CRNL--5966

DE83 012337

ORNL-5966

Contract No. W-7405-eng-26

**Publications in
Biomedical and Environmental
Sciences Programs
1982**

**Compiled and Edited By:
J. B. Moody**

Date Published April 1983

DISCLAIMER

This report was prepared as an account of work sponsored by an agency of the United States Government. Neither the United States Government nor any agency thereof, nor any of their employees, makes any warranty, express or implied, or assumes any legal liability or responsibility for the accuracy, completeness, or usefulness of any information, apparatus, product, or process disclosed, or represents that its use would not infringe privately owned rights. Reference herein to any specific commercial product, process, or service by trade name, trademark, manufacturer, or otherwise does not necessarily constitute or imply its endorsement, recommendation, or favoring by the United States Government or any agency thereof. The views and opinions of authors expressed herein do not necessarily state or reflect those of the United States Government or any agency thereof.

**OAK RIDGE NATIONAL LABORATORY
Oak Ridge, Tennessee 37830
operated by
UNION CARBIDE CORPORATION
for the
DEPARTMENT OF ENERGY**

DISTRIBUTION OF THIS DOCUMENT IS UNLIMITED

TABLE OF CONTENTS

Acknowledgements	v
Introduction	vii
Journals and Books	1
Analytical Chemistry Division	1
Biology Division	1
Information Division—R&D	18
Health and Safety Research Division	19
Instrumentation and Controls Division	28
Computer Sciences Division	28
Physics Division	28
Energy Division	28
Engineering Technology Division	28
Solid State Division	28
Central Management	28
Environmental Sciences Division	29
Reports	37
Biology Division	37
Chemical Technology Division	37
Information Division—R&D	37
Health and Safety Research Division	38
Instrumentation and Controls Division	41
Engineering Physics Division	41
Energy Division	41
Engineering Technology Division	42
Central Management	42
Industrial Safety and Applied Health	
Physics Division	42
Environmental Sciences Division	43
UCC-ND — Engineering Division	47
Indexes	49
Author	51
Title	77
Journal	291

Acknowledgements

I am grateful to the divisions for their help and cooperation. I am especially grateful to Virginia Norman of the Information Division who did the file manipulation in order to produce this publication.

Introduction

This bibliography contains 725 references to articles in journals, books, and reports published in the subject area of biomedical and environmental sciences during 1982. There are 553 references to articles published in journals and books and 172 references to reports. The citations appear once and are in order by the first author's division or in order by the division for which the work was performed. Staff members in the Biomedical and Environmental Sciences divisions have other publications not included in this bibliography; for example, theses, book reviews, abstracts published in journals or symposia proceedings, pending journal publications and reports such as monthly, bimonthly, and quarterly progress reports, contractor reports, and reports for internal distribution.

This document is sorted by the division, and then alphabetically by author. The sorting by divisions separates the references by subject area in a simple way. The divisions represented in the order that they appear in the bibliography are Analytical Chemistry, Biology, Chemical Technology, Information R&D, Health and Safety Research, Instrumentation and Controls, Computer Sciences, Engineering Physics, Physics, Energy, Engineering Technology, Solid State, Central Management, Industrial Safety and Applied Health Physics, Environmental Sciences, and UCC-ND -- Engineering.

Indexes are provided by author, title, and journal reference.

Reprints of articles referenced in this bibliography can be obtained from the author or the author's division.

Journals and Books

Analytical Chemistry Division

1
Ferguson, N.M.; Lindberg, S.E.; Vargo, J.D. "A Simple Reverse Phase Column Clean Up for the Determination of Sulfate in Aqueous Leachates Containing Organic Compounds," *Int. J. Environ. Anal. Chem.* 11, 61-65 (1982)

2
Todd, P.J.; Warmack, R.J.; McBay, E.H. "Calculated Angular Distribution of Fragment Ions from Polya-tomic Ion Collisions," pp 748-9. *Mass Spectrometry and Allied Topics, Proc. 30th Annu. Conf., Honolulu, June 6-11, 1982, 1982*

Biology Division

3
Adams, L.M.; Ullrich, R.L. "Survival of Mammary Epithelial Cells from Virgin Female BALB/c Mice Following in Vivo Gamma Irradiation," *Radiat. Res.* 91, 409 (1982)

4
Adler, H.I.; Crow, W.D. "Factors Influencing the Development of Spontaneous Mutant Colonies in the Salmonella Mutagenicity Assay," p 135. *Abstracts 82nd Annu. Meet. Am. Soc. Microbiol., Atlanta, Mar. 7-12, 1982, 1982*

5
Amsler, K.; Cook, J.S. "Development of Sodium-Independent Hexose Transport in a Cultured Line of Porcine Kidney Cells," *Am. J. Physiol.* 242 (Cell Physiol 11), C94-C101 (1982)

6
Amsler, K.; Cook, J.S. "Development of Na⁺ Dependent Phlorizin Binding Sites in a Clone of LLC-PK1 Cells," *J. Cell Biol.* 95, 30a (1982)

7
Anderson, W.F.; Martinell, J.; Whitney, J.B., III; Popp, R.A. "Mouse Models of Human Thalassemia," pp 11-26. *Animal Models Inherited Metabolic Diseases, Alan R. Liss, Inc., New York, 1982*

8
Armitage, W.J.; Mazur, P. "The Response of Granulocytes to Osmotic Shrinkage," *Cryobiology* 19, 678 (1982)

9
Armitage, W.J.; Mazur, P.; Cole, K.W. "The Detrimental Effect of Glycerol on Granulocytes," *Cryobiology* 19, 677-8 (1982)

10
Ashley, T.; Russell, L.B.; Cacheiro, N.L.A. "Synaptonemal Complex Analysis of Two X-7 Translocations in Male Mice. I. R3 and R5 Quadrivalents," *Chromosoma* 87, 149-64 (1982)

11
Au, W.W.; Laippold, H.E. "Sister Chromatid Differentiation Analysis of Cell Cycle Kinetics in Mouse Bone Marrow Cells," *Environ. Mutagenesis* 4, 376 (1982)

12
Au, W.W.; Otten, J.A.; Laippold, H.E. "Mouse Myeloid Leukemia as an Experimental Model for Monitoring Progression of Leukemia and Chemotherapy," *Proc. Am. Assoc. Cancer Res.* 23, 221 (1982)

13
Bednar, R.A.; Hartman, F.C.; Colman, R.F. "3-Bromo 2-Ketoglutarate: A Substrate and Affinity Label for Diphosphopyridine Nucleotide-Dependent Isocitrate Dehydrogenase," *Biochemistry* 21, 3681-9 (1982)

- 14
Bodnar, R.A.; Hartman, F.C.; Colman, R.F. "3,4-Dihydro-2-Ketoglutarate: An Affinity Label for Diplophosphopyridine Nucleotide-Dependent Isocitrate Dehydrogenase," *Biochemistry* 21, 3690-7 (1982)
- 15
Bender, M.A.; Preston, R.J. "Effect of Base Damage in Aberration Formation Interacts with Aphidicolin and X-Rays," v.4, pp 37-46, *Progress in Mutation Research*, Elsevier Biomedical Press, 1982
- 16
Bianchi, M.; Bianchi, N.O.; Brewen, J.G.; Buckton, K.E.; Fabry, L.; Fischer, P.; Goech, P.C.; Kucerova, M.; Leonard, A.; Mukherjee, R.N.; Mukherjee, U.; Nakai, S.; Natarajan, A.T.; Obe, G.; Pallitti, F.; Pohl-Ruckling, J.; Schwarzscher, H.G.; Scott, D.; Sharma, T.; Takahashi, E.; Tanzarella, C.; van Bunt, P.P.W. "Evaluation of Radiation-Induced Chromosomal Aberrations in Human Peripheral Blood Lymphocytes In Vitro," *Mutat. Res.* 96, 233-42 (1982)
- 17
Birchler, J.A.; Owenby, R.K.; Jacobson, K.B. "Dosage Compensation of Serine-4 Transfer RNA in *Drosophila melanogaster*," *Genetics* 102, 525-37 (1982)
- 18
Bonnewell, V.; Fowler, R.F.; Skinner, D.M. "Sequence Augmentation by Amplification of an (A+T)-Rich 142 bp Segment in a (G+C)-Rich Satellite DNA," *J. Cell Biol.* 95, 210a (1982)
- 19
Bowin, M.C.; Delacoste, C.; Fuerstenberger, G.; Marks, F.; Schweizer, J.; Klein-Szanto, A.J.P.; Premierat, M. "Effect of Phorbol Esters on Guinea Pig Skin In Vivo," *Carcinogenesis* 3, 671-6 (1982)
- 20
Braslowsky, G.R.; Flynn, K.M.; Steele, V.E.; Nettesheim, P. "Changes in DNA Content of Rat Tracheal Epithelial Cells during Neoplastic Progression In Vitro," *Carcinogenesis* 3, 847-50 (1982)
- 21
Bran, R.; Russell, L.B.; Schenck, J. "Workshop on the Practical Application of the Mammalian Spot Test in Routine Mutagenicity Testing of Drugs and Other Chemicals," *Mutat. Res.* 97, 155-61 (1982)
- 22
Brewen, J.G.; Preston, R.J. "Cytogenetic Analysis of Mammalian Oocytes in Mutagenicity Studies," pp 277-87, *Cytogenetic Assays of Environmental Mutagens*, Allanheld, Osmun, Totowa, NJ, 1982
- 23
Brimer, P.A.; Tan, E.-L.; Hsie, A.W. "Effect of Metabolite Activation on the Cytotoxicity and Mutagenicity of 1,2-Dibromoethane in the CHO/HGPRT System," *Mutat. Res.* 95, 377-88 (1982)
- 24
Broyde, S.B.; Hingerty, B.E. "DNA Backbone Conformation in AAF Modified dCpdG: Variable Conformational Modes of Achieving Base Displacement," *Chemico-Biol. Interactions* 40, 113-9 (1982)
- 25
Brummett, A.R.; Dumont, J.N.; Larkin, J.R. "The Ovary of *Fundulus heteroclitus*," *J. Morphol.* 173, 1-16 (1982)
- 26
Bunick, G.J.; Uberbacher, E.C.; Olin, D.E. "Neutron Scattering and X-Ray Diffraction of Nucleosomes and Nucleosome - HMG Complexes," *J. Cell Biol.* 95, 85a (1982)
- 27
Butler, A.P.; Olin, D.E. "pH Effects on the Structure of the Inner Histones," *Biochem. Biophys. Acta* 698, 199-203 (1982)
- 28
Carrier, W.L.; Snyder, R.D.; Regan, J.D. "Ultraviolet-Induced Damage and Its Repair in Human DNA," pp 91-112, *The Science of Photomedicine*, Plenum Publ. Corp., 1982

- 29
Christeller, J.T.; Hartman, F.C. "Inactivation of Rhodospirillum rubrum. Ribulose Biphosphate Carboxylase/Oxygenase by the Affinity Label 2-N-Chloroamino-2-Deoxypentitol 1,5-Bisphosphate," *FEBS Lett.* 142, 162-6 (1982)
- 30
Christie, N.T.; Jacobson, K.B. "Metal Ion Toxicity in Drosophila," *The Toxicologist* 2, 85 (1982)
- 31
Christie, N.T.; Owenby, R.K.; Jacobson, K.B.; Hiatt, V.S.; Farfas, W.R. "Quinine-Containing Isoacceptor of Tyrosine tRNA in Drosophila melanogaster," *Biochim. Biophys. Acta* 699, 40-8 (1982)
- 32
Collier, I.E.; Popp, D.M.; Lee, W.H.; Regan, J.D. "DNA Repair in a Congenic Pair of Mice with Different Longevities," *Mech. Ageing Dev.* 19, 141-6 (1982)
- 33
Cook, J.S.; Amsler, K.; Weiss, E.R.; Shaffer, C. "Development of Sodium Ion-Dependent Hexose Transport In Vitro," pp 551-67, *Membranes in Growth and Development*, Alan R. Liss, Inc., New York, 1982
- 34
Cook, J.S.; Tate, E.H.; Shaffer, C. "Uptake of Tritiated Ouabain from the Cell Surface into the Lysosomal Compartment of HeLa Cells," *J. Cell. Physiol.* 110, 84-92 (1982)
- 35
Cook, J.S.; Weiss, E.R.; Shaffer, C.; Amsler, K. "A Model for the Differentiation of Na-Dependent Hexose Transport Capacity in a Population of LLC-PK₁ Cells," *Fed. Proc.* 41, 1415 (1982)
- 36
Cosgrove, G.E.; Satterfield, L.C. "Amyloidosis," pp 95-9, *Noninfectious Diseases of Wildlife*, Iowa State Univ., Ames, 1982
- 37
Crow, W.D., Adler, H.I. "Membrane Preparations Used to Produce Anaerobic Conditions in Bacteriological Media," p 103, *Abstracts 82nd Annu. Meet. Am. Soc. Microbiol.*, Atlanta, Mar.7-12, 1982, 1982
- 38
Dalbey, W.E. "Formaldehyde and Tumors in Hamster Respiratory Tract," *Toxicology* 24, 9-14 (1982)
- 39
Dalbey, W.E.; Lock, S.; Garfinkel, S.; Jenkins, R.; Holmberg, R.; Guerin, M.R. "Effects of Repeated Exposures to Aerosolized Diesel Fuel," *The Toxicologist* 2, 50 (1982)
- 40
Dalbey, W.E.; Lock, S.; Rice, K.; Ross, T.; Garfinkel, S.; Balogh, L.A. "Effects of Single Exposures to Aerosolized Diesel Fuel," *The Toxicologist* 2, 56 (1982)
- 41
Darlington, G.J.; Papaconstantinou, J.; Sammons, D.W.; Brown, P.C.; Wong, E.Y.; Esterman, A.L.; Kang, J. "Generation and Characterization of Variants of Mouse Hepatoma Cells with Defects in Hepato-Specific Gene Expression. I. Albumin Synthesis Variants," *Somatic Cell Genet.* 8, 451-64 (1982)
- 42
Davidson, K.A.; Holland, J.M.; Hahn, J.W.; Gipson, L.C. "Endocrine Morphology and Reproductive Function in Athymic Nude Mice," pp 317-24, *Proc. 3rd Int. Workshop Nude Mice*, Bozeman, MT, Sept.6-9, 1979, Gustav Fischer New York, Inc., 1982
- 43
Davidson, K.A.; Slaga, T.J. "Effects of Phorbol Ester Tumor Promoters and Hyperplasiogenic Agents on Cytoplasmic Glucocorticoid Receptors in Epidermis," *J. Invest. Dermatol.* 79, 378-82 (1982)
- 44
DeMarini, D.M.; Hsie, A.W. "Cytotoxicity and Mutagenicity of Five Antitumor Compounds (Ellipticines) in the CHO/HGPRT System," *Environ. Mutagenesis* 4, 391-2 (1982)
- 45
DiGiovanni, J.; Diamond, L.; Singer, J.M.; Daniel, F.B.; Witlak, D.T.; Slaga, T.J. "Tumor-Initiating Activity of 4-Fluoro-7, 12-Dimethylbenz(a)anthracene and 1,2,3,4-Tetrahydro-7, 12-Dimethylbenz(a)anthracene in Female SEN-CAR Mice," *Carcinogenesis* 3, 651-5 (1982)

46

DiGiovanni, J.; Miller, D.R.; Singer, J.M.; Viaje, A.V.; Slaga, T.J. "Benzo(a)pyrene Metabolism in Primary Cultures of Mouse Epidermal Cells and Untransformed and Transformed Epidermal Cell Lines," *Cancer Res.* 42, 2579-85 (1982)

47

Dodson, L.A.; Foote, R.S.; Mitra, S.; Masker, W.E. "Mutagenesis of Bacteriophage T7 In Vitro by Incorporation of O-6-Methylguanine during DNA Synthesis," *Proc. Natl. Acad. Sci.* 79, 7440-4 (1982)

48

Donehue, T.M., Jr.; Lee, K.-L.; Kenney, F.T. "Concanavalin A Alters the Turnover Rate of Tyrosine Aminotransferase in Cultured Hepatoma Cells," *Biochim. Biophys. Acta* 721, 94-100 (1982)

49

Dorsett, D.; Flanagan, J.M.; Jacobson, K.B. "Biosynthesis, Non-enzymatic Synthesis and Purification of the Intermediate in Synthesis of Sepiapterin in *Drosophila*," *Biochemistry* 21, 3892-9 (1982)

50

Dorsett, D.; Jacobson, K.B. "Purification and Biosynthesis of Quercetin Spot, a Drosopterin Precursor in *Drosophila melanogaster*," *Biochemistry* 21, 1238-43 (1982)

51

Dumont, J.N.; Schultz, T.W.; Newman, S.M., Jr. "A Frog Embryo Teratogenesis Assay: Xenopus (FETAX) - A Model for Teratogen Screening," *Teratology* 25, 37A (1982)

52

Dunn, W.C.; Carrier, W.L.; Regan, J.D. "Effects of an Extract from the Sea Squirt *Ecteinascidia turbinata* on DNA Synthesis and Excision Repair in Human Fibroblasts," *Toxicol.* 20, 703-8 (1982)

53

Easley, J.R.; Holland, J.M. "Percutaneous Acute and Chronic Renal Toxicity Induced by Shale Oil and Petroleum Derived Jet and Diesel Fuel," *The Toxicologist* 2, 180 (1982)

54

Easley, J.R.; Holland, J.M.; Gipson, L.C.; Whitaker, M.J. "Renal Toxicity of Middle Distillates of Shale Oil and Petroleum in Mice," *Toxicol. Appl. Pharmacol.* 65, 84-91 (1982)

55

Ethier, S.P.; Ulrich, R.L. "Detection of Ductal Dysplasia in Mammary Outgrowths Derived from Carcinogen-Treated Virgin Female BALB/c Mice," *Cancer Res.* 42, 1753-60 (1982)

56

Ethier, S.P.; Ulrich, R.L. "Induction of Mammary Tumors in Virgin Female BALB/c Mice by Single Low Doses of 7,12-Dimethylbenz(a)anthracene (DMBA)," *Proc. Am. Assoc. Cancer Res.* 23, 230 (1982)

57

Ethier, S.P.; Ulrich, R.L. "Induction of Mammary Tumors in Virgin Female BALB/c Mice by Single Low Doses of 7,12-Dimethylbenz(a)anthracene," *J. Natl. Cancer Inst.* 69, 1199-203 (1982)

58

Filler, R. "The Presence of Metabolites in Early Embryos," *Teratology* 25, 40A (1982)

59

Filler, R.; Woods, L.S. "Cell Specific Activation and Detoxification of Benzo(a)pyrene by Two Clones Murine Testicular Cell Lines," *The Toxicologist* 2, 165 (1982)

60

Fischer, S.M.; Mills, G.D.; Slaga, T.J. "Inhibition of Mouse Skin Tumor Promotion by Several Inhibitors of Arachidonic Acid Metabolism," *Carcinogenesis* 3, 1243-5 (1982)

61

Fischer, S.M.; Nelson, K.D.G.; Reimers, J.J., Jr.; Viaje, A.V.; Pelling, J.C.; Slaga, T.J. "Separation of Epidermal Cells by Density Centrifugation: A New Technique for Studies on Normal and Pathological Differentiation," *J. Cutaneous Pathol.* 9, 43-9 (1982)

62

Fischer, S.M.; Slaga, T.J. "Modulation of Prostaglandin Synthesis and Tumor Promotion," pp 255-64, *Prostaglandins and Cancer, Proc. Int. Conf., Washington, DC, Aug.31-Sept.3, 1981*, Alan R. Liss, Inc., New York, 1982

63

Fishman, J.B.; Cook, J.S. "Recycling of Surface Sialoglycoconjugates in HTC and HeLa Cells," *J. Biol. Chem.* 257, 8122-9 (1982)

64

Fishman, J.B.; Cook, J.S. "Heterogeneous Recycling of Surface Sialoglycoproteins in HeLa Cells," *J. Cell Biol.* 95, 419a (1982)

65

Fowler, R.F.; Bonnewell, V.; Skinner, D.M. "Unusual Sequence Features in the Repeat Unit of (G+C) - Rich Crab Satellite DNA," *J. Cell Biol.* 95, 212a (1982)

66

Fraij, B.M.; Hartman, F.C. "2-Bromoacetylaminopentitol 1,5-Bisphosphate as an Affinity Label for Ribulose Bisphosphate Carboxylase/Oxygenase from *Rhodospirillum rubrum*," *J. Biol. Chem.* 257, 3501-5 (1982)

67

Fry, R.J.M. "The Role of Animal Studies in Low Dose Extrapolation," pp 109-18, *Proc. 17th Annu. Meet. National Council on Radiation Protection and Measurements, Critical Issues in Setting Radiation Dose Limits, National Council on Radiation Protection and Measurements, Washington, 1982*, 1982

68

Fry, R.J.M. "The Relevance of Long Term Carcinogenic and Genetic Hazards to Emergency Control," pp 40-45, *The Control of Exposure of the Public to Ionizing Radiation in the Events of Accident or Attack, Proc. Symp., Washington, DC, Apr.27-29, 1981, Natl. Council on Radiation Protection and Measurements, 1982*

69

Fry, R.J.M.; Ley, R.D.; Grube, D. "Ultraviolet Radiation Skin Carcinogenesis," *Proc. Am. Assoc. Cancer Res.* 23, 95 (1982)

70

Fry, R.J.M.; Ley, R.D.; Grube, D.; Staffeldt, E. "Studies on the Multistage Nature of Radiation Carcinogenesis," pp 155-65, *Carcinogenesis and Biological Effects of Tumor Promoters*, (Carcinogenesis, v.7), Raven Press, New York, 1982

71

Fujimura, R.K.; Roop, B.C. "Interaction of a DNA-Binding Protein, the Gene Product of D5 of Bacteriophage T5, with Double-Stranded DNA - Analysis by Metrizamide Gradient Centrifugation," *J. Biol. Chem.* 257, 14811-6 (1982)

72

Fuscoe, J.C.; O'Neill, J.P.; Machanoff, R.; Hsie, A.W. "Quantitation and Analysis of Reverse Mutations at the HGPRT Locus in Cultured Mammalian Cells," *Mutat. Res.* 96, 15-30 (1982)

73

Generoso, W.M. "A Possible Mechanism for Chemical Induction of Chromosome Aberrations in Male Meiotic and Postmeiotic Germ Cells of Mice," *Cytogenet. Cell Genet.* 33, 74-80 (1982)

74

Generoso, W.M.; Cain, K.T.; Cornett, C.V.; Russell, E.W.; Hellwig, C.S.; Horton, C.Y. "Difference in the Ratio of Dominant-Lethal Mutations to Heritable Translocations Produced in Mouse Spermatids and Fully Mature Sperm after Treatment with Triethylenemelamine (TEM)," *Genetics* 100, 633-40 (1982)

75

Generoso, W.M.; Cain, K.T.; Hellwig, C.S.; Cachero, N.L.A. "Lack of Association between Induction of Dominant-Lethal Mutations and Induction of Heritable Translocations with Benzo(a)pyrene (BaP) in Postmeiotic Germ Cells of Male Mice," *Mutat. Res.* 94, 155-63 (1982)

76

Gill, J.S.; Adler, H.I. "Study of the Mechanism by Which a Cytoplasmic Membrane Preparation Promotes Septation in Irradiated *Escherichia coli*," p 171, *Abstracts 82nd Annu. Meet. Am. Soc. Microbiol., Atlanta, Mar.7-12, 1982*, 1982

77

Gottlieb, T.A.; Wallace, R.A. "Intracellular Glycosylation of Vitellogenin in the Liver of Estrogen-Stimulated *Xenopus laevis*," *J. Biol. Chem.* 257, 95-103 (1982)

78

Grell, R.F.; Genereux, E.E. "A Temporal Study at the Ultrastructural Level of the Developing Pro-oocyte of *Drosophila melanogaster*," *Chromosoma* 87, 49-75 (1982)

79

Hadden, C.T. "Psoralen-Plus-Light Damage and Repair in Transforming DNA of *Bacillus subtilis*," pp 143-51, *Genetic Exchange - A Celebration and a New Generation*, Marcel Dekker, Inc., 1982

80

Hakkinen, P.J.; Frankel, R.; Harden, M.; Balogh, L.A.; Witschi, H.R. "Effect of Lung, Liver and Kidney Toxicants on Respiratory Rates of Mice," *The Toxicologist* 2, 179 (1982)

81

Hakkinen, P.J.; Haschek, W.M. "Pulmonary Toxicity of Methylcyclopentadienyl Manganese Tricarbonyl (MMT). Nonciliated Bronchiolar Epithelial (Clara) Cell Necrosis and Alveolar Damage in the Mouse Rat and Hamster," *Toxicol. Appl. Pharmacol.* 65, 11-22 (1982)

82

Hakkinen, P.J.; Whiteley, J.W.; Witschi, H.R. "Hyperoxia, But Not Thoracic X-Irradiation, Potentiates Bleomycin- and Cyclophosphamide-Induced Lung Damage in Mice," *Am. Rev. Respir. Dis.* 126, 281-5 (1982)

83

Harrington, R.E.; Uberbacher, E.C.; Bunick, G.J. "Conformation of the HMG 14 Nucleosome Core Complex from Flow Birefringence," *Nucl. Acids Res.* 10, 5695-709 (1982)

84

Hartman, F.C.; Fraij, B.M. "Identification of an Active-Site Methionyl Residue in Ribulose Bisphosphate Carboxylase/Oxygenase," *Fed. Proc.* 41, 1178 (1982)

85

Hartman, F.C.; Stringer, C.D.; Ommaas, J.; Donnelly, M.I.; Fraij, B.M. "Purification and Sequencing of Cyanogen Bromide Fragments from Ribulosebisphosphate Carboxylase/Oxygenase from *Rhodospirillum rubrum*," *Arch. Biochem. Biophys.* 219, 422-37 (1982)

86

Haschek, W.M.; Hakkinen, P.J.; Witschi, H.R.; Hanzlik, R.P.; Traiger, G.J. "Nonciliated Bronchiolar Epithelial (Clara) Cell Necrosis Induced by Organometallic Carbonyl Compounds," *Toxicol. Lett.* 14, 85-92 (1982)

87

Haschek, W.M.; Klein-Szanto, A.J.P.; Last, J.A.; Reiser, K.M.; Witschi, H.R. "Long-Term Morphologic and Biochemical Features of Experimentally Induced Lung Fibrosis in the Mouse," *Lab. Invest.* 46, 438-49 (1982)

88

Haschek, W.M.; Klein-Szanto, A.J.P.; Last, J.A.; Reiser, K.M.; Lock, S.; Dalbey, W.E.; Witschi, H.R. "Experimental Lung Fibrosis in the Mouse: Long-Term Morphologic and Biochemical Features," *The Toxicologist* 2, 46 (1982)

89

Hass, B.S.; McKeown, C.K.; Sardella, D.J.; Boger, E.; Huberman, E. "Cell-Mediated Mutagenicity in Chinese Hamster V79 Cells by Dibenzpyrenes and Their Bay-Region Disubstituted Fluorinated Derivatives," *Cancer Res.* 42, 1646-9 (1982)

90

Hearl, W.G.; Boling, M.E.; Jones, M.H.; Volkin, E. "Compartmentation of the Nucleotide Pool," *Fed. Proc.* 41, 1295 (1982)

91

Heartlein, M.W.; O'Neill, J.P.; Pal, B.C.; Preston, R.J. "The Induction of Specific Locus Mutations and Sister Chromatid Exchanges by 5-Bromo- and 5-Chloro-Deoxyuridine," *Mutat. Res.* 92, 411-6 (1982)

92

Hearstein, M.W.; O'Neill, J.P.; Pal, B.C.; Preston, R.J. "Incorporation of CldU and BrdU into DNA and the Induction of SCE and Mutations," *Environ. Mutagenesis* 4, 301-2 (1982)

93

Heckman, C.A.; Dalbey, W.E. "Pathogenesis of Lesions Induced in Rat Lung by Chronic Tobacco Smoke Inhalation," *JNCI* 69, 117-29 (1982)

94

Heckman, C.A.; Ludemann, S.E.; Campbell, A.E.; Shah, Y.B. "Cell Shape Changes in Oncogenic Transformation," *J. Cell Biol.* 95, 327a (1982)

95

Herdon, C.S.; Norton, I.L.; Hartman, F.C. "Reexamination of the Binding Site for Pyridoxal 5'-Phosphate in Ribulose Biphosphate Carboxylase/Oxygenase from *Rhodospirillum rubrum*," *Biochemistry* 21, 1380-5 (1982)

96

Hingerty, B.E.; Brown, R.S.; Klug, A. "Stabilization of the Tertiary Structure of Yeast Phenylalanine tRNA by the Hexammine Cobaltic Ion: X-Ray Evidence for Hydrogen Bonding to Pairs of Guanine Bases in the Major Groove," *Biochem. Biophys. Acta* 697, 78-82 (1982)

97

Hingerty, B.E.; Broyde, S.B. "Conformation of the Deoxydinucleotide Monophosphate dCpdG Modified at Carbon 8 of Guanine with 2-(Acetylamino)fluorine," *Biochemistry* 21, 3243-52 (1982)

98

Hingerty, B.E.; Broyde, S.B.; Olson, W.K. "The Poly rU Coil: A Minimum Energy Model That Matches Experimental Observations," *Biopolymers* 21, 1167-88 (1982)

99

Hoffman, D.R.; Huberman, E. "The Control of Phospholipid Methylation by Phorbol Diesters in Differentiating Human Myeloid HL-60 Leukemia Cells," *Carcinogenesis* 3, 875-80 (1982)

100

Holland, J.M.; Fry, R.J.M. "Neoplasms of the Mouse Integument and Harderian Gland," pp 513-28, *The Mouse in Biomedical Research*, Academic Press, New York, 1982

101

Holland, J.M.; Kao, J.Y. "A Novel Method for Quantitative Cutaneous Toxicokinetics," *The Toxicologist* 2, 190 (1982)

102

Holland, J.M.; Perkins, E.H. "Resistance of Germfree Athymic Nude Mice to Two-Stage Skin Carcinogenesis," pp 423-33, *Proc. 3rd Int. Workshop Nude Mice*, Bozeman, MT, Sept.6-9,1979, Gustav Fischer New York, Inc., 1982

103

Hsie, A.W. "Gene Mutation, Quantitative Mutagenesis and Mutagen Screening in Mammalian Cells: Study with the CHO/HGPRT System," pp 715-21, *Cell Growth*, Plenum Publ. Corp., 1982

104

Hsie, A.W. "A Multiphasic Chinese Hamster Mutational System," *Environ. Mutagenesis* 4, 353 (1982)

105

Hsie, A.W.; "Reverse Transformation of Chinese Hamster Cells by Cyclic AMP and Hormones," pp 557-73, *Cell Growth*, Plenum Publ. Corp., 1982

106

Hsie, A.W.; Schenley, R.L. "The Need to Develop a Short-Term Chinese Hamster In Vivo Specific Locus Mutational Assay," pp 487-501, *Banbury Report 13, Indicators of Genotoxic Exposure*, Cold Spring Harbor, NY, Apr.18-21,1982, 1982

107

Huang, A.; Tsao, Y.S.; Kernel, S.J.; Huang, L. "Characterization of Antibody Covalently Coupled to Liposomes," *Biochim. Biophys. Acta* 716, 140-50 (1982)

108

Huberman, E.; Braslauer, G.R.; Callahan, M.; Sugimura, T. "Induction of Differentiation of Human

Promyelocytic Leukemia (HL-60) Cells by Teleocidin B and Phorbol-13-Myristate-13-Acetate," *Carcinogenesis* 3, 111-4 (1982)

109

Huberman, E.; Weeks, C.E.; Solanki, V.; Callahan, M.; Slaga, T.J. "Cell Differentiation, Alterations in Polyamine Levels, and Specific Binding of Phorbol Diesters in Cultured Human Cells," pp 405-16, *Carcinogenesis and Biological Effects of Tumor Promoters*, (Carcinogenesis, v.7), Raven Press, New York, 1982

110

Iyer, R.P.; Slaga, T.J.; Pal, B.C. "Preparation of Enantiomers of (plus or minus)-Trans-7Beta, 8Alpha-Dihydroxy-9Alpha, 10Alpha-Epoxy-7,8,9,10-Tetrahydrobenzo[a]pyrene," *Ind. J. Chem.* 21B, 275-8 (1982)

111

Jacobson, K.B.; Dorsett, D.; Pfeiderer, W.; McCloskey, J.A.; Sethi, S.K.; Buchanan, M.V.; Rubin, L.B. "A Naturally Occurring Pyrimidodiazepine in *Drosophila*: Chemical and Spectral Properties and Relationship to Drosopterin," *Biochemistry* 21, 5000-6 (1982)

112

Jacobson, K.B.; Grell, E.H.; Yim, J.J.; Gardner, A.L. "Mechanism of Suppression in *Drosophila melanogaster*. 8. Comparison of Su(S) Alleles for Ability to Suppress the Mutants Purple, Vermilion, and Speck," *Genet. Res.* 40, 19-32 (1982)

113

Jacobson, K.B.; Yim, J.J.; Grell, E.H.; Wobbe, C.R. "Mechanism of Suppression in *Drosophila*: Evidence for a Macromolecule Produced by the su(s)⁺ Locus That Inhibits Sepiapterin Synthase," *Cell* 30, 817-23 (1982)

114

Jamathi, R.J.; Perkins, E.H. "Immunological Properties of in Vitro Passaged Carcinomas and Propagated Clones from Different Cell Lines," *Proc. Am. Assoc. Cancer Res.* 23, 269 (1982)

115

Kao, J.Y.; Hall, J.W.; Holland, J.M. "A Method for In Vitro Cutaneous Toxicity Evaluation," *The Pharmacol.* 24, 145 (1982)

116

Kempner, E.S.; Cole, K.W.; Gaertner, F.H. "The Functional Unit of the Arom Conjugate in *Neurospora*," *J. Biol. Chem.* 257, 8919-21 (1982)

117

Kennel, S.J. "Binding of Monoclonal Antibody to Protein Antigen in Fluid Phase or Bound to Solid Supports," *J. Immunol. Methods* 55, 1-12 (1982)

118

Kenney, F.T.; Lee, K.-L. "Turnover of Gene Products in the Control of Gene Expression," *BioScience* 32, 181-4 (1982)

119

Klamm, R.C.; Marchok, A.C. "Effects of Retinoic Acid on Cell Proliferation and Cell Differentiation in a Rat Tracheal Epithelial Cell Line," *Cell Tissue Kinet.* 15, 473-82 (1982)

120

Klamm, R.C.; Marchok, A.C. "Determination of Growth Requirements of Non-Tumorigenic and Tumorigenic Tracheal Epithelial Cells Using a Semi-Automated Quantitative Method," *In Vitro* 18, 283-4 (1982)

121

Klein-Szanto, A.J.P.; Major, S.K.; Slaga, T.J. "Quantitative Evaluation of Dark Keratinocytes Induced by Several Promoting and Hyperplasiogenic Agents: Their Use as an Early Morphological Indicator of Tumor-Promoting Action," v.7, pp 305-9, *Carcinogenesis* 7, Raven Press, New York, 1982

122

Klein-Szanto, A.J.P.; Martin, D.H.; Segal, M. "Hyperkeratinization and Hyperplasia of the Forestomach Epithelium in Vitamin A Deficient Rats," *Virchows Archiv* 40, 387-94 (1982)

123

Klein-Szanto, A.J.P.; Netteshia, P.; Saccomanno, G. "Dark Epithelial Cells in Preneoplastic Lesions of the Human Respiratory Tract," *Cancer* 50, 107-13 (1982)

124

Klein-Szanto, A.J.P.; Segal, M.; Banoczy, J.; Aronow, M. "Dark Cells in Human Oral Leukoplakias," *J. Oral Pathol.* 11, 228-36 (1982)

125

Klein-Szanto, A.J.P.; Shiba, M.; Shah, Y.B.; Slaga, T.J. "Histochemical Localization of Gamma-Glutamyltranspeptidase (GGT) and Concanavalin A in Normal, Preneoplastic and Neoplastic Epithelia," *Lab. Invest.* 46, 82A (1982)

126

Klein-Szanto, A.J.P.; Slaga, T.J. "Effects of Peroxides on Rodent Skin: Epidermal Hyperplasia and Tumor Promotion," *J. Invest. Dermatol.* 79, 30-4 (1982)

127

Klein-Szanto, A.J.P.; Terzaghi, M.; Mirkin, L.D.; Martin, D.H.; Shiba, M. "Propagation of Normal Human Epithelial Cell Populations Using an in Vivo Culture System: Description and Applications," *Propag. Cell Popul.* 108, 231-9 (1982)

128

Koch, G.; Lalley, P.A.; Shows, T.B. "Acid Lipase-1 (Lip-1) is on Mouse Chromosome 19: Evidence for Homologous Regions on Human Chromosome 10 and Mouse 19," *Cytogenet. Cell Genet.* 32, 291 (1982)

129

Kuennemerle, N.B.; Ley, R.D.; Masker, W.E. "The Effect of Mutations in the *uvrD* Cistron of *Escherichia coli* on Repair Resynthesis," *Mutat. Res.* 94, 285-97 (1982)

130

Lalley, P.A.; Naylor, S.L.; Elliott, R.W.; Shows, T.B. "Assignment of *Acy-1* to Mouse Chromosome 9: Evidence for Homologous Linkage Groups in Man and Mouse," *Cytogenet. Cell Genet.* 32, 293 (1982)

131

Lalley, P.A.; Popp, R.A.; Whitney, J.B., III; Anderson, W.F. "Mouse Alpha-Like Pseudogenes are Assigned to Chromosome 15 and 17," *Cytogenet. Cell Genet.* 32, 294 (1982)

132

Larimer, F.W.; Hardigree, A.A. "Effect of *rev* Genes on Chemically-Induced Frameshift Mutagenesis in *Saccharomyces Cerevisiae*," *Environ. Mutagenesis* 4, 300-1 (1982)

133

Laughlin, T.J.; Henry, J.M.; Butler, A.P.; Olin, D.E. "The Structure of Gene-Size Chromatin Fragments from the Macronucleus of *Oxytricha nova*," *J. Cell Biol.* 95, 70a (1982)

134

Laughlin, T.J.; Wilkinson-Singley, E.; Olin, D.E.; Olin, A.L. "Stereo Electron Microscope Studies of Mitotic Chromosomes from Chinese Hamster Ovary Cells," *Eur. J. Cell Biol.* 27, 170-6 (1982)

135

Lee, K.-L.; Isham, K.R.; Kenney, F.T. "Cloned cDNAs Specific to Flucocorticoid-Induced mRNAs of Rat Liver," *Fed. Proc.* 41, 1449 (1982)

136

Legator, M.S.; Bueding, E.; Batzinger, R.P.; Connor, T.H.; Eisenstadt, E.; Farrow, M.G.; Ficor, G.; Hsie, A.W.; Seed, J.; Stafford, R.S. "An Evaluation of the Host-Mediated Assay and Body Fluid Analysis - A Report of the U.S. Experimental Protection Agency Gene-Tox Program," *Mutat. Res.* 98, 319-74 (1982)

137

Lemontt, J.F.; Lair, S.V. "Plate Assay for Chemical- and Radiation-Induced Mutagenesis of *CAN1* in Yeast as a Function of Post-Treatment DNA Replication: The Effect of *rad6-1*," *Mutat. Res.* 93, 339-52 (1982)

138

Longworth, J.W. "On Light, Colors, and Origins of Spectroscopy," pp 21-67, *PhotoMedicine*, Plenum Press, New York, 1982

139

Lothrop, C.D., Jr.; Uziel, M. "Salvage of the Modified Nucleoside Ribothymidine in Cultured Hamster Embryo Cells," *Biochim. Biophys. Acta* 698, 134-9 (1982)

140

Ma, C.Y.; Rao, T.K.; Gries, W.H.; Ho, C.-h.; Guerin, M.R.; Hardigree, A.A.; Epner, J.J. "Preparative Scale Organic Extraction and Mutagenicity Analysis of Fly Ash," *Environ. Mutagenesis* 4, 406 (1982)

141

Machanoff, R. "Protein Turnover and Phenotypic Expression in the Chinese Hamster Ovary Cell/Hypoxanthine-Guanine Phosphoribosyl Transferase (CHO/HGPRT) System," *Environ. Mutagenesis* 4, 346-7 (1982)

142

MacLeod, M.C.; Mansfield, B.K.; Selkirk, J.K. "Benzo(a)pyrene-Binding Proteins of Hamster Embryo Cell Nuclei: Comparison of Nuclear Isolation Procedures," *J. Cell. Biochem.* 18, 507-13 (1982)

143

MacLeod, M.C.; Mansfield, B.K.; Selkirk, J.K. "Time Course of Metabolism of Benzo(e)pyrene by Hamster Embryo Cells and the Effect of Chemical Modifiers," *Chem. Biol. Interact.* 40, 275-85 (1982)

144

MacLeod, M.C.; Mansfield, B.K.; Selkirk, J.K. "Covalent Binding of Isomeric Benzo(a)pyrene Diol-epoxides to DNA," *Carcinogenesis* 3, 1031-7 (1982)

145

MacLeod, M.C.; Selkirk, J.K. "Physical Interactions of Isomeric Benzo(a)pyrene Diol-Epoxides with DNA," *Carcinogenesis* 3, 287-92 (1982)

146

MacLeod, M.C.; Selkirk, J.K. "Covalent Intercalative Binding of Benzo(a)pyrene-9,10-Diol-7,8-Epoxy to DNA," *Proc. Am. Assoc. Cancer Res.* 23, 61 (1982)

147

MacLeod, M.C.; Selkirk, J.K. "Physical Binding of Diol-Epoxy Derivatives of the Carcinogen Benzo(a)pyrene to DNA," *Fed. Proc.* 41, 625 (1982)

148

Mamrack, M.D.; Slaga, T.J. "Multistage Skin Tumor

Promotion: Involvement of a Protein Kinase," pp 81-106, *Biological Carcinogenesis*, Marcel Dekker, Inc., New York and Basel, 1982

149

Manger, R.L.; Heckman, C.A. "Structural Anomalies of Highly Malignant Respiratory Tract Epithelial Cells," *Cancer Res.* 42, 4591-9 (1982)

150

Marchok, A.C.; Huang, S.F. "Localization and Quantitation of Presumptive Neoplastic Cell Populations (PNCP) in Tracheas Exposed to Dimethylbenz(a)anthracene (DMBA)," *Proc. Am. Assoc. Cancer Res.* 23, 59 (1982)

151

Marchok, A.C.; Nettesheim, P.; Johnston, W.W. "Localization of Specific Lesions in Dimethylbenz(a)anthracene-Preexposed Tracheal Explants," *Am. J. Pathol.* 109, 321-9 (1982)

152

Masker, W.E. "In Vitro Packaging of Bacteriophage T7 DNA Requires ATP," *J. Virol.* 43, 365-7 (1982)

153

Masker, W.E.; Serwer, P. "DNA Packaging In Vitro by an Isolated Bacteriophage T7 Procapsid," *J. Virol.* 43, 1138-42 (1982)

154

Mazur, P.; Armitage, W.J.; Frim, J. "Relative Contributions of Cryobiological and Non-Cryobiological Factors to "Freezing" Injury in Human Granulocytes," *Cryobiology* 19, 676-7 (1982)

155

Mazur, P.; Rigopoulos, N.; Cole, K.W. "Contribution of Unfrozen Fraction and of Salt Concentration to the Survival of Slowly Frozen Human Erythrocytes: Influence of Cell Concentration," *Cryobiology* 19, 679 (1982)

156

Miller, D.R.; Hamby, K.M.; Slaga, T.J. "Contact-Stimulated Proliferation of Cultured Mouse Epidermal Cells by 3T3 Feeder Layers: Inhibition by 12-O-Tetradecanoylphorbol-13-Acetate (TPA)," *J. Cell. Physiol.* 112, 76-82 (1982)

157

Mitra, S.; Pal, B.C.; Foote, R.S. "O-6-Methylguanine-DNA Methyl Transferase in Wild-Type and Ada Mutants of *E. coli*," *J. Bacteriol.* 152, 534-7 (1982)

158

Mitra, S.; Snyder, C.E.; Bates, R.C.; Banerjee, P.T. "Comparative Physicochemical and Biological Properties of Two Strains of Kilham Rat Virus, a Non-Defective Parvovirus," *J. Gen. Virol.* 61, 43-54 (1982)

159

Morales, M.H.; Papaconstantinou, J. "Regulation of Alpha-Fetoprotein and Transferrin Synthesis and Secretion in Mouse Hepatoma Cells," *Arch. Biochem. Biophys.* 218, 592-602 (1982)

160

Mullaney, P.F.; Mann, R.C.; Seger, G.; Achatz, M. "Expectation Values for Low Resolution Slit-Scan Flow Prescreening: Influence of Nuclear Shape and DNA Density," *Anal. Quant. Cytol.* 25, 115-22 (1982)

161

Mykles, D.L.; Skinner, D.M. "Crustacean Muscles: Atrophy and Regeneration during Molting," pp 337-57, *Basic Biology of Muscles: A Comparative Approach*, Raven Press, New York, 1982

162

Mykles, D.L.; Skinner, D.M. "Molt-Cycle Associated Changes in Calcium-Dependent Proteinase Activity that Degrades Actin and Myosin in Crustacean Muscle," *Dev. Biol.* 92, 386-97 (1982)

163

Mykles, D.L.; Skinner, D.M. "Crustacean Calcium-Ion-Dependent Proteinase that Degrades Actin, Myosin, and Other Myofibrillar Proteins," *J. Cell Biol.* 95, 361a (1982)

164

Nagel, R.; Adler, H.I.; Rao, T.K. "Induction of Filamentation by Mutagens and Carcinogens in a Lon(-) Mutant of *Escherichia coli*," *Mutat. Res. Lett.* 105, 309-12 (1982)

165

Nelson, K.D.G.; Slagc, T.J. "Keratin Modifications in Epidermis, Papillomas and Carcinomas during Two-Stage Carcinogenesis in the SENCAR Mouse," *Cancer Res.* 42, 4176-81 (1982)

166

Nelson, K.D.G.; Stephenson, K.B.; Slaga, T.J. "Protein Modification Induced by Potent and Weak Tumor-Promoting Hyperplastic Agents," *Cancer Res.* 42, 4164-5 (1982)

167

Nettesheim, P.; Klein-Szanto, A.J.P. "Experimental Models for the Study of Morphogenesis of Lung Cancer," v.2, pp 131-66, *Morphogenesis of Lung Cancer*, CRC Press, Inc., Boca Raton, FL, 1982

168

Nettesheim, P.; Terraghi, M.; Klein-Szanto, A.J.P. "Development and Progression of Neoplastic Disease. Morphologic and Cell Culture Studies with Airway Epithelium," pp 473-89, *Mechanisms of Chemical Carcinogenesis*, Alan R. Liss, Inc., New York, 1982

169

O'Neill, J.P. "Mutation Induction in Arrested CHO Cell Cultures: Stability of Mutagenic Damage," *Environ. Mutagenesis* 4, 347 (1982)

170

O'Neill, J.P. "Induction and Expression of Mutations in Mammalian Cells in the Absence of DNA Synthesis and Cell Division," *Mutat. Res.* 106, 113-22 (1982)

171

O'Neill, J.P.; Bowman, K.O. "Effect of Selection Cell Density on the Recovery of Mutagen Induced 6-Thioguanine Resistant Cells (CHO/HGPRT System)," *Environ. Mutagenesis* 4, 627-37 (1982)

172

O'Neill, J.P.; Machanoff, R.; Hsie, A.W. "Phenotypic Expression Time of Mutagen-Induced 6-Thioguanine Resistance in Chinese Hamster Ovary Cells (CHO/HGPRT System): Expression in Division Arrested Cell Cultures," *Environ. Mutagenesis* 4, 421-34 (1982)

173

O'Neill, J.P.; Machanoff, R.; San Sebastian, J.R.; Hsie, A.W. "Cytotoxicity and Mutagenicity of Dimethylnitrosamine in Mammalian Cells (CHO/HGPRT System): Enhancement by Calcium Phosphate," *Environ. Mutagenesis* 4, 7-18 (1982)

174

Oakberg, E.F.; Crosthwait, C.D.; Raymer, G.D. "Spermatogenic Stage Sensitivity to 6-Mercaptopurine in the Mouse," *Mutat. Res.* 94, 165-78 (1982)

175

Olin, A.L.; Olin, D.E.; Lezzi, M. "Ultrastructural Studies of Chironomus Salivary Gland Cells in Different States of Balbiani Ring Activity," *Eur. J. Cell Biol.* 27, 161-9 (1982)

176

Olin, D.E.; Olin, A.L.; Levy, H.A.; Durfee, R.C.; Margle, S.M.; Timel, E.P.; Dover, S.D. "Electron Microscope Tomography: Transcription in 3-D," *J. Cell Biol.* 95, 66a (1982)

177

Otten, J.A.; Tennant, R.W. "Mouse Adenovirus," v.2, pp 335-40, *The Mouse in Biomedical Research*, Academic Press, Inc., New York, 1982

178

Papaconstantinou, J.; Wong, E.Y.; Ratrie, H.C.; Szpirer, C.; Szpirer, J. "Molecular Mechanism of Extinction of Liver Specific Functions in Mouse Hepatoma x Rat Fibroblast Hybrids: Extinction of the Albumin Gene," *Somatic Cell Genet.* 8, 363-76 (1982)

179

Pegg, A.E.; Roberfroid, M.; von Bahr, C.; Foote, R.S.; Mitra, S.; Bresli, H.; Likachev, A.; Montesano, R. "Removal of O⁶-Methylguanine from DNA by Human Liver Fractions," *Proc. Natl. Acad. Sci. USA* 79, 5162-5 (1982)

180

Pelling, J.C.; Slaga, T.J. "Comparison of Levels of Benzo(a)pyrene 7,8-Diol-9,10-Epoxy (BPDE) Diastereomers and Enantiomers Covalently Bound In Vivo to Macromolecular Components of Whole Epidermis Versus the Basal Cell Layer," *Proc. Am. Assoc. Cancer Res.* 23, 63 (1982)

181

Pelling, J.C.; Slaga, T.J. "Comparison of Levels of Benzo(a)pyrene Diol Epoxy Diastereomers Covalently Bound In Vivo to Macromolecular Components of the Whole Epidermis Versus the Basal Cell Layer," *Carcinogenesis* 3, 1135-41 (1982)

182

Perkins, E.H.; Glover, P.L. "Sequential Thymus Grafting of Aged Mice: Characterization of Growth, Regression and Enhancement of Immune Competence," *The Gerontol.* 22, 235 (1982)

183

Perkins, E.H.; Masucci, J.M.; Glover, P.L. "Antigen Presentation by Peritoneal Macrophages from Young Adult and Old Mice," *Cell. Immunol.* 70, 1-10 (1982)

184

Perry, S.T.; Kulkarni, S.B.; Lee, K.-L.; Kenney, F.T. "Selective Effect of the Metalloprotein Beryllium on Hormonal Regulation of Gene Expression in Cultured Cells," *Cancer Res.* 42, 473-6 (1982)

185

Peterson, W.J.; Perkins, E.H.; Mahimoodan, T. "Recovery of Immune Competence Following Sublethal X-Irradiation of Young and Old Mice: A Model for Studying Age-Related Loss of Immunologic Homeostasis," *Radiat. Res.* 89, 53-64 (1982)

186

Pollack, L.R.; Tate, E.H.; Cook, J.S. "Regulation by Turnover of Na,K-ATPase in HeLa Cells," pp 71-87, *Membranes in Growth and Development*, Alan R. Liss, Inc., New York, 1982

187

Popp, D.M. "An Analysis of Genetic Factors Regulating Life-Span in Congenic Mice," *Mech. Ageing Dev.* 18, 125-34 (1982)

188

Popp, R.A.; Ballif, E.G.; Skow, L.C.; Whitney, J.B., III. "The Primary Structure of Genetic Variants of Mouse Hemoglobin," *Biochem. Genet.* 20, 199-208 (1982)

188

Preston, R.J. "DNA Repair and Chromosome Aberrations: Interactive Effects of Radiation and Chemicals," v.4, pp 25-35, *Progress in Mutation Research*, Elsevier Biomedical Press, 1982

190

Preston, R.J. "The Induction of Chromosome Aberrations in Germ Cells: A Discussion of Factors That Can Influence Sensitivity to Chemical Mutagens," pp 463-74, *Environmental Mutagens and Carcinogens*, Univ. of Tokyo Press, Japan and Alan R. Liss, Inc., New York, 1982

191

Preston, R.J. "The Use of Inhibitors of DNA Repair in the Study of the Mechanisms of Induction of Chromosome Aberrations," *Cytogenet. Cell Genet.* 33, 20-6 (1982)

192

Preston, R.J. "Cytogenetic Studies in Animals," pp 379-88, *Genetic Toxicology*, Plenum Publ. Corp., 1982

193

Preston, R.J. "Chromosome Aberrations in Decondensed Sperm DNA," pp 515-26, *Banbury Report 13, Indicators of Genotoxic Exposure*, Cold Spring Harbor, NY, Apr.18-21, 1982, 1982

194

Preston, R.J.; Brewen, J.G. "The Use of the Host Mediated Assay for Cytogenetic Studies," pp 231-5, *Cytogenetic Assays of Environmental Mutagens*, Allanheld, Asmun, Totowa, NJ, 1982

195

Rahn, R.O.; Chang, S.S.; Holland, J.M.; Shugart, L.R. "A Fluorometric-HPLC Assay for Quantitating the Binding of Benzo(a)pyrene Metabolites to DNA," *Biochem. Biophys. Res. Commun.* 109, 262-8 (1982)

196

Rahn, R.O.; Sellin, H.G. "Action Spectra for the Photolysis of 5-Iododeoxyuridine in DNA and Related Model Systems: Evidence for Short-Range Energy Transfer," *Photochem. Photobiol.* 35, 459-65 (1982)

197

Raczels, D.E.; Low, R.E.; Yeodale, T.; Volkin, E.; Longmore, W.J. "Use of Radioisotopes in Quantitative Studies of Lung Metabolism," *Fed. Proc.* 41, 1-7 (1982)

198

Rae, T.K.; Adler, H.I.; Crew, W.D. "Modification of Salmonella/Pour-Plate Incorporation Assay for Mutagenesis Studies," *Environ. Mutagenesis* 4, 413-4 (1982)

199

Rae, T.K.; Dorsey, G.F.; Allen, B.E.; Epler, J.L. "Mutagenicity of 4,4'-Methylenedianiline (MDA) Derivatives in the Salmonella Histidine Reversion Assay," *Arch. Toxicol.* 49, 185-90 (1982)

200

Regan, J.D.; Carrier, W.L.; Samet, C.; Olla, B.L. "Photoreactivation in Two Closely Related Marine Fishes Having Different Longevities," *Mech. Ageing Dev.* 18, 59-66 (1982)

201

Reveh, D.; Slaga, T.J.; Huberman, E. "Cell-Mediated Mutagenesis and Tumor-Initiating Activity of the Ubiquitous Polycyclic Hydrocarbon, Cyclopenta(c,d) Pyrene," *Carcinogenesis* 3, 763-6 (1982)

202

Revis, N.W. "Relationship of Vanadium, Cadmium, Lead, Nickel, Cobalt and Soft Water to Myocardial and Vascular Toxicity and Cardiovascular Disease," pp 365-75, *Cardiovascular Toxicology*, Raven Press, New York, 1982

203

Russell, L.B. "How Predictive is the Mouse Spot Test for Heritable Gene Mutations?," *Environ. Mutagenesis* 4, 316-7 (1982)

204

Russell, L.B. "Relevance of the Mouse Spot Test as a Genotoxicity Indicator," pp 379-91, *Banbury Report 13, Indicators of Genotoxic Exposure*, Cold Spring Harbor, NY, Apr.18-21, 1982, 1982

205

Russell, L.B.; Bernstein, E.G. "Mammalian Mutagenesis: Future Directions," pp 345-59. *Molecular and Cellular Mechanisms of Mutagenesis*, Plenum Publ. Corp., 1982

206

Russell, L.B.; Montgomery, C.S. "Supermutagenicity of Ethylnitrosourea in the Mouse Spot Test -- Comparison with Methylnitrosourea and Ethylnitrosoureaethane," *Mutat. Res.* 92, 193-204 (1982)

207

Russell, L.B.; Montgomery, C.S.; Raymer, G.D. "Analysis of the Albino-Locus Region of the Mouse: IV. Characterization of 34 Deficiencies," *Genetics* 100, 427-53 (1982)

208

Russell, W.L. "Factors Affecting Mutagenicity of Ethylnitrosourea in the Mouse Specific-Locus Test and Their Bearing on Risk Estimation," pp 59-70, *Environmental Mutagens and Carcinogens*, Proc. 3rd Int. Conf. Environmental Mutagens, Tokyo, Mishima and Kyoto Sept. 21-27, 1981, Univ. of Tokyo Press, Alan R. Liss, Inc., New York, 1982

209

Russell, W.L.; Hunsicker, P.R. "Effect of Dose Fractionation on Specific-Locus Mutation Induction by Ethylnitrosourea in Mouse Spermatogonia," *Environ. Mutagenesis* 4, 351-2 (1982)

210

Russell, W.L.; Hunsicker, P.R.; Carpenter, D.A.; Cornett, C.V.; Guinn, G.M. "Effect of Dose Fractionation on the Ethylnitrosourea Induction of Specific-Locus Mutations in Mouse Spermatogonia," *Proc. Natl. Acad. Sci.* 79, 3592-3 (1982)

211

Russell, W.L.; Hunsicker, P.R.; Raymer, G.D.; Steele, M.H.; Stelzner, K.F.; Thompson, H.M. "Dose-Response Curve for Ethylnitrosourea-Induced Specific-Locus Mutations in Mouse Spermatogonia," *Proc. Natl. Acad. Sci.* 79, 3589-91 (1982)

212

Russell, W.L.; Kelly, E.M. "Mutation Frequencies in Male Mice and the Estimation of Genetic Hazards of Radiation in Men," *Proc. Natl. Acad. Sci.* 79, 542-4 (1982)

213

Russell, W.L.; Kelly, E.M. "Specific-Locus Mutation Frequencies in Mouse Stem-Cell Spermatogonia at Very Low Radiation Dose Rates," *Proc. Natl. Acad. Sci.* 79, 539-4; (1982)

214

Saenger, W.; Betzel, C.H.; Hingerty, B.E.; Brown, G.M. "Flip-Flop Hydrogen Bonding in Partially Disordered System," *Nature* 255, 581-3 (1982)

215

San Sebastian, J.R.; Hsie, A.W. "An Analysis of Mutagenic Activity of Quinolines in the CHO/HGPRT System," *Environ. Mutagenesis* 4, 395 (1982)

216

Sayer, G.S.; Reid, M.C.; Perkins, B.K.; Pagni, R.M.; Smith, R.L.; Rao, T.K.; Epler, J.L.; Morrison, W.D.; DuFrain, R. "Evaluation of the Mutagenic Potential of Bacterial Polychlorinated Biphenyl Biodegradation Products," *Arch. Environ. Contam. Toxicol.* 11, 577-81 (1982)

217

Schloss, J.V.; Phares, E.F.; Long, M.V.; Norton, L.L.; Stringer, C.D.; Hartman, F.C. "Ribulosebiphosphate Carboxylase/Oxygenase from *Rhodospirillum rubrum*," *Methods Enzymol.* 90, 522-8 (1982)

218

Schultz, T.W. "Acute Cytotoxicity of Fossil-Energy-Related Comparative Research Materials," *Environ. Sci. Health A17*, 153-67 (1982)

219

Schultz, T.W.; Cajina-Quezada, M. "Structure-Toxicity Relationships of Selected Dinitrogen-Containing Cyclic Compounds," *Arch. Environ. Contam. Toxicol.* 11, 408-17 (1982)

220

Schultz, T.W.; Cajina-Quezada, M. "Structure-Toxicity Relationships of Selected Nitrogenous Heterocyclic Compounds. II. Dinitrogen Molecules," *Arch. Environ. Contam. Toxicol.* 11, 353-61 (1982)

221

Schultz, T.W.; Dumont, J.N.; Clark, B.R.; Buchanan, M.V. "Embryotoxic and Teratogenic Effects of Aqueous Extracts of a Coal Gasification Electrostatic Precipitator," *Teratogenesis Carcinog. Mutagenesis* 2, 1-11 (1982)

222

Schultz, T.W.; Dumont, J.N.; Rao, T.K.; Garcia, M.R.; Ma, C.Y.; Epler, J.L. "Evaluation of Hydro-treatment as a Means of Reducing Biological Activity of Synuel Related Materials," *Environ. Res.* 29, 389-98 (1982)

223

Schultz, T.W.; Kier, L.B.; Hall, L.H. "Structure-Toxicity Relationships of Selected Nitrogenous Heterocyclic Compounds. III: Relations Using Molecular Connectivity," *Bull. Environ. Contam. Toxicol.* 28, 373-8 (1982)

224

Sega, G.A. "DNA Repair in Spermatocytes and Spermatids of the Mouse," pp 503-13, *Banbury Report 13, Indicators of Genotoxic Exposure*, Cold Spring Harbor, NY, Apr. 19-21, 1982, 1982

225

Sega, G.A.; Owens, J.G. "The Use of Alkaline Elution To Study DNA Damage in Developing Mouse Sperm after Exposure to Methyl Methanesulfonate," *Environ. Mutagenesis* 4, 347-8 (1982)

226

Sega, G.A.; Sotomayor, R.E. "Unscheduled DNA Synthesis in Mammalian Germ Cells - Its Potential Use in Mutagenicity Testing," v.7, pp 421-45, *Chemical Mutagens Principles and Methods for Their Detection*, Plenum Press, New York, 1982

227

Selby, P.B. "Induced Mutations in Mice and Genetic Risk Assessment in Humans," v.3, pp 275-88, *Progress in Mutation Research*, Elsevier Biomedical Press, 1982

228

Selby, P.B. "Dominant Skeletal Mutations: Applications to Mutagenicity Testing and Risk Estimation," pp 385-406, *Mutagenicity New Horizons in Genetic Toxicology*, Academic Press, New York, 1982

229

Selby, P.B.; McKinley, T.W., Jr.; Zaymer, G.D. "Test of Dichlorvos Using the Sensitivity-Indicator Method for Dominant Skeletal Mutations in Mice," *Environ. Mutagenesis* 4, 352 (1982)

230

Selkirk, J.K. "Heterogeneity of Benzo(a)pyrene Metabolism in Human and Rodent Cell Culture," *In Vitro* 18, 289 (1982)

231

Selkirk, J.K.; MacLeod, M.C. "Chemical Carcinogenesis: Nature's Metabolic Mistake," *BioScience* 32, 601-5 (1982)

232

Selkirk, J.K.; MacLeod, M.C.; Kuroki, T.; Dreven, C.; Piccoli, C.; Montesano, R. "Benzo(a)pyrene Metabolites: Formation in Rat Liver Cell-Culture Lines, Binding to Macromolecules, and Mutagenesis in V79 Hamster Cells," *Carcinogenesis* 3, 635-9 (1982)

233

Selkirk, J.K.; MacLeod, M.C.; Mansfield, B.K.; Noghrei-Nikbakht, P.A. "Metabolic Rationale for the Weak Mutagenic and Carcinogenic Activity of Benzo(e)pyrene," pp 497-504, *Environmental Mutagens and Carcinogens*, Univ. of Tokyo Press, Japan and Alan R. Liss, Inc., New York, 1982

234

Selkirk, J.K.; MacLeod, M.C.; Moore, C.J.; Mansfield, B.K.; Noghrei-Nikbakht, P.A.; Dearstone, K.C. "Species Variance in the Metabolic Activation of Polycyclic Hydrocarbons," *Mech. Chem. Carcinog.* 331-49 (1982)

235

Shah, Y.B.; Manger, R.L.; Heckman, C.A. "Cytoskeletal Proteins from Tumorigenic and Nontumorigenic Rat Respiratory Tract Epithelial Cells," *J. Cell Biol.* 95, 283a (1982)

236

Shen, D.-F.; Huang, A.; Huang, L. "An Improved Method for Covalent Attachment of Antibody to Liposomes," *Biochim. Biophys. Acta* 689, 31-7 (1982)

237

Shiba, M.; Klein-Szanta, A.J.P.; Marchak, A.C.; Pal, B.C.; Nettesheim, P. "The Effect of Carcinogen Release Rate on the Incidence of Precarcinogenic and Neoplastic Lesions of the Respiratory Tract Epithelium in Rats," *J. Natl. Cancer Inst.* 69, 1155-61 (1982)

238

Shrago, L.R.; Chastain, B.; Holland, J.M. "Poly(ADP-Ribosylation) in N,N-Diethylnitrosamine-Treated Mice," *Int. J. Biochem.* 14, 231-3 (1982)

239

Sinha, S.N.; Hellwig, R.J.; Allison, D.P.; Niyogi, S.K. "Cell-Free Extracts That Induce Correct Transcription Initiation by RNA Polymerase II Convert SV40 DNA to Ordered Nucleoprotein Structures," *Fed. Proc.* 41, 1293 (1982)

240

Sinha, S.N.; Hellwig, R.J.; Allison, D.P.; Niyogi, S.K. "Conversion of Simian Virus 40 DNA to Ordered Nucleoprotein Structures by Extracts that Direct Accurate Initiation by Eukaryotic RNA Polymerase II," *Nucleic Acids Res.* 10, 5533-52 (1982)

241

Skinner, D.M.; Fowler, R.F.; Spann, M.S.; Bonnewell, V. "Multiple Sites of Deletions and Insertions in Variants of a Complex Satellite DNA," *Fed. Proc.* 41, 1448 (1982)

242

Shew, L.C. "Location of a Gene Controlling Electrophoretic Variation in Mouse Gamma-Crystallins," *Exp. Eye Res.* 34, 509-16 (1982)

243

Slaga, T.J.; Fischer, S.M.; Triplett, L.L.; Nesnow, S. "Comparison of Complete Carcinogenesis and Tumor Initiation in Mouse Skin: The Induction of Papillomas by Tumor Initiation-Promotion a Reliable Short Term Assay," *J. Am. Coll. Toxicol.* 1, 83-99 (1982)

244

Slaga, T.J.; Fischer, S.M.; Weeks, C.E.; Klein-Szanta, A.J.P.; Reiners, J.J., Jr. "Studies on the Mechanisms Involved in Multistage Carcinogenesis in Mouse Skin," *J. Cell. Biochem.* 18, 99-119 (1982)

245

Slaga, T.J.; Fischer, S.M.; Weeks, C.E.; Nelson, K.D. G.; Mamrack, M.D.; Klein-Szanta, A.J.P. "Specificity and Mechanism(s) of Promoter Inhibitors in Multistage Promotion," v.7, pp 19-34, *Carcinogenesis*, Raven Press, New York, 1982

246

Snow, E.T.; Foote, R.S.; Mitra, S. "In Vitro Replication of DNA Containing O-6-Methylguanine-Kinetic Evidence of Mutagenic Potential of the Alkylated Base," *Fed. Proc.* 41, 686 (1982)

247

Snyder, C.E.; Schmeyer, R.L., Jr.; Bates, R.C.; Mitra, S. "Calibration of Denaturing Agarose Gels for Molecular Weight Estimation of DNA: Size Determination of the Single-Stranded Genomes of Parvoviruses," *Electrophoresis* 3, 210-3 (1982)

248

Snyder, R.D.; Regan, J.D. "DNA Repair in Normal Human and Xeroderma Pigmentosum Group A Fibroblasts following Treatment with Various Methanesulfonates and the Demonstration of a Long-Patch (UV-Like) Repair Component," *Carcinogenesis* 3, 7-14 (1982)

249

Snyder, R.D.; Regan, J.D. "Differential Responses of Log and Stationary Phase Human Fibroblasts to Inhibition of DNA Repair by Aphidicolin," *Biochim. Biophys. Acta* 697, 229-34 (1982)

250

Snyder, R.D.; Van Houten, B.; Regan, J.D. "Studies on the Inhibition of Ultraviolet- and Methyl Methanesulfonate-Induced Damage in the DNA of Human Fibroblasts by Novobiocin," *Nucl. Acids Res.* 10, 6207-19 (1982)

- 251
Solanki, V.; Slaga, T.J. "The Down-Modulation of Receptors for Phorbol Ester Tumor Promoter in Primary Epidermal Cells," *Carcinogenesis* 3, 993-8 (1982)
- 252
Solanki, V.; Slaga, T.J.; Callahan, M.; Huberman, E. "The Down Regulation of Specific Binding of [20-H-3]phorbol 12,13,-dibutyrate and Phorbol Ester Induced Differentiation of Human Promyelocytic Leukemia Cells," *Proc. Natl. Acad. Sci.* 78, 1722-5 (1982)
- 253
Stankowski, L.F., Jr.; Hsie, A.W. "Calcium-Enhanced Cellular Uptake of Rat Liver S9 by Chinese Hamster Ovary Cells," *Environ. Mutagenesis* 4, 306 (1982)
- 254
Stevens, A.R. "A Yeast Endoribonuclease Stimulated by Novikoff Hepatoma Small Nuclear RNAs U1 and U2," *Biochem. Biophys. Res. Commun.* 107, 642-8 (1982)
- 255
Storer, J.B. "Associations between Tumor Types in Irradiated BALB/c Female Mice," *Radiat. Res.* 92, 396-404 (1982)
- 256
Storer, J.B. "Radiation Histopathology, Vol. I & II - Book Review," *J. Nucl. Med.* 23, 553-4 (1982)
- 257
Storer, J.B.; Fry, R.J.M.; Ulrich, R.L. "Somatic Effects of Radiation," pp 133-46. *The Mouse in Biomedical Research*, Academic Press, New York, 1982
- 258
Storer, J.B.; Mitchell, T.J.; Ulrich, R.L. "Causes of Death and Their Contribution to Radiation-Induced Life Shortening in Intact and Ovariectomized Mice," *Radiat. Res.* 89, 618-43 (1982)
- 259
Tan, E.-L.; Arneson, R.M.; Schenley, R.L.; Hsie, A.W. "Lipid Peroxidation of S9 and the CHO/HGRPT System," *Environ. Mutagenesis* 4, 305 (1982)
- 260
Tan, E.-L.; Schenley, R.L.; Hsie, A.W. "Microsome-Mediated Cytotoxicity to CHO Cells," *Mutat. Res.* 103, 359-65 (1982)
- 261
Tennant, R.W.; Hand, R.E., Jr.; Otten, J.A.; Liu, R.-S.; Kiggans, J.O.; Yang, W.K. "Radiation-Induced Leukemogenesis in RFM-Un Strain Mice: A Potential Model for Retrovirus Sequence Transposition," pp 211-27. *Biological Carcinogenesis*, Marcel Dekker, Inc., New York and Basel, 1982
- 262
Tennant, R.W.; Otten, J.A.; Myer, F.E.; Raarati, R.J. "Induction of Retrovirus Gene Expression in Mouse Cells by Some Chemical Mutagens," *Cancer Res.* 42, 3050-5 (1982)
- 263
Terzaghi, M.; Nettesheim, P.; Riester, L. "Effect of Carcinogen Dose on the Dynamics of Neoplastic Development in Rat Tracheal Epithelium," *Cancer Res.* 42, 4511-8 (1982)
- 264
Tindall, K.R.; Hsie, A.W. "A System for the Molecular Analysis of Mutation in pSV2gpt Transfected CHO Cells," *Environ. Mutagenesis* 4, 328-9 (1982)
- 265
Tong, S.; Sellkirk, J.K. "Metabolism of 6-Nitrobenzo(a)pyrene by Hamster Embryo Cells and Rat Liver Microsomes," *Proc. Am. Assoc. Cancer Res.* 23, 80 (1982)
- 266
Uberbacher, E.C.; Mardian, J.K.W.; Rossi, R.M.; Olina, D.E.; Banick, G.J. "Neutron Scattering Studies and Modeling of High Mobility Group 14 Core Nucleosome Complex," *Proc. Natl. Acad. Sci. USA* 75, 5258-62 (1982)

267

Ulrich, R.L. "Radiation Carcinogenesis," pp 111-27, *Radiation Biology*, CRC Press, Inc., Boca Raton, FL, 1982

268

Ulrich, R.L.; Meyer, K.R. "The Influence of Butylated Hydroxytoluene-Induced Cell Proliferation on Mouse Lung Damage after X-Rays or Fission Neutrons," *Radiat. Res.* 89, 428-32 (1982)

269

Ulrich, R.L.; Storer, J.B. "The Influence of Split Dose Fractionation Interval on the Carcinogenic Effects of Fission Spectrum Neutrons," *Radiat. Res.* 91, 411 (1982)

270

Urban, J.L.; Holland, J.M.; Kripke, M.L.; Schreiber, H. "Immunoselection of Tumor Cell Variants by Mice Suppressed with Ultraviolet Radiation," *J. Exp. Med.* 156, 1025-41 (1982)

271

Wasilenko, W.J.; Marchak, A.C. "The Effect of Reestablishing Tissue-Like Cell Associations on Hexose Uptake in Rat Tracheal Epithelial Cell Lines and Primary Cell Cultures," *Cell Biol.* 95, 14a (1982)

272

Waters, L.C.; Burke, J.R.; Stalberg, M.P. "Studies on the Function of the Non-primer tRNAs Associated with the 70S RNA of Avian Myeloblastosis Virus," *Biochem. Biophys. Acta* 696, 201-7 (1982)

273

Waters, L.C.; Nix, C.E.; Epler, J.L. "Dimethylnitrosamine Demethylase in *Drosophila melanogaster*," *Fed. Proc.* 41, 1403 (1982)

274

Waters, L.C.; Nix, C.E.; Epler, J.L. "Dimethylnitrosamine Demethylase Activity in *Drosophila melanogaster*," *Biochem. Biophys. Res. Commun.* 105, 779-85 (1982)

275

Weeks, C.E.; Herrmann, A.L.; Nelson, F.R.; Slaga, T.J. "Alpha-Difluoromethylornithine, an Irreversible

Inhibitor of Ornithine Decarboxylase, Inhibits Tumor Promoter-Induced Polyamine Accumulation and Carcinogenesis in Mouse Skin," *Proc. Natl. Acad. Sci. USA* 79, 6028-32 (1982)

276

Wei, C.H. "Antischistosomal Analogs of Hycanthone. 2. Structure of 2-[2-(Diethylamino)ethyl]-2H-[1]-Benzothiopyrano [4,3,2-cd] Indazole-5-Methanol Monohydrate," *Acta Crystallogr. B* 38, 548-53 (1982)

277

Weiss, E.R.; Cook, J.S. "Pathways for Efflux of Hexoses during Differentiation of LLC-PK1 Cells in Culture," *J. Cell Biol.* 95, 31a (1982)

278

Witschi, H.R. "Altered Tissue Reactivity and Interactions between Chemicals," pp 263-88, *Assessment of Multichemical Contamination, Proc. Workshop Milan, Italy, Apr. 28-30, 1981, National Academy Press, Washington, DC, 1982*

279

Witschi, H.R.; Hakkinen, P.J. "The Lung as a Site of Toxicological Interactions," *Trends Pharmacol. Sci.* 3, 333-5 (1982)

280

Witschi, H.R.; Kehler, J.P. "Adenoma Development in Mouse Lung following Treatment with Possible Promoting Agents," *J. Am. Coll. Toxicol.* 1, 71-84 (1982)

Information Division

281

Allison, L.J.; Talmage, S.S. "The Carbon Dioxide Question: An Introduction to the Literature," pp 415-27, *Carbon Dioxide Review: 1982, Oxford Univ. Press, New York, 1982*

282

Clark, W.C.; Cook, K.H.; Marland, G.; Weinberg, A.M.; Rotty, R.M.; Bell, P.R.; Allison, L.J.; Cooper, C.L. "The Carbon Dioxide Question: Perspectives for 1982," pp 3-43, *The Carbon Dioxide Review: 1982, Oxford Univ. Press, New York, 1982*

283

Cone, M.V.; Stroup, C. "Chemicals Identified in Human Biological Media," pp 288-92, *Progress on Joint Environmental and Occupational Cancer Studies, Proc. 2nd NCI/EPA/NIOSH Collaborative Workshop, Rockville, MD, Sept. 9-11, 1981, Government Printing Office, 1982, 1982-361-132:561*

284

Constantin, M.J.; Owens, E.T. "Introduction and Perspectives of Plant Genetic and Cytogenetic Assays: A Report of the U.S. Environmental Protection Agency Gene-Tox Program," *Mutat. Res.* 99, 1-12 (1982)

285

Jordan, A.C.; Preston, E.L. "Computer Processing of Public Comments on Proposed Federal Regulations," pp 21-22, *Proc. 11th ASIS Mid-Year Meet., Univ. of Tennessee, Knoxville, June 13-16, 1982, 1982*

286

Kafer, E.; Scott, B.R.; Dorn, G.L.; Stafford, R.S. "Aspergillus nidulans: Systems and Results of Tests for Chemical Induction of Mitotic Segregation and Mutation. I. Diploid and Duplication Assay Systems. A Report of the U.S. EPA Gene-Tox Program," *Mutat. Res.* 98, 1-48 (1982)

287

Larsen, K.H.; Brash, D.; Cleaver, J.E.; Hart, R.W.; Maher, V.M.; Painter, R.B.; Sega, G.A. "DNA Repair Assays as Tests for Environmental Mutagens: A Report of the U.S. EPA Gene-Tox Program," *Mutat. Res.* 98, 287-318 (1982)

288

Lu, P.Y.; Hubner, S.M.; Haberman, C.B. "Peer Review Mechanism for the Toxicology Data Bank," pp 7-8, *Proc. 11th ASIS Mid-Year Meet., Univ. of Tennessee, Knoxville, June 13-16, 1982, 1982*

289

Oen, C.J. "Ten Basics for Marketing Information," *Bull. Am. Soc. Inf. Sci.* 8, 31 (1982)

290

Oen, C.J.; Gove, R.M. "Information - The Critical Difference in Risk Analysis," p 19, *Proc. 11th ASIS Mid-year Meet., Univ. of Tennessee, Knoxville, June 13-16, 1982, 1982*

291

Oen, C.J.; Pfanderer, H.A. "Scientific and Technical Information for Research and Development," pp 8-9, *Proc. 11th ASIS Mid-Year Meet. Univ. of Tennessee, Knoxville, June 13-16, 1982, 1982*

292

Oen, C.J.; Winslow, S.G.; Gerstner, H.B. "The Toxicology Information Response Center. A Ten-Year Perspective," p 19, *Proc. 11th ASIS Mid-Year Meet., Univ. of Tennessee, Knoxville, June 13-16, 1982, 1982*

293

Scott, B.R.; Dorn, G.L.; Kafer, E.; Stafford, R.S. "Aspergillus nidulans: Systems and Results of Tests for Induction of Mitotic Segregation and Mutation. II. Haploid Assay Systems and Overall Response of Systems. A Report of the U.S. EPA Gene-Tox Program," *Mutat. Res.* 98, 49-94 (1982)

294

Seltzer, R.J. "Toxicology Data Bank Steps up Efforts," *Chem. Eng. News* 60, 33-5 (1982)

295

Wassom, J.S.; Frankos, V.H. "The Environmental Teratology Information Center's Data Extraction Project," *Teratology* 25, 80A (1982)

Health and Safety Research Division

296

Ambrose, K.R.; Lowrey, J.S. "Effect of Cis- and Trans-Dichlorodiammineplatinum(II) on Human Tumor Cell Proliferation in Diffusion Chambers in Vivo," *Cancer Res.* 42, 1769-73 (1982)

297

Ashley, J.C. "Density Effect in Liquid Water," *Radiat. Res.* 89, 32-7 (1982)

298

Ashley, J.C. "Energy Losses and Inelastic Mean Free Paths of Low-Energy Electrons in Polyethylene," *Radiat. Res.* 90, 433-6 (1982)

299

Ashley, J.C. "Stopping Power of Liquid Water for Low-Energy Electrons," *Radiat. Res.* 89, 25-31 (1982)

300

Ashley, J.C. "Simple Model for Electron Inelastic Mean Free Paths: Application to Condensed Organic Materials," *J. Electron Spectrosc. Relat. Phenom.* 28, 177-94 (1982)

301

Ashley, J.C.; Tung, C.J. "Electron Inelastic Mean Free Paths in Several Solids for Energies from 200 eV to 10 keV," *Surf. Interface Anal.* 4, 52-5 (1982)

302

Bees, C.F., III "Prediction of Radionuclide Distribution Coefficient Values from Soil-Plant Concentration Ratios," *Trans. Am. Nucl. Soc.* 41, 53-4 (1982)

303

Basbas, G.J.; Ritchie, R.H. "Vicinage Effects in Ion Cluster Collisions with Condensed Matter and with Single Atoms," *Phys. Rev. A* 25, 1943-62 (1982)

304

Bernard, S.R. "Chapter 6.3: Mathematical Models in Internal Dose Estimation," pp 331-66, *Handbook of Radiation Protection and Measurement*, CRC Press, Boca Raton, FL, 1982

305

Bernard, S.R.; Nestor, C.W., Jr.; Elsele, G.R. "Mathematical Studies of the Absorption into Blood of Am-241 following Oral Intubation into the Gut of Miniature Swine," *Proc. Am. Soc. Exp. Biol.* 41, 1329 (1982)

306

Bernard, S.R.; Nestor, C.W., Jr.; Elsele, G.R.; Eckerman, K.F. "Estimates of Dose to Systemic Organs and GI Tract Based on Data from Miniature Swine Orally Intubated with a Single Dose of Am-241 Citrate," *Health Phys.* 43, 126 (1982)

307

Berven, B.A.; Myrick, T.E.; Perdue, P.T. "Use of

Gamma-Ray Detection Instrumentation in ORNL's Off-Site Radiological Survey Program," *Trans. Am. Nucl. Soc.* 41, 235-6 (1982)

308

Birkhoff, R.D.; Heller, J.M., Jr.; Painter, L.R.; Ashley, J.C.; Hubbell, H.H., Jr. "Photoemission and Electron Mean Free Paths in Liquid Formamide in the Vacuum UV," *J. Chem. Phys.* 76, 5208-13 (1982)

309

Birkhoff, R.D.; Hubbell, H.H., Jr.; Ashley, J.C.; Painter, L.R. "Yields and Mean Free Paths of Photoelectrons from Liquid Hexamethyl Phosphoric Triamide," *J. Chem. Phys.* 77, 4350-2 (1982)

310

Chang, C.; Callcott, T.A.; Arakawa, E.T. "Diffusion of Au into Sn Thin Films Studied by the Attenuated Total Reflection Method," *J. Appl. Phys.* 53, 7362-6 (1982)

311

Christopherson, L.G. "Electronegative Gases," pp 133-76, *Electrical Breakdown and Discharges in Gases, Part A: Fundamental Processes and Breakdown*, Proc. NATO Advanced Studies Inst., Les Arcs, France, June 28-July 12, 1981, Plenum Publ. Corp., New York, 1982

312

Christopherson, L.G.; Carter, J.G.; Maxey, D.V. "Electron Motion in High-Pressure Polar Gases: Ammonia," *J. Chem. Phys.* 76, 2653-61 (1982)

313

Christopherson, L.G.; Hunter, S.R.; Carter, J.G.; Mathis, R.A. "Gases for Possible Use in Diffuse-Discharge Switches," *Appl. Phys. Lett.* 41, 147-9 (1982)

314

Christopherson, L.G.; Hunter, S.R.; Carter, J.G.; Spyron, S.M. "Gases for Possible Use in Diffuse-Discharge Switches," pp 236-51, *Diffuse Discharge Opening Switches*, Proc. Workshop, Tamarron, CO, Jan. 12-16, 1982, Texas Tech Univ., Lubbock, TX, 1982

315

Christophoron, L.G.; James, D.R.; Pai, R.Y. "Gas Breakdown and High-Voltage Insulating Gases," v.5, pp 87-167, *Applied Atomic Collision Physics*, Academic Press, New York, 1982

316

Christophoron, L.G.; James, D.R.; Sowers, I.; Pace, M.O.; Pai, R.Y.; Fatheddin, A. "Ternary Gas Dielectrics," pp 151-63, *Gaseous Dielectrics III, Proc. 3rd Int. Symp., Knoxville, TN, Mar.7-11, 1982*, Pergamon Press, New York, 1982

317

Christophoron, L.G.; McCorkle, D.L.; Sowers, I. "Tagging Materials for Detection of Explosives," *Anal. Chim. Acta* 135, 179-92 (1982)

318

Compton, R.N.; Miller, J.C. "Multiphoton Ionization and Third-Harmonic Generation in Atoms and Molecules," pp 459-67, *Lasers '81, Proc. Int. Conf., New Orleans, Dec.14-18, 1981*, 1982

319

Compton, R.N.; Miller, J.C. "Multiphoton Ionization of Atoms and Molecules," p 319, *Laser Techniques for Extreme Ultraviolet Spectroscopy, Proc. Am. Inst. Phys. Conf., Boulder, CO, Mar.8-10, 1982*, Am. Inst. Phys., 1982

320

Compton, R.N.; Reinhardt, P.W. "Collisional Ionization between Fast Alkali Atoms and Hexafluorobenzene," *Chem. Phys. Lett.* 91, 268-70 (1982)

321

Crawford-Brown, D.J. "Identifying Critical Human Subpopulations by Age Groups: Radioactivity and t. - Lung," *Phys. Med. Biol.* 27, 539-52 (1982)

322

Easterly, C.E. "Cardiovascular Risk from Exposure to Static Magnetic Fields," *Am. Ind. Hyg. Assoc. J.* 43, 533-9 (1982)

323

Easterly, C.E. "Occupational Radiation Exposures at a Fusion Power Station," *Nucl. Technol./Fusion* 2, 723-39 (1982)

324

Echenique, P.M.; Ashley, J.C.; Ritchie, R.H. "Coherent States and the Interaction of Swift Ions with Condensed Matter," *Eur. J. Phys.* 3, 25-9 (1982)

325

Fatheddin, A.; Pace, M.O.; Christophoron, L.G.; Pai, R.Y. "Impulse Breakdown in Sulfur Hexafluoride, Sulfur Hexafluoride/Nitrogen and Sulfur Hexafluoride/Perfluorocarbon Mixtures," pp 183-90, *Gaseous Dielectrics III, Proc. 3rd Int. Symp., Knoxville, TN, Mar.7-11, 1982*, Pergamon Press, New York, 1982

326

Ferrell, T.L. "Surface-Enhanced Raman Scattering in Ag-Pyridine Sols," *Phys. Rev. B* 25, 2930-2 (1982)

327

Fields, D.E. "Examining the Distribution of Experimental Data," *Energygram, Technical Information Center, USDOE, DOE/TIC/EG-81/123*, 1982

328

Fields, D.E.; Little, C.A.; Emerson, C.J.; Hiromoto, G. "Shallow-Land Burial of Low-Level Radioactive Wastes: Preliminary Simulations of Long-Term Health Risks," pp 171-82, *Waste Isolation in the U.S. and Elsewhere, Technical Programs and Public Communications*, Univ. of Arizona Press, 1982

329

Gammage, P.B.; Chowdhury, A. "Partial Optimization of Electrochemical-Etching Parameters for Highly Sensitive Cr-39 Fast Neutron Dosimeters," *Health Phys.* 43, 225-9 (1982)

330

Garrett, W.R. "Electron Interactions with Polar Molecules," pp 65-77, *Physics of Electronic and Atomic Collisions*, North-Holland Publ. Co., 1982

331

Garrett, W.R. "Excited States of Polar Negative Ions," *J. Chem. Phys.* 77, 3666-73 (1982)

332

Glowna, J.H.; Riley, S.J.; Cohen, S.D.; Miller, J.C.; Compton, R.N. "Multiphoton Ionization of Ammonia: Mass Analysis and Photoelectron Spectra," *J. Chem. Phys.* 77, 68-76 (1982)

333

Goodman, M.M.; Knapp, F.F., Jr. "Synthesis of 15-(p-Iodophenyl)-6-Tellurapentadecanoic Acid: A New Myocardial Imaging Agent," *J. Org. Chem.* 47, 3004-6 (1982)

334

Goodman, M.M.; Knapp, F.F., Jr.; Callahan, A.P.; Ferren, L.A. "Synthesis and Biological Evaluation of 17-[I-131]Iodo-9-Telluraheptadecanoic Acid - A Potential Myocardial Imaging Agent," *J. Med. Chem.* 25, 613-8 (1982)

335

Goodman, M.M.; Knapp, F.F., Jr.; Callahan, A.P.; Ferren, L.A.; Coffey, J.L. "A New, Well-Retained Myocardial Imaging Agent: Radioiodinated 15-(p-Iodophenyl)-6-Tellurapentadecanoic Acid," *J. Nucl. Med.* 23, 904-8 (1982)

336

Gondonnet, J.P.; Begun, G.M.; Arakawa, E.T. "Surface-Enhanced Raman Scattering on Silver-Coated Teflon Sphere Substrates," *Chem. Phys. Lett.* 92, 197-201 (1982)

337

Greene, R.T.; Gilley, L.W. "Measurements of the TLD-Albedo Calibration Ratio Made at the Health Physics Research Reactor," *Radiat. Prot. Dosim.* 2, 249-52 (1982)

338

Griffin, G.D.; Owen, B.A.; Atchley, C.E.; Novelli, G.D.; Solomon, A.M. "Decreased Immunoglobulin Production by a Human Lymphoid Cell Line following Melphalan Treatment," *Cancer Res.* 42, 4505-10 (1982)

339

Griffin, G.D.; Owen, B.A.; Easterly, C.E.; Walsh, P.J. "In Vitro Toxicity Screening of Dielectric Gases Using Mammalian Cells," pp 420-6, *Gaseous Dielectrics, Proc. 3rd Int. Symp., Knoxville, TN, Mar. 7-11, 1982, Pergamon Press, 1982*

340

Hawthorne, A.R.; Gammage, R.B. "Formaldehyde Release from Simulated Wall Panels Insulated with Urea-Formaldehyde Foam Insulation," *APCA J.* 32, 1126-31 (1982)

341

Hayden, T.L.; Turner, J.E.; Williams, M.W.; Cook, J.S.; Hsie, A.W. "A Model for Cadmium Transport and Distribution in CHO Cells," *Comput. Biomed. Res.* 15, 97-110 (1982)

342

Hingerty, B.E.; Broyle, S.B. "Base Displacement in AAF and AF Modified dCpdG: Syn and Anti Guanine," *Int. J. Quantum Chem.: Quantum Biol. Symp.* 9, 125-36 (1982)

343

Hoeschele, J.D.; Butler, T.A.; Roberts, J.A.; Goyer, C.E. "Analysis and Refinement of the Microscale Synthesis of the Pt-195m-Labeled Antitumor Drug, cis-Dichlorodiammineplatinum(II), cis-DDP," *Radiochim. Acta* 31, 27-36 (1982)

344

Hoffman, F.O.; Garten, C.T., Jr.; Huckabee, J.W.; Lucas, D.M. "Interception and Retention of Technetium by Vegetation and Soil," *J. Environ. Qual.* 11, 134-41 (1982)

345

Hubbell, H.H., Jr.; Birkhoff, R.D. "Calorimetric Measurement of Electron Stopping Power of Aluminum and Copper between 11 and 127 keV," *Phys. Rev. A* 26, 2460-7 (1982)

346

Hunter, S.R.; Christopherson, L.G.; James, D.R.; Mathis, R.A. "Pressure-Dependent Electron Attachment Rates in Perfluoroalkanes and Perfluoropropylene and Their Effect on the Breakdown Strength of These Gases," pp 7-20, *Gaseous Dielectrics III, Proc. 3rd Int. Symp., Knoxville, TN, Mar. 7-11, 1982, Pergamon Press, New York, 1982*

347

Hurst, G.S. "Single Particle Detection: Gaseous Devices," v.5, pp 201-18, *Applied Atomic Collision Physics, Academic Press, Inc., 1982*

348

Hurst, G.S. "Resonance Ionization Spectroscopy," pp 586-9, *Encyclopedia of Science and Technology*, McGraw-Hill, 1982

349

Hurst, G.S. "Counting the Atoms: Some Applications in Chemistry," *J. Chem. Educ.* 59, 895-99 (1982)

350

Hurst, G.S.; Kramer, S.D.; Lehmann, B.E. "Resonance Ionization Spectroscopy for Low-Level Counting," pp 149-58, *Nuclear and Chemical Dating Technique: Interpreting the Environmental Record*, Am. Chem. Soc. Symp. Ser. 176, 1982

351

Inagaki, T.; Arakawa, E.T.; Cathers, A.R.; Glastad, K.A. "Optical Properties of Liquid Pb and Bi between 0.6 and 3.7eV," *Phys. Rev. B* 25, 6130-8 (1982)

352

Inagaki, T.; Kagami, K.; Arakawa, E.T. "Photoacoustic Study of Surface Plasmons in Metals," *Appl. Opt.* 21, 949-54 (1982)

353

Inagaki, T.; Nakagawa, Y.; Arakawa, E.T.; Aas, D.J. "Photoacoustic Determination of Light Scattering from Thin Ag Films in ATR Geometry," *Phys. Rev. B* 26, 6421-30 (1982)

354

Inhaber, H. "Coping with the Biomedical Literature - Book Review," *Scientometrics* 4, 171-2 (1982)

355

Inhaber, H. "On Discussion of Risk of Energy Systems," *Am. J. Public Health* 72, 613 (1982)

356

Inhaber, H.; Caton, G.M.; Gove, R.M. "Risk of Producing Energy - and Conserving It," pp 217-30, *Uranium and Nuclear Energy, Proc. 6th Int. Symp.*, London, Sept. 1981, Butterworth, 1982

357

Inhaber, H.; Caton, G.M.; Gove, R.M. "Health Risk Associated with Energy Conservation," *Trans. Am. Nucl. Soc.* 41, 50-51 (1982)

358

Iturbe, J.; Allman, S.L.; Hurst, G.S.; Payne, M.G. "Fluctuation Experiments on Atomic and Molecular Systems Using the One-Atom Detector," *Chem. Phys. Lett.* 93, 460-7 (1982)

359

Jones, T.D. "Neutrons in Hiroshima?," *Health Phys.* 42, 537-9 (1982)

360

Kerr, G.D. "Dosimetry for the Japanese Atomic Bomb Survivors," *Med. Phys.* 9, 644 (1982)

361

Klots, C.E. "Van der Waals Molecules - Linking the Gas and Liquid Phases," *Radiat. Phys. Chem.* 20, 51-6 (1982)

362

Klots, C.E. "Non-Maxwellian Velocity Distributions and Molecular Beam Intensities in Sonic Nozzle Expansions," *Chem. Phys.* 67, 75-81 (1982)

363

Knapp, F.F., Jr.; Butler, T.A.; Ambrose, K.R.; Callahan, A.P.; Gayer, C.E.; Roberts, J.A.; Ferren, L.A. "New Myocardial Imaging Agents - The Influence of Chain Length on the Heart Uptake of Se-75-Labeled Fatty Acids," p 347, *Proceedings - Symposium on Practical Applications of Nuclear and Radiochemistry*, Pergamon Press, New York, 1982

364

Kocher, D.C. "On the Long-Term Behaviour of Iodine 129 in the Terrestrial Environment," pp 669-79, *Environmental Migration of Long-Lived Radionuclides, Proc. Int. Symp.*, Knoxville, TN, July 27-31, 1981, IAEA, 1982, SM-257

365

Kocher, D.C. "Models and Risk from High-Level Waste Disposal - The Missing Pieces," *Trans. Am. Nucl. Soc.* 41, 232-3 (1982)

366

Kocher, D.C.; Leggett, R.W.; Dunning, D.E., Jr.; Ryan, M.T.; Eckerman, K.F. "Uncertainties in the Assessment of Long-Term Collective Dose and Health

Effects," pp 279-90, *Uncertainties Associated with the Regulation of the Geologic Disposal of High-Level Radioactive Waste, Proc. Symp., Gatlinburg, TN, Mar.9-13, 1981, ORNL, 1982, CONF-810372*

367

Kocher, D.C.; Sjoreen, A.L.; Bard, C.S.; Olsen, C.R. "Uncertainties Associated with Geologic Disposal of High-Level Radioactive Waste," pp 197-208, *Waste Management '82, Proc. Am. Nucl. Soc. Top. Meet., Tucson, AZ, Mar.8-11, 1982, 1982*

368

Kourouklis, G.A.; Siomos, K.; Christophorou, L.G. "Vacuum Ultraviolet Absorption Spectra of Aromatic Molecules in Solution," *J. Mol. Spectrosc.* 92, 127-40 (1982)

369

Kourouklis, G.A.; Siomos, K.; Christophorou, L.G. "Photoionization of Fluoranthene in Dielectric Liquids," *Chem. Phys. Lett.* 88, 572-5 (1982)

370

Framer, S.D.; Lehmann, B.E.; Hurst, G.S.; Payne, M.G.; Young, J.P. "The Reaction of Li with Oxygen in the Presence of He or Ar," *J. Chem. Phys.* 76, 3614-22 (1982)

371

Kremens, P.; Jadusliwer, B.; Bederson, B.; Stockdale, J.A.D. "Electric Dipole Polarizabilities of Alkali Halide Dimers," pp 301-7, *Metal Bonding and Interactions in High Temperature Systems, Am. Chem. Soc. Symp. Ser.* 179, 1982

372

Leggett, R.W.; Eckerman, K.F.; Williams, L.R. "Strontium-90 in Bone: A Case Study in Age-Dependent Dosimetric Modeling," *Health Phys.* 43, 307-22 (1982)

373

Leung, P.T.; Rustgi, M.L.; Turner, J.E. "Comparison of Bethe's Formula for Magnetic-Moment Transitions in Atoms with the Generalized Rosenbluth's Equation," *Phys. Rev. A* 25, 1775-6 (1982)

374

Little, C.A.; Miller, C.W. "Comparison of Observed and Predicted Air Concentrations for 18.6 μ m Fluorescein Particles," *Health Phys.* 43, 355-62 (1982)

375

Little, J.W.; Ferrell, T.L.; Calicott, T.A.; Arakawa, E.T. "Radiative Decay of Surface Plasmons on Oblate Spheroids," *Phys. Rev. B* 26, 5953-6 (1982)

376

Matthews, T.G. "Multiple-Reflection Raman Gas Cell Design," *Appl. Opt.* 21, 577-9 (1982)

377

Matthews, T.G. "Evaluation of a Modified CEA Instruments, Inc. Model 555 Analyzer for the Monitoring of Formaldehyde Vapor in Domestic Environments," *Am. Ind. Hyg. Assoc. J.* 43, 547-552 (1982)

378

Matthews, T.G.; Hawthorne, A.R.; Howell, T.C.; Metcalfe, C.E.; Gammage, R.B. "Evaluation of Selected Monitoring Methods for Formaldehyde in Domestic Environments," *Environ. Int.* 8, 143-51 (1982)

379

Matthews, T.G.; Howell, T.C. "Solid Sorbent for Formaldehyde Monitoring," *Anal. Chem.* 54, 1495-8 (1982)

380

McCorkle, D.L.; Szamrej, I.; Christophorou, L.G. "Electron Attachment to Halocarbons of Environmental Interest: Chloroethanes," *J. Chem. Phys.* 77, 5542-8 (1982)

381

Meyer, H.R. "The Contribution of Residential Wood Combustion to Local Airshed Pollutant Concentrations," pp 386-97, *Residential Solid Fuels, Proc. Int. Conf., Portland, OR, June 1-5, 1981, Oregon Graduate Center, 1982*

382

Miller, C.W. "Uncertainty Estimates for Site-Specific Atmospheric Diffusion Parameters," *Trans. Am. Nucl. Soc.* 41, 74-5 (1982)

383

Miller, C.W. "An Examination of Two Methods for Estimating the Transfer of Aerosols from the Troposphere to the Earth's Surface," pp 226-9, *Preprint Volume, 2nd Symp. Composition of the Nonurban Troposphere*, May 25-28, 1982, Williamsburg, VA, Am. Meteorol. Soc., Boston, 1982

384

Miller, C.W.; Cotter, S.J. "Comparison of Observed and Predicted Normalized Air Concentrations for Particles Released from a Height of 111 Meters," pp 271-4, *Preprint, 3rd Jt. Conf. Applications of Air Pollution Meteorology*, San Antonio, Jan. 11-15, 1982, Am. Meteorol. Soc., Boston, 1982

385

Miller, C.W.; Fields, D.E.; Wiseman, P.J. "Comparison of Observed and Predicted Sodium Air and Ground Concentrations," *Trans. Am. Nucl. Soc.* 43, 81-2 (1982)

386

Miller, C.W.; Hoffman, F.O. "An Analysis of Reported Values of the Environmental Half-Time for Radionuclides Deposited on the Surfaces of Vegetation," pp 313-28, *Environmental Migration of Long-Lived Radionuclides*, Proc. Int. Symp., Knoxville, TN, July 27-31, 1981, IAEA, Vienna, 1982, SM-257/63

387

Miller, J.C.; Compton, R.N. "Third-Harmonic Generation and Multiphoton Ionization in Rare Gases," *Phys. Rev. A* 25, 2056-63 (1982)

388

Miller, J.C.; Compton, R.N. "Multiphoton Ionization Photoelectron Spectroscopy: Xenon and Nitric Oxide," *Chem. Phys. Lett.* 93, 453-9 (1982)

389

Miller, J.C.; Compton, R.N.; Carney, T.E.; Baer, T. "Photoelectron Spectrum of Hydrogen Sulfide following Multiphoton Ionization," *J. Chem. Phys.* 76, 5648-9 (1982)

390

Miller, J.C.; Compton, R.N.; Cooper, C.D. "Vacuum Ultraviolet Spectroscopy of Molecules Using Third-Harmonic Generation in Rare Gases," *J. Chem. Phys.* 76, 3967-73 (1982)

391

Miller, J.C.; Compton, R.N.; Cooper, C.D. "Vacuum Ultraviolet Spectroscopy of Molecules Using Third-Harmonic Generation in Rare Gases," v.90, pp 368-77, *Laser Techniques for Extreme Ultraviolet Spectroscopy*, Proc. Am. Inst. Phys. Conf., Boulder, CO, Mar. 8-10, 1982, Am. Inst. Phys., 1982

392

Niemczyk, S.J. "Uncertainties in LWR Accident Source Term Estimation," *Trans. Am. Nucl. Soc.* 43, 362-4 (1982)

393

O'Brien, D.H.; Dere, N.; Griphy, R.A.; Irgolic, K.J.; Knapp, F.F., Jr. "Tellurium-125 Chemical Shifts of Symmetric and Unsymmetric Dialkyl Ditellurides," *Organometallics* 1, 513 (1982)

394

Okada, R.D.; Knapp, F.F., Jr.; Elmaleh, D.R.; Pohost, G.M.; Yasuda, T.; Leppo, J.; Boucher, C.A.; Strauss, H.W. "Tellurium-123m Labeled-9-Telluraheptadecanoic Acid: A Possible Cardiac Imaging Agent," *Circulation* 65, 305-10 (1982)

395

Pace, M.O.; Adcock, J.L.; Freese, J.C.; Christopherson, L.G. "Feasibility Studies for Improving Gas Insulation By Coating Contaminating Particles," pp 307-14, *Gaseous Dielectrics III*, Proc. 3rd Int. Symp., Knoxville, TN, Mar. 7-11, 1982, Pergamon Press, 1982

396

Pace, M.O.; Aschwanden, T.; Bancroft, K.B.; Farish, O.; Honda, M.; Pfeiffer, W.; Wootton, R.E. "Forum II: Requirements for Insulating Gases," pp 552-60, *Gaseous Dielectrics III*, Pergamon Press, New York, 1982

397

Payne, M.G.; Baker, H.C. "Two-State Models of Radiative Collisions and Related Ionization Effects," pp 403-10, *Lasers '81*, Proc. Int. Conf., New Orleans, Dec. 14-18, 1981, 1982

398

Payne, M.G.; Garrett, W.R. "Cooperative Effects on Multiphoton Ionization and Third-Harmonic Generation in the Region near Three-Photon Resonance," *Phys. Rev. A* 25, 356-71 (1982)

399

Phillips, J.E.; Easterly, C.E. "Cold Trapping Efficiencies for Collection of Tritiated Water Entrained in a Gaseous Stream," *Rev. Sci. Instrum.* 53, 112-4 (1982)

400

Ritchie, R.H. "Energy Losses by Swift Charged Particles in the Bulk and at the Surface of Condensed Matter," *Nucl. Instrum. Methods* 198, 81-91 (1982)

401

Ritchie, R.H.; Ashley, J.C.; Ferrell, T.L. "Chapter 3 - The Interaction of Photons with Surface Plasmons," *Electromagnetic Modes*, Boardman, Wiley and Sons, New York, 1982

402

Ritchie, R.H.; Claussen, C. "A Core Plasma Model of Charged Particle Track Formation in Insulators," *Nucl. Instrum. Methods* 198, 133-8 (1982)

403

Ritchie, R.H.; Echenique, P.M. "The Wake of Charged Particles in Condensed Matter," *Philos. Mag.* 45, 347 (1982)

404

Rutz, R.A.; Fields, D.E. "The Development and Application of an Image Analyzing and Processing System," pp 115-25, *Proc. Am. Comput. Mach. Reg. Meet.*, Knoxville, TN, Apr. 1-3, 1982, 1982

405

Salla, S.; Rustgi, M.L. "Absorption of RF and Microwaves on Spherical Multilayer Biological Systems," *Health Phys.* 42, 165-77 (1982)

406

Somers, L.; Ellis, H.W.; Frees, L.C.; Christopherson, L.G. "Detection of Sulfur Tetrafluoride in Sparked Sulfur Hexafluoride," *Inst. Electr. Electron. Eng. Trans. Electr. Insul.* EI-17, 284-6 (1982)

407

Somers, L.; Ellis, H.W.; Frees, L.C.; Christopherson, L.G. "Studies of Spark Decomposition Products of Sulfur Hexafluoride and Sulfur Hexafluoride/Perfluorocarbon Mixtures," pp 387-99, *Gaseous Dielectrics III*, Pergamon Press, New York, 1982

408

Schureske, D.D.; Griffin, G.D.; MacLeod, M.C.; Selkirk, J.K. "Enhanced Benzo(a)pyrene Metabolism in Hamster Embryonic Cells Exposed in Culture to Fossil Synfuel Products," pp 725-34, *Polynuclear Aromatic Hydrocarbons, Proc. 6th Int. Symp.*, Battelle Columbus Labs., Oct. 27-29, 1981, Battelle Press, 1982

409

Schwartz, G.; Dunning, D.E., Jr. "Imprecision in Estimates of Dose from Ingested Cs-137 Due to Variability in Human Biological Characteristics," *Health Phys.* 43, 631-45 (1982)

410

Sims, C.S.; Swaja, R.E. "Personnel Dosimetry Intercomparison Studies at the Health Physics Research Reactor: A Summary (1974-1980)," *Health Phys.* 42, 3-18 (1982)

411

Simos, K.; Christopherson, L.G. "Studies of Photoionization in Liquids Using a Laser Two-Photon Ionization Conductivity Technique," *J. Electrostat.* 12, 147-52 (1982)

412

Swaja, R.E.; Sims, C.S. "Personnel Dosimetry Intercomparison Studies at the Oak Ridge National Laboratory," p 311, *Radiation Protection, Proc. 3rd Int. Symp.*, Inverness, Scotland, June 6-11, 1982, Soc. Radiat. Prot., 1982

413

Swaja, R.E.; Sims, C.S. "Dosimetry Training Programs at Oak Ridge National Laboratory," *Trans. Am. Nucl. Soc.* 43, 47-8 (1982)

414

Todo, A.S.; Hiromoto, G.; Turner, J.E.; Wright, H.A.; Hamm, R.N. "Monte Carlo Calculations of Initial Energies of Electrons in Water Irradiated by Photons with Energies up to 1 GeV," *Health Phys.* 43, 845-52 (1982)

415

Todo, A.S.; Turner, J.E.; Hamm, R.N.; Wright, H.A. "Calculated Initial Energies of Electrons in Si and Silicon Dioxide Irradiated by Photons with Energies up to 2 MeV," *Nucl. Instrum. Methods* 203, 459-65 (1982)

416

Travis, C.C.; Etmier, E.L. "Dietary Intake of Cadmium in the United States: 1920-1975," *Environ. Res.* 27, 1-9 (1982)

417

Travis, C.C.; Etmier, E.L. "AAAS Symposium Volume Series - Health Risks Associated with Energy Technologies," *Health Risks Associated with Energy Technologies, Am. Assoc. Adv. Sci. Symp. Vol. Ser., Westview Press, Boulder, CO, 278 pp. 1982*

418

Travis, C.C.; Meyer, H.R.; Etmier, E.L. "Health and Safety Impacts of Residential Wood Heat," *Trans. Am. Nucl. Soc.* 41, 49-50 (1982)

419

Travis, C.C.; Yoshida, N. "Oscillation Criteria for Non linear Bianchi Equations," *Nonlinear Anal. Theory Appl.* 6, 625-36 (1982)

420

Turner, J.E.; Paretzke, H.G.; Hamm, R.N.; Wright, H.A.; Ritchie, R.H. "Comparative Study of Electron Energy Deposition and Yields in Water in the Liquid and Vapor Phases," *Radiat. Res.* 92, 47-60 (1982)

421

Vo-Dinh, T. "Synchronous Luminescence Spectroscopy: Methodology and Applicability," *Appl. Spectrosc.* 36, 576-81 (1982)

422

Vo-Dinh, T. "Quantification of Surface Contamination: Principles and Applications," pp 206-10, *Proc. 28th Annu. Tech. Meet. Inst. of Environmental Sciences, Atlanta, Apr. 21-23, 1982, Inst. of Environmental Sciences, 1982*

423

Walsh, P.J.; Jones, T.D.; Griffin, G.D.; Inney, C.S.; Calle, E.E.; Easterly, C.E. "Risk Assessment Approaches: General Definitions, Limitations and

Research Needs," *J. Environ. Sci. Health A17*, 541-52 (1982)

424

Washburn, L.C.; Sun, T.T.; Byrd, B.L.; Callahan, A.P. "Production of L-[1-11C]Valine by HPLC Resolution," *J. Nucl. Med.* 23, 29-33 (1982)

425

Watson, A.P. "Energy Analysis of the Coal Fuel Cycle: Community Health and Resource Change in an Appalachian Coal County," pp 143-55, *Health Impacts of Different Sources of Energy, Nashville, TN, June 22-26, 1981, IAEA, Vienna, 1982, IAEA-SM-254/33*

426

Watson, A.P.; Matthiessen, J.N.; Springett, B.P. "Arthropod Associates and Macronutrient Status of the Red-Ink Sundew (*Drosera erythrorhiza* Lindl.)," *Aust. J. Ecol.* 7, 13-22 (1982)

427

Watson, E.E.; Cristy, M. "A Model of the 3-Month Pregnant Woman for Radiation Dose Estimation," *J. Nucl. Med.* 23, 88 (1982)

428

Williams, L.R.; Leggett, R.W. "Nonzero Solutions of Nonlinear Integral Equations Modeling Infectious Disease," *SIAM J. Math. Anal.* 13, 112-21 (1982)

429

Williams, L.R.; Leggett, R.W. "Unique and Multiple Solutions of a Family of Differential Equations Modeling Chemical Reactions," *SIAM J. Math. Anal.* 13, 122-33 (1982)

430

Williams, M.W.; Hoeschele, J.D.; Turner, J.E.; Jacobson, K.B.; Christie, N.T.; Paton, C.L.; Smith, L.H.; Witschi, H.R.; Lee, E.H. "Chemical Softness and Acute Metal Toxicity in Mice and *Drosophila*," *Toxicol. Appl. Pharmacol.* 63, 461-9 (1982)

Instrumentation and Controls Division

431

Kopp, M.K.; Valentine, K.H.; Christopheron, L.G.; Carter, J.G. "New Gas Mixture Improves Performance of He-3 Neutron Counters," *Nucl. Instrum. Methods* 201, 395-401 (1982)

Computer Sciences Division

432

Eckerman, K.F.; Watson, S.B.; Fore, C.S. "ORNL-ICRP Dosimetric Data Base," *Trans. Am. Nucl. Soc.* 43, 431-3 (1982)

433

Sharp, R.D.; Baes, C.F., III "Simulation of Radionuclide Transport in U.S. Agriculture," pp 253-7, *Proc. Summer Computer Simulation Conf., Denver, July 19-21, 1982, Soc. Comput. Simulation, 1982*

Physics Division

434

Beene, J.R.; Bemis, C.E., Jr.; Kramer, S.D.; Young, J.P. "Laser-Optical Studies of the Spontaneous-Fission Isomer Am-240m," pp 171-82, *Lasers in Nuclear Physics, Proc. Conf., Oak Ridge, TN, Apr. 1982, Harwood Academic, New York, 1982*

Energy Division

435

Carnes, S.A.; Soderstrom, E.J.; Sorensen, J.H.; Peele, E.B.; Reed, J.H.; Bjornstad, D.J.; Copenhagen, E.D. "Framework for Evaluating the Utility of Incentive Systems for Radioactive Waste Repository Siting," *Proc. Waste Management '82, Tucson, AZ, Mar. 11-15, 1982, 1982*

436

Hunsaker, D.B., Jr.; Moreland, R.M. "Compilation of a Biogenic Hydrocarbon Emissions Inventory for Evaluating Ozone Control Strategies in the San Francisco

Bay Area," v.81.5, pp 1-12, *Proc. 75th Anniv. Air Pollut. Control Assoc. Annu. Meet./Exhib., New Orleans, June 20-25, 1982, ACPA, Pittsburgh, 1982*

Engineering Technology Division

437

Chen, N.C.J.; Lindberg, S.E.; Saylor, R.E. "Plume Washout around a Major Coal-Fired Power Plant: Results of a Single Storm Event," v.2, pp 11-22, *Energy and Environmental Chemistry, Ann Arbor Science, 1982*

438

Chen, N.C.J.; Saylor, R.E.; Lindberg, S.E. "Plume Washout around a Major Coal-Fired Power Plant: Results of a Single Storm Event," pp 11-22, *Energy and the Environment, Am. Chem. Soc., Washington, DC, 1982*

439

Hoy, H.C.; O'Donnell, F.R. "Occupational Risk from Nuclear Power," *Trans. Am. Nucl. Soc.* 41, 46-8 (1982)

Solid State Division

440

White, C.W.; Naramoto, H.; Williams, J.M.; Narayan, J.; Appleton, B.R.; Wilson, S.R. "Zone Refining of Nonsubstitutional Impurities during Pulsed Laser Annealing," pp 241-8, *Laser and Electron-Beam Interactions with Solids, Elsevier Science Publ. Co., Inc., 1982*

Central Management Offices Division

441

Cowser, K.E.; Epler, J.L.; Gehra, C.W.; Guerin, M.R.; Klein, J.A. "Health and Environmental Studies of H-Coal Process," pp 124-47, *Environmental Aspects of Fuel Conversion Technology, Proc. 6th Symp. on Coal-Based Synfuel, Denver, Oct. 26-30, 1981, USEPA, Govt. Printing Office, 1982, EPA-600/9-82-017*

443

Vennart, J.; Bair, W.J.; Feinendegen, L.E.; Ford, M.R.; Kaul, A.; Mays, C.W.; Nenot, J.C.; Neeslin, B.; Ramzaev, P.V.; Richmond, C.R.; Thompson, R.C.; Veall, N. "Limits for Intakes of Radionuclides by Workers. ICRP Publication 30, Supplement A to Part 3," *Annals of the International Commission on Radiological Protection* 7(1-3): 1-440 (1982)

444

Vennart, J.; Bair, W.J.; Feinendegen, L.E.; Ford, M.R.; Kaul, A.; Mays, C.W.; Nenot, J.C.; Neeslin, B.; Ramzaev, P.V.; Richmond, C.R.; Thompson, R.C.; Veall, N. "Limits for Intakes of Radionuclides by Workers. ICRP Publication 30, Supplement B to Part 3 Including Addendum to the Supplements of Parts 1 and 2," *Annals of the International Commission on Radiological Protection* 8(1-3): 41-78 (1982)

Environmental Sciences Division

445

Adams, S.M.; Giddings, J.M. "Review and Evaluation of Microcosms for Assessing Effects of Stress in Marine Ecosystems," *Environ. Int.* 7, 409-18 (1982)

446

Adams, S.M.; McLean, R.B.; Hoffman, M.M. "Structuring of a Predator Population through Temperature-Mediated Effects on Prey Availability," *Can. J. Fish. Aquat. Sci.* 39, 1175-84 (1982)

447

Adams, S.M.; McLean, R.B.; Parrotta, J.A. "Energy Partitioning in Largemouth Bass under Conditions of Seasonally Fluctuating Prey Availability," *Trans. Am. Fish. Soc.* 111, 549-58 (1982)

448

Bartell, S.M. "Influence of Prey Abundance on Size-Selective Predation by Bluegills," *Trans. Am. Fish. Soc.* 111, 453-61 (1982)

449

Blaylock, B.G.; Alexander, H.J. "Radioactive Wastes," *J. Water Pollut. Control* 54, 1002-23 (1982)

450

Blaylock, B.G.; Frank, M.L. "Bioaccumulation and Distribution of Tc-95m in an Experimental Freshwater Pond," pp 451-64, *Migration in the Terrestrial Environment of Long-Lived Radionuclides from the Nuclear Fuel Cycle, Proc. Int. Symp., Knoxville, TN, July 27-31, 1981, IAEA, Vienna, 1982, IAEA-SM-257/41*

451

Blaylock, B.G.; Frank, M.L.; DeAngelis, D.L. "Bioaccumulation of Tc-95m in Fish and Snails," *Health Phys.* 42, 257-66 (1982)

452

Bondietti, E.A. "Effects on Agriculture," *AMBIO* 11, 38-42 (1982)

453

Bondietti, E.A. "Mobile Species of Pu, Am, Cm, Np, and Te in the Environment," pp 81-96, *Environmental Migration of Long-Lived Radionuclides, Proc. IAEA Symp., Knoxville, TN, July 27-31, 1981, IAEA, Vienna, 1982, IAEA-SM-257/42*

454

Bondietti, E.A. "The Influence of Geochemical Variables on Long-Lived Radionuclide Migration and Risk Assessment," pp 337-347, *Uncertainties Associated with the Regulation of the Geologic Disposal of High-Level Radioactive Waste, Proc. Symp., Gatlinburg, TN, Mar. 9-13, 1981, NUREG/CP-0022, CONF-810372, 1982*

455

Brocksen, R.W.; Fraser, M.; Hildebrand, S.G.; Murarka, L.P. "The Effects of Selected Hydraulic Structures on Fisheries and Limnology," *Crit. Rev. Environ. Control.* 12, 69-89 (1982)

456

Browman, M.G.; Maskarinec, M.P. "Environmental Aspects of Organics in Selected Coal Conversion Solid Wastes," *J. Environ. Sci. Health A17*, 737-66 (1982)

457

Certling, T.E.; Spalding, B.P. "Distribution and Relationship of Radionuclides to Streambed Gravels in a Small Watershed," *Environ. Geol.* 4, 99-116 (1982)

458

Cerling, T.E.; Turner, R.R. "Formation of Freshwater Fe-Mn Coatings on Gravel and the Behavior of Co-60, Sr-90, and Cs-137 in a Small Watershed," *Geochim. Cosmochim. Acta* 46, 1333-43 (1982)

459

Chan, Y.-H. "Storage and Release of Organic Carbon in Peninsular Malaysia," *Int. J. Environ. Stud.* 18, 211-22 (1982)

460

Constant, C.C. "Positive Phototaxis in First Instar Hydropsyche cockerelli Banks (Trichoptera)," *Aquat. Insects* 4, 55-9 (1982)

461

Constant, C.C. "Evidence for Upstream Dispersion of Adult Caddisflies (Trichoptera: Hydropsychidae) in the Columbia River," *Aquat. Insects* 4, 61-6 (1982)

462

Cox, D.K.; Beauchamp, J.J. "Thermal Resistance of Juvenile Crayfish, *Cambarus bartoni* (Fabricius): Experiment and Model," *Am. Midl. Nat.* 108, 187-93 (1982)

463

Crandall, D.A.; Luxmoore, R.J. "Simulated Water Budgets for an Irrigated Sycamore Phytomass Farm," *For. Sci.* 28, 17-30 (1982)

464

Cushman, J.H.; Ranney, J.W. "Short Rotation Growth of Hardwoods for Energy Applications Across the United States - Field Results and Economics," pp 109-32, *Energy from Biomass and Wastes, Proc. Inst. of Gas Technology 6th Annu. Conf., Lake Buena Vista, FL, Jan. 25-29, 1982, 1982*

465

Cushman, R.M.; Brown, D.K. "Composition and Toxicity of Solid Waste Leachates from Industrial Coal Gasifiers," v.6, pp 425-32, *Alternative Energy Sources IV, Ann Arbor Science, 1982*

466

Cushman, R.M.; Brown, D.K.; Edwards, N.T.; Giddings, J.M.; Parkhurst, B.R. "Ecotoxicity of Coal Gasifier Solid Wastes," *Bull. Environ. Contam. Toxicol.* 28, 39-45 (1982)

467

Outshall, N.H. "Transuranic Elements in the Environment - Book Review," *Bull. Mar. Sci.* 32, 376-7 (1982)

468

Daniels, K.L.; Geyert, J.C.; Farrell, M.P.; Strand, R.H. "A General Linear Models Approach for Comparing the Response of Several Species in Acute Toxicity Tests," pp 733-738, *Proc. 7th Annu. Stat. Anal. Syst. Users Group Int. Conf., San Francisco, Feb. 14-17, 1982, ESD 1888, 1982*

469

DeAngelis, D.L.; Constant, C.C. "Genesis of Bimodal Size Distributions in Species Cohorts," *Trans. Am. Fish. Soc.* 111, 384-8 (1982)

470

Edwards, N.T. "The Use of Soda-Lime for Measuring Respiration Rates in Terrestrial Systems," *Pedobiologia* 23, 321-30 (1982)

471

Edwards, N.T. "A Timesaving Technique for Measuring Respiration Rates in Incubated Soil Samples," *Soil Sci. Soc. Am. J.* 46, 1114-6 (1982)

472

Edwards, N.T.; Ross-Todd, B.M.; Groothuis, E.L. "Uptake and Metabolism of C-14 Anthracene by Soybean (*Glycine max*)," *Environ. Exp. Bot.* 22, 349-57 (1982)

473

Elmore, J.L. "The Influence of Food Concentration and Container Volume on Life History Parameters of *Diaptomus dorsalis* Marsh from Subtropical Florida," *Hydrobiologia* 89, 215-23 (1982)

474

Emanuel, W.R.; Killough, G.G.; Post, W.M.; Shugart, H.H. "Modeling Terrestrial Carbon Cycling at the Global Scale," pp 166-94, *Global Dynamics of Biospheric Carbon, Proc. Symp., Bloomington, IN, Aug. 17, 1981, DOE Carbon/Climate Series, ESD 1878, CONF-8108131, 1982*

475

Francis, C.W.; Boegly, W.J., Jr.; Turner, R.R.; Davis, E.C. "Coal Conversion Solid Waste Disposal," pp 665-75, *Proc. Conf. Energy in the Man-Built Environment*, Am. Soc. Civil Eng., Vail, CO, Aug.3-5, 1981, 1982

476

Francis, C.W.; Boegly, W.J., Jr.; Turner, R.R.; Davis, E.C. "Coal Conversion Solid Waste Disposal," *Am. Soc. Civil Eng.* 108, No.EE6, 1301-11 (1982)

477

Gardner, R.H.; Cale, W.G., Jr.; O'Neill, R.V. "Robust Analysis of Aggregation Error," *Ecology* 63, 1771-9 (1982)

478

Gardner, R.H.; O'Neill, R.V.; Hoffman, F.O. "Assessing Model Uncertainties," pp 199-208, *Uncertainties Associated with the Regulation of the Geologic Disposal of High-Level Waste*, Proc. Symp., Gatlinburg, TN, Mar.9-13, 1981, CONF-810372, 1982

479

Garten, C.T., Jr.; Trabalka, J.R.; Bogle, M.A. "Comparative Food Chain Behavior and Distribution of Actinide Elements in and around a Contaminated Fresh-Water Pond," pp 299-312, *Environmental Migration of Long-Lived Radionuclides*, Proc. IAEA Symp., Knoxville, TN, July 27-31, 1981, IAEA, Vienna, 1982, IAEA-SM-257/71

480

Giddings, J.M. "Effects of the Water-Soluble Fraction of a Coal-Derived Oil on Pond Microcosms," *Arch. Environ. Contam. Toxicol.* 11, 735-47 (1982)

481

Goyer, J.C.; Daniels, K.L.; Strand, R.H.; Farrell, M.P. "Cartographic Evaluation of Environmental Management Strategies," pp 224-9, *Proc. Stat. Anal. Syst. Users Group Conf.*, San Francisco, Feb.15-17, 1982, ESD 1940, 1982

482

Haase, C.S. "Metamorphic Petrology of the Negaunee Iron Formation, Marquette District, Northern Michigan: Mineralogy, Metamorphic Reactions, and Phase Equilibria," *J. Econ. Geol.* 77, 60-81 (1982)

483

Hoffman, F.O.; Garten, C.T., Jr.; Lucas, D.M.; Hackabee, J.W. "Environmental Behavior of Technetium in Soil and Vegetation. Implications for Radiological Assessments," *Environ. Sci. Technol.* 16, 214-7 (1982)

484

Hoffman, W.A., Jr.; Lindberg, S.E.; Turner, R.R. "Characterization of Covalent Constituents in a Coal Conversion Solid Waste," *Environ. Pollut. (Series B)* 4, 219-29 (1982)

485

Hosker, P.P., Jr.; Lindberg, S.E. "Atmospheric Deposition and Plant Assimilation of Gases and Particles," *Atmos. Environ.* 16, 889-910 (1982)

486

Huff, D.D. "Hydrologic Factors and Sr-90 Transport at a Low-Level Waste Disposal Site," pp 349-56, *Hydrologic and Geologic Factors in Waste Disposal*, Proc. Waste Management '82 Symp., Univ. of Arizona, Tucson, AZ, Mar.1982, 1982

487

Huff, D.D.; Farrow, N.D.; Jones, J.R. "Hydrologic Factors and Sr-90 Transport: A Case Study," *Environ. Geol.* 4, 53-63 (1982)

488

Huff, D.D.; O'Neill, R.V.; Emanuel, W.R.; Elwood, J.W.; Newbold, J.D. "Flow Variability and Hillslope Hydrology," *Earth Surf. Landforms* 7, 91-4 (1982)

489

Johnson, D.W.; Henderson, G.S.; Huff, D.D.; Lindberg, S.E.; Richter, D.D.; Shriner, D.S.; Todd, D.E.; Turner, J.E. "Cycling of Organic and Inorganic Sulfur in a Chestnut Oak Forest," *Oecologia* 54, 141-8 (1982)

490

Johnson, D.W.; Turner, J.E.; Kelly, J.M. "The Effects of Acid Rain on Forest Nutrient Status," *Water Resour. Res.* 18, 449-61 (1982)

491

Johnson, D.W.; West, D.C.; Todd, D.E.; Mann, L.K. "Effects of Sawlog vs. Whole-Tree Harvesting on the

Nitrogen, Phosphorus, Potassium, and Calcium Budgets of an Upland Mixed Oak Forest," *Soil Sci. Soc. Am. J.* 46, 1304-9 (1982)

492

Johnston, J.W.; Heagle, A.S. "Response of Chronically Ozonated Soybean Plants to an Acute Ozone Exposure," *Phytopathology* 72, 387-9 (1982)

493

Johnston, J.W.; Shriner, D.S.; Klarer, C.L.; Lodge, D.M. "Effect of Rain pH Senescence, Growth, and Yield of Bush Bean," *Environ. Exp. Bot.* 22, 329-37 (1982)

494

Kanciruk, P.; Herrick, W.F.; Phillips, B.F.; Arnold, P.M. "An Indexed Bibliography of the Spiny (Rock) Lobsters (Decapoda: Palinuridae)," *Commonwealth Scientific and Industrial Research Organization Marine Laboratories Report* 141, 225 pp. 1982

495

Kelly, J.M.; Johnson, D.W. "Sulfur and Nitrogen Uptake by Loblolly Pine Seedlings as Influenced by Soil Nitrogen and Sulfur Additions," *For. Sci.* 28, 725-31 (1982)

496

Klepatch, J.M.; Rimer, P.G. "Energy Analysis of Oklahoma Rangelands and Improved Pastures," *J. Range Manage.* 35, 637-43 (1982)

497

Kreoduma, R.L. "Edge Effect on Breeding Forest Birds Along a Power Line Corridor," *J. Appl. Ecol.* 19, 361-70 (1982)

498

Kreoduma, R.L. "Bird Community Ecology on Power-Line Corridors in East Tennessee," *Biol. Conserv.* 23, 79-94 (1982)

499

Lee, S.Y. "Coal Gasification Solid Wastes: Physicochemical Characterization," *Environ. Sci. Technol. (ES&T)* 16, 728-31 (1982)

500

Lee, S.Y.; Bondietti, E.A.; Tamura, T. "Dissolution Characteristics of Pu-Contaminated Soils and Sediments in Lung Serum Simulant Solution," *Health Phys.* 43, 663-8 (1982)

501

Lindberg, S.E. "Factors Influencing Trace Metal, Sulfate, and Hydrogen Ion Concentrations in Rain," *Atmos. Environ.* 16, 1701-9 (1982)

502

Lindberg, S.E.; Harriss, R.C.; Turner, R.R. "Atmospheric Deposition of Metals to Forest Vegetation," *Science* 215, 1609-11 (1982)

503

Lindberg, S.E.; Shriner, D.S.; Hoffman, W.A., Jr. "The Interaction of Wet and Dry Deposition with the Forest Canopy," pp 385-410, *Acid Precipitation Effects on Ecological Systems*, Ann Arbor Science Publ., Ann Arbor, MI, 1982

504

Mann, L.K. "Nitrogen Ion Utilization by Tulip Poplar (*Liriodendron tulipifera* L.) Seedlings," *J. Tennessee Acad. Sci.* 57, 26-8 (1982)

505

McCarthy, J.F. "Ecdysone Metabolism in Premolt Land Crabs (*Gecarcinus lateralis*)," *Gen. Comp. Endocrinol.* 47, 323-32 (1982)

506

McLaughlin, S.B.; McConathy, R.K.; Davick, D.N.; Mann, L.K. "Effects of Chronic Air Pollution Stress on Photosynthesis, Carbon Allocation, and Growth of White Pine Trees," *Forest Sci.* 28, 60-70 (1982)

507

McLean, R.B.; Beauchamp, J.J.; Kane, V.E.; Singley, P.T. "Impingement of Threadfin Shad: Effects of Temperature and Hydrography," *Environ. Manage.* 6, 431-9 (1982)

508

McLean, R.B.; Singley, P.T.; Lodge, D.M.; Wallace, R.A. "Synchronous Spawning of Threadfin Shad," *Copeia* 4, 952-5 (1982)

509

Millemann, R.E.; Ehrenberg, D.S. "Chronic Toxicity of the Azaarene Quinoline, a Synthetic Fuel Component, to the Pond Snail *Physa heterostrophus*," *Environ. Technol. Lett.* 3, 193-8 (1982)

510

Millemann, R.E.; Haynes, R.J.; Boggs, T.A.; Floran, R.J.; Hildebrand, S.G. "Enhanced Oil Recovery: Environmental Issues and State Regulatory Programs," *Environ. Int.* 7, 165-77 (1982)

511

Minton, J.W.; McLean, R.B. "Measurements of Growth and Consumption of Sauger (*Stizostedion canadense*): Implication for Fish Energetics Studies," *Can. J. Fish. Aquat. Sci.* 39, 1396-403 (1982)

512

Mulholland, P.J.; Elwood, J.W. "The Role of Lake and Reservoir Sediments as Sinks in the Perturbed Global Carbon Cycle," *Tellus* 34, 490-9 (1982)

513

Mulholland, P.J.; Watts, J.A. "Transport of Organic Carbon to the Sea by Rivers of North America: A Synthesis of Existing Data," *Tellus* 34, 176-86 (1982)

514

Newbold, J.D.; Mulholland, P.J.; Elwood, J.W.; O'Neill, R.V. "Organic Carbon Spiralling in Stream Ecosystems," *OIKOS* 38, 266-72 (1982)

515

Newbold, J.D.; O'Neill, R.V.; Elwood, J.W.; Van Winkle, W. "Nutrient Spiralling in Streams: Implications for Nutrient Limitation and Invertebrate Activity," *Am. Nat.* 120, 628-52 (1982)

516

O'Neill, R.V.; Gardner, R.H.; Barnhouse, L.W.; Suter, G.W., II; Hildebrand, S.G.; Gehrs, C.W. "Ecosystem Risk Analysis - A New Methodology," *Environ. Toxicol. Chem.* 1, 167-77 (1982)

517

O'Neill, R.V.; Gardner, R.H.; Carney, J.H. "Parameter Constraints in a Stream Ecosystem Model: Incorporation of a Priori Information in Monte Carlo Error Analysis," *Ecol. Modelling* 16, 51-65 (1982)

518

O'Neill, R.V.; Gardner, R.H.; Weller, D.E. "Chaotic Models as Representations of Ecological Systems," *Am. Nat.* 120, 259-63 (1982)

519

Olson, R.J. "Data Resources for Assessing Regional Impacts of Energy Facilities on Health and the Environment," pp 115-25, *Health Impacts of Different Sources of Energy, Proc. Int. Symp., Nashville, TN, June 22-26, 1981, IAEA, Vienna, 1982, IAEA-SM-254/69*

520

Olson, R.J.; Kumar, K.D.; Burgess, R.L. "Analyses of Ecoregions Utilizing the Geoecology Data Base," pp 149-56, *In-Place Resources Inventories: Principles and Practices, Proc. Natl. Workshop, Orono, ME, Aug. 9-14, 1981, Soc. Am. For., USDA Forest Service, Washington, DC, 1982*

521

Parkhurst, B.R. "Environmental Risk Analyses of Wastewaters Produced by Synthetic Fuels Technologies," pp 399-411, *Environmental Risk Analyses for Chemicals, Van Nostrand Reinhold Co., New York, 1982*

522

Parr, P.D.; Taylor, F.G., Jr. "Germination and Growth Effects of Hexavalent Chromium in Orocol (A Corrosion Inhibitor) on *Phaseolus vulgaris*," *Environ. Int.* 7, 197-202 (1982)

523

Post, W.M.; Emanuel, W.R.; Zinke, P.J.; Strangenberger, A.G. "Soil Carbon Pools and World Life Zones," *Nature* 258, 156-9 (1982)

524

Post, W.M.; Zinke, P.J.; Strangenberger, A.G.; Emanuel, W.R.; Jenny, H.; Olson, J.S. "Summaries of Soil Carbon Storage in World Life Zones," pp 131-9, *Proc. Global Dynamics of Biospheric Carbon Symp., Bloomington, IN, Aug. 17, 1981, USDOE, Washington, DC, 1982, CONF-8108131*

525

Ranney, J.W.; Cushman, J.H. "Short-Rotation Woody Crops as a Source of Energy," p 1562, *Proc. 9th Energy Technology Conf./Expo., Washington, DC, Feb. 16-18, 1982, 1982*

526

Reed, R.M.; Voorhees, L.D.; Mulholland, P.J. "Using Peat for Energy: Potential Environmental Constraints," pp 675-91, *Proc. Peat as an Energy Alternative II, Arlington, VA, Dec.1-3, 1981, Inst. of Gas Technology, Chicago, 1982*

527

Reinert, R.A.; Shriner, D.S.; Rawlings, J.O. "Responses of Radish to Nitrogen Dioxide, Sulfur Dioxide, and Ozone in Combination at Three Concentrations," *J. Environ. Qual.* 11, 52-7 (1982)

528

Richter, D.D.; Johnson, D.W.; Ingram, D.M. "Effects of Municipal Sewage Sludge-Cake on Nitrogen and Phosphorus Distributions in a Pine Plantation," pp 532-46, *Proc. 5th Madison Waste Research Conf., Madison, WI, Sept. 30, 1982, ESD 2027, 1982*

529

Richter, D.D.; Ralston, C.W. "Prescribed Fire: Effects on Water Quality and Forest Nutrient Cycling," *Science* 215, 661-3 (1982)

530

Richter, D.D.; Switzer, G.L. "A Technique for Determining Some Quantitative Expressions of Dormancy in Seeds," *Ann. Bot.* 50, 459-63 (1982)

531

Sale, M.J.; Brill, E.D., Jr.; Herricks, E.E. "An Approach to Optimizing Reservoir Operation for Downstream Aquatic Resources," *Water Resour. Res.* 18, 705-12 (1982)

532

Shelly, T.E.; Christensen, S.W. "Testing for Competition: A Critique of De Vita's Use of the Broken-Stick Model," *Am. Nat.* 119, 435-7 (1982)

533

Shriner, D.S. "Air Pollution Impacts on Forest Trees: Acid Deposition: Effects on Terrestrial Ecosystems," pp 132-4, *Interactions between Forest Ecosystems and Air Pollution, Proc. 1st US/USSR Symp., Leningrad, Oct. 1982, ESD 2062, 1982*

534

Solomon, A.M.; Blasing, T.J.; Solomon, J.A. "Interpretation of Floodplain Pollen in Alluvial Sediments from an Arid Region," *Quat. Res.* 18, 52-71 (1982)

535

Southworth, G.R. "Evaporation of Phenols from Synthetic Liquid Fuel Spills," *Environ. Int.* 7, 203-6 (1982)

536

Southworth, G.R.; Parkhurst, B.R.; Herbes, S.E.; Tsai, S.-C. "The Risk of Chemicals to Aquatic Environments," pp 85-153, *Environmental Risks Analysis for Chemicals, Van Nostrand Reinhold, New York, 1982*

537

Spalding, B.P. "Research Efforts on Environmental Transport of Hazardous Materials at Oak Ridge National Laboratory," *Trans. Am. Nucl. Soc.* 41, 66 (1982)

538

Spalding, B.P.; Tamura, T. "Grouting Research for Uranium Mill Tailings," *Trans. Am. Nucl. Soc.* 43, 309-10 (1982)

539

Story, J.D.; Galbraith, W.J.; Kitchings, J.T. "Food Habits of Bobcats in Eastern Tennessee," *J. Tennessee Acad. Sci.* 57, 29-32 (1982)

540

Stow, S.H.; Tull, J.F. "Geology and Geochemistry of the Stratabound Sulfide Deposits of the Pyriton District, Alabama," *Econ. Geol.* 77, 328-40 (1982)

541

Suter, G.W., II "Terrestrial Perturbation Experiments for Environmental Assessment," *Environ. Manage.* 6, 43-54 (1982)

542

Taylor, F.G., Jr.; Beauchamp, J.J.; Parr, P.D. "Use of Pine Foliage as an Indicator of Fluoride Accumulation from Uranium Hexafluoride Technologies," *Fluoride* 15, 14-20 (1982)

543

Taylor, G.E., Jr.; Tingey, D.T.; Ratsch, H.C. "Ozone Flux in *Glycine max* (L.) Merr.: Sites of Regulation and Relationship to Leaf Injury," *Oecologia* 53, 179-86 (1982)

544

Tingey, D.T.; Taylor, G.E., Jr. "Variation in Plant Response to Ozone: A Conceptual Model of Physiological Events," pp 113-38, *Effects of Gaseous Air Pollution in Agriculture and Horticulture*, Proc. 32nd Univ. of Nottingham School of Agricultural Science Symp., Nottingham, Great Britain, Sept. 1-5, 1980, Butterworth Scientific, London, 1982

545

Tull, J.F.; Stow, S.H. "Geologic Setting of the Hillabee Metavolcanic Complex and Associated Stratabound Sulfide Deposits in the Appalachian Piedmont of Alabama," *Econ. Geol.* 77, 318-27 (1982)

546

Tyndall, R.L. "Concentration, Serotypic Profiles and Infectivity of Legionnaires' Disease Bacteria Populations in Cooling Towers," *J. Cool. Tower Inst.* 3, 25-33 (1982)

547

Van Hook, R.I.; Johnson, D.W.; West, D.C.; Mann, L.K. "Environmental Effects of Harvesting Forests for Energy," *Forest Ecol. Manage.* 4, 79-94 (1982)

548

Vaughan, D.S.; Kumar, K.D. "Entrainment Mortality of Ichthyoplankton: Detectability and Precision of Estimates," *Environ. Manage.* 6, 155-62 (1982)

549

Vaughan, D.S.; Van Winkle, W. "Corrected Analysis of the Ability to Detect Reductions in Year-Class Strength of the Hudson River White Perch (*Morone americana*) Population," *Can. J. Fish. Aquat. Sci.* 39, 782-5 (1982)

550

Walton, B.T.; Buchanan, M.V.; Ho, C.-h. "Comparative Embryotoxicity and Teratogenicity of Petroleum and Petroleum Substitutes to Insects Developing in Contaminated Substrates," pp 249-57, *Energy and Environmental Chemistry*, Ann Arbor Science, Ann Arbor, MI, 1982

551

Watts, J.A. "The Carbon Dioxide Question: A Data Sampler," pp 431-69, *Carbon Dioxide Annual Review*, Oxford Press, New York, 1982, ESD 1923

552

West, D.C.; Smith, T.M.; Weinstein, D.A.; Shugart, H.H. "Forest Succession Models and Their Ecological and Management Implications," pp 3-13, *Forest Succession and Stand Development Research in the Pacific Northwest*, Oregon State Univ. Press, Corvallis, 1982

553

Yeh, G.T.; Tamura, T. "Geohydrochemical Considerations in Land Disposal of Low-Level Wastes," *Nucl. Sci. Eng.* 82, 206-19 (1982)

Reports

Biology Division

554

Griesemer, R.A.; Odell, T.T. "Biology Division Progress Report for Period of June 1, 1980 - July 31, 1982," *ORNL-5927*

555

Griesemer, R.A.; Tutton, J.M. "Quality Assurance Program Manual for the Biology Division," *ORNL/FPO-81/150*

Chemical Technology Division

556

Meyer, H.R.; Witherspoon, J.P.; McBride, J.P.; Frederick, E.J. "Comparison of the Radiological Impacts of Thorium and Uranium Nuclear Fuel Cycles," *ORNL/TM-7868*

Information Division

557

Cone, M.V.; Baldauf, M.F.; Martin, F.M. "Chemicals Identified in Human Biological Media, A Data Base: Third Annual Report, October 1981, Volume 3, Part 2 Records 3501-5271," *ORNL/EIS-163/V3-P2*

558

Cone, M.V.; Baldauf, M.F.; Martin, F.M. "Chemicals Identified in Human Biological Media, A Data Base: Third Annual Report, October 1981, Volume 3, Part 1," *ORNL/EIS-163/V3-P1*

559

Cone, M.V.; Baldauf, M.F.; Opresko, D.M.; Uziel, M.S. "Chemicals Identified in Human Biological Media, A Data Base, Volume IV," *ORNL/EIS-163/V4*

560

Cone, M.V.; Baldauf, M.F.; Opresko, D.M.; Uziel, M.S. "Chemicals Identified in Human Biological Media, A Data Base: Fourth Annual Report," *ORNL/EIS-163/V5-P1*

561

Cone, M.V.; Baldauf, M.F.; Opresko, D.M.; Uziel, M.S. "Chemicals Identified in Human Biological Media, A Data Base: Fourth Annual Report," *ORNL/EIS-163/V5/P2*

562

Cone, M.V.; Faust, R.A.; Baldauf, M.F. "Chemicals Identified in Feral and Food Animals, A Data Base: First Annual Report - October 1981," *ORNL/EIS-196/V1*

563

Cone, M.V.; Faust, R.A.; Baldauf, M.F. "Chemicals Identified in Feral and Food Animals, A Data Base: Second Annual Report," *ORNL/EIS-196/V2*

564

Drury, J.S.; Michelson, D.C.; Easminger, J.T.; Lee, S.Y.; White, S.K.; Bondietti, E.A. "Methods of Removing Uranium from Drinking Water - A Literature Survey - Present Municipal Water Treatment and Potential Removal Methods," *ORNL/EIS-194*

565

Fore, C.S. "Transportation of Radioactive Materials: The Legislative and Regulatory Information System," *ORNL/TM-7439*

566

Fore, C.S.; Faust, R.A.; Brewster, R.H. "Cleanup and Treatment of Radioactively Contaminated Land Including Areas Near Nuclear Facilities - A Selected Bibliography," *ORNL/EIS-199*

567

Frogge, L.M.; Ehrenshaft, A.R.; Morris, L.E. "Status of the Residential Conservation Service Program in Selected States as of December 1981," *ORNL/TM-8486*

568

Frogge, L.M.; Jordan, A.C. "Residential Conservation Service - Planning and Implementation Guide for Home Heating Suppliers," *ORNL/Sub-79/24718/2*

569

Frogge, L.M.; Jordan, A.C.; Preston, E.L.; Ehrenshaft, A.R. "Residential Conservation Service - Planning and Implementation Guide," *ORNL/Sub-79/24718/1*

570

Galbraith, W.M.; Voytek, P.; Ryon, M.G. "Assessment of Risks to Human Reproduction and to Development of the Human Conceptus from Exposure to Environmental Substances," *ORNL/EIS-197*

571

Howard, E.B. "The Oak Ridge National Laboratory Registry of Notable Honors and Awards in Science and Engineering, 1943-May 1982, 4th Edition," *ORNL/FPO-82/100*

572

Jordan, A.C. "Materials and Structures Program Publications Data Base," *ORNL/MSP/1.10-82/2*

573

Moody, J.B. "Publications in Biomedical and Environmental Sciences Programs - 1981," *ORNL-5904*

574

Newman, B.G.; Weaver, R.S.; Alford, A.C.; Guthrie, M.P. "Publications of the Transportation Systems Utilization Division A Bibliography," *ORNL/EIS-198*

575

Owen, P.T.; Knox, N.P.; Fielden, J.M.; Johnson, C.A. "Nuclear Facility Decommissioning and Site Remedial Actions - A Selected Bibliography Volume 3," *ORNL/EIS-154/V3*

576

Pruett, J.G.; Winslow, S.G. "Health Effects of Environmental Chemicals on the Adult Human Reproductive System - A Selected Bibliography with Abstracts 1963-1981," *ORNL/FPO-82/117*

577

Rickert, L.W. "Publications of Life Sciences Synthetic Fuels of Oak Ridge National Laboratory," *ORNL/TM-7680/S1*

578

Talmage, S.S.; Opresko, D.M. "Literature Review: Response of Fish to Thermal Discharge," *ORNL/EIS-193*

Health and Safety Research Division

579

Becker, R.S. "An Investigation of Dissipative Forces Near Macroscopic Media," *ORNL/TM-8506*

580

Berry, W.; Cataldo, A.; Chaney, R.; Etnier, E.L.; Ng, Y.; Paige, A.; Raper, D.; Wagner, G. "Environmental Mobility of Toxic Substances Released from Photovoltaic-Associated Processes: Terrestrial Ecosystems," *BNL-51431*

581

Berven, B.A.; Dickson, H.W.; Goldsmith, W.A.; Johnson, W.M.; Cottrell, W.D.; Doane, R.W.; Haywood, F.F.; Ryan, M.T.; Shimpugh, W.H. "Radiological Survey of the Former Kellogg Research Facility, Jersey City, New Jersey," *ORNL-5734*

582

Christophorou, L.G. "Gaseous Dielectrics III - Proceedings of the Third International Symposium on Gaseous Dielectrics, Knoxville, TN, March 7-11, 1982," *ORNL/FPO-82/53*

583

Christophorou, L.G.; James, D.R.; Mathis, R.A.; Sauer, I.; Hunter, S.R.; Pace, M.O.; Bouldin, D.W.; Spyrou, S.M.; Fatheddin, A.; Lakdawala, V.K.; Adcock, J.L.; Easterly, C.E.; Griffin, G.D. "Gaseous Dielectric Research and Applications Semiannual Report - October 1, 1981-March 31, 1982," *ORNL/TM-8368*

584

Christopherson, L.G.; James, D.R.; Pai, R.Y.; Mathis, R.A.; Sowers, I.; Freese, L.C.; Hunter, S.R.; Pace, M.O.; Bouldin, D.W.; Spyron, S.M.; Fatheddin, A.; Hanna, M.C. "High Voltage Research (Breakdown Strengths of Gaseous and Liquid Insulators) and Environmental Effects of Dielectric Gases Semiannual Report (April 1 - September 30, 1981)," *ORNL/TM-8158*

585

Chu, Y.T. "The Scattering of a Plane Electromagnetic Wave by a Conducting Circular Cylinder," *ORNL/TM-8451*

586

Cottrell, W.D. "Characterization of Metal and Debris Samples from the Shpack Landfill, Norton, Massachusetts," *ORNL/FPO-82/161*

587

Cottrell, W.D.; Witt, D.A.; Shimpagh, W.H.; Goldsmith, W.A.; Haywood, F.F. "Results of Subsurface Investigation of Radionuclides in Soil in Finberg Field, Attleboro, Massachusetts," *ORNL/TM-7934*

588

Dudney, C.S.; Hinkle, N.F.; Becker, J.M. "On the Occurrence of Fungi in Loose-Fill Attic Insulation in Typical Single-Family Dwellings," *ORNL/CON-93*

589

Easterly, C.E. "Biological Effects of Static Magnetic Fields: A Selective Review with Emphasis on Risk Assessment," *ORNL/TM-7860*

590

Easterly, C.E.; Dudney, C.S.; Griffin, G.D.; Walsh, P.J. "Health Effects of Dielectric Gases: Preliminary Report," *ORNL/TM-8353*

591

Fields, D.E. "EPA Liquid Release Pathway Health Impact Code: Feasibility Study," *ORNL-5867*

592

Gladson, S.R.; Fields, D.E. "An Interactive Statistical Distribution Analysis Program Utilizing Numerical and Graphical Methods," *ORNL-5813*

593

Gladson, S.R.; Fields, D.E. "MAGIC: A Digitization and Image Processing Program," *ORNL-5814*

594

Haywood, F.F.; Dickson, H.W.; Cottrell, W.D.; Shimpagh, W.H.; Burden, J.E.; Stone, D.R.; Doane, R.W.; Goldsmith, W.A. "Radiological Survey of the Former Bridgeport Brass Company Special Metals Extrusion Plant, Adrian, Michigan," *ORNL-5713*

595

Hoffman, F.O. "Environmental Behavior of Technetium in Soil and Vegetation: Implications for Radiological Impact Assessment," *ORNL-5856*

596

Holton, G.A.; Little, C.A.; O'Donnell, F.R.; Etnier, E.L.; Travis, C.C. "Initial Atmospheric Dispersion Modeling in Support of the Multiple-Site Incineration Study," *ORNL/TM-8181*

597

Inhaber, H. "Small is BRUTAL: The Risk/Energy Trade-Off for Automobiles," *ORNL/TM-7793*

598

Kabalka, G.W. "New Myocardial Imaging Agents: A Unique Approach," *ORNL/Sub/81-7685/6&87*

599

Kabalka, G.W. "New Myocardial Imaging Agents: A Unique Approach," *ORNL/Sub/81-7685/5&87*

600

Kerr, G.D. "Findings of a Recent ORNL Review of Dosimetry for the Japanese Atomic-Bomb Survivors," *ORNL/TM-8078*

601

Kerr, G.D. "Photon and Neutron Fluence-to-Kerma Conversion Factors for ICR-1975 Reference Man Using Improved Elemental Compositions for Bone and Marrow of the Skeleton," *ORNL/TM-8318*

602

Killough, G.G. "Derivation of Dose Conversion Factors for Tritium," *ORNL-5853*

603

Kocher, D.C.; Cotter, S.J.; Chester, R.O.; Connella, P.A.; Costanzi, F.A. "Proceedings of the Symposium on Uncertainties Associated with the Regulation of the Geologic Disposal of High-Level Radioactive Waste," *CONF-810372*

604

Matthews, T.G.; Hawthorne, A.R.; Gammage, R.B. "Evaluation of a Second Derivative UV-Absorption Spectrometer (DUVAS) for Analyzing Gases in Smoke Plumes," *ORNL/TM-3007*

605

McDowell-Boyer, L.M.; Hetrick, D.M. "A Multimedia Screening-Level Model for Assessing the Potential Fate of Chemicals Released to the Environment," *ORNL/TM-8334*

606

Miller, C.W.; Little, C.A. "A Review of Uncertainty Estimates Associated with Models for Assessing the Impact of Breeder Reactor Radioactivity Releases," *ORNL-5832*

607

Myrick, T.E.; Blair, M.S.; Doane, R.W.; Goldsmith, W.A. "A Mobile Gamma-Ray Scanning System for Detecting Radiation Anomalies Associated with Radium-226 Bearing Materials," *ORNL/TM-8475*

608

Niemczyk, S.J.; McDowell-Boyer, L.M. "Interim Source Term Assumptions for Emergency Planning and Equipment Qualification," *ORNL/TM-8274*

609

Niemczyk, S.J.; McDowell-Boyer, L.M. "Technical Considerations Related to Interim Source Term Assumptions for Emergency Planning and Equipment Qualification," *ORNL/TM-8275*

610

Phillips, J.E.; Easterly, C.E. "Experimental Procedure for Examining the Kinetics of Tritium Gas Conversion to Tritiated Water," *ORNL/TM-7670*

611

Pleasant, J.C.; McDowell-Boyer, L.M.; Killough,

G.G. "RAGBEEF: A FORTRAN IV - Implementation of a Time-Dependent Model for Radionuclide Contamination of BEEF," *ORNL/TM-8011*

612

Randolph, M.L.; Eckerman, K.F. "Analysis of Proposed New IAEA Basis for Transportation Regulatory System Technical Report," *ORNL/HASRD-151*

613

Shor, R.W.; Boes, C.F., III; Sharp, R.D. "Agricultural Production in the United States by County: A Compilation of Information from the 1974 Census of Agriculture for Use in Terrestrial Food-Chain Transport and Assessment Models," *ORNL-5768*

614

Swaja, R.E.; Sims, C.S.; Greene, R.T. "Eighteenth Nuclear Accident Dosimetry Intercomparison Study: August 10-14, 1981," *ORNL/TM-8281*

615

Tedo, A.S.; Hiramoto, G.; Turner, J.E.; Hamm, R.N.; Wright, H.A. "User's Manual for PHOEL-3, A Monte Carlo Computer Code for Calculating Initial Energies of Electrons and Positrons Produced in Water Irradiated by Photons with Energies Up to 1 GeV," *ORNL/TM-8259*

616

Watson, A.P.; Birchfield, T.E.; Fore, C.S. "Risk Assessment of Coal Production: An Information System User's Manual," *ORNL/TM-8421*

617

Watson, A.P.; Smith, J.G.; Elmore, J.L. "A Survey of Potential Health and Safety Hazards of Commercial-Scale Ethanol Production Facilities," *ORNL/TM-7817*

618

Witherspoon, J.P. "Technology and Cost of Termination Surveys Associated with Decommissioning of Nuclear Facilities," *ORNL/HASRD-121*

619

Yalcintas, M.G. "Abstracts of the Low-Level Waste Disposal: Site Characterization and Monitoring," *ORNL/FPO-82/66*

620

Yalcintas, M.G. "Low-Level Waste Disposal: Facility Design, Construction, and Operating Practices, Washington, DC, September 29-30, 1982 - Abstracts," *ORNL/FPO-82/113*

621

Yalcintas, M.G.; Jacobs, D.G. "Proceedings of the Symposium on Low-Level Waste Disposal: Site Suitability Requirements," *CONF-811218, Vol. 1*

Instrumentation and Controls Division

622

Good, G.O.; Anderson, R.L.; Andrews, W.H.; Bradley, N.C.; Brown, C.H.; Cairright, G.S.; Caton, G.M.; Hamel, W.R.; Hutton, J.T.; Jansen, J.M., Jr.; Klatt, L.N.; Moore, R.L.; Moyers, J.C.; Ottinger, L.E.; Rohrer, E.R.; Seaver, G.V.; Walla, D.S.; Wetherington, G.R., Jr.; Carr, K.R. "State-of-the-Art Assessment of Coal Preparation Plant Automation," *ORNL-5699*

Engineering Physics Division

623

White, J.E.; Eckerman, K.F. "User's Manual for LPGS: A Computer Program for Calculating Radiation Exposure Resulting from Accidental Radioactive Releases to the Hydrosphere," *ORNL/TDMC-2*

Energy Division

624

Adams, S.M.; Gilmore, C.C.; McBrayer, J.F.; Secora, D.N.; Sharples, F.E.; Webb, J.W. "Environmental Assessment - Eastern Ethanol Corporation - Loan Guarantee Application, Williamsburg County, South Carolina," *ORNL/FPO-82/79*

625

Adams, S.M.; McBrayer, J.F.; Secora, D.N.; Sharples, F.E.; Webb, J.W. "Environmental Assessment - Energy Conversion Corporation - Loan Guarantee Application, Hampton County, South Carolina," *ORNL/FPO-82/31*

626

Boercker, F.; Menendez, L.F.; Frogge, L.M. "Basic Considerations for Monitoring and Evaluating the Residential Conservation Service," *ORNL/CON-98*

627

Boyle, J.W.; Blumberg, R.; Cotter, S.J.; Hill, G.S.; Kerley, C.R.; Kettle, R.H.; Kroodsmma, R.L.; Lee, D.W.; Martin, R.C.; Reop, R.D.; Secora, D.N.; Staub, W.P.; Thoma, R.E. "Environmental Analysis of the Operation of Oak Ridge National Laboratory (X-10 Site)," *ORNL-5870*

628

Boyle, J.W.; Gilmore, C.C.; Hunsaker, C.T.; McBrayer, J.F.; Sharples, F.E. "Environmental Assessment - D. W. Small and Sons, Inc. - Loan Guarantee Application, Androscoggin County, Maine," *ORNL/FPO-82/32*

629

Boyle, J.W.; Gilmore, C.C.; Kornegay, F.C.; McBrayer, J.F.; Mulholland, P.J.; Sharples, F.E. "Environmental Assessment, Circle Energies Corporation - Loan Guarantee Application, Finney County, Kansas," *ORNL/FPO-82/22*

630

Carnes, S.A.; Copenhaver, E.D.; Rees, J.H.; Soderstrom, E.J.; Sorensen, J.H.; Peele, E.B.; Bjornstad, D.J. "Incentives and the Siting of Radioactive Waste Facilities," *ORNL-5880*

631

Eddlemon, G.K.; Kerley, C.R.; McBrayer, J.F.; Secora, D.N.; Webb, J.W. "Environmental Assessment, New Energy Corporation of Indiana - Loan Guarantee Application, St. Joseph County, Indiana," *ORNL/FPO-82/20*

632

Eddlemon, G.K.; McBrayer, J.F.; Secora, D.N.; Webb, J.W. "Minnesota Alcohol Producers - Loan Guarantee Application, Blue Earth County, Minnesota," *ORNL/FPO-82/19*

633

Elmore, J.L.; Hunsaker, D.B., Jr.; Kerley, C.R.; McBrayer, J.F.; Oakes, K.M.; Weaver, R.S. "Environmental Assessment, U.S. Ethanol Corporation - Loan Guarantee Application, East Baton Rouge Parish, Louisiana," *ORNL/FPO-82/21*

634

Elmore, J.L.; Hunsaker, D.B., Jr.; Kerley, C.R.; McBrayer, J.F.; Oakes, K.M.; Sharples, F.E. "Environmental Assessment - Agrifuels Refining Corporation - Loan Guarantee Application, Iberia Parish, Louisiana," *ORNL/FPO-82/23*

635

Elmore, J.L.; Hunsaker, D.B., Jr.; McBrayer, J.F.; Oakes, K.M. "Environmental Assessment - Gulf Coast Resources, Inc. - Loan Guarantee Application, Lee County, Iowa," *ORNL/FPO-82/33*

636

Elmore, J.L.; McBrayer, J.F.; Oakes, K.M.; Secora, D.N. "Environmental Assessment - Tennol, Inc. - Loan Guarantee Application, Marion County, Tennessee," *ORNL/FPO-82/122*

637

Witten, A.J.; Kornegay, F.C.; Hunsaker, D.B., Jr.; Long, E.C., Jr.; Sharp, R.D.; Walsh, P.J.; Zeighebi, E.A.; Gordon, J.S.; Lin, W.L. "The Implications of a Stochastic Approach to Air Quality Regulations," *ORNL/TM-8440*

Engineering Technology Division

638

Krishnan, R.P.; Johnson, K.O. "International Energy Technology Assessment - Atmospheric Fluidized-Bed Combustion," *ORNL/TM-8033*

639

Moyers, J.C.; Johnson, K.O. "International Survey of Coal Preparation Technology," *ORNL/TM-8207*

640

Spiewak, I.; Bomar, E.S.; Butz, T.R.; Delene, J.G.; Dobson, J.E.; Edlmoncz, G.K.; Fox, E.C.; Gehra, C.W.; Helgeson, R.N.; Kettle, R.H.; McBrayer, J.F.; Nichols, J.P.; Petrich, C.H.; Silverman, M.D. "Chattanooga Shale: An Assessment of the Resource and Technology for the Recovery of Hydrocarbons and Minerals," *ORNL/TM-7920*

641

Spiewak, I.; Nichols, J.P.; Alvic, D.; Delene, J.G.; Fitzgerald, B.H.; Hightower, J.R.; Klepper, O.H.;

Krummel, J.R.; Mills, J.B. "Technical Analysis of the Use of Biomass for Energy Production," *ORNL/TM-7919*

Central Management Offices Division

642

Postma, H.; Richmond, C.R.; Rosenthal, M.W.; Sommerfeld, E.W.; Trauger, D.B.; Zucker, A.; McNeany, S.R.; Anderson, T.D.; Clark, B.R.; Dilworth, R.H., II; Preston, E.L.; Reddy, J.W.; White, J.D. "Oak Ridge National Laboratory Institutional Plan FY 1983-1988," *ORNL/PPA-82/3*

643

Preston, E.L.; Getsi, J.A. "Biomedical and Environmental Sciences Programs at the Oak Ridge National Laboratory," *ORNL/TM-8448*

644

Richmond, C.R.; Walsh, P.J.; Copenhaver, E.D. "Health Risk Analysis - Proceedings of the Third Life Sciences Symposium, Gatlinburg, TN, October 27-30, 1980," *ORNL/FPO-82/24*

645

Spiewak, I.; Guthrie, M.P.; Nichols, J.P.; Preston, E.L.; West, C.D.; Wilbanks, T.J.; Wilkes, B.Y.; Zerby, A.C. "The Multiprogram Laboratories of the Department of Energy," *ORNL/PPA-82/4*

646

Stinton, L.H.; McBrayer, J.F. "Shallow Land Burial Handbook," *ORNL/NFW-82/23*

Industrial Safety and Applied Health Physics Division

647

Alexander, W.A.; Huang, S.F.; Oakes, T.W.; Hubbard, H.M.; Eldridge, J.S. "Radionuclide Characterization of Subsurface Soil on the Site of Building 3505 at Oak Ridge National Laboratory," *ORNL/TM-8479*

648

Oakes, T.W.; Ohmesorge, W.F.; Eldridge, J.S.; Scott, T.G.; Parsons, D.W.; Hubbard, H.M.; Sealard, O.M.; Shank, K.E.; Eymann, L.D. "Technical Background

Information for the Environmental and Safety Report, Vol. 5: The 1977 Clinch River Sediment Survey - Data Presentation," *ORNL-5878*

649

Ryan, M.T.; Butler, H.M.; Gupton, E.D.; Sims, C.S. "Calibration of the Indium Foil Used for Criticality Accident Dosimetry in the UCC-ND Employee Identification Badge," *ORNL/TM-8294*

Environmental Sciences Division

650

Adams, S.M. "Evaluation and Critique of In Situ Experimental Systems for Investigating Effects of Stress in Lentic Ecosystems," *ORNL/TM-8270*

651

Auerbach, S.I. "Environmental Sciences Division Publications - 1981," *ORNL/FPO-82/48*

652

Auerbach, S.I.; Reichle, D.E. "Environmental Sciences Division Annual Progress Report for Period Ending September 30, 1981," *ORNL-5900*

653

Barnhouse, L.W.; DeAngelis, D.L.; Gardner, R.H.; O'Neill, R.V.; Powers, C.D.; Suter, G.W., II; Vaughan, D.S. "Methodology for Environmental Risk Analysis," *ORNL/TM-8167*

654

Barnhouse, L.W.; Van Winkle, W.; Golumbek, J.; Cada, G.F.; Goodyear, C.P.; Christensen, S.W.; Cannon, J.B.; Lee, D.W. "The Impact of Entrainment and Impingement on Fish Populations in the Hudson River Estuary - Volume II: Impingement: Impact Analyses, Evaluations of Alternative Screening Devices, and Critiques of Utility Testimony Relating to Density-Dependent Growth, the Age-Composition of the Striped Bass Spawning Stock, and the LMS Real-Time Life Cycle Model," *ORNL/NUREG/TM-385/V2*

655

Barnhouse, L.W.; Van Winkle, W.; Kirk, B.L.; Vaughan, D.S. "The Impact of Impingement on the Hudson River White Perch Population: Final Report," *ORNL/TM-7975*

656

Boreman, J.; Barnhouse, L.W.; Vaughan, D.S.; Goodyear, C.P.; Christensen, S.W.; Kumar, K.D.; Kirk, B.L.; Van Winkle, W. "The Impact of Entrainment and Impingement on Fish Populations in the Hudson River Estuary - Volume I - Entrainment Impact Estimates for Six Fish Populations Inhabiting the Hudson River Estuary," *ORNL/NUREG/TM-385/V1*

657

Browman, M.G.; Patterson, M.R.; Sworski, T.J. "Formulations of the Physiochemical Processes in the ORNL Unified Transport Model for Toxicants (UTM-TOX) (Interim Report)," *ORNL/TM-8013*

658

Cada, G.F. "Environmental Studies of Materials from the H-Coal Liquefaction Process Development Unit," *ORNL/TM-8466*

659

Cada, G.F.; Kumar, K.D.; Solomon, J.A.; Hildebrand, S.G. "Analysis of Environmental Issues Related to Small-Scale Hydroelectric Development. VI. Dissolved Oxygen Concentrations Below Operating Dams," *ORNL/TM-7887*

660

Cada, G.F.; Mulholland, P.J. "Guidance Manual for Department of Energy Compliance with Corps of Engineers Permits on Dredging and Filling Activities," *DOE/EP-0060*

661

Cada, G.F.; Solomon, J.A.; Kumar, K.D. "Investigation of Entrainment Stresses Using a Power Plant Simulator," *ORNL/TM-7869*

662

Christensen, S.W.; DeAngelis, D.L. "The Effect of Stochastic Variation on Estimates of the Probability of Entrainment Mortality: Methodology, Results, and User's Guide," *ORNL/TM-7965*

663

Christensen, S.W.; Goodyear, C.P.; Kirk, B.L. "The Impact of Entrainment and Impingement on Fish Populations in the Hudson River Estuary - Volume III - An Analysis of the Validity of the Utilities' Stock-Recruitment Curve-Fitting Exercise and "Prior Estimation of Beta" Technique," *ORNL/NUREG/TM-385/V3*

664

Christensen, S.W.; Kirk, B.L.; Goodyear, C.P. "A User's Guide for the Stock-Recruitment Model Validation Program," *ORNL/TM-8216*

665

Christensen, S.W.; Vaughan, D.S.; Van Winkle, W.; Barnhouse, L.W.; DeAngelis, D.L.; Kumar, K.D.; Yoshiyama, R.M. "Methods to Assess Impacts on Hudson River Striped Bass: Final Report," *ORNL/TM-8309*

666

Cushman, R.M.; Suter, G.W., II; Bailey, M.E.; Hosker, R.P., Jr.; Jordan, C.; Nappo, C.J.; Satterfield, L.C.; Snodgrass, H.F. "Baseline Environmental Characterization of Pike County Coal Gasification Facility Site," *ORNL/TM-8035*

667

Dailey, N.S.; Mattice, J.S. "Predation of *Chaoborus punctipennis* on Larvae of *Dorosoma*," *ORNL/TM-7825*

668

Davis, E.C.; Kimmitt, R.R. "Coal Pile Leachate Treatment," *ORNL/TM-8215*

669

Doyle, T.W. "A Description of FORICO, A Tropical Gap Dynamics Model of the Lower Montane Rain Forest of Puerto Rico," *ORNL/TM-8102*

670

Eddlemon, G.K. "A Review of NRC Rules and Regulations Related to the Disposal of High-Level Radioactive Waste in Geologic Repositories," *ORNL/FPO-82/97*

671

Eddlemon, G.K.; Intemann, P.R.; Kanciruk, P.; Kroodsmma, R.L.; Lee, D.W.; Meyer, H.R.; Schweitzer, M.; Sharples, F.E.; Stanb, W.P.; Tolbert, V.R.; Triegel, E.K.; Voorhees, L.D.; Webb, J.W. "Guidelines for Preparing Environmental Analyses for Department of Energy NEPA Documents," *ORNL/FPO-81/85*

672

Elmore, J.L.; Waits, E.D.; Sharples, F.E.; Hunsaker,

D.B., Jr.; Carnes, S.A.; Schweitzer, M.; McBrayer, J.F. "Generic Environmental Assessment Report for Conventional Fuel-Alcohol Plants," *ORNL/TM-7993*

673

Erasmu, A.H.; Sharp, R.D.; Van Winkle, W. "User's Manual for STRIPE: A Computer Code for Simulating Striped Bass Young-of-the-Year Population in the Hudson River," *ORNL/NUREG/TM-423*

674

Farrell, M.P.; Magoun, A.D.; Daniels, K.L.; Pennington, C.H.; Strand, R.H. "Environmetrics of the Long-Term Field Studies of the Environmental Water Quality Operational Studies," *ORNL/TM-7579*

675

Farrell, M.P.; Strand, R.H. "Environmetrics of the Gasifier in Industry Program: III. Decision Support Systems for Quality Assurance Controls," *ORNL/TM-7575*

676

Giddings, J.M. "Summary of Research on Coal Liquefaction Product Spills," *ORNL/TM-7966*

677

Hetrick, D.M.; Holdeman, J.T.; Luxmoore, R.J. "AGTEHM: Documentation of Modifications to the Terrestrial Ecosystem Hydrology Model (TEHM) for Agricultural Applications," *ORNL/TM-7856*

678

Hetrick, D.M.; Patterson, M.R.; Sjoreen, A.L. "SEDMNT: A Sediment Transport Submodel Based on Hydrodynamic Principles for the Unified Transport Model," *ORNL/TM-7831*

679

Huff, D.D.; Kelly, J.M.; Sapp, C.D. "An Evaluation of Remote Sensing Methods for Study of Variable Hydrologic Source Areas," *ORNL-5800*

680

Hunsaker, C.T. "Guidance Manual for Department of Energy Compliance with the Clean Water Act: National Pollutant Discharge Elimination System (NPDES)," *DOE/EP-0061*

681

Hutchison, B.A.; Taylor, F.G., Jr.; Wendt, R.L. "Use of Vegetation to Ameliorate Building Microclimates: An Assessment of Energy Conservation Potentials," *ORNL/CON-87*

682

Kanciruk, P. "Hydroacoustic Biomass Estimation Techniques," *ORNL/TM-8304*

683

Kanciruk, P.; Breck, J.E.; Vaughan, D.S. "Population-Level Effects of Multiple Stresses on Fish and Shellfish," *ORNL/TM-8317*

684

Land, S.B., Jr. "Genetic Selection of American Sycamore for Biomass Production in the Mid-South Final Report for the Period March 9, 1979 - May 31, 1982," *ORNL/Sub/81-9051/1*

685

Large, D.E.; Lowrie, R.S.; Stratton, L.E.; Jacobs, D.G. "Proceedings of the Third Annual Information Meeting DOE Low-Level Waste Management Program," *ORNL/NFW-81/34*

686

Large, D.E.; Mezga, L.J.; Stratton, L.E.; Rose, R.R. "Proceedings of the Fourth Annual Participants' Information Meeting on DOE Low-Level Waste Management Program," *ORNL/NFW-82/18*

687

Luxmoore, R.J. "Physical Characteristics of Soils of the Southern Region - Fullerton and Sequoia Series," *ORNL-5868*

688

Mann, L.K.; Kitchings, J.T. "Resource Data Inventory for the Oak Ridge Area," *ORNL/TM-7941*

689

Mattice, J.S.; McLean, R.B.; Burch, M.B. "Evaluation of Short-Term Exposure to Heated Water and Chlorine for Control of the Asiatic Clam (*Corbicula fluminea*)," *ORNL/TM-7808*

690

Nir, A.; Kirk, B.L. "Tracer Theory with Applications in Geosciences - Part 1," *ORNL-5695/P1*

691

Olsen, R.J.; Cavanaugh, S.J. "Proceedings of the 1981 Integrated Data Users Workshop," *CONF-8110199*

692

Olsen, R.J.; Johnson, D.W.; Shriner, D.S. "Regional Assessment of Potential Sensitivity of Soils in the Eastern United States to Acid Precipitation," *ORNL/TM-8374*

693

Parr, P.D. "Effects of Orocol TL (a Corrosion Inhibitor) on Germination and Growth of Bush Beans," *ORNL/TM-7838*

694

Polovino, H.N.; Farrell, M.P.; Pennington, C.H. "An Evaluation of Community Information Indices for Mississippi River Fisheries," *ORNL/TM-8272*

695

Ranney, J.W.; Cushman, J.H.; Trimble, J.L. "The Short Rotation Woody Crops Program: 1982 Program Summary," *ORNL-5916*

696

Reed, R.M.; Etnier, E.L.; Kroodsmma, R.L.; Mulholland, P.J.; Oakes, K.M.; Reed, R.M.; Reep, R.D.; Sale, M.J.; Schweitzer, M.; Switek, J.; Vaughan, N.D.; Voorhees, L.D.; Waits, E.D. "Preparation of Environmental Analyses for Synfuel and Unconventional Gas Technologies," *ORNL-5911*

697

Richey, J.E.; Lettenmaier, D.P.; Sanders, F.S. "A Construct for Analysis of Ecosystem Perturbations Based on Input/Output Analysis," *ORNL/TM-7256*

698

Sale, M.J. "Guidance Manual for Department of Energy Compliance with the Fish and Wildlife Coordination Act," *DOE/EP-0059*

699

Salt, M.S.; Reed, R.M.; Powers, C.D. "Manual for Department of Energy Compliance with the Endangered Species Act," DOE/EP-0058

700

Sanders, F.S. "Guidance for the Use of Artificial Streams to Assess the Effects of Toxicants in Freshwater Systems," ORNL/TM-7185

701

Sharples, F.E. "Spread of Organisms with Novel Genotypes: Thoughts from an Ecological Perspective," ORNL/TM-8473

702

Shriner, D.S.; Richmond, C.R.; Lindberg, S.E. "Atmospheric Sulfur Deposition: Environmental Impact and Health Effects," ORNL/FPO-83/4

703

Sigal, L.L. "Guidance Manual for Department of Energy Compliance with the Clean Air Act: Prevention of Significant Deterioration," DOE/EP-0062

704

Spalding, B.P.; Hoffman, W.A., Jr. "Soil Radiochromatography Using Na-22, Sr-85, and Co-58," ORNL/TM-8138

705

Story, J.D.; Kitchings, J.T. "White-Tailed Deer (*Odocoileus virginianus*) on the Department of Energy's Oak Ridge Reservation: 1980 Status Report," ORNL/TM-6803/S3

706

Story, J.D.; Kitchings, J.T. "White-Tailed Deer (*Odocoileus virginianus*) on the Department of Energy's Oak Ridge Reservation: 1981 Status Report," ORNL/TM-6803/S4

707

Strand, R.H.; Farrell, M.P.; Daniels, K.L.; Goyert, J.C. "Environmetrics of Synfuels: IV. Project Results Tracking Systems (PRTS)," ORNL/TM-8291

708

Trabalka, J.R.; Garten, C.T., Jr. "Development of Predictive Models for Xenobiotic Bioaccumulation in Terrestrial Ecosystems," ORNL-5869

709

Trabalka, J.R.; Garten, C.T., Jr.; Uziel, M.S.; Opreste, D.M. "Xenobiotic Bioaccumulation by Terrestrial Vertebrates: A Bibliography for Food Chain Modeling," ORNL-5829

710

Turner, M.A.; DeAngelis, D.L. "Resilience and Inertia in Model Ecosystems: Tests of Some Hypotheses," ORNL/TM-7751

711

Tyndall, R.L. "Presence of Pathogenic Microorganisms in Power Plant Cooling Waters Report for October 1, 1979, to September 30, 1981," ORNL/TM-8523

712

Tyndall, R.L.; Domingue, E.L. "Survey of Cooling Towers Within Oak Ridge Operations for the Presence of Legionnaire's Disease Bacterium," ORNL/TM-7781

713

Ulrich, S.O., Jr.; Millemann, R.E. "The Effect of Temperature on the Toxicity of the Water Soluble Fractions of Diesel Fuel No. 2 and H-Coal Crude Oil to *Daphnia magna*," ORNL/TM-7823

714

Van Winkle, W.; Kumar, K.D. "Relative Stock Composition of the Atlantic Coast Striped Bass Population: Further Analysis," ORNL/TM-8217

715

Vaughan, D.S.; Adams, S.M. "Scientific Review and Critique of R. L. Patterson's: Production, Mortality, and Power-Plant Entrainment of Larval Yellow Perch in Western Lake Erie," ORNL/EPA-V5

716

Vaughan, D.S.; Kanciruk, P.; Breck, J.E. "Research Needs to Assess Population-Level Effects of Multiple Stresses on Fish and Shellfish," ORNL/TM-8375

717

Vaughan, D.S.; Yoshiyama, R.M.; Breck, J.E.; DeAngelis, D.L. "Review and Analysis of Existing Modeling Approaches for Assessing Population-Level Effects of Multiple Stresses on Fish and Shellfish," *ORNL/TM-8342*

718

Walker, R.F.; West, D.C.; McLaughlin, S.B. "The Growth, Nutrient Absorption, and Moisture Status of Selected Woody Species in Coal Mine Spoil in Response to an Induced Infection by the Ectomycorrhizal Fungus *Pisolithus tinctorius*," *ORNL/TM-8359*

719

Weinstein, D.A.; Shugart, H.H.; West, D.C. "The Long-Term Nutrient Retention Properties of Forest Ecosystems: A Simulation Investigation," *ORNL/TM-8472*

720

Yeh, G.T. "CHNHYD: A CHaNel HYDrodynamic Model for Simulating Flows and Water Surface Elevations in a Stream/River Network," *ORNL-5701*

721

Yeh, G.T. "Training Course No 1: The Implementation of FEMWATER (ORNL-5567) Computer Program Final Report," *ORNL/TM-8327*

722

Yeh, G.T. "Training Course No. 2: The Implementation of FEMWASTE (ORNL-5601) Computer Program - Final Report," *ORNL/TM-8328*

723

Yeh, G.T.; Strand, R.H. "FECWATER: User's Manual of a Finite-Element Code for Simulating WATER Flow Through Saturated-Unsaturated Porous Media," *ORNL/TM-7316*

724

Yeh, G.T.; Strand, R.H. "FECWASTE: User's Manual of a Finite-Element Code for Simulating WASTE Transport Through Saturated-Unsaturated Porous Media," *ORNL/TM-8104*

UCC/ND Engineering Division

725

Williams, W.R.; Conley, T.B.; Dahl, T.L.; Johnson, K.O. "International Survey of the Status of Technology of Critical Components for Coal Liquefaction Processes," *ORNL/ENG/TM-24*

49/50

INDEXES

Author Index

Aas, D.J. 353	Anderson, R.L. 622
Achatz, M. 160	Anderson, T.D. 642
Adams, L.M. 3	Anderson, W.F. 7, 131
Adams, S.M. 445–447, 624, 625, 650, 715	Andrews, W.H. 622
Adcock, J.L. 395, 583	Appleton, B.R. 440
Adler, H.I. 4, 37, 76, 164, 198	Arakawa, E.T. 310, 336, 351–353, 375
Albrecht, M. 124	Armitage, W.J. 8, 9, 154
Alexander, H.J. 449	Arnaud, P.M. 494
Alexander, W.A. 647	Arneson, R.M. 259
Alford, A.C. 574	Aschwanden, T. 396
Allen, B.E. 199	Ashley, J.C. 297–301, 308, 309, 324, 401
Allgood, G.O. 622	Ashley, T. 10
Allison, D.P. 239, 240	Atchley, C.E. 338
Allison, L.J. 281, 282	Au, W.W. 11, 12
Allman, S.L. 358	Auerbach, S.I. 651, 652
Alvic, D. 641	Baer, T. 389
Ambrose, K.R. 296, 363	Baer, C.F., III 302, 433, 613
Amsler, K. 5, 6, 33, 35	Bailey, M.E. 666

- Bailiff, E.G.** 188
- Bair, W.J.** 443, 444
- Baker, H.C.** 397
- Baldauf, M.F.** 557–563
- Balogh, L.A.** 40, 80
- Banerjee, P.T.** 158
- Banoczy, J.** 124
- Bard, C.S.** 367
- Barnthouse, L.W.** 516, 653–656, 665
- Bartell, S.M.** 448
- Basbas, G.J.** 303
- Bates, R.C.** 158, 247
- Batzinger, R.P.** 136
- Baucom, K.B.** 396
- Beauchamp, J.J.** 462, 507, 542
- Becker, J.M.** 588
- Becker, R.S.** 579
- Bederson, B.** 371
- Bednar, R.A.** 13, 14
- Beene, J.R.** 434
- Begun, G.M.** 336
- Bell, P.R.** 282
- Bemis, C.E., Jr.** 434
- Bender, M.A.** 15
- Bernard, S.R.** 304–306
- Bernstine, E.G.** 205
- Berry, W.** 580
- Berven, B.A.** 307, 581
- Betzel, C.H.** 214
- Bianchi, M.** 16
- Bianchi, N.O.** 16
- Birchfield, T.E.** 616
- Birchler, J.A.** 17
- Birkhoff, R.D.** 308, 309, 345
- Bjornstad, D.J.** 435, 630
- Blair, M.S.** 607
- Blasing, T.J.** 534
- Blaylock, B.G.** 449–451
- Blumberg, R.** 627
- Boegly, W.J., Jr.** 475, 476
- Boercker, F.** 626
- Boger, E.** 89

- Boggs, T.A.** 510
Bogle, M.A. 479
Boling, M.E. 90
Bomar, E.S. 640
Bondietti, E.A. 452–454, 500, 564
Bonnewolf, V. 18, 65, 241
Boreman, J. 656
Boucher, C.A. 394
Bouldin, D.W. 583, 584
Fourin, M.C. 19
Bowman, K.O. 171
Boyle, J.W. 627–629
Bradley, N.C. 622
Brash, D. 287
Braslowsky, G.R. 20, 108
Braun, R. 21
Breck, J.E. 683, 716, 717
Bresil, H. 179
Brewen, J.G. 10, 22, 194
Brewster, R.H. 566
Brill, E.D., Jr. 531
Brimer, P.A. 23
Brocksen, R.W. 455
Browman, M.G. 456, 657
Brown, C.H. 622
Brown, D.K. 465, 466
Brown, G.M. 214
Brown, P.C. 41
Brown, R.S. 96
Broyde, S.B. 24, 97, 98, 342
Brummett, A.R. 25
Buchanan, M.V. 111, 221, 550
Buckton, K.E. 16
Bueding, E. 136
Bunick, G.J. 26, 83, 266
Burch, M.B. 689
Burden, J.E. 594
Burgess, R.L. 520
Burke, J.R. 272
Butler, A.P. 27, 133
Butler, H.M. 649
Butler, T.A. 343, 363

- Butz, T.R. 640
- Byrd, B.L. 424
- Cacheiro, N.L.A. 10, 75
- Cada, G.F. 654, 658-661
- Cain, K.T. 74, 75
- Cajina-Quezada, M. 219, 220
- Cale, W.G., Jr. 477
- Callahan, M. 108, 109, 252
- Callahan, A.P. 334 335, 363, 424
- Calkcott, T.A. 310, 375
- Calle, E.E. 423
- Campbell, A.E. 94
- Cannon, J.B. 654
- Canright, G.S. 622
- Carnes, S.A. 435, 630, 672
- Carney, J.H. 517
- Carney, T.E. 389
- Carpenter, D.A. 210
- Carr, K.R. 622
- Carrier, W.L. 28, 52, 200
- Carter, J.G. 312-314, 431
- Cataño, A. 580
- Cathers, A.R. 351
- Caton, G.M. 356, 357, 622
- Cavanagh, S.J. 691
- Cerling, T.E. 457, 458
- Chan, Y-H. 459
- Chaney, R. 580
- Chang, C. 310
- Chang, S.S. 195
- Charatan, B. 238
- Chen, N.C.J. 437, 438
- Chester, R.O. 603
- Chowdhury, A. 329
- Christeller, J.T. 29
- Christensen, S.W. 532, 654, 656, 662-665
- Christie, N.T. 30, 31, 430
- Christophorou, L.G. 311-317, 325, 346, 369, 369, 380, 395, 406, 407, 411, 431, 582-584
- Chu, Y.T. 585
- Clark, B.R. 221, 642
- Clark, W.C. 282

- Claussen, C. 402
- Cleaver, J.E. 287
- Colley, J.L. 335
- Cole, K.W. 9, 116, 155
- Collier, I.E. 32
- Colman, R.F. 13, 14
- Colson, S.D. 332
- Comella, P.A. 603
- Compton, R.N. 318-320, 332, 387-391
- Cone, M.V. 283, 557-563
- Conley, T.B. 725
- Connor, T.H. 136
- Constantin, M.J. 284
- Cook, J.S. 5, 6, 33-35, 63, 64, 186, 277, 341
- Cook, K.H. 282
- Cooper, C.D. 390, 391
- Cooper, C.L. 282
- Copenhaver, E.D. 435, 630, 644
- Cornett, C.V. 74, 210
- Cosgrove, G.E. 36
- Costanzi, F.A. 603
- Cotter, S.J. 384, 603, 627
- Cottrell, W.D. 581, 586, 587, 594
- Costant, C.C. 460, 461, 469
- Cowser, K.E. 441
- Cox, D.K. 462
- Crandall, D.A. 463
- Crawford-Brown, D.J. 321
- Cristy, M. 427
- Crosthwait, C.D. 174
- Crow, W.D. 4, 37, 198
- Cushman, J.H. 464, 525, 695
- Cushman, R.M. 465, 466, 666
- Cutshall, N.H. 467
- Dahl, T.L. 725
- Dailey, N.S. 667
- Dalbey, W.E. 38-40, 88, 93
- Daniel, F.B. 45
- Daniels, K.L. 468, 481, 674, 707
- Darlington, G.J. 41
- Davidson, K.A. 42, 43
- Davis, E.C. 475, 476, 668

- DeAngelis, D.L. 451, 469, 653, 662, 665, 710, 717
- Dearstone, K.C. 234
- Delene, J.G. 640, 641
- Delescluse, C. 19
- DeMarini, D.M. 44
- Dereu, N. 393
- Diamond, L. 45
- Dickson, H.W. 581, 594
- DiGiovanni, J. 45, 46
- Dilworth, R.H., III 642
- Doane, R.W. 581, 594, 607
- Dobson, J.E. 640
- Dodson, L.A. 47
- Domingue, E.L. 712
- Donnelly, M.I. 85
- Donohue, T.M., Jr. 48
- Dorn, G.L. 286, 293
- Dorsett, D. 49, 50, 111
- Dorsey, G.F. 199
- Dover, S.D. 176
- Doyle, T.W. 669
- Drevon, C. 232
- Drury, J.S. 564
- Dudney, C.S. 423, 588, 590
- DuFrain, R. 216
- Dumont, J.N. 25, 51, 221, 222
- Dunn, W.C. 52
- Dunning, D.E., Jr. 366, 409
- Durfee, R.C. 176
- Duvick, D.N. 506
- Easley, J.R. 53, 54
- Easterly, C.E. 322, 323, 339, 399, 423, 583, 589, 590, 610
- Echenique, P.M. 324, 403
- Eckerman, K.F. 306, 366, 372, 432, 612, 623
- Eddlemon, G.K. 631, 632, 640, 670, 671
- Edwards, N.T. 466, 470-472
- Ehrenberg, D.S. 509
- Ehrenshaft, A.R. 567, 569
- Eisele, G.R. 305, 306
- Eisenstadt, E. 136

- Edridge, J.S. 647, 648
 Elliott, R.W. 130
 Ellis, H.W. 406, 407
 Elmaleh, D.R. 394
 Elmore, J.L. 473, 617, 633–636, 672
 Elwood, J.W. 488, 512, 514, 515
 Emanuel, W.R. 474, 488, 523, 524
 Emerson, C.J. 328
 Ensminger, J.T. 564
 Epler, J.L. 140, 199, 216, 222, 273, 274, 441, 442
 Eraslan, A.H. 673
 Esterman, A.L. 41
 Ethier, S.P. 55–57
 Etnier, E.L. 416–418, 580, 596, 696
 Eyman, L.D. 648
 Fabry, L. 16
 Farish, O. 396
 Farkas, W.R. 31
 Farrell, M.P. 468, 481, 674, 675, 694, 707
 Farrow, M.G. 136
 Farrow, N.D. 487
 Fatmeh, A. 316, 325, 583, 584
 Faust, R.A. 562, 563, 566
 Feinendegen, L.E. 443, 444
 Ferguson, N.M. 1
 Ferrell, T.L. 326, 375, 401
 Ferren, L.A. 334, 335, 363
 Ficsor, G. 136
 Fielden, J.M. 575
 Fields, D.E. 327, 328, 385, 404, 591–593
 Filler, R. 58, 59
 Fischer, P. 16
 Fischer, S.M. 60–62, 243–245
 Fishman, J.B. 63, 64
 Fitzgerald, B.H. 641
 Flanagan, J.M. 49
 Floran, R.J. 510
 Flynn, K.M. 20
 Foote, R.S. 47, 157, 179, 246
 Ford, M.R. 443, 444
 Fore, C.S. 432, 565, 566, 616
 Fowler, R.F. 18, 65, 241

- Fox, E.C.** 640
Fraij, B.M. 66, 84, 85
Francis, C.W. 475, 476
Frank, M.L. 450, 451
Frankel, R. 80
Frankos, V.H. 295
Fraser, M. 455
Frederick, E.J. 556
Frees, L.C. 395, 406, 407, 584
Frim, J. 154
Frogge, L.M. 567-569, 626
Fry, R.J.M. 67-70, 100, 257
Fuerstenberger, G. 19
Fujimura, R.K. 71
Fuscoe, J.C. 72
Gaertner, F.H. 116
Galbraith, W.J. 539
Galbraith, W.M. 570
Gammage, R.B. 329, 340, 378, 604
Gardner, A.L. 112
Gardner, R.H. 477, 478, 516-518, 653
Garfinkel, S. 39, 40
Garrett, W.R. 330, 331, 398
Garten, C.T., Jr. 344, 479, 483, 708, 709
Gehrs, C.W. 441, 442, 516, 640
Generoso, E.E. 78
Generoso, W.M. 73-75
Gerstner, H.B. 292
Getsi, J.A. 643
Giddings, J.M. 445, 466, 480, 676
Gill, J.S. 76
Gilley, L.W. 337
Gilmore, C.C. 624, 628, 629
Gipson, L.C. 42, 54
Glandon, S.R. 592, 593
Glastad, K.A. 351
Glover, P.L. 182, 183
Glownia, J.H. 332
Goldsmith, W.A. 581, 587, 594, 607
Golumbek, J. 654
Gooch, P.C. 16
Goodman, M.M. 333-335

- Goodyear, C.P.** 654, 656, 663, 664
Gordon, J.S. 637
Gottlieb, T.A. 77
Goudonnet, J.P. 336
Gove, R.M. 290, 356, 357
Goyert, J.C. 468, 481, 707
Greene, R.T. 337, 614
Grell, E.H. 112, 113
Grell, R.F. 78
Griesemer, R.A. 554, 555
Griest, W.H. 140
Griffin, G.D. 338, 339, 408, 423, 583, 590
Grigsby, R.A. 393
Groothuis, E.L. 472
Grube, D. 69, 70
Guerin, M.R. 39, 140, 222, 441, 442
Guinn, G.M. 210
Gupton, E.D. 649
Guthrie, M.P. 574, 645
Guyer, C.E. 343, 363
Haase, C.S. 482
Haberman, C.B. 288
Hadden, C.T. 79
Hakkinen, P.J. 80-82, 86, 279
Hall, J.W. 42, 115
Hall, L.H. 223
Hamby, K.M. 156
Hamel, W.R. 622
Hamm, R.N. 414, 415, 420, 615
Hand, R.E., Jr. 261
Hanna, M.C. 584
Hanzlik, R.P. 86
Harden, M. 80
Hardigree, A.A. 132, 140
Harrington, R.E. 83
Harriss, R.C. 502
Hart, R.W. 287
Hartman, F.C. 13, 14, 29, 66, 84, 85, 95, 217
Haschek, W.M. 81, 86-88
Hase, B.S. 89
Hawthorne, A.R. 340, 378, 604
Hayden, T.L. 341

- Haynes, R.J. 510
- Haywood, F.F. 581, 587, 594
- Heagle, A.S. 492
- Hearl, W.G. 90
- Heartlein, M.W. 91, 92
- Heckman, C.A. 93, 94, 149, 235
- Helgeson, R.N. 640
- Heller, J.M., Jr. 308
- Hellwig, C.S. 74, 75
- Hellwig, R.J. 239, 240
- Henderson, G.S. 489
- Henry, J.M. 133
- Herbes, S.E. 536
- Herradon, C.S. 95
- Herricks, E.E. 531
- Herrmann, A.L. 275
- Herrukind, W.F. 494
- Hetrick, D.M. 605, 677, 678
- Hiatt, V.S. 31
- Hightower, J.R. 641
- Hildebrand, S.G. 455, 510, 516, 659
- Hill, G.S. 627
- Hingerty, B.E. 24, 96-98, 214, 342
- Hinkle, N.F. 588
- Hiromoto, G. 328, 414, 615
- Ho, C.-h. 140, 550
- Hoeschele, J.D. 343, 430
- Hoffman, D.R. 99
- Hoffman, F.O. 344, 386, 478, 483, 595
- Hoffman, W.A., Jr. 484, 503, 704
- Holdeman, J.T. 677
- Holland, J.M. 42, 53, 54, 100-102, 115, 195, 238, 270
- Holmberg, R. 39
- Holton, G.A. 596
- Honda, M. 396
- Horton, C.Y. 74
- Hosker, R.P., Jr. 485, 666
- Howard, E.B. 571
- Howell, T.C. 378, 379
- Hoy, H.C. 439
- Hsie, A.W. 23, 44, 72, 103-106, 136, 172, 173, 215, 253, 259, 260, 264, 341

- Huang, A. 107, 236
- Huang, L. 107, 236
- Huang, S.F. 150, 647
- Hubbard, H.M. 647, 648
- Hubbell, H.H., Jr. 308, 309, 345
- Huberman, E. 89, 99, 108, 109, 201, 252
- Hubner, S.M. 288
- Huckabee, J.W. 344, 483
- Huff, D.D. 486–489, 679
- Huffman, M.M. 446
- Hunsaker, C.T. 628, 680
- Hunsaker, D.B., Jr. 436, 633–635, 637, 672
- Hunsicker, P.R. 209–211
- Hunter, S.R. 313, 314, 346, 583, 584
- Hurst, G.S. 347–350, 358, 370
- Hutchison, B.A. 681
- Hutton, J.T. 622
- Inagaki, T. 351–353
- Ingram, D.M. 528
- Inhaber, H. 354–357, 597
- Intemann, P.R. 671
- Irgoic, K.J. 393
- Isham, K.R. 135
- Iturbe, J. 358
- Iyer, R.P. 110
- Jacobs, D.G. 621, 685
- Jacobson, K.B. 17, 30, 31, 49, 50, 111–113, 430
- Jadusliwer, B. 371
- Jamasbi, R.J. 114
- James, D.R. 315, 316, 346, 583, 584
- Jansen, J.M., Jr. 622
- Jenkins, R. 39
- Jenny, H. 524
- Johnson, C.A. 575
- Johnson, D.W. 489–491, 495, 528, 547, 692
- Johnson, W.M. 581
- Johnsson, K.O. 638, 639, 725
- Johnston, J.W. 492, 493
- Johnston, W.W. 151
- Jones, J.R. 487
- Jones, M.H. 90
- Jones, T.D. 359, 423

- Jordan, A.C. 285, 568, 569, 572
- Jordan, C. 666
- Kabalka, G.W. 598, 599
- Kafer, E. 286, 293
- Kagami, K. 352
- Kanciruk, P. 494, 671, 682, 683, 716
- Kane, V.E. 507
- Kang, J. 41
- Kao, J.Y. 101, 115
- Kaul, A. 443, 444
- Kehrer, J.P. 280
- Kelly, E.M. 212, 213
- Kelly, J.M. 490, 495, 679
- Kempner, E.S. 116
- Kennel, S.J. 107, 117
- Kenney, F.T. 48, 118, 135, 184
- Kerley, C.R. 627, 631, 633, 634
- Kerr, G.D. 360, 600, 601
- Ketelle, R.H. 627, 640
- Kier, L.B. 223
- Kiggans, J.O. 261
- Killough, G.G. 474, 602, 611
- Kinnitt, R.R. 668
- Kirt, B.L. 655, 656, 663, 664, 690
- Kitchings, J.T. 539, 688, 705, 706
- Klamm, R.C. 119, 120
- Klarer, C.L. 493
- Klatt, L.N. 622
- Klein-Szanto, A.J.P. 19, 87, 88, 121-127, 167, 168, 237, 244, 245
- Klein, J.A. 441, 442
- Klepper, O.H. 641
- Klopatek, J.M. 496
- Klots, C.E. 361, 362
- Klug, A. 96
- Knapp, F.F., Jr. 333-335, 353, 393, 394
- Knox, N.P. 575
- Korh, G. 128
- Kocher, D.C. 364-367, 603
- Kopp, M.K. 431
- Kornegay, F.C. 629, 637
- Kourouklis, G.A. 368, 369

- Kramer, S.D.** 350, 370, 434
Kremens, P. 371
Kripke, M.L. 270
Krishnan, R.P. 638
Kroodsma, R.L. 497, 498, 627, 671, 696
Krummel, J.R. 641
Kucerova, M. 16
Kuemmerle, N.B. 129
Kulkarni, S.B. 184
Kumar, K.D. 520, 548, 656, 659, 661, 665, 714
Kuroki, T. 232
Lair, S.V. 137
Lakdawala, V.K. 583
Lalley, P.A. 128, 130, 131
Land, S.B., Jr. 684
Large, D.E. 685, 686
Larimer, F.W. 132
Larkin, J.R. 25
Larsen, K.H. 287
Last, J.A. 87, 88
Laughlin, T.J. 133, 134
Lee, D.W. 627, 654, 671
Lee, E.H. 430
Lee, K.-L. 48, 118, 135, 184
Lee, S.Y. 499, 500, 564
Lee, W.H. 32
Legator, M.S. 136
Leggett, R.W. 366, 372, 428, 429
Lehmann, R.E. 350, 370
Lemont, J.F. 137
Leonard, A. 16
Leppo, J. 394
Lettenmaier, D.P. 697
Leung, P.T. 373
Levy, H.A. 176
Ley, R.D. 69, 70, 129
Lezzi, M. 175
Likhachev, A. 179
Lin, W.L. 637
Lindberg, S.E. 1, 437, 438, 484, 485, 489, 501-503, 702
Lion, R.-S. 261

- Little, C.A.** 328, 374, 596, 606
- Little, J.W.** 375
- Lock, S.** 39, 40, 88
- Lodge, D.M.** 493, 508
- Long, E.C., Jr.** 637
- Long, M.V.** 217
- Longmore, W.J.** 197
- Longworth, J.W.** 138
- Lothrop, C.D., Jr.** 139
- Low, R.B.** 197
- Lowrey, J.S.** 296
- Lowrie, R.S.** 685
- Lu, P.Y.** 288
- Lucas, D.M.** 344, 483
- Ludemann, S.E.** 94
- Luippold, H.E.** 11, 12
- Luxmoore, R.J.** 463, 677, 687
- Ma, C.Y.** 140, 222
- Machanoff, R.** 72, 141, 172, 173
- MacLeod, M.C.** 142–147, 231–234, 408
- Magoun, A.D.** 674
- Maher, V.M.** 267
- Mahimodan, T.** 185
- Major, S.K.** 121
- Mamrack, M.D.** 148, 245
- Manger, R.L.** 149, 235
- Mann, L.K.** 491, 504, 506, 547, 688
- Mann, R.C.** 160
- Mansfield, B.K.** 142–144, 233, 234
- Marchok, A.C.** 119, 120, 150, 151, 237, 271
- Mardian, J.K.W.** 266
- Margle, S.M.** 176
- Marks, F.** 19
- Marland, G.** 282
- Martin, D.H.** 122, 127
- Martin, F.M.** 557, 558
- Martin, R.C.** 627
- Martinell, J.** 7
- Maskarinec, M.P.** 456
- Masker, W.E.** 47, 129, 152, 153
- Massucci, J.M.** 183
- Mathis, R.A.** 313, 346, 583, 584

- Matthews, T.G.** 376 379, 604
Matthiessen, J.N. 426
Mattice, J.S. 667, 689
Maxey, D.V. 312
Mays, C.W. 443, 444
Mazar, P. 8, 9, 154, 155
McBay, E.H. 2
McBrayer, J.F. 624, 625, 628, 629, 631–636, 640, 646, 672
McBride, J.P. 556
McCarthy, J.F. 505
McCloskey, J.A. 111
McConathy, R.K. 506
McCorkle, D.L. 317, 380
McDowell–Boyer, L.M. 605, 608, 609, 611
McKeown, C.K. 69
McKinley, T.W., Jr. 229
McLaughlin, S.B. 506, 718
McLean, R.B. 446, 447, 507, 508, 511, 689
McNeany, S.R. 642
Menendez, L.F. 626
Metcalf, C.E. 378
Meyer, H.R. 381, 418, 556, 671
Meyer, K.R. 268
Mezga, L.J. 686
Michelson, D.C. 564
Milleman, R.E. 509, 510, 713
Miller, C.W. 374, 382–386, 606
Miller, D.R. 46, 156
Miller, J.C. 318 319, 332, 387–391
Mills, G.D. 60
Mills, J.B. 641
Minton, J.W. 511
Mirkin, L.D. 127
Mitchell, T.J. 258
Mitra, S. 47, 157, 158, 179, 246, 247
Montesano, R. 179, 232
Montgomery, C.S. 206, 207
Moody, J.B. 573
Moore, C.J. 234
Moore, R.L. 622
Morales, M.H. 159

- Morciani, R.M. 436
 Morris, L.E. 567
 Morrison, W.D. 216
 Moyers, J.C. 622, 639
 Mukherjee, R.N. 16
 Mukherjee, U. 16
 Mulholland, P.J. 512–514, 526, 629, 660, 696
 Mullaney, P.F. 160
 Murarka, I.P. 455
 Myer, F.E. 262
 Mykles, D.L. 161–163
 Myrick, T.E. 307, 607
 Nagel, R. 164
 Nakagawa, Y. 353
 Nakai, S. 16
 Nappo, C.J. 666
 Naramoto, H. 440
 Narayan, J. 440
 Natarajan, A.T. 16
 Naylor, S.L. 130
 Nelson, F.R. 275
 Nelson, K.D.G. 61, 165, 166, 245
 Nemot, J.C. 443, 444
 Nesnow, S. 243
 Nestor, C.W., Jr. 305, 306
 Nettesheim, P. 20, 123, 151, 167, 168, 237, 263
 Newbold, J.D. 488, 514, 515
 Newman, B.G. 574
 Newman, S.M., Jr. 51
 Ng, Y. 580
 Nichols, J.P. 640, 641, 645
 Niemczyk, S.J. 392, 608, 609
 Nir, A. 690
 Nix, C.E. 273, 274
 Niyogi, S.K. 239, 240
 Noghei – Nikbakht, P.A. 233, 234
 Norton, I.L. 95, 217
 Nosslin, B. 443, 444
 Novelli, G.D. 338
 O'Brien, D.H. 393
 O'Donnell, F.R. 439, 596
 O'Neill, J.P. 72, 91, 92, 169–173

- O'Neill, R.V. 477, 478, 488, 514-518, 653
- Oakberg, E.F. 174
- Oakes, K.M. 633-636, 696
- Oakes, T.W. 647, 648
- Obe, G. 16
- Odell, T.T. 554
- Oen, C.J. 289-292
- Ohnesorge, W.F. 648
- Okada, R.D. 394
- Olins, A.L. 134, 175, 176
- Olins, D.E. 26, 27, 133, 134, 175, 176, 266
- Olla, B.L. 200
- Olsen, C.R. 367
- Olson, J.S. 524
- Olson, R.J. 519, 520, 691, 692
- Olson, W.K. 98
- Omnaas, J. 85
- Opresko, D.M. 559-561, 578, 709
- Otten, J.A. 12, 177, 261, 262
- Ottinger, L.E. 622
- Owen, B.A. 338, 339
- Owen, P.T. 575
- Owenby, R.K. 17, 31
- Owens, E.T. 284
- Owens, J.G. 225
- Pace, M.O. 316, 325, 395, 396, 583, 584
- Paggi, R.M. 216
- Pai, R.Y. 315, 316, 325, 584
- Paige, A. 580
- Painter, L.R. 308, 309
- Painter, R.B. 287
- Pal, B.C. 91, 92, 110, 157, 237
- Palitti, F. 16
- Papaconstantinou, J. 41, 159, 178
- Paretzke, H.G. 420
- Parkhurst, B.R. 466, 521, 536
- Parr, P.D. 522, 542, 693
- Parrotta, J.A. 447
- Parsons, D.W. 648
- Paton, C.L. 430
- Patterson, M.R. 657, 678
- Payne, M.G. 358, 370, 397, 398

- Peck, E.B. 435, 630
 Pegg, A.E. 1/9
 Pelling, J.C. 61, 180, 181
 Pennington, C.H. 674, 694
 Perdue, P.T. 307
 Perkins, B.K. 216
 Perkins, E.H. 102, 114, 182, 183, 185
 Perry, S.T. 184
 Peterson, W.J. 185
 Petrich, C.H. 640
 Pfeiderer, W. 111
 Pfuderer, H.A. 291
 Phares, E.F. 217
 Pfeiffer, W. 396
 Phillips, B.F. 494
 Phillips, J.E. 399, 610
 Piccoli, C. 232
 Pleasant, J.C. 611
 Pohl-Rueling, J. 16
 Pohost, G.M. 354
 Pollack, L.R. 186
 Polovino, H.N. 694
 Popp, D.M. 32, 187
 Popp, R.A. 7, 131, 188
 Post, W.M. 474, 523, 524
 Postma, H. 642
 Powers, C.D. 653, 699
 Preston, E.L. 285, 569, 642, 643, 645
 Preston, R.J. 15, 22, 91, 92, 189-194
 Pruett, J.G. 576
 Prunieras, M. 19
 Rahn, R.O. 195, 196
 Ralston, C.W. 529
 Ramzaev, P.V. 443, 444
 Randolph, M.L. 612
 Rannels, D.F. 197
 Ranney, J.W. 464, 525, 695
 Rao, T.K. 140, 164, 198, 199, 216, 222
 Raper, D. 580
 Rascati, R.J. 262
 Ratlie, H.C. 178
 Ratsch, H.C. 543

- Rawlings, J.O.** 527
Raymer, G.D. 174, 207, 211, 229
Reed, J.H. 435, 630
Reed, R.M. 526, 696, 699
Regan, J.D. 28, 32, 52, 200, 248–250
Reichle, D.E. 652
Reid, M.C. 216
Reimers, J.J., Jr. 61, 244
Reinert, R.A. 527
Reinhardt, P.W. 320
Reiser, K.M. 87
Reveh, D. 201
Revis, N.W. 202
Rice, R. 40
Richey, J.E. 697
Richmond, C.R. 443, 444, 642, 644, 702
Pichter, D.D. 489, 528–530
Rickert, L.W. 577
Rieser, K.M. 88
Riester, L. 263
Rigopoulos, N. 155
Riley, S.J. 332
Risser, P.G. 496
Ritchie, R.H. 303, 324, 400–403, 420
Roberfroid, M. 179
Roberts, J.A. 343, 363
Roddy, J.W. 642
Rohrer, E.R. 622
Roop, B.C. 71
Roop, R.D. 627, 696
Rose, R.R. 686
Rosenthal, M.W. 642
Ross-Todd, B.M. 472
Ross, T. 40
Rossi, R.M. 266
Rotty, R.M. 282
Robin, I.B. 111
Russell, E.W. 74
Russell, L.B. 10, 21, 203–207
Russell, W.L. 208–213
Rustgi, M.L. 373, 405
Rutz, R.A. 404

- Ryan, M.T. 366, 581, 649
- Ryon, M.G. 570
- Saccomanno, G. 123
- Saenger, W. 214
- Sale, M.J. 531, 696, 698
- Salib, S. 405
- Salk, M.S. 699
- Samet, C. 200
- Sammons, D.W. 41
- San Sebastian, J.R. 173, 215
- Sanders, F.S. 697, 700
- Sapp, C.D. 679
- Sardella, D.J. 89
- Satterfield, L.C. 36, 666
- Sauers, I. 316, 317, 406, 407, 583, 584
- Sayer, G.S. 216
- Saylor, R.E. 437
- Schenley, R.L. 106, 259, 260
- Schloss, J.V. 217
- Schmoyer, R.L., Jr. 247
- Schoneich, J. 21
- Schreiber, H. 270
- Schultz, T.W. 51, 218-223
- Schuresko, D.D. 408
- Schwartz, G. 409
- Schwarzacher, H.G. 16
- Schweitzer, M. 671, 672, 696
- Schweizer, J. 19
- Scott, B.R. 286, 293
- Scott, D. 16
- Scott, T.G. 648
- Sealand, O.M. 648
- Seaver, G.V. 622
- Secora, D.N. 624, 625, 627, 631, 632, 636
- Seed, J. 136
- Sega, G.A. 224-226, 287
- Sega, M. 122, 124
- Seeger, G. 160
- Selby, P.B. 227-229
- Selkirk, J.K. 142-147, 230-234, 265, 408
- Sellin, H.G. 196
- Seltzer, R.J. 294

- Serwer, P. 153
 Sethi, S.K. 111
 Shaffer, C. 33-35
 Shah, Y.B. 94, 125, 235
 Shank, K.E. 648
 Sharma, T. 16
 Sharp, R.D. 433, 613, 637, 673
 Sharples, F.E. 624, 625, 628, 629, 634, 671, 672, 701
 Shelly, T.E. 532
 Shea, D-F. 236
 Shiba, M. 125, 127, 237
 Shipnough, W.H. 581, 587, 594
 Shor, R.W. 613
 Shows, T.B. 128, 130
 Shriner, D.S. 489, 493, 503, 527, 533, 692, 702
 Shugart, H.H. 474, 552, 719
 Shugart, L.R. 195, 238
 Sigal, L.L. 703
 Silverman, M.D. 640
 Sims, C.S. 410, 412, 413, 614, 649
 Singer, J.M. 45, 46
 Singley, P.T. 507, 508
 Sinha, S.N. 239, 240
 Siomos, K. 368, 369, 411
 Sjoreen, A.L. 367, 678
 Skinner, D.M. 18, 65, 161-163, 241
 Skow, L.C. 188, 242
 Slaga, T.J. 43, 45, 46, 60-62, 109, 110, 121, 125, 126, 148, 156, 165, 166, 180, 181, 201, 243-245, 251, 252, 275
 Smith, J.G. 617
 Smith, L.H. 430
 Smith, R.L. 216
 Smith, T.M. 552
 Snodgrass, H.F. 666
 Snow, E.T. 246
 Snyder, C.E. 158, 247
 Snyder, R.D. 28, 248-250
 Soderstrom, E.J. 435, 630
 Solzaki, V. 109, 251, 252
 Solomon, A.M. 338, 534
 Solomon, J.A. 534, 659, 661

- Sommerfeld, K.W. 642
 Sorensen, J.H. 435, 630
 Sotomayor, R.E. 226
 Southworth, G.R. 535, 536
 Spalding, B.P. 457, 537, 538, 704
 Spann, M.S. 241
 Spiewak, I. 640, 641, 645
 Springett, B.P. 426
 Spyron, S.M. 314, 583, 584
 Saylor, R.E. 438
 Staffeldt, E. 70
 Stafford, R.S. 136, 286, 293
 Stankowski, L.F., Jr. 253
 Staub, W.P. 627, 671
 Steele, M.H. 211
 Steele, V.E. 20
 Stelzner, K.F. 211
 Stephenson, K.B. 166
 Stevens, A.R. 254
 Stinton, L.H. 646
 Stockdale, J.A.D. 371
 Stone, D.R. 594
 Storer, J.B. 255–258, 269
 Story, J.D. 539, 705, 706
 Stow, S.H. 540, 545
 Strand, R.H. 468, 481, 674, 675, 707, 723, 724
 Strangenberger, A.G. 523, 524
 Stratton, L.E. 685, 686
 Strauss, H.W. 394
 Stringer, C.D. 85, 217
 Stroup, C. 283
 Stulberg, M.P. 272
 Sugimura, T. 108
 Sun, T.T. 424
 Suter, G.W., II 516, 541, 653, 666
 Swaja, R.E. 410, 412, 413, 614
 Switek, J. 696
 Switzer, G.L. 530
 Sworski, T.J. 657
 Szamrej, I. 380
 Szpirer, C. 178
 Szpirer, J. 178

- Takahashi, E. 16
 Talmage, S.S. 281, 578
 Tamura, T. 500, 538, 553
 Tan, E.-L. 23, 259, 260
 Tanzarella, C. 16
 Tate, E.H. 34, 186
 Taylor, F.G., Jr. 522, 542, 681
 Taylor, G.E., Jr. 543, 544
 Tennant, R.W. 177, 261, 262
 Terzaghi, M. 127, 168, 263
 Thomas, R.E. 527
 Thompson, H.M. 211
 Thompson, R.C. 443, 444
 Tindall, K.R. 264
 Tingey, D.T. 543, 544
 Tinnel, E.P. 176
 Todd, D.E. 489, 491
 Todd, P.J. 2
 Todo, A.S. 414, 415, 615
 Tolbert, V.R. 671
 Tong, S. 265
 Trabalka, J.R. 479, 708, 709
 Traiger, G.J. 86
 Tranger, D.B. 642
 Travis, C.C. 416-419, 596
 Triegel, E.K. 671
 Trimble, J.L. 695
 Triplett, L.L. 243
 Tsai, S.-C. 536
 Tsao, Y.S. 107
 Tull, J.F. 540, 545
 Tung, C.J. 301
 Turner, J.E. 341, 373, 414, 415, 420, 430, 489, 490, 615
 Turner, M.A. 710
 Turner, R.R. 458, 475, 476, 484, 502
 Tutton, J.M. 555
 Tyndall, R.L. 546, 711, 712
 Uberbacher, E.C. 26, 83, 266
 Ullrich, R.L. 3, 55-57, 257, 258, 267-269
 Ullrich, S.O., Jr. 713
 Urban, J.L. 270

- Uziel, M. 139
 Uziel, M.S. 559–561, 709
 Valentine, K.H. 431
 van Bui, P.P.W. 16
 Van Hook, R.L. 547
 Van Houston, B. 250
 Van Winkle, W. 515, 549, 654–656, 665, 673, 714
 Vargo, J.D. 1
 Vaughan, D.S. 548, 549, 653, 655, 656, 665, 683, 715–717
 Vaughan, N.D. 696
 Veall, N. 443, 444
 Vennart, J. 443, 444
 Viaje, A.V. 46, 61
 Vo–Dinh, T. 421, 422
 Volkin, E. 90, 197
 von Bahr, C. 179
 Voorhees, L.D. 526, 671, 696
 Voytek, P. 570
 Wagner, G. 580
 Walts, E.D. 672, 696
 Walla, D.S. 622
 Walker, R.F. 718
 Wallace, R.A. 77, 508
 Walsh, P.J. 339, 423, 590, 637, 644
 Walton, B.T. 550
 Warmack, R.J. 2
 Washburn, L.C. 424
 Wasilenko, W.J. 271
 Wassom, J.S. 295
 Waters, L.C. 272–274
 Watson, A.P. 425, 426, 616, 617
 Watson, E.E. 427
 Watson, S.B. 432
 Watts, J.A. 513, 551
 Weaver, R.S. 574, 633
 Webb, J.W. 624, 625, 631, 632, 671
 Weeks, C.E. 109, 244, 245, 275
 Wei, C.L. 276
 Weinberg, A.M. 282
 Weinstein, D.A. 552, 719
 Weiss, E.R. 33, 35, 277

- Weller, D.E. 518
- Wendt, R.L. 681
- West, C.D. 645
- West, D.C. 491, 547, 552, 718, 719
- Wetherington, G.R., Jr. 622
- Whitaker, M.J. 54
- White, C.W. 440
- White, J.D. 642
- White, J.E. 623
- White, S.K. 564
- Whiteley, J.W. 82
- Whitney, J.B., III 7, 131, 188
- Wilbanks, T.J. 645
- Wilcox, B.Y. 645
- Wilkinson-Singley, E. 134
- Williams, J.M. 440
- Williams, L.R. 372, 428, 429
- Williams, M.W. 341, 430
- Williams, W.R. 725
- Wilson, S.R. 440
- Winslow, S.G. 292, 576
- Wineman, P.J. 385
- Witherspoon, J.P. 556, 618
- Witniak, D.T. 45
- Witschi, H.R. 80, 82, 86-88, 278-280, 430
- Witt, D.A. 587
- Witten, A.J. 637
- Wobbe, C.R. 113
- Wong, E.Y. 41, 178
- Woods, L.S. 59
- Wootton, R.F. 396
- Wright, H.A. 414, 415, 420, 615
- Yalcintas, M.G. 619-621
- Yang, W.K. 261
- Yasuda, T. 394
- Yeh, G.T. 553, 720-724
- Yim, J.J. 112, 113
- Yoshida, N. 419
- Yoshiyama, R.M. 665, 717
- Yondale, T. 197
- Young, J.P. 370, 434
- Zeighami, E.A. 637

Zerby, A.C. 645

Zinke, P.J. 523, 524

Zucker, A. 642

Title Index

AAAS

AAAS Symposium Volume Series – Health Risks Associated with Energy Technologies 417

AAF

DNA Backbone Conformation in AAF Modified dCpdG: Variable Conformational Modes of Achieving Base Displacement 24

Base Displacement in AAF and AF Modified dCpdG: Syn and Anti Guanine 342

Aberration

Role of Base Damage in Aberration Formation Interaction of Aphidicolin and X-Rays 15

Aberrations

Evaluation of Radiation-Induced Chromosomal Aberrations in Human Peripheral Blood Lymphocytes In Vitro 16

A Possible Mechanism for Chemical Induction of Chromosome Aberrations in Male Meiotic and Postmeiotic Germ Cells of Mice 73

DNA Repair and Chromosome Aberrations: Interactive Effects of Radiation and Chemicals 189

The Induction of Chromosome Aberrations in Germ Cells: A Discussion of Factors That Can Influence Sensitivity to Chemical Mutagens 190

The Use of Inhibitors of DNA Repair in the Study of the Mechanisms of Induction of Chromosome Aberrations 191

Chromosome Aberrations in Decondensed Sperm DNA 193

Absence

Induction and Expression of Mutations in Mammalian Cells in the Absence of DNA Synthesis and Cell Division 170

Absorption

Mathematical Studies of the Absorption into Blood of Am-241 following Oral Intubation into the Gut of Minature Swine 305

Vacuum Ultraviolet Absorption Spectra of Aromatic Molecules in Solution 368

Absorption of RF and Microwaves on Spherical Multilayer Biological Systems 405

Evaluation of a Second Derivative UV-Absorption Spectrometer (DUVAS) for Analyzing Gases in Smoke Plumes 604

The Growth, Nutrient Absorption, and Moisture Status of Selected Woody Species in Coal Mine Spoil in Response to n Induced Infection by the Ectomycorrhizal Fungus Pisolithus tinctorius 718

Abstracts

Health Effects of Environmental Chemicals on the Adult Human Reproductive System - A Selected Bibliography with Abstracts 1963-1981 576

Abstracts of the Low-Level Waste Disposal: Site Characterization and Monitoring 619

Low-Level Waste Disposal: Facility Design, Construction, and Operating Practices, Washington, DC, September 29-30, 1982 - Abstracts 620

Abundance

Influence of Prey Abundance on Size-Selective Predation by Bluegills 448

Accident

Uncertainties in LWR Accident Source Term Estimation 392

Eighteenth Nuclear Accident Dosimetry Intercomparison Study: August 10-14, 1981 614

Calibration of the Indium Foil Used for Criticality Accident Dosimetry in the UCC-ND Employee Identification Badge 649

Accidental

User's Manual for LPGS: A Computer Program for Calculating Radiation Exposure Resulting from Accidental Radioactive Releases to the Hydrosphere 623

Accumulation

- Alpha-Difluoromethylornithine, an Irreversible Inhibitor of Ornithine Decarboxylase, Inhibits Tumor Promoter-Induced Polyamine Accumulation and Carcinogenesis in Mouse Skin 275
- Use of Pine Foliage as an Indicator of Fluoride Accumulation from Uranium Hexafluoride Technologies 542

Accurate

- Conversion of Simian Virus 40 DNA to Ordered Nucleoprotein Structures by Extracts that Direct Accurate Initiation by Eukaryotic RNA Polymerase II 240

Acetate

- Induction of Differentiation of Human Promyelocytic Leukemia (HL-60) Cells by Teleocidin B and Phorbol-13-Myristate-13-Acetate 108
- Contact-Stimulated Proliferation of Cultured Mouse Epidermal Cells by 3T3 Feeder Layers: Inhibition by 12-O-Tetradecanoylphorbol-13-Acetate (TPA) 156

Acetylamino

- Conformation of the Deoxydinucleotide Monophosphate dCpdG Modified at Carbon 8 of Guanine with 2-(Acetylamino)fluorine 97

Acid

- Inhibition of Mouse Skin Tumor Promotion by Several Inhibitors of Arachidonic Acid Metabolism 60
- Effects of Retinoic Acid on Cell Proliferation and Cell Differentiation in a Rat Tracheal Epithelial Cell Line 119
- Acid Lipase-1 (Lip-1) is on Mouse Chromosome 19: Evidence for Homologous Regions on Human Chromosome 10 and Mouse 19 128
- Synthesis of 15-(p-Iodophenyl)-6-Tellurapentadecanoic Acid: A New Myocardial Imaging Agent 333
- Synthesis and Biological Evaluation of 17-[I-131]Iodo-9-Telluraheptadecanoic Acid - A Potential Myocardial Imaging Agent 334
- A New, Well-Retained Myocardial Imaging Agent: Radioiodinated 15-(p-Iodophenyl)-6-Tellurapentadecanoic Acid 335
- Tellurium-123m Labeled-9-Telluraheptadecanoic Acid: A Possible Cardiac Imaging Agent 394
- The Effects of Acid Rain on Forest Nutrient Status 490
- Air Pollution Impacts on Forest Trees: Acid Deposition: Effects on Terrestrial Ecosystems 533
- Regional Assessment of Potential Sensitivity of Soils in the Eastern United States to Acid Precipitation 692

Acids

- New Myocardial Imaging Agents - The Influence of Chain Length on the Heart Uptake of Se-75-Labeled Fatty Acids 363

Act

- Guidance Manual for Department of Energy Compliance with the Clean Water Act: National Pollutant Discharge Elimination System (NPDES) 680
- Guidance Manual for Department of Energy Compliance with the Fish and Wildlife Coordination Act 698
- Manual for Department of Energy Compliance with the Endangered Species Act 699
- Guidance Manual for Department of Energy Compliance with the Clean Air Act: Prevention of Significant Deterioration 703

Actin

- Molt-Cycle Associated Changes in Calcium-Dependent Proteinase Activity that Degrades Actin and Myosin in Crustacean Muscle 162
- Crustacean Calcium-Ion-Dependent Proteinase that Degrades Actin, Myosin, and Other Myofibrillar Proteins 163

Actinide

- Comparative Food Chain Behavior and Distribution of Actinide Elements in and around a Contaminated Fresh-Water Pond 479

Activation

Effect of Metabolic Activation on the Cytotoxicity and Mutagenicity of 1,2-Dibromoethane in the CHO/HGPRT System 23

Cell Specific Activation and Detoxification of Benzo(a)pyrene by Two Clones Murine Testicular Cell Lines 59

Species Variance in the Metabolic Activation of Polycyclic Hydrocarbons 234

Active

Identification of an Active-Site Methionyl Residue in Ribulose Bisphosphate Carboxylase/Oxygenase 84

Activities

Guidance Manual for Department of Energy Compliance with Corps of Engineers Permits on Dredging and Filling Activities 660

Activity

Tumor-Initiating Activity of 4-Fluoro-7, 12-Dimethylbenz(a)anthracene and 1,2,3, 4-Tetrahydro-7,12-Dimethylbenz(a)anthracene in Female SENCAR Mice 45

Molt-Cycle Associated Changes in Calcium-Dependent Proteinase Activity that Degrades Actin and Myosin in Crustacean Muscle 162

Ultrastructural Studies of Chironomus Salivary Gland Cells in Different States of Balbiani Ring Activity 175

Cell-Mediated Mutagenesis and Tumor-Initiating Activity of the Ubiquitous Polycyclic Hydrocarbon, Cyclopenta(c,d) Pyrene 201

An Analysis of Mutagenic Activity of Quinolines in the CHO/HGPRT System 215

Evaluation of Hydrotreatment as a Means of Reducing Biological Activity of Synfuel Related Materials 222

Metabolic Rationale for the Weak Mutagenic and Carcinogenic Activity of Benzo(e)pyrene 233

Dimethylnitrosamine Demethylase Activity in Drosophila melanogaster 274

Nutrient Spiralling in Streams: Implications for Nutrient Limitation and Invertebrate Activity 515

Acute

Percutaneous Acute and Chronic Renal Toxicity Induced by Shale Oil and Petroleum Derived Jet and Diesel Fuel 53

Acute Cytotoxicity of Fossil-Energy-Related Comparative Research Materials 218

Chemical Softness and Acute Metal Toxicity in Mice and Drosophila 430

A General Linear Models Approach for Comparing the Response of Several Species in Acute Toxicity Tests 468

Response of Chronically Ozonated Soybean Plants to an Acute Ozone Exposure 492

Acy

Assignment of Acy-1 to Mouse Chromosome 9: Evidence for Homologous Linkage Groups in Man and Mouse 130

Ada

O-6-Methylguanine-DNA Methyl Transferase in Wild-Type and Ada Mutants of E. coli 157

Addendum

Limits for Intakes of Radionuclides by Workers. ICRP Publication 30, Supplement B to Part 3 Including Addendum to the Supplements of Parts 1 and 2 444

Additions

Sulfur and Nitrogen Uptake by Loblolly Pine Seedlings as Influenced by Soil Nitrogen and Sulfur Additions 495

Adenoma

Adenoma Development in Mouse Lung following Treatment with Possible Promoting Agents 280

Adenovirus

Mouse Adenovirus 177

- ADP**
Poly(ADP-Ribosylation) in N,N-Diethylnitrosamine-Treated Mice 238
- Adrian**
Radiological Survey of the Former Bridgeport Brass Company Special Metals Extrusion Plant, Adrian, Michigan 594
- Adult**
Antigen Presentation by Peritoneal Macrophages from Young Adult and Old Mice 183
Evidence for Upstream Dispersion of Adult Caddisflies (Trichoptera: Hydropsychidae) in the Columbia River 461
Health Effects of Environmental Chemicals on the Adult Human Reproductive System - A Selected Bibliography with Abstracts 1963-1981 576
- Aerosolized**
Effects of Repeated Exposures to Aerosolized Diesel Fuel 39
Effects of Single Exposures to Aerosolized Diesel Fuel 40
- Aerosols**
An Examination of Two Methods for Estimating the Transfer of Aerosols from the Troposphere to the Earth's Surface 383
- AF**
Base Displacement in AAF and AF Modified dCpdG: Syn and Anti Guanine 347
- Affinity**
3-Bromo-2-Ketoglutarate: A Substrate and Affinity Label for Diphosphopyridine Nucleotide-Dependent Isocitrate Dehydrogenase 13
3,4-Didehydro-2-Ketoglutarate: An Affinity Label for Diphosphopyridine Nucleotide-Dependent Isocitrate Dehydrogenase 14
Inactivation of *Rhodospirillum rubrum* Ribulose Bisphosphate Carboxylase/Oxygenase by the Affinity Label 2-N-Chloroamino-2-Deoxypentitol 1,5-Bisphosphate 29
2-Bromoacetylaminopentitol 1,5-Bisphosphate as an Affinity Label for Ribulose Bisphosphate Carboxylase/Oxygenase from *Rhodospirillum rubrum* 66
- Ag**
Surface-Enhanced Raman Scattering in Ag-Pyridine Sols 326
Photoacoustic Determination of Light Scattering from Thin Ag Films in ATR Geometry 353
- Agarose**
Calibration of Denaturing Agarose Gels for Molecular Weight Estimation of DNA: Size Determination of the Single-Stranded Genomes of Parvoviruses 247
- Age**
Recovery of Immune Competence Following Sublethal X-Irradiation of Young and Old Mice: A Model for Studying Age-Related Loss of Immunologic Homeostasis 185
Identifying Critical Human Subpopulations by Age Groups: Radioactivity and the Lung 321
Strontium-90 in Bone: A Case Study in Age-Dependent Dosimetric Modeling 372
The Impact of Entrainment and Impingement on Fish Populations in the Hudson River Estuary - Volume II: Impingement Impact Analyses, Evaluations of Alternative Screening Devices, and Critiques of Utility Testimony Relating to Density-Dependent Growth, the Age-Composition of the Striped Bass Spawning Stock, and the LMS Real-Time Life Cycle Model 654
- Aged**
Sequential Thymus Grafting of Aged Mice: Characterization of Growth, Regression and Enhancement of Immune Competence 182
- Agency**
An Evaluation of the Host-Mediated Assay and Body Fluid Analysis - A Report of the U.S. Experimental Protection Agency Gene-Tox Program 136
Introduction and Perspectives of Plant Genetic and Cytogenetic Assays: A Report of the U.S. Environmental Protection Agency Gene-Tox Program 284
- Aggregation**
Robust Analysis of Aggregation Error 477

Agricultural

Agricultural Production in the United States by County: A Compilation of Information from the 1974 Census of Agriculture for Use in Terrestrial Food-Chain Transport and Assessment Models 613

AGTEHM: Documentation of Modifications to the Terrestrial Ecosystem Hydrology Model (TEHM) for Agricultural Applications 677

Agriculture

Simulation of Radionuclide Transport in U.S. Agriculture 433

Effects on Agriculture 452

Agricultural Production in the United States by County: A Compilation of Information from the 1974 Census of Agriculture for Use in Terrestrial Food-Chain Transport and Assessment Models 613

Agri-fuels

Environmental Assessment - Agri-fuels Refining Corporation - Loan Guarantee Application, Iberia Parish, Louisiana 634

AGTEHM

AGTEHM: Documentation of Modifications to the Terrestrial Ecosystem Hydrology Model (TEHM) for Agricultural Applications 677

Air

Comparison of Observed and Predicted Air Concentrations for 18.6 μ m Fluorescein Particles 374

Comparison of Observed and Predicted Normalized Air Concentrations for Particles Released from a Height of 111 Meters 384

Comparison of Observed and Predicted Sodium Air and Ground Concentrations 385

Effects of Chronic Air Pollution Stress on Photosynthesis, Carbon Allocation, and Growth of White Pine Trees 506

Air Pollution Impacts on Forest Trees: Acid Deposition: Effects on Terrestrial Ecosystems 533

The Implications of a Stochastic Approach to Air Quality Regulations 637

Guidance Manual for Department of Energy Compliance with the Clean Air Act: Prevention of Significant Deterioration 703

Airshed

The Contribution of Residential Wood Combustion to Local Airshed Pollutant Concentrations 381

Airway

Development and Progression of Neoplastic Disease. Morphologic and Cell Culture Studies with Airway Epithelium 168

Alabama

Geology and Geochemistry of the Stratabound Sulfide Deposits of the Pyriton District, Alabama 540

Geologic Setting of the Hillabee Metavolcanic Complex and Associated Stratabound Sulfide Deposits in the Appalachian Piedmont of Alabama 545

Albedo

Measurements of the TLD-Albedo Calibration Ratio Made at the Health Physics Research Reactor 337

Albino

Analysis of the Albino-Locus Region of the Mouse: IV. Characterization of 34 Deficiencies 207

Albumin

Generation and Characterization of Variants of Mouse Hepatoma Cells with Defects in Hepato-Specific Gene Expression. I. Albumin Synthesis Variants 41

Molecular Mechanism of Extinction of Liver Specific Functions in Mouse Hepatoma x Rat Fibroblast Hybrids: Extinction of the Albumin Gene 178

Alcohol

Minnesota Alcohol Producers - Loan Guarantee Application, Blue Earth County,
Minnesota 632

Generic Environmental Assessment Report for Conventional Fuel-Alcohol Plant. 672

Alkali

Collisional Ionization between Fast Alkali Atoms and Hexafluorobenzene 320

Electric Dipole Polarizabilities of Alkali Halide Dimers 371

Alkaline

The Use of Alkaline Elution To Study DNA Damage in Developing Mouse Sperm after Exposure
to Methyl Methanesulfonate 225

Alkylated

In Vitro Replication of DNA Containing O-6-Methylguanine-Kinetic Evidence of Mutagenic
Potential of the Alkylated Base 246

Alleles

Mechanism of Suppression in *Drosophila melanogaster*. 8. Comparison of Su(S) Alleles for Ability
to Suppress the Mutants Purple, Vermilion, and Speck 112

Allocation

Effects of Chronic Air Pollution Stress on Photosynthesis, Carbon Allocation, and Growth of White
Pine Trees 506

Alluvial

Interpretation of Floodplain Pollen in Alluvial Sediments from an Arid Region 534

Alpha

Mouse Alpha-Like Pseudogenes are Assigned to Chromosome 15 and 17 131

Regulation of Alpha-Fetoprotein and Transferrin Synthesis and Secretion in Mouse Hepatoma
Cells 159

Alpha-Difluoromethylornithine, an Irreversible Inhibitor of Ornithine Decarboxylase, Inhibits
Tumor Promoter-Induced Polyamine Accumulation and Carcinogenesis in Mouse Skin 275

Alterations

Cell Differentiation, Alterations in Polyamine Levels, and Specific Binding of Phorbol Diesters in
Cultured Human Cells 109

Altered

Altered Tissue Reactivity and Interactions between Chemicals 278

Alternative

The Impact of Entrainment and Impingement on Fish Populations in the Hudson River Estuary -
Volume II: Impingement Impact Analyses, Evaluations of Alternative Screening Devices, and
Critiques of Utility Testimony Relating to Density-Dependent Growth, the Age-Composition
of the Striped Bass Spawning Stock, and the LMS Real-Time Life Cycle Model 654

Alters

Concanavalin A Alters the Turnover Rate of Tyrosine Aminotransferase in Cultured Hepatoma
Cells 48

Aluminum

Calorimetric Measurement of Electron Stopping Power of Aluminum and Copper between 11 and
127 keV 345

Alveolar

Pulmonary Toxicity of Methylcyclopentadienyl Manganese Tricarbonyl (MMT): Nonciliated
Bronchiolar Epithelial (Clara) Cell Necrosis and Alveolar Damage in the Mouse Rat and
Hamster 81

Am

Mathematical Studies of the Absorption into Blood of Am-241 following Oral Intubation into the
Gut of Miniature Swine 305

Estimates of Dose to Systemic Organs and GI Tract Based on Data from Miniature Swine Orally
Intubated with a Single Dose of Am-241 Citrate 306

Laser-Optical Studies of the Spontaneous-Fission Isomer Am-240m 434

Mobile Species of Pu, Am, Cm, Np, and Te in the Environment 453

Ameliorate

Use of Vegetation to Ameliorate Building Microclimates: An Assessment of Energy Conservation Potentials 681

America

Transport of Organic Carbon to the Sea by Rivers of North America: A Synthesis of Existing Data 513

American

Genetic Selection of American Sycamore for Biomass Production in the Mid-South Final Report for the Period March 9, 1979 - May 31, 1982 684

americana

Corrected Analysis of the Ability to Detect Reductions in Year-Class Strength of the Hudson River White Perch (*Morone americana*) Population 549

Aminotransferase

Concanavalin A Alters the Turnover Rate of Tyrosine Aminotransferase in Cultured Hepatoma Cells 48

Ammonia

Electron Motion in High-Pressure Polar Gases: Ammonia 312

Multiphoton Ionization of Ammonia: Mass Analysis and Photoelectron Spectra 332

AMP

Reverse Transformation of Chinese Hamster Cells by Cyclic AMP and Hormones 105

Amplification

Sequence Augmentation by Amplification of an (A+T)-Rich 142 bp Segment in a (G+C)-Rich Satellite DNA 18

Amyloidosis

Amyloidosis 36

Anaerobic

Membrane Preparations Used to Produce Anaerobic Conditions in Bacteriological Media 37

Analogs

Antischistosomal Analogs of Hycanthone. 2. Structure of 2-[2-(Diethylamino)ethyl]-2H-[1]-Benzothiopyran [4,3,2-cd]indazole-5-Methanol Monohydrate 276

Analyses

Analyses of Ecoregions Utilizing the Geocology Data Base 520

Environmental Risk Analyses of Wastewaters Produced by Synthetic Fuels Technologies 521

The Impact of Entrainment and Impingement on Fish Populations in the Hudson River Estuary - Volume II: Impingement Impact Analyses, Evaluations of Alternative Screening Devices, and Critiques of Utility Testimony Relating to Density-Dependent Growth, the Age-Composition of the Striped Bass Spawning Stock, and the LMS Real-Time Life Cycle Model 654

Guidelines for Preparing Environmental Analyses for Department of Energy NEPA

Documents 671

Preparation of Environmental Analyses for Synfuel and Unconventional Gas Technologies 696

Analysis

Synaptonemal Complex Analysis of Two X-7 Translocations in Male Mice. I. R3 and R5 Quadrivalents 10

Sister Chromatid Differentiation Analysis of Cell Cycle Kinetics in Mouse Bone Marrow Cells 11

Cytogenetic Analysis of Mammalian Oocytes in Mutagenicity Studies 22

Interaction of a DNA-Binding Protein, the Gene Product of D5 of Bacteriophage T5, with Double-Stranded DNA - Analysis by Metrizamide Gradient Centrifugation 71

Quantitation and Analysis of Reverse Mutations at the HGPRT Locus in Cultured Mammalian Cells 72

An Evaluation of the Host-Mediated Assay and Body Fluid Analysis - A Report of the U.S. Experimental Protection Agency Gene-Tox Program 136

Preparative Scale Organic Extraction and Mutagenicity Analysis of Fly Ash	140
An Analysis of Genetic Factors Regulating Life-Span in Congenic Mice	187
Analysis of the Albino-Locus Region of the Mouse: IV. Characterization of 34 Deficiencies	207
An Analysis of Mutagenic Activity of Quinolines in the CHO/HGPRT System	215
A System for the Molecular Analysis of Mutation in pSV2gpt Transfected CHO Cells	264
Information - The Critical Difference in Risk Analysis	290
Multiphoton Ionization of Ammonia: Mass Analysis and Photoelectron Spectra	332
Analysis and Refinement of the Microscale Synthesis of the Pt-195m-Labeled Antitumor Drug, cis-Dichlorodiammineplatinum(II), cis-DDP	343
An Analysis of Reported Values of the Environmental Half-Time for Radionuclides Deposited on the Surfaces of Vegetation	386
Energy Analysis of the Coal Fuel Cycle: Community Health and Resource Change in an Appalachian Coal County	425
Robust Analysis of Aggregation Error	477
Energy Analysis of Oklahoma Rangelands and Improved Pastures	496
Ecosystem Risk Analysis - A New Methodology	516
Parameter Constraints in a Stream Ecosystem Model: Incorporation of a Priori Information in Monte Carlo Error Analysis	517
Corrected Analysis of the Ability to Detect Reductions in Year-Class Strength of the Hudson River White Perch (<i>Morone americana</i>) Population	549
An Interactive Statistical Distribution Analysis Program Utilizing Numerical and Graphical Methods	592
Analysis of Proposed New IAEA Basis for Transportation Regulatory System Technical Report	612
Environmental Analysis of the Operation of Oak Ridge National Laboratory (X-10 Site)	627
Technical Analysis of the Use of Biomass for Energy Production	641
Health Risk Analysis - Proceedings of the Third Life Sciences Symposium, Gatlinburg, TN, October 27-30, 1980	644
Methodology for Environmental Risk Analysis	653
Analysis of Environmental Issues Related to Small-Scale Hydroelectric Development. VI. Dissolved Oxygen Concentrations Below Operating Dams	659
The Impact of Entrainment and Impingement on Fish Populations in the Hudson River Estuary - Volume III - An Analysis of the Validity of the Utilities' Stock-Recruitment Curve-Fitting Exercise and "Prior Estimation of Beta" Technique	663
A Construct for Analysis of Ecosystem Perturbations Based on Input/Output Analysis	697
A Construct for Analysis of Ecosystem Perturbations Based on Input/Output Analysis	697
Relative Stock Composition of the Atlantic Coast Striped Bass Population: Further Analysis	714
Review and Analysis of Existing Modeling Approaches for Assessing Population-Level Effects of Multiple Stresses on Fish and Shellfish	717
Analyzer	
Evaluation of a Modified CEA Instruments, Inc. Model 555 Analyzer for the Monitoring of Formaldehyde Vapor in Domestic Environments	377
Analyzing	
The Development and Application of an Image Analyzing and Processing System	404
Evaluation of a Second Derivative UV-Absorption Spectrometer (DUVAS) for Analyzing Gases in Smoke Plumes	604
Androscoggin	
Environmental Assessment - D. W. Small and Sons, Inc. - Loan Guarantee Application, Androscoggin County, Maine	628
Angular	
Calculated Angular Distribution of Fragment Ions from Polyatomic Ion Collisions	2

Animal

The Role of Animal Studies in Low Dose Extrapolation 67

Animals

Cytogenetic Studies in Animals 192

Chemicals Identified in Feral and Food Animals, A Data Base: First Annual Report - October 1981 562

Chemicals Identified in Feral and Food Animals, A Data Base: Second Annual Report 563

Annealing

Zone Refining of Nonsubstitutional Impurities during Pulsed Laser Annealing 440

Annual

Chemicals Identified in Human Biological Media, A Data Base: Third Annual Report, October 1981, Volume 3, Part 2 Records 3501-5271 557

Chemicals Identified in Human Biological Media, A Data Base: Third Annual Report, October 1981, Volume 3, Part 1 558

Chemicals Identified in Human Biological Media, A Data Base: Fourth Annual Report 560

Chemicals Identified in Human Biological Media, A Data Base: Fourth Annual Report 561

Chemicals Identified in Feral and Food Animals, A Data Base: First Annual Report - October 1981 562

Chemicals Identified in Feral and Food Animals, A Data Base: Second Annual Report 563

Environmental Sciences Division Annual Progress Report for Period Ending September 30, 1981 652

Proceedings of the Third Annual Information Meeting DOE Low-Level Waste Management Program 685

Proceedings of the Fourth Annual Participants' Information Meeting on DOE Low-Level Waste Management Program 686

Anomalies

Structural Anomalies of Highly Malignant Respiratory Tract Epithelial Cells 149

A Mobile Gamma-Ray Scanning System for Detecting Radiation Anomalies Associated with Radium-226 Bearing Materials 607

anthracene

Tumor-Initiating Activity of 4-Fluro-7, 12-Dimethylbenz(a)anthracene and 1,2,3, 4-Tetrahydro-7,12-Dimethylbenz(a)anthracene in Female SENCAR Mice 45

Tumor-Initiating Activity of 4-Fluro-7, 12-Dimethylbenz(a)anthracene and 1,2,3, 4-Tetrahydro-7,12-Dimethylbenz(a)anthracene in Female SENCAR Mice 45

Induction of Mammary Tumors in Virgin Female BALB/c Mice by Single Low Doses of 7,12-Dimethylbenz(a)anthracene (DMBA) 56

Induction of Mammary Tumors in Virgin Female BALB/c Mice by Single Low Doses of 7,12-Dimethylbenz(a)anthracene 57

Localization and Quantitation of Presumptive Neoplastic Cell Populations (PNCP) in Tracheas Exposed to Dimethylbenz(a)anthracene (DMBA) 150

Localization of Specific Lesions in Dimethylbenz(a)anthracene-Preexposed Tracheal Explants 151

Anthracene

Uptake and Metabolism of C-14 Anthracene by Soybean (Glycine max) 472

Antibody

Characterization of Antibody Covalently Coupled to Liposomes 107

Binding of Monoclonal Antibody to Protein Antigen in Fluid Phase or Bound to Solid Supports 117

An Improved Method for Covalent Attachment of Antibody to Liposomes 236

Antigen

Binding of Monoclonal Antibody to Protein Antigen in Fluid Phase or Bound to Solid Supports 117

Antigen Presentation by Peritoneal Macrophages from Young Adult and Old Mice 183

Antischistosomal

- Antischistosomal Analogs of Hycanthone. 2. Structure of 2-[2-(Diethylamino)ethyl]-2H-[1]-Benzothiopyrano [4,3,2-cd]Indazole-5-Methanol Monohydrate 276

Antitumor

- Cytotoxicity and Mutagenicity of Five Antitumor Compounds (Ellipticines) in the CHO/HGPRT System 44
- Analysis and Refinement of the Microscale Synthesis of the Pt-195m-Labeled Antitumor Drug, cis-Dichlorodiammineplatinum(II), cis-D'D'P 343

Aphidicidin

- Role of Base Damage in Aberration Formation Interaction of Aphidicolin and X-Rays 15
- Differential Responses of Log and Stationary Phase Human Fibroblasts to Inhibition of DNA Repair by Aphidicolin 249

Appalachian

- Energy Analysis of the Coal Fuel Cycle: Community Health and Resource Change in an Appalachian Coal County 425
- Geologic Setting of the Hillabee Metavolcanic Complex and Associated Stratabound Sulfide Deposits in the Appalachian Piedmont of Alabama 545

Applicability

- Synchronous Luminescence Spectroscopy: Methodology and Applicability 421

April

- High Voltage Research (Breakdown Strengths of Gaseous and Liquid Insulators) and Environmental Effects of Dielectric Gases Semiannual Report (April 1-September 30, 1981) 584

Aquatic

- An Approach to Optimizing Reservoir Operation for Downstream Aquatic Resources 531
- The Risk of Chemicals to Aquatic Environments 536

Aqueous

- A Simple Reverse Phase Column Clean Up for the Determination of Sulfate in Aqueous Leachates Containing Organic Compounds 1
- Embryotoxic and Teratogenic Effects of Aqueous Extracts of a Coal Gasification Electrostatic Precipitator 221

Ar

- The Reaction of Li with Oxygen in the Presence of He or Ar 370

Arachidonic

- Inhibition of Mouse Skin Tumor Promotion by Several Inhibitors of Arachidonic Acid Metabolism 60

Area

- Compilation of a Biogenic Hydrocarbon Emissions Inventory for Evaluating Ozone Control Strategies in the San Francisco Bay Area 436
- Resource Data Inventory for the Oak Ridge Area 688

Areas

- Cleanup and Treatment of Radioactively Contaminated Land Including Areas Near Nuclear Facilities - A Selected Bibliography 566
- An Evaluation of Remote Sensing Methods for Study of Variable Hydrologic Source Areas 679

Arid

- Interpretation of Floodplain Pollen in Alluvial Sediments from an Arid Region 534

Arom

- The Functional Unit of the Arom Conjugate in Neurospora 116

Aromatic

- Vacuum Ultraviolet Absorption Spectra of Aromatic Molecules in Solution 368

Arthropod

- Arthropod Associates and Macronutrient Status of the Red-Ink Sundew (*Drosera erythrorhiza* Lindl.) 426

Artificial

Guidance for the Use of Artificial Streams to Assess the Effects of Toxicants in Freshwater Systems 700

Ash

Preparative Scale Organic Extraction and Mutagenicity Analysis of Fly Ash 140

Asiatic

Evaluation of Short-Term Exposure to Heated Water and Chlorine for Control of the Asiatic Clam (*Corbicula fluminea*) 689

Aspergillus

Aspergillus nidulans: Systems and Results of Tests for Chemical Induction of Mitotic Segregation and Mutation. I. Diploid and Duplication Assay Systems. A Report of the U.S. EPA Gene-Tox Program 286

Aspergillus nidulans: Systems and Results of Tests for Induction of Mitotic Segregation and Mutation. II. Haploid Assay Systems and Overall Response of All Systems. A Report of the U.S. EPA Gene-Tox Program 293

Assay

Factors Influencing the Development of Spontaneous Mutant Colonies in the Salmonella Mutagenicity Assay 4

A Frog Embryo Teratogenesis Assay: *Xenopus* (FETAX) - A Model for Teratogen Screening 51

The Need to Develop a Short-Term Chinese Hamster In Vivo Specific Locus Mutational Assay 106

An Evaluation of the Host-Mediated Assay and Body Fluid Analysis - A Report of the U.S. Experimental Protection Agency Gene-Tox Program 136

Plate Assay for Chemical- and Radiation-Induced Mutagenesis of *CAN1* in Yeast as a Function of Post-Treatment DNA Replication: The Effect of *rad6-1* 137

The Use of the Host Mediated Assay for Cytogenetic Studies 194

A Fluorometric-HPLC Assay for Quantitating the Binding of Benzo(a)pyrene Metabolites to DNA 195

Modification of Salmonella/Pour-Plate Incorporation Assay for Mutagenesis Studies 198

Mutagenicity of 4,4'-Methylenedianiline (MDA) Derivatives in the Salmonella Histidine Reversion Assay 199

Comparison of Complete Carcinogenesis and Tumor Initiation in Mouse Skin: The Induction of Papillomas by Tumor Initiation-Promotion a Reliable Short Term Assay 243

Aspergillus nidulans: Systems and Results of Tests for Chemical Induction of Mitotic Segregation and Mutation. I. Diploid and Duplication Assay Systems. A Report of the U.S. EPA Gene-Tox Program 286

Aspergillus nidulans: Systems and Results of Tests for Induction of Mitotic Segregation and Mutation. II. Haploid Assay Systems and Overall Response of All Systems. A Report of the U.S. EPA Gene-Tox Program 293

Assays

Introduction and Perspectives of Plant Genetic and Cytogenetic Assays: A Report of the U.S. Environmental Protection Agency Gene-Tox Program 284

DNA Repair Assays as Tests for Environmental Mutagens: A Report of the U.S. EPA Gene-Tox Program 287

Assess

Methods to Assess Impacts on Hudson River Striped Bass: Final Report 665

Guidance for the Use of Artificial Streams to Assess the Effects of Toxicants in Freshwater Systems 700

Research Needs to Assess Population-Level Effects of Multiple Stresses on Fish and Shellfish 716

Assessing

- Review and Evaluation of Microcosms for Assessing Effects of Stress in Marine Ecosystems 445**
- Assessing Model Uncertainties 478**
- Data Resources for Assessing Regional Impacts of Energy Facilities on Health and the Environment 519**
- A Multimedia Screening-Level Model for Assessing the Potential Fate of Chemicals Released to the Environment 605**
- A Review of Uncertainty Estimates Associated with Models for Assessing the Impact of Breeder Reactor Radioactivity Releases 606**
- Review and Analysis of Existing Modeling Approaches for Assessing Population-Level Effects of Multiple Stresses on Fish and Shellfish 717**

Assessment

- Induced Mutations in Mice and Genetic Risk Assessment in Humans 227**
- Uncertainties in the Assessment of Long-Term Collective Dose and Health Effects 366**
- Risk Assessment Approaches: General Definitions, Limitations and Research Needs 423**
- The Influence of Geochemical Variables on Long-Lived Radionuclide Migration and Risk Assessment 454**
- Terrestrial Perturbation Experiments for Environmental Assessment 541**
- Assessment of Risks to Human Reproduction and to Development of the Human Conceptus from Exposure to Environmental Substances 570**
- Biological Effects of Static Magnetic Fields: A Selective Review with Emphasis on Risk Assessment 589**
- Environmental Behavior of Technetium in Soil and Vegetation: Implications for Radiological Impact Assessment 595**
- Agricultural Production in the United States by County: A Compilation of Information from the 1974 Census of Agriculture for Use in Terrestrial Food-Chain Transport and Assessment Models 613**
- Risk Assessment of Coal Production: An Information System User's Manual 616**
- State-of-the-Art Assessment of Coal Preparation Plant Automation 622**
- Environmental Assessment - Eastern Ethanol Corporation - Loan Guarantee Application, Williamsburg County, South Carolina 624**
- Environmental Assessment - Energy Conversion Corporation - Loan Guarantee Application, Hampton County, South Carolina 625**
- Environmental Assessment - D. W. Small and Sons, Inc. - Loan Guarantee Application, Androscoggin County, Maine 628**
- Environmental Assessment, Circle Energies Corporation - Loan Guarantee Application, Finney County, Kansas 629**
- Environmental Assessment, New Energy Corporation of Indiana - Loan Guarantee Application, St. Joseph County, Indiana 631**
- Environmental Assessment, U.S. Ethanol Corporation - Loan Guarantee Application, East Baton Rouge Parish, Louisiana 633**
- Environmental Assessment - Agrifuels Refining Corporation - Loan Guarantee Application, Iberia Parish, Louisiana 634**
- Environmental Assessment - Gulf Coast Resources, Inc. - Loan Guarantee Application, Lee County, Iowa 635**
- Environmental Assessment - Tennol, Inc. - Loan Guarantee Application, Marion County, Tennessee 636**
- International Energy Technology Assessment - Atmospheric Fluidized-Bed Combustion 638**
- Chattanooga Shale: An Assessment of the Resource and Technology for the Recovery of Hydrocarbons and Minerals 640**
- Generic Environmental Assessment Report for Conventional Fuel-Alcohol Plants 672**
- Use of Vegetation to Ameliorate Building Microclimates: An Assessment of Energy Conservation Potentials 681**
- Regional Assessment of Potential Sensitivity of Soils in the Eastern United States to Acid**

Assessments

- Environmental Behavior of Technetium in Soil and Vegetation. Implications for Radiological Assessments 483

Assigned

- Mouse Alpha-Like Pseudogenes are Assigned to Chromosome 15 and 17 131

Assignment

- Assignment of Aey-1 to Mouse Chromosome 9: Evidence for Homologous Linkage Groups in Man and Mouse 130

Assimilation

- Atmospheric Deposition and Plant Assimilation of Gases and Particles 485

Associated

- Molt-Cycle Associated Changes in Calcium-Dependent Proteinase Activity that Degrades Actin and Myosin in Crustacean Muscle 162
- Studies on the Function of the Non-primer tRNAs Associated with the 70S RNA of Avian Myeloblastosis Virus 272
- Health Risk Associated with Energy Conservation 357
- Uncertainties Associated with Geologic Disposal of High-Level Radioactive Waste 367
- AAAS Symposium Volume Series - Health Risks Associated with Energy Technologies 417
- Geologic Setting of the Hillabee Metavolcanic Complex and Associated Stratabound Sulfide Deposits in the Appalachian Piedmont of Alabama 545
- Environmental Mobility of Toxic Substances Released from Photovoltaic-Associated Processes: Terrestrial Ecosystems 580
- Proceedings of the Symposium on Uncertainties Associated with the Regulation of the Geologic Disposal of High-Level Radioactive Waste 603
- A Review of Uncertainty Estimates Associated with Models for Assessing the Impact of Breeder Reactor Radioactivity Releases 606
- A Mobile Gamma-Ray Scanning System for Detecting Radiation Anomalies Associated with Radium-226 Bearing Materials 607
- Technology and Cost of Termination Surveys Associated with Decommissioning of Nuclear Facilities 618

Associates

- Arthropod Associates and Macronutrient Status of the Red-Inf Sundew (*Drosera erythrorhiza* Lindl.) 426

Association

- Lack of Association between Induction of Dominant-Lethal Mutations and Induction of Heritable Translocations with Benzo(a)pyrene (BaP) in Postmeiotic Germ Cells of Male Mice 75

Associations

- Associations between Tumor Types in Irradiated BALB/c Female Mice 255
- The Effect of Reestablishing Tissue-Like Cell Associations on Hexose Uptake in Rat Tracheal Epithelial Cell Lines and Primary Cell Cultures 271

Assumptions

- Interim Source Term Assumptions for Emergency Planning and Equipment Qualification 608
- Technical Considerations Related to Interim Source Term Assumptions for Emergency Planning and Equipment Qualification 609

Assurance

- Quality Assurance Program Manual for the Biology Division 555
- Environmetrics of the Gasifier in Industry Program: III. Decision Support Systems for Quality Assurance Controls 675

Athymic

- Endocrine Morphology and Reproductive Function in Athymic Nude Mice 42
- Resistance of Germfree Athymic Nude Mice to Two-Stage Skin Carcinogenesis 102

Atlantic

- Relative Stock Composition of the Atlantic Coast Striped Bass Population: Further Analysis 714

Atmospheric

- Uncertainty Estimates for Site-Specific Atmospheric Diffusion Parameters 382
- Atmospheric Deposition and Plant Assimilation of Gases and Particles 485
- Atmospheric Deposition of Metals to Forest Vegetation 502
- Initial Atmospheric Dispersion Modeling in Support of the Multiple-Site Incineration Study 596
- International Energy Technology Assessment - Atmospheric Fluidized-Bed Combustion 638
- Atmospheric Sulfur Deposition: Environmental Impact and Health Effects 702

Atom

- Fluctuation Experiments on Atomic and Molecular Systems Using the One-Atom Detector 358

Atomic

- Fluctuation Experiments on Atomic and Molecular Systems Using the One-Atom Detector 358
- Dosimetry for the Japanese Atomic Bomb Survivors 360
- Findings of a Recent ORNL Review of Dosimetry for the Japanese Atomic-Bomb Survivors 600

Atoms

- Vicinage Effects in Ion Cluster Collisions with Condensed Matter and with Single Atoms 303
- Multiphoton Ionization and Third-Harmonic Generation in Atoms and Molecules 318
- Multiphoton Ionization of Atoms and Molecules 319
- Collisional Ionization between Fast Alkali Atoms and Hexafluorobenzene 320
- Counting the Atoms: Some Applications in Chemistry 349
- Comparison of Bethe's Formula for Magnetic-Moment Transitions in Atoms with the Generalized Rosenbluth's Equation 373

ATP

- In Vitro Packaging of Bacteriophage T7 DNA Requires ATP 152

ATPase

- Regulation by Turnover of Na,K-ATPase in HeLa Cells 186

ATR

- Photoacoustic Determination of Light Scattering from Thin Ag Films in ATR Geometry 353

Atrophy

- Crustacean Muscles: Atrophy and Regeneration during Molting 161

Attenuated

- Diffusion of Au into Sn Thin Films Studied by the Attenuated Total Reflection Method 310

Attic

- On the Occurrence of Fungi in Loose-Fill Attic Insulation in Typical Single-Family Dwellings 586

Attleboro

- Results of Subsurface Investigation of Radionuclides in Soil in Finberg Field, Attleboro, Massachusetts 587

Au

- Diffusion of Au into Sn Thin Films Studied by the Attenuated Total Reflection Method 310

Augmentation

- Sequence Augmentation by Amplification of an (A+T)-Rich 142 bp Segment in a (G+C)-Rich Satellite DNA 18

August

- Eighteenth Nuclear Accident Dosimetry Intercomparison Study: August 10-14, 1981 614

Automated

- Determination of Growth Requirements of Non-Tumorigenic and Tumorigenic Tracheal Epithelial Cells Using a Semi-Automated Quantitative Method 120

Automation

- State-of-the-Art Assessment of Coal Preparation Plant Automation 622

Automobiles

Small is BRUTAL: The Risk/Energy Trade-Off for Automobiles 597

Availability

Structuring of a Predator Population through Temperature-Mediated Effects on Prey

Availability 446

Energy Partitioning in Largemouth Bass under Conditions of Seasonally Fluctuating Prey

Availability 447

Avian

Studies on the Function of the Non-primer tRNAs Associated with the 70S RNA of Avian

Mycoblastosis Virus 272

Awards

The Oak Ridge National Laboratory Registry of Notable Honors and Awards in Science and Engineering, 1943-May 1982, 4th Edition 571

Azaarene

Chronic Toxicity of the Azaarene Quinoline, a Synthetic Fuel Component, to the Pond Snail *Physa heterostrophus* 509

Bacillus

Psoralen-Plus-Light Damage and Repair in Transforming DNA of *Bacillus subtilis* 79

Backbone

DNA Backbone Conformation in AAF Modified dCpdG: Variable Conformational Modes of Achieving Base Displacement 24

Bacteria

Concentration, Serotypic Profiles and Infectivity of Legionnaires' Disease Bacteria Populations in Cooling Towers 546

Bacterial

Evaluation of the Mutagenic Potential of Bacterial Polychlorinated Biphenyl Biodegradation Products 216

Bacteriological

Membrane Preparations Used to Produce Anaerobic Conditions in Bacteriological Media 37

Bacteriophage

Mutagenesis of Bacteriophage T7 In Vitro by Incorporation of O-6-Methylguanine during DNA Synthesis 47

In Vitro Packaging of Bacteriophage T7 DNA Requires ATP 152

Bacteriophage

Interaction of a DNA-Binding Protein, the Gene Product of D5 of Bacteriophage T5, with Double-Stranded DNA - Analysis by Metrizamide Gradient Centrifugation 71

DNA Packaging In Vitro by an Isolated Bacteriophage T7 Procapsid 153

Bacterium

Survey of Cooling Towers Within Oak Ridge Operations for the Presence of Legionnaire's Disease Bacterium 712

Badge

Calibration of the Indium Foil Used for Criticality Accident Dosimetry in the UCC-ND Employee Identification Badge 649

BALB

Survival of Mammary Epithelial Cells from Virgin Female BALB/c Mice Following in Vivo Gamma Irradiation 3

Detection of Ductal Dysplasia in Mammary Outgrowths Derived from Carcinogen-Treated Virgin Female BALB/c Mice 55

Induction of Mammary Tumors in Virgin Female BALB/c Mice by Single Low Doses of 7,12-Dimethylbenz(a)anthracene (DMBA) 56

Induction of Mammary Tumors in Virgin Female BALB/c Mice by Single Low Doses of 7,12-Dimethylbenz(a)anthracene 57

Associations between Tumor Types in Irradiated BALB/c Female Mice 255

Balbani

Ultrastructural Studies of Chironomus Salivary Gland Cells in Different States of Balbiani Ring Activity 175

Bank

Peer Review Mechanism for the Toxicology Data Bank 288

Toxicology Data Bank Steps up Efforts 294

Banks

Positive Phototaxis in First Instar Hydropsyche cockerelli Banks (Trichoptera) 460

BaP

Lack of Association between Induction of Dominant-Lethal Mutations and Induction of Heritable Translocations with Benzo(a)pyrene (BaP) in Postmeiotic Germ Cells of Male Mice 75

bartoni

Thermal Resistance of Juvenile Crayfish, Cambarus bartoni (Fabricius): Experiment and Model 462

Basal

Comparison of Levels of Benzo(a)pyrene 7,8-Diol-9,10-Epoxy (BPDE) Diastereomers and Enantiomers Covalently Bound in Vivo to Macromolecular Components of Whole Epidermis Versus the Basal Cell Layer 180

Comparison of Levels of Benzo(a)pyrene Diol Epoxy Diastereomers Covalently Bound In Vivo to Macromolecular Components of the Whole Epidermis Versus the Basal Cell Layer 181

Baseline

Baseline Environmental Characterization of Pike County Coal Gasification Facility Site 666

Bases

Stabilization of the Tertiary Structure of Yeast Phenylalanine tRNA by the Hexamine Cobaltic Ion: X-Ray Evidence for Hydrogen Bonding to Pairs of Guanine Bases in the Major Groove 96

Basics

Ten Basics for Marketing Information 289

Bass

Energy Partitioning in Largemouth Bass under Conditions of Seasonally Fluctuating Prey Availability 447

The Impact of Entrainment and Impingement on Fish Populations in the Hudson River Estuary - Volume II: Impingement Impact Analyses, Evaluations of Alternative Screening Devices, and Critiques of Utility Testimony Relating to Density-Dependent Growth, the Age-Composition of the Striped Bass Spawning Stock, and the LMS Real-Time Life Cycle Model 654

Methods to Assess Impacts on Hudson River Striped Bass: Final Report 665

User's Manual for STRIPE: A Computer Code for Simulating Striped Bass Young-of-the-Year Population in the Hudson River 673

Relative Stock Composition of the Atlantic Coast Striped Bass Population: Further Analysis 714

Baton

Environmental Assessment, U.S. Ethanol Corporation - Loan Guarantee Application, East Baton Rouge Parish, Louisiana 633

Bay

Cell-Mediated Mutagenicity in Chinese Hamster V79 Cells by Dibenzpyrenes and Their Bay-Region Disubstituted Fluorinated Derivatives 89

Compilation of a Biogenic Hydrocarbon Emissions Inventory for Evaluating Ozone Control Strategies in the San Francisco Bay Area 436

Beam

Non-Maxwellian Velocity Distributions and Molecular Beam Intensities in Sonic Nozzle Expansions 362

Bean

Effect of Rain pH Senescence, Growth, and Yield of Bush Bean 493

Beans

- Effects of Orocol TL (a Corrosion Inhibitor) on Germination and Growth of Bush Beans 693

Bearing

- Factors Affecting Mutagenicity of Ethylnitrosourea in the Mouse Specific-Locus Test and Their Bearing on Risk Estimation 208
A Mobile Gamma-Ray Scanning System for Detecting Radiation Anomalies Associated with Radium-226 Bearing Materials 607

Bed

- International Energy Technology Assessment - Atmospheric Fluidized-Bed Combustion 638

BEEF

- RAGEEF: A FORTRAN IV - Implementation of a Time-Dependent Model for Radionuclide Contamination of BEEF 611

Behavior

- Formation of Freshwater Fe-Mn Coatings on Gravel and the Behavior of Co-60, Sr-90, and Cs-137 in a Small Watershed 458
Comparative Food Chain Behavior and Distribution of Actinide Elements in and around a Contaminated Fresh-Water Pond 479
Environmental Behavior of Technetium in Soil and Vegetation. Implications for Radiological Assessments 483
Environmental Behavior of Technetium in Soil and Vegetation: Implications for Radiological Impact Assessment 595

Behaviour

- On the Long-Term Behaviour of Iodine 129 in the Terrestrial Environment 364

Benzo

- Benzo(a)pyrene Metabolism in Primary Cultures of Mouse Epidermal Cells and Untransformed and Transformed Epidermal Cell Lines 46
Cell Specific Activation and Detoxification of Benzo(a)pyrene by Two Clones Murine Testicular Cell Lines 59
Lack of Association between Induction of Dominant-Lethal Mutations and Induction of Heritable Translocations with Benzo(a)pyrene (BaP) in Postmeiotic Germ Cells of Male Mice 75
Benzo(a)pyrene-Binding Proteins of Hamster Embryo Cell Nuclei: Comparison of Nuclear Isolation Procedures 142
Time Course of Metabolism of Benzo(e)pyrene by Hamster Embryo Cells and the Effect of Chemical Modifiers 143
Covalent Binding of Isomeric Benzo(a)pyrene Diol-epoxides to DNA 144
Physical Interactions of Isomeric Benzo(a)pyrene Diol-Epoxides with DNA 145
Covalent Intercalative Binding of Benzo(a)pyrene-9,10-Diol-7,8-Epoxy to DNA 146
Physical Binding of Diol-Epoxy Derivatives of the Carcinogen Benzo(a)pyrene to DNA 147
Comparison of Levels of Benzo(a)pyrene 7,8-Diol-9,10-Epoxy (BPDE) Diastereomers and Enantiomers Covalently Bound in Vivo to Macromolecular Components of Whole Epidermis Versus the Basal Cell Layer 180
Comparison of Levels of Benzo(a)pyrene Diol Epoxy Diastereomers Covalently Bound In Vivo to Macromolecular Components of the Whole Epidermis Versus the Basal Cell Layer 181
A Fluorometric-HPLC Assay for Quantitating the Binding of Benzo(a)pyrene Metabolites to DNA 195
Heterogeneity of Benzo(a)pyrene Metabolism in Human and Rodent Cell Culture 230
Benzo(a)pyrene Metabolites: Formation in Rat Liver Cell-Culture Lines, Binding to Macromolecules, and Mutagenesis in V79 Hamster Cells 232
Metabolic Rationale for the Weak Mutagenic and Carcinogenic Activity of Benzo(e)pyrene 233
Enhanced Benzo(a)pyrene Metabolism in Hamster Embryonic Cells Exposed in Culture to Fossil Synfuel Products 408

Benzothiopyrano

- Antischistosomal Analogs of Hycanthone. 2. Structure of 2-[2-(Diethylamino)ethyl]-2H-[1]-Benzothiopyrano [4,3,2-cd]Indazole-5-N-ethanol Monohydrate 276

Beryllium

- Selective Effect of the Metallo carcinogen Beryllium on Hormonal Regulation of Gene Expression in Cultured Cells 184

Beta

- The Impact of Entrainment and Impingement on Fish Populations in the Hudson River Estuary - Volume III - An Analysis of the Validity of the Utilities' Stock-Recruitment Curve-Fitting Exercise and "Prior Estimation of Beta" Technique 663

Bethe

- Comparison of Bethe's Formula for Magnetic-Moment Transition in Atoms with the Generalized Rosenbluth's Equation 373

Bi

- Optical Properties of Liquid Pb and Bi between 0.6 and 3.7eV 351

Bianchi

- Oscillation Criteria for Nonlinear Bianchi Equations 419

Bibliography

- An Indexed Bibliography of the Spiny (Rock) Lobsters (Decapoda:palinuridae) 494
 Cleanup and Treatment of Radioactively Contaminated Land Including Areas Near Nuclear Facilities - A Selected Bibliography 566
 Publications of the Transportation Systems Utilization Division: A Bibliography 574
 Nuclear Facility Decommissioning and Site Remedial Actions - A Selected Bibliography Volume 3 575
 Health Effects of Environmental Chemicals on the Adult Human Reproductive System - A Selected Bibliography with Abstracts 1963-1981 576
 Xenobiotic Bioaccumulation by Terrestrial Vertebrates: A Bibliography for Food Chain Modeling 709

Bimodal

- Genesis of Bimodal Size Distributions in Species Cohorts 469

Binding

- Development of Na(Sup +)-Dependent Phlorizin Binding Sites in a Clone of LLC-PK1 Cells 6
 Interaction of a DNA-Binding Protein, the Gene Product of D5 of Bacteriophage T5, with Double-Stranded DNA - Analysis by Metrizamide Gradient Centrifugation 71
 Reexamination of the Binding Site for Pyridoxal 5'-Phosphate in Ribulose Biphosphate Carboxylase/Oxygenase from *Rhodospirillum rubrum* 95
 Cell Differentiation, Alterations in Polyamine Levels, and Specific Binding of Phorbol Diesters in Cultured Human Cells 109
 Binding of Monoclonal Antibody to Protein Antigen in Fluid Phase or Bound to Solid Supports 117
 Benzo(a)pyrene-Binding Proteins of Hamster Embryo Cell Nuclei: Comparison of Nuclear Isolation Procedures 142
 Covalent Binding of Isomeric Benzo(a)pyrene Diol-epoxides to DNA 144
 Covalent Intercalative Binding of Benzo(a)pyrene-9,10-Diol-7,8-Epoxy to DNA 146
 Physical Binding of Diol-Epoxy Derivatives of the Carcinogen Benzo(a)pyrene to DNA 147
 A Fluorometric-HPLC Assay for Quantitating the Binding of Benzo(a)pyrene Metabolites to DNA 195
 Benzo(a)pyrene Metabolites: Formation in Rat Liver Cell-Culture Lines, Binding to Macromolecules, and Mutagenesis in V79 Hamster Cells 232
 The Down Regulation of Specific Binding of [20-H-3]phorbol 12,13,-dibutyrate and Phorbol Ester Induced Differentiation of Human Promyelocytic Leukemia Cells 252

Bioaccumulation

- Bioaccumulation and Distribution of Tc-95m in an Experimental Freshwater Pond 450
 Bioaccumulation of Tc-95m in Fish and Snails 451

Development of Predictive Models for Xenobiotic Bioaccumulation in Terrestrial Ecosystems	708
Xenobiotic Bioaccumulation by Terrestrial Vertebrates: A Bibliography for Food Chain Modeling	799
Biochemical	
Long-Term Morphologic and Biochemical Features of Experimentally Induced Lung Fibrosis in the Mouse	87
Experimental Lung Fibrosis in the Mouse: Long-Term Morphologic and Biochemical Features	88
Biodegradation	
Evaluation of the Mutagenic Potential of Bacterial Polychlorinated Biphenyl Biodegradation Products	216
Biogenic	
Compilation of a Biogenic Hydrocarbon Emissions Inventory for Evaluating Ozone Control Strategies in the San Francisco Bay Area	436
Biological	
Comparative Physicochemical and Biological Properties of Two Strains of Kilham Rat Virus, a Non-Defective Parvovirus	158
Evaluation of Hydrotreatment as a Means of Reducing Biological Activity of Synfuel Related Materials	222
Chemicals Identified in Human Biological Media	283
Synthesis and Biological Evaluation of 17-[1-131]Iodo-9-Telluraheptadecanoic Acid - A Potential Myocardial Imaging Agent	334
Absorption of RF and Microwaves on Spherical Multilayer Biological Systems	405
Imprecision in Estimates of Dose from Ingested Cs-137 Due to Variability in Human Biological Characteristics	409
Chemicals Identified in Human Biological Media, A Data Base: Third Annual Report, October 1981, Volume 3, Part 2 Records 3501-5271	557
Chemicals Identified in Human Biological Media, A Data Base: Third Annual Report, October 1981, Volume 3, Part 1	558
Chemicals Identified in Human Biological Media, A Data Base, Volume IV	559
Chemicals Identified in Human Biological Media, A Data Base: Fourth Annual Report	560
Chemicals Identified in Human Biological Media, A Data Base: Fourth Annual Report	561
Biological Effects of Static Magnetic Fields: A Selective Review with Emphasis on Risk Assessment	589
Biology	
Biology Division Progress Report for Period of June 1, 1980 - July 31, 1982	554
Quality Assurance Program Manual for the Biology Division	555
Biomass	
Technical Analysis of the Use of Biomass for Energy Production	641
Hydroacoustic Biomass Estimation Techniques	682
Genetic Selection of American Sycamore for Biomass Production in the Mid-South Final Report for the Period March 9, 1979 - May 31, 1982	684
Biomedical	
Coping with the Biomedical Literature - Book Review	354
Publications in Biomedical and Environmental Sciences Programs - 1981	573
Biomedical and Environmental Sciences Programs at the Oak Ridge National Laboratory	643
Biophosphate	
Reexamination of the Binding Site for Pyridoxal 5'-Phosphate in Ribulose Biphosphate Carboxylase/Oxygenase from Rhodospirillum rubrum	95
Biosynthesis	
Biosynthesis, Nonenzymatic Synthesis and Purification of the Intermediate in Synthesis of Sepiapterin in Drosophila	49
Purification and Biosynthesis of Quenon Spot, a Drosoperin Precursor in Drosophila melanogaster	50

Biphenyl

- Evaluation of the Mutagenic Potential of Bacterial Polychlorinated Biphenyl Biodegradation Products 216

Bird

- Bird Community Ecology on Power-Line Corridors in East Tennessee 498

Birds

- Edge Effect on Breeding Forest Birds Along a Power Line Corridor 497

Birefringence

- Conformation of the HMG 14 Nucleosome Core Complex from Flow Birefringence 83

Bisphosphate

- Inactivation of *Rhodospirillum rubrum* Ribulose Bisphosphate Carboxylase/Oxygenase by the Affinity Label 2-N-Chloroamino-2-Deoxypentitol 1,5-Bisphosphate 29
- Inactivation of *Rhodospirillum rubrum* Ribulose Bisphosphate Carboxylase/Oxygenase by the Affinity Label 2-N-Chloroamino-2-Deoxypentitol 1,5-Bisphosphate 29
- 2-Bromoacetylaminopentitol 1,5-Bisphosphate as an Affinity Label for Ribulose Bisphosphate Carboxylase/Oxygenase from *Rhodospirillum rubrum* 66
- 2-Bromoacetylaminopentitol 1,5-Bisphosphate as an Affinity Label for Ribulose Bisphosphate Carboxylase/Oxygenase from *Rhodospirillum rubrum* 66
- Identification of an Active-Site Methionyl Residue in Ribulose Bisphosphate Carboxylase/Oxygenase 84

Bleomycin

- Hyperoxia, But Not Thoracic X-Irradiation, Potentiates Bleomycin- and Cyclophosphamide-Induced Lung Damage in Mice 82

Blood

- Evaluation of Radiation-Induced Chromosomal Aberrations in Human Peripheral Blood Lymphocytes In Vitro 16
- Mathematical Studies of the Absorption into Blood of An-241 following Oral Intubation into the Gut of Minature Swine 305

Blue

- Minnesota Alcohol Producers - Loan Guarantee Application, Blue Earth County, Minnesota 632

Bluegills

- Influence of Prey Abundance on Size-Selective Predation by Bluegills 448

Bobcats

- Food Habits of Bobcats in Eastern Tennessee 539

Body

- An Evaluation of the Host-Mediated Assay and Body Fluid Analysis - A Report of the U.S. Experimental Protection Agency Gene-Tox Program 136

Bomb

- Dosimetry for the Japanese Atomic Bomb Survivors 360
- Findings of a Recent ORNL Review of Dosimetry for the Japanese Atomic-Bomb Survivors 600

Bonding

- Stabilization of the Tertiary Structure of Yeast Phenylalanine tRNA by the Hexamine Cobaltic Ion: X-Ray Evidence for Hydrogen Bonding to Pairs of Guanine Bases in the Major Groove 96
- Flip-Flop Hydrogen Bonding in Partially Disordered System 214

Bone

- Sister Chromatid Differentiation Analysis of Cell Cycle Kinetics in Mouse Bone Marrow Cells 11
- Strontium-90 in Bone: A Case Study in Age-Dependent Dosimetric Modeling 372
- Photon and Neutron Fluence-to-Kerma Conversion Factors for ICR-1975 Reference Man Using Improved Elemental Compositions for Bone and Marrow of the Skeleton 601

Book

- Radiation Histopathology, Vol. I & II - Book Review 256
 Coping with the Biomedical Literature - Book Review 354
 Transuranic Elements in the Environment - Book Review 467

Bound

- Binding of Monoclonal Antibody to Protein Antigen in Fluid Phase or Bound to Solid Supports 117
 Comparison of Levels of Benzo(a)pyrene 7,8-Diol-9,10-Epoxy (BPDE) Diastereomers and Enantiomers Covalently Bound in Vivo to Macromolecular Components of Whole Epidermis Versus the Basal Cell Layer 180
 Comparison of Levels of Benzo(a)pyrene Diol Epoxy Diastereomers Covalently Bound In Vivo to Macromolecular Components of the Whole Epidermis Versus the Basal Cell Layer 181

bp

- Sequence Augmentation by Amplification of an (A+T)-Rich 142 bp Segment in a (G+C)-Rich Satellite DNA 18

BPDE

- Comparison of Levels of Benzo(a)pyrene 7,8-Diol-9,10-Epoxy (BPDE) Diastereomers and Enantiomers Covalently Bound in Vivo to Macromolecular Components of Whole Epidermis Versus the Basal Cell Layer 180

Brass

- Radiological Survey of the Former Bridgeport Brass Company Special Metals Extrusion Plant, Adrian, Michigan 594

BrdU

- Incorporation of CldU and BrdU into DNA and the Induction of SCE and Mutations 92

Breakdown

- Gas Breakdown and High-Voltage Insulating Gases 315
 Impulse Breakdown in Sulfur Hexafluoride, Sulfur Hexafluoride/Nitrogen and Sulfur Hexafluoride/Perfluorocarbon Mixtures 325
 Pressure-Dependent Electron Attachment Rates in Perfluoroalkanes and Perfluoropropylene and Their Effect on the Breakdown Strength of These Gases 346
 High Voltage Research (Breakdown Strengths of Gaseous and Liquid Insulators) and Environmental Effects of Dielectric Gases Semiannual Report (April 1-September 30, 1981) 584

Breeder

- A Review of Uncertainty Estimates Associated with Models for Assessing the Impact of Breeder Reactor Radioactivity Releases 606

Breeding

- Edge Effect on Breeding Forest Birds Along a Power Line Corridor 497

Bridgeport

- Radiological Survey of the Former Bridgeport Brass Company Special Metals Extrusion Plant, Adrian, Michigan 594

Broken

- Testing for Competition: A Critique of De Vita's Use of the Broken-Stick Model 532

Bromide

- Purification and Sequencing of Cyanogen Bromide Fragments from Ribulosebiphosphate Carboxylase/Oxygenase from *Rhodospirillum rubrum* 85

Bromo

- 3-Bromo-2-Ketoglutarate: A Substrate and Affinity Label for Diphosphopyridine Nucleotide-Dependent Isocitrate Dehydrogenase 13
 The Induction of Specific Locus Mutations and Sister Chromatid Exchanges by 5-Bromo- and 5-Chloro-Deoxyuridine 91

Bromoacetylaminopent

- 2-Bromoacetylaminopentitol 1,5-Bisphosphate as an Affinity Label for Ribulose Bisphosphate Carboxylase/Oxygenase from *Rhodospirillum rubrum* 66

Bronchiolar

- Pulmonary Toxicity of Methylcyclopentadienyl Manganese Tricarbonyl (MMT): Nonciliated Bronchiolar Epithelial (Clara) Cell Necrosis and Alveolar Damage in the Mouse Rat and Hamster 81
- Nonciliated Bronchiolar Epithelial (Clara) Cell Necrosis Induced by Organometallic Carbonyl Compounds 86

BRUTAL

- Small is BRUTAL: The Risk/Energy Trade-Off for Automobiles 597

Budgets

- Simulated Water Budgets for an Irrigated Sycamore Phytomass Farm 463
- Effects of Sawlog vs. Whole-Tree Harvesting on the Nitrogen, Phosphorus, Potassium, and Calcium Budgets of an Upland Mixed Oak Forest 491

Building

- Radionuclide Characterization of Subsurface Soil on the Site of Building 3505 at Oak Ridge National Laboratory 647
- Use of Vegetation to Ameliorate Building Microclimates: An Assessment of Energy Conservation Potentials 681

Bulk

- Energy Losses by Swift Charged Particles in the Bulk and at the Surface of Condensed Matter 400

Burial

- Shallow-Land Burial of Low-Level Radioactive Wastes: Preliminary Simulations of Long-Term Health Risks 328
- Shallow Land Burial Handbook 646

Bush

- Effect of Rainfall Senescence, Growth, and Yield of Bush Bean 493
- Effects of Orocol TL (a Corrosion Inhibitor) on Germination and Growth of Bush Beans 693

Butylated

- The Influence of Butylated Hydroxytoluene-Induced Cell Proliferation on Mouse Lung Damage after X-Rays or Fission Neutrons 268

Caddisflies

- Evidence for Upstream Dispersion of Adult Caddisflies (Trichoptera: Hydropsychidae) in the Columbia River 461

Cadmium

- Relationship of Vanadium, Cadmium, Lead, Nickel, Cobalt and Soft Water to Myocardial and Vascular Toxicity and Cardiovascular Disease 202
- A Model for Cadmium Transport and Distribution in CHO Cells 341
- Dietary Intake of Cadmium in the United States: 1920-1975 416

Cake

- Effects of Municipal Sewage Sludge-Cake on Nitrogen and Phosphorus Distributions in a Pine Plantation 528

Calcium

- Molt-Cycle Associated Changes in Calcium-Dependent Proteinase Activity that Degrades Actin and Myosin in Crustacean Muscle 162
- Crustacean Calcium-Dependent Proteinase that Degrades Actin, Myosin, and Other Myofibrillar Proteins 163
- Cytotoxicity and Mutagenicity of Dimethylnitrosamine in Mammalian Cells (CHO/HGPRT System): Enhancement by Calcium Phosphate 173
- Calcium-Enhanced Cellular Uptake of Rat Liver S9 by Chinese Hamster Ovary Cells 253
- Effects of Sawlog vs. Whole-Tree Harvesting on the Nitrogen, Phosphorus, Potassium, and Calcium Budgets of an Upland Mixed Oak Forest 491

Calculated

- Calculated Angular Distribution of Fragment Ions from Polyatomic Ion Collisions 2
 Calculated Initial Energies of Electrons in Si and Silicon Dioxide Irradiated by Photons with Energies up to 2 MeV 415

Calculating

- User's Manual for PHOEL-3, A Monte Carlo Computer Code for Calculating Initial Energies of Electrons and Positrons Produced in Water Irradiated by Photons with Energies Up to 1 GeV 615
 User's Manual for LPGS: A Computer Program for Calculating Radiation Exposure Resulting from Accidental Radioactive Releases to the Hydrosphere 623

Calibration

- Calibration of Denaturing Agarose Gels for Molecular Weight Estimation of DNA: Size Determination of the Single-Stranded Genomes of Parvoviruses 247
 Measurements of the TLD-Albedo Calibration Ratio Made at the Health Physics Research Reactor 337
 Calibration of the Indium Foil Used for Criticality Accident Dosimetry in the UCC-ND Employee Identification Badge 649

Calorimetric

- Calorimetric Measurement of Electron Stopping Power of Aluminum and Copper between 11 and 127 keV 345

Cambarus

- Thermal Resistance of Juvenile Crayfish, *Cambarus bartoni* (Fabricius): Experiment and Model 462

canadense

- Measurements of Growth and Consumption of Sauger (*Stizostedion canadense*): Implication for Fish Energetics Studies 511

Cancer

- Experimental Models for the Study of Morphogenesis of Lung Cancer 167

Canopy

- The Interaction of Wet and Dry Deposition with the Forest Canopy 503

CANI

- Plate Assay for Chemical- and Radiation-Induced Mutagenesis of CAN1 in Yeast as a Function of Post-treatment DNA Replication: The Effect of rad6-1 137

Carbon

- Conformation of the Deoxydinucleotide Monophosphate dCpdG Modified at Carbon 8 of Guanine with 2-(Acetylamino)fluorine 97
 The Carbon Dioxide Question: An Introduction to the Literature 281
 The Carbon Dioxide Question: Perspectives for 1982 282
 Storage and Release of Organic Carbon in Peninsular Malaysia 459
 Modeling Terrestrial Carbon Cycling at the Global Scale 474
 Effects of Chronic Air Pollution Stress on Photosynthesis, Carbon Allocation, and Growth of White Pine Trees 506
 The Role of Lake and Reservoir Sediments as Sinks in the Perturbed Global Carbon Cycle 512
 Transport of Organic Carbon to the Sea by Rivers of North America: A Synthesis of Existing Data 513
 Organic Carbon Spiralling in Stream Ecosystems 514
 Soil Carbon Pools and World Life Zones 523
 Summaries of Soil Carbon Storage in World Life Zones 524
 The Carbon Dioxide Question: A Data Sampler 551

Carbonyl

- Nonciliated Bronchiolar Epithelial (Clara) Cell Necrosis Induced by Organometallic Carbonyl Compounds 86

Carboxylase

- Inactivation of *Rhodospirillum rubrum* Ribulose Bisphosphate Carboxylase/Oxygenase by the Affinity Label 2-N-Chloroamino-2-Deoxypentitol 1,5-Bisphosphate 29
- 2-Bromoacetylaminopentitol 1,5-Bisphosphate as an Affinity Label for Ribulose Bisphosphate Carboxylase/Oxygenase from *Rhodospirillum rubrum* 66
- Identification of an Active-Site Methionyl Residue in Ribulose Bisphosphate Carboxylase/Oxygenase 84
- Purification and Sequencing of Cyanogen Bromide Fragments from Ribulosebisphosphate Carboxylase/Oxygenase from *Rhodospirillum rubrum* 85
- Reexamination of the Binding Site for Pyridoxal 5'-Phosphate in Ribulose Biophosphate Carboxylase/Oxygenase from *Rhodospirillum rubrum* 95
- Ribulosebisphosphate Carboxylase/Oxygenase from *Rhodospirillum rubrum* 217

Carcinogen

- Detection of Ductal Dysplasia in Mammary Outgrowths Derived from Carcinogen-Treated Virgin Female BALB/c Mice 55
- Physical Binding of Diol-Epoxyde Derivatives of the Carcinogen Benzo(a)pyrene to DNA 147
- The Effect of Carcinogen Release Rate on the Incidence of Preneoplastic and Neoplastic Lesions of the Respiratory Tract Epithelium in Rats 237
- Effect of Carcinogen Dose on the Dynamics of Neoplastic Development in Rat Tracheal Epithelium 263

Carcinogenesis

- Ultraviolet Radiation Skin Carcinogenesis 69
- Studies on the Multistage Nature of Radiation Carcinogenesis 70
- Resistance of Germfree Athymic Nude Mice to Two-Stage Skin Carcinogenesis 102
- Keratin Modifications in Epidermis, Papillomas and Carcinomas during Two-Stage Carcinogenesis in the SENCAR Mouse 165
- Chemical Carcinogenesis: Nature's Metabolic Mistake 231
- Comparison of Complete Carcinogenesis and Tumor Initiation in Mouse Skin: The Induction of Papillomas by Tumor Initiation-Promotion a Reliable Short Term Assay 243
- Studies on the Mechanisms Involved in Multistage Carcinogenesis in Mouse Skin 244
- Radiation Carcinogenesis 267
- Alpha-Difluoromethylornithine, an Irreversible Inhibitor of Ornithine Decarboxylase, Inhibits Tumor Promoter-Induced Polyamine Accumulation and Carcinogenesis in Mouse Skin 275

Carcinogenic

- The Relevance of Long Term Carcinogenic and Genetic Hazards to Emergency Control 68
- Metabolic Rationale for the Weak Mutagenic and Carcinogenic Activity of Benzo(e)pyrene 233
- The Influence of Split Dose Fractionation Interval on the Carcinogenic Effects of Fission Spectrum Neutrons 269

Carcinogens

- Induction of Filamentation by Mutagens and Carcinogens in a Lon(-) Mutant of *Escherichia coli* 164

Carcinomas

- Immunological Properties of in Vitro Passaged Carcinomas and Propagated Clones from Different Cell Lines 114
- Keratin Modifications in Epidermis, Papillomas and Carcinomas during Two-Stage Carcinogenesis in the SENCAR Mouse 165

Cardiac

- Tellurium-123m Labeled-9-Telluraheptadecanoic Acid: A Possible Cardiac Imaging Agent 394

Cardiovascular

- Relationship of Vanadium, Cadmium, Lead, Nickel, Cobalt and Soft Water to Myocardial and Vascular Toxicity and Cardiovascular Disease 202
- Cardiovascular Risk from Exposure to Static Magnetic Fields 322

Carlo

Monte Carlo Calculations of Initial Energies of Electrons in Water Irradiated by Photons with Energies up to 1 GeV 414

Parameter Constraints in a Stream Ecosystem Model: Incorporation of a Priori Information in Monte Carlo Error Analysis 517

User's Manual for PHOEL-3, A Monte Carlo Computer Code for Calculating Initial Energies of Electrons and Positrons Produced in Water Irradiated by Photons with Energies Up to 1 GeV 615

Carolina

Environmental Assessment - Eastern Ethanol Corporation - Loan Guarantee Application, Williamsburg County, South Carolina 624

Environmental Assessment - Energy Conversion Corporation - Loan Guarantee Application, Hampton County, South Carolina 625

Cartographic

Cartographic Evaluation of Environmental Management Strategies 481

cd

Antischistosomal Analogs of Ipycanthone. 2. Structure of 2-[2-(Diethylamino)ethyl]-2H-[1]-Benzothiopyrano [4,3,2-cd]Indazole-5-Methanol Monohydrate 276

cDNAs

Cloned cDNAs Specific to Flucocorticoid-Induced mRNAs of Rat Liver 135

CEA

Evaluation of a Modified CEA Instruments, Inc. Model 555 Analyzer for the Monitoring of Formaldehyde Vapor in Domestic Environments 377

Cell

Sister Chromatid Differentiation Analysis of Cell Cycle Kinetics in Mouse Bone Marrow Cells 11

Uptake of Tritiated Ouabain from the Cell Surface into the Lysosomal Compartment of HeLa Cells 34

Benzo(a)pyrene Metabolism in Primary Cultures of Mouse Epidermal Cells and Untransformed and Transformed Epidermal Cell Lines 46

Cell Specific Activation and Detoxification of Benzo(a)pyrene by Two Clones Murine Testicular Cell Lines 59

Cell Specific Activation and Detoxification of Benzo(a)pyrene by Two Clones Murine Testicular Cell Lines 59

Pulmonary Toxicity of Methylcyclopentadienyl Manganese Tricarbonyl (MMT): Nonciliated Bronchiolar Epithelial (Clara) Cell Necrosis and Alveolar Damage in the Mouse Rat and Hamster 81

Nonciliated Bronchiolar Epithelial (Clara) Cell Necrosis Induced by Organometallic Carbonyl Compounds 86

Cell-Mediated Mutagenicity in Chinese Hamster V79 Cells by Dibenzpyrenes and Their Bay-Region Disubstituted Fluorinated Derivatives 89

Cell Shape Changes in Oncogenic Transformation 94

Cell Differentiation, Alterations in Polyamine Levels, and Specific Binding of Phorbol Diesters in Cultured Human Cells 109

Immunological Properties of in Vitro Passaged Carcinomas and Propagated Clones from Different Cell Lines 114

Effects of Retinoic Acid on Cell Proliferation and Cell Differentiation in a Rat Tracheal Epithelial Cell Line 119

Effects of Retinoic Acid on Cell Proliferation and Cell Differentiation in a Rat Tracheal Epithelial Cell Line 119

Effects of Retinoic Acid on Cell Proliferation and Cell Differentiation in a Rat Tracheal Epithelial Cell Line 119

Propagation of Normal Human Epithelial Cell Populations Using an in Vivo Culture System:

Description and Applications	127
Protein Turnover and Phenotypic Expression in the Chinese Hamster Ovary Cell/ Hypoxanthine-Guanine Phosphoribosyl Transferase (CHO/HGPRT) System	141
Benzo(a)pyrene-Binding Proteins of Hamster Embryo Cell Nuclei: Comparison of Nuclear Isolation Procedures	142
Localization and Quantitation of Presumptive Neoplastic Cell Populations (PNCP) in Tracheas Exposed to Dimethylbenz(a)anthracene (DMBA)	150
Contribution of Unfrozen Fraction and of Salt Concentration to the Survival of Slowly Frozen Human Erythrocytes: Influence of Cell Concentration	155
Development and Progression of Neoplastic Disease. Morphologic and Cell Culture Studies with Airway Epithelium	168
Mutation Induction in Arrested CHO Cell Cultures: Stability of Mutagenic Damage	169
Induction and Expression of Mutations in Mammalian Cells in the Absence of DNA Synthesis and Cell Division	170
Effect of Selection Cell Density on the Recovery of Mutagen Induced 6-Thioguanine Resistant Cells (CHO/HGPRT System)	171
Phenotypic Expression Time of Mutagen-Induced 6-Thioguanine Resistance in Chinese Hamster Ovary Cells (CHO/HGPRT System): Expression in Division Arrested Cell Cultures	172
Comparison of Levels of Benzo(a)pyrene 7,8-Diol-9,10-Epoxy (BPDE) Diastereomers and Enantiomers Covalently Bound in Vivo to Macromolecular Components of Whole Epidermis Versus the Basal Cell Layer	180
Comparison of Levels of Benzo(a)pyrene Diol Epoxide Diastereomers Covalently Bound In Vivo to Macromolecular Components of the Whole Epidermis Versus the Basal Cell Layer	181
Cell-Mediated Mutagenesis and Tumor-Initiating Activity of the Ubiquitous Polycyclic Hydro- carbon, Cyclopenta(c,d) Pyrene	201
Specific-Locus Mutation Frequencies in Mouse Stem-Cell Spermatogonia at Very Low Radia- tion Dose Rates	213
Heterogeneity of Benzo(a)pyrene Metabolism in Human and Rodent Cell Culture	230
Benzo(a)pyrene Metabolites: Formation in Rat Liver Cell-Culture Lines, Binding to Macromo- lecules, and Mutagenesis in V79 Hamster Cells	232
Cell-Free Extracts That Induce Correct Transcription Initiation by RNA Polymerase II Convert SV40 DNA to Ordered Nucleoprotein Structures	239
The Influence of Butylated Hydroxytoluene-Induced Cell Proliferation on Mouse Lung Damage after X-Rays or Fission Neutrons	268
Immunoselection of Tumor Cell Variants by Mice Suppressed with Ultraviolet Radiation	270
The Effect of Reestablishing Tissue-Like Cell Associations on Hexose Uptake in Rat Tracheal Epithelial Cell Lines and Primary Cell Cultures	271
The Effect of Reestablishing Tissue-Like Cell Associations on Hexose Uptake in Rat Tracheal Epithelial Cell Lines and Primary Cell Cultures	271
The Effect of Reestablishing Tissue-Like Cell Associations on Hexose Uptake in Rat Tracheal Epithelial Cell Lines and Primary Cell Cultures	271
Effect of Cis- and Trans-Dichlorodiammineplatinum(II) on Human Tumor Cell Proliferation in Diffusion Chambers in Vivo	296
Decreased Immunoglobulin Production by a Human Lymphoid Cell Line following Melphalan Treatment	338
Multiple-Reflection Raman Gas Cell Design	376

Cells

Survival of Mammary Epithelial Cells from Virgin Female BALB/c Mice Following in Vivo Gamma Irradiation	3
Development of Sodium-independent Hexose Transport in a Cultured Line of Porcine Kidney Cells	5
Development of Na(Su ⁺)-Dependent Phlorizin Binding Sites in a Clone of LLC-PK1 Cells	6

Sister Chromatid Differentiation Analysis of Cell Cycle Kinetics in Mouse Bone Marrow Cells	11
Changes in DNA Content of Rat Tracheal Epithelial Cells during Neoplastic Progression In Vitro	20
Uptake of Tritiated Ouabain from the Cell Surface into the Lysosomal Compartment of HeLa Cells	34
A Model for the Differentiation of Na-Dependent Hexose Transport Capacity in a Population of LLC-PK(Sub 1) Cells	35
Generation and Characterization of Variants of Mouse Hepatoma Cells with Defects in Hepato-Specific Gene Expression. I. Albumin Synthesis Variants	41
Benzo(a)pyrene Metabolism in Primary Cultures of Mouse Epidermal Cells and Untransformed and Transformed Epidermal Cell Lines	46
Concanavalin A Alters the Turnover Rate of Tyrosine Aminotransferase in Cultured Hepatoma Cells	48
Separation of Epidermal Cells by Density Centrifugation: A New Technique for Studies on Normal and Pathological Differentiation	61
Recycling of Surface Sialoglycoconjugates in HTC and HeLa Cells	63
Heterogeneous Recycling of Surface Sialoglycoproteins in HeLa Cells	64
Quantitation and Analysis of Reverse Mutations at the HGPRT Locus in Cultured Mammalian Cells	72
A Possible Mechanism for Chemical Induction of Chromosome Aberrations in Male Meiotic and Postmeiotic Germ Cells of Mice	73
Lack of Association between Induction of Dominant-Lethal Mutations and Induction of Heritable Translocations with Benzo(a)pyrene (BaP) in Postmeiotic Germ Cells of Male Mice	75
Cell-Mediated Mutagenicity in Chinese Hamster V79 Cells by Dibenzpyrenes and Their Bay-Region Disubstituted Fluorinated Derivatives	89
The Control of Phospholipid Methylation by Phorbol Diesters in Differentiating Human Myeloid HL-60 Leukemia Cells	99
Gene Mutation, Quantitative Mutagenesis and Mutagen Screening in Mammalian Cells: Study with the CHO/HGPRT System	103
Reverse Transformation of Chinese Hamster Cells by Cyclic AMP and Hormones	105
Induction of Differentiation of Human Promyelocytic Leukemia (HL-60) Cells by Teleocidin B and Phorbol-13-Myristate-13-Acetate	108
Cell Differentiation, Alterations in Polyamine Levels, and Specific Binding of Phorbol Diesters in Cultured Human Cells	109
Determination of Growth Requirements of Non-Tumorigenic and Tumorigenic Tracheal Epithelial Cells Using a Semi-Automated Quantitative Method	120
Dark Epithelial Cells in Preneoplastic Lesions of the Human Respiratory Tract	123
Dark Cells in Human Oral Leukoplakias	124
Stereo Electron Microscope Studies of Mitotic Chromosomes from Chinese Hamster Ovary Cells	134
Salvage of the Modified Nucleoside Ribothymidine in Cultured Hamster Embryo Cells	139
Time Course of Metabolism of Benzo(e)pyrene by Hamster Embryo Cells and the Effect of Chemical Modifiers	143
Structural Anomalies of Highly Malignant Respiratory Tract Epithelial Cells	149
Contact-Stimulated Proliferation of Cultured Mouse Epidermal Cells by 3T3 Feeder Layers: Inhibition by 12-O-Tetradecanoylphorbol-13-Acetate (TPA)	156
Regulation of Alpha-Fetoprotein and Transferrin Synthesis and Secretion in Mouse Hepatoma Cells	159
Induction and Expression of Mutations in Mammalian Cells in the Absence of DNA Synthesis and Cell Division	170
Effect of Selection Cell Density on the Recovery of Mutagen Induced 6-Thioguanine Resistant Cells (CHO/HGPRT System)	171
Phenotypic Expression Time of Mutagen-Induced 6-Thioguanine Resistance in Chinese Hamster	

Ovary Cells (CHO/HGPRT System): Expression in Division Arrested Cell Cultures	172
Cytotoxicity and Mutagenicity of Dimethylnitrosamine in Mammalian Cells (CHO/HGPRT System): Enhancement by Calcium Phosphate	173
Ultrastructural Studies of Chironomus Salivary Gland Cells in Different States of Balbiani Ring Activity	175
Selective Effect of the Metallocarcinogen Beryllium on Hormonal Regulation of Gene Expression in Cultured Cells	184
Regulation by Turnover of Na,K-ATPase in HeLa Cells	186
The Induction of Chromosome Aberrations in Germ Cells: A Discussion of Factors That Can Influence Sensitivity to Chemical Mutagens	190
Unscheduled DNA Synthesis in Mammalian Germ Cells - Its Potential Use in Mutagenicity Testing	226
Benzo(a)pyrene Metabolites: Formation in Rat Liver Cell-Culture Lines, Binding to Macromolecules, and Mutagenesis in V79 Hamster Cells	232
Cytoskeletal Proteins from Tumorigenic and Nontumorigenic Rat Respiratory Tract Epithelial Cells	235
The Down-Modulation of Receptors for Phorbol Ester Tumor Promoter in Primary Epidermal Cells	251
The Down Regulation of Specific Binding of [20-H-3]phorbol 12,13,-dibutyrate and Phorbol Ester Induced Differentiation of Human Promyelocytic Leukemia Cells	252
Calcium-Enhanced Cellular Uptake of Rat Liver S9 by Chinese Hamster Ovary Cells	253
Microsome-Mediated Cytotoxicity to CHO Cells	260
Induction of Retrovirus Gene Expression in Mouse Cells by Some Chemical Mutagens	262
A System for the Molecular Analysis of Mutation in pSV2gpt Transfected CHO Cells	264
Metabolism of 6-Nitrobenzo(a)pyrene by Hamster Embryo Cells and Rat Liver Microsomes	265
Pathways for Efflux of Hexoses during Differentiation of LLC-PK1 Cells in Culture	277
In Vitro Toxicity Screening of Dielectric Gases Using Mammalian Cells	339
A Model for Cadmium Transport and Distribution in CHO Cells	341
Enhanced Benzo(a)pyrene Metabolism in Hamster Embryonic Cells Exposed in Culture to Fossil Synfuel Products	408
Cellular	
Calcium-Enhanced Cellular Uptake of Rat Liver S9 by Chinese Hamster Ovary Cells	253
Census	
Agricultural Production in the United States by County: A Compilation of Information from the 1974 Census of Agriculture for Use in Terrestrial Food-Chain Transport and Assessment Models	613
Center	
The Toxicology Information Response Center: A Ten-Year Perspective	292
The Environmental Teratology Information Center's Data Extraction Project	295
Centrifugation	
Separation of Epidermal Cells by Density Centrifugation: A New Technique for Studies on Normal and Pathological Differentiation	61
Interaction of a DNA-Binding Protein, the Gene Product of D5 of Bacteriophage T5, with Double-Stranded DNA - Analysis by Metrizamide Gradient Centrifugation	71
Cerevisiae	
Effect of rev Genes on Chemically-Induced Frameshift Mutagenesis in Saccharomyces Cerevisiae	132
Chain	
New Myocardial Imaging Agents - The Influence of Chain Length on the Heart Uptake of Se-75-Labeled Fatty Acids	363
Comparative Food Chain Behavior and Distribution of Actinide Elements in and around a Contaminated Fresh-Water Pond	479

Agricultural Production in the United States by County: A Compilation of Information from the 1974 Census of Agriculture for Use in Terrestrial Food-Chain Transport and Assessment Models 613

Xenobiotic Bioaccumulation by Terrestrial Vertebrates: A Bibliography for Food Chain Modeling 709

Chambers

Effect of Cis- and Trans-Dichlorodiammineplatinum(II) on Human Tumor Cell Proliferation in Diffusion Chambers in Vivo 296

CHaNnel

CHNHYD: A CHaNnel HYDrodynamic Model for Simulating Flows and Water Surface Elevations in a Stream/River Network 720

Chaoborus

Predation of Chaoborus punctipennis on Larvae of Dorosoma 667

Chaotic

Chaotic Models as Representations of Ecological Systems 518

Chapter

Chapter 6.3: Mathematical Models in Internal Dose Estimation 304

Chapter 3 - The Interaction of Photons with Surface Plasmons 401

Characterization

Generation and Characterization of Variants of Mouse Hepatoma Cells with Defects in Hepato-Specific Gene Expression. I. Albumin Synthesis Variants 41

Characterization of Antibody Covalently Coupled to Liposomes 107

Sequential Thymus Grafting of Aged Mice: Characterization of Growth, Regression and Enhancement of Immune Competence 182

Analysis of the Albino-Locus Region of the Mouse: IV. Characterization of 34 Deficiencies 207

Characterization of Covalent Constituents in a Coal Conversion Solid Waste 484

Coal Gasification Solid Wastes: Physicochemical Characterization 499

Characterization of Metal and Debris Samples from the Shpack Landfill, Norton, Massachusetts 586

Abstracts of the Low-Level Waste Disposal: Site Characterization and Monitoring 619

Radionuclide Characterization of Subsurface Soil on the Site of Building 3505 at Oak Ridge National Laboratory 647

Baseline Environmental Characterization of Pike County Coal Gasification Facility Site 666

Charged

Energy Losses by Swift Charged Particles in the Bulk and at the Surface of Condensed Matter 400

A Core Plasma Model of Charged Particle Track Formation in Insulators 402

The Wake of Charged Particles in Condensed Matter 403

Chattanooga

Chattanooga Shale: An Assessment of the Resource and Technology for the Recovery of Hydrocarbons and Minerals 640

Chemical

A Possible Mechanism for Chemical Induction of Chromosome Aberrations in Male Meiotic and Postmeiotic Germ Cells of Mice 73

A Naturally Occurring Pyrimidodiazepine in Drosophila: Chemical and Spectral Properties and Relationship to Drosopterin 111

Plate Assay for Chemical- and Radiation-Induced Mutagenesis of CAN1 in Yeast as a Function of Post-Treatment DNA Replication: The Effect of rad6-1 137

Time Course of Metabolism of Benzo(e)pyrene by Hamster Embryo Cells and the Effect of Chemical Modifiers 143

The Induction of Chromosome Aberrations in Germ Cells: A Discussion of Factors That Can Influ-

ence Sensitivity to Chemical Mutagens	190
Chemical Carcinogenesis: Nature's Metabolic Mistake	231
Induction of Retrovirus Gene Expression in Mouse Cells by Some Chemical Mutagens	262
Aspergillus nidulans: Systems and Results of Tests for Chemical Induction of Mitotic Segregation and Mutation. I. Diploid and Duplication Assay Systems. A Report of the U.S. EPA Gene-Tox Program	286
Tellurium-125 Chemical Shifts of Symmetric and Unsymmetric Dialkyl Ditellurides	393
Unique and Multiple Solutions of a Family of Differential Equations Modeling Chemical Reactions	429
Chemical Softness and Acute Metal Toxicity in Mice and Drosophila	430
Chemically	
Effect of rev Genes on Chemically-Induced Frameshift Mutagenesis in Saccharomyces Cerevisiae	132
Chemicals	
Workshop on the Practical Application of the Mammalian Spot Test in Routine Mutagenicity Testing of Drugs and Other Chemicals	21
DNA Repair and Chromosome Aberrations: Interactive Effects of Radiation and Chemicals	189
Altered Tissue Reactivity and Interactions between Chemicals	278
Chemicals Identified in Human Biological Media	283
The Risk of Chemicals to Aquatic Environments	536
Chemicals Identified in Human Biological Media, A Data Base: Third Annual Report, October 1981, Volume 3, Part 2 Records 3501-5271	557
Chemicals Identified in Human Biological Media, A Data Base: Third Annual Report, October 1981, Volume 3, Part 1	558
Chemicals Identified in Human Biological Media, A Data Base, Volume IV	559
Chemicals Identified in Human Biological Media, A Data Base: Fourth Annual Report	560
Chemicals Identified in Human Biological Media, A Data Base: Fourth Annual Report	561
Chemicals Identified in Feral and Food Animals, A Data Base: First Annual Report - October 1981	562
Chemicals Identified in Feral and Food Animals, A Data Base: Second Annual Report	563
Health Effects of Environmental Chemicals on the Adult Human Reproductive System - A Selected Bibliography with Abstracts 1963-1981	576
A Multimedia Screening-Level Model for Assessing the Potential Fate of Chemicals Released to the Environment	605
Chemistry	
Counting the Atoms: Some Applications in Chemistry	349
Chemotherapy	
Mouse Myeloid Leukemia as an Experimental Model for Monitoring Progression of Leukemia and Chemotherapy	12
Chestnut	
Cycling of Organic and Inorganic Sulfur in a Chestnut Oak Forest	489
Chinese	
Cell-Mediated Mutagenicity in Chinese Hamster V79 Cells by Dibenzpyrenes and Their Bay-Region Disubstituted Fluorinated Derivatives	89
A Multiphasic Chinese Hamster Mutational System	104
Reverse Transformation of Chinese Hamster Cells by Cyclic AMP and Hormones	105
The Need to Develop a Short-Term Chinese Hamster In Vivo Specific Locus Mutational Assay	106
Stereo Electron Microscope Studies of Mitotic Chromosomes from Chinese Hamster Ovary Cells	134
Protein Turnover and Phenotypic Expression in the Chinese Hamster Ovary Cell/Hypoxanthine-Guanine Phosphoribosyl Transferase (CHO/HGPRT) System	141
Phenotypic Expression Time of Mutagen-Induced 6-Thioguanine Resistance in Chinese Hamster Ovary Cells (CHO/HGPRT System): Expression in Division Arrested Cell Cultures	172
Calcium-Enhanced Cellular Uptake of Rat Liver S9 by Chinese Hamster Ovary Cells	253

Chironomus

- Ultrastructural Studies of Chironomus Salivary Gland Cells in Different States of Balbiani Ring Activity 175

Chlorine

- Evaluation of Short-Term Exposure to Heated Water and Chlorine for Control of the Asiatic Clam (*Corbicula fluminea*) 689

Chloro

- The Induction of Specific Locus Mutations and Sister Chromatid Exchanges by 5-Bromo- and 5-Chloro-Deoxyuridine 91

Chloroamino

- Inactivation of *Rhodospirillum rubrum* Ribulose Biphosphate Carboxylase/Oxygenase by the Affinity Label 2-N-Chloroamino-2-Deoxypentitol 1,5-Bisphosphate 29

Chloroethanes

- Electron Attachment to Halocarbons of Environmental Interest: Chloroethanes 388

CHNHYD

- CHNHYD: A CHaNNel HYDrodynamic Model for Simulating Flows and Water Surface Elevations in a Stream/River Network 720

CHO

- Effect of Metabolic Activation on the Cytotoxicity and Mutagenicity of 1,2-Dibromoethane in the CHO/HGPRT System 23
- Cytotoxicity and Mutagenicity of Five Antitumor Compounds (Ellipticines) in the CHO/HGPRT System 44
- Gene Mutation, Quantitative Mutagenesis and Mutagen Screening in Mammalian Cells: Study with the CHO/HGPRT System 103
- Protein Turnover and Phenotypic Expression in the Chinese Hamster Ovary Cell/Hypoxanthine-Guanine Phosphoribosyl Transferase (CHO/HGPRT) System 141
- Mutation Induction in Arrested CHO Cell Cultures: Stability of Mutagenic Damage 169
- Effect of Selection Cell Density on the Recovery of Mutagen Induced 6-Thioguanine Resistant Cells (CHO/HGPRT System) 171
- Phenotypic Expression Time of Mutagen-Induced 6-Thioguanine Resistance in Chinese Hamster Ovary Cells (CHO/HGPRT System): Expression in Division Arrested Cell Cultures 172
- Cytotoxicity and Mutagenicity of Dimethylnitrosamine in Mammalian Cells (CHO/HGPRT System): Enhancement by Calcium Phosphate 173
- An Analysis of Mutagenic Activity of Quinolines in the CHO/HGPRT System 215
- Lipid Peroxidation of S9 and the CHO/HGPRT System 259
- Microsome-Mediated Cytotoxicity to CHO Cells 260
- A System for the Molecular Analysis of Mutation in pSV2gpt Transfected CHO Cells 264
- A Model for Cadmium Transport and Distribution in CHO Cells 341

Chromatid

- Sister Chromatid Differentiation Analysis of Cell Cycle Kinetics in Mouse Bone Marrow Cells 11
- The Induction of Specific Locus Mutations and Sister Chromatid Exchanges by 5-Bromo- and 5-Chloro-Deoxyuridine 91

Chromatin

- The Structure of Gene-Size Chromatin Fragments from the Macronucleus of *Oxytricha nova* 133

Chromium

- Germination and Growth Effects of Hexavalent Chromium in Orocol (A Corrosion Inhibitor) on *Phaseolus vulgaris* 522

Chromosomal

- Evaluation of Radiation-Induced Chromosomal Aberrations in Human Peripheral Blood Lymphocytes In Vitro 16

Chromosome

- A Possible Mechanism for Chemical Induction of Chromosome Aberrations in Male Meiotic and Postmeiotic Germ Cells of Mice 73
- Acid Lipase-1 (Lip-1) is on Mouse Chromosome 19: Evidence for Homologous Regions on Human Chromosome 10 and Mouse 19 128
- Acid Lipase-1 (Lip-1) is on Mouse Chromosome 19: Evidence for Homologous Regions on Human Chromosome 10 and Mouse 19 128
- Assignment of Aey-1 to Mouse Chromosome 3: Evidence for Homologous Linkage Groups in Man and Mouse 130
- Mouse Alpha-Like Pseudogenes are Assigned to Chromosome 15 and 17 131
- DNA Repair and Chromosome Aberrations: Interactive Effects of Radiation and Chemicals 189
- The Induction of Chromosome Aberrations in Germ Cells: A Discussion of Factors That Can Influence Sensitivity to Chemical Mutagens 190
- The Use of Inhibitors of DNA Repair in the Study of the Mechanisms of Induction of Chromosome Aberrations 191
- Chromosome Aberrations in Decondensed Sperm DNA 193

Chromosomes

- Stereo Electron Microscope Studies of Mitotic Chromosomes from Chinese Hamster Ovary Cells 134

Chronic

- Percutaneous Acute and Chronic Renal Toxicity Induced by Shale Oil and Petroleum Derived Jet and Diesel Fuel 53
- Pathogenesis of Lesions Induced in Rat Lung by Chronic Tobacco Smoke Inhalation 92
- Effects of Chronic Air Pollution Stress on Photosynthesis, Carbon Allocation, and Growth of White Pine Trees 506
- Chronic Toxicity of the Azaarene Quinoline, a Synthetic Fuel Component, to the Pond Snail *Physa heterostropha* 509

Chronically

- Response of Chronically Ozonated Soybean Plants to an Acute Ozone Exposure 492

Circle

- Environmental Assessment, Circle Energies Corporation - Loan Guarantee Application, Finney County, Kansas 629

Circular

- The Scattering of a Plane Electromagnetic Wave by a Conducting Circular Cylinder 585

Cistron

- The Effect of Mutations in the *uvrD* Cistron of *Escherichia coli* on Repair Resynthesis 129

Citrate

- Estimates of Dose to Systemic Organs and GI Tract Based on Data from Miniature Swine Orally Intubated with a Single Dose of Am-241 Citrate 306

City

- Radiological Survey of the Former Kellogg Research Facility, Jersey City, New Jersey 521

Clam

- Evaluation of Short-Term Exposure to Heated Water and Chlorine for Control of the Asiatic Clam (*Corbicula fluminea*) 689

Clara

- Pulmonary Toxicity of Methylcyclopentadienyl Manganese Tricarbonyl (MMT): Nonciliated Bronchiolar Epithelial (Clara) Cell Necrosis and Alveolar Damage in the Mouse Rat and Hamster 81
- Nonciliated Bronchiolar Epithelial (Clara) Cell Necrosis Induced by Organometallic Carbonyl Compounds 86

Class

- Corrected Analysis of the Ability to Detect Reductions in Year-Class Strength of the Hudson River White Perch (*Morone americana*) Population 549

CldU

- Incorporation of CldU and BrdU into DNA and the Induction of SCE and Mutations 92

Clean

- A Simple Reverse Phase Column Clean Up for the Determination of Sulfate in Aqueous Leachates Containing Organic Compounds 1
 Guidance Manual for Department of Energy Compliance with the Clean Water Act: National Pollutant Discharge Elimination System (NPDES) 680
 Guidance Manual for Department of Energy Compliance with the Clean Air Act: Prevention of Significant Deterioration 703

Cleanup

- Cleanup and Treatment of Radioactively Contaminated Land Including Areas Near Nuclear Facilities - A Selected Bibliography 566

Clinch

- Technical Background Information for the Environmental and Safety Report, Vol. 5: The 1977 Clinch River Sediment Survey - Data Presentation 648

Clone

- Development of Na(Sup +)-Dependent Phlorizin Binding Sites in a Clone of LLC-PK1 Cells 6

Cloned

- Cloned cDNAs Specific to Flucocorticoid-Induced mRNAs of Rat Liver 135

Clones

- Cell Specific Activation and Detoxification of Benzo(a)pyrene by Two Clones Murine Testicular Cell Lines 59
 Immunological Properties of in Vitro Passaged Carcinomas and Propagated Clones from Different Cell Lines 114

Cluster

- Vicinage Effects in Ion Cluster Collisions with Condensed Matter and with Single Atoms 303

Cm

- Mobile Species of Pu, Am, Cm, Np, and Te in the Environment 453

Coal

- Embryotoxic and Teratogenic Effects of Aqueous Extracts of a Coal Gasification Electrostatic Precipitator 221
 Energy Analysis of the Coal Fuel Cycle: Community Health and Resource Change in an Appalachian Coal County 425
 Energy Analysis of the Coal Fuel Cycle: Community Health and Resource Change in an Appalachian Coal County 425
 Plume Washout around a Major Coal-Fired Power Plant: Results of a Single Storm Event 437
 Plume Washout around a Major Coal-Fired Power Plant: Results of a Single Storm Event 438
 Health and Environmental Studies of H-Coal Process 441
 Health and Environmental Studies of H-Coal Process 442
 Environmental Aspects of Organics in Selected Coal Conversion Solid Wastes 456
 Composition and Toxicity of Solid Waste Leachates from Industrial Coal Gasifiers 465
 Ecotoxicity of Coal Gasifier Solid Wastes 466
 Coal Conversion Solid Waste Disposal 475
 Coal Conversion Solid Waste Disposal 476
 Effects of the Water-Soluble Fraction of a Coal-Derived Oil on Pond Microcosms 480
 Characterization of Covalent Constituents in a Coal Conversion Solid Waste 484
 Coal Gasification Solid Wastes: Physicochemical Characterization 499
 Risk Assessment of Coal Production: An Information System User's Manual 616
 State-of-the-Art Assessment of Coal Preparation Plant Automation 622
 International Survey of Coal Preparation Technology 639
 Environmental Studies of Materials from the H-Coal Liquefaction Process Development

- Unit 658**
 Baseline Environmental Characterization of Pike County Coal Gasification Facility Site 666
 Coal Pile Leachate Treatment 668
 Summary of Research on Coal Liquefaction Product Spills 676
 The Effect of Temperature on the Toxicity of the Water Soluble Fractions of Diesel Fuel No. 2 and
 H-Coal Crude Oil to *Daphnia magna* 713
 The Growth, Nutrient Absorption, and Moisture Status of Selected Woody Species in Coal Mine
 Spoil in Response to an Induced Infection by the Ectomycorrhizal Fungus *Pisolithus*
tinctorius 718
 International Survey of the Status of Technology or Critical Components for Coal Liquefaction
 Processes 725
- Coast**
 Environmental Assessment - Gulf Coast Resources, Inc. - Loan Guarantee Application, Lee
 County, Iowa 635
 Relative Stock Composition of the Atlantic Coast Striped Bass Population: Further
 Analysis 714
- Coated**
 Surface-Enhanced Raman Scattering on Silver-Coated Teflon Sphere Substrates 336
- Coating**
 Feasibility Studies for Improving Gas Insulation By Coating Contaminating Particles 395
- Coatings**
 Formation of Freshwater Fe-Mn Coatings on Gravel and the Behavior of Co-60, Sr-90, and
 Cs-137 in a Small Watershed 458
- Cobalt**
 Relationship of Vanadium, Cadmium, Lead, Nickel, Cobalt and Soft Water to Myocardial and
 Vascular Toxicity and Cardiovascular Disease 202
- Cobaltic**
 Stabilization of the Tertiary Structure of Yeast Phenylalanine tRNA by the Hexamine Cobaltic
 Ion: X-Ray Evidence for Hydrogen Bonding to Pairs of Guanine Bases in the Major
 Groove 96
- cockerelli**
 Positive Phototaxis in First Instar *Hydropsyche cockerelli* Banks (Trichoptera) 460
- Code**
 EPA Liquid Release Pathway Health Impact Code: Feasibility Study 591
 User's Manual for PHOEL-3, A Monte Carlo Computer Code for Calculating Initial Energies of
 Electrons and Positrons Produced in Water Irradiated by Photons with Energies Up to 1
 GeV 615
 User's Manual for STRIPE: A Computer Code for Simulating Striped Bass Young-of-the-Year
 Population in the Hudson River 673
 FECWATER: User's Manual of a Finite-Element Code for Simulating WATER Flow Through
 Saturated-Unsaturated Porous Media 723
 FECWASTE: User's Manual of a Finite-Element Code for Simulating WASTE Transport
 Through Saturated-Unsaturated Porous Media 724
- Coefficient**
 Prediction of Radionuclide Distribution Coefficient Values from Soil-Plant Concentration
 Ratios 302
- Coherent**
 Coherent States and the Interaction of Swift Ions with Condensed Matter 324
- Cohorts**
 Genesis of Bimodal Size Distributions in Species Cohorts 469
- Coil**
 The Poly rU Coil: A Minimum Energy Model That Matches Experimental Observations 98

Cold

- Cold Trapping Efficiencies for Collection of Tritiated Water Entrained in a Gaseous Stream 399

coli

- Study of the Mechanism by Which a Cytoplasmic Membrane Preparation Promotes Septation in Irradiated *Escherichia coli* 76
- The Effect of Mutations in the *uvrD* Cistron of *Escherichia coli* on Repair Resynthesis 129
- O-6-Methylguanine-DNA Methyl Transferase in Wild-Type and Ada Mutants of *E. coli* 157
- Induction of Filamentation by Mutagens and Carcinogens in a *Lou(-)* Mutant of *Escherichia coli* 164

Collection

- Cold Trapping Efficiencies for Collection of Tritiated Water Entrained in a Gaseous Stream 399

Collective

- Uncertainties in the Assessment of Long-Term Collective Dose and Health Effects 366

Collisional

- Collisional Ionization between Fast Alkali Atoms and Hexafluorobenzene 320

Collisions

- Calculated Angular Distribution of Fragment Ions from Polyatomic Ion Collisions 2
- Vicinage Effects in Ion Cluster Collisions with Condensed Matter and with Single Atoms 303
- Two-State Models of Radiative Collisions and Related Ionization Effects 397

Colonies

- Factors Influencing the Development of Spontaneous Mutant Colonies in the Salmonella Mutagenicity Assay 4

Colors

- On Light, Colors, and Origins of Spectroscopy 138

Columbia

- Evidence for Upstream Dispersion of Adult Caddisflies (Trichoptera: Hydropsychidae) in the Columbia River 461

Column

- A Simple Reverse Phase Column Clean Up for the Determination of Sulfate in Aqueous Leachates Containing Organic Compounds 1

Combustion

- The Contribution of Residential Wood Combustion to Local Airshed Pollutant Concentrations 381
- International Energy Technology Assessment - Atmospheric Fluidized-Bed Combustion 638

Commercial

- A Survey of Potential Health and Safety Hazards of Commercial-Scale Ethanol Production Facilities 617

Community

- Energy Analysis of the Coal Fuel Cycle: Community Health and Resource Change in an Appalachian Coal County 425
- Bird Community Ecology on Power-Line Corridors in East Tennessee 498
- An Evaluation of Community Information Indices for Mississippi River Fisheries 694

Comparative

- Comparative Physicochemical and Biological Properties of Two Strains of Kilham Rat Virus, a Non-Defective Parvovirus 158
- Acute Cytotoxicity of Fossil-Energy-Related Comparative Research Materials 218
- Comparative Study of Electron Energy Deposition and Yields in Water in the Liquid and Vapor Phases 420
- Comparative Food Chain Behavior and Distribution of Actinide Elements in and around a Contam-

- inated Fresh-Water Pond 479
- Comparative Embryotoxicity and Teratogenicity of Petroleum and Petroleum Substitutes to Insects Developing in Contaminated Substrates 550
- Comparing**
- A General Linear Models Approach for Comparing the Response of Several Species in Acute Toxicity Tests 468
- Compartment**
- Uptake of Tritiated Ouabain from the Cell Surface into the Lysosomal Compartment of HeLa Cells 34
- Compartmentation**
- Compartmentation of the Nucleotide Pool 90
- Compensation**
- Dosage Compensation of Serine-4 Transfer RNA in *Drosophila melanogaster* 17
- Competence**
- Sequential Thymus Grafting of Aged Mice: Characterization of Growth, Regression and Enhancement of Immune Competence 182
- Recovery of Immune Competence Following Sublethal X-Irradiation of Young and Old Mice: A Model for Studying Age-Related Loss of Immunologic Homeostasis 185
- Competition**
- Testing for Competition: A Critique of De Vita's Use of the Broken-Stick Model 532
- Compilation**
- Compilation of a Biogenic Hydrocarbon Emissions Inventory for Evaluating Ozone Control Strategies in the San Francisco Bay Area 436
- Agricultural Production in the United States by County: A Compilation of Information from the 1974 Census of Agriculture for Use in Terrestrial Food-Chain Transport and Assessment Models 613
- Complex**
- Synaptonemal Complex Analysis of Two X-7 Translocations in Male Mice. I. R3 and R5 Quadrivalents 10
- Conformation of the HMG 14 Nucleosome Core Complex from Flow Birefringence 83
- Multiple Sites of Deletions and Insertions in Variants of a Complex Satellite DNA 241
- Neutron Scattering Studies and Modeling of High Mobility Group 14 Core Nucleosome Complex 266
- Geologic Setting of the Hillabee Metavolcanic Complex and Associated Stratabound Sulfide Deposits in the Appalachian Piedmont of Alabama 545
- Complexes**
- Neutron Scattering and X-Ray Diffraction of Nucleosomes and Nucleosome - HMG Complexes 26
- Compliance**
- Guidance Manual for Department of Energy Compliance with Corps of Engineers Permits on Dredging and Filling Activities 660
- Guidance Manual for Department of Energy Compliance with the Clean Water Act: National Pollutant Discharge Elimination System (NPDES) 680
- Guidance Manual for Department of Energy Compliance with the Fish and Wildlife Coordination Act 698
- Manual for Department of Energy Compliance with the Endangered Species Act 699
- Guidance Manual for Department of Energy Compliance with the Clean Air Act: Prevention of Significant Deterioration 703
- Component**
- DNA Repair in Normal Human and Xeroderma Pigmentosum Group A Fibroblasts following Treatment with Various Methanesulfonates and the Demonstration of a Long-Patch (UV-Like) Repair Component 248
- Chronic Toxicity of the Azaarene Quinoline, a Synthetic Fuel Component, to the Pond Snail *Physa heterostroph*a 509

Components

Comparison of Levels of Benzo(a)pyrene 7,8-Diol-9,10-Epoxy (BPDE) Diastereomers and Enantiomers Covalently Bound in Vivo to Macromolecular Components of Whole Epidermis Versus the Basal Cell Layer 180

Comparison of Levels of Benzo(a)pyrene Diol Epoxy Diastereomers Covalently Bound In Vivo to Macromolecular Components of the Whole Epidermis Versus the Basal Cell Layer 181

International Survey of the Status of Technology of Critical Components for Coal Liquefaction Processes 725

Composition

Composition and Toxicity of Solid Waste Leachates from Industrial Coal Gasifiers 465

The Impact of Entrainment and Impingement on Fish Populations in the Hudson River Estuary - Volume II: Impingement Impact Analyses, Evaluations of Alternative Screening Devices, and Critiques of Utility Testimony Relating to Density-Dependent Growth, the Age-Composition of the Striped Bass Spawning Stock, and the LMS Real-Time Life Cycle Model 654

Relative Stock Composition of the Atlantic Coast Striped Bass Population: Further Analysis 714

Compositions

Photon and Neutron Fluence-to-Kerma Conversion Factors for ICR-1975 Reference Man Using Improved Elemental Compositions for Bone and Marrow of the Skeleton 601

Compounds

A Simple Reverse Phase Column Clean Up for the Determination of Sulfate in Aqueous Leachates Containing Organic Compounds 1

Cytotoxicity and Mutagenicity of Five Antitumor Compounds (Ellipticines) in the CHO/HGPRT System 44

Nonciliated Bronchiolar Epithelial (Clara) Cell Necrosis Induced by Organometallic Carbonyl Compounds 86

Structure-Toxicity Relationships of Selected Dinitrogen-Containing Cyclic Compounds 219

Structure-Toxicity Relationships of Selected Nitrogenous Heterocyclic Compounds. II. Dinitrogen Molecules 220

Structure-Toxicity Relationships of Selected Nitrogenous Heterocyclic Compounds. III: Relations Using Molecular Connectivity 223

Computer

Computer Processing of Public Comments on Proposed Federal Regulations 285

User's Manual for PHOEL-3, A Monte Carlo Computer Code for Calculating Initial Energies of Electrons and Positrons Produced in Water Irradiated by Photons with Energies Up to 1 GeV 615

User's Manual for LPGS: A Computer Program for Calculating Radiation Exposure Resulting from Accidental Radioactive Releases to the Hydrosphere 623

User's Manual for STRIPE: A Computer Code for Simulating Striped Bass Young-of-the-Year Population in the Hudson River 673

Training Course No 1: The Implementation of FEMWATER (ORNL-5567) Computer Program Final Report 721

Training Course No. 2: The Implementation of FEMWASTE (ORNL-5601) Computer Program - Final Report 722

Concanavalin

Concanavalin A Alters the Turnover Rate of Tyrosine Aminotransferase in Cultured Hepatoma Cells 48

Histochemical Localization of Gamma-Glutamyltranspeptidase (GGT) and Concanavalin A in Normal, Preneoplastic and Neoplastic Epithelia 125

Concentration

Contribution of Unfrozen Fraction and of Salt Concentration to the Survival of Slowly Frozen Human Erythrocytes: Influence of Cell Concentration 155

Contribution of Unfrozen Fraction and of Salt Concentration to the Survival of Slowly Frozen

Human Erythrocytes: Influence of Cell Concentration	155
Prediction of Radionuclide Distribution Coefficient Values from Soil-Plant Concentration Ratios	302
The Influence of Food Concentration and Container Volume on Life History Parameters of <i>Diaptomus dorsalis</i> Marsh from Subtropical Florida	473
Concentration, Serotypic Profiles and Infectivity of Legionnaires' Disease Bacteria Populations in Cooling Towers	546
Concentrations	
Comparison of Observed and Predicted Air Concentrations for 18.6 μ m Fluorescein Particles	374
The Contribution of Residential Wood Combustion to Local Airshed Pollutant Concentrations	381
Comparison of Observed and Predicted Normalized Air Concentrations for Particles Released from a Height of 111 Meters	384
Comparison of Observed and Predicted Sodium Air and Ground Concentrations	385
Factors Influencing Trace Metal, Sulfate, and Hydrogen Ion Concentrations in Rain	501
Responses of Radish to Nitrogen Dioxide, Sulfur Dioxide, and Ozone in Combination at Three Concentrations	527
Analysis of Environmental Issues Related to Small-Scale Hydroelectric Development. VI. Dissolved Oxygen Concentrations Below Operating Dams	659
Conceptual	
Variation in Plant Response to Ozone: A Conceptual Model of Physiological Events	544
Conceptus	
Assessment of Risks to Human Reproduction and to Development of the Human Conceptus from Exposure to Environmental Substances	570
Condensed	
Simple Model for Electron Inelastic Mean Free Paths: Application to Condensed Organic Materials	300
Vicinage Effects in Ion Cluster Collisions with Condensed Matter and with Single Atoms	303
Coherent States and the Interaction of Swift Ions with Condensed Matter	324
Energy Losses by Swift Charged Particles in the Bulk and at the Surface of Condensed Matter	400
The Wake of Charged Particles in Condensed Matter	403
Conducting	
The Scattering of a Plane Electromagnetic Wave by a Conducting Circular Cylinder	585
Conductivity	
Studies of Photoionization in Liquids Using a Laser Two-Photon Ionization Conductivity Technique	411
Conformation	
DNA Backbone Conformation in AAF Modified dCpdG: Variable Conformational Modes of Achieving Base Displacement	24
Conformation of the HMG 14 Nucleosome Core Complex from Flow Birefringence	83
Conformation of the Deoxydinucleotide Monophosphate dCpdG Modified at Carbon 8 of Guanine with 2-(Acetylamino)fluorine	97
Conformational	
DNA Backbone Conformation in AAF Modified dCpdG: Variable Conformational Modes of Achieving Base Displacement	24
Congenic	
DNA Repair in a Congenic Pair of Mice with Different Longevities	32
An Analysis of Genetic Factors Regulating Life-Span in Congenic Mice	187
Conjugate	
The Functional Unit of the Arom Conjugate in <i>Neurospora</i>	116

Connectivity

Structure-Toxicity Relationships of Selected Nitrogenous Heterocyclic Compounds. III: Relations Using Molecular Connectivity 223

Conservation

Health Risk Associated with Energy Conservation 357

Status of the Residential Conservation Service Program in Selected States as of December 1981 567

Residential Conservation Service - Planning and Implementation Guide for Home Heating Suppliers 568

Residential Conservation Service - Planning and Implementation Guide 569

Basic Considerations for Monitoring and Evaluating the Residential Conservation Service 626

Use of Vegetation to Ameliorate Building Microclimates: An Assessment of Energy Conservation Potentials 681

Conserving

Risk of Producing Energy - and Conserving It 356

Constituents

Characterization of Covalent Constituents in a Coal Conversion Solid Waste 484

Constraints

Parameter Constraints in a Stream Ecosystem Model: Incorporation of a Priori Information in Monte Carlo Error Analysis 517

Using Peat for Energy: Potential Environmental Constraint 526

Construct

A Construct for Analysis of Ecosystem Perturbations Based on Input/Output Analysis 697

Construction

Low-Level Waste Disposal: Facility Design, Construction, and Operating Practices, Washington, DC, September 29-30, 1982 - Abstracts 620

Consumption

Measurements of Growth and Consumption of Sauger (*Stizostedion canadense*): Implication for Fish Energetics Studies 511

Container

The Influence of Food Concentration and Container Volume on Life History Parameters of *Diaptomus dorsalis* Marsh from Subtropical Florida 473

Contaminated

Comparative Food Chain Behavior and Distribution of Actinide Elements in and around a Contaminated Fresh-Water Pond 479

Dissolution Characteristics of Pu-Contaminated Soils and Sediments in Lung Serum Simulant Solution 500

Comparative Embryotoxicity and Teratogenicity of Petroleum and Petroleum Substitutes to Insects Developing in Contaminated Substrates 550

Cleanup and Treatment of Radioactively Contaminated Land Including Areas Near Nuclear Facilities - A Selected Bibliography 566

Contaminating

Feasibility Studies for Improving Gas Insulation By Coating Contaminating Particles 395

Contamination

Quantification of Surface Contamination: Principles and Applications 422

RAGBEEF: A FORTRAN IV - Implementation of a Time-Dependent Model for Radionuclide Contamination of BEEF 611

Contributions

Relative Contributions of Cryobiological and Non-Cryobiological Factors to "Freezing" Injury in Human Granulocytes 154

Control

The Relevance of Long Term Carcinogenic and Genetic Hazards to Emergency Control 68

- The Control of Phospholipid Methylation by Phorbol Diesters in Differentiating Human Myeloid HL-60 Leukemia Cells 99
- Turnover of Gene Products in the Control of Gene Expression 118
- Compilation of a Biogenic Hydrocarbon Emissions Inventory for Evaluating Ozone Control Strategies in the San Francisco Bay Area 436
- Evaluation of Short-Term Exposure to Heated Water and Chlorine for Control of the Asiatic Clam (*Corbicula fluminea*) 689
- Controlling**
- Location of a Gene Controlling Electrophoretic Variation in Mouse Gamma-Crystallins 242
- Controls**
- Environmetrics of the Gasifier in Industry Program: III. Decision Support Systems for Quality Assurance Controls 675
- Conventional**
- Generic Environmental Assessment Report for Conventional Fuel-Alcohol Plants 672
- Conversion**
- Conversion of Simian Virus 40 DNA to Ordered Nucleoprotein Structures by Extracts that Direct Accurate Initiation by Eukaryotic RNA Polymerase II 240
- Environmental Aspects of Organics in Selected Coal Conversion Solid Wastes 456
- Coal Conversion Solid Waste Disposal 475
- Coal Conversion Solid Waste Disposal 476
- Characterization of Covalent Constituents in a Coal Conversion Solid Waste 484
- Photon and Neutron Fluence-to-Kerma Conversion Factors for ICR-1975 Reference Man Using Improved Elemental Compositions for Bone and Marrow of the Skeleton 601
- Derivation of Dose Conversion Factors for Tritium 602
- Experimental Procedure for Examining the Kinetics of Tritium Gas Conversion to Tritiated Water 610
- Environmental Assessment - Energy Conversion Corporation - Loan Guarantee Application, Hampton County, South Carolina 625
- Convert**
- Cell-Free Extracts That Induce Correct Transcription Initiation by RNA Polymerase II Convert SV40 DNA to Ordered Nucleoprotein Structures 239
- Cooling**
- Concentration, Serotypic Profiles and Infectivity of Legionnaires' Disease Bacteria Populations in Cooling Towers 546
- Presence of Pathogenic Microorganisms in Power Plant Cooling Waters Report for October 1, 1979, to September 30, 1981 711
- Survey of Cooling Towers Within Oak Ridge Operations for the Presence of Legionnaire's Disease Bacterium 712
- Cooperative**
- Cooperative Effects on Multiphoton Ionization and Third-Harmonic Generation in the Region near Three-Photon Resonance 398
- Coordination**
- Guidance Manual for Department of Energy Compliance with the Fish and Wildlife Coordination Act 698
- Coping**
- Coping with the Biomedical Literature - Book Review 354
- Copper**
- Calorimetric Measurement of Electron Stopping Power of Aluminum and Copper between 11 and 127 keV 345
- Corbicula**
- Evaluation of Short-Term Exposure to Heated Water and Chlorine for Control of the Asiatic Clam (*Corbicula fluminea*) 689

Core

- Conformation of the HMG 14 Nucleosome Core Complex from Flow Birefringence Neutron Scattering Studies and Modeling of High Mobility Group 14 Core Nucleosome Complex 266
- A Core Plasma Model of Charged Particle Track Formation in Insulators 402

Corporation

- Environmental Assessment - Eastern Ethanol Corporation - Loan Guarantee Application, Williamsburg County, South Carolina 624
- Environmental Assessment - Energy Conversion Corporation - Loan Guarantee Application, Hampton County, South Carolina 625
- Environmental Assessment, Circle Energies Corporation - Loan Guarantee Application, Finney County, Kansas 629
- Environmental Assessment, New Energy Corporation of Indiana - Loan Guarantee Application, St. Joseph County, Indiana 631
- Environmental Assessment, U.S. Ethanol Corporation - Loan Guarantee Application, East Baton Rouge Parish, Louisiana 633
- Environmental Assessment - Agrifuels Refining Corporation - Loan Guarantee Application, Iberia Parish, Louisiana 634

Corps

- Guidance Manual for Department of Energy Compliance with Corps of Engineers Permits on Dredging and Filling Activities 660

Correct

- Cell-Free Extracts That Induce Correct Transcription Initiation by RNA Polymerase II Convert SV40 DNA to Ordered Nucleoprotein Structures 239

Corrected

- Corrected Analysis of the Ability to Detect Reductions in Year-Class Strength of the Hudson River White Perch (*Morone americana*) Population 549

Corridor

- Edge Effect on Breeding Forest Birds Along a Power Line Corridor 497

Corridors

- Bird Community Ecology on Power-Line Corridors in East Tennessee 498

Corrosion

- Germination and Growth Effects of Hexavalent Chromium in Orocol (A Corrosion Inhibitor) on *Phaseolus vulgaris* 522
- Effects of Orocol TL (a Corrosion Inhibitor) on Germination and Growth of Bush Beans 693

Cost

- Technology and Cost of Termination Surveys Associated with Decommissioning of Nuclear Facilities 618

Counters

- New Gas Mixture Improves Performance of He-3 Neutron Counters 431

Counting

- Counting the Atoms: Some Applications in Chemistry 349
- Resonance Ionization Spectroscopy for Low-Level Counting 350

County

- Energy Analysis of the Coal Fuel Cycle: Community Health and Resource Change in an Appalachian Coal County 425
- Agricultural Production in the United States by County: A Compilation of Information from the 1974 Census of Agriculture for Use in Terrestrial Food-Chain Transport and Assessment Models 613
- Environmental Assessment - Eastern Ethanol Corporation - Loan Guarantee Application, Williamsburg County, South Carolina 624
- Environmental Assessment - Energy Conversion Corporation - Loan Guarantee Application,

- Hampton County, South Carolina 625
 Environmental Assessment - D. W. Small and Sons, Inc. - Loan Guarantee Application, Androscoggin County, Maine 628
 Environmental Assessment, Circle Energies Corporation - Loan Guarantee Application, Finney County, Kansas 629
 Environmental Assessment, New Energy Corporation of Indiana - Loan Guarantee Application, St. Joseph County, Indiana 631
 Minnesota Alcohol Producers - Loan Guarantee Application, Blue Earth County, Minnesota 632
 Environmental Assessment - Gulf Coast Resources, Inc. - Loan Guarantee Application, Lee County, Iowa 635
 Environmental Assessment - Tennol, Inc. - Loan Guarantee Application, Marion County, Tennessee 636
 Baseline Environmental Characterization of Pike County Coal Gasification Facility Site 666
- Coupled**
 Characterization of Antibody Covalently Coupled to Liposomes 107
- Covalent**
 Covalent Binding of Isomeric Benzo(a)pyrene Diol-epoxides to DNA 144
 Covalent Intercalative Binding of Benzo(a)pyrene-9,10-Diol-7,8-Epoxy to DNA 146
 An Improved Method for Covalent Attachment of Antibody to Liposomes 236
 Characterization of Covalent Constituents in a Coal Conversion Solid Waste 484
- Covalently**
 Characterization of Antibody Covalently Coupled to Liposomes 107
 Comparison of Levels of Benzo(a)pyrene 7,8-Diol-9,10-Epoxy (BPDE) Diastereomers and Enantiomers Covalently Bound in Vivo to Macromolecular Components of Whole Epidermis Versus the Basal Cell Layer 180
 Comparison of Levels of Benzo(a)pyrene Diol Epoxy Diastereomers Covalently Bound In Vivo to Macromolecular Components of the Whole Epidermis Versus the Basal Cell Layer 181
- Cr**
 Partial Optimization of Electrochemical-Etching Parameters for Highly Sensitive Cr-39 Fast Neutron Dosimeters 329
- Crab**
 Unusual Sequence Features in the Repeat Unit of (G+C)-Rich Crab Satellite DNA 65
- Crabs**
 Ecdysone Metabolism in Premolt Land Crabs (*Gecarcinus lateralis*) 505
- Crayfish**
 Thermal Resistance of Juvenile Crayfish, *Cambarus bartoni* (Fabricius): Experiment and Model 462
- Criteria**
 Oscillation Criteria for Nonlinear Bianchi Equations 419
- Critical**
 Information - The Critical Difference in Risk Analysis 290
 Identifying Critical Human Subpopulations by Age Groups: Radioactivity and the Lung 321
 International Survey of the Status of Technology of Critical Components for Coal Liquefaction Processes 725
- Criticality**
 Calibration of the Indium Foil Used for Criticality Accident Dosimetry in the UCC-ND Employee Identification Badge 649
- Critique**
 Testing for Competition: A Critique of De Vita's Use of the Broken-Stick Model 532
 Evaluation and Critique of In Situ Experimental Systems for Investigating Effects of Stress in Lentic Ecosystems 650
 Scientific Review and Critique of R. L. Patterson's: Production, Mortality, and Power-Plant Entrainment of Larval Yellow Perch in Western Lake Erie 715

Critiques

- The Impact of Entrainment and Impingement on Fish Populations in the Hudson River Estuary - Volume II: Impingement Impact Analyses, Evaluations of Alternative Screening Devices, and Critiques of Utility Testimony Relating to Density-Dependent Growth, the Age-Composition of the Striped Bass Spawning Stock, and the LMS Real-Time Life Cycle Model 654

Crops

- Short-Rotation Woody Crops as a Source of Energy 525
The Short Rotation Woody Crops Program: 1982 Program Summary 695

Crude

- The Effect of Temperature on the Toxicity of the Water Soluble Fractions of Diesel Fuel No. 2 and H-Coal Crude Oil to *Daphnia magna* 713

Crustacean

- Crustacean Muscles: Atrophy and Regeneration during Molting 161
Molt-Cycle Associated Changes in Calcium-Dependent Proteinase Activity that Degrades Actin and Myosin in Crustacean Muscle 162
Crustacean Calcium-Ion-Dependent Proteinase that Degrades Actin, Myosin, and Other Myofibrillar Proteins 163

Cryobiological

- Relative Contributions of Cryobiological and Non-Cryobiological Factors to "Freezing" Injury in Human Granulocytes 154
Relative Contributions of Cryobiological and Non-Cryobiological Factors to "Freezing" Injury in Human Granulocytes 154

Crystallins

- Location of a Gene Controlling Electrophoretic Variation in Mouse Gamma-Crystallins 242

Cs

- Imprecision in Estimates of Dose from Ingested Cs-137 Due to Variability in Human Biological Characteristics 409
Formation of Freshwater Fe-Mn Coatings on Gravel and the Behavior of Co-60, Sr-90, and Cs-137 in a Small Watershed 458

Culture

- Propagation of Normal Human Epithelial Cell Populations Using an in Vivo Culture System: Description and Applications 127
Development and Progression of Neoplastic Disease. Morphologic and Cell Culture Studies with Airway Epithelium 168
Heterogeneity of Benzo(a)pyrene Metabolism in Human and Rodent Cell Culture 230
Benzo(a)pyrene Metabolites: Formation in Rat Liver Cell-Culture Lines, Binding to Macromolecules, and Mutagenesis in V79 Hamster Cells 232
Pathways for Efflux of Hexoses during Differentiation of LLC-PK1 Cells in Culture 277
Enhanced Benzo(a)pyrene Metabolism in Hamster Embryonic Cells Exposed in Culture to Fossil Synfuel Products 406

Cultured

- Development of Sodium-Independent Hexose Transport in a Cultured Line of Porcine Kidney Cells 5
Concanavalin A Alters the Turnover Rate of Tyrosine Aminotransferase in Cultured Hepatoma Cells 48
Quantitation and Analysis of Reverse Mutations at the HGPRT Locus in Cultured Mammalian Cells 72
Cell Differentiation, Alterations in Polyamine Levels, and Specific Binding of Phorbol Diesters in Cultured Human Cells 109
Salvage of the Modified Nucleoside Ribothymidine in Cultured Hamster Embryo Cells 139
Contact-Stimulated Proliferation of Cultured Mouse Epidermal Cells by 3T3 Feeder Layers: Inhibition by 12-O-Tetradecanoylphorbol-13-Acetate (TPA) 156
Selective Effect of the Metalloccarcinogen Beryllium on Hormonal Regulation of Gene Expression in Cultured Cells 184

Cultures

- Benzo(a)pyrene Metabolism in Primary Cultures of Mouse Epidermal Cells and Untransformed and Transformed Epidermal Cell Lines 46
- Mutation Induction in Arrested CHO Cell Cultures: Stability of Mutagenic Damage 169
- Phenotypic Expression Time of Mutagen-Induced 6-Thioguanine Resistance in Chinese Hamster Ovary Cells (CHO/HGPRT System): Expression in Division Arrested Cell Cultures 172
- The Effect of Reestablishing Tissue-Like Cell Associations on Hexose Uptake in Rat Tracheal Epithelial Cell Lines and Primary Cell Cultures 271

Curve

- Dose-Response Curve for Ethylnitrosourea-Induced Specific-Locus Mutations in Mouse Spermatogonia 211
- The Impact of Entrainment and Impingement on Fish Populations in the Hudson River Estuary - Volume III - An Analysis of the Validity of the Utilities' Stock-Recruitment Curve-Fitting Exercise and "Prior Estimation of Beta" Technique 663

Cutaneous

- A Novel Method for Quantitative Cutaneous Toxicokinetics 101
- A Method for In Vitro Cutaneous Toxicity Evaluation 115

Cyanogen

- Purification and Sequencing of Cyanogen Bromide Fragments from Ribulosebiphosphate Carboxylase/Oxygenase from *Rhodospirillum rubrum* 85

Cycles

- Comparison of the Radiological Impacts of Thorium and Uranium Nuclear Fuel Cycles 556

Cyclic

- Reverse Transformation of Chinese Hamster Cells by Cyclic AMP and Hormones 105
- Structure-Toxicity Relationships of Selected Dinitrogen-Containing Cyclic Compounds 219

Cycling

- Modeling Terrestrial Carbon Cycling at the Global Scale 474
- Cycling of Organic and Inorganic Sulfur in a Chestnut Oak Forest 489
- Prescribed Fire: Effects on Water Quality and Forest Nutrient Cycling 529

Cyclopenta

- Cell-Mediated Mutagenesis and Tumor-Initiating Activity of the Ubiquitous Polycyclic Hydrocarbon, Cyclopenta(c,d) Pyrene 201

Cyclophosphamide

- Hyperoxia, But Not Thoracic X-Irradiation, Potentiates Bleomycin- and Cyclophosphamide-Induced Lung Damage in Mice 82

Cylinder

- The Scattering of a Plane Electromagnetic Wave by a Conducting Circular Cylinder 585

Cytogenetic

- Cytogenetic Analysis of Mammalian Oocytes in Mutagenicity Studies 22
- Cytogenetic Studies in Animals 192
- The Use of the Host Mediated Assay for Cytogenetic Studies 194
- Introduction and Perspectives of Plant Genetic and Cytogenetic Assays: A Report of the U.S. Environmental Protection Agency Gene-Tox Program 284

Cytoplasmic

- Effects of Phorbol Ester Tumor Promoters and Hyperplasiogenic Agents on Cytoplasmic Glucocorticoid Receptors in Epidermis 43
- Study of the Mechanism by Which a Cytoplasmic Membrane Preparation Promotes Septation in Irradiated *Escherichia coli* 76

Cytoskeletal

- Cytoskeletal Proteins from Tumorigenic and Nontumorigenic Rat Respiratory Tract Epithelial Cells 235

Cytotoxicity

Effect of Metabolic Activation on the Cytotoxicity and Mutagenicity of 1,2-Dibromoethane in the CHO/HGPRT System	23
Cytotoxicity and Mutagenicity of Five Antitumor Compounds (Ellipticines) in the CHO/HGPRT System	44
Cytotoxicity and Mutagenicity of Dimethylnitrosamine in Mammalian Cells (CHO/HGPRT System): Enhancement by Calcium Phosphate	173
Acute Cytotoxicity of Fossil-Energy-Related Comparative Research Materials	218
Microsome-Mediated Cytotoxicity to CHO Cells	260
Damage	
Role of Base Damage in Aberration Formation Interaction of Aphidicolin and X-Rays	15
Ultraviolet-Induced Damage and Its Repair in Human DNA	28
Psoralen-Plus-Light Damage and Repair in Transforming DNA of <i>Bacillus subtilis</i>	79
Pulmonary Toxicity of Methylcyclopentadienyl Manganese Tricarbonyl (MMT): Nonciliated Bronchiolar Epithelial (Clara) Cell Necrosis and Alveolar Damage in the Mouse Rat and Hamster	81
Hyperoxia, But Not Thoracic X-Irradiation, Potentiates Bleomycin- and Cyclophosphamide-Induced Lung Damage in Mice	82
Mutation Induction in Arrested CHO Cell Cultures: Stability of Mutagenic Damage	169
The Use of Alkaline Elution To Study DNA Damage in Developing Mouse Sperm after Exposure to Methyl Methanesulfonate	225
Studies on the Inhibition of Ultraviolet- and Methyl Methanesulfonate-Induced Damage in the DNA of Human Fibroblasts by Novobiocin	250
The Influence of Butylated Hydroxytoluene-Induced Cell Proliferation on Mouse Lung Damage after X-Rays or Fission Neutrons	268
Dams	
Analysis of Environmental Issues Related to Small-Scale Hydroelectric Development. VI. Dissolved Oxygen Concentrations Below Operating Dams	659
Daphnia	
The Effect of Temperature on the Toxicity of the Water Soluble Fractions of Diesel Fuel No. 2 and H-Coal Crude Oil to <i>Daphnia magna</i>	713
Dark	
Quantitative Evaluation of Dark Keratinocytes Induced by Several Promoting and Hyperplasiogenic Agents: Their Use as an Early Morphological Indicator of Tumor-Promoting Action	121
Dark Epithelial Cells in Preneoplastic Lesions of the Human Respiratory Tract	123
Dark Cells in Human Oral Leukoplakias	124
DC	
Low-Level Waste Disposal: Facility Design, Construction, and Operating Practices, Washington, DC, September 29-30, 1982 - Abstracts	620
dCpdG	
DNA Backbone Conformation in AAF Modified dCpdG: Variable Conformational Modes of Achieving Base Displacement	24
Conformation of the Deoxydinucleotide Monophosphate dCpdG Modified at Carbon 8 of Guanine with 2-(Acetylamino)fluoride	97
Base Displacement in AAF and AF Modified dCpdG: Syn and Anti Guanine	342
DDP	
Analysis and Refinement of the Microscale Synthesis of the Pt-195m-Labeled Antitumor Drug, cis-Dichlorodiammineplatinum(II), cis-DDP	343
Death	
Causes of Death and Their Contribution to Radiation-Induced Life Shortening in Intact and Ovariectomized Mice	258
Debris	
Characterization of Metal and Debris Samples from the Shpack Landfill, Norton, Massachusetts	586

Decapoda

- An Indexed Bibliography of the Spiny (Rock) Lobsters (Decapoda: Palinuridae) 494

Decarboxylation

- Alpha-Difluoromethylornithine, an Irreversible Inhibitor of Ornithine Decarboxylase, Inhibits Tumor Promoter-Induced Polyamine Accumulation and Carcinogenesis in Mouse Skin 275

Decay

- Radiative Decay of Surface Plasmons on Oblate Spheroids 375

December

- Status of the Residential Conservation Service Program in Selected States as of December 1981 567

Decision

- Environmetrics of the Gasifier in Industry Program: III. Decision Support Systems for Quality Assurance Controls 675

Decommissioning

- Nuclear Facility Decommissioning and Site Remedial Actions - A Selected Bibliography Volume 3 575
Technology and Cost of Termination Surveys Associated with Decommissioning of Nuclear Facilities 618

Decomposition

- Studies of Spark Decomposition Products of Sulfur Hexafluoride and Sulfur Hexafluoride/Perfluorocarbon Mixtures 407

Decocondensed

- Chromosome Aberrations in Decocondensed Sperm DNA 193

Decreased

- Decreased Immunoglobulin Production by a Human Lymphoid Cell Line following Melphalan Treatment 338

Deer

- White-Tailed Deer (*Odocoileus virginianus*) on the Department of Energy's Oak Ridge Reservation: 1980 Status Report 705
White-Tailed Deer (*Odocoileus virginianus*) on the Department of Energy's Oak Ridge Reservation: 1981 Status Report 706

Defective

- Comparative Physicochemical and Biological Properties of Two Strains of Kilham Rat Virus, a Non-Defective Parvovirus 158

Defects

- Generation and Characterization of Variants of Mouse Hepatoma Cells with Defects in Hepato-Specific Gene Expression. I. Albumin Synthesis Variants 41

Deficiencies

- Analysis of the Albino-Locus Region of the Mouse: IV. Characterization of 34 Deficiencies 207

Deficient

- Hyperkeratinization and Hyperplasia of the Forestomach Epithelium in Vitamin A Deficient Rats 122

Definitions

- Risk Assessment Approaches: General Definitions, Limitations and Research Needs 423

Degrades

- Molt-Cycle Associated Changes in Calcium-Dependent Proteinase Activity that Degrades Actin and Myosin in Crustacean Muscle 162
Crustacean Calcium-Ion-Dependent Proteinase that Degrades Actin, Myosin, and Other Myofibrillar Proteins 163

Dehydrogenase

- 3-Bromo-2-Ketoglutarate: A Substrate and Affinity Label for Diphosphopyridine Nucleo-

- tide-Dependent Isocitrate Dehydrogenase 13
 3,4-Dihydro-2-Ketoglutarate: An Affinity Label for Diphosphopyridine Nucleotide-Dependent Isocitrate Dehydrogenase 14
- Deletions**
- Multiple Sites of Deletions and Insertions in Variants of a Complex Satellite DNA 241
- Demethylase**
- Dimethylnitrosamine Demethylase in *Drosophila melanogaster* 273
 Dimethylnitrosamine Demethylase Activity in *Drosophila melanogaster* 274
- Demonstration**
- DNA Repair in Normal Human and Xeroderma Pigmentosum Group A Fibroblasts following Treatment with Various Methanesulfonates and the Demonstration of a Long-Patch (UV-Like) Repair Component 248
- Denaturing**
- Calibration of Denaturing Agarose Gels for Molecular Weight Estimation of DNA: Size Determination of the Single-Stranded Genomes of Parvoviruses 247
- Density**
- Separation of Epidermal Cells by Density Centrifugation: A New Technique for Studies on Normal and Pathological Differentiation 61
 Expectation Values for Low Resolution Slit-Scan Flow Prescreening: Influence of Nuclear Shape and DNA Density 160
 Effect of Selection Cell Density on the Recovery of Mutagen Induced 6-Theoguanine Resistant Cells (CHO/HGPRT System) 171
 Density Effect in Liquid Water 297
 The Impact of Entrainment and Impingement on Fish Populations in the Hudson River Estuary - Volume II: Impingement Impact Analyses, Evaluations of Alternative Screening Devices, and Critiques of Utility Testimony Relating to Density-Dependent Growth, the Age-Composition of the Striped Bass Spawning Stock, and the LMS Real-Time Life Cycle Model 654
- Deoxydinucleotide**
- Conformation of the Deoxydinucleotide Monophosphate dCpdG Modified at Carbon 8 of Guanine with 2-(Acetylamino)fluorine 97
- Deoxypentitol**
- Inactivation of *Rhodospirillum rubrum* Ribulose Bisphosphate Carboxylase/Oxygenase by the Affinity Label 2-N-Chloroamino-2-Deoxypentitol 1,5-Bisphosphate 29
- Deoxycytidine**
- The Induction of Specific Locus Mutations and Sister Chromatid Exchanges by 5-Bromo- and 5-Chloro-Deoxyuridine 91
- Department**
- The Multiprogram Laboratories of the Department of Energy 645
 Guidance Manual for Department of Energy Compliance with Corps of Engineers Permits on Dredging and Filling Activities 660
 Guidelines for Preparing Environmental Analyses for Department of Energy NEPA Documents 671
 Guidance Manual for Department of Energy Compliance with the Clean Water Act: National Pollutant Discharge Elimination System (NPDES) 680
 Guidance Manual for Department of Energy Compliance with the Fish and Wildlife Coordination Act 698
 Manual for Department of Energy Compliance with the Endangered Species Act 699
 Guidance Manual for Department of Energy Compliance with the Clean Air Act: Prevention of Significant Deterioration 703
 White-Tailed Deer (*Odocoileus virginianus*) on the Department of Energy's Oak Ridge Reservation: 1980 Status Report 705
 White-Tailed Deer (*Odocoileus virginianus*) on the Department of Energy's Oak Ridge Reservation: 1981 Status Report 706

Dependent

- Development of Na(Sup +)-Dependent Phlorizin Binding Sites in a Clone of LLC-PK1 Cells 6
- 3-Bromo-2-Ketoglutarate: A Substrate and Affinity Label for Diphosphopyridine Nucleotide-Dependent Isocitrate Dehydrogenase 13
- 3,4-Didehydro-2-Ketoglutarate: An Affinity Label for Diphosphopyridine Nucleotide-Dependent Isocitrate Dehydrogenase 14
- Development of Sodium Ion-Dependent Hexose Transport In Vitro 33
- A Model for the Differentiation of Na-Dependent Hexose Transport Capacity in a Population of LLC-PK(Sub 1) Cells 35
- Molt-Cycle Associated Changes in Calcium-Dependent Proteinase Activity that Degrades Actin and Myosin in Crustacean Muscle 162
- Crustacean Calcium-Ion-Dependent Proteinase that Degrades Actin, Myosin, and Other Myofibrillar Proteins 163
- Pressure-Dependent Electron Attachment Rates in Perfluoroalkanes and Perfluoropropylene and Their Effect on the Breakdown Strength of These Gases 346
- Strontium-90 in Bone: A Case Study in Age-Dependent Dosimetric Modeling 372
- RAGBEEF: A FORTRAN IV - Implementation of a Time-Dependent Model for Radionuclide Contamination of BEEF 611
- The Impact of Entrainment and Impingement on Fish Populations in the Hudson River Estuary - Volume II: Impingement Impact Analyses, Evaluations of Alternative Screening Devices, and Critiques of Utility Testimony Relating to Density-Dependent Growth, the Age-Composition of the Striped Bass Spawning Stock, and the LMS Real-Time Life Cycle Model 654

Deposited

- An Analysis of Reported Values of the Environmental Half-Time for Radionuclides Deposited on the Surfaces of Vegetation 386

Deposition

- Comparative Study of Electron Energy Deposition and Yields in Water in the Liquid and Vapor Phases 420
- Atmospheric Deposition and Plant Assimilation of Gases and Particles 485
- Atmospheric Deposition of Metals to Forest Vegetation 502
- The Interaction of Wet and Dry Deposition with the Forest Canopy 503
- Air Pollution Impacts on Forest Trees: Acid Deposition: Effects on Terrestrial Ecosystems 533
- Atmospheric Sulfur Deposition: Environmental Impact and Health Effects 702

Deposits

- Geology and Geochemistry of the Stratabound Sulfide Deposits of the Pyriton District, Alabama 540
- Geologic Setting of the Hillabee Metavolcanic Complex and Associated Stratabound Sulfide Deposits in the Appalachian Piedmont of Alabama 545

Derivation

- Derivation of Dose Conversion Factors for Tritium 602

Derivative

- Evaluation of a Second Derivative UV-Absorption Spectrometer (DUVAS) for Analyzing Gases in Smoke Plumes 604

Derivatives

- Cell-Mediated Mutagenicity in Chinese Hamster V79 Cells by Dibenzpyrenes and Their Bay-Region Disubstituted Fluorinated Derivatives 89
- Physical Binding of Diol-Epoxy Derivatives of the Carcinogen Benzo(a)pyrene to DNA 147
- Mutagenicity of 4,4'-Methylenedianiline (MDA) Derivatives in the Salmonella Histidine Reversion Assay 199

Design

- Multiple-Reflection Raman Gas Cell Design 376
- Low-Level Waste Disposal: Facility Design, Construction, and Operating Practices, Washington, DC, September 29-30, 1982 - Abstracts 620

Detect

Corrected Analysis of the Ability to Detect Reductions in Year-Class Strength of the Hudson River White Perch (*Morone americana*) Population 549

Detectability

Entrainment Mortality of Ichthyoplankton: Detectability and Precision of Estimates 548

Detecting

A Mobile Gamma-Ray Scanning System for Detecting Radiation Anomalies Associated with Radium-226 Bearing Materials 607

Detection

Detection of Ductal Dysplasia in Mammary Outgrowths Derived from Carcinogen-Treated Virgin Female BALB/c Mice 55

Use of Gamma-Ray Detection Instrumentation in ORNL's Off-Site Radiological Survey Program 307

Tagging Materials for Detection of Explosives 317

Single Particle Detection: Gaseous Devices 347

Detection of Sulfur Tetrafluoride in Sparked Sulfur Hexafluoride 406

Detector

Fluctuation Experiments on Atomic and Molecular Systems Using the One-Atom Detector 358

Deterioration

Guidance Manual for Department of Energy Compliance with the Clean Air Act: Prevention of Significant Deterioration 703

Detoxification

Cell Specific Activation and Detoxification of Benzo(a)pyrene by Two Clones Murine Testicular Cell Lines 59

Detrimental

The Detrimental Effect of Glycerol on Granulocytes 9

Develop

The Need to Develop a Short-Term Chinese Hamster In Vivo Specific Locus Mutational Assay 106

Developing

A Temporal Study at the Ultrastructural Level of the Developing Pro-oocyte of *Drosophila melanogaster* 78

The Use of Alkaline Elution To Study DNA Damage in Developing Mouse Sperm after Exposure to Methyl Methanesulfonate 225

Comparative Embryotoxicity and Teratogenicity of Petroleum and Petroleum Substitutes to Insects Developing in Contaminated Substrates 550

Devices

Single Particle Detection: Gaseous Devices 347

The Impact of Entrainment and Impingement on Fish Populations in the Hudson River Estuary - Volume II: Impingement Impact Analyses, Evaluations of Alternative Screening Devices, and Critiques of Utility Testimony Relating to Density-Dependent Growth, the Age-Composition of the Striped Bass Spawning Stock, and the LMS Real-Time Life Cycle Model 654

Dialkyl

Tellurium-125 Chemical Shifts of Symmetric and Unsymmetric Dialkyl Ditellurides 393

Diaptomus

The Influence of Food Concentration and Container Volume on Life History Parameters of *Diaptomus dorsalis* Marsh from Subtropical Florida 473

Diastereomers

Comparison of Levels of Benzo(a)pyrene 7,8-Diol-9,10-Epoxy (BPDE) Diastereomers and Enantiomers Covalently Bound in Vivo to Macromolecular Components of Whole Epidermis Versus the Basal Cell Layer 180

Comparison of Levels of Benzo(a)pyrene Diol Epoxy Diastereomers Covalently Bound In Vivo to Macromolecular Components of the Whole Epidermis Versus the Basal Cell Layer 181

Dibenzpyrenes

- Cell-Mediated Mutagenicity in Chinese Hamster V79 Cells by Dibenzpyrenes and Their Bay-Region Disubstituted Fluorinated Derivatives 89

Dibromoethane

- Effect of Metabolic Activation on the Cytotoxicity and Mutagenicity of 1,2-Dibromoethane in the CHO/HGPRT System 23

dibutyrate

- The Down Regulation of Specific Binding of [20-H-3]phorbol 12,13,-dibutyrate and Phorbol Ester Induced Differentiation of Human Promyelocytic Leukemia Cells 252

Dichlorodiammineplat

- Effect of Cis- and Trans-Dichlorodiammineplatinum(II) on Human Tumor Cell Proliferation in Diffusion Chambers in Vivo 296
Analysis and Refinement of the Microscale Synthesis of the Pt-195m-Labeled Antitumor Drug, cis-Dichlorodiammineplatinum(II), cis-DDP 343

Dichlorvos

- Test of Dichlorvos Using the Sensitive-Indicator Method for Dominant Skeletal Mutations in Mice 229

Didehydro

- 3,4-Didehydro-2-Ketoglutarate: An Affinity Label for Diphosphopyridine Nucleotide-Dependent Isocitrate Dehydrogenase 14

Dielectric

- In Vitro Toxicity Screening of Dielectric Gases Using Mammalian Cells 339
Photoionization of Fluoranthene in Dielectric Liquids 369
High Voltage Research (Breakdown Strengths of Gaseous and Liquid Insulators) and Environmental Effects of Dielectric Gases Semiannual Report (April 1-September 30, 1981) 584
Health Effects of Dielectric Gases: Preliminary Report 590

Dielectrics

- Ternary Gas Dielectrics 316
Gaseous Dielectrics III - Proceedings of the Third International Symposium on Gaseous Dielectrics, Knoxville, TN, March 7-11, 1982 582
Gaseous Dielectrics III - Proceedings of the Third International Symposium on Gaseous Dielectrics, Knoxville, TN, March 7-11, 1982 582
Gaseous Dielectrics Research and Applications Semiannual Report - October 1, 1981-March 31, 1982 583

Diesel

- Effects of Repeated Exposures to Aerosolized Diesel Fuel 39
Effects of Single Exposures to Aerosolized Diesel Fuel 40
Percutaneous Acute and Chronic Renal Toxicity Induced by Shale Oil and Petroleum Derived Jet and Diesel Fuel 53
The Effect of Temperature on the Toxicity of the Water Soluble Fractions of Diesel Fuel No. 2 and H-Coal Crude Oil to *Daphnia magna* 713

Diesters

- The Control of Phospholipid Methylation by Phorbol Diesters in Differentiating Human Myeloid HL-60 Leukemia Cells 99
Cell Differentiation, Alterations in Polyamine Levels, and Specific Binding of Phorbol Diesters in Cultured Human Cells 109

Dietary

- Dietary Intake of Cadmium in the United States: 1920-1975 416

Diethylamino

- Antischistosomal Analogs of Hycanthone. 2. Structure of 2-[2-(Diethylamino)ethyl]-2H-[1]-Benzothiopyrano [4,3,2-cd]Indazole-5-Methanol Monohydrate 276

Diethylnitrosamine

- Poly(ADP-Ribosylation) in N,N-Diethylnitrosamine-Treated Mice 238

Difference

Difference in the Ratio of Dominant-Lethal Mutations to Heritable Translocations Produced in Mouse Spermatids and Fully Mature Sperm after Treatment with Triethylenemelamine (TEM) 74

Information - The Critical Difference in Risk Analysis 290

Differential

Differential Responses of Log and Stationary Phase Human Fibroblasts to Inhibition of DNA Repair by Aphidicolin 249

Unique and Multiple Solutions of a Family of Differential Equations Modeling Chemical Reactions 429

Differentiating

The Control of Phospholipid Methylation by Phorbol Diesters in Differentiating Human Myeloid HL-60 Leukemia Cells 99

Differentiation

Sister Chromatid Differentiation Analysis of Cell Cycle Kinetics in Mouse Bone Marrow Cells 11

A Model for the Differentiation of Na-Dependent Hexose Transport Capacity in a Population of LLC-PK(Sub 1) Cells 35

Separation of Epidermal Cells by Density Centrifugation: A New Technique for Studies on Normal and Pathological Differentiation 61

Induction of Differentiation of Human Promyelocytic Leukemia (HL-60) Cells by Teleocidin B and Phorbol-13-Myristate-13-Acetate 108

Cell Differentiation, Alterations in Polyamine Levels, and Specific Binding of Phorbol Diesters in Cultured Human Cells 109

Effects of Retinoic Acid on Cell Proliferation and Cell Differentiation in a Rat Tracheal Epithelial Cell Line 119

The Down Regulation of Specific Binding of [20-H-3]phorbol 12,13,-dibutyrate and Phorbol Ester Induced Differentiation of Human Promyelocytic Leukemia Cells 252

Pathways for Efflux of Hexoses during Differentiation of LLC-PK1 Cells in Culture 277

Diffraction

Neutron Scattering and X-Ray Diffraction of Nucleosomes and Nucleosome - HMG Complexes 26

Diffuse

Gases for Possible Use in Diffuse-Discharge Switches 313

Gases for Possible Use in Diffuse-Discharge Switches 314

Diffusion

Effect of Cis- and Trans-Dichlorodiammineplatinum(II) on Human Tumor Cell Proliferation in Diffusion Chambers in Vivo 296

Diffusion of Au into Sn Thin Films Studied by the Attenuated Total Reflection Method 310

Uncertainty Estimates for Site-Specific Atmospheric Diffusion Parameters 382

Diffusomethylornith

Alpha-Difluoromethylornithine, an Irreversible Inhibitor of Ornithine Decarboxylase, Inhibits Tumor Promoter-Induced Polyamine Accumulation and Carcinogenesis in Mouse Skin 275

Digitization

MAGIC: A Digitization and Image Processing Program 593

Dihydroxy

Preparation of Enantiomers of (plus or minus)-Trans-7Beta, 8Alpha-Dihydroxy-9Alpha, 10Alpha-Epoxy-7,8,9,10-Tetrahydrobenzo[a]pyrene 110

Dimers

Electric Dipole Polarizabilities of Alkali Halide Dimers 371

Dimethylbenz

Tumor-Initiating Activity of 4-Fluoro-7, 12-Dimethylbenz(a)anthracene and 1,2,3,

4-Tetrahydro-7,12-Dimethylbenz(a)anthracene in Female SENCAR Mice	45
Tumor-Initiating Activity of 4-Fluoro-7,12-Dimethylbenz(a)anthracene and 1,2,3,4-Tetrahydro-7,12-Dimethylbenz(a)anthracene in Female SENCAR Mice	45
Induction of Mammary Tumors in Virgin Female BALB/c Mice by Single Low Doses of 7,12-Dimethylbenz(a)anthracene (DMBA)	56
Induction of Mammary Tumors in Virgin Female BALB/c Mice by Single Low Doses of 7,12-Dimethylbenz(a)anthracene	57
Localization and Quantitation of Presumptive Neoplastic Cell Populations (PNCP) in Tracheas Exposed to Dimethylbenz(a)anthracene (DMBA)	150
Localization of Specific Lesions in Dimethylbenz(a)anthracene-Precexposed Tracheal Explants	151
Dimethylnitrosamine	
Cytotoxicity and Mutagenicity of Dimethylnitrosamine in Mammalian Cells (CHO/HGPRT System): Enhancement by Calcium Phosphate	173
Dimethylnitrosamine Demethylase in <i>Drosophila melanogaster</i>	273
Dimethylnitrosamine Demethylase Activity in <i>Drosophila melanogaster</i>	274
Dinitrogen	
Structure-Toxicity Relationships of Selected Dinitrogen-Containing Cyclic Compounds	219
Structure-Toxicity Relationships of Selected Nitrogenous Heterocyclic Compounds. II. Dinitrogen Molecules	220
Diol	
Covalent Binding of Isomeric Benzo(a)pyrene Diol-epoxides to DNA	144
Physical Interactions of Isomeric Benzo(a)pyrene Diol-Epoxides with DNA	145
Covalent Intercalative Binding of Benzo(a)pyrene-9,10-Diol-7,8-Epoxide to DNA	146
Physical Binding of Diol-Epoxide Derivatives of the Carcinogen Benzo(a)pyrene to DNA	147
Comparison of Levels of Benzo(a)pyrene 7,8-Diol-9,10-Epoxide (BPDE) Diastereomers and Enantiomers Covalently Bound in Vivo to Macromolecular Components of Whole Epidermis Versus the Basal Cell Layer	180
Comparison of Levels of Benzo(a)pyrene Diol Epoxide Diastereomers Covalently Bound In Vivo to Macromolecular Components of the Whole Epidermis Versus the Basal Cell Layer	181
Dioxide	
The Carbon Dioxide Question: An Introduction to the Literature	281
The Carbon Dioxide Question: Perspectives for 1982	282
Calculated Initial Energies of Electrons in Si and Silicon Dioxide Irradiated by Photons with Energies up to 2 MeV	415
Responses of Radish to Nitrogen Dioxide, Sulfur Dioxide, and Ozone in Combination at Three Concentrations	527
Responses of Radish to Nitrogen Dioxide, Sulfur Dioxide, and Ozone in Combination at Three Concentrations	527
The Carbon Dioxide Question: A Data Sampler	551
Diphosphopyridine	
3-Bromo-2-Ketoglutarate: A Substrate and Affinity Label for Diphosphopyridine Nucleotide-Dependent Isocitrate Dehydrogenase	13
3,4-Didehydro-2-Ketoglutarate: An Affinity Label for Diphosphopyridine Nucleotide-Dependent Isocitrate Dehydrogenase	14
Diploid	
<i>Aspergillus nidulans</i> : Systems and Results of Tests for Chemical Induction of Mitotic Segregation and Mutation. I. Diploid and Duplication Assay Systems. A Report of the U.S. EPA Gene-Tox Program	286
Dipole	
Electric Dipole Polarizabilities of Alkali Halide Dimers	371
Directions	
Mammalian Mutagenesis: Future Directions	205

Discharge

- Gases for Possible Use in Diffuse-Discharge Switches 313
- Gases for Possible Use in Diffuse-Discharge Switches 314
- Literature Review: Response of Fish to Thermal Discharge 578
- Guidance Manual for Department of Energy Compliance with the Clean Water Act: National Pollutant Discharge Elimination System (NPDES) 680

Disease

- Development and Progression of Neoplastic Disease. Morphologic and Cell Culture Studies with Airway Epithelium 168
- Relationship of Vanadium, Cadmium, Lead, Nickel, Cobalt and Soft Water to Myocardial and Vascular Toxicity and Cardiovascular Disease 202
- Nonzero Solutions of Nonlinear Integral Equations Modeling Infectious Disease 428
- Concentration, Serotypic Profiles and Infectivity of Legionnaires' Disease Bacteria Populations in Cooling Towers 546
- Survey of Cooling Towers Within Oak Ridge Operations for the Presence of Legionnaire's Disease Bacterium 712

Disordered

- Flip-Flop Hydrogen Bonding in Partially Disordered System 214

Dispersion

- Evidence for Upstream Dispersion of Adult Caddisflies (Trichoptera: Hydropsychidae) in the Columbia River 461
- Initial Atmospheric Dispersion Modeling in Support of the Multiple-Site Incineration Study 596

Displacement

- DNA Backbone Conformation in AAF Modified dCpdG: Variable Conformational Modes of Achieving Base Displacement 24
- Base Displacement in AAF and AF Modified dCpdG: Syn and Anti Guanine 342

Disposal

- Models and Risk from High-Level Waste Disposal - The Missing Pieces 365
- Uncertainties Associated with Geologic Disposal of High-Level Radioactive Waste 367
- Coal Conversion Solid Waste Disposal 475
- Coal Conversion Solid Waste Disposal 476
- Hydrologic Factors and Sr-90 Transport at a Low-Level Waste Disposal Site 486
- Geohydrochemical Considerations in Land Disposal of Low-Level Wastes 553
- Proceedings of the Symposium on Uncertainties Associated with the Regulation of the Geologic Disposal of High-Level Radioactive Waste 603
- Abstracts of the Low-Level Waste Disposal: Site Characterization and Monitoring 619
- Low-Level Waste Disposal: Facility Design, Construction, and Operating Practices, Washington, DC, September 29-30, 1982 - Abstracts 620
- Proceedings of the Symposium on Low-Level Waste Disposal: Site Suitability Requirements 621
- A Review of NRC Rules and Regulations Related to the Disposal of High-Level Radioactive Waste in Geologic Repositories 670

Dissipative

- An Investigation of Dissipative Forces Near Macroscopic Media 579

Dissolution

- Dissolution Characteristics of Pu-Contaminated Soils and Sediments in Lung Serum Simulant Solution 500

Dissolved

- Analysis of Environmental Issues Related to Small-Scale Hydroelectric Development. VI. Dissolved Oxygen Concentrations Below Operating Dams 659

Distillates

- Renal Toxicity of Middle Distillates of Shale Oil and Petroleum in Mice 54

Distribution

- Calculated Angular Distribution of Fragment Ions from Polyatomic Ion Collisions 2
- Prediction of Radionuclide Distribution Coefficient Values from Soil-Plant Concentration Ratios 302
- Examining the Distribution of Experimental Data 527
- A Model for Cadmium Transport and Distribution in CHO Cells 341
- Bioaccumulation and Distribution of Tc-95m in an Experimental Freshwater Pond 450
- Distribution and Relationship of Radionuclides to Streambed Gravels in a Small Watershed 457
- Comparative Food Chain Behavior and Distribution of Actinide Elements in and around a Contaminated Fresh-Water Pond 479
- An Interactive Statistical Distribution Analysis Program Utilizing Numerical and Graphical Methods 592

Distributions

- Non-Maxwellian Velocity Distributions and Molecular Beam Intensities in Sonic Nozzle Expansions 362
- Genesis of Bimodal Size Distributions in Species Cohorts 469
- Effects of Municipal Sewage Sludge-Cake on Nitrogen and Phosphorus Distributions in a Pine Plantation 528

District

- Metamorphic Petrology of the Negaunee Iron Formation, Marquette District, Northern Michigan: Mineralogy, Metamorphic Reactions, and Phase Equilibria 482
- Geology and Geochemistry of the Stratabound Sulfide Deposits of the Pyriton District, Alabama 540

Disubstituted

- Cell-Mediated Mutagenicity in Chinese Hamster V79 Cells by Dibenzpyrenes and Their Bay-Region Disubstituted Fluorinated Derivatives 89

Ditellurides

- Tellurium-125 Chemical Shifts of Symmetric and Unsymmetric Dialkyl Ditellurides 393

Division

- Induction and Expression of Mutations in Mammalian Cells in the Absence of DNA Synthesis and Cell Division 170
- Phenotypic Expression Time of Mutagen-Induced 6-Thioguanine Resistance in Chinese Hamster Ovary Cells (CHO/HGPRT System): Expression in Division Arrested Cell Cultures 172
- Biology Division Progress Report for Period of June 1, 1980 - July 31, 1982 554
- Quality Assurance Program Manual for the Biology Division 555
- Publications of the Transportation Systems Utilization Division: A Bibliography 574
- Environmental Sciences Division Publications - 1981 651
- Environmental Sciences Division Annual Progress Report for Period Ending September 30, 1981 652

DMBA

- Induction of Mammary Tumors in Virgin Female BALB/c Mice by Single Low Doses of 7,12-Dimethylbenz(a)anthracene (DMBA) 56
- Localization and Quantitation of Presumptive Neoplastic Cell Populations (PNCP) in Tracheas Exposed to Dimethylbenz(a)anthracene (DMBA) 150

DNA

- Sequence Augmentation by Amplification of an (A+T)-Rich 142 bp Segment in a (G+C)-Rich Satellite DNA 18
- Changes in DNA Content of Rat Tracheal Epithelial Cells during Neoplastic Progression In Vitro 20
- DNA Backbone Conformation in AAF Modified dCpdG: Variable Conformational Modes of Achieving Base Displacement 24
- Ultraviolet-Induced Damage and Its Repair in Human DNA 28

DNA Repair in a Congenic Pair of Mice with Different Longevities	32
Mutagenesis of Bacteriophage T7 In Vitro by Incorporation of O-6-Methylguanine during DNA Synthesis	47
Effects of an Extract from the Sea Squirt <i>Ecteinascidia turbinata</i> on DNA Synthesis and Excision Repair in Human Fibroblasts	52
Unusual Sequence Features in the Repeat Unit of (G+C)-Rich Crab Satellite DNA	65
Interaction of a DNA-Binding Protein, the Gene Product of D5 of Bacteriophage T5, with Double-Stranded DNA - Analysis by Metrizamide Gradient Centrifugation	71
Interaction of a DNA-Binding Protein, the Gene Product of D5 of Bacteriophage T5, with Double-Stranded DNA - Analysis by Metrizamide Gradient Centrifugation	71
Psoralen-Plus-Light Damage and Repair in Transforming DNA of <i>Bacillus subtilis</i>	79
Incorporation of CldU and BrdU into DNA and the Induction of SCE and Mutations	92
Plate Assay for Chemical- and Radiation-Induced Mutagenesis of CAN1 in Yeast as a Function of Post-Treatment DNA Replication: The Effect of rad6-1	137
Covalent Binding of Isomeric Benzo(a)pyrene Diol-epoxides to DNA	144
Physical Interactions of Isomeric Benzo(a)pyrene Diol-Epoxides with DNA	145
Covalent Intercalative Binding of Benzo(a)pyrene-9,10-Diol-7,8-Epoxide to DNA	146
Physical Binding of Diol-Epoxide Derivatives of the Carcinogen Benzo(a)pyrene to DNA	147
In Vitro Packaging of Bacteriophage T7 DNA Requires ATP	152
DNA Packaging In Vitro by an Isolated Bacteriophage T7 Procapsid	153
O-6-Methylguanine-DNA Methyl Transferase in Wild-Type and Ada Mutants of <i>E. coli</i>	157
Expectation Values for Low Resolution Slit-Scan Flow Prescreening: Influence of Nuclear Shape and DNA Density	160
Induction and Expression of Mutations in Mammalian Cells in the Absence of DNA Synthesis and Cell Division	170
Removal of O(Sup 6)-Methylguanine from DNA by Human Liver Fractions	179
DNA Repair and Chromosome Aberrations: Interactive Effects of Radiation and Chemicals	189
The Use of Inhibitors of DNA Repair in the Study of the Mechanisms of Induction of Chromosome Aberrations	191
Chromosome Aberrations in Decondensed Sperm DNA	193
A Fluorometric-HPLC Assay for Quantitating the Binding of Benzo(a)pyrene Metabolites to DNA	195
Action Spectra for the Photolysis of 5-Iododeoxyuridine in DNA and Related Model Systems: Evidence for Short-Range Energy Transfer	196
DNA Repair in Spermatocytes and Spermatids of the Mouse	224
The Use of Alkaline Elution To Study DNA Damage in Developing Mouse Sperm after Exposure to Methyl Methanesulfonate	225
Unscheduled DNA Synthesis in Mammalian Germ Cells - Its Potential Use in Mutagenicity Testing	226
Cell-Free Extracts That Induce Correct Transcription Initiation by RNA Polymerase II Convert SV40 DNA to Ordered Nucleoprotein Structures	239
Conversion of Simian Virus 40 DNA to Ordered Nucleoprotein Structures by Extracts that Direct Accurate Initiation by Eukaryotic RNA Polymerase II	240
Multiple Sites of Deletions and Insertions in Variants of a Complex Satellite DNA	241
In Vitro Replication of DNA Containing O-6-Methylguanine-Kinetic Evidence of Mutagenic Potential of the Alkylated Base	246
Calibration of Denaturing Agarose Gels for Molecular Weight Estimation of DNA: Size Determination of the Single-Stranded Genomes of Parvoviruses	247
DNA Repair in Normal Human and Xeroderma Pigmentosum Group A Fibroblasts following Treatment with Various Methanesulfonates and the Demonstration of a Long-Patch (UV-Like) Repair Component	248
Differential Responses of Log and Stationary Phase Human Fibroblasts to Inhibition of DNA Repair by Aphidicolin	249

Studies on the Inhibition of Ultraviolet- and Methyl Methanesulfonate-Induced Damage in the DNA of Human Fibroblasts by Novobiocin 250

DNA Repair Assays as Tests for Environmental Mutagens: A Report of the U.S. EPA Gene-Tox Program 287

Documentation

AGTEHM: Documentation of Modifications to the Terrestrial Ecosystem Hydrology Model (TEHM) for Agricultural Applications 677

Documents

Guidelines for Preparing Environmental Analyses for Department of Energy NEPA Documents 671

DOE

Proceedings of the Third Annual Information Meeting DOE Low-Level Waste Management Program 685

Proceedings of the Fourth Annual Participants' Information Meeting on DOE Low-Level Waste Management Program 686

Domestic

Evaluation of a Modified CEA Instruments, Inc. Model 555 Analyzer for the Monitoring of Formaldehyde Vapor in Domestic Environments 377

Evaluation of Selected Monitoring Methods for Formaldehyde in Domestic Environments 378

Dominant

Difference in the Ratio of Dominant-Lethal Mutations to Heritable Translocations Produced in Mouse Spermatids and Fully Mature Sperm after Treatment with Triethylenetriamine (TEM) 74

Lack of Association between Induction of Dominant-Lethal Mutations and Induction of Heritable Translocations with Benzo(a)pyrene (BaP) in Postmeiotic Germ Cells of Male Mice 75

Dominant Skeletal Mutations: Applications to Mutagenicity Testing and Risk Estimation 228

Test of Dichlorvos Using the Sensitive-Indicator Method for Dominant Skeletal Mutations in Mice 229

Dormancy

A Technique for Determining Some Quantitative Expressions of Dormancy in Seeds 530

Dorosoma

Predation of Chaoborus punctipennis on Larvae of Dorosoma 667

dorsalis

The Influence of Food Concentration and Container Volume on Life History Parameters of Diaptomus dorsalis Marsh from Subtropical Florida 473

Dosage

Dosage Compensation of Serine-4 Transfer RNA in Drosophila melanogaster 17

Dose

The Role of Animal Studies in Low Dose Extrapolation 67

Effect of Dose Fractionation on Specific-Locus Mutation Induction by Ethylnitrosourea in Mouse Spermatogonia 209

Effect of Dose Fractionation on the Ethylnitrosourea Induction of Specific-Locus Mutations in Mouse Spermatogonia 210

Dose-Response Curve for Ethylnitrosourea-Induced Specific-Locus Mutations in Mouse Spermatogonia 211

Specific-Locus Mutation Frequencies in Mouse Stem-Cell Spermatogonia at Very Low Radiation Dose Rates 213

Effect of Carcinogen Dose on the Dynamics of Neoplastic Development in Rat Tracheal Epithelium 263

The Influence of Split Dose Fractionation Interval on the Carcinogenic Effects of Fission Spectrum Neutrons 269

Chapter 6.3: Mathematical Models in Internal Dose Estimation 304

Estimates of Dose to Systemic Organs and GI Tract Based on Data from Miniature Swine Orally
Intubated with a Single Dose of Am-241 Citrate 306

Estimates of Dose to Systemic Organs and GI Tract Based on Data from Miniature Swine Orally
Intubated with a Single Dose of Am-241 Citrate 306

Uncertainties in the Assessment of Long-Term Collective Dose and Health Effects 366

Imprecision in Estimates of Dose from Ingested Cs-137 Due to Variability in Human Biological
Characteristics 409

A Model of the 3-Month Pregnant Woman for Radiation Dose Estimation 427

Derivation of Dose Conversion Factors for Tritium 602

Doses

Induction of Mammary Tumors in Virgin Female BALB/c Mice by Single Low Doses of 7,12-Di-
methylbenz(a)anthracene (DMBA) 56

Induction of Mammary Tumors in Virgin Female BALB/c Mice by Single Low Doses of
7,12-Dimethylbenz(a)anthracene 57

Dosimeters

Partial Optimization of Electrochemical Etching Parameters for Highly Sensitive Cr-39 Fast
Neutron Dosimeters 329

Dosimetric

Strontium-90 in Bone: A Case Study in Age-Dependent Dosimetric Modeling 372

ORNL-ICRP Dosimetric Data Base 432

Dosimetry

Dosimetry for the Japanese Atomic Bomb Survivors 360

Personnel Dosimetry Intercomparison Studies at the Health Physics Research Reactor: A Summary
(1974-1980) 410

Personnel Dosimetry Intercomparison Studies at the Oak Ridge National Laboratory 412

Dosimetry Training Programs at Oak Ridge National Laboratory 413

Findings of a Recent ORNL Review of Dosimetry for the Japanese Atomic-Bomb
Survivors 600

Eighteenth Nuclear Accident Dosimetry Intercomparison Study: August 10-14, 1981 614

Calibration of the Indium Foil Used for Criticality Accident Dosimetry in the UCC-ND
Employee Identification Badge 649

Double

Interaction of a DNA-Binding Protein, the Gene Product of D5 of Bacteriophage T5, with Dou-
ble-Stranded DNA - Analysis by Metrizamide Gradient Centrifugation 71

Downstream

An Approach to Optimizing Reservoir Operation for Downstream Aquatic Resources 531

Dredging

Guidance Manual for Department of Energy Compliance with Corps of Engineers Permits on
Dredging and Filling Activities 660

Drinking

Methods of Removing Uranium from Drinking Water - A Literature Survey - Present Municipal
Water Treatment and Potential Removal Methods 564

Drosera

Arthropod Associates and Macronutrient Status of the Red-Ink Sundew (*Drosera erythrorhiza*
Lindl.) 426

Drosophila

Dosage Compensation of Serine-4 Transfer RNA in *Drosophila melanogaster* 17

Metal Ion Toxicity in *Drosophila* 30

Quinine-Containing Isoacceptor of Tyrosine tRNA in *Drosophila melanogaster* 31

Biosynthesis, Nonenzymatic Synthesis and Purification of the Intermediate in Synthesis of Sepi-
apterin in *Drosophila* 49

Purification and Biosynthesis of Quench Spot, a Drosopterlin Precursor in *Drosophila*

- melanogaster** 50
- A Temporal Study at the Ultrastructural Level of the Developing Pro-oocyte of *Drosophila melanogaster*** 78
- A Naturally Occurring Pyrimidodiazepine in *Drosophila*: Chemical and Spectral Properties and Relationship to Drosopterin** 111
- Mechanism of Suppression in *Drosophila melanogaster*. 8. Comparison of Su(S) Alleles for Ability to Suppress the Mutants Purple, Vermilion, and Speck** 112
- Mechanism of Suppression in *Drosophila*: Evidence for a Macromolecule Produced by the su(s)+ Locus That Inhibits Sepiapterin Synthase** 113
- Dimethylnitrosamine Demethylase in *Drosophila melanogaster*** 273
- Dimethylnitrosamine Demethylase Activity in *Drosophila melanogaster*** 274
- Chemical Softness and Acute Metal Toxicity in Mice and *Drosophila*** 430
- Drosopterin**
- Purification and Biosynthesis of Quench Spot, a Drosopterin Precursor in *Drosophila melanogaster*** 50
- A Naturally Occurring Pyrimidodiazepine in *Drosophila*: Chemical and Spectral Properties and Relationship to Drosopterin** 111
- Drug**
- Analysis and Refinement of the Microscale Synthesis of the Pt-195m-Labeled Antitumor Drug, cis-Dichlorodiammineplatinum(II), cis-DDP** 343
- Drugs**
- Workshop on the Practical Application of the Mammalian Spot-Test in Routine Mutagenicity Testing of Drugs and Other Chemicals** 21
- Dry**
- The Interaction of Wet and Dry Deposition with the Forest Canopy** 503
- Ductal**
- Detection of Ductal Dysplasia in Mammary Outgrowths Derived from Carcinogen-Treated Virgin Female BALB/c Mice** 55
- Duplication**
- Aspergillus nidulans*: Systems and Results of Tests for Chemical Induction of Mitotic Segregation and Mutation. I. Diploid and Duplication Assay Systems. A Report of the U.S. EPA Gene-Tox Program** 286
- DUVAS**
- Evaluation of a Second Derivative UV-Absorption Spectrometer (DUVAS) for Analyzing Gases in Smoke Plumes** 604
- Dwellings**
- On the Occurrence of Fungi in Loose-Fill Attic Insulation in Typical Single-Family Dwellings** 588
- Dynamics**
- Effect of Carcinogen Dose on the Dynamics of Neoplastic Development in Rat Tracheal Epithelium** 263
- A Description of FORICO, A Tropical Gap Dynamics Model of the Lower Montane Rain Forest of Puerto Rico** 669
- Dysplasia**
- Detection of Ductal Dysplasia in Mammary Outgrowths Derived from Carcinogen-Treated Virgin Female BALB/c Mice** 55
- D5**
- Interaction of a DNA-Binding Protein, the Gene Product of D5 of Bacteriophage T5, with Double-Stranded DNA - Analysis by Metrizamide Gradient Centrifugation** 71
- Early**
- The Presence of Metabolites in Early Embryos** 58
- Quantitative Evaluation of Dark Keratinocytes Induced by Several Promoting and Hyperplastic Agents: Their Use as an Early Morphological Indicator of Tumor-Promoting Action** 121

Earth

An Examination of Two Methods for Estimating the Transfer of Aerosols from the Troposphere to the Earth's Surface 383

Minnesota Alcohol Producers - Loan Guarantee Application, Blue Earth County, Minnesota 632

East

Bird Community Ecology on Power-Line Corridors in East Tennessee 498

Environmental Assessment, U.S. Ethanol Corporation - Loan Guarantee Application, East Baton Rouge Parish, Louisiana 633

Eastern

Food Habits of Bobcats in Eastern Tennessee 539

Environmental Assessment - Eastern Ethanol Corporation - Loan Guarantee Application, Williamsburg County, South Carolina 624

Regional Assessment of Potential Sensitivity of Soils in the Eastern United States to Acid Precipitation 692

Ecdysone

Ecdysone Metabolism in Premolt Land Crabs (*Gecarcinus lateralis*) 505

Ecological

Chaotic Models as Representations of Ecological Systems 518

Forest Succession Models and Their Ecological and Management Implications 552

Spread of Organisms with Novel Genotypes: Thoughts from an Ecological Perspective 701

Ecology

Bird Community Ecology on Power-Line Corridors in East Tennessee 498

Economics

Short Rotation Growth of Hardwoods for Energy Applications Across the United States - Field Results and Economics 464

Ecoregions

Analyses of Ecoregions Utilizing the Geocology Data Base 520

Ecosystem

Ecosystem Risk Analysis - A New Methodology 516

Parameter Constraints in a Stream Ecosystem Model: Incorporation of a Priori Information in Monte Carlo Error Analysis 517

AGTEHM: Documentation of Modifications to the Terrestrial Ecosystem Hydrology Model (TEHM) for Agricultural Applications 677

A Construct for Analysis of Ecosystem Perturbations Based on Input/Output Analysis 697

Ecosystems

Review and Evaluation of Microcosms for Assessing Effects of Stress in Marine Ecosystems 445

Organic Carbon Spiralling in Stream Ecosystems 514

Air Pollution Impacts on Forest Trees: Acid Deposition: Effects on Terrestrial Ecosystems 533

Environmental Mobility of Toxic Substances Released from Photovoltaic-Associated Processes: Terrestrial Ecosystems 580

Evaluation and Critique of In Situ Experimental Systems for Investigating Effects of Stress in Lentic Ecosystems 650

Development of Predictive Models for Xenobiotic Bioaccumulation in Terrestrial Ecosystems 708

Resilience and Inertia in Model Ecosystems: Tests of Some Hypotheses 710

The Long-Term Nutrient Retention Properties of Forest Ecosystems: A Simulation Investigation 719

Ecotoxicity

Ecotoxicity of Coal Gasifier Solid Wastes 466

Ecteinascidia

Effects of an Extract from the Sea Squirt *Ecteinascidia turbinata* on DNA Synthesis and Excision Repair in Human Fibroblasts 52

Ectomycorrhizal

- The Growth, Nutrient Absorption, and Moisture Status of Selected Woody Species in Coal Mine Spoil in Response to an Induced Infection by the Ectomycorrhizal Fungus *Pisolithus tinctorius* 718

Edition

- The Oak Ridge National Laboratory Registry of Notable Honors and Awards in Science and Engineering, 1943–May 1982, 4th Edition 571

Efflux

- Pathways for Efflux of Hexoses during Differentiation of LLC-PK1 Cells in Culture 277

Efforts

- Toxicology Data Bank Steps up Efforts 294
Research Efforts on Environmental Transport of Hazardous Materials at Oak Ridge National Laboratory 537

Eighteenth

- Eighteenth Nuclear Accident Dosimetry Intercomparison Study: August 10–14, 1981 614

Electric

- Electric Dipole Polarizabilities of Alkali Halide Dimers 371

Electrochemical

- Partial Optimization of Electrochemical Etching Parameters for Highly Sensitive Cr-39 Fast Neutron Dosimeters 329

Electromagnetic

- The Scattering of a Plane Electromagnetic Wave by a Conducting Circular Cylinder 585

Electron

- Stereo Electron Microscope Studies of Mitotic Chromosomes from Chinese Hamster Ovary Cells 134
Electron Microscope Tomography: Transcription in 3-D 176
Simple Model for Electron Inelastic Mean Free Paths: Application to Condensed Organic Materials 300
Electron Inelastic Mean Free Paths in Several Solids for Energies from 200 eV to 10 keV 301
Photoemission and Electron Mean Free Paths in Liquid Formamide in the Vacuum UV 308
Electron Motion in High-Pressure Polar Gases: Ammonia 312
Electron Interactions with Polar Molecules 330
Calorimetric Measurement of Electron Stopping Power of Aluminum and Copper between 11 and 127 keV 345
Pressure-Dependent Electron Attachment Rates in Perfluoroalkanes and Perfluoropropylene and Their Effect on the Breakdown Strength of These Gases 346
Electron Attachment to Halocarbons of Environmental Interest: Chloroethanes 380
Comparative Study of Electron Energy Deposition and Yields in Water in the Liquid and Vapor Phases 420

Electronegative

- Electronegative Gases 311

Electrons

- Energy Losses and Inelastic Mean Free Paths of Low-Energy Electrons in Polyethylene 298
Stopping Power of Liquid Water for Low-Energy Electrons 299
Monte Carlo Calculations of Initial Energies of Electrons in Water Irradiated by Photons with Energies up to 1 GeV 414
Calculated Initial Energies of Electrons in Si and Silicon Dioxide Irradiated by Photons with Energies up to 2 MeV 415
User's Manual for PHOEL-3, A Monte Carlo Computer Code for Calculating Initial Energies of Electrons and Positrons Produced in Water Irradiated by Photons with Energies Up to 1 GeV 615

Electrophoretic

- Location of a Gene Controlling Electrophoretic Variation in Mouse Gamma-Crystallins 242

Electrostatic

Embryotoxic and Teratogenic Effects of Aqueous Extracts of a Coal Gasification Electrostatic Precipitator 221

Elemental

Photon and Neutron Fluence-to-Kerma Conversion Factors for ICR-1975 Reference Man Using Improved Elemental Compositions for Bone and Marrow of the Skeleton 601

Elevations

CHNHYD: A CHaNNel HYDrodynamic Model for Simulating Flows and Water Surface Elevations in a Stream/River Network 720

Elimination

Guidance Manual for Department of Energy Compliance with the Clean Water Act: National Pollutant Discharge Elimination System (NPDES) 680

Ellipticines

Cytotoxicity and Mutagenicity of Five Antitumor Compounds (Ellipticines) in the CHO/HGPRT System 44

Elution

The Use of Alkaline Elution To Study DNA Damage in Developing Mouse Sperm after Exposure to Methyl Methanesulfonate 225

Embryo

A Frog Embryo Teratogenesis Assay: Xenopus (FETAX) - A Model for Teratogen Screening 51

Salvage of the Modified Nucleoside Ribothymidine in Cultured Hamster Embryo Cells 139

Benzo(a)pyrene-Binding Proteins of Hamster Embryo Cell Nuclei: Comparison of Nuclear Isolation Procedures 142

Time Course of Metabolism of Benzo(e)pyrene by Hamster Embryo Cells and the Effect of Chemical Modifiers 143

Metabolism of 6-Nitrobenzo(a)pyrene by Hamster Embryo Cells and Rat Liver Microsomes 265

Embryonic

Enhanced Benzo(a)pyrene Metabolism in Hamster Embryonic Cells Exposed in Culture to Fossil Synfuel Products 408

Embryos

The Presence of Metabolites in Early Embryos 58

Embryotoxic

Embryotoxic and Teratogenic Effects of Aqueous Extracts of a Coal Gasification Electrostatic Precipitator 221

Embryotoxicity

Comparative Embryotoxicity and Teratogenicity of Petroleum and Petroleum Substitutes to Insects Developing in Contaminated Substrates 550

Emergency

The Relevance of Long Term Carcinogenic and Genetic Hazards to Emergency Control 68

Interim Source Term Assumptions for Emergency Planning and Equipment Qualification 608

Technical Considerations Related to Interim Source Term Assumptions for Emergency Planning and Equipment Qualification 609

Emissions

Compilation of a Biogenic Hydrocarbon Emissions Inventory for Evaluating Ozone Control Strategies in the San Francisco Bay Area 436

Emphasis

Biological Effects of Static Magnetic Fields: A Selective Review with Emphasis on Risk Assessment 589

Employee

Calibration of the Indium Foil Used for Criticality Accident Dosimetry in the UCC-ND Employee Identification Badge 649

Enantiomers

Preparation of Enantiomers of (plus or minus)-Trans-7Beta, 8Alpha-Dihydroxy-9Alpha, 10Alpha-Epoxy-7,8,9,10-Tetrahydrobenzo[a]pyrene 110

Comparison of Levels of Benzo(a)pyrene 7,8-Diol-9,10-Epoxy (BPDE) Diastereomers and Enantiomers Covalently Bound in Vivo to Macromolecular Components of Whole Epidermis Versus the Basal Cell Layer 180

Endangered

Manual for Department of Energy Compliance with the Endangered Species Act 699

Endocrine

Endocrine Morphology and Reproductive Function in Athymic Nude Mice 42

Endoribonuclease

A Yeast Endoribonuclease Stimulated by Novikoff Hepatoma Small Nuclear RNAs U1 and U2 254

Energetics

Measurements of Growth and Consumption of Sauger (*Stizostedion canadense*): Implication for Fish Energetics Studies 511

Energies

Electron Inelastic Mean Free Paths in Several Solids for Energies from 200 eV to 10 keV 301

Monte Carlo Calculations of Initial Energies of Electrons in Water Irradiated by Photons with Energies up to 1 GeV 414

Monte Carlo Calculations of Initial Energies of Electrons in Water Irradiated by Photons with Energies up to 1 GeV 414

Calculated Initial Energies of Electrons in Si and Silicon Dioxide Irradiated by Photons with Energies up to 2 MeV 415

Calculated Initial Energies of Electrons in Si and Silicon Dioxide Irradiated by Photons with Energies up to 2 MeV 415

User's Manual for PHOEL-3, A Monte Carlo Computer Code for Calculating Initial Energies of Electrons and Positrons Produced in Water Irradiated by Photons with Energies Up to 1 GeV 615

User's Manual for PHOEL-3, A Monte Carlo Computer Code for Calculating Initial Energies of Electrons and Positrons Produced in Water Irradiated by Photons with Energies Up to 1 GeV 615

Environmental Assessment, Circle Energies Corporation - Loan Guarantee Application, Finney County, Kansas 629

Energy

The Poly rU Coil: A Minimum Energy Model That Matches Experimental Observations 98

Action Spectra for the Photolysis of 5-Iododeoxyuridine in DNA and Related Model Systems: Evidence for Short-Range Energy Transfer 196

Acute Cytotoxicity of Fossil-Energy-Related Comparative Research Materials 218

Energy Losses and Inelastic Mean Free Paths of Low-Energy Electrons in Polyethylene 298

Energy Losses and Inelastic Mean Free Paths of Low-Energy Electrons in Polyethylene 298

Stopping Power of Liquid Water for Low-Energy Electrons 299

On Discussion of Risk of Energy Systems 355

Risk of Producing Energy - and Conserving It 356

Health Risk Associated with Energy Conservation 357

Energy Losses by Swift Charged Particles in the Bulk and at the Surface of Condensed Matter 400

AAAS Symposium Volume Series - Health Risks Associated with Energy Technologies 417

Comparative Study of Electron Energy Deposition and Yields in Water in the Liquid and Vapor Phases 420

Energy Analysis of the Coal Fuel Cycle: Community Health and Resource Change in an Appalachian Coal County 425

Energy Partitioning in Largemouth Bass under Conditions of Seasonally Fluctuating Prey

- Availability 447**
 Short Rotation Growth of Hardwoods for Energy Applications Across the United States - Field Results and Economics 464
 Energy Analysis of Oklahoma Rangelands and Improved Pastures 496
 Data Resources for Assessing Regional Impacts of Energy Facilities on Health and the Environment 519
 Short-Rotation Woody Crops as a Source of Energy 525
 Using Peat for Energy: Potential Environmental Constraints 526
 Environmental Effects of Harvesting Forests for Energy 547
 Small is BRUTAL: The Risk/Energy Trade-Off for Automobiles 597
 Environmental Assessment - Energy Conversion Corporation - Loan Guarantee Application, Hampton County, South Carolina 625
 Environmental Assessment, New Energy Corporation of Indiana - Loan Guarantee Application, St. Joseph County, Indiana 631
 International Energy Technology Assessment - Atmospheric Fluidized-Bed Combustion 638
 Technical Analysis of the Use of Biomass for Energy Production 641
 The Multiprogram Laboratories of the Department of Energy 645
 Guidance Manual for Department of Energy Compliance with Corps of Engineers Permits on Dredging and Filling Activities 660
 Guidelines for Preparing Environmental Analyses for Department of Energy NEPA Documents 671
 Guidance Manual for Department of Energy Compliance with the Clean Water Act: National Pollutant Discharge Elimination System (NPDES) 680
 Use of Vegetation to Ameliorate Building Microclimates: An Assessment of Energy Conservation Potentials 681
 Guidance Manual for Department of Energy Compliance with the Fish and Wildlife Coordination Act 698
 Manual for Department of Energy Compliance with the Endangered Species Act 699
 Guidance Manual for Department of Energy Compliance with the Clean Air Act: Prevention of Significant Deterioration 703
 White-Tailed Deer (*Odocoileus virginianus*) on the Department of Energy's Oak Ridge Reservation: 1980 Status Report 705
 White-Tailed Deer (*Odocoileus virginianus*) on the Department of Energy's Oak Ridge Reservation: 1981 Status Report 706
- Engineering**
 The Oak Ridge National Laboratory Registry of Notable Honors and Awards in Science and Engineering, 1943-May 1982, 4th Edition 571
- Engineer:**
 Guidance Manual for Department of Energy Compliance with Corps of Engineers Permits on Dredging and Filling Activities 660
- Enhanced**
 Calcium-Enhanced Cellular Uptake of Rat Liver S9 by Chinese Hamster Ovary Cells 253
 Surface-Enhanced Raman Scattering in Ag-Pyridine Sols 326
 Surface-Enhanced Raman Scattering on Silver-Coated Teflon Sphere Substrates 336
 Enhanced Benzo(a)pyrene Metabolism in Hamster Embryonic Cells Exposed in Culture to Fossil Synfuel Products 406
 Enhanced Oil Recovery: Environmental Issues and State Regulatory Programs 510
- Enhancement**
 Cytotoxicity and Mutagenicity of Dimethylnitrosamine in Mammalian Cells (CHO/HGPRT System): Enhancement by Calcium Phosphate 173
 Sequential Thymus Grafting of Aged Mice: Characterization of Growth, Regression and Enhancement of Immune Competence 182
- Entrained**
 Cold Trapping Efficiencies for Collection of Tritiated Water Entrained in a Gaseous Stream 399

Entrainment

- Entrainment Mortality of Ichthyoplankton: Detectability and Precision of Estimates 543
- The Impact of Entrainment and Impingement on Fish Populations in the Hudson River Estuary - Volume II: Impingement Impact Analyses, Evaluations of Alternative Screening Devices, and Critiques of Utility Testimony Relating to Density-Dependent Growth, the Age-Composition of the Striped Bass Spawning Stock, and the LMS Real-Time Life Cycle Model 654
- The Impact of Entrainment and Impingement on Fish Populations in the Hudson River Estuary - Volume I - Entrainment Impact Estimates for Six Fish Populations Inhabiting the Hudson River Estuary 656
- The Impact of Entrainment and Impingement on Fish Populations in the Hudson River Estuary - Volume I - Entrainment Impact Estimates for Six Fish Populations Inhabiting the Hudson River Estuary 656
- The Effect of Stochastic Variation on Estimates of the Probability of Entrainment Mortality: Methodology, Results, and User's Guide 662
- The Impact of Entrainment and Impingement on Fish Populations in the Hudson River Estuary - Volume III - An Analysis of the Validity of the Utilities' Stock-Recruitment Curve-Fitting Exercise and "Prior Estimation of Beta" Technique 663
- Scientific Review and Critique of R. L. Patterson's: Production, Mortality, and Power-Plant Entrainment of Larval Yellow Perch in Western Lake Erie 715

Environment

- On the Long-Term Behaviour of Iodine 129 in the Terrestrial Environment 364
- Mobile Species of Pu, Am, Cm, Np, and Te in the Environment 453
- Transuranic Elements in the Environment - Book Review 467
- Data Resources for Assessing Regional Impacts of Energy Facilities on Health and the Environment 519
- A Multimedia Screening-Level Model for Assessing the Potential Fate of Chemicals Released to the Environment 605

Environmental

- Introduction and Perspectives of Plant Genetic and Cytogenetic Assays: A Report of the U.S. Environmental Protection Agency Gene-Tox Program 284
- DNA Repair Assays as Tests for Environmental Mutagens: A Report of the U.S. EPA Gene-Tox Program 287
- The Environmental Teratology Information Center's Data Extraction Project 295
- Electron Attachment to Halocarbons of Environmental Interest: Chloroethanes 380
- An Analysis of Reported Values of the Environmental Half-Time for Radionuclides Deposited on the Surfaces of Vegetation 386
- Health and Environmental Studies of H-Coal Process 441
- Health and Environmental Studies of H-Coal Process 442
- Environmental Aspects of Organics in Selected Coal Conversion Solid Wastes 456
- Cartographic Evaluation of Environmental Management Strategies 481
- Environmental Behavior of Technetium in Soil and Vegetation. Implications for Radiological Assessments 483
- Enhanced Oil Recovery: Environmental Issues and State Regulatory Programs 510
- Environmental Risk Analyses of Wastewaters Produced by Synthetic Fuels Technologies 521
- Using Peat for Energy: Potential Environmental Constraints 526
- Research Efforts on Environmental Transport of Hazardous Materials at Oak Ridge National Laboratory 537
- Terrestrial Perturbation Experiments for Environmental Assessment 541
- Environmental Effects of Harvesting Forests for Energy 547
- Assessment of Risks to Human Reproduction and to Development of the Human Conceptus from Exposure to Environmental Substances 570
- Publications in Biomedical and Environmental Sciences Programs - 1981 573
- Health Effects of Environmental Chemicals on the Adult Human Reproductive System - A

Selected Bibliography with Abstracts 1963-1981	576
Environmental Mobility of Toxic Substances Released from Photovoltaic-Associated Processes: Terrestrial Ecosystems	580
High Voltage Research (Breakdown Strengths of Gaseous and Liquid Insulators) and Environmental Effects of Dielectric Gases Semiannual Report (April 1-September 30, 1981)	584
Environmental Behavior of Technetium in Soil and Vegetation: Implications for Radiological Impact Assessment	595
Environmental Assessment - Eastern Ethanol Corporation - Loan Guarantee Application, Williamsburg County, South Carolina	624
Environmental Assessment - Energy Conversion Corporation - Loan Guarantee Application, Hampton County, South Carolina	625
Environmental Analysis of the Operation of Oak Ridge National Laboratory (X-10 Site)	627
Environmental Assessment - D. W. Small and Sons, Inc. - Loan Guarantee Application, Androscoggin County, Maine	628
Environmental Assessment, Circle Energies Corporation - Loan Guarantee Application, Finney County, Kansas	629
Environmental Assessment, New Energy Corporation of Indiana - Loan Guarantee Application, St. Joseph County, Indiana	631
Environmental Assessment, U.S. Ethanol Corporation - Loan Guarantee Application, East Baton Rouge Parish, Louisiana	633
Environmental Assessment - Agrifuels Refining Corporation - Loan Guarantee Application, Iberia Parish, Louisiana	634
Environmental Assessment - Gulf Coast Resources, Inc. - Loan Guarantee Application, Lee County, Iowa	635
Environmental Assessment - Tennol, Inc. - Loan Guarantee Application, Marion County, Tennessee	636
Biomedical and Environmental Sciences Programs at the Oak Ridge National Laboratory	643
Technical Background Information for the Environmental and Safety Report, Vol. 5: The 1977 Clinch River Sediment Survey - Data Presentation	648
Environmental Sciences Division Publications - 1981	651
Environmental Sciences Division Annual Progress Report for Period Ending September 30, 1981	652
Methodology for Environmental Risk Analysis	653
Environmental Studies of Materials from the H-Coal Liquefaction Process Development Unit	658
Analysis of Environmental Issues Related to Small-Scale Hydroelectric Development. VI. Dissolved Oxygen Concentrations Below Operating Dams	659
Baseline Environmental Characterization of Pike County Coal Gasification Facility Site	666
Guidelines for Preparing Environmental Analyses for Department of Energy NEPA Documents	671
Generic Environmental Assessment Report for Conventional Fuel-Alcohol Plants	672
Environmetrics of the Long-Term Field Studies of the Environmental Water Quality Operational Studies	674
Preparation of Environmental Analyses for Synfuel and Unconventional Gas Technologies	696
Atmospheric Sulfur Deposition: Environmental Impact and Health Effects	702
Environments	
Evaluation of a Modified CEA Instruments, Inc. Model 555 Analyzer for the Monitoring of Formaldehyde Vapor in Domestic Environments	377
Evaluation of Selected Monitoring Methods for Formaldehyde in Domestic Environments	378
The Risk of Chemicals to Aquatic Environments	536
Environmetrics	
Environmetrics of the Long-Term Field Studies of the Environmental Water Quality Operational Studies	674

Environmetrics of the Gasifier in Industry Program: III. Decision Support Systems for Quality Assurance Controls 675

Environmetrics of Synfuels: IV. Project Results Tracking Systems (PRTS) 707

EPA

Aspergillus nidulans: Systems and Results of Tests for Chemical Induction of Mitotic Segregation and Mutation. I. Diploid and Duplication Assay Systems. A Report of the U.S. EPA Gene-Tox Program 286

DNA Repair Assays as Tests for Environmental Mutagens: A Report of the U.S. EPA Gene-Tox Program 287

Aspergillus nidulans: Systems and Results of Tests for Induction of Mitotic Segregation and Mutation. II. Haploid Assay Systems and Overall Response of All Systems. A Report of the U.S. EPA Gene-Tox Program 293

EPA Liquid Release Pathway Health Impact Code: Feasibility Study 591

Epidermal

Benzo(a)pyrene Metabolism in Primary Cultures of Mouse Epidermal Cells and Untransformed and Transformed Epidermal Cell Lines 46

Benzo(a)pyrene Metabolism in Primary Cultures of Mouse Epidermal Cells and Untransformed and Transformed Epidermal Cell Lines 46

Separation of Epidermal Cells by Density Centrifugation: A New Technique for Studies on Normal and Pathological Differentiation 61

Effects of Peroxides on Rodent Skin: Epidermal Hyperplasia and Tumor Promotion 126

Contact-Stimulated Proliferation of Cultured Mouse Epidermal Cells by 3T3 Feeder Layers: Inhibition by 12-O-Tetradecanoylphorbol-13-Acetate (TPA) 156

The Down-Modulation of Receptors for Phorbol Ester Tumor Promoter in Primary Epidermal Cells 251

Epidermis

Effects of Phorbol Ester Tumor Promoters and Hyperplasiogenic Agents on Cytoplasmic Glucocorticoid Receptors in Epidermis 43

Keratin Modifications in Epidermis, Papillomas and Carcinomas during Two-Stage Carcinogenesis in the SENCAR Mouse 165

Comparison of Levels of Benzo(a)pyrene 7,8-Diol-9,10-Epoxy (BPDE) Diastereomers and Enantiomers Covalently Bound in Vivo to Macromolecular Components of Whole Epidermis Versus the Basal Cell Layer 180

Comparison of Levels of Benzo(a)pyrene Diol Epoxy Diastereomers Covalently Bound In Vivo to Macromolecular Components of the Whole Epidermis Versus the Basal Cell Layer 181

Epithelia

Histochemical Localization of Gamma-Glutamyltranspeptidase (GGT) and Concanavalin A in Normal, Preneoplastic and Neoplastic Epithelia 125

Epithelial

Survival of Mammary Epithelial Cells from Virgin Female BALB/c Mice Following in Vivo Gamma Irradiation 3

Changes in DNA Content of Rat Tracheal Epithelial Cells during Neoplastic Progression In Vitro 20

Pulmonary Toxicity of Methylcyclopentadienyl Manganese Tricarbonyl (MMT): Nonciliated Bronchiolar Epithelial (Clara) Cell Necrosis and Alveolar Damage in the Mouse Rat and Hamster 81

Nonciliated Bronchiolar Epithelial (Clara) Cell Necrosis Induced by Organometallic Carbonyl Compounds 86

Effects of Retinoic Acid on Cell Proliferation and Cell Differentiation in a Rat Tracheal Epithelial Cell Line 119

Determination of Growth Requirements of Non-Tumorigenic and Tumorigenic Tracheal Epithelial Cells Using a Semi-Automated Quantitative Method 120

Dark Epithelial Cells in Preneoplastic Lesions of the Human Respiratory Tract 123

Propagation of Normal Human Epithelial Cell Populations Using an in Vivo Culture System: Description and Applications	127
Structural Anomalies of Highly Malignant Respiratory Tract Epithelial Cells	149
Cytoskeletal Proteins from Tumorigenic and Nontumorigenic Rat Respiratory Tract Epithelial Cells	235
The Effect of Reestablishing Tissue-Like Cell Associations on Hexose Uptake in Rat Tracheal Epithelial Cell Lines and Primary Cell Cultures	271
Epithelium	
Hyperkeratinization and Hyperplasia of the Forestomach Epithelium in Vitamin A Deficient Rats	122
Development and Progression of Neoplastic Disease. Morphologic and Cell Culture Studies with Airway Epithelium	168
The Effect of Carcinogen Release Rate on the Incidence of Preneoplastic and Neoplastic Lesions of the Respiratory Tract Epithelium in Rats	237
Effect of Carcinogen Dose on the Dynamics of Neoplastic Development in Rat Tracheal Epithelium	263
Epoxide	
Covalent Intercalative Binding of Benzo(a)pyrene-9,10-Diol-7,8-Epoxide to DNA	146
Physical Binding of Diol-Epoxide Derivatives of the Carcinogen Benzo(a)pyrene to DNA	147
Comparison of Levels of Benzo(a)pyrene 7,8-Diol-9,10-Epoxide (BPDE) Diastereomers and Enantiomers Covalently Bound in Vivo to Macromolecular Components of Whole Epidermis Versus the Basal Cell Layer	180
epoxides	
Covalent Binding of Isomeric Benzo(a)pyrene Diol-epoxides to DNA	144
Epoxides	
Physical Interactions of Isomeric Benzo(a)pyrene Diol-Epoxides with DNA	145
Epoxide	
Comparison of Levels of Benzo(a)pyrene Diol Epoxide Diastereomers Covalently Bound In Vivo to Macromolecular Components of the Whole Epidermis Versus the Basal Cell Layer	181
Epoxy	
Preparation of Enantiomers of (plus or minus)-Trans-7Beta, 8Alpha-Dihydroxy-9Alpha, 10Alpha-Epoxy-7,8,9,10-Tetrahydrobenzo[a]pyrene	110
Equation	
Comparison of Bethe's Formula for Magnetic-Moment Transitions in Atoms with the Generalized Rosenbluth's Equation	373
Equations	
Oscillation Criteria for Nonlinear Bianchi Equations	419
Nonzero Solutions of Nonlinear Integral Equations Modeling Infectious Disease	428
Unique and Multiple Solutions of a Family of Differential Equations Modeling Chemical Reactions	429
Equilibria	
Metamorphic Petrology of the Negaunee Iron Formation, Marquette District, Northern Michigan: Mineralogy, Metamorphic Reactions, and Phase Equilibria	482
Equipment	
Interim Source Term Assumptions for Emergency Planning and Equipment Qualification	608
Technical Considerations Related to Interim Source Term Assumptions for Emergency Planning and Equipment Qualification	609
Erie	
Scientific Review and Critique of R. L. Patterson's: Production, Mortality, and Power-Plant Entrainment of Larval Yellow Perch in Western Lake Erie	715
Error	
Robust Analysis of Aggregation Error	477
Parameter Constraints in a Stream Ecosystem Model: Incorporation of a Priori Information in Monte Carlo Error Analysis	517

Erythrocytes

- Contribution of Unfrozen Fraction and of Salt Concentration to the Survival of Slowly Frozen Human Erythrocytes: Influence of Cell Concentration 155

erythrorhiza

- Arthropod Associates and Macronutrient Status of the Red-Ink Sundew (*Drosera erythrorhiza* Lindl.) 426

Escherichia

- Study of the Mechanism by Which a Cytoplasmic Membrane Preparation Promotes Septation in Irradiated *Escherichia coli* 76
 The Effect of Mutations in the *uvrD* Cistron of *Escherichia coli* on Repair Resynthesis 129
 Induction of Filamentation by Mutagens and Carcinogens in a *Lon*(-) Mutant of *Escherichia coli* 164

Ester

- Effects of Phorbol Ester Tumor Promoters and Hyperplasiogenic Agents on Cytoplasmic Glucocorticoid Receptors in Epidermis 43
 The Down-Modulation of Receptors for Phorbol Ester Tumor Promoter in Primary Epidermal Cells 251
 The Down Regulation of Specific Binding of [³H]-phorbol 12,13,-dibutyrate and Phorbol Ester Induced Differentiation of Human Promyelocytic Leukemia Cells 252

Esters

- Effect of Phorbol Esters on Guinea Pig Skin In Vivo 19

Estimates

- Estimates of Dose to Systemic Organs and GI Tract Based on Data from Miniature Swine Orally Intubated with a Single Dose of Am-241 Citrate 306
 Uncertainty Estimates for Site-Specific Atmospheric Diffusion Parameters 382
 Imprecision in Estimates of Dose from Ingested Cs-137 Due to Variability in Human Biological Characteristics 409
 Entrainment Mortality of Ichthyoplankton: Detectability and Precision of Estimates 548
 A Review of Uncertainty Estimates Associated with Models for Assessing the Impact of Breeder Reactor Radioactivity Releases 606
 The Impact of Entrainment and Impingement on Fish Populations in the Hudson River Estuary - Volume I - Entrainment Impact Estimates for Six Fish Populations Inhabiting the Hudson River Estuary 656
 The Effect of Stochastic Variation on Estimates of the Probability of Entrainment Mortality: Methodology, Results, and User's Guide 662

Estimating

- An Examination of Two Methods for Estimating the Transfer of Aerosols from the Troposphere to the Earth's Surface 383

Estimation

- Factors Affecting Mutagenicity of Ethylnitrosourea in the Mouse Specific-Locus Test and Their Bearing on Risk Estimation 208
 Mutation Frequencies in Male Mice and the Estimation of Genetic Hazards of Radiation in Men 212
 Dominant Skeletal Mutations: Applications to Mutagenicity Testing and Risk Estimation 228
 Calibration of Denaturing Agarose Gels for Molecular Weight Estimation of DNA: Size Determination of the Single-Stranded Genomes of Parvoviruses 247
 Chapter 6.3: Mathematical Models in Internal Dose Estimation 304
 Uncertainties in LWR Accident Source Term Estimation 392
 A Model of the 3-Month Pregnant Woman for Radiation Dose Estimation 427
 The Impact of Entrainment and Impingement on Fish Populations in the Hudson River Estuary - Volume III - An Analysis of the Validity of the Utilities' Stock-Recruitment Curve-Fitting Exercise and "Prior Estimation of Beta" Technique 663
 Hydroacoustic Biomass Estimation Techniques 682

Estrogen

Intracellular Glycosylation of Vitellogenin in the Liver of Estrogen-Stimulated *Xenopus laevis* 77

Estuary

The Impact of Entrainment and Impingement on Fish Populations in the Hudson River Estuary - Volume II: Impingement Impact Analyses, Evaluations of Alternative Screening Devices, and Critiques of Utility Testimony Relating to Density-Dependent Growth, the Age-Composition of the Striped Bass Spawning Stock, and the LMS Real-Time Life Cycle Model 654

The Impact of Entrainment and Impingement on Fish Populations in the Hudson River Estuary - Volume I - Entrainment Impact Estimates for Six Fish Populations Inhabiting the Hudson River Estuary 656

The Impact of Entrainment and Impingement on Fish Populations in the Hudson River Estuary - Volume I - Entrainment Impact Estimates for Six Fish Populations Inhabiting the Hudson River Estuary 656

The Impact of Entrainment and Impingement on Fish Populations in the Hudson River Estuary - Volume III - An Analysis of the Validity of the Utilities' Stock-Recruitment Curve-Fitting Exercise and "Prior Estimation of Beta" Technique 663

Etching

Partial Optimization of Electrochemical-Etching Parameters for Highly Sensitive Cr-39 Fast Neutron Dosimeters 329

Ethanol

A Survey of Potential Health and Safety Hazards of Commercial-Scale Ethanol Production Facilities 617

Environmental Assessment - Eastern Ethanol Corporation - Loan Guarantee Application, Williamsburg County, South Carolina 624

Environmental Assessment, U.S. Ethanol Corporation - Loan Guarantee Application, East Baton Rouge Parish, Louisiana 633

ethyl

Antischistosomal Analogs of Hycanthone. 2. Structure of 2-[2-(Diethylamino)ethyl]-2H-[1]-Benzothiopyrano [4,3,2-cd]Indazole-5-Methanol Monohydrate 276

Ethylnitrosourea

Supermutagenicity of Ethylnitrosourea in the Mouse Spot Test - Comparison with Methylnitrosourea and Ethylnitrosourethane 206

Factors Affecting Mutagenicity of Ethylnitrosourea in the Mouse Specific-Locus Test and Their Bearing on Risk Estimation 208

Effect of Dose Fractionation on Specific-Locus Mutation Induction by Ethylnitrosourea in Mouse Spermatogonia 209

Effect of Dose Fractionation on the Ethylnitrosourea Induction of Specific-Locus Mutations in Mouse Spermatogonia 210

Dose-Response Curve for Ethylnitrosourea-Induced Specific-Locus Mutations in Mouse Spermatogonia 211

Ethylnitrosourethane

Supermutagenicity of Ethylnitrosourea in the Mouse Spot Test - Comparison with Methylnitrosourea and Ethylnitrosourethane 206

Eukaryotic

Conversion of Simian Virus 40 DNA to Ordered Nucleoprotein Structures by Extracts that Direct Accurate Initiation by Eukaryotic RNA Polymerase II 240

eV

Electron Inelastic Mean Free Paths in Several Solids for Energies from 200 eV to 10 keV 301

Evaluations

The Impact of Entrainment and Impingement on Fish Populations in the Hudson River Estuary - Volume II: Impingement Impact Analyses, Evaluations of Alternative Screening Devices, and Critiques of Utility Testimony Relating to Density-Dependent Growth, the Age-Composition of the Striped Bass Spawning Stock, and the LMS Real-Time Life Cycle Model 654

Evaporation

Evaporation of Phenol from Synthetic Liquid Fuel Spills 535

Event

Plume Washout around a Major Coal-Fired Power Plant: Results of a Single Storm Event 437

Plume Washout around a Major Coal-Fired Power Plant: Results of a Single Storm Event 438

Events

Variation in Plant Response to Ozone: A Conceptual Model of Physiological Events 544

Examining

Examining the Distribution of Experimental Data 327

Experimental Procedure for Examining the Kinetics of Tritium Gas Conversion to Tritiated Water 610

Exchanges

The Induction of Specific Locus Mutations and Sister Chromatid Exchanges by 5-Bromo- and 5-Chloro-Deoxyuridine 91

ExcisionEffects of an Extract from the Sea Squirt *Ecteinascidia turbinata* on DNA Synthesis and Excision Repair in Human Fibroblasts 52**Excited**

Excited States of Polar Negative Ions 331

Exercise

The Impact of Entrainment and Impingement on Fish Populations in the Hudson River Estuary - Volume III - An Analysis of the Validity of the Utilities' Stock-Recruitment Curve-Fitting Exercise and "Prior Estimation of Beta" Technique 663

Existing

Transport of Organic Carbon to the Sea by Rivers of North America: A Synthesis of Existing Data 513

Review and Analysis of Existing Modeling Approaches for Assessing Population-Level Effects of Multiple Stresses on Fish and Shellfish 717

Expansions

Non-Maxwellian Velocity Distributions and Molecular Beam Intensities in Sonic Nozzle Expansions 362

Expectation

Expectation Values for Low Resolution Slit-Scan Flow Prescreening: Influence of Nuclear Shape and DNA Density 160

Experimentally

Long-Term Morphologic and Biochemical Features of Experimentally Induced Lung Fibrosis in the Mouse 87

Explants

Localization of Specific Lesions in Dimethylbenz(a)anthracene-Preexposed Tracheal Explants 151

Explosives

Tagging Materials for Detection of Explosives 317

Exposed

Localization and Quantitation of Presumptive Neoplastic Cell Populations (PNCP) in Tracheas Exposed to Dimethylbenz(a)anthracene (DMBA) 150

Enhanced Benzo(a)pyrene Metabolism in Hamster Embryonic Cells Exposed in Culture to Fossil Synfuel Products 408

Exposure

The Use of Alkaline Elution To Study DNA Damage in Developing Mouse Sperm after Exposure to Methyl Methanesulfonate 225

Cardiovascular Risk from Exposure to Static Magnetic Fields 322

Response of Chronically Ozonated Soybean Plants to an Acute Ozone Exposure 492

Assessment of Risks to Human Reproduction and to Development of the Human Conceptus from Exposure to Environmental Substances 570

User's Manual for LPGS: A Computer Program for Calculating Radiation Exposure Resulting from Accidental Radioactive Releases to the Hydrosphere 623

Evaluation of Short-Term Exposure to Heated Water and Chlorine for Control of the Asiatic Clam (*Corbicula fluminea*) 689

Exposures

Effects of Repeated Exposures to Aerosolized Diesel Fuel 39

Effects of Single Exposures to Aerosolized Diesel Fuel 40

Occupational Radiation Exposures at a Fusion Power Station 323

Expression

Generation and Characterization of Variants of Mouse Hepatoma Cells with Defects in Hepato-Specific Gene Expression. I. Albumin Synthesis Variants 41

Turnover of Gene Products in the Control of Gene Expression 118

Protein Turnover and Phenotypic Expression in the Chinese Hamster Ovary Cell/

Hypoxanthine-Guanine Phosphoribosyl Transferase (CHO/HGPRT) System 141

Induction and Expression of Mutations in Mammalian Cells in the Absence of DNA Synthesis and Cell Division 170

Phenotypic Expression Time of Mutagen-Induced 6-Thioguanine Resistance in Chinese Hamster Ovary Cells (CHO/HGPRT System): Expression in Division Arrested Cell Cultures 172

Phenotypic Expression Time of Mutagen-Induced 6-Thioguanine Resistance in Chinese Hamster Ovary Cells (CHO/HGPRT System): Expression in Division Arrested Cell Cultures 172

Selective Effect of the Metallo carcinogen Beryllium on Hormonal Regulation of Gene Expression in Cultured Cells 184

Induction of Retrovirus Gene Expression in Mouse Cells by Some Chemical Mutagens 262

Expressions

A Technique for Determining Some Quantitative Expressions of Dormancy in Seeds 530

Extinction

Molecular Mechanism of Extinction of Liver Specific Functions in Mouse Hepatoma x Rat Fibroblast Hybrids: Extinction of the Albumin Gene 178

Molecular Mechanism of Extinction of Liver Specific Functions in Mouse Hepatoma x Rat Fibroblast Hybrids: Extinction of the Albumin Gene 178

Extract

Effects of an Extract from the Sea Squirt *Ecteinascidia turbinata* on DNA Synthesis and Excision Repair in Human Fibroblasts 52

Extraction

Preparative Scale Organic Extraction and Mutagenicity Analysis of Fly Ash 140

The Environmental Teratology Information Center's Data Extraction Project 295

Extracts

Embryotoxic and Teratogenic Effects of Aqueous Extracts of a Coal Gasification Electrostatic Precipitator 221

Cell-Free Extracts That Induce Correct Transcription Initiation by RNA Polymerase II Convert SV40 DNA to Ordered Nucleoprotein Structures 239

Conversion of Simian Virus 40 DNA to Ordered Nucleoprotein Structures by Extracts that Direct Accurate Initiation by Eukaryotic RNA Polymerase II 240

Extrainment

Investigation of Extrainment Stresses Using a Power Plant Simulator 661

Extrapolation

The Role of Animal Studies in Low Dose Extrapolation 67

Extrusion

Radiological Survey of the Former Bridgeport Brass Company Special Metals Extrusion Plant, Adrian, Michigan 594

Fabrics

Thermal Resistance of Juvenile Crayfish, *Cambarus bartoni* (Fabricius): Experiment and Model 462

Facilities

Data Resources for Assessing Regional Impacts of Energy Facilities on Health and the Environment 519

Cleanup and Treatment of Radioactively Contaminated Land Including Areas Near Nuclear Facilities - A Selected Bibliography 566

A Survey of Potential Health and Safety Hazards of Commercial-Scale Ethanol Production Facilities 617

Technology and Cost of Termination Surveys Associated with Decommissioning of Nuclear Facilities 618

Incentives and the Siting of Radiactive Waste Facilities 630

Facility

Nuclear Facility Decommissioning and Site Remedial Actions - A Selected Bibliography Volume 3 575

Radiological Survey of the Former Kellex Research Facility, Jersey City, New Jersey 581

Low-Level Waste Disposal: Facility Design, Construction, and Operating Practices, Washington, DC, September 29-30, 1982 - Abstracts 620

Baseline Environmental Characterization of Pike County Coal Gasification Facility Site 666

Family

Unique and Multiple Solutions of a Family of Differential Equations Modeling Chemical Reactions 429

On the Occurrence of Fungi in Loose-Fill Attic Insulation in Typical Single-Family Dwellings 588

Farm

Simulated Water Budgets for an Irrigated Sycamore Phytomass Farm 463

Fate

A Multimedia Screening-Level Model for Assessing the Potential Fate of Chemicals Released to the Environment 605

Fatty

New Myocardial Imaging Agents - The Influence of Chain Length on the Heart Uptake of Se-75-Labeled Fatty Acids 363

Fe

Formation of Freshwater Fe-Mn Coatings on Gravel and the Behavior of Co-60, Sr-90, and Cs-137 in a Small Watershed 458

Feasibility

Feasibility Studies for Improving Gas Insulation By Coating Contaminating Particles 395

EPA Liquid Release Pathway Health Impact Code: Feasibility Study 591

FECWASTE

FECWASTE: User's Manual of a Finite-Element Code for Simulating WASTE Transport Through Saturated-Unsaturated Porous Media 724

FECWATER

FECWATER: User's Manual of a Finite-Element Code for Simulating WATER Flow Through Saturated-Unsaturated Porous Media 723

Federal

Computer Processing of Public Comments on Proposed Federal Regulations 285

Feeder

Contact-Stimulated Proliferation of Cultured Mouse Epidermal Cells by 3T3 Feeder Layers: Inhibition by 12-O-Tetradecanoylphorbol-13-Acetate (TPA) 156

Female

Survival of Mammary Epithelial Cells from Virgin Female BALB/c Mice Following in Vivo

Gamma Irradiation	3
Tumor-Initiating Activity of 4-Fluoro-7, 12-Dimethylbenz(a)anthracene and 1,2,3, 4-Tetrahydro-7,12-Dimethylbenz(a)anthracene in Female SENCAR Mice	45
Detection of Ductal Dysplasia in Mammary Outgrowths Derived from Carcinogen-Treated Virgin Female BALB/c Mice	55
Induction of Mammary Tumors in Virgin Female BALB/c Mice by Single Low Doses of 7,12-Dimethylbenz(a)anthracene (DMBA)	56
Induction of Mammary Tumors in Virgin Female BALB/c Mice by Single Low Doses of 7,12-Dimethylbenz(a)anthracene	57
Associations between Tumor Types in Irradiated BALB/c Female Mice	255
FEMWASTE	
Training Course No. 2: The Implementation of FEMWASTE (ORNL-5601) Computer Program - Final Report	722
FEMWATER	
Training Course No 1: The Implementation of FEMWATER (ORNL-5567) Computer Program Final Report	721
Feral	
Chemicals Identified in Feral and Food Animals, A Data Base: First Annual Report - October 1981	562
Chemicals Identified in Feral and Food Animals, A Data Base: Second Annual Report	563
FETAX	
A Frog Embryo Teratogenesis Assay: Xenopus (FETAX) - A Model for Teratogen Screening	51
Fetoprotein	
Regulation of Alpha-Fetoprotein and Transferrin Synthesis and Secretion in Mouse Hepatoma Cells	159
Fibroblast	
Molecular Mechanism of Extinction of Liver Specific Functions in Mouse Hepatoma x Rat Fibroblast Hybrids: Extinction of the Albumin Gene	178
Fibroblasts	
Effects of an Extract from the Sea Squirt Ecteinascidia turbinata on DNA Synthesis and Excision Repair in Human Fibroblasts	52
DNA Repair in Normal Human and Xeroderma Pigmentosum Group A Fibroblasts following Treatment with Various Methanesulfonates and the Demonstration of a Long-Patch (UV-Like) Repair Component	248
Differential Responses of Log and Stationary Phase Human Fibroblasts to Inhibition of DNA Repair by Aphidicolin	249
Studies on the Inhibition of Ultraviolet- and Methyl Methanesulfonate-Induced Damage in the DNA of Human Fibroblasts by Novobiocin	250
Fibrosis	
Long-Term Morphologic and Biochemical Features of Experimentally Induced Lung Fibrosis in the Mouse	87
Experimental Lung Fibrosis in the Mouse: Long-Term Morphologic and Biochemical Features	88
Field	
Short Rotation Growth of Hardwoods for Energy Applications Across the United States - Field Results and Economics	464
Results of Subsurface Investigation of Radionuclides in Soil in Finberg Field, Attleboro, Massachusetts	587
Environmetrics of the Long-Term Field Studies of the Environmental Water Quality Operational Studies	674

Fields

- Cardiovascular Risk from Exposure to Static Magnetic Fields 322
 Biological Effects of Static Magnetic Fields: A Selective Review with Emphasis on Risk Assessment 589

Filamentation

- Induction of Filamentation by Mutagens and Carcinogens in a Lon(-) Mutant of Escherichia coli 164

Fil

- On the Occurrence of Fungi in Loose-Fill Attic Insulation in Typical Single-Family Dwellings 588

Filling

- Guidance Manual for Department of Energy Compliance with Corps of Engineers Permits on Dredging and Filling Activities 660

Film

- Diffusion of Au into Sn Thin Films Studied by the Attenuated Total Reflection Method 310
 Photoacoustic Determination of Light Scattering from Thin Ag Films in ATR Geometry 352

Final

- The Impact of Impingement on the Hudson River White Perch Population: Final Report 655
 Methods to Assess Impacts on Hudson River Striped Bass: Final Report 665
 Genetic Selection of American Sycamore for Biomass Production in the Mid-South Final Report for the Period March 9, 1979 - May 31, 1982 684
 Training Course No 1: The Implementation of FEMWATER (ORNL-5567) Computer Program Final Report 721
 Training Course No. 2: The Implementation of FEMWASTE (ORNL-5601) Computer Program - Final Report 722

Finberg

- Results of Subsurface Investigation of Radionuclides in Soil in Finberg Field, Attleboro, Massachusetts 587

Findings

- Findings of a Recent ORNL Review of Dosimetry for the Japanese Atomic-Bomb Survivors 600

Finite

- FECWATER: User's Manual of a Finite-Element Code for Simulating WATER Flow Through Saturated-Unsaturated Porous Media 723
 FECWASTE: User's Manual of a Finite-Element Code for Simulating WASTE Transport Through Saturated-Unsaturated Porous Media 724

Finney

- Environmental Assessment, Circle Energies Corporation - Loan Guarantee Application, Finney County, Kansas 629

Fire

- Prescribed Fire: Effects on Water Quality and Forest Nutrient Cycling 529

Fired

- Plume Washout around a Major Coal-Fired Power Plant: Results of a Single Storm Event 437
 Plume Washout around a Major Coal-Fired Power Plant: Results of a Single Storm Event 438

Fish

- Bioaccumulation of Tc-95m in Fish and Snails 451
 Measurements of Growth and Consumption of Sauger (Stizostedion canadense): Implication for Fish Energetics Studies 511
 Literature Review: Response of Fish to Thermal Discharge 578
 The Impact of Entrainment and Impingement on Fish Populations in the Hudson River Estuary - Volume II: Impingement Impact Analyses, Evaluations of Alternative Screening Devices, and Critiques of Utility Testimony Relating to Density-Dependent Growth, the Age-Composition of the Striped Bass Spawning Stock, and the LMS Real-Time Life Cycle Model 654

- The Impact of Entrainment and Impingement on Fish Populations in the Hudson River Estuary – Volume I – Entrainment Impact Estimates for Six Fish Populations Inhabiting the Hudson River Estuary 656
- The Impact of Entrainment and Impingement on Fish Populations in the Hudson River Estuary – Volume I – Entrainment Impact Estimates for Six Fish Populations Inhabiting the Hudson River Estuary 656
- The Impact of Entrainment and Impingement on Fish Populations in the Hudson River Estuary – Volume III – An Analysis of the Validity of the Utilities' Stock-Recruitment Curve-Fitting Exercise and "Prior Estimation of Beta" Technique 663
- Population-Level Effects of Multiple Stresses on Fish and Shellfish 683
- Guidance Manual for Department of Energy Compliance with the Fish and Wildlife Coordination Act 698
- Research Needs to Assess Population-Level Effects of Multiple Stresses on Fish and Shellfish 716
- Review and Analysis of Existing Modeling Approaches for Assessing Population-Level Effects of Multiple Stresses on Fish and Shellfish 717
- Fisheries**
- The Effects of Selected Hydraulic Structures on Fisheries and Limnology 455
- An Evaluation of Community Information Indices for Mississippi River Fisheries 694
- Fishes**
- Photoreactivation in Two Closely Related Marine Fishes Having Different Longevities 200
- Fission**
- The Influence of Butylated Hydroxytoluene-Induced Cell Proliferation on Mouse Lung Damage after X-Rays or Fission Neutrons 268
- The Influence of Split Dose Fractionation Interval on the Carcinogenic Effects of Fission Spectrum Neutrons 269
- Laser-Optical Studies of the Spontaneous-Fission Isomer Am-240m 434
- Fitting**
- The Impact of Entrainment and Impingement on Fish Populations in the Hudson River Estuary – Volume III – An Analysis of the Validity of the Utilities' Stock-Recruitment Curve-Fitting Exercise and "Prior Estimation of Beta" Technique 663
- Flip**
- Flip-Flop Hydrogen Bonding in Partially Disordered System 214
- Floodplain**
- Interpretation of Floodplain Pollen in Alluvial Sediments from an Arid Region 534
- Flop**
- Flip-Flop Hydrogen Bonding in Partially Disordered System 214
- Florida**
- The Influence of Food Concentration and Container Volume on Life History Parameters of *Diaptomus dorsalis* Marsh from Subtropical Florida 473
- Flow**
- Conformation of the HMG 14 Nucleosome Core Complex from Flow Birefringence 83
- Expectation Values for Low Resolution Slit-Scan Flow Prescreening: Influence of Nuclear Shape and DNA Density 160
- Flow Variability and Hillslope Hydrology 488
- FECWATER: User's Manual of a Finite-Element Code for Simulating WATER Flow Through Saturated-Unsaturated Porous Media 723
- Flows**
- CHNHYD: A CHaNnel HYDrodynamic Model for Simulating Flows and Water Surface Elevations in a Stream/River Network 720
- Flucocorticoid**
- Cloned cDNAs Specific to Flucocorticoid-Induced mRNAs of Rat Liver 135

Fluctuating

Energy Partitioning in Largemouth Bass under Conditions of Seasonally Fluctuating Prey Availability 447

Fluctuation

Fluctuation Experiments on Atomic and Molecular Systems Using the One-Atom Detector 358

Fluence

Photon and Neutron Fluence-to-Kerma Conversion Factors for ICR-1975 Reference Man Using Improved Elemental Compositions for Bone and Marrow of the Skeleton 601

Fluid

Binding of Monoclonal Antibody to Protein Antigen in Fluid Phase or Bound to Solid Supports 117

An Evaluation of the Host-Mediated Assay and Body Fluid Analysis - A Report of the U.S. Experimental Protection Agency Gene-Tox Program 136

Fluidized

International Energy Technology Assessment - Atmospheric Fluidized-Bed Combustion 638

fluminea

Evaluation of Short-Term Exposure to Heated Water and Chlorine for Control of the Asiatic Clam (*Corbicula fluminea*) 689

Fluoranthene

Photoionization of Fluoranthene in Dielectric Liquids 369

Fluorescein

Comparison of Observed and Predicted Air Concentrations for 18.6 μ m Fluorescein Particles 374

Fluoride

Use of Pine Foliage as an Indicator of Fluoride Accumulation from Uranium Hexafluoride Technologies 542

Fluorinated

Cell-Mediated Mutagenicity in Chinese Hamster V79 Cells by Dibenzyrenes and Their Bay-Region Disubstituted Fluorinated Derivatives 89

fluorine

Conformation of the Deoxydinucleotide Monophosphate dCpdG Modified at Carbon 8 of Guanine with 2-(Acetylaminofluorine 97

Fluorometric

A Fluorometric-HPLC Assay for Quantitating the Binding of Benzo(a)pyrene Metabolites to DNA 195

Fluro

Tumor-Initiating Activity of 4-Fluro-7, 12-Dimethylbenz(a)anthracene and 1,2,3, 4-Tetrahydro-7,12-Dimethylbenz(a)anthracene in Female SENCAR Mice 45

Flux

Ozone Flux in Glycine max (L.) Merr.: Sites of Regulation and Relationship to Leaf Injury 543

Fly

Preparative Scale Organic Extraction and Mutagenicity Analysis of Fly Ash 140

Foam

Formaldehyde Release from Simulated Wall Panels Insulated with Urea-Formaldehyde Foam Insulation 340

Foil

Calibration of the Indium Foil Used for Criticality Accident Dosimetry in the UCC-ND Employee Identification Badge 649

Foliage

Use of Pine Foliage as an Indicator of Fluoride Accumulation from Uranium Hexafluoride Technologies 542

Food

- The Influence of Food Concentration and Container Volume on Life History Parameters of *Diaptomus dorsalis* Marsh from Subtropical Florida 473
- Comparative Food Chain Behavior and Distribution of Actinide Elements in and around a Contaminated Fresh-Water Pond 479
- Food Habits of Bobcats in Eastern Tennessee 539
- Chemicals Identified in Feral and Food Animals, A Data Base: First Annual Report - October 1981 562
- Chemicals Identified in Feral and Food Animals, A Data Base: Second Annual Report 563
- Agricultural Production in the United States by County: A Compilation of Information from the 1974 Census of Agriculture for Use in Terrestrial Food-Chain Transport and Assessment Models 613
- Xenobiotic Bioaccumulation by Terrestrial Vertebrates: A Bibliography for Food Chain Modeling 709

Forces

- An Investigation of Dissipative Forces Near Macroscopic Media 579

Forest

- Cycling of Organic and Inorganic Sulfur in a Chestnut Oak Forest 489
- The Effects of Acid Rain on Forest Nutrient Status 490
- Effects of Sawlog vs. Whole-Tree Harvesting on the Nitrogen, Phosphorus, Potassium, and Calcium Budgets of an Upland Mixed Oak Forest 491
- Edge Effect on Breeding Forest Birds Along a Power Line Corridor 497
- Atmospheric Deposition of Metals to Forest Vegetation 502
- The Interaction of Wet and Dry Deposition with the Forest Canopy 503
- Prescribed Fire: Effects on Water Quality and Forest Nutrient Cycling 529
- Air Pollution Impacts on Forest Trees: Acid Deposition: Effects on Terrestrial Ecosystems 533
- Forest Succession Models and Their Ecological and Management Implications 552
- A Description of FORICO, A Tropical Gap Dynamics Model of the Lower Montane Rain Forest of Puerto Rico 669
- The Long-Term Nutrient Retention Properties of Forest Ecosystems: A Simulation Investigation 719

Forestomach

- Hyperkeratinization and Hyperplasia of the Forestomach Epithelium in Vitamin A Deficient Rats 122

Forests

- Environmental Effects of Harvesting Forests for Energy 547

FORICO

- A Description of FORICO, A Tropical Gap Dynamics Model of the Lower Montane Rain Forest of Puerto Rico 669

Formaldehyde

- Formaldehyde and Tumors in Hamster Respiratory Tract 38
- Formaldehyde Release from Simulated Wall Panels Insulated with Urea-Formaldehyde Foam Insulation 340
- Formaldehyde Release from Simulated Wall Panels Insulated with Urea-Formaldehyde Foam Insulation 340
- Evaluation of a Modified CEA Instruments, Inc. Model 555 Analyzer for the Monitoring of Formaldehyde Vapor in Domestic Environments 377
- Evaluation of Selected Monitoring Methods for Formaldehyde in Domestic Environments 378
- Solid Sorbent for Formaldehyde Monitoring 379

Formamide

- Photoemission and Electron Mean Free Paths in Liquid Formamide in the Vacuum UV 308

Formation

- Role of Base Damage in Aberration Formation Interaction of Aphidicolin and X-Rays 15
- Benzo(a)pyrene Metabolites: Formation in Rat Liver Cell-Culture Lines, Binding to Macromolecules, and Mutagenesis in V79 Hamster Cells 232
- A Core Plasma Model of Charged Particle Track Formation in Insulators 402
- Formation of Freshwater Fe-Mn Coatings on Gravel and the Behavior of Co-60, Sr-90, and Cs-137 in a Small Watershed 458
- Metamorphic Petrology of the Negaunee Iron Formation, Marquette District, Northern Michigan: Mineralogy, Metamorphic Reactions, and Phase Equilibria 482

Former

- Radiological Survey of the Former Kellogg Research Facility, Jersey City, New Jersey 581
- Radiological Survey of the Former Bridgeport Brass Company Special Metals Extrusion Plant, Adrian, Michigan 594

Formula

- Comparison of Bethe's Formula for Magnetic-Moment Transitions in Atoms with the Generalized Rosenbluth's Equation 373

Formulations

- Formulations of the Physicochemical Processes in the ORNL Unified Transport Model for Toxicants (UTM-TOX) (Interim Report) 657

FORTTRAN

- RAGBEEF: A FORTRAN IV - Implementation of a Time-Dependent Model for Radionuclide Contamination of BEEF 611

Forum

- Forum II: Requirements for Insulating Gases 396

Fossil

- Acute Cytotoxicity of Fossil-Energy-Related Comparative Research Materials 218
- Enhanced Benzo(a)pyrene Metabolism in Hamster Embryonic Cells Exposed in Culture to Fossil Synfuel Products 408

Fourth

- Chemicals Identified in Human Biological Media, A Data Base: Fourth Annual Report 560
- Chemicals Identified in Human Biological Media, A Data Base: Fourth Annual Report 561
- Proceedings of the Fourth Annual Participants' Information Meeting on DOE Low-Level Waste Management Program 686

Fraction

- Contribution of Unfrozen Fraction and of Salt Concentration to the Survival of Slowly Frozen Human Erythrocytes: Influence of Cell Concentration 155
- Effects of the Water-Soluble Fraction of a Coal-Derived Oil on Pond Microcosms 480

Fractionation

- Effect of Dose Fractionation on Specific-Locus Mutation Induction by Ethylnitrosourea in Mouse Spermatogonia 209
- Effect of Dose Fractionation on the Ethylnitrosourea Induction of Specific-Locus Mutations in Mouse Spermatogonia 210
- The Influence of Split Dose Fractionation Interval on the Carcinogenic Effects of Fission Spectrum Neutrons 269

Fractions

- Removal of O(Sup 6)-Methylguanine from DNA by Human Liver Fractions 179
- The Effect of Temperature on the Toxicity of the Water Soluble Fractions of Diesel Fuel No. 2 and H-Coal Crude Oil to Daphnia magna 713

Fragment

- Calculated Angular Distribution of Fragment Ions from Polyatomic Ion Collisions 2

Fragments

- Purification and Sequencing of Cyanogen Bromide Fragments from Ribulosebiphosphate Carboxylase/Oxygenase from Rhodospirillum rubrum 85
- The Structure of Gene-Size Chromatin Fragments from the Macronucleus of Oxytricha nova 133

Frameshift

- Effect of rev Genes on Chemically-Induced Frameshift Mutagenesis in *Saccharomyces Cerevisiae* 132

Framework

- Framework for Evaluating the Utility of Incentive Systems for Radioactive Waste Repository Siting 435

Francisco

- Compilation of a Biogenic Hydrocarbon Emissions Inventory for Evaluating Ozone Control Strategies in the San Francisco Bay Area 436

Freezing

- Relative Contributions of Cryobiological and Non-Cryobiological Factors to "Freezing" Injury in Human Granulocytes 154

Frequencies

- Mutation Frequencies in Male Mice and the Estimation of Genetic Hazards of Radiation in Men 212
Specific-Locus Mutation Frequencies in Mouse Stem-Cell Spermatogonia at Very Low Radiation Dose Rates 213

Fresh

- Comparative Food Chain Behavior and Distribution of Actinide Elements in and around a Contaminated Fresh-Water Pond 479

Freshwater

- Bioaccumulation and Distribution of Tc-95m in an Experimental Freshwater Pond 450
Formation of Freshwater Fe-Mn Coatings on Gravel and the Behavior of Co-60, Sr-90, and Cs-137 in a Small Watershed 458
Guidance for the Use of Artificial Streams to Assess the Effects of Toxicants in Freshwater Systems 700

Frog

- A Frog Embryo Teratogenesis Assay: *Xenopus* (FETAX) - A Model for Teratogen Screening 51

Frozen

- Contribution of Unfrozen Fraction and of Salt Concentration to the Survival of Slowly Frozen Human Erythrocytes: Influence of Cell Concentration 155

Fuel

- Effects of Repeated Exposures to Aerosolized Diesel Fuel 39
Effects of Single Exposures to Aerosolized Diesel Fuel 40
Percutaneous Acute and Chronic Renal Toxicity Induced by Shale Oil and Petroleum Derived Jet and Diesel Fuel 53
Energy Analysis of the Coal Fuel Cycle: Community Health and Resource Change in an Appalachian Coal County 425
Chronic Toxicity of the Azaarene Quinoline, a Synthetic Fuel Component, to the Pond Snail *Physa heterostropha* 509
Evaporation of Phenols from Synthetic Liquid Fuel Spills 535
Comparison of the Radiological Impacts of Thorium and Uranium Nuclear Fuel Cycles 556
Generic Environmental Assessment Report for Conventional Fuel-Alcohol Plants 672
The Effect of Temperature on the Toxicity of the Water Soluble Fractions of Diesel Fuel No. 2 and H-Coal Crude Oil to *Daphnia magna* 713

Fuels

- Environmental Risk Analyses of Wastewaters Produced by Synthetic Fuels Technologies 521
Publications of Life Sciences Synthetic Fuels of Oak Ridge National Laboratory 577

Fullerton

- Physical Characteristics of Soils of the Southern Region - Fullerton and Sequoia Series 687

Function

- Endocrine Morphology and Reproductive Function in Athymic Nude Mice 42
- Plate Assay for Chemical- and Radiation-Induced Mutagenesis of CAN1 in Yeast as a Function of Post-Treatment DNA Replication: The Effect of rad6-1 137
- Studies on the Function of the Non-primer tRNAs Associated with the 70S RNA of Avian Myeloblastosis Virus 272

Functional

- The Functional Unit of the Arom Conjugate in Neurospora 116

Functions

- Molecular Mechanism of Extinction of Liver Specific Functions in Mouse Hepatoma x Rat Fibroblast Hybrids: Extinction of the Albumin Gene 178

Fundulus

- The Ovary of Fundulus heteroclitus 25

Fungi

- On the Occurrence of Fungi in Loose-Fill Attic Insulation in Typical Single-Family Dwellings 588

Fungus

- The Growth, Nutrient Absorption, and Moisture Status of Selected Woody Species in Coal Mine Spoil in Response to n Induced Infection by the Ectomycorrhizal Fungus Pisolithus tinctorius 718

Fusion

- Occupational Radiation Exposures at a Fusion Power Station 323

Future

- Mammalian Mutagenesis: Future Directions 205

FY

- Oak Ridge National Laboratory Institutional Plan FY 1983-1988 642

G

- Sequence Augmentation by Amplification of an (A+T)-Rich 142 bp Segment in a (G+C)-Rich Satellite DNA 18
- Unusual Sequence Features in the Repeat Unit of (G+C)-Rich Crab Satellite DNA 65

Gamma

- Survival of Mammary Epithelial Cells from Virgin Female BALB/c Mice Following in Vivo Gamma Irradiation 3
- Histochemical Localization of Gamma-Glutamyltranspeptidase (GGT) and Concanavalin A in Normal, Preneoplastic and Neoplastic Epithelia 125
- Location of a Gene Controlling Electrophoretic Variation in Mouse Gamma-Crystallins 242
- Use of Gamma-Ray Detection Instrumentation in ORNL's Off-Site Radiological Survey Program 307
- A Mobile Gamma-Ray Scanning System for Detecting Radiation Anomalies Associated with Radium-226 Bearing Materials 607

Gap

- A Description of FORICO, A Tropical Gap Dynamics Model of the Lower Montane Rain Forest of Puerto Rico 669

Gas

- Gas Breakdown and High-Voltage Insulating Gases 315
- Ternary Gas Dielectrics 316
- Van der Waals Molecules - Linking the Gas and Liquid Phases 361
- Multiple-Reflection Raman Gas Cell Design 376
- Feasibility Studies for Improving Gas Insulation By Coating Contaminating Particles 395
- New Gas Mixture Improves Performance of He-3 Neutron Counters 431
- Experimental Procedure for Examining the Kinetics of Tritium Gas Conversion to Tritiated Water 610
- Preparation of Environmental Analyses for Synfuel and Unconventional Gas Technologies 696

Gaseous

- Single Particle Detection: Gaseous Devices 347
- Cold Trapping Efficiencies for Collection of Tritiated Water Entrained in a Gaseous Stream 399
- Gaseous Dielectrics III - Proceedings of the Third International Symposium on Gaseous Dielectrics, Knoxville, TN, March 7-11, 1982 582
- Gaseous Dielectrics III - Proceedings of the Third International Symposium on Gaseous Dielectrics, Knoxville, TN, March 7-11, 1982 582
- Gaseous Dielectrics Research and Applications Semiannual Report - October 1, 1981-March 31, 1982 583
- High Voltage Research (Breakdown Strengths of Gaseous and Liquid Insulators) and Environmental Effects of Dielectric Gases Semiannual Report (April 1-September 30, 1981) 584

Gases

- Electronegative Gases 311
- Electron Motion in High-Pressure Polar Gases: Ammonia 312
- Gases for Possible Use in Diffuse-Discharge Switches 313
- Gases for Possible Use in Diffuse-Discharge Switches 314
- Gas Breakdown and High-Voltage Insulating Gases 315
- In Vitro Toxicity Screening of Dielectric Gases Using Mammalian Cells 339
- Pressure-Dependent Electron Attachment Rates in Perfluoroalkanes and Perfluoropropylene and Their Effect on the Breakdown Strength of These Gases 346
- Third-Harmonic Generation and Multiphoton Ionization in Rare Gases 387
- Vacuum Ultraviolet Spectroscopy of Molecules Using Third-Harmonic Generation in Rare Gases 390
- Vacuum Ultraviolet Spectroscopy of Molecules Using Third-Harmonic Generation in Rare Gases 391
- Forum II: Requirements for Insulating Gases 396
- Atmospheric Deposition and Plant Assimilation of Gases and Particles 485
- High Voltage Research (Breakdown Strengths of Gaseous and Liquid Insulators) and Environmental Effects of Dielectric Gases Semiannual Report (April 1-September 30, 1981) 584
- Health Effects of Dielectric Gases: Preliminary Report 590
- Evaluation of a Second Derivative UV-Absorption Spectrometer (DUVAS) for Analyzing Gases in Smoke Plumes 604

Gasification

- Embryotoxic and Teratogenic Effects of Aqueous Extracts of a Coal Gasification Electrostatic Precipitator 221
- Coal Gasification Solid Wastes: Physiochemical Characterization 499
- Baseline Environmental Characterization of Pike County Coal Gasification Facility Site 666

Gasifier

- Ecotoxicity of Coal Gasifier Solid Wastes 466
- Environmetrics of the Gasifier in Industry Program: III. Decision Support Systems for Quality Assurance Controls 675

Gasifiers

- Composition and Toxicity of Solid Waste Leachates from Industrial Coal Gasifiers 465

Gatlinburg

- Health Risk Analysis - Proceedings of the Third Life Sciences Symposium, Gatlinburg, TN, October 27-30, 1980 644

Gecarcinus

- Ecdysone Metabolism in Premolt Land Crabs (*Gecarcinus lateralis*) 505

Gels

- Calibration of Denaturing Agarose Gels for Molecular Weight Estimation of DNA: Size Determination of the Single-Stranded Genomes of Parvoviruses 247

Gene

- Generation and Characterization of Variants of Mouse Hepatoma Cells with Defects in Hepato-Specific Gene Expression. I. Albumin Synthesis Variants 41
- Interaction of a DNA-Binding Protein, the Gene Product of D5 of Bacteriophage T5, with Double-Stranded DNA - Analysis by Metrizamide Gradient Centrifugation 71
- Gene Mutation, Quantitative Mutagenesis and Mutagen Screening in Mammalian Cells: Study with the CHO/HGPRT System 103
- Turnover of Gene Products in the Control of Gene Expression 118
- Turnover of Gene Products in the Control of Gene Expression 118
- The Structure of Gene-Size Chromatin Fragments from the Macronucleus of *Oxytricha nova* 133
- An Evaluation of the Host-Mediated Assay and Body Fluid Analysis - A Report of the U.S. Experimental Protection Agency Gene-Tox Program 136
- Molecular Mechanism of Extinction of Liver Specific Functions in Mouse Hepatoma x Rat Fibroblast Hybrids: Extinction of the Albumin Gene 178
- Selective Effect of the Metallocarcinogen Beryllium on Hormonal Regulation of Gene Expression in Cultured Cells 184
- How Predictive is the Mouse Spot Test for Heritable Gene Mutations? 203
- Location of a Gene Controlling Electrophoretic Variation in Mouse Gamma-Crystallins 242
- Induction of Retrovirus Gene Expression in Mouse Cells by Some Chemical Mutagens 262
- Introduction and Perspectives of Plant Genetic and Cytogenetic Assays: A Report of the U.S. Environmental Protection Agency Gene-Tox Program 284
- Aspergillus nidulans*: Systems and Results of Tests for Chemical Induction of Mitotic Segregation and Mutation. I. Diploid and Duplication Assay Systems. A Report of the U.S. EPA Gene-Tox Program 286
- DNA Repair Assays as Tests for Environmental Mutagens: A Report of the U.S. EPA Gene-Tox Program 287
- Aspergillus nidulans*: Systems and Results of Tests for Induction of Mitotic Segregation and Mutation. II. Haploid Assay Systems and Overall Response of All Systems. A Report of the U.S. EPA Gene-Tox Program 293

Generalized

- Comparison of Bethe's Formula for Magnetic-Moment Transitions in Atoms with the Generalized Rosenbluth's Equation 373

Generation

- Generation and Characterization of Variants of Mouse Hepatoma Cells with Defects in Hepato-Specific Gene Expression. I. Albumin Synthesis Variants 41
- Multiphoton Ionization and Third-Harmonic Generation in Atoms and Molecules 318
- Third-Harmonic Generation and Multiphoton Ionization in Rare Gases 387
- Vacuum Ultraviolet Spectroscopy of Molecules Using Third-Harmonic Generation in Rare Gases 390
- Vacuum Ultraviolet Spectroscopy of Molecules Using Third-Harmonic Generation in Rare Gases 391
- Cooperative Effects on Multiphoton Ionization and Third-Harmonic Generation in the Region near Three-Photon Resonance 398

Generic

- Generic Environmental Assessment Report for Conventional Fuel-Alcohol Plants 672

Genes

- Effect of rev Genes on Chemically-Induced Frameshift Mutagenesis in *Saccharomyces Cerevisiae* 132

Genesis

- Genesis of Bimodal Size Distributions in Species Cohorts 469

Genetic

- The Relevance of Long Term Carcinogenic and Genetic Hazards to Emergency Control 68

An Analysis of Genetic Factors Regulating Life-Span in Congenic Mice	187
The Primary Structure of Genetic Variants of Mouse Hemoglobin	188
Mutation Frequencies in Male Mice and the Estimation of Genetic Hazards of Radiation in Men	212
Induced Mutations in Mice and Genetic Risk Assessment in Humans	227
Introduction and Perspectives of Plant Genetic and Cytogenetic Assays: A Report of the U.S. Environmental Protection Agency Gene-Tox Program	284
Genetic Selection of American Sycamore for Biomass Production in the Mid-South Final Report for the Period March 9, 1979 - May 31, 1982	684
Genomes	
Calibration of Denaturing Agarose Gels for Molecular Weight Estimation of DNA: Size Determination of the Single-Stranded Genomes of Parvoviruses	247
Genotoxicity	
Relevance of the Mouse Spot Test as a Genotoxicity Indicator	204
Genotypes	
Spread of Organisms with Novel Genotypes: Thoughts from an Ecological Perspective	701
Geochemical	
The Influence of Geochemical Variables on Long-Lived Radionuclide Migration and Risk Assessment	454
Geochemistry	
Geology and Geochemistry of the Stratabound Sulfide Deposits of the Pyriton District, Alabama	540
Geocology	
Analyses of Ecoregions Utilizing the Geocology Data Base	520
Geohydrochemical	
Geohydrochemical Considerations in Land Disposal of Low-Level Wastes	553
Geologic	
Uncertainties Associated with Geologic Disposal of High-Level Radioactive Waste	367
Geologic Setting of the Hillabee Metavolcanic Complex and Associated Stratabound Sulfide Deposits in the Appalachian Piedmont of Alabama	545
Proceedings of the Symposium on Uncertainties Associated with the Regulation of the Geologic Disposal of High-Level Radioactive Waste	603
A Review of NRC Rules and Regulations Related to the Disposal of High-Level Radioactive Waste in Geologic Repositories	670
Geology	
Geology and Geochemistry of the Stratabound Sulfide Deposits of the Pyriton District, Alabama	540
Geometry	
Photoacoustic Determination of Light Scattering from Thin Ag Films in ATR Geometry	353
Geosciences	
Tracer Theory with Applications in Geosciences - Part I	690
Germ	
A Possible Mechanism for Chemical Induction of Chromosome Aberrations in Male Meiotic and Postmeiotic Germ Cells of Mice	73
Lack of Association between Induction of Dominant-Lethal Mutations and Induction of Heritable Translocations with Benzo(a)pyrene (BaP) in Postmeiotic Germ Cells of Male Mice	75
The Induction of Chromosome Aberrations in Germ Cells: A Discussion of Factors That Can Influence Sensitivity to Chemical Mutagens	190
Unscheduled DNA Synthesis in Mammalian Germ Cells - Its Potential Use in Mutagenicity Testing	226
Germfree	
Resistance of Germfree Athymic Nude Mice to Two-Stage Skin Carcinogenesis	102

Germination

Germination and Growth Effects of Hexavalent Chromium in Orocol (A Corrosion Inhibitor) on *Phaseolus vulgaris* 522

Effects of Orocol TL (a Corrosion Inhibitor) on Germination and Growth of Bush Beans 693

GeV

Monte Carlo Calculations of Initial Energies of Electrons in Water Irradiated by Photons with Energies up to 1 GeV 414

User's Manual for PHOEL-3, A Monte Carlo Computer Code for Calculating Initial Energies of Electrons and Positrons Produced in Water Irradiated by Photons with Energies Up to 1 GeV 615

GGT

Histochemical Localization of Gamma-Glutamyltranspeptidase (GGT) and Concanavalin A in Normal, Preneoplastic and Neoplastic Epithelia 125

GI

Estimates of Dose to Systemic Organs and GI Tract Based on Data from Miniature Swine Orally Intubated with a Single Dose of Am-241 Citrate 306

Gland

Neoplasms of the Mouse Integument and Harderian Gland 100

Ultrastructural Studies of Chironomus Salivary Gland Cells in Different States of Balbiani Ring Activity 175

Global

Modeling Terrestrial Carbon Cycling at the Global Scale 474

The Role of Lake and Reservoir Sediments as Sinks in the Perturbed Global Carbon Cycle 512

Glucocorticoid

Effects of Phorbol Ester Tumor Promoters and Hyperplasiogenic Agents on Cytoplasmic Glucocorticoid Receptors in Epidermis 43

Glutamyltranspeptidase

Histochemical Localization of Gamma-Glutamyltranspeptidase (GGT) and Concanavalin A in Normal, Preneoplastic and Neoplastic Epithelia 125

Glycerol

The Detrimental Effect of Glycerol on Granulocytes 9

Glycine

Uptake and Metabolism of C-14 Anthracene by Soybean (*Glycine max*) 472

Ozone Flux in *Glycine max* (L.) Merr.: Sites of Regulation and Relationship to Leaf Injury 543

Glycosylation

Intracellular Glycosylation of Vitellogenin in the Liver of Estrogen-Stimulated *Xenopus laevis* 77

Gradient

Interaction of a DNA-Binding Protein, the Gene Product of D5 of Bacteriophage T5, with Double-Stranded DNA - Analysis by Metrizamide Gradient Centrifugation 71

Grafting

Sequential Thymus Grafting of Aged Mice: Characterization of Growth, Regression and Enhancement of Immune Competence 182

Granulocytes

The Response of Granulocytes to Osmotic Shrinkage 8

The Detrimental Effect of Glycerol on Granulocytes 9

Relative Contributions of Cryobiological and Non-Cryobiological Factors to "Freezing" Injury in Human Granulocytes 154

Graphical

An Interactive Statistical Distribution Analysis Program Utilizing Numerical and Graphical Methods 592

Gravel

Formation of Freshwater Fe-Mn Coatings on Gravel and the Behavior of Co-60, Sr-90, and Cs-137 in a Small Watershed 458

Gravels

- Distribution and Relationship of Radionuclides to Streambed Gravels in a Small Watershed 457

Groove

- Stabilization of the Tertiary Structure of Yeast Phenylalanine tRNA by the Hexamine Cobaltic Ion: X-Ray Evidence for Hydrogen Bonding to Pairs of Guanine Bases in the Major Groove 96

Ground

- Comparison of Observed and Predicted Sodium Air and Ground Concentrations 385

Grouting

- Grouting Research for Uranium Mill Tailings 538

Growth

- Determination of Growth Requirements of Non-Tumorigenic and Tumorigenic Tracheal Epithelial Cells Using a Semi-Automated Quantitative Method 120
- Sequential Thymus Grafting of Aged Mice: Characterization of Growth, Regression and Enhancement of Immune Competence 182
- Short Rotation Growth of Hardwoods for Energy Applications Across the United States - Field Results and Economics 464
- Effect of Rain pH Senescence, Growth, and Yield of Bush Bean 493
- Effects of Chronic Air Pollution Stress on Photosynthesis, Carbon Allocation, and Growth of White Pine Trees 506
- Measurements of Growth and Consumption of Sauger (*Stizostedion canadense*): Implication for Fish Energetics Studies 511
- Germination and Growth Effects of Hexavalent Chromium in Orocol (A Corrosion Inhibitor) on *Phaseolus vulgaris* 522
- The Impact of Entrainment and Impingement on Fish Populations in the Hudson River Estuary - Volume II: Impingement Impact Analyses, Evaluations of Alternative Screening Devices, and Critiques of Utility Testimony Relating to Density-Dependent Growth, the Age-Composition of the Striped Bass Spawning Stock, and the LMS Real-Time Life Cycle Model 654
- Effects of Orocol TL (a Corrosion Inhibitor) on Germination and Growth of Bush Beans 693
- The Growth, Nutrient Absorption, and Moisture Status of Selected Woody Species in Coal Mine Spoil in Response to an Induced Infection by the Ectomycorrhizal Fungus *Pisolithus tinctorius* 718

Guanine

- Stabilization of the Tertiary Structure of Yeast Phenylalanine tRNA by the Hexamine Cobaltic Ion: X-Ray Evidence for Hydrogen Bonding to Pairs of Guanine Bases in the Major Groove 96
- Conformation of the Deoxydinucleotide Monophosphate dCpdG Modified at Carbon 8 of Guanine with 2-(Acetylamino)fluorine 97
- Protein Turnover and Phenotypic Expression in the Chinese Hamster Ovary Cell/Hypoxanthine-Guanine Phosphoribosyl Transferase (CHO/HGPRT) System 141
- Base Displacement in AAF and AF Modified dCpdG: Syn and Anti Guanine 342

Guarantee

- Environmental Assessment - Eastern Ethanol Corporation - Loan Guarantee Application, Williamsburg County, South Carolina 624
- Environmental Assessment - Energy Conversion Corporation - Loan Guarantee Application, Hampton County, South Carolina 625
- Environmental Assessment - D. W. Small and Sons, Inc. - Loan Guarantee Application, Androscoggin County, Maine 628
- Environmental Assessment, Circle Energies Corporation - Loan Guarantee Application, Finney County, Kansas 629
- Environmental Assessment, New Energy Corporation of Indiana - Loan Guarantee Application, St. Joseph County, Indiana 631
- Minnesota Alcohol Producers - Loan Guarantee Application, Blue Earth County,

- Minnesota 632**
 Environmental Assessment, U.S. Ethanol Corporation - Loan Guarantee Application, East Baton Rouge Parish, Louisiana 633
 Environmental Assessment - Agrifuels Refining Corporation - Loan Guarantee Application, Iberia Parish, Louisiana 634
 Environmental Assessment - Gulf Coast Resources, Inc. - Loan Guarantee Application, Lee County, Iowa 635
 Environmental Assessment - Tennol, Inc. - Loan Guarantee Application, Marion County, Tennessee 636
- Guidance**
 Guidance Manual for Department of Energy Compliance with Corps of Engineers Permits on Dredging and Filling Activities 660
 Guidance Manual for Department of Energy Compliance with the Clean Water Act: National Pollutant Discharge Elimination System (NPDES) 680
 Guidance Manual for Department of Energy Compliance with the Fish and Wildlife Coordination Act 698
 Guidance for the Use of Artificial Streams to Assess the Effects of Toxicants in Freshwater Systems 700
 Guidance Manual for Department of Energy Compliance with the Clean Air Act: Prevention of Significant Deterioration 703
- Guide**
 Residential Conservation Service - Planning and Implementation Guide for Home Heating Suppliers 568
 Residential Conservation Service - Planning and Implementation Guide 569
 The Effect of Stochastic Variation on Estimates of the Probability of Entrainment Mortality: Methodology, Results, and User's Guide 662
 A User's Guide for the Stock-Recruitment Model Validation Program 664
- Guidelines**
 Guidelines for Preparing Environmental Analyses for Department of Energy NEPA Documents 671
- Guinea**
 Effect of Phorbol Esters on Guinea Pig Skin In Vivo 19
- Gulf**
 Environmental Assessment - Gulf Coast Resources, Inc. - Loan Guarantee Application, Lee County, Iowa 635
- Gut**
 Mathematical Studies of the Absorption into Blood of Am-241 following Oral Intubation into the Gut of Minature Swine 305
- H**
 The Down Regulation of Specific Binding of [20-H-3]phorbol 12,13,-dibutyrate and Phorbol Ester Induced Differentiation of Human Promyelocytic Leukemia Cells 252
 Health and Environmental Studies of H-Coal Process 441
 Health and Environmental Studies of H-Coal Process 442
 Environmental Studies of Materials from the H-Coal Liquefaction Process Development Unit 658
 The Effect of Temperature on the Toxicity of the Water Soluble Fractions of Diesel Fuel No. 2 and H-Coal Crude Oil to Daphnia magna 713
- Habits**
 Food Habits of Bobcats in Eastern Tennessee 539
- Halide**
 Electric Dipole Polarizabilities of Alkali Halide Dimers 371
- Halocarbons**
 Electron Attachment to Halocarbons of Environmental Interest: Chloroethanes 380

Hampton

Environmental Assessment – Energy Conversion Corporation – Loan Guarantee Application,
Hampton County, South Carolina 625

Hamster

- Formaldehyde and Tumors in Hamster Respiratory Tract 38
- Pulmonary Toxicity of Methylcyclopentadienyl Manganese Tricarbonyl (MMT): Nonciliated Bronchiolar Epithelial (Clara) Cell Necrosis and Alveolar Damage in the Mouse Rat and Hamster 81
- Cell-Mediated Mutagenicity in Chinese Hamster V79 Cells by Dibenzpyrenes and Their Bay-Region Disubstituted Fluorinated Derivatives 89
- A Multiphasic Chinese Hamster Mutational System 104
- Reverse Transformation of Chinese Hamster Cells by Cyclic AMP and Hormones 105
- The Need to Develop a Short-Term Chinese Hamster In Vivo Specific Locus Mutational Assay 106
- Stereo Electron Microscope Studies of Mitotic Chromosomes from Chinese Hamster Ovary Cells 134
- Salvage of the Modified Nucleoside Ribothymidine in Culture: Hamster Embryo Cells 139
- Protein Turnover and Phenotypic Expression in the Chinese Hamster Ovary Cell/Hypoxanthine-Guanine Phosphoribosyl Transferase (CHO/HGPRT) System 141
- Benzo(a)pyrene-Binding Proteins of Hamster Embryo Cell Nuclei: Comparison of Nuclear Isolation Procedures 142
- Time Course of Metabolism of Benzo(e)pyrene by Hamster Embryo Cells and the Effect of Chemical Modifiers 143
- Phenotypic Expression Time of Mutagen-Induced 6-Thioguanine Resistance in Chinese Hamster Ovary Cells (CHO/HGPRT System): Expression in Division Arrested Cell Cultures 172
- Benzo(a)pyrene Metabolites: Formation in Rat Liver Cell-Culture Lines, Binding to Macromolecules, and Mutagenesis in V79 Hamster Cells 232
- Calcium-Enhanced Cellular Uptake of Rat Liver S9 by Chinese Hamster Ovary Cells 253
- Metabolism of 6-Nitrobenzo(a)pyrene by Hamster Embryo Cells and Rat Liver Microsomes 265
- Enhanced Benzo(a)pyrene Metabolism in Hamster Embryonic Cells Exposed in Culture to Fossil Synfuel Products 408

Handbook

Shallow Land Burial Handbook 646

Haploid

Aspergillus nidulans: Systems and Results of Tests for Induction of Mitotic Segregation and Mutation. II. Haploid Assay Systems and Overall Response of All Systems. A Report of the U.S. EPA Gene-Tox Program 293

Harderian

Neoplasms of the Mouse Integument and Harderian Gland 100

Hardwoods

Short Rotation Growth of Hardwoods for Energy Applications Across the United States – Field Results and Economics 464

Harmonic

- Multiphoton Ionization and Third-Harmonic Generation in Atoms and Molecules 318
- Third-Harmonic Generation and Multiphoton Ionization in Rare Gases 387
- Vacuum Ultraviolet Spectroscopy of Molecules Using Third-Harmonic Generation in Rare Gases 390
- Vacuum Ultraviolet Spectroscopy of Molecules Using Third-Harmonic Generation in Rare Gases 391
- Cooperative Effects on Multiphoton Ionization and Third-Harmonic Generation in the Region near Three-Photon Resonance 398

Harvesting

- Effects of Sawlog vs. Whole-Tree Harvesting on the Nitrogen, Phosphorus, Potassium, and Calcium Budgets of an Upland Mixed Oak Forest 491
- Environmental Effects of Harvesting Forests for Energy 547

Hazardous

- Research Efforts on Environmental Transport of Hazardous Materials at Oak Ridge National Laboratory 537

Hazards

- The Relevance of Long Term Carcinogenic and Genetic Hazards to Emergency Control 68
- Mutation Frequencies in Male Mice and the Estimation of Genetic Hazards of Radiation in Men 212
- A Survey of Potential Health and Safety Hazards of Commercial-Scale Ethanol Production Facilities 617

He

- The Reaction of Li with Oxygen in the Presence of He or Ar 370
- New Gas Mixture Improves Performance of He-3 Neutron Counters 4: 1

Health

- Shallow-Land Burial of Low-Level Radioactive Wastes: Preliminary Simulations of Long-Term Health Risks 328
- Measurements of the TLD-Albedo Calibration Ratio Made at the Health Physics Research Reactor 337
- Health Risk Associated with Energy Conservation 357
- Uncertainties in the Assessment of Long-Term Collective Dose and Health Effects 366
- Personnel Dosimetry Intercomparison Studies at the Health Physics Research Reactor: A Summary (1974-1980) 410
- AAAS Symposium Volume Series - Health Risks Associated with Energy Technologies 417
- Health and Safety Impacts of Residential Wood Heat 418
- Energy Analysis of the Coal Fuel Cycle: Community Health and Resource Change in an Appalachian Coal County 425
- Health and Environmental Studies of H-Coal Process 441
- Health and Environmental Studies of H-Coal Process 442
- Data Resources for Assessing Regional Impacts of Energy Facilities on Health and the Environment 519
- Health Effects of Environmental Chemicals on the Adult Human Reproductive System - A Selected Bibliography with Abstracts 1963-1981 576
- Health Effects of Dielectric Gases: Preliminary Report 590
- EPA Liquid Release Pathway Health Impact Code: Feasibility Study 591
- A Survey of Potential Health and Safety Hazards of Commercial-Scale Ethanol Production Facilities 617
- Health Risk Analysis - Proceedings of the Third Life Sciences Symposium, Gatlinburg, TN, October 27-30, 1980 644
- Atmospheric Sulfur Deposition: Environmental Impact and Health Effects 702

Heart

- New Myocardial Imaging Agents - The Influence of Chain Length on the Heart Uptake of Se-75-Labeled Fatty Acids 363

Heat

- Health and Safety Impacts of Residential Wood Heat 418

Heated

- Evaluation of Short-Term Exposure to Heated Water and Chlorine for Control of the Asiatic Clam (*Corbicula fluminea*) 689

Heating

- Residential Conservation Service - Planning and Implementation Guide for Home Heating Suppliers 568

Height

- Comparison of Observed and Predicted Normalized Air Concentrations for Particles Released from a Height of 111 Meters 384

HeLa

- Uptake of Tritiated Ouabain from the Cell Surface into the Lysosomal Compartment of HeLa Cells 34
- Recycling of Surface Sialoglycoconjugates in HTC and HeLa Cells 63
- Heterogeneous Recycling of Surface Sialoglycoproteins in HeLa Cells 64
- Regulation by Turnover of Na,K-ATPase in HeLa Cells 186

Hemoglobin

- The Primary Structure of Genetic Variants of Mouse Hemoglobin 188

Hepato

- Generation and Characterization of Variants of Mouse Hepatoma Cells with Defects in Hepato-Specific Gene Expression. I. Albumin Synthesis Variants 41

Hepatoma

- Generation and Characterization of Variants of Mouse Hepatoma Cells with Defects in Hepato-Specific Gene Expression. I. Albumin Synthesis Variants 41
- Concanavalin A Alters the Turnover Rate of Tyrosine Aminotransferase in Cultured Hepatoma Cells 48
- Regulation of Alpha-Fetoprotein and Transferrin Synthesis and Secretion in Mouse Hepatoma Cells 159
- Molecular Mechanism of Extinction of Liver Specific Functions in Mouse Hepatoma x Rat Fibroblast Hybrids: Extinction of the Albumin Gene 178
- A Yeast Endoribonuclease Stimulated by Novikoff Hepatoma Small Nuclear RNAs U1 and U2 254

Heritable

- Difference in the Ratio of Dominant-Lethal Mutations to Heritable Translocations Produced in Mouse Spermatids and Fully Mature Sperm after Treatment with Triethylenemelamine (TEM) 74
- Lack of Association between Induction of Dominant-Lethal Mutations and Induction of Heritable Translocations with Benzo(a)pyrene (BaP) in Postmeiotic Germ Cells of Male Mice 75
- How Predictive is the Mouse Spot Test for Heritable Gene Mutations? 203

heteroclitus

- The Ovary of Fundulus heteroclitus 25

Heterocyclic

- Structure-Toxicity Relationships of Selected Nitrogenous Heterocyclic Compounds. II. Dinitrogen Molecules 220
- Structure-Toxicity Relationships of Selected Nitrogenous Heterocyclic Compounds. III: Relations Using Molecular Connectivity 223

Heterogeneity

- Heterogeneity of Benzo(a)pyrene Metabolism in Human and Rodent Cell Culture 230

Heterogeneous

- Heterogeneous Recycling of Surface Sialoglycoproteins in HeLa Cells 64

heterostrophia

- Chronic Toxicity of the Azaarene Quinoline, a Synthetic Fuel Component, to the Pond Snail Physa heterostrophia 509

Hexafluoride

- Impulse Breakdown in Sulfur Hexafluoride, Sulfur Hexafluoride/Nitrogen and Sulfur Hexafluoride/Perfluorocarbon Mixtures 325
- Impulse Breakdown in Sulfur Hexafluoride, Sulfur Hexafluoride/Nitrogen and Sulfur Hexafluoride/Perfluorocarbon Mixtures 325
- Impulse Breakdown in Sulfur Hexafluoride, Sulfur Hexafluoride/Nitrogen and Sulfur Hexafluoride/Perfluorocarbon Mixtures 325

- ride/Perfluorocarbon Mixtures 325
- Detection of Sulfur Tetrafluoride in Sparked Sulfur Hexafluoride 406
- Studies of Spark Decomposition Products of Sulfur Hexafluoride and Sulfur Hexafluoride/Perfluorocarbon Mixtures 407
- Studies of Spark Decomposition Products of Sulfur Hexafluoride and Sulfur Hexafluoride/Perfluorocarbon Mixtures 407
- Use of Pine Foliage as an Indicator of Fluoride Accumulation from Uranium Hexafluoride Technologies 542
- Hexafluorobenzene**
- Collisional Ionization between Fast Alkali Atoms and Hexafluorobenzene 329
- Hexamethyl**
- Yields and Mean Free Paths of Photoelectrons from Liquid Hexamethyl Phosphoric Thiamide 309
- Hexamine**
- Stabilization of the Tertiary Structure of Yeast Phenylalanine tRNA by the Hexamine Cobaltic Ion: X-Ray Evidence for Hydrogen Bonding to Pairs of Guanine Bases in the Major Groove 96
- Hexavalent**
- Germination and Growth Effects of Hexavalent Chromium in Orocol (A Corrosion Inhibitor) on *Phaseolus vulgaris* 522
- Hexose**
- Development of Sodium-Independent Hexose Transport in a Cultured Line of Porcine Kidney Cells 5
- Development of Sodium Ion-Dependent Hexose Transport In Vitro 33
- A Model for the Differentiation of Na-Dependent Hexose Transport Capacity in a Population of LLC-PK(Sub 1) Cells 35
- The Effect of Reestablishing Tissue-Like Cell Associations on Hexose Uptake in Rat Tracheal Epithelial Cell Lines and Primary Cell Cultures 271
- Hexoses**
- Pathways for Efflux of Hexoses during Differentiation of LLC-PK1 Cells in Culture 277
- HGPRT**
- Effect of Metabolic Activation on the Cytotoxicity and Mutagenicity of 1,2-Dibromoethane in the CHO/HGPRT System 23
- Cytotoxicity and Mutagenicity of Five Antitumor Compounds (Ellipticines) in the CHO/HGPRT System 44
- Quantitation and Analysis of Reverse Mutations at the HGPRT Locus in Cultured Mammalian Cells 72
- Gene Mutation, Quantitative Mutagenesis and Mutagen Screening in Mammalian Cells: Study with the CHO/HGPRT System 103
- Protein Turnover and Phenotypic Expression in the Chinese Hamster Ovary Cell/Hypoxanthine-Guanine Phosphoribosyl Transferase (CHO/HGPRT) System 141
- Effect of Selection Cell Density on the Recovery of Mutagen Induced 6-Thioguanine Resistant Cells (CHO/HGPRT System) 171
- Phenotypic Expression Time of Mutagen-Induced 6-Thioguanine Resistance in Chinese Hamster Ovary Cells (CHO/HGPRT System): Expression in Division Arrested Cell Cultures 172
- Cytotoxicity and Mutagenicity of Dimethylnitrosamine in Mammalian Cells (CHO/HGPRT System): Enhancement by Calcium Phosphate 173
- An Analysis of Mutagenic Activity of Quinolines in the CHO/HGPRT System 215
- Lipid Peroxidation of S9 and the CHO/HGPRT System 259
- Hillabee**
- Geologic Setting of the Hillabee Metavolcanic Complex and Associated Stratabound Sulfide Deposits in the Appalachian Piedmont of Alabama 545

Hillslope

Flow Variability and Hillslope Hydrology 488

Hiroshima

Neutrons in Hiroshima? 359

Histidine

Mutagenicity of 4,4'-Methylenedianiline (MDA) Derivatives in the Salmonella Histidine Reversion Assay 199

Histochemical

Histochemical Localization of Gamma-Glutamyltranspeptidase (GGT) and Concanavalin A in Normal, Preneoplastic and Neoplastic Epithelia 125

Histones

pH Effects on the Structure of the Inner Histones 27

Histopathology

Radiation Histopathology, Vol. I & II - Book Review 256

HistoryThe Influence of Food Concentration and Container Volume on Life History Parameters of *Diaptomus dorsalis* Marsh from Subtropical Florida 473**HL**

The Control of Phospholipid Methylation by Phorbol Diesters in Differentiating Human Myeloid HL-60 Leukemia Cells 99

Induction of Differentiation of Human Promyelocytic Leukemia (HL-60) Cells by Teleocidin B and Phorbol-13-Myristate-13-Acetate 108

HMG

Neutron Scattering and X-Ray Diffraction of Nucleosomes and Nucleosome - HMG Complexes 26

Conformation of the HMG 14 Nucleosome Core Complex from Flow Birefringence 83

Home

Residential Conservation Service - Planning and Implementation Guide for Home Heating Suppliers 568

Homeostasis

Recovery of Immune Competence Following Sublethal X-Irradiation of Young and Old Mice: A Model for Studying Age-Related Loss of Immunologic Homeostasis 185

Homologous

Acid Lipase-1 (Lip-1) is on Mouse Chromosome 19: Evidence for Homologous Regions on Human Chromosome 10 and Mouse 19 128

Assignment of Acy-1 to Mouse Chromosome 9: Evidence for Homologous Linkage Groups in Man and Mouse 130

Honors

The Oak Ridge National Laboratory Registry of Notable Honors and Awards in Science and Engineering, 1943-May 1982, 4th Edition 571

Hormonal

Selective Effect of the Metallocarcinogen Beryllium on Hormonal Regulation of Gene Expression in Cultured Cells 184

Hormones

Reverse Transformation of Chinese Hamster Cells by Cyclic AMP and Hormones 105

Host

An Evaluation of the Host-Mediated Assay and Body Fluid Analysis - A Report of the U.S. Experimental Protection Agency Gene-Tox Program 136

The Use of the Host Mediated Assay for Cytogenetic Studies 194

HPLC

A Fluorometric-HPLC Assay for Quantitating the Binding of Benzo(a)pyrene Metabolites to DNA 195

Production of L-[1-11C]Valine by HPLC Resolution 424

HTC

Recycling of Surface Sialoglycoconjugates in HTC and HeLa Cells 63

Hudson

Corrected Analysis of the Ability to Detect Reductions in Year-Class Strength of the Hudson River White Perch (*Morone americana*) Population 549

The Impact of Entrainment and Impingement on Fish Populations in the Hudson River Estuary - Volume II: Impingement Impact Analyses, Evaluations of Alternative Screening Devices, and Critiques of Utility Testimony Relating to Density-Dependent Growth, the Age-Composition of the Striped Bass Spawning Stock, and the LMS Real-Time Life Cycle Model 654

The Impact of Impingement on the Hudson River White Perch Population: Final Report 655

The Impact of Entrainment and Impingement on Fish Populations in the Hudson River Estuary - Volume I - Entrainment Impact Estimates for Six Fish Populations Inhabiting the Hudson River Estuary 656

The Impact of Entrainment and Impingement on Fish Populations in the Hudson River Estuary - Volume I - Entrainment Impact Estimates for Six Fish Populations Inhabiting the Hudson River Estuary 656

The Impact of Entrainment and Impingement on Fish Populations in the Hudson River Estuary - Volume III - An Analysis of the Validity of the Utilities' Stock-Recruitment Curve-Fitting Exercise and "Prior Estimation of Beta" Technique 663

Methods to Assess Impacts on Hudson River Striped Bass: Final Report 665

User's Manual for STRIPE: A Computer Code for Simulating Striped Bass Young-of-the-Year Population in the Hudson River 673

Human

Mouse Models of Human Thalassemia 7

Evaluation of Radiation-Induced Chromosomal Aberrations in Human Peripheral Blood Lymphocytes In Vitro 16

Ultraviolet-Induced Damage and Its Repair in Human DNA 28

Effects of an Extract from the Sea Squirt *Ecteinascidia turbinata* on DNA Synthesis and Excision Repair in Human Fibroblasts 52

The Control of Phospholipid Methylation by Phorbol Diesters in Differentiating Human Myeloid HL-60 Leukemia Cells 99

Induction of Differentiation of Human Promyelocytic Leukemia (HL-60) Cells by Teleocidin B and Phorbol-13-Myristate-13-Acetate 108

Cell Differentiation, Alterations in Polyamine Levels, and Specific Binding of Phorbol Diesters in Cultured Human Cells 109

Dark Epithelial Cells in Preneoplastic Lesions of the Human Respiratory Tract 123

Dark Cells in Human Oral Leukoplakias 124

Propagation of Normal Human Epithelial Cell Populations Using an in Vivo Culture System: Description and Applications 127

Acid Lipase-1 (Lip-1) is on Mouse Chromosome 19: Evidence for Homologous Regions on Human Chromosome 10 and Mouse 19 128

Relative Contributions of Cryobiological and Non-Cryobiological Factors to "Freezing" Injury in Human Granulocytes 154

Contribution of Unfrozen Fraction and of Salt Concentration to the Survival of Slowly Frozen Human Erythrocytes: Influence of Cell Concentration 155

Removal of O(Sup 6)-Methylguanine from DNA by Human Liver Fractions 179

Heterogeneity of Benzo(a)pyrene Metabolism in Human and Rodent Cell Culture 230

DNA Repair in Normal Human and Xeroderma Pigmentosum Group A Fibroblasts following Treatment with Various Methanesulfonates and the Demonstration of a Long-Patch (UV-Like) Repair Component 248

Differential Responses of Log and Stationary Phase Human Fibroblasts to Inhibition of DNA Repair by Aphidicolin 249

Studies on the Inhibition of Ultraviolet- and Methyl Methanesulfonate-Induced Damage in the

- DNA of Human Fibroblasts by Novobiocin 250
- The Down Regulation of Specific Binding of [20-H-3]phorbol 12,13,-dibutyrate and Phorbol Ester Induced Differentiation of Human Promyelocytic Leukemia Cells 252
- Chemicals Identified in Human Biological Media 283
- Effect of Cis- and Trans-Dichlorodiammineplatinum(II) on Human Tumor Cell Proliferation in Diffusion Chambers in Vivo 296
- Identifying Critical Human Subpopulations by Age Groups: Radioactivity and the Lung 321
- Decreased Immunoglobulin Production by a Human Lymphoid Cell Line following Melphalan Treatment 338
- Imprecision in Estimates of Dose from Ingested Cs-137 Due to Variability in Human Biological Characteristics 409
- Chemicals Identified in Human Biological Media, A Data Base: Third Annual Report, October 1981, Volume 3, Part 2 Records 3501-5271 557
- Chemicals Identified in Human Biological Media, A Data Base: Third Annual Report, October 1981, Volume 3, Part 1 558
- Chemicals Identified in Human Biological Media, A Data Base, Volume IV 559
- Chemicals Identified in Human Biological Media, A Data Base: Fourth Annual Report 560
- Chemicals Identified in Human Biological Media, A Data Base: Fourth Annual Report 561
- Assessment of Risks to Human Reproduction and to Development of the Human Conceptus from Exposure to Environmental Substances 570
- Assessment of Risks to Human Reproduction and to Development of the Human Conceptus from Exposure to Environmental Substances 570
- Health Effects of Environmental Chemicals on the Adult Human Reproductive System - A Selected Bibliography with Abstracts 1963-1981 576
- Humans**
- Induced Mutations in Mice and Genetic Risk Assessment in Humans 227
- Hybrids**
- Molecular Mechanism of Extinction of Liver Specific Functions in Mouse Hepatoma x Rat Fibroblast Hybrids: Extinction of the Albumin Gene 178
- Hycanthone**
- Antischistosomal Analogs of Hycanthone. 2. Structure of 2-[2-(Diethylamino)ethyl]-2H-[1]-Benzothiopyrano [4,3,2-cd]Indazole-5-Methanol Monohydrate 276
- Hydraulic**
- The Effects of Selected Hydraulic Structures on Fisheries and Limnology 455
- Hydroacoustic**
- Hydroacoustic Biomass Estimation Techniques 682
- Hydrocarbon**
- Cell-Mediated Mutagenesis and Tumor-Initiating Activity of the Ubiquitous Polycyclic Hydrocarbon, Cyclopenta(c,d) Pyrene 201
- Compilation of a Biogenic Hydrocarbon Emissions Inventory for Evaluating Ozone Control Strategies in the San Francisco Bay Area 436
- Hydrocarbons**
- Species Variance in the Metabolic Activation of Polycyclic Hydrocarbons 234
- Chattanooga Shale: An Assessment of the Resource and Technology for the Recovery of Hydrocarbons and Minerals 640
- Hydrodynamic**
- SEDMNT: A Sediment Transport Submodel Based on Hydrodynamic Principles for the Unified Transport Model 678
- HYDROdynamic**
- CHNHYD: A CHaNNel HYDROdynamic Model for Simulating Flows and Water Surface Elevations in a Stream/River Network 720
- Hydroelectric**
- Analysis of Environmental Issues Related to Small-Scale Hydroelectric Development. VI. Dissolved Oxygen Concentrations Below Operating Dams 659

Hydrogen

Stabilization of the Tertiary Structure of Yeast Phenylalanine tRNA by the Hexammine Cobaltic Ion: X-Ray Evidence for Hydrogen Bonding to Pairs of Guanine Bases in the Major Groove 96

Flip-Flop Hydrogen Bonding in Partially Disordered System 214

Photoelectron Spectrum of Hydrogen Sulfide following Multiphoton Ionization 389

Factors Influencing Trace Metal, Sulfate, and Hydrogen Ion Concentrations in Rain 501

Hydrography

Impingement of Threadfin Shad: Effects of Temperature and Hydrography 507

Hydrologic

Hydrologic Factors and Sr-90 Transport at a Low-Level Waste Disposal Site 486

Hydrologic Factors and Sr-90 Transport: A Case Study 487

An Evaluation of Remote Sensing Methods for Study of Variable Hydrologic Source Areas 679

Hydrology

Flow Variability and Hillslope Hydrology 488

AGTEHM: Documentation of Modifications to the Terrestrial Ecosystem Hydrology Model (TEHM) for Agricultural Applications 677

Hydropsyche

Positive Phototaxis in First Instar *Hydropsyche cockerelli* Banks (Trichoptera) 460

Hydropsychidae

Evidence for Upstream Dispersion of Adult Caddisflies (Trichoptera: Hydropsychidae) in the Columbia River 461

Hydrosphere

User's Manual for LPGS: A Computer Program for Calculating Radiation Exposure Resulting from Accidental Radioactive Releases to the Hydrosphere 623

Hydrotreatment

Evaluation of Hydrotreatment as a Means of Reducing Biological Activity of Synfuel Related Materials 222

Hydroxytoluene

The Influence of Butylated Hydroxytoluene-Induced Cell Proliferation on Mouse Lung Damage after X-Rays or Fission Neutrons 268

Hyperkeratinization

Hyperkeratinization and Hyperplasia of the Forestomach Epithelium in Vitamin A Deficient Rats 122

Hyperoxia

Hyperoxia, But Not Thoracic X-Irradiation, Potentiates Bleomycin- and Cyclophosphamide-Induced Lung Damage in Mice 82

Hyperplasia

Hyperkeratinization and Hyperplasia of the Forestomach Epithelium in Vitamin A Deficient Rats 122

Effects of Peroxides on Rodent Skin: Epidermal Hyperplasia and Tumor Promotion 126

Hyperplasiogenic

Effects of Phorbol Ester Tumor Promoters and Hyperplasiogenic Agents on Cytoplasmic Glucocorticoid Receptors in Epidermis 43

Quantitative Evaluation of Dark Keratinocytes Induced by Several Promoting and Hyperplasiogenic Agents: Their Use as an Early Morphological Indicator of Tumor-Promoting Action 121

Hyperplasogenic

Protein Modification Induced by Potent and Weak Tumor-Promoting Hyperplasogenic Agents 166

Hypotheses

Resilience and Inertia in Model Ecosystems: Tests of Some Hypotheses 710

Hypoxanthine

Protein Turnover and Phenotypic Expression in the Chinese Hamster Ovary Cell/Hypoxanthine-Guanine Phosphoribosyl Transferase (CHO/HGPRT) System 141

IAEA

Analysis of Proposed New IAEA Basis for Transportation Regulatory System Technical Report 612

Iberia

Environmental Assessment - Agrifuels Refining Corporation - Loan Guarantee Application, Iberia Parish, Louisiana 634

Ichthyoplankton

Entrainment Mortality of Ichthyoplankton: Detectability and Precision of Estimates 548

ICR

Photon and Neutron Fluence-to-Kerma Conversion Factors for ICR-1975 Reference Man Using Improved Elemental Compositions for Bone and Marrow of the Skeleton 601

ICRP

ORNL-ICRP Dosimetric Data Base 432

Limits for Intakes of Radionuclides by Workers. ICRP Publication 30, Supplement A to Part 3 443

Limits for Intakes of Radionuclides by Workers. ICRP Publication 30, Supplement B to Part 3 Including Addendum to the Supplements of Parts 1 and 2 444

Identification

Identification of an Active-Site Methionyl Residue in Ribulose Biphosphate Carboxylase/Oxygenase 84

Calibration of the Indium Foil Used for Criticality Accident Dosimetry in the UCC-ND Employee Identification Badge 649

Identified

Chemicals Identified in Human Biological Media 283

Chemicals Identified in Human Biological Media, A Data Base: Third Annual Report, October 1981, Volume 3, Part 2 Records 3501-5271 557

Chemicals Identified in Human Biological Media, A Data Base: Third Annual Report, October 1981, Volume 3, Part 1 558

Chemicals Identified in Human Biological Media, A Data Base, Volume IV 559

Chemicals Identified in Human Biological Media, A Data Base: Fourth Annual Report 560

Chemicals Identified in Human Biological Media, A Data Base: Fourth Annual Report 561

Chemicals Identified in Feral and Food Animals, A Data Base: First Annual Report - October 1981 562

Chemicals Identified in Feral and Food Animals, A Data Base: Second Annual Report 563

Identifying

Identifying Critical Human Subpopulations by Age Groups: Radioactivity and the Lung 321

Image

The Development and Application of an Image Analyzing and Processing System 404

MAGIC: A Digitization and Image Processing Program 593

Imaging

Synthesis of 15-(p-Iodophenyl)-6-Tellurapentadecanoic Acid: A New Myocardial Imaging Agent 333

Synthesis and Biological Evaluation of 17-[I-131]Iodo-9-Telluraheptadecanoic Acid - A Potential Myocardial Imaging Agent 334

A New, Well-Retained Myocardial Imaging Agent: Radioiodinated 15-(p-Iodophenyl)-6-Tellurapentadecanoic Acid 335

New Myocardial Imaging Agents - The Influence of Chain Length on the Heart Uptake of Se-75-Labeled Fatty Acids 363

Tellurium-123m Labeled-9-Telluraheptadecanoic Acid: A Possible Cardiac Imaging Agent 394

New Myocardial Imaging Agents: A Unique Approach 598

New Myocardial Imaging Agents: A Unique Approach 599

Immune

Sequential Thymus Grafting of Aged Mice: Characterization of Growth, Regression and Enhancement of Immune Competence 182

Recovery of Immune Competence Following Sublethal X-Irradiation of Young and Old Mice: A Model for Studying Age-Related Loss of Immunologic Homeostasis 185

Immunoglobulin

Decreased Immunoglobulin Production by a Human Lymphoid Cell Line following Melphalan Treatment 338

Immunologic

Recovery of Immune Competence Following Sublethal X-Irradiation of Young and Old Mice: A Model for Studying Age-Related Loss of Immunologic Homeostasis 185

Immunological

Immunological Properties of in Vitro Passaged Carcinomas and Propagated Clones from Different Cell Lines 114

Immunoselection

Immunoselection of Tumor Cell Variants by Mice Suppressed with Ultraviolet Radiation 270

Impact

EPA Liquid Release Pathway Health Impact Code: Feasibility Study 591

Environmental Behavior of Technetium in Soil and Vegetation: Implications for Radiological Impact Assessment 595

A Review of Uncertainty Estimates Associated with Models for Assessing the Impact of Breeder Reactor Radioactivity Releases 606

The Impact of Entrainment and Impingement on Fish Populations in the Hudson River Estuary - Volume II: Impingement Impact Analyses, Evaluations of Alternative Screening Devices, and Critiques of Utility Testimony Relating to Density-Dependent Growth, the Age-Composition of the Striped Bass Spawning Stock, and the LMS Real-Time Life Cycle Model 654

The Impact of Entrainment and Impingement on Fish Populations in the Hudson River Estuary - Volume II: Impingement Impact Analyses, Evaluations of Alternative Screening Devices, and Critiques of Utility Testimony Relating to Density-Dependent Growth, the Age-Composition of the Striped Bass Spawning Stock, and the LMS Real-Time Life Cycle Model 654

The Impact of Impingement on the Hudson River White Perch Population: Final Report 655

The Impact of Entrainment and Impingement on Fish Populations in the Hudson River Estuary - Volume I - Entrainment Impact Estimates for Six Fish Populations Inhabiting the Hudson River Estuary 656

The Impact of Entrainment and Impingement on Fish Populations in the Hudson River Estuary - Volume I - Entrainment Impact Estimates for Six Fish Populations Inhabiting the Hudson River Estuary 656

The Impact of Entrainment and Impingement on Fish Populations in the Hudson River Estuary - Volume III - An Analysis of the Validity of the Utilities' Stock-Recruitment Curve-Fitting Exercise and "Prior Estimation of Beta" Technique 663

Atmospheric Sulfur Deposition: Environmental Impact and Health Effects 702

Impacts

Health and Safety Impacts of Residential Wood Heat 418

Data Resources for Assessing Regional Impacts of Energy Facilities on Health and the Environment 519

Air Pollution Impacts on Forest Trees: Acid Deposition: Effects on Terrestrial Ecosystems 533

Comparison of the Radiological Impacts of Thorium and Uranium Nuclear Fuel Cycles 556

Methods to Assess Impacts on Hudson River Striped Bass: Final Report 665

Impingement

Impingement of Threadfin Shad: Effects of Temperature and Hydrography 507

The Impact of Entrainment and Impingement on Fish Populations in the Hudson River Estuary - Volume II: Impingement Impact Analyses, Evaluations of Alternative Screening Devices, and

Critiques of Utility Testimony Relating to Density-Dependent Growth, the Age-Composition of the Striped Bass Spawning Stock, and the LMS Real-Time Life Cycle Model 654

The Impact of Entrainment and Impingement on Fish Populations in the Hudson River Estuary - Volume II: Impingement Impact Analyses, Evaluations of Alternative Screening Devices, and Critiques of Utility Testimony Relating to Density-Dependent Growth, the Age-Composition of the Striped Bass Spawning Stock, and the LMS Real-Time Life Cycle Model 654

The Impact of Impingement on the Hudson River White Perch Population. Final Report 655

The Impact of Entrainment and Impingement on Fish Populations in the Hudson River Estuary - Volume I - Entrainment Impact Estimates for Six Fish Populations Inhabiting the Hudson River Estuary 656

The Impact of Entrainment and Impingement on Fish Populations in the Hudson River Estuary - Volume III - An Analysis of the Validity of the Utilities' Stock-Recruitment Curve-Fitting Exercise and "Prior Estimation of Beta" Technique 663

Implementation

Residential Conservation Service - Planning and Implementation Guide for Home Heating Suppliers 568

Residential Conservation Service - Planning and Implementation Guide 569

RAGBEEF: A FORTRAN IV - Implementation of a Time-Dependent Model for Radionuclide Contamination of BEEF 611

Training Course No 1: The Implementation of FEMWATER (ORNL-5567) Computer Program Final Report 721

Training Course No. 2: The Implementation of FEMWASTE (ORNL-5601) Computer Program - Final Report 722

Implication

Measurements of Growth and Consumption of Sauger (*Stizostedion canadense*): Implication for Fish Energetics Studies 511

Implications

Environmental Behavior of Technetium in Soil and Vegetation. Implications for Radiological Assessments 483

Nutrient Spiralling in Streams: Implications for Nutrient Limitation and Invertebrate Activity 515

Forest Succession Models and Their Ecological and Management Implications 552

Environmental Behavior of Technetium in Soil and Vegetation: Implications for Radiological Impact Assessment 595

The Implications of a Stochastic Approach to Air Quality Regulations 637

Imprecision

Imprecision in Estimates of Dose from Ingested Cs-137 Due to Variability in Human Biological Characteristics 409

Improves

New Gas Mixture Improves Performance of He-3 Neutron Counters 431

Impulse

Impulse Breakdown in Sulfur Hexafluoride, Sulfur Hexafluoride/Nitrogen and Sulfur Hexafluoride/Perfluorocarbon Mixtures 325

Impurities

Zone Refining of Nonsubstitutional Impurities during Pulsed Laser Annealing 440

Inactivation

Inactivation of *Rhodospirillum rubrum* Ribulose Bisphosphate Carboxylase/Oxygenase by the Affinity Label 2-N-Chloroamino-2-Deoxypentitol 1,5-Bisphosphate 29

Incentive

Framework for Evaluating the Utility of Incentive Systems for Radioactive Waste Repository Siting 435

Incentives

Incentives and the Siting of Radioactive Waste Facilities 630

Incidence

The Effect of Carcinogen Release Rate on the Incidence of Preneoplastic and Neoplastic Lesions of the Respiratory Tract Epithelium in Rats 237

Incineration

Initial Atmospheric Dispersion Modeling in Support of the Multiple-Site Incineration Study 596

Incubated

A Timesaving Technique for Measuring Respiration Rates in Incubated Soil Samples 471

Indazole

Antischistosomal Analogs of Hycanthone. 2. Structure of 2-[2-(1-ethylamino)ethyl]-2H-[1]-Benzothiopyrano [4,3,2-cd]Indazole-5-Methanol Monohydrate 276

Independent

Development of Sodium-Independent Hexose Transport in a Cultured Line of Porcine Kidney Cells 5

Indexed

An Indexed Bibliography of the Spiny (Rock) Lobsters (Decapoda:palinuridae) 494

Indiana

Environmental Assessment, New Energy Corporation of Indiana - Loan Guarantee Application, St. Joseph County, Indiana 631

Environmental Assessment, New Energy Corporation of Indiana - Loan Guarantee Application, St. Joseph County, Indiana 631

Indicator

Quantitative Evaluation of Dark Keratinocytes Induced by Several Promoting and Hyperplasiogenic Agents: Their Use as an Early Morphological Indicator of Tumor-Promoting Action 121

Relevance of the Mouse Spot Test as a Genotoxicity Indicator 204

Test of Dichlorvos Using the Sensitive-Indicator Method for Dominant Skeletal Mutations in Mice 229

Use of Pine Foliage as an Indicator of Fluoride Accumulation from Uranium Hexafluoride Technologies 542

Indices

An Evaluation of Community Information Indices for Mississippi River Fisheries 694

Indium

Calibration of the Indium Foil Used for Criticality Accident Dosimetry in the UCC-ND Employee Identification Badge 649

Induce

Cell-Free Extracts That Induce Correct Transcription Initiation by RNA Polymerase II Convert SV40 DNA to Ordered Nucleoprotein Structures 239

Industrial

Composition and Toxicity of Solid Waste Leachates from Industrial Coal Gasifiers 465

Industry

Environmetrics of the Gasifier in Industry Program: III. Decision Support Systems for Quality Assurance Controls 675

Inelastic

Energy Losses and Inelastic Mean Free Paths of Low-Energy Electrons in Polyethylene 298

Simple Model for Electron Inelastic Mean Free Paths: Application to Condensed Organic Materials 300

Electron Inelastic Mean Free Paths in Several Solids for Energies from 200 eV to 10 keV 301

Inertia

Resilience and Inertia in Model Ecosystems: Tests of Some Hypotheses 710

Infection

The Growth, Nutrient Absorption, and Moisture Status of Selected Woody Species in Coal Mine Spoil in Response to an Induced Infection by the Ectomycorrhizal Fungus Pisolithus tinctorius 718

Infections

- Nonzero Solutions of Nonlinear Integral Equations Modeling Infectious Disease 428

Infectivity

- Concentration, Serotypic Profiles and Infectivity of Legionnaires' Disease Bacteria Populations in Cooling Towers 546

Information

- Ten Basics for Marketing Information 289
 Information - The Critical Difference in Risk Analysis 290
 Scientific and Technical Information for Research and Development 291
 The Toxicology Information Response Center: A Ten-Year Perspective 292
 The Environmental Teratology Information Center's Data Extraction Project 295
 Parameter Constraints in a Stream Ecosystem Model: Incorporation of a Priori Information in Monte Carlo Error Analysis 517
 Transportation of Radioactive Materials: The Legislative and Regulatory Information System 565
 Agricultural Production in the United States by County: A Compilation of Information from the 1974 Census of Agriculture for Use in Terrestrial Food-Chain Transport and Assessment Models 613
 Risk Assessment of Coal Production: An Information System User's Manual 616
 Technical Background Information for the Environmental and Safety Report, Vol. 5: The 1977 Clinch River Sediment Survey - Data Presentation 648
 Proceedings of the Third Annual Information Meeting DOE Low-Level Waste Management Program 685
 Proceedings of the Fourth Annual Participants' Information Meeting on DOE Low-Level Waste Management Program 686
 An Evaluation of Community Information Indices for Mississippi River Fisheries 694

Ingested

- Imprecision in Estimates of Dose from Ingested Cs-137 Due to Variability in Human Biological Characteristics 409

Inhabiting

- The Impact of Entrainment and Impingement on Fish Populations in the Hudson River Estuary - Volume 1 - Entrainment Impact Estimates for Six Fish Populations Inhabiting the Hudson River Estuary 656

Inhalation

- Pathogenesis of Lesions Induced in Rat Lung by Chronic Tobacco Smoke Inhalation 93

Inhibition

- Inhibition of Mouse Skin Tumor Promotion by Several Inhibitors of Arachidonic Acid Metabolism 60
 Contact-Stimulated Proliferation of Cultured Mouse Epidermal Cells by 3T3 Feeder Layers: Inhibition by 12-O-Tetradecanoylphorbol-13-Acetate (TPA) 156
 Differential Responses of Log and Stationary Phase Human Fibroblasts to Inhibition of DNA Repair by Aphidicolin 249
 Studies on the Inhibition of Ultraviolet- and Methyl Methanesulfonate-Induced Damage in the DNA of Human Fibroblasts by Novobiocin 250

Inhibitor

- Alpha-Difluoromethylornithine, an Irreversible Inhibitor of Ornithine Decarboxylase, Inhibits Tumor Promoter-Induced Polyamine Accumulation and Carcinogenesis in Mouse Skin 275
 Germination and Growth Effects of Hexavalent Chromium in Orocol (A Corrosion Inhibitor) on Phaseolus vulgaris 522
 Effects of Orocol TL (a Corrosion Inhibitor) on Germination and Growth of Bush Beans 693

Inhibitors

- Inhibition of Mouse Skin Tumor Promotion by Several Inhibitors of Arachidonic Acid

Metabolism	60
The Use of Inhibitors of DNA Repair in the Study of the Mechanisms of Induction of Chromosome Aberrations	191
Specificity and Mechanism(s) of Promoter Inhibitors in Multistage Promotion	245
Inhibits	
Mechanism of Suppression in <i>Drosophila</i> : Evidence for a Macromolecule Produced by the su(s)+ Locus That Inhibits Sepiapterin Synthase	113
Alpha-Difluoromethylornithine, an Irreversible Inhibitor of Ornithine Decarboxylase, Inhibits Tumor Promoter-Induced Polyamine Accumulation and Carcinogenesis in Mouse Skin	275
Initial	
Monte Carlo Calculations of Initial Energies of Electrons in Water Irradiated by Photons with Energies up to 1 GeV	414
Calculated Initial Energies of Electrons in Si and Silicon Dioxide Irradiated by Photons with Energies up to 2 MeV	415
Initial Atmospheric Dispersion Modeling in Support of the Multiple-Site Incineration Study	596
User's Manual for PHOEL-3, A Monte Carlo Computer Code for Calculating Initial Energies of Electrons and Positrons Produced in Water Irradiated by Photons with Energies Up to 1 GeV	615
Initiating	
Tumor-Initiating Activity of 4-Fluoro-7, 12-Dimethylbenz(a)anthracene and 1,2,3, 4-Tetrahydro-7,12-Dimethylbenz(a)anthracene in Female SENCAR Mice	45
Cell-Mediated Mutagenesis and Tumor-Initiating Activity of the Ubiquitous Polycyclic Hydrocarbon, Cyclopenta(c,d) Pyrene	201
Initiation	
Cell-Free Extracts That Induce Correct Transcription Initiation by RNA Polymerase II Convert SV40 DNA to Ordered Nucleoprotein Structures	239
Conversion of Simian Virus 40 DNA to Ordered Nucleoprotein Structures by Extracts that Direct Accurate Initiation by Eukaryotic RNA Polymerase II	240
Comparison of Complete Carcinogenesis and Tumor Initiation in Mouse Skin: The Induction of Papillomas by Tumor Initiation-Promotion a Reliable Short Term Assay	243
Comparison of Complete Carcinogenesis and Tumor Initiation in Mouse Skin: The Induction of Papillomas by Tumor Initiation-Promotion a Reliable Short Term Assay	243
Injury	
Relative Contributions of Cryobiological and Non-Cryobiological Factors to "Freezing" Injury in Human Granulocytes	154
Ozone Flux in <i>Glycine max</i> (L.) Merr.: Sites of Regulation and Relationship to Leaf Injury	543
Ink	
Arthropod Associates and Macronutrient Status of the Red-Ink Sundew (<i>Drosera erythrorhiza</i> Lindl.)	426
Inner	
pH Effects on the Structure of the Inner Histones	27
Inorganic	
Cycling of Organic and Inorganic Sulfur in a Chestnut Oak Forest	489
Insects	
Comparative Embryotoxicity and Teratogenicity of Petroleum and Petroleum Substitutes to Insects Developing in Contaminated Substrates	550
Insertions	
Multiple Sites of Deletions and Insertions in Variants of a Complex Satellite DNA	241
Instar	
Positive Phototaxis in First Instar <i>Hydropsyche cockerelli</i> Banks (Trichoptera)	460
Institutional	
Oak Ridge National Laboratory Institutional Plan FY 1983-1988	642

Instrumentation

- Use of Gamma-Ray Detection Instrumentation in ORNL's Off-Site Radiological Survey Program 307

Instruments

- Evaluation of a Modified CEA Instruments, Inc. Model 555 Analyzer for the Monitoring of Formaldehyde Vapor in Domestic Environments 377

Insulated

- Formaldehyde Release from Simulated Wall Panels Insulated with Urea-Formaldehyde Foam Insulation 340

Insulating

- Gas Breakdown and High-Voltage Insulating Gases 315
Forum II: Requirements for Insulating Gases 396

Insulation

- Formaldehyde Release from Simulated Wall Panels Insulated with Urea-Formaldehyde Foam Insulation 340
Feasibility Studies for Improving Gas Insulation By Coating Contaminating Particles 395
On the Occurrence of Fungi in Loose-Fill Attic Insulation in Typical Single-Family Dwellings 588

Insulators

- A Core Plasma Model of Charged Particle Track Formation in Insulators 402
High Voltage Research (Breakdown Strengths of Gaseous and Liquid Insulators) and Environmental Effects of Dielectric Gases Semiannual Report (April 1-September 30, 1981) 584

Intact

- Causes of Death and Their Contribution to Radiation-Induced Life Shortening in Intact and Ovariectomized Mice 258

Intake

- Dietary Intake of Cadmium in the United States: 1920-1975 416

Intakes

- Limits for Intakes of Radionuclides by Workers. ICRP Publication 30, Supplement A to Part 3 443
Limits for Intakes of Radionuclides by Workers. ICRP Publication 30, Supplement B to Part 3 Including Addendum to the Supplements of Parts 1 and 2 444

Integral

- Nonzero Solutions of Nonlinear Integral Equations Modeling Infectious Disease 428

Integrated

- Proceedings of the 1981 Integrated Data Users Workshop 691

Integument

- Neoplasms of the Mouse Integument and Harderian Gland 100

Intensities

- Non-Maxwellian Velocity Distributions and Molecular Beam Intensities in Sonic Nozzle Expansions 362

Interaction

- Role of Base Damage in Aberration Formation Interaction of Aphidicolin and X-Rays 15
Interaction of a DNA-Binding Protein, the Gene Product of D5 of Bacteriophage T5, with Double-Stranded DNA - Analysis by Metrizamide Gradient Centrifugation 71
Coherent States and the Interaction of Swift Ions with Condensed Matter 324
Chapter 3 - The Interaction of Photons with Surface Plasmons 401
The Interaction of Wet and Dry Deposition with the Forest Canopy 503

Interactions

- Physical Interactions of Isomeric Benzo(a)pyrene Diol-Epoxides with DNA 145
Altered Tissue Reactivity and Interactions between Chemicals 278
The Lung as a Site of Toxicological Interactions 279
Electron Interactions with Polar Molecules 330

Interactive

- DNA Repair and Chromosome Aberrations: Interactive Effects of Radiation and Chemicals 189
 An Interactive Statistical Distribution Analysis Program Utilizing Numerical and Graphical Methods 592

Intercalative

- Covalent Intercalative Binding of Benzo(a)pyrene-9,10-Diol-7,8-Epoxy to DNA 146

Interception

- Interception and Retention of Technetium by Vegetation and Soil 344

Intercomparison

- Personnel Dosimetry Intercomparison Studies at the Health Physics Research Reactor: A Summary (1974-1980) 410
 Personnel Dosimetry Intercomparison Studies at the Oak Ridge National Laboratory 412
 Eighteenth Nuclear Accident Dosimetry Intercomparison Study: August 10-14, 1981 614

Interim

- Interim Source Term Assumptions for Emergency Planning and Equipment Qualification 608
 Technical Considerations Related to Interim Source Term Assumptions for Emergency Planning and Equipment Qualification 609
 Formulations of the Physicochemical Processes in the ORNL Unified Transport Model for Toxicants (UTM-TOX) (Interim Report) 657

Intermediate

- Biosynthesis, Nonenzymatic Synthesis and Purification of the Intermediate in Synthesis of Sepiapterin in *Protophila* 49

Internal

- Chapter 6.3: Mathematical Models in Internal Dose Estimation 304

International

- Gaseous Dielectrics III - Proceedings of the Third International Symposium on Gaseous Dielectrics, Knoxville, TN, March 7-11, 1982 582
 International Energy Technology Assessment - Atmospheric Fluidized-Bed Combustion 638
 International Survey of Coal Preparation Technology 639
 International Survey of the Status of Technology of Critical Components for Coal Liquefaction Processes 725

Interpretation

- Interpretation of Floodplain Pollen in Alluvial Sediments from an Arid Region 534

Interval

- The Influence of Split Dose Fractionation Interval on the Carcinogenic Effects of Fission Spectrum Neutrons 269

Intracellular

- Intracellular Glycosylation of Vitellogenin in the Liver of Estrogen-Stimulated *Xenopus laevis* 77

Intubated

- Estimates of Dose to Systemic Organs and GI Tract Based on Data from Miniature Swine Orally Intubated with a Single Dose of Am-241 Citrate 306

Intubation

- Mathematical Studies of the Absorption into Blood of Am-241 following Oral Intubation into the Gut of Miniature Swine 305

Inventory

- Compilation of a Biogenic Hydrocarbon Emissions Inventory for Evaluating Ozone Control Strategies in the San Francisco Bay Area 436
 Resource Data Inventory for the Oak Ridge Area 688

Invertebrate

- Nutrient Spiralling in Streams: Implications for Nutrient Limitation and Invertebrate Activity 515

Investigating

- Evaluation and Critique of In Situ Experimental Systems for Investigating Effects of Stress in Lentic Ecosystems 650

Involvement

- Multistage Skin Tumor Promotion: Involvement of a Protein Kinase 148

Iodine

- On the Long-Term Behaviour of Iodine 129 in the Terrestrial Environment 364

Iodo

- Synthesis and Biological Evaluation of 17-[I-131]Iodo-9-Telluraheptadecanoic Acid - A Potential Myocardial Imaging Agent 334

Iododeoxyuridine

- Action Spectra for the Photolysis of 5-Iododeoxyuridine in DNA and Related Model Systems: Evidence for Short-Range Energy Transfer 196

Iodophenyl

- Synthesis of 15-(p-Iodophenyl)-6-Tellurapentadecanoic Acid: A New Myocardial Imaging Agent 333
A New, Well-Retained Myocardial Imaging Agent: Radioiodinated 15-(p-Iodophenyl)-6-Tellurapentadecanoic Acid 335

Ion

- Calculated Angular Distribution of Fragment Ions from Polyatomic Ion Collisions 2
Metal Ion Toxicity in *Drosophila* 30
Development of Sodium Ion-Dependent Hexose Transport In Vitro 33
Stabilization of the Tertiary Structure of Yeast Phenylalanine tRNA by the Hexammine Cobaltic Ion: X-Ray Evidence for Hydrogen Bonding to Pairs of Guanine Bases in the Major Groove 96
Crustacean Calcium-Ion-Dependent Proteinase that Degrades Actin, Myosin, and Other Myofibrillar Proteins 163
Vicinity Effects in Ion Cluster Collisions with Condensed Matter and with Single Atoms 303
Factors Influencing Trace Metal, Sulfate, and Hydrogen Ion Concentrations in Rain 501
Nitrogen Ion Utilization by Tulip Poplar (*Liriodendron tulipifera* L.) Seedlings 504

Ionization

- Multiphoton Ionization and Third-Harmonic Generation in Atoms and Molecules 318
Multiphoton Ionization of Atoms and Molecules 319
Collisional Ionization between Fast Alkali Atoms and Hexafluorobenzene 320
Multiphoton Ionization of Ammonia: Mass Analysis and Photoelectron Spectra 332
Resonance Ionization Spectroscopy 348
Resonance Ionization Spectroscopy for Low-Level Counting 350
Third-Harmonic Generation and Multiphoton Ionization in Rare Gases 387
Multiphoton Ionization Photoelectron Spectroscopy: Xenon and Nitric Oxide 388
Photoelectron Spectrum of Hydrogen Sulfide following Multiphoton Ionization 389
Two-State Models of Radiative Collisions and Related Ionization Effects 397
Cooperative Effects on Multiphoton Ionization and Third-Harmonic Generation in the Region near Three-Photon Resonance 398
Studies of Photoionization in Liquids Using a Laser Two-Photon Ionization Conductivity Technique 411

Ions

- Calculated Angular Distribution of Fragment Ions from Polyatomic Ion Collisions 2
Coherent States and the Interaction of Swift Ions with Condensed Matter 324
Excited States of Polar Negative Ions 331

Iowa

- Environmental Assessment - Gulf Coast Resources, Inc. - Loan Guarantee Application, Lee County, Iowa 635

Iron

- Metamorphic Petrology of the Negaunee Iron Formation, Marquette District, Northern Michigan: Mineralogy, Metamorphic Reactions, and Phase Equilibria 482

Irradiated

- Study of the Mechanism by Which a Cytoplasmic Membrane Preparation Promotes Septation in Irradiated *Escherichia coli* 76
- Associations between Tumor Types in Irradiated BALB/c Female Mice 255
- Monte Carlo Calculations of Initial Energies of Electrons in Water Irradiated by Photons with Energies up to 1 GeV 414
- Calculated Initial Energies of Electrons in Si and Silicon Dioxide Irradiated by Photons with Energies up to 2 MeV 415
- User's Manual for PHOEL-3, A Monte Carlo Computer Code for Calculating Initial Energies of Electrons and Positrons Produced in Water Irradiated by Photons with Energies Up to 1 GeV 615

Irradiation

- Survival of Mammary Epithelial Cells from Virgin Female BALB/c Mice Following in Vivo Gamma Irradiation 3
- Hyperoxia, But Not Thoracic X-Irradiation, Potentiates Bleomycin- and Cyclophosphamide-Induced Lung Damage in Mice 82
- Recovery of Immune Competence Following Sublethal X-Irradiation of Young and Old Mice: A Model for Studying Age-Related Loss of Immunologic Homeostasis 185

Irreversible

- Alpha-Difluoromethylornithine, an Irreversible Inhibitor of Ornithine Decarboxylase, Inhibits Tumor Promoter-Induced Polyamine Accumulation and Carcinogenesis in Mouse Skin 275

Irrigated

- Simulated Water Budgets for an Irrigated Sycamore Phytomass Farm 463

Isoacceptor

- Quinine-Containing Isoacceptor of Tyrosine tRNA in *Drosophila melanogaster* 31

Isocitrate

- 3-Bromo-2-Ketoglutarate: A Substrate and Affinity Label for Diphosphopyridine Nucleotide-Dependent Isocitrate Dehydrogenase 13
- 3,4-Didehydro-2-Ketoglutarate: An Affinity Label for Diphosphopyridine Nucleotide-Dependent Isocitrate Dehydrogenase 14

Isolated

- DNA Packaging In Vitro by an Isolated Bacteriophage T7 Procapsid 153

Isolation

- Benzo(a)pyrene-Binding Proteins of Hamster Embryo Cell Nuclei: Comparison of Nuclear Isolation Procedures 142

Isomer

- Laser-Optical Studies of the Spontaneous-Fission Isomer Am-240m 434

Isomeric

- Covalent Binding of Isomeric Benzo(a)pyrene Diol-epoxides to DNA 144
- Physical Interactions of Isomeric Benzo(a)pyrene Diol-Epoxides with DNA 145

Issues

- Enhanced Oil Recovery: Environmental Issues and State Regulatory Programs 510
- Analysis of Environmental Issues Related to Small-Scale Hydroelectric Development. VI. Dissolved Oxygen Concentrations Below Operating Dams 659

Japanese

- Dosimetry for the Japanese Atomic Bomb Survivors 360
- Findings of a Recent ORNL Review of Dosimetry for the Japanese Atomic-Bomb Survivors 600

Jersey

- Radiological Survey of the Former Kellogg Research Facility, Jersey City, New Jersey 581
- Radiological Survey of the Former Kellogg Research Facility, Jersey City, New Jersey 581

Jet

Percutaneous Acute and Chronic Renal Toxicity Induced by Shale Oil and Petroleum Derived Jet and Diesel Fuel 53

Joseph

Environmental Assessment, New Energy Corporation of Indiana - Loan Guarantee Application, St. Joseph County, Indiana 631

July

Biology Division Progress Report for Period of June 1, 1980 - July 31, 1982 554

June

Biology Division Progress Report for Period of June 1, 1980 - July 31, 1982 554

Juvenile

Thermal Resistance of Juvenile Crayfish, *Cambarus bartoni* (Fabricius): Experiment and Model 462

Kansas

Environmental Assessment, Circle Energies Corporation - Loan Guarantee Application, Finney County, Kansas 629

Kellex

Radiological Survey of the Former Kellex Research Facility, Jersey City, New Jersey 581

Keratin

Keratin Modifications in Epidermis, Papillomas and Carcinomas during Two-Stage Carcinogenesis in the SENCAR Mouse 165

Keratinocytes

Quantitative Evaluation of Dark Keratinocytes Induced by Several Promoting and Hyperplasiogenic Agents: Their Use as an Early Morphological Indicator of Tumor-Promoting Action 121

Kerma

Photon and Neutron Fluence-to-Kerma Conversion Factors for ICR-1975 Reference Man Using Improved Elemental Compositions for Bone and Marrow of the Skeleton 601

Ketoglutarate

3-Bromo-2-Ketoglutarate: A Substrate and Affinity Label for Diphosphopyridine Nucleotide-Dependent Isocitrate Dehydrogenase 13

3,4-Didehydro-2-Ketoglutarate: An Affinity Label for Diphosphopyridine Nucleotide-Dependent Isocitrate Dehydrogenase 14

keV

Electron Inelastic Mean Free Paths in Several Solids for Energies from 200 eV to 10 keV 301
Calorimetric Measurement of Electron Stopping Power of Aluminum and Copper between 11 and 127 keV 345

Kidney

Development of Sodium-Independent Hexose Transport in a Cultured Line of Porcine Kidney Cells 5

Effect of Lung, Liver and Kidney Toxicants on Respiratory Rates of Mice 80

Kilham

Comparative Physicochemical and Biological Properties of Two Strains of Kilham Rat Virus, a Non-Defective Parvovirus 158

Kinase

Multistage Skin Tumor Promotion: Involvement of a Protein Kinase 148

Kinetic

In Vitro Replication of DNA Containing O-6-Methylguanine-Kinetic Evidence of Mutagenic Potential of the Alkylated Base 246

Kinetics

Sister Chromatid Differentiation Analysis of Cell Cycle Kinetics in Mouse Bone Marrow Cells 11

Experimental Procedure for Examining the Kinetics of Tritium Gas Conversion to Tritiated Water 610

Knoxville

Gaseous Dielectrics III - Proceedings of the Third International Symposium on Gaseous Dielectrics, Knoxville, TN, March 7-11, 1982 582

Label

- 3-Bromo-2-Ketoglutarate: A Substrate and Affinity Label for Diphosphopyridine Nucleotide-Dependent Isocitrate Dehydrogenase 13
- 3,4-Didehydro-2-Ketoglutarate: An Affinity Label for Diphosphopyridine Nucleotide-Dependent Isocitrate Dehydrogenase 14
- Inactivation of *Rhodospirillum rubrum* Ribulose Biphosphate Carboxylase/Oxygenase by the Affinity Label 2-N-Chloroamino-2-Deoxypentitol 1,5-Bisphosphate 29
- 2-Bromoacetylaminopentitol 1,5-Bisphosphate as an Affinity Label for Ribulose Bisphosphate Carboxylase/Oxygenase from *Rhodospirillum rubrum* 66

Labeled

- New Myocardial Imaging Agents - The Influence of Chain Length on the Heart Uptake of Se-75-Labeled Fatty Acids 363
- Tellurium-123m Labeled-9-Telluraheptadecanoic Acid: A Possible Cardiac Imaging Agent 394

Labels

- Analysis and Refinement of the Microscale Synthesis of the Pt-195m-Labelled Antitumor Drug, cis-Dichlorodiammineplatinum(II), cis-DDP 343

Laboratories

- The Multiprogram Laboratories of the Department of Energy 645

Laboratory

- Personnel Dosimetry Intercomparison Studies at the Oak Ridge National Laboratory 412
- Dosimetry Training Programs at Oak Ridge National Laboratory 413
- Research Efforts on Environmental Transport of Hazardous Materials at Oak Ridge National Laboratory 537
- The Oak Ridge National Laboratory Registry of Notable Honors and Awards in Science and Engineering, 1943-May 1982, 4th Edition 571
- Publications of Life Sciences Synthetic Fuels of Oak Ridge National Laboratory 577
- Environmental Analysis of the Operation of Oak Ridge National Laboratory (X-10 Site) 627
- Oak Ridge National Laboratory Institutional Plan FY 1983-1988 642
- Biomedical and Environmental Sciences Programs at the Oak Ridge National Laboratory 643
- Radionuclide Characterization of Subsurface Soil on the Site of Building 3505 at Oak Ridge National Laboratory 647

laevis

- Intracellular Glycosylation of Vitellogenin in the Liver of Estrogen-Stimulated *Xenopus laevis* 77

Lake

- The Role of Lake and Reservoir Sediments as Sinks in the Perturbed Global Carbon Cycle 512
- Scientific Review and Critique of R. L. Patterson's: Production, Mortality, and Power-Plant Entrainment of Larval Yellow Perch in Western Lake Erie 715

Land

- Shallow-Land Burial of Low-Level Radioactive Wastes: Preliminary Simulations of Long-Term Health Risks 328
- Ecdysone Metabolism in Premolt Land Crabs (*Gecarcinus lateralis*) 505
- Geohydrochemical Considerations in Land Disposal of Low-Level Wastes 553
- Cleanup and Treatment of Radioactively Contaminated Land Including Areas Near Nuclear Facilities - A Selected Bibliography 566
- Shallow Land Burial Handbook 646

Landfill

- Characterization of Metal and Debris Samples from the Shpack Landfill, Norton, Massachusetts 586

Largemouth

- Energy Partitioning in Largemouth Bass under Conditions of Seasonally Fluctuating Prey Availability 447

Larvae

- Predation of *Chaoborus punctipennis* on Larvae of *Dorosoma* 667

Larval

- Scientific Review and Critique of R. L. Patterson's: Production, Mortality, and Power-Plant Entrainment of Larval Yellow Perch in Western Lake Erie 715

Laser

- Studies of Photoionization in Liquids Using a Laser Two-Photon Ionization Conductivity Technique 411

- Laser-Optical Studies of the Spontaneous-Fission Isomer Am-240m 434

- Zone Refining of Nonsubstitutional Impurities during Pulsed Laser Annealing 440

lateralis

- Ecdysone Metabolism in Premolt Land Crabs (*Gecarcinus lateralis*) 505

Layer

- Comparison of Levels of Benzo(a)pyrene 7,8-Diol-9,10-Epoxy (BPDE) Diastereomers and Enantiomers Covalently Bound in Vivo to Macromolecular Components of Whole Epidermis Versus the Basal Cell Layer 180

- Comparison of Levels of Benzo(a)pyrene Diol Epoxy Diastereomers Covalently Bound In Vivo to Macromolecular Components of the Whole Epidermis Versus the Basal Cell Layer 181

Layers

- Contact-Stimulated Proliferation of Cultured Mouse Epidermal Cells by 3T3 Feeder Layers: Inhibition by 12-O-Tetradecanoylphorbol-13-Acetate (TPA) 156

Leachate

- Coal Pile Leachate Treatment 668

Leachates

- A Simple Reverse Phase Column Clean Up for the Determination of Sulfate in Aqueous Leachates Containing Organic Compounds 1

- Composition and Toxicity of Solid Waste Leachates from Industrial Coal Gasifiers 465

Lead

- Relationship of Vanadium, Cadmium, Lead, Nickel, Cobalt and Soft Water to Myocardial and Vascular Toxicity and Cardiovascular Disease 202

Leaf

- Ozone Flux in *Glycine max* (L.) Merr.: Sites of Regulation and Relationship to Leaf Injury 543

Lee

- Environmental Assessment - Gulf Coast Resources, Inc. - Loan Guarantee Application, Lee County, Iowa 635

Legionnaire

- Survey of Cooling Towers Within Oak Ridge Operations for the Presence of Legionnaire's Disease Bacterium 712

Legionnaires

- Concentration, Serotypic Profiles and Infectivity of Legionnaires' Disease Bacteria Populations in Cooling Towers 546

Legislative

- Transportation of Radioactive Materials: The Legislative and Regulatory Information System 565

Length

- New Myocardial Imaging Agents - The Influence of Chain Length on the Heart Uptake of Se-75-Labeled Fatty Acids 363

Lentic

- Evaluation and Critique of In Situ Experimental Systems for Investigating Effects of Stress in Lentic Ecosystems 650

Lesions

- Pathogenesis of Lesions Induced in Rat Lung by Chronic Tobacco Smoke Inhalation 93
 Dark Epithelial Cells in Preneoplastic Lesions of the Human Respiratory Tract 123
 Localization of Specific Lesions in Dimethylbenz(a)anthracene-Preexposed Tracheal
 Explants 151
 The Effect of Carcinogen Release Rate on the Incidence of Preneoplastic and Neoplastic Lesions of
 the Respiratory Tract Epithelium in Rats 237

Lethal

- Difference in the Ratio of Dominant-Lethal Mutations to Heritable Translocations Produced in
 Mouse Spermatids and Fully Mature Sperm after Treatment with Triethylenemelamine
 (TEM) 74
 Lack of Association between Induction of Dominant-Lethal Mutations and Induction of Heritable
 Translocations with Benzo(a)pyrene (BaP) in Postmeiotic Germ Cells of Male Mice 75

Leukemia

- Mouse Myeloid Leukemia as an Experimental Model for Monitoring Progression of Leukemia and
 Chemotherapy 12
 Mouse Myeloid Leukemia as an Experimental Model for Monitoring Progression of Leukemia and
 Chemotherapy 12
 The Control of Phospholipid Methylation by Phorbol Diesters in Differentiating Human Myeloid
 HL-60 Leukemia Cells 99
 Induction of Differentiation of Human Promyelocytic Leukemia (HL-60) Cells by Teicocidin B
 and Phorbol-13-Myristate-13-Acetate 108
 The Down Regulation of Specific Binding of [20-H-3]phorbol 12,13,-dibutyrate and Phorbol
 Ester Induced Differentiation of Human Promyelocytic Leukemia Cells 252

Leukemogenesis

- Radiation-Induced Leukemogenesis in RFM-Un Strain Mice: A Potential Model for Retrovirus
 Sequence Transposition 261

Leukoplakias

- Dark Cells in Human Oral Leukoplakias 124

Life

- An Analysis of Genetic Factors Regulating Life-Span in Congenic Mice 187
 Causes of Death and Their Contribution to Radiation-Induced Life Shortening in Intact and
 Ovariectomized Mice 258
 The Influence of Food Concentration and Container Volume on Life History Parameters of *Diapto-*
mus dorsalis Marsh from Subtropical Florida 473
 Soil Carbon Pools and World Life Zones 523
 Summaries of Soil Carbon Storage in World Life Zones 524
 Publications of Life Sciences Synthetic Fuels of Oak Ridge National Laboratory 577
 Health Risk Analysis - Proceedings of the Third Life Sciences Symposium, Gatlinburg, TN, Octo-
 ber 27-30, 1980 644
 The Impact of Entrainment and Impingement on Fish Populations in the Hudson River Estuary -
 Volume II: Impingement Impact Analyses, Evaluations of Alternative Screening Devices, and
 Critiques of Utility Testimony Relating to Density-Dependent Growth, the Age-Composition
 of the Striped Bass Spawning Stock, and the LMS Real-Time Life Cycle Model 654

Light

- Psoralen-Plus-Light Damage and Repair in Transforming DNA of *Bacillus subtilis* 79
 On Light, Colors, and Origins of Spectroscopy 138
 Photoacoustic Determination of Light Scattering from Thin Ag Films in ATR Geometry 353

Lime

- The Use of Soda-Lime for Measuring Respiration Rates in Terrestrial Systems 470

Limitation

- Nutrient Spiralling in Streams: Implications for Nutrient Limitation and Invertebrate
 Activity 515

Limitations

Risk Assessment Approaches: General Definitions, Limitations and Research Needs 423

Limits

Limits for Intakes of Radionuclides by Workers. ICRP Publication 30, Supplement A to Part 3 443

Limits for Intakes of Radionuclides by Workers. ICRP Publication 30, Supplement B to Part 3 Including Addendum to the Supplements of Parts 1 and 2 444

Limnology

The Effects of Selected Hydraulic Structures on Fisheries and Limnology 455

Lindl

Arthropod Associates and Macronutrient Status of the Red-Ink Sundew (*Drosera erythrorhiza* Lindl.) 426

Line

Development of Sodium-Independent Hexose Transport in a Cultured Line of Porcine Kidney Cells 5

Effects of Retinoic Acid on Cell Proliferation and Cell Differentiation in a Rat Tracheal Epithelial Cell Line 119

Decreased Immunoglobulin Production by a Human Lymphoid Cell Line following Melphalan Treatment 338

Edge Effect on Breeding Forest Birds Along a Power Line Corridor 497

Bird Community Ecology on Power-Line Corridors in East Tennessee 498

Linear

A General Linear Models Approach for Comparing the Response of Several Species in Acute Toxicity Tests 468

Lines

Benzo(a)pyrene Metabolism in Primary Cultures of Mouse Epidermal Cells and Untransformed and Transformed Epidermal Cell Lines 46

Cell Specific Activation and Detoxification of Benzo(a)pyrene by Two Clones Murine Testicular Cell Lines 59

Immunological Properties of in Vitro Passaged Carcinomas and Propagated Clones from Different Cell Lines 114

Benzo(a)pyrene Metabolites: Formation in Rat Liver Cell-Culture Lines, Binding to Macromolecules, and Mutagenesis in V79 Hamster Cells 232

The Effect of Reestablishing Tissue-Like Cell Associations on Hexose Uptake in Rat Tracheal Epithelial Cell Lines and Primary Cell Cultures 271

Linkage

Assignment of *Acy-1* to Mouse Chromosome 9: Evidence for Homologous Linkage Groups in Man and Mouse 130

Linking

Van der Waals Molecules - Linking the Gas and Liquid Phases 361

Lip

Acid Lipase-1 (*Lip-1*) is on Mouse Chromosome 19: Evidence for Homologous Regions on Human Chromosome 10 and Mouse 19 128

Lipase

Acid Lipase-1 (*Lip-1*) is on Mouse Chromosome 19: Evidence for Homologous Regions on Human Chromosome 10 and Mouse 19 128

Lipid

Lipid Peroxidation of S9 and the CHO/HGRPT System 259

Liposomes

Characterization of Antibody Covalently Coupled to Liposomes 107

An Improved Method for Covalent Attachment of Antibody to Liposomes 236

Liquefaction

- Environmental Studies of Materials from the H-Coal Liquefaction Process Development Unit 658
- Summary of Research on Coal Liquefaction Product Spills 676
- International Survey of the Status of Technology of Critical Components for Coal Liquefaction Processes 725

Liquid

- Density Effect in Liquid Water 297
- Stopping Power of Liquid Water for Low-Energy Electrons 299
- Photoemission and Electron Mean Free Paths in Liquid Formamide in the Vacuum UV 308
- Yields and Mean Free Paths of Photoelectrons from Liquid Hexamethyl Phosphoric Thiamide 309
- Optical Properties of Liquid Pb and Bi between 0.6 and 3.7eV 351
- Van der Waals Molecules - Linking the Gas and Liquid Phases 361
- Comparative Study of Electron Energy Deposition and Yields in Water in the Liquid and Vapor Phases 420
- Evaporation of Phenols from Synthetic Liquid Fuel Spills 535
- High Voltage Research (Breakdown Strengths of Gaseous and Liquid Insulators) and Environmental Effects of Dielectric Gases Semiannual Report (April 1-September 30, 1981) 584
- EPA Liquid Release Pathway Health Impact Code: Feasibility Study 591

Liquids

- Photoionization of Fluoranthene in Dielectric Liquids 369
- Studies of Photoionization in Liquids Using a Laser Two-Photon Ionization Conductivity Technique 411

Liriodendron

- Nitrogen Ion Utilization by Tulip Poplar (*Liriodendron Tulipifera* L.) Seedlings 504

Literature

- The Carbon Dioxide Question: An Introduction to the Literature 281
- Coping with the Biomedical Literature - Book Review 354
- Methods of Removing Uranium from Drinking Water - A Literature Survey - Present Municipal Water Treatment and Potential Removal Methods 564
- Literature Review: Response of Fish to Thermal Discharge 578

Lived

- The Influence of Geochemical Variables on Long-Lived Radionuclide Migration and Risk Assessment 454

Liver

- Intracellular Glycosylation of Vitellogenin in the Liver of Estrogen-Stimulated *Xenopus laevis* 77
- Effect of Lung, Liver and Kidney Toxicants on Respiratory Rates of Mice 80
- Cloned cDNAs Specific to Flucocorticoid-Induced mRNAs of Rat Liver 135
- Molecular Mechanism of Extinction of Liver Specific Functions in Mouse Hepatoma x Rat Fibroblast Hybrids: Extinction of the Albumin Gene 178
- Removal of O(Sup 6)-Methylguanine from DNA by Human Liver Fractions 179
- Benzo(a)pyrene Metabolites: Formation in Rat Liver Cell-Culture Lines, Binding to Macromolecules, and Mutagenesis in V79 Hamster Cells 232
- Calcium-Enhanced Cellular Uptake of Rat Liver S9 by Chinese Hamster Ovary Cells 253
- Metabolism of 6-Nitrobenzo(a)pyrene by Hamster Embryo Cells and Rat Liver Microsomes 265

LLC

- Development of Na(Sup +)-Dependent Phlorizin Binding Sites in a Clone of LLC-PK1 Cells 6
- A Model for the Differentiation of Na-Dependent Hexose Transport Capacity in a Population of LLC-PK(Sub 1) Cells 35
- Pathways for Efflux of Hexoses during Differentiation of LLC-PK1 Cells in Culture 277

LMS

- The Impact of Entrainment and Impingement on Fish Populations in the Hudson River Estuary - Volume II: Impingement Impact Analyses, Evaluations of Alternative Screening Devices, and Critiques of Utility Testimony Relating to Density-Dependent Growth, the Age-Composition of the Striped Bass Spawning Stock, and the LMS Real-Time Life Cycle Model 654

Loan

- Environmental Assessment - Eastern Ethanol Corporation - Loan Guarantee Application, Williamsburg County, South Carolina 624
- Environmental Assessment - Energy Conversion Corporation - Loan Guarantee Application, Hampton County, South Carolina 625
- Environmental Assessment - D. W. Small and Sons, Inc. - Loan Guarantee Application, Androscoggin County, Maine 628
- Environmental Assessment, Circle Energies Corporation - Loan Guarantee Application, Finney County, Kansas 629
- Environmental Assessment, New Energy Corporation of Indiana - Loan Guarantee Application, St. Joseph County, Indiana 631
- Minnesota Alcohol Producers - Loan Guarantee Application, Blue Earth County, Minnesota 632
- Environmental Assessment, U.S. Ethanol Corporation - Loan Guarantee Application, East Baton Rouge Parish, Louisiana 633
- Environmental Assessment - Agrifuels Refining Corporation - Loan Guarantee Application, Iberia Parish, Louisiana 634
- Environmental Assessment - Gulf Coast Resources, Inc. - Loan Guarantee Application, Lee County, Iowa 635
- Environmental Assessment - Tennol, Inc. - Loan Guarantee Application, Marion County, Tennessee 636

Loblolly

- Sulfur and Nitrogen Uptake by Loblolly Pine Seedlings as Influenced by Soil Nitrogen and Sulfur Additions 495

Lobsters

- An Indexed Bibliography of the Spiny (Rock) Lobsters (Decapoda:palinuridae) 494

Local

- The Contribution of Residential Wood Combustion to Local Airshed Pollutant Concentrations 381

Localization

- Histochemical Localization of Gamma-Glutamyltranspeptidase (GGT) and Concanavalin A in Normal, Preneoplastic and Neoplastic Epithelia 125
- Localization and Quantitation of Presumptive Neoplastic Cell Populations (PNCP) in Tracheas Exposed to Dimethylbenz(a)anthracene (DMBA) 150
- Localization of Specific Lesions in Dimethylbenz(a)anthracene-Preexposed Tracheal Explants 151

Location

- Location of a Gene Controlling Electrophoretic Variation in Mouse Gamma-Crystallins 242

Locus

- Quantitation and Analysis of Reverse Mutations at the HGPRT Locus in Cultured Mammalian Cells 72
- The Induction of Specific Locus Mutations and Sister Chromatid Exchanges by 5-Bromo- and 5-Chloro-Deoxyuridine 91
- The Need to Develop a Short-Term Chinese Hamster In Vivo Specific Locus Mutational Assay 106
- Mechanism of Suppression in *Drosophila*: Evidence for a Macromolecule Produced by the *su(s)+* Locus That Inhibits Sepiapterin Synthase 113

- Analysis of the Albino-Locus Region of the Mouse: IV. Characterization of 34 Deficiencies** 207
- Factors Affecting Mutagenicity of Ethylnitrosourea in the Mouse Specific-Locus Test and Their Bearing on Risk Estimation** 208
- Effect of Dose Fractionation on Specific-Locus Mutation Induction by Ethylnitrosourea in Mouse Spermatogonia** 209
- Effect of Dose Fractionation on the Ethylnitrosourea Induction of Specific-Locus Mutations in Mouse Spermatogonia** 210
- Dose-Response Curve for Ethylnitrosourea-Induced Specific-Locus Mutations in Mouse Spermatogonia** 211
- Specific-Locus Mutation Frequencies in Mouse Stem-Cell Spermatogonia at Very Low Radiation Dose Rates** 213
- Log**
- Differential Responses of Log and Stationary Phase Human Fibroblasts to Inhibition of DNA Repair by Aphidicolin** 249
- Lon**
- Induction of Filamentation by Mutagens and Carcinogens in a Lor(-) Mutant of Escherichia coli** 164
- Longevities**
- DNA Repair in a Congenic Pair of Mice with Different Longevities** 32
- Photoreactivation in Two Closely Related Marine Fishes Having Different Longevities** 200
- Loss**
- Recovery of Immune Competence Following Sublethal X-Irradiation of Young and Old Mice: A Model for Studying Age-Related Loss of Immunologic Homeostasis** 185
- Losses**
- Energy Losses and Inelastic Mean Free Paths of Low-Energy Electrons in Polyethylene** 298
- Energy Losses by Swift Charged Particles in the Bulk and at the Surface of Condensed Matter** 400
- Louisiana**
- Environmental Assessment, U.S. Ethanol Corporation - Loan Guarantee Application, East Baton Rouge Parish, Louisiana** 633
- Environmental Assessment - Agrifuels Refining Corporation - Loan Guarantee Application, Iberia Parish, Louisiana** 634
- Low**
- Induction of Mammary Tumors in Virgin Female BALB/c Mice by Single Low Doses of 7,12-Dimethylbenz(a)anthracene (DMBA)** 56
- Induction of Mammary Tumors in Virgin Female BALB/c Mice by Single Low Doses of 7,12-Dimethylbenz(a)anthracene** 57
- The Role of Animal Studies in Low Dose Extrapolation** 67
- Expectation Values for Low Resolution Slit-Scan Flow Prescreening: Influence of Nuclear Shape and DNA Density** 160
- Specific-Locus Mutation Frequencies in Mouse Stem-Cell Spermatogonia at Very Low Radiation Dose Rates** 213
- Energy Losses and Inelastic Mean Free Paths of Low-Energy Electrons in Polyethylene** 298
- Stopping Power of Liquid Water for Low-Energy Electrons** 299
- Shallow-Land Burial of Low-Level Radioactive Wastes: Preliminary Simulations of Long-Term Health Risks** 328
- Resonance Ionization Spectroscopy for Low-Level Counting** 350
- Hydrologic Factors and Sr-90 Transport at a Low-Level Waste Disposal Site** 486
- Geohydrochemical Considerations in Land Disposal of Low-Level Wastes** 553
- Abstracts of the Low-Level Waste Disposal: Site Characterization and Monitoring** 619
- Low-Level Waste Disposal: Facility Design, Construction, and Operating Practices, Washington,**

DC, September 29-30, 1982 - Abstracts	620
Proceedings of the Symposium on Low-Level Waste Disposal: Site Suitability Requirements	621
Proceedings of the Third Annual Information Meeting DOE Low-Level Waste Management Program	685
Proceedings of the Fourth Annual Participants' Information Meeting on DOE Low-Level Waste Management Program	686
LPGS	
User's Manual for LPGS: A Computer Program for Calculating Radiation Exposure Resulting from Accidental Radioactive Releases to the Hydrosphere	623
Luminescence	
Synchronous Luminescence Spectroscopy: Methodology and Applicability	421
Lung	
Effect of Lung, Liver and Kidney Toxicants on Respiratory Rates of Mice	80
Hyperoxia, But Not Thoracic X-Irradiation, Potentiates Bleomycin- and Cyclophosphamide-Induced Lung Damage in Mice	82
Long-Term Morphologic and Biochemical Features of Experimentally Induced Lung Fibrosis in the Mouse	87
Experimental Lung Fibrosis in the Mouse: Long-Term Morphologic and Biochemical Features	88
Pathogenesis of Lesions Induced in Rat Lung by Chronic Tobacco Smoke Inhalation	93
Experimental Models for the Study of Morphogenesis of Lung Cancer	167
Use of Radioisotopes in Quantitative Studies of Lung Metabolism	197
The Influence of Butylated Hydroxytoluene-Induced Cell Proliferation on Mouse Lung Damage after X-Rays or Fission Neutrons	268
The Lung as a Site of Toxicological Interactions	279
Adenoma Development in Mouse Lung following Treatment with Possible Promoting Agents	280
Identifying Critical Human Subpopulations by Age Groups: Radioactivity and the Lung	321
Dissolution Characteristics of Pu-Contaminated Soils and Sediments in Lung Serum Simulant Solution	500
LWR	
Uncertainties in LWR Accident Source Term Estimation	392
Lymphocytes	
Evaluation of Radiation-Induced Chromosomal Aberrations in Human Peripheral Blood Lymphocytes In Vitro	16
Lymphoid	
Decreased Immunoglobulin Production by a Human Lymphoid Cell Line following Melphalan Treatment	338
Lysosomal	
Uptake of Tritiated Ouabain from the Cell Surface into the Lysosomal Compartment of HeLa Cells	34
Macromolecular	
Comparison of Levels of Benzo(a)pyrene 7,8-Diol-9,10-Epoxy (BPDE) Diastereomers and Enantiomers Covalently Bound In Vivo to Macromolecular Components of Whole Epidermis Versus the Basal Cell Layer	180
Comparison of Levels of Benzo(a)pyrene Diol Epoxy Diastereomers Covalently Bound In Vivo to Macromolecular Components of the Whole Epidermis Versus the Basal Cell Layer	181
Macromolecule	
Mechanism of Suppression in Drosophila: Evidence for a Macromolecule Produced by the su(s)+ Locus That Inhibits Sepiapterin Synthase	113
Macromolecules	
Benzo(a)pyrene Metabolites: Formation in Rat Liver Cell-Culture Lines, Binding to Macromolecules, and Mutagenesis in V79 Hamster Cells	232

Macronucleus

- The Structure of Gene-Size Chromatin Fragments from the Macronucleus of *Oxytricha nova* 133

Macronutrient

- Arthropod Associates and Macronutrient Status of the Red-Ink Sundew (*Drosera erythrorhiza* Lindl.) 426

Macrophages

- Antigen Presentation by Peritoneal Macrophages from Young Adult and Old Mice 183

Macroscopic

- An Investigation of Dissipative Forces Near Macroscopic Media 579

Magentic

- Comparison of Bethe's Formula for Magentic-Moment Transitions in Atoms with the Generalized Rosenbluth's Equation 373

MAGIC

- MAGIC: A Digitization and Image Processing Program 593

magna

- The Effect of Temperature on the Toxicity of the Water Soluble Fractions of Diesel Fuel No. 2 and H-Coal Crude Oil to *Daphnia magna* 713

Magnetic

- Cardiovascular Risk from Exposure to Static Magnetic Fields 322
Biological Effects of Static Magnetic Fields: A Selective Review with Emphasis on Risk Assessment 589

Maine

- Environmental Assessment - D. W. Small and Sons, Inc. - Loan Guarantee Application, Androscoggin County, Maine 628

Malaysia

- Storage and Release of Organic Carbon in Peninsular Malaysia 459

Male

- Synaptonemal Complex Analysis of Two X-7 Translocations in Male Mice. I. R3 and R5 Quadrivalents 10
A Possible Mechanism for Chemical Induction of Chromosome Aberrations in Male Meiotic and Postmeiotic Germ Cells of Mice 73
Lack of Association between Induction of Dominant-Lethal Mutations and Induction of Heritable Translocations with Benzo(a)pyrene (BaP) in Postmeiotic Germ Cells of Male Mice 75
Mutation Frequencies in Male Mice and the Estimation of Genetic Hazards of Radiation in Men 212

Malignant

- Structural Anomalies of Highly Malignant Respiratory Tract Epithelial Cells 149

Mammalian

- Workshop on the Practical Application of the Mammalian Spot Test in Routine Mutagenicity Testing of Drugs and Other Chemicals 21
Cytogenetic Analysis of Mammalian Oocytes in Mutagenicity Studies 22
Quantitation and Analysis of Reverse Mutations at the HGPRT Locus in Cultured Mammalian Cells 72
Gene Mutation, Quantitative Mutagenesis and Mutagen Screening in Mammalian Cells: Study with the CHO/HGPRT System 103
Induction and Expression of Mutations in Mammalian Cells in the Absence of DNA Synthesis and Cell Division 170
Cytotoxicity and Mutagenicity of Dimethylnitrosamine in Mammalian Cells (CHO/HGPRT System): Enhancement by Calcium Phosphate 173
Mammalian Mutagenesis: Future Directions 205
Unscheduled DNA Synthesis in Mammalian Germ Cells - Its Potential Use in Mutagenicity Testing 226
In Vitro Toxicity Screening of Dielectric Gases Using Mammalian Cells 339

Mammary

- Survival of Mammary Epithelial Cells from Virgin Female BALB/c Mice Following in Vivo Gamma Irradiation 3
- Detection of Ductal Dysplasia in Mammary Outgrowths Derived from Carcinogen-Treated Virgin Female BALB/c Mice 55
- Induction of Mammary Tumors in Virgin Female BALB/c Mice by Single Low Doses of 7,12-Dimethylbenz(a)anthracene (DMBA) 56
- Induction of Mammary Tumors in Virgin Female BALB/c Mice by Single Low Doses of 7,12-Dimethylbenz(a)anthracene 57

Man

- Assignment of Acy-1 to Mouse Chromosome 9: Evidence for Homologous Linkage Groups in Man and Mouse 130
- Photon and Neutron Fluence-to-Kerma Conversion Factors for ICR-1975 Reference Man Using Improved Elemental Compositions for Bone and Marrow of the Skeleton 601

Management

- Cartographic Evaluation of Environmental Management Strategies 481
- Forest Succession Models and Their Ecological and Management Implications 552
- Proceedings of the Third Annual Information Meeting DOE Low-Level Waste Management Program 685
- Proceedings of the Fourth Annual Participants' Information Meeting on DOE Low-Level Waste Management Program 686

Manganese

- Pulmonary Toxicity of Methylcyclopentadienyl Manganese Tricarbonyl (MMT): Nonciliated Bronchiolar Epithelial (Clara) Cell Necrosis and Alveolar Damage in the Mouse Rat and Hamster 81

Manual

- Quality Assurance Program Manual for the Biology Division 555
- User's Manual for PHOEL-3, A Monte Carlo Computer Code for Calculating Initial Energies of Electrons and Positrons Produced in Water Irradiated by Photons with Energies Up to 1 GeV 615
- Risk Assessment of Coal Production: An Information System User's Manual 616
- User's Manual for LPGS: A Computer Program for Calculating Radiation Exposure Resulting from Accidental Radioactive Releases to the Hydrosphere 623
- Guidance Manual for Department of Energy Compliance with Corps of Engineers Permits on Dredging and Filling Activities 660
- User's Manual for STRIPE: A Computer Code for Simulating Striped Bass Young-of-the-Year Population in the Hudson River 673
- Guidance Manual for Department of Energy Compliance with the Clean Water Act: National Pollutant Discharge Elimination System (NPDES) 680
- Guidance Manual for Department of Energy Compliance with the Fish and Wildlife Coordination Act 698
- Manual for Department of Energy Compliance with the Endangered Species Act 699
- Guidance Manual for Department of Energy Compliance with the Clean Air Act: Prevention of Significant Deterioration 703
- FECWATER: User's Manual of a Finite-Element Code for Simulating WATER Flow Through Saturated-Unsaturated Porous Media 723
- FECWASTE: User's Manual of a Finite-Element Code for Simulating WASTE Transport Through Saturated-Unsaturated Porous Media 724

March

- Gaseous Dielectrics III - Proceedings of the Third International Symposium on Gaseous Dielectrics, Knoxville, TN, March 7-11, 1982 582
- Gaseous Dielectrics Research and Applications Semiannual Report - October 1, 1981 - March 31, 1982 583
- Genetic Selection of American Sycamore for Biomass Production in the Mid-South Final Report for the Period March 9, 1979 - May 31, 1982 684

- Marine**
 Photoreactivation in Two Closely Related Marine Fishes Having Different Longevities 200
 Review and Evaluation of Microcosms for Assessing Effects of Stress in Marine Ecosystems 445
- Marion**
 Environmental Assessment - Tennol, Inc. - Loan Guarantee Application, Marion County, Tennessee 636
- Marketing**
 Ten Basics for Marketing Information 289
- Marquette**
 Metamorphic Petrology of the Negaunee Iron Formation, Marquette District, Northern Michigan: Mineralogy, Metamorphic Reactions, and Phase Equilibria 482
- Marrow**
 Sister Chromatid Differentiation Analysis of Cell Cycle Kinetics in Mouse Bone Marrow Cells 11
 Photon and Neutron Fluence-to-Kerma Conversion Factors for ICR-1975 Reference Man Using Improved Elemental Compositions for Bone and Marrow of the Skeleton 601
- Marsh**
 The Influence of Food Concentration and Container Volume on Life History Parameters of *Diaptomus dorsalis* Marsh from Subtropical Florida 473
- Mass**
 Multiphoton Ionization of Ammonia: Mass Analysis and Photoelectron Spectra 332
- Massachusetts**
 Characterization of Metal and Debris Samples from the Shpack Landfill, Norton, Massachusetts 586
 Results of Subsurface Investigation of Radionuclides in Soil in Finberg Field, Attleboro, Massachusetts 587
- Matches**
 The Poly rU Coil: A Minimum Energy Model That Matches Experimental Observations 98
- Materials**
 Acute Cytotoxicity of Fossil-Energy-Related Comparative Research Materials 218
 Evaluation of Hydrotreatment as a Means of Reducing Biological Activity of Synfuel Related Materials 222
 Simple Model for Electron Inelastic Mean Free Paths: Application to Condensed Organic Materials 300
 Tagging Materials for Detection of Explosives 317
 Research Efforts on Environmental Transport of Hazardous Materials at Oak Ridge National Laboratory 537
 Transportation of Radioactive Materials: The Legislative and Regulatory Information System 565
 Materials and Structures Program Publications Data Base 572
 A Mobile Gamma-Ray Scanning System for Detecting Radiation Anomalies Associated with Radium-226 Bearing Materials 607
 Environmental Studies of Materials from the H-Coal Liquefaction Process Development Unit 658
- Mathematical**
 Chapter 6.3: Mathematical Models in Internal Dose Estimation 304
 Mathematical Studies of the Absorption into Blood of Am-241 following Oral Intubation into the Gut of Minature Swine 305
- Matter**
 Vicinage Effects in Ion Cluster Collisions with Condensed Matter and with Single Atoms 303
 Coherent States and the Interaction of Swift Ions with Condensed Matter 324
 Energy Losses by Swift Charged Particles in the Bulk and at the Surface of Condensed Matter 400
 The Wake of Charged Particles in Condensed Matter 403

Mature

- Difference in the Ratio of Dominant-Lethal Mutations to Heritable Translocations Produced in Mouse Spermatids and Fully Mature Sperm after Treatment with Triethylenemelamine (TEM) 74

max

- Uptake and Metabolism of C-14 Anthracene by Soybean (Glycine max) 472
Ozone Flux in Glycine max (L.) Merr.: Sites of Regulation and Relationship to Leaf Injury 543

Maxwellian

- Non-Maxwellian Velocity Distributions and Molecular Beam Intensities in Sonic Nozzle Expansions 362

MDA

- Mutagenicity of 4,4'-Methylenedianiline (MDA) Derivatives in the Salmonella Histidine Reversion Assay 199

Mean

- Energy Losses and Inelastic Mean Free Paths of Low-Energy Electrons in Polyethylene 298
Simple Model for Electron Inelastic Mean Free Paths: Application to Condensed Organic Materials 300
Electron Inelastic Mean Free Paths in Several Solids for Energies from 200 eV to 10 keV 301
Photoemission and Electron Mean Free Paths in Liquid Formamide in the Vacuum UV 308
Yields and Mean Free Paths of Photoelectrons from Liquid Hexamethyl Phosphoric Thiamide 309

Measurement

- Calorimetric Measurement of Electron Stopping Power of Aluminum and Copper between 11 and 127 keV 345

Measurements

- Measurements of the TLD-Albedo Calibration Ratio Made at the Health Physics Research Reactor 337
Measurements of Growth and Consumption of Sauger (*Stizostedion canadense*): Implication for Fish Energetics Studies 511

Measuring

- The Use of Soda-Lime for Measuring Respiration Rates in Terrestrial Systems 470
A Timesaving Technique for Measuring Respiration Rates in Incubated Soil Samples 471

Mechanism

- A Possible Mechanism for Chemical Induction of Chromosome Aberrations in Male Meiotic and Postmeiotic Germ Cells of Mice 73
Study of the Mechanism by Which a Cytoplasmic Membrane Preparation Promotes Septation in Irradiated *Escherichia coli* 76
Mechanism of Suppression in *Drosophila melanogaster*. 8. Comparison of Su(S) Alleles for Ability to Suppress the Mutants Purple, Vermilion, and Speck 112
Mechanism of Suppression in *Drosophila*: Evidence for a Macromolecule Produced by the su(s)+ Locus That Inhibits Sepiapterin Synthase 113
Molecular Mechanism of Extinction of Liver Specific Functions in Mouse Hepatoma x Rat Fibroblast Hybrids: Extinction of the Albumin Gene 178
Specificity and Mechanism(s) of Promoter Inhibitors in Multistage Promotion 245
Peer Review Mechanism for the Toxicology Data Bank 288

Mechanisms

- The Use of Inhibitors of DNA Repair in the Study of the Mechanisms of Induction of Chromosome Aberrations 191
Studies on the Mechanisms Involved in Multistage Carcinogenesis in Mouse Skin 244

Media

- Membrane Preparations Used to Produce Anaerobic Conditions in Bacteriological Media 37
Chemicals Identified in Human Biological Media 283

- Chemicals Identified in Human Biological Media, A Data Base: Third Annual Report, October 1981, Volume 3, Part 2 Records 3501-5271 557
- Chemicals Identified in Human Biological Media, A Data Base: Third Annual Report, October 1981, Volume 3, Part 1 558
- Chemicals Identified in Human Biological Media, A Data Base, Volume IV 559
- Chemicals Identified in Human Biological Media, A Data Base: Fourth Annual Report 560
- Chemicals Identified in Human Biological Media, A Data Base: Fourth Annual Report 561
- An Investigation of Dissipative Forces Near Macroscopic Media 579
- FECWATER: User's Manual of a Finite-Element Code for Simulating WATER Flow Through Saturated-Unsaturated Porous Media 723
- FECWASTE: User's Manual of a Finite-Element Code for Simulating WASTE Transport Through Saturated-Unsaturated Porous Media 724

Mediated

- Cell-Mediated Mutagenicity in Chinese Hamster V79 Cells by Dibenzyrenes and Their Bay-Region Disubstituted Fluorinated Derivatives 89
- An Evaluation of the Host-Mediated Assay and Body Fluid Analysis - A Report of the U.S. Experimental Protection Agency Gene-Tox Program 136
- The Use of the Host Mediated Assay for Cytogenetic Studies 194
- Cell-Mediated Mutagenesis and Tumor-Initiating Activity of the Ubiquitous Polycyclic Hydrocarbon, Cyclopenta(c,d) Pyrene 201
- Microsome-Mediated Cytotoxicity to CHO Cells 260
- Structuring of a Predator Population through Temperature-Mediated Effects on Prey Availability 446

Meeting

- Proceedings of the Third Annual Information Meeting DOE Low-Level Waste Management Program 685
- Proceedings of the Fourth Annual Participants' Information Meeting on DOE Low-Level Waste Management Program 686

Meiotic

- A Possible Mechanism for Chemical Induction of Chromosome Aberrations in Male Meiotic and Postmeiotic Germ Cells of Mice 73

melanogaster

- Dosage Compensation of Serine-4 Transfer RNA in *Drosophila melanogaster* 17
- Quinine-Containing Isoacceptor of Tyrosine tRNA in *Drosophila melanogaster* 31
- Purification and Biosynthesis of Quench Spot, a Drosoperin Precursor in *Drosophila melanogaster* 50
- A Temporal Study at the Ultrastructural Level of the Developing Pro-oocyte of *Drosophila melanogaster* 78
- Mechanism of Suppression in *Drosophila melanogaster*. 8. Comparison of Su(S) Alleles for Ability to Suppress the Mutants Purple, Vermilion, and Speck 112
- Dimethylnitrosamine Demethylase in *Drosophila melanogaster* 273
- Dimethylnitrosamine Demethylase Activity in *Drosophila melanogaster* 274

Melphalan

- Decreased Immunoglobulin Production by a Human Lymphoid Cell Line following Melphalan Treatment 338

Membrane

- Membrane Preparations Used to Produce Anaerobic Conditions in Bacteriological Media 37
- Study of the Mechanism by Which a Cytoplasmic Membrane Preparation Promotes Septation in Irradiated *Escherichia coli* 76

Men

- Mutation Frequencies in Male Mice and the Estimation of Genetic Hazards of Radiation in Men 212

Mercaptopurine

- Spermatogenic Stage Sensitivity to 6-Mercaptopurine in the Mouse 174

Merr

- Ozone Flux in Glycine max (L.) Merr.: Sites of Regulation and Relationship to Leaf Injury 543

Metabolic

- Effect of Metabolic Activation on the Cytotoxicity and Mutagenicity of 1,2-Dibromoethane in the CHO/HGPRT System 23
- Chemical Carcinogenesis: Nature's Metabolic Mistake 231
- Metabolic Rationale for the Weak Mutagenic and Carcinogenic Activity of Benzo(e)pyrene 233
- Species Variance in the Metabolic Activation of Polycyclic Hydrocarbons 234

Metabolism

- Benzo(a)pyrene Metabolism in Primary Cultures of Mouse Epidermal Cells and Untransformed and Transformed Epidermal Cell Lines 46
- Inhibition of Mouse Skin Tumor Promotion by Several Inhibitors of Arachidonic Acid Metabolism 60
- Time Course of Metabolism of Benzo(e)pyrene by Hamster Embryo Cells and the Effect of Chemical Modifiers 143
- Use of Radioisotopes in Quantitative Studies of Lung Metabolism 197
- Heterogeneity of Benzo(a)pyrene Metabolism in Human and Rodent Cell Culture 230
- Metabolism of 6-Nitrobenzo(a)pyrene by Hamster Embryo Cells and Rat Liver Microsomes 265
- Enhanced Benzo(a)pyrene Metabolism in Hamster Embryonic Cells Exposed in Culture to Fossil Synfuel Products 408
- Uptake and Metabolism of C-14 Anthracene by Soybean (Glycine max) 472
- Ecdysone Metabolism in Premolt Land Crabs (Gecarcinus lateralis) 505

Metabolites

- The Presence of Metabolites in Early Embryos 58
- A Fluorometric-HPLC Assay for Quantitating the Binding of Benzo(a)pyrene Metabolites to DNA 195
- Benzo(a)pyrene Metabolites: Formation in Rat Liver Cell-Culture Lines, Binding to Macromolecules, and Mutagenesis in V79 Hamster Cells 232

Metal

- Metal Ion Toxicity in Drosophila 30
- Chemical Softness and Acute Metal Toxicity in Mice and Drosophila 430
- Factors Influencing Trace Metal, Sulfate, and Hydrogen Ion Concentrations in Rain 501
- Characterization of Metal and Debris Samples from the Shpack Landfill, Norton, Massachusetts 506

Metallocarcinogen

- Selective Effect of the Metallocarcinogen Beryllium on Hormonal Regulation of Gene Expression in Cultured Cells 184

Metals

- Photoacoustic Study of Surface Plasmons in Metals 352
- Atmospheric Deposition of Metals to Forest Vegetation 502
- Radiological Survey of the Former Bridgeport Brass Company Special Metals Extrusion Plant, Adrian, Michigan 594

Metamorphic

- Metamorphic Petrology of the Negaunee Iron Formation, Marquette District, Northern Michigan: Mineralogy, Metamorphic Reactions, and Phase Equilibria 482
- Metamorphic Petrology of the Negaunee Iron Formation, Marquette District, Northern Michigan: Mineralogy, Metamorphic Reactions, and Phase Equilibria 482

Metavolcanic

- Geologic Setting of the Hillabee Metavolcanic Complex and Associated Stratabound Sulfide Deposits in the Appalachian Piedmont of Alabama 545

Meters

- Comparison of Observed and Predicted Normalized Air Concentrations for Particles Released from a Height of 111 Meters 384

Methanesulfonate

- The Use of Alkaline Elution To Study DNA Damage in Developing Mouse Sperm after Exposure to Methyl Methanesulfonate 225
- Studies on the Inhibition of Ultraviolet- and Methyl Methanesulfonate-Induced Damage in the DNA of Human Fibroblasts by Novobiocin 250

Methanesulfonates

- DNA Repair in Normal Human and Xeroderma Pigmentosum Group A Fibroblasts following Treatment with Various Methanesulfonates and the Demonstration of a Long-Patch (UV-Like) Repair Component 248

Methanol

- Antischistosomal Analogs of Hycanthone. 2. Structure of 2-[2-(Diethylamino)ethyl]-2H-[1]-Benzothiopyrano [4,3,2-cd]Indazole-5-Methanol Monohydrate 276

Methionyl

- Identification of an Active-Site Methionyl Residue in Ribulose Biphosphate Carboxylase/Oxygenase 84

Methodology

- Synchronous Luminescence Spectroscopy: Methodology and Applicability 421
- Ecosystem Risk Analysis - A New Methodology 516
- Methodology for Environmental Risk Analysis 653
- The Effect of Stochastic Variation on Estimates of the Probability of Entrainment Mortality: Methodology, Results, and User's Guide 662

Methyl

- O-6-Methylguanine-DNA Methyl Transferase in Wild-Type and Ada Mutants of E. coli 157
- The Use of Alkaline Elution To Study DNA Damage in Developing Mouse Sperm after Exposure to Methyl Methanesulfonate 225
- Studies on the Inhibition of Ultraviolet- and Methyl Methanesulfonate-Induced Damage in the DNA of Human Fibroblasts by Novobiocin 250

Methylation

- The Control of Phospholipid Methylation by Phorbol Diesters in Differentiating Human Myeloid HL-60 Leukemia Cells 99

Methylcyclopentadienyl

- Pulmonary Toxicity of Methylcyclopentadienyl Manganese Tricarbonyl (MMT): Nonciliated Bronchiolar Epithelial (Clara) Cell Necrosis and Alveolar Damage in the Mouse Rat and Hamster 81

Methylenedianiline

- Mutagenicity of 4,4'-Methylenedianiline (MDA) Derivatives in the Salmonella Histidine Reversion Assay 199

Methylguanine

- Mutagenesis of Bacteriophage T7 In Vitro by Incorporation of O-6-Methylguanine during DNA Synthesis 47
- O-6-Methylguanine-DNA Methyl Transferase in Wild-Type and Ada Mutants of E. coli 157
- Removal of O(Sup 6)-Methylguanine from DNA by Human Liver Fractions 179
- In Vitro Replication of DNA Containing O-6-Methylguanine-Kinetic Evidence of Mutagenic Potential of the Alkylated Base 246

Methylnitrosourea

- Supermutagenicity of Ethylnitrosourea in the Mouse Spot Test - Comparison with Methylnitrosourea and Ethylnitrosourethane 206

Metrizamide

- Interaction of a DNA-Binding Protein, the Gene Product of D5 of Bacteriophage T5, with Double-Stranded DNA - Analysis by Metrizamide Gradient Centrifugation 71

MeV

- Calculated Initial Energies of Electrons in Si and Silicon Dioxide Irradiated by Photons with Energies up to 2 MeV 415

Mice

- Survival of Mammary Epithelial Cells from Virgin Female BALB/c Mice Following in Vivo Gamma Irradiation 3
- Synaptonemal Complex Analysis of Two X-7 Translocations in Male Mice. I. R3 and R5 Quadrivalents 10
- DNA Repair in a Congenic Pair of Mice with Different Longevities 32
- Endocrine Morphology and Reproductive Function in Athymic Nude Mice 42
- Tumor-Initiating Activity of 4-Fluro-7, 12-Dimethylbenz(a)anthracene and 1,2,3, 4-Tetrahydro-7,12-Dimethylbenz(a)anthracene in Female SENCAR Mice 45
- Renal Toxicity of Middle Distillates of Shale Oil and Petroleum in Mice 54
- Detection of Ductal Dysplasia in Mammary Outgrowths Derived from Carcinogen-Treated Virgin Female BALB/c Mice 55
- Induction of Mammary Tumors in Virgin Female BALB/c Mice by Single Low Doses of 7,12-Dimethylbenz(a)anthracene (DMBA) 56
- Induction of Mammary Tumors in Virgin Female BALB/c Mice by Single Low Doses of 7,12-Dimethylbenz(a)anthracene 57
- A Possible Mechanism for Chemical Induction of Chromosome Aberrations in Male Meiotic and Postmeiotic Germ Cells of Mice 73
- Lack of Association between Induction of Dominant-Lethal Mutations and Induction of Heritable Translocations with Benzo(a)pyrene (BaP) in Postmeiotic Germ Cells of Male Mice 75
- Effect of Lung, Liver and Kidney Toxicants on Respiratory Rates of Mice 80
- Hyperoxia, But Not Thoracic X-Irradiation, Potentiates Eleomycin- and Cyclophosphamide-Induced Lung Damage in Mice 82
- Resistance of Germfree Athymic Nude Mice to Two-Stage Skin Carcinogenesis 102
- Sequential Thymus Grafting of Aged Mice: Characterization of Growth, Regression and Enhancement of Immune Competence 182
- Antigen Presentation by Peritoneal Macrophages from Young Adult and Old Mice 183
- Recovery of Immune Competence Following Sublethal X-Irradiation of Young and Old Mice: A Model for Studying Age-Related Loss of Immunologic Homeostasis 185
- An Analysis of Genetic Factors Regulating Life-Span in Congenic Mice 187
- Mutation Frequencies in Male Mice and the Estimation of Genetic Hazards of Radiation in Men 212
- Induced Mutations in Mice and Genetic Risk Assessment in Humans 227
- Test of Dichlorvos Using the Sensitive-Indicator Method for Dominant Skeletal Mutations in Mice 229
- Poly(ADP-Ribosylation) in N,N-Diethylnitrosamine-Treated Mice 238
- Associations between Tumor Types in Irradiated BALB/c Female Mice 255
- Causes of Death and Their Contribution to Radiation-Induced Life Shortening in Intact and Ovariectomized Mice 258
- Radiation-Induced Leukemogenesis in RFM-Un Strain Mice: A Potential Model for Retrovirus Sequence Transposition 261
- Immunoselection of Tumor Cell Variants by Mice Suppressed with Ultraviolet Radiation 270
- Chemical Softness and Acute Metal Toxicity in Mice and Drosophila 430

Michigan

- Metamorphic Petrology of the Negaunee Iron Formation, Marquette District, Northern Michigan: Mineralogy, Metamorphic Reactions, and Phase Equilibria 482
- Radiological Survey of the Former Bridgeport Brass Company Special Metals Extrusion Plant, Adrian, Michigan 594

Microclimates

- Use of Vegetation to Ameliorate Building Microclimates: An Assessment of Energy Conservation Potentials 681

Microcosms

- Review and Evaluation of Microcosms for Assessing Effects of Stress in Marine Ecosystems 445
Effects of the Water-Soluble Fraction of a Coal-Derived Oil on Pond Microcosms 480

Microorganisms

- Presence of Pathogenic Microorganisms in Power Plant Cooling Waters Report for October 1, 1979, to September 30, 1981 711

Microscale

- Analysis and Refinement of the Microscale Synthesis of the Pt-195m-Labeled Antitumor Drug, cis-Dichlorodiammineplatinum(II), cis-DDP 343

Microscope

- Stereo Electron Microscope Studies of Mitotic Chromosomes from Chinese Hamster Ovary Cells 134
Electron Microscope Tomography: Transcription in 3-D 176

Microsome

- Microsome-Mediated Cytotoxicity to CHO Cells 260

Microsomes

- Metabolism of 6-Nitrobenzo(a)pyrene by Hamster Embryo Cells and Rat Liver Microsomes 265

Microwaves

- Absorption of RF and Microwaves on Spherical Multilayer Biological Systems 405

Mid

- Genetic Selection of American Sycamore for Biomass Production in the Mid-South Final Report for the Period March 9, 1979 - May 31, 1982 684

Middle

- Renal Toxicity of Middle Distillates of Shale Oil and Petroleum in Mice 54

Migration

- The Influence of Geochemical Variables on Long-Lived Radionuclide Migration and Risk Assessment 454

Mill

- Grouting Research for Uranium Mill Tailings 538

Minature

- Mathematical Studies of the Absorption into Blood of Am-241 following Oral Intubation into the Gut of Minature Swine 305

Mine

- The Growth, Nutrient Absorption, and Moisture Status of Selected Woody Species in Coal Mine Spoil in Response to an Induced Infection by the Ectomycorrhizal Fungus Pisolithus tinctorius 718

Mineralogy

- Metamorphic Petrology of the Negaunee Iron Formation, Marquette District, Northern Michigan: Mineralogy, Metamorphic Reactions, and Phase Equilibria 482

Minerals

- Chattanooga Shale: An Assessment of the Resource and Technology for the Recovery of Hydrocarbons and Minerals 640

Miniature

- Estimates of Dose to Systemic Organs and GI Tract Based on Data from Miniature Swine Orally Intubated with a Single Dose of Am-241 Citrate 306

Minimum

- The Poly rU Code: A Minimum Energy Model That Matches Experimental Observations 92

Minnesota

- Minnesota Alcohol Producers - Loan Guarantee Application, Blue Earth County,
Minnesota 632
- Minnesota Alcohol Producers - Loan Guarantee Application, Blue Earth County,
Minnesota 632

minus

- Preparation of Enantiomers of (plus or minus)-Trans-7Beta, 8Alpha-Dihydroxy-9Alpha,
10Alpha-Epoxy-7,8,9,10-Tetrahydrobenzo[a]pyrene 110

Missing

- Models and Risk from High-Level Waste Disposal - The Missing Pieces 365

Mississippi

- An Evaluation of Community Information Indices for Mississippi River Fisheries 694

Mistake

- Chemical Carcinogenesis: Nature's Metabolic Mistake 231

Mitotic

- Stereo Electron Microscope Studies of Mitotic Chromosomes from Chinese Hamster Ovary
Cells 134
- Aspergillus nidulans*: Systems and Results of Tests for Chemical Induction of Mitotic Segregation
and Mutation. I. Diploid and Duplication Assay Systems. A Report of the U.S. EPA Gene-Tox
Program 286
- Aspergillus nidulans*: Systems and Results of Tests for Induction of Mitotic Segregation and Muta-
tion. II. Haploid Assay Systems and Overall Response of All Systems. A Report of the U.S.
EPA Gene-Tox Program 293

Mixed

- Effects of Sawlog vs. Whole-Tree Harvesting on the Nitrogen, Phosphorus, Potassium, and Cal-
cium Budgets of an Upland Mixed Oak Forest 491

Mixture

- New Gas Mixture Improves Performance of He-3 Neutron Counters 431

Mixtures

- Impulse Breakdown in Sulfur Hexafluoride, Sulfur Hexafluoride/Nitrogen and Sulfur Hexafluoride/
Perfluorocarbon Mixtures 325
- Studies of Spark Decomposition Products of Sulfur Hexafluoride and Sulfur Hexafluoride/
Perfluorocarbon Mixtures 407

MMT

- Pulmonary Toxicity of Methylcyclopentadienyl Manganese Tricarbonyl (MMT): Nonciliated
Bronchiolar Epithelial (Clara) Cell Necrosis and Alveolar Damage in the Mouse Rat and
Hamster 81

Mn

- Formation of Freshwater Fe-Mn Coatings on Gravel and the Behavior of Co-60, Sr-90, and
Cs-137 in a Small Watershed 458

Mobile

- Mobile Species of Pu, Am, Cm, Np, and Te in the Environment 453
- A Mobile Gamma-Ray Scanning System for Detecting Radiation Anomalies Associated with
Radium-226 Bearing Materials 607

Mobility

- Neutron Scattering Studies and Modeling of High Mobility Group 14 Core Nucleosome
Complex 266
- Environmental Mobility of Toxic Substances Released from Photovoltaic-Associated Processes:
Terrestrial Ecosystems 500

Model

- Mouse Myeloid Leukemia as an Experimental Model for Monitoring Progression of Leukemia and
Chemotherapy 12
- A Model for the Differentiation of Na-Dependent Hexose Transport Capacity in a Population of

- LLC-PK(Sub 1) Cells 35
- A Frog Embryo Teratogenesis Assay: Xenopus (FETAX) - A Model for Teratogen Screening 51
- The Poly rU Coil: A Minimum Energy Model That Matches Experimental Observations 93
- Recovery of Immune Competence Following Sublethal X-Irradiation of Young and Old Mice: A Model for Studying Age-Related Loss of Immunologic Homeostasis 185
- Action Spectra for the Photolysis of 5-Iododeoxyuridine in DNA and Related Model Systems: Evidence for Short-Range Energy Transfer 196
- Radiation-Induced Leukemogenesis in RFM-Un Strain Mice: A Potential Model for Retrovirus Sequence Transposition 261
- Simple Model for Electron Inelastic Mean Free Paths: Application to Condensed Organic Materials 300
- A Model for Cadmium Transport and Distribution in CHO Cells 341
- Evaluation of a Modified CEA Instruments, Inc. Model 555 Analyzer for the Monitoring of Formaldehyde Vapor in Domestic Environments 377
- A Core Plasma Model of Charged Particle Track Formation in Insulators 462
- A Model of the 3-Month Pregnant Woman for Radiation Dose Estimation 427
- Thermal Resistance of Juvenile Crayfish, *Cambarus bartoni* (Fabricius): Experiment and Model 462
- Assessing Model Uncertainties 476
- Parameter Constraints in a Stream Ecosystem Model: Incorporation of a Priori Information in Monte Carlo Error Analysis 517
- Testing for Competition: A Critique of De Vita's Use of the Broken-Stick Model 532
- Variation in Plant Response to Ozone: A Conceptual Model of Physiological Events 544
- A Multimedia Screening-Level Model for Assessing the Potential Fate of Chemicals Released to the Environment 605
- RAGBEEF: A FORTRAN IV - Implementation of a Time-Dependent Model for Radionuclide Contamination of BEEF 611
- The Impact of Entrainment and Impingement on Fish Populations in the Hudson River Estuary - Volume II: Impingement Impact Analyses, Evaluations of Alternative Screening Devices, and Critiques of Utility Testimony Relating to Density-Dependent Growth, the Age-Composition of the Striped Bass Spawning Stock, and the LMS Real-Time Life Cycle Model 654
- Formulations of the Physiochemical Processes in the ORNL Unified Transport Model for Toxicants (UTM-TOX) (Interim Report) 657
- A Users's Guide for the Stock-Recruitment Model Validation Program 664
- A Description of FORICO, A Tropical Gap Dynamics Model of the Lower Montane Rain Forest of Puerto Rico 669
- AGTEHM: Documentation of Modifications to the Terrestrial Ecosystem Hydrology Model (TEHM) for Agricultural Applications 677
- SEDMNT: A Sediment Transport Submodel Based on Hydrodynamic Principles for the Unified Transport Model 678
- Resilience and Inertia in Model Ecosystems: Tests of Some Hypotheses 710
- CHNHYD: A CHANnel HYDrodynamic Model for Simulating Flows and Water Surface Elevations in a Stream/River Network 720

Modeling

- Neutron Scattering Studies and Modeling of High Mobility Group 14 Core Nucleosome Complex 266
- Strontium-90 in Bone: A Case Study in Age-Dependent Dosimetric Modeling 372
- Nonzero Solutions of Nonlinear Integral Equations Modeling Infectious Disease 428
- Unique and Multiple Solutions of a Family of Differential Equations Modeling Chemical Reactions 429
- Modeling Terrestrial Carbon Cycling at the Global Scale 474
- Initial Atmospheric Dispersion Modeling in Support of the Multiple-Site Incineration

- Study** 596
 Xenobiotic Bioaccumulation by Terrestrial Vertebrates: A Bibliography for Food Chain
Modeling 709
 Review and Analysis of Existing Modeling Approaches for Assessing Population-Level Effects of Multiple Stresses on Fish and Shellfish 717
- Models**
 Mouse Models of Human Thalassemia 7
 Experimental Models for the Study of Morphogenesis of Lung Cancer 167
 Chapter 6.3: Mathematical Models in Internal Dose Estimation 304
 Models and Risk from High-Level Waste Disposal - The Missing Pieces 365
 Two-State Models of Radiative Collisions and Related Ionization Effects 397
 A General Linear Models Approach for Comparing the Response of Several Species in Acute Toxicity Tests 468
 Chaotic Models as Representations of Ecological Systems 518
 Forest Succession Models and Their Ecological and Management Implications 552
 A Review of Uncertainty Estimates Associated with Models for Assessing the Impact of Breeder Reactor Radioactivity Releases 606
 Agricultural Production in the United States by County: A Compilation of Information from the 1974 Census of Agriculture for Use in Terrestrial Food-Chain Transport and Assessment Models 613
 Development of Predictive Models for Xenobiotic Bioaccumulation in Terrestrial Ecosystems 708
- Modes**
 DNA Backbone Conformation in AAF Modified dCpdG: Variable Conformational Modes of Achieving Base Displacement 24
- Modifiers**
 Time Course of Metabolism of Benzo(e)pyrene by Hamster Embryo Cells and the Effect of Chemical Modifiers 143
- Modulation**
 Modulation of Prostaglandin Synthesis and Tumor Promotion 62
 The Down-Modulation of Receptors for Phorbol Ester Tumor Promoter in Primary Epidermal Cells 251
- Moisture**
 The Growth, Nutrient Absorption, and Moisture Status of Selected Woody Species in Coal Mine Spoil in Response to a Induced Infection by the Ectomycorrhizal Fungus Pisolithus tinctorius 718
- Molecular**
 Molecular Mechanism of Extinction of Liver Specific Functions in Mouse Hepatoma x Rat Fibroblast Hybrids: Extinction of the Albumin Gene 178
 Structure-Toxicity Relationships of Selected Nitrogenous Heterocyclic Compounds. III: Relations Using Molecular Connectivity 223
 Calibration of Denaturing Agarose Gels for Molecular Weight Estimation of DNA: Size Determination of the Single-Stranded Genomes of Parvoviruses 247
 A System for the Molecular Analysis of Mutation in pSV2gpt Transfected CHO Cells 264
 Fluctuation Experiments on Atomic and Molecular Systems Using the One-Atom Detector 358
 Non-Maxwellian Velocity Distributions and Molecular Beam Intensities in Sonic Nozzle Expansions 362
- Molecules**
 Structure-Toxicity Relationships of Selected Nitrogenous Heterocyclic Compounds. II. Dinitrogen Molecules 220
 Multiphoton Ionization and Third-Harmonic Generation in Atoms and Molecules 318

- Multiphoton Ionization of Atoms and Molecules 319
 Electron Interactions with Polar Molecules 330
 Van der Waals Molecules - Linking the Gas and Liquid Phases 361
 Vacuum Ultraviolet Absorption Spectra of Aromatic Molecules in Solution 368
 Vacuum Ultraviolet Spectroscopy of Molecules Using Third-Harmonic Generation in Rare Gases 390
 Vacuum Ultraviolet Spectroscopy of Molecules Using Third-Harmonic Generation in Rare Gases 391
- Molt**
 Molt-Cycle Associated Changes in Calcium-Dependent Proteinase Activity that Degrades Actin and Myosin in Crustacean Muscle 162
- Molting**
 Crustacean Muscles: Atrophy and Regeneration during Molting 161
- Moment**
 Comparison of Bethe's Formula for Magnetic-Moment Transitions in Atoms with the Generalized Rosenbluth's Equation 373
- Monitoring**
 Mouse Myeloid Leukemia as an Experimental Model for Monitoring Progression of Leukemia and Chemotherapy 12
 Evaluation of a Modified CEA Instruments, Inc. Model 555 Analyzer for the Monitoring of Formaldehyde Vapor in Domestic Environments 377
 Evaluation of Selected Monitoring Methods for Formaldehyde in Domestic Environments 378
 Solid Sorbent for Formaldehyde Monitoring 379
 Abstracts of the Low-Level Waste Disposal: Site Characterization and Monitoring 619
 Basic Considerations for Monitoring and Evaluating the Residential Conservation Service 626
- Monoclonal**
 Binding of Monoclonal Antibody to Protein Antigen in Fluid Phase or Bound to Solid Supports 117
- Monohydrate**
 Antischistosomal Analogs of Hycanthone. 2. Structure of 2-[2-(Diethylamino)ethyl]-2H-[1]-Benzothiopyrano [4,3,2-cd]Indazole-5-Methanol Monohydrate 276
- Monophosphate**
 Conformation of the Deoxydinucleotide Monophosphate dCpdG Modified at Carbon 8 of Guanine with 2-(Acetyl amino)fluorine 97
- Montane**
 A Description of FORICO, A Tropical Gap Dynamics Model of the Lower Montane Rain Forest of Puerto Rico 669
- Monte**
 Monte Carlo Calculations of Initial Energies of Electrons in Water Irradiated by Photons with Energies up to 1 GeV 414
 Parameter Constraints in a Stream Ecosystem Model: Incorporation of a Priori Information in Monte Carlo Error Analysis 517
 User's Manual for PHOEL-3, A Monte Carlo Computer Code for Calculating Initial Energies of Electrons and Positrons Produced in Water Irradiated by Photons with Energies Up to 1 GeV 615
- Month**
 A Model of the 3-Month Pregnant Woman for Radiation Dose Estimation 427
- Morone**
 Corrected Analysis of the Ability to Detect Reductions in Year-Class Strength of the Hudson River White Perch (*Morone americana*) Population 549
- Morphogenesis**
 Experimental Models for the Study of Morphogenesis of Lung Cancer 167

Morphologic

Long-Term Morphologic and Biochemical Features of Experimentally Induced Lung Fibrosis in the Mouse 87

Experimental Lung Fibrosis in the Mouse: Long-Term Morphologic and Biochemical Features 88

Development and Progression of Neoplastic Disease. Morphologic and Cell Culture Studies with Airway Epithelium 168

Morphological

Quantitative Evaluation of Dark Keratinocytes Induced by Several Promoting and Hyperplasiogenic Agents: Their Use as an Early Morphological Indicator of Tumor-Promoting Action 121

Morphology

Endocrine Morphology and Reproductive Function in Athymic Nude Mice 42

Mortality

Entrainment Mortality of Ichthyoplankton: Detectability and Precision of Estimates 548

The Effect of Stochastic Variation on Estimates of the Probability of Entrainment Mortality: Methodology, Results, and User's Guide 662

Scientific Review and Critique of R. L. Patterson's: Production, Mortality, and Power-Plant Entrainment of Larval Yellow Perch in Western Lake Erie 715

Motion

Electron Motion in High-Pressure Polar Gases: Ammonia 312

Mouse

Mouse Models of Human Thalassemia 7

Sister Chromatid Differentiation Analysis of Cell Cycle Kinetics in Mouse Bone Marrow Cells 11

Mouse Myeloid Leukemia as an Experimental Model for Monitoring Progression of Leukemia and Chemotherapy 12

Generation and Characterization of Variants of Mouse Hepatoma Cells with Defects in Hepato-Specific Gene Expression. I. Albumin Synthesis Variants 41

Benzo(a)pyrene Metabolism in Primary Cultures of Mouse Epidermal Cells and Untransformed and Transformed Epidermal Cell Lines 46

Inhibition of Mouse Skin Tumor Promotion by Several Inhibitors of Arachidonic Acid Metabolism 68

Difference in the Ratio of Dominant-Lethal Mutations to Heritable Translocations Produced in Mouse Spermatids and Fully Mature Sperm after Treatment with Triethylenemelamine (TEM) 74

Pulmonary Toxicity of Methylcyclopentadienyl Manganese Tricarbonyl (MMT): Nonciliated Bronchiolar Epithelial (Clara) Cell Necrosis and Alveolar Damage in the Mouse Rat and Hamster 81

Long-Term Morphologic and Biochemical Features of Experimentally Induced Lung Fibrosis in the Mouse 87

Experimental Lung Fibrosis in the Mouse: Long-Term Morphologic and Biochemical Features 88

Neoplasms of the Mouse Integument and Harderian Gland 100

Acid Lipase-1 (Lip-1) is on Mouse Chromosome 19: Evidence for Homologous Regions on Human Chromosome 10 and Mouse 19 128

Acid Lipase-1 (Lip-1) is on Mouse Chromosome 19: Evidence for Homologous Regions on Human Chromosome 10 and Mouse 19 128

Assignment of Acy-1 to Mouse Chromosome 9: Evidence for Homologous Linkage Groups in Man and Mouse 130

Assignment of Acy-1 to Mouse Chromosome 9: Evidence for Homologous Linkage Groups in Man and Mouse 130

Mouse Alpha-Like Pseudogenes are Assigned to Chromosome 15 and 17 131

Contact-Stimulated Proliferation of Cultured Mouse Epidermal Cells by 3T3 Feeder Layers: Inhi-

Initiation by 12-O-Tetradecanoylphorbol-13-Acetate (TPA)	156
Regulation of Alpha-Fetoprotein and Transferrin Synthesis and Secretion in Mouse Hepatoma Cells	159
Keratin Modifications in Epidermis, Papillomas and Carcinomas during Two-Stage Carcinogenesis in the SENCAR Mouse	165
Spermatogenic Stage Sensitivity to 6-Mercaptopurine in the Mouse	174
Mouse Adenovirus	177
Molecular Mechanism of Extinction of Liver Specific Functions in Mouse Hepatoma x Rat Fibroblast Hybrids: Extinction of the Albumin Gene	178
The Primary Structure of Genetic Variants of Mouse Hemoglobin	188
How Predictive is the Mouse Spot Test for Heritable Gene Mutations?	203
Relevance of the Mouse Spot Test as a Genotoxicity Indicator	204
Supermutagenicity of Ethylnitrosourea in the Mouse Spot Test - Comparison with Methylnitrosourea and Ethylnitrosourethane	206
Analysis of the Albino-Locus Region of the Mouse: IV. Characterization of 34 Deficiencies	207
Factors Affecting Mutagenicity of Ethylnitrosourea in the Mouse Specific-Locus Test and Their Bearing on Risk Estimation	208
Effect of Dose Fractionation on Specific-Locus Mutation Induction by Ethylnitrosourea in Mouse Spermatogonia	209
Effect of Dose Fractionation on the Ethylnitrosourea Induction of Specific-Locus Mutations in Mouse Spermatogonia	210
Dose-Response Curve for Ethylnitrosourea-Induced Specific-Locus Mutations in Mouse Spermatogonia	211
Specific-Locus Mutation Frequencies in Mouse Stem-Cell Spermatogonia at Very Low Radiation Dose Rates	213
DNA Repair in Spermatocytes and Spermatids of the Mouse	224
The Use of Alkaline Elution To Study DNA Damage in Developing Mouse Sperm after Exposure to Methyl Methanesulphonate	225
Location of a Gene Controlling Electrophoretic Variation in Mouse Gamma-Crystallins	242
Comparison of Complete Carcinogenesis and Tumor Initiation in Mouse Skin: The Induction of Papillomas by Tumor Initiation-Promotion a Reliable Short Term Assay	243
Studies on the Mechanisms Involved in Multistage Carcinogenesis in Mouse Skin	244
Induction of Retrovirus Gene Expression in Mouse Cells by Some Chemical Mutagens	262
The Influence of Butylated Hydroxytoluene-Induced Cell Proliferation on Mouse Lung Damage after X-Rays or Fission Neutrons	269
Alpha-Difluoromethylornithine, an Irreversible Inhibitor of Ornithine Decarboxylase, Inhibits Tumor Promoter-Induced Polyamine Accumulation and Carcinogenesis in Mouse Skin	273
Adenoma Development in Mouse Lung following Treatment with Possible Promoting Agents	280
mRNAs	
Cloned cDNAs Specific to Flucocorticoid-Induced mRNAs of Rat Liver	135
Multilayer	
Absorption of RF and Microwaves on Spherical Multilayer Biological Systems	405
Multimedia	
A Multimedia Screening-Level Model for Assessing the Potential Fate of Chemicals Released to the Environment	605
Multiphasic	
A Multiphasic Chinese Hamster Mutational System	104
Multiphoton	
Multiphoton Ionization and Third-Harmonic Generation in Atoms and Molecules	318
Multiphoton Ionization of Atoms and Molecules	319
Multiphoton Ionization of Ammonia: Mass Analysis and Photoelectron Spectra	332

Third--Harmonic Generation and Multiphoton Ionization in Rare Gases	387
Multiphoton Ionization Photoelectron Spectroscopy: Xenon and Nitric Oxide	388
Photoelectron Spectrum of Hydrogen Sulfide following Multiphoton Ionization	389
Cooperative Effects on Multiphoton Ionization and Third--Harmonic Generation in the Region near Three--Photon Resonance	398
Multiple	
Multiple Sites of Deletions and Insertions in Variants of a Complex Satellite DNA	241
Multiple--Reflection Raman Gas Cell Design	376
Unique and Multiple Solutions of a Family of Differential Equations Modeling Chemical Reactions	429
Initial Atmospheric Dispersion Modeling in Support of the Multiple--Site Incineration Study	596
Population--Level Effects of Multiple Stresses on Fish and Shellfish	683
Research Needs to Assess Population--Level Effects of Multiple Stresses on Fish and Shellfish	716
Review and Analysis of Existing Modeling Approaches for Assessing Population--Level Effects of Multiple Stresses on Fish and Shellfish	717
Multiprogram	
The Multiprogram Laboratories of the Department of Energy	645
Multistage	
Studies on the Multistage Nature of Radiation Carcinogenesis	70
Multistage Skin Tumor Promotion: Involvement of a Protein Kinase	148
Studies on the Mechanisms Involved in Multistage Carcinogenesis in Mouse Skin	244
Specificity and Mechanism(s) of Promoter Inhibitors in Multistage Promotion	245
Municipal	
Effects of Municipal Sewage Sludge--Cake on Nitrogen and Phosphorus Distributions in a Pine Plantation	528
Methods of Removing Uranium from Drinking Water - A Literature Survey - Present Municipal Water Treatment and Potential Removal Methods	564
Murine	
Cell Specific Activation and Detoxification of Benzo(a)pyrene by Two Clones Murine Testicular Cell Lines	59
Muscle	
Molt--Cycle Associated Changes in Calcium--Dependent Proteinase Activity that Degrades Actin and Myosin in Crustacean Muscle	162
Muscles	
Crustacean Muscles: Atrophy and Regeneration during Molting	161
Mutagen	
Gene Mutation, Quantitative Mutagenesis and Mutagen Screening in Mammalian Cells: Study with the CHO/HGPRT System	103
Effect of Selection Cell Density on the Recovery of Mutagen Induced 6--Thioguanine Resistant Cells (CHO/HGPRT System)	171
Phenotypic Expression Time of Mutagen--Induced 6--Thioguanine Resistance in Chinese Hamster Ovary Cells (CHO/HGPRT System): Expression in Division Arrested Cell Cultures	172
Mutagenesis	
Mutagenesis of Bacteriophage T7 In Vitro by Incorporation of O--6--Methylguanine during DNA Synthesis	47
Gene Mutation, Quantitative Mutagenesis and Mutagen Screening in Mammalian Cells: Study with the CHO/HGPRT System	103
Effect of rev Genes on Chemically--Induced Frameshift Mutagenesis in <i>Saccharomyces Cerevisiae</i>	132
Plate Assay for Chemical-- and Radiation--Induced Mutagenesis of CAN1 in Yeast as a Function	

of Post-Treatment DNA Replication: The Effect of rad6-1	137
Modification of Salmonella/Pour-Plate Incorporation Assay for Mutagenesis Studies	198
Cell-Mediated Mutagenesis and Tumor-Initiating Activity of the Ubiquitous Polycyclic Hydrocarbon, Cyclopenta(c,d) Pyrene	201
Mammalian Mutagenesis: Future Directions	205
Benzo(a)pyrene Metabolites: Formation in Rat Liver Cell-Culture Lines, Binding to Macromolecules, and Mutagenesis in V79 Hamster Cells	232
Mutagenic	
Mutation Induction in Arrested CHO Cell Cultures: Stability of Mutagenic Damage	169
An Analysis of Mutagenic Activity of Quinolines in the CHO/HGPRT System	215
Evaluation of the Mutagenic Potential of Bacterial Polychlorinated Biphenyl Biodegradation Products	216
Metabolic Rationale for the Weak Mutagenic and Carcinogenic Activity of Benzo(e)pyrene	233
In Vitro Replication of DNA Containing O-6-Methylguanine-Kinetic Evidence of Mutagenic Potential of the Alkylated Base	246
Mutagenicity	
Factors Influencing the Development of Spontaneous Mutant Colonies in the Salmonella Mutagenicity Assay	4
Workshop on the Practical Application of the Mammalian Spot Test in Routine Mutagenicity Testing of Drugs and Other Chemicals	21
Cytogenetic Analysis of Mammalian Oocytes in Mutagenicity Studies	22
Effect of Metabolic Activation on the Cytotoxicity and Mutagenicity of 1,2-Dibromoethane in the CHO/HGPRT System	23
Cytotoxicity and Mutagenicity of Five Antitumor Compounds (Ellipticines) in the CHO/HGPRT System	44
Cell-Mediated Mutagenicity in Chinese Hamster V79 Cells by Dibenzpyrenes and Their Bay-Region Disubstituted Fluorinated Derivatives	89
Preparative Scale Organic Extraction and Mutagenicity Analysis of Fly Ash	140
Cytotoxicity and Mutagenicity of Dimethylnitrosamine in Mammalian Cells (CHO/HGPRT System): Enhancement by Calcium Phosphate	173
Mutagenicity of 4,4'-Methylenedianiline (MDA) Derivatives in the Salmonella Histidine Reversion Assay	199
Factors Affecting Mutagenicity of Ethylnitrosourea in the Mouse Specific-Locus Test and Their Bearing on Risk Estimation	208
Unscheduled DNA Synthesis in Mammalian Germ Cells - Its Potential Use in Mutagenicity Testing	226
Dominant Skeletal Mutations: Applications to Mutagenicity Testing and Risk Estimation	228
Mutagens	
Induction of Filamentation by Mutagens and Carcinogens in a Lon(-) Mutant of Escherichia coli	164
The Induction of Chromosome Aberrations in Germ Cells: A Discussion of Factors That Can Influence Sensitivity to Chemical Mutagens	190
Induction of Retrovirus Gene Expression in Mouse Cells by Some Chemical Mutagens	262
DNA Repair Assays as Tests for Environmental Mutagens: A Report of the U.S. EPA Gene-Tox Program	287
Mutant	
Factors Influencing the Development of Spontaneous Mutant Colonies in the Salmonella Mutagenicity Assay	4
Induction of Filamentation by Mutagens and Carcinogens in a Lon(-) Mutant of Escherichia coli	164
Mutants	
Mechanism of Suppression in Drosophila melanogaster. 8. Comparison of Su(S) Alleles for Ability to Suppress the Mutants Purple, Vermilion, and Speck	112
O-6-Methylguanine-DNA Methyl Transferase in Wild-Type and Ada Mutants of E. coli	157

Mutation

- Gene Mutation, Quantitative Mutagenesis and Mutagen Screening in Mammalian Cells: Study with the CHO/HGPRT System 103
- Mutation Induction in Arrested CHO Cell Cultures: Stability of Mutagenic Damage 169
- Effect of Dose Fractionation on Specific-Locus Mutation Induction by Ethylnitrosourea in Mouse Spermatogonia 209
- Mutation Frequencies in Male Mice and the Estimation of Genetic Hazards of Radiation in Men 212
- Specific-Locus Mutation Frequencies in Mouse Stem-Cell Spermatogonia at Very Low Radiation Dose Rates 213
- A System for the Molecular Analysis of Mutation in pSV2gpt Transfected CHO Cells 264
- Aspergillus nidulans*: Systems and Results of Tests for Chemical Induction of Mitotic Segregation and Mutation. I. Diploid and Duplication Assay Systems. A Report of the U.S. EPA Gene-Tox Program 286
- Aspergillus nidulans*: Systems and Results of Tests for Induction of Mitotic Segregation and Mutation. II. Haploid Assay Systems and Overall Response of All Systems. A Report of the U.S. EPA Gene-Tox Program 293

Mutational

- A Multiphasic Chinese Hamster Mutational System 104
- The Need to Develop a Short-Term Chinese Hamster In Vivo Specific Locus Mutational Assay 106

Mutations

- Quantitation and Analysis of Reverse Mutations at the HGPRT Locus in Cultured Mammalian Cells 72
- Difference in the Ratio of Dominant-Lethal Mutations to Heritable Translocations Produced in Mouse Spermatids and Fully Mature Sperm after Treatment with Triethylenemelamine (TEM) 74
- Lack of Association between Induction of Dominant-Lethal Mutations and Induction of Heritable Translocations with Benzo(a)pyrene (BaP) in Postmeiotic Germ Cells of Male Mice 75
- The Induction of Specific Locus Mutations and Sister Chromatid Exchanges by 5-Bromo- and 5-Chloro-Deoxyuridine 91
- Incorporation of CldU and BrdU into DNA and the Induction of SCE and Mutations 92
- The Effect of Mutations in the *uvrD* Cistron of *Escherichia coli* on Repair Resynthesis 129
- Induction and Expression of Mutations in Mammalian Cells in the Absence of DNA Synthesis and Cell Division 170
- How Predictive is the Mouse Spot Test for Heritable Gene Mutations? 203
- Effect of Dose Fractionation on the Ethylnitrosourea Induction of Specific-Locus Mutations in Mouse Spermatogonia 210
- Dose-Response Curve for Ethylnitrosourea-Induced Specific-Locus Mutations in Mouse Spermatogonia 211
- Induced Mutations in Mice and Genetic Risk Assessment in Humans 227
- Dominant Skeletal Mutations: Applications to Mutagenicity Testing and Risk Estimation 228
- Test of Dichlorvos Using the Sensitive-Indicator Method for Dominant Skeletal Mutations in Mice 229

Myeloblastosis

- Studies on the Function of the Non-primer tRNAs Associated with the 70S RNA of Avian Myeloblastosis Virus 272

Myeloid

- Mouse Myeloid Leukemia as an Experimental Model for Monitoring Progression of Leukemia and Chemotherapy 12
- The Control of Phospholipid Methylation by Phorbol Diesters in Differentiating Human Myeloid HL-60 Leukemia Cells 99

Myocardial

Relationship of Vanadium, Cadmium, Lead, Nickel, Cobalt and Soft Water to Myocardial and Vascular Toxicity and Cardiovascular Disease 202

Synthesis of 15-(p-Iodophenyl)-6-Tellurapentadecanoic Acid: A New Myocardial Imaging Agent 333

Synthesis and Biological Evaluation of 17-[I-131]Iodo-9-Telluraheptadecanoic Acid - A Potential Myocardial Imaging Agent 334

A New, Well-Retained Myocardial Imaging Agent: Radioiodinated 15-(p-Iodophenyl)-6-Tellurapentadecanoic Acid 335

New Myocardial Imaging Agents - The Influence of Chain Length on the Heart Uptake of Se-75-Labeled Fatty Acids 363

New Myocardial Imaging Agents: A Unique Approach 598

New Myocardial Imaging Agents: A Unique Approach 599

Myofibrillar

Crustacean Calcium-Ion-Dependent Proteinase that Degrades Actin, Myosin, and Other Myofibrillar Proteins 163

Myosin

Molt-Cycle Associated Changes in Calcium-Dependent Proteinase Activity that Degrades Actin and Myosin in Crustacean Muscle 162

Crustacean Calcium-Ion-Dependent Proteinase that Degrades Actin, Myosin, and Other Myofibrillar Proteins 163

Myristate

Induction of Differentiation of Human Promyelocytic Leukemia (HL-60) Cells by Teleocidin B and Phorbol-13-Myristate-13-Acetate 108

Na

Development of Na(Sup +)-Dependent Phlorizin Binding Sites in a Clone of LLC-PK1 Cells 6

A Model for the Differentiation of Na-Dependent Hexose Transport Capacity in a Population of LLC-PK(Sub 1) Cells 35

Regulation by Turnover of Na,K-ATPase in HeLa Cells 186

Soil Radiochromatography Using Na-22, Sr-85, and Co-58 704

National

Personnel Dosimetry Intercomparison Studies at the Oak Ridge National Laboratory 412

Dosimetry Training Programs at Oak Ridge National Laboratory 413

Research Efforts on Environmental Transport of Hazardous Materials at Oak Ridge National Laboratory 537

The Oak Ridge National Laboratory Registry of Notable Honors and Awards in Science and Engineering, 1943-May 1982, 4th Edition 571

Publications of Life Sciences Synthetic Fuels of Oak Ridge National Laboratory 577

Environmental Analysis of the Operation of Oak Ridge National Laboratory (X-10 Site) 627

Oak Ridge National Laboratory Institutional Plan FY 1983-1988 642

Biomedical and Environmental Sciences Programs at the Oak Ridge National Laboratory 643

Radionuclide Characterization of Subsurface Soil on the Site of Building 3505 at Oak Ridge National Laboratory 647

Guidance Manual for Department of Energy Compliance with the Clean Water Act: National Pollutant Discharge Elimination System (NPDES) 680

Naturally

A Naturally Occurring Pyrimidodiazepine in *Drosophila*: Chemical and Spectral Properties and Relationship to Drosopterin 111

Nature

Studies on the Multistage Nature of Radiation Carcinogenesis 70

Chemical Carcinogenesis: Nature's Metabolic Mistake 231

ND

Calibration of the Indium Foil Used for Criticality Accident Dosimetry in the UCC-ND Employee Identification Badge 649

Necrosis

Pulmonary Toxicity of Methylcyclopentadienyl Manganese Tricarbonyl (MMT): Nonciliated Bronchiolar Epithelial (Clara) Cell Necrosis and Alveolar Damage in the Mouse Rat and Hamster 81

Nonciliated Bronchiolar Epithelial (Clara) Cell Necrosis Induced by Organometallic Carbonyl Compounds 86

Negative

Excited States of Polar Negative Ions 331

Negaunee

Metamorphic Petrology of the Negaunee Iron Formation, Marquette District, Northern Michigan: Mineralogy, Metamorphic Reactions, and Phase Equilibria 482

Neoplasms

Neoplasms of the Mouse Integument and Harderian Gland 100

Neoplastic

Changes in DNA Content of Rat Tracheal Epithelial Cells during Neoplastic Progression In Vitro 20

Histochemical Localization of Gamma-Glutamyltranspeptidase (GGT) and Concanavalin A in Normal, Preneoplastic and Neoplastic Epithelia 125

Localization and Quantitation of Presumptive Neoplastic Cell Populations (PNCP) in Tracheas Exposed to Dimethylbenz(a)anthracene (DMBA) 150

Development and Progression of Neoplastic Disease. Morphologic and Cell Culture Studies with Airway Epithelium 168

The Effect of Carcinogen Release Rate on the Incidence of Preneoplastic and Neoplastic Lesions of the Respiratory Tract Epithelium in Rats 237

Effect of Carcinogen Dose on the Dynamics of Neoplastic Development in Rat Tracheal Epithelium 263

NEPA

Guidelines for Preparing Environmental Analyses for Department of Energy NEPA Documents 671

Network

CHNHYD: A CHaNNel HYDrodynamic Model for Simulating Flows and Water Surface Elevations in a Stream/River Network 720

Neurospora

The Functional Unit of the Arom Conjugate in Neurospora 116

Neutron

Neutron Scattering and X-Ray Diffraction of Nucleosomes and Nucleosome - HMG Complexes 26

Neutron Scattering Studies and Modeling of High Mobility Group 14 Core Nucleosome Complex 266

Partial Optimization of Electrochemical-Etching Parameters for Highly Sensitive Cr-39 Fast Neutron Dosimeters 329

New Gas Mixture Improves Performance of He-3 Neutron Counters 431

Photon and Neutron Fluence-to-Kerma Conversion Factors for ICR-1975 Reference Man Using Improved Elemental Compositions for Bone and Marrow of the Skeleton 601

Neutrons

The Influence of Butylated Hydroxytoluene-Induced Cell Proliferation on Mouse Lung Damage after X-Rays or Fission Neutrons 268

The Influence of Split Dose Fractionation Interval on the Carcinogenic Effects of Fission Spectrum Neutrons 269

Neutrons in Hiroshima? 359

Nickel

Relationship of Vanadium, Cadmium, Lead, Nickel, Cobalt and Soft Water to Myocardial and Vascular Toxicity and Cardiovascular Disease 202

Aspergillus

Aspergillus nidulans: Systems and Results of Tests for Chemical Induction of Mitotic Segregation and Mutation. I. Diploid and Duplication Assay Systems. A Report of the U.S. EPA Gene-Tox Program 286

Aspergillus nidulans: Systems and Results of Tests for Induction of Mitotic Segregation and Mutation. II. Haploid Assay Systems and Overall Response of All Systems. A Report of the U.S. EPA Gene-Tox Program 293

Nitric

Multiphoton Ionization Photoelectron Spectroscopy: Xenon and Nitric Oxide 388

Nitrobenzo

Metabolism of 6-Nitrobenzo(a)pyrene by Hamster Embryo Cells and Rat Liver Microsomes 265

Nitrogen

Impulse Breakdown in Sulfur Hexafluoride, Sulfur Hexafluoride/Nitrogen and Sulfur Hexafluoride/Perfluorocarbon Mixtures 325

Effects of Sawlog vs. Whole-Tree Harvesting on the Nitrogen, Phosphorus, Potassium, and Calcium Budgets of an Upland Mixed Oak Forest 491

Sulfur and Nitrogen Uptake by Loblolly Pine Seedlings as Influenced by Soil Nitrogen and Sulfur Additions 495

Sulfur and Nitrogen Uptake by Loblolly Pine Seedlings as Influenced by Soil Nitrogen and Sulfur Additions 495

Nitrogen Ion Utilization by Tulip Poplar (Liriodendron tulipifera L.) Seedlings 504

Responses of Radish to Nitrogen Dioxide, Sulfur Dioxide, and Ozone in Combination at Three Concentrations 527

Effects of Municipal Sewage Sludge-Cake on Nitrogen and Phosphorus Distributions in a Pine Plantation 528

Nitrogenous

Structure-Toxicity Relationships of Selected Nitrogenous Heterocyclic Compounds. II. Dinitrogen Molecules 220

Structure-Toxicity Relationships of Selected Nitrogenous Heterocyclic Compounds. III. Relations Using Molecular Connectivity 223

No

The Effect of Temperature on the Toxicity of the Water Soluble Fractions of Diesel Fuel No. 2 and H-Coal Crude Oil to Daphnia magna 713

Training Course No 1: The Implementation of FEMWATER (ORNL-5567) Computer Program Final Report 721

Training Course No. 2: The Implementation of FEMWASTE (ORNL-5601) Computer Program - Final Report 722

Nonciliated

Pulmonary Toxicity of Methylcyclopentadienyl Manganese Tricarbonyl (MMT): Nonciliated Bronchiolar Epithelial (Clara) Cell Necrosis and Alveolar Damage in the Mouse Rat and Hamster 81

Nonciliated Bronchiolar Epithelial (Clara) Cell Necrosis Induced by Organometallic Carbonyl Compounds 86

Nonenzymatic

Biosynthesis, Nonenzymatic Synthesis and Purification of the Intermediate in Synthesis of Sepiapterin in Drosophila 49

Nonlinear

Oscillation Criteria for Nonlinear Bianchi Equations 419

Nonzero Solutions of Nonlinear Integral Equations Modeling Infectious Disease 428

Nonsubstitutional

Zone Refining of Nonsubstitutional Impurities during Pulsed Laser Annealing 440

Nontumorigenic

Cytoskeletal Proteins from Tumorigenic and Nontumorigenic Rat Respiratory Tract Epithelial Cells 235

Nonzero

Nonzero Solutions of Nonlinear Integral Equations Modeling Infectious Disease 428

Normal

Separation of Epidermal Cells by Density Centrifugation: A New Technique for Studies on Normal and Pathological Differentiation 61

Histochemical Localization of Gamma-Glutamyltranspeptidase (GGT) and Concanavalin A in Normal, Preneoplastic and Neoplastic Epithelia 125

Propagation of Normal Human Epithelial Cell Populations Using an in Vivo Culture System: Description and Applications 127

DNA Repair in Normal Human and Xeroderma Pigmentosum Group A Fibroblasts following Treatment with Various Methanesulfonates and the Demonstration of a Long-Patch (UV-Like) Repair Component 248

Normalized

Comparison of Observed and Predicted Normalized Air Concentrations for Particles Released from a Height of 111 Meters 384

North

Transport of Organic Carbon to the Sea by Rivers of North America: A Synthesis of Existing Data 513

Northern

Metamorphic Petrology of the Negaunee Iron Formation, Marquette District, Northern Michigan: Mineralogy, Metamorphic Reactions, and Phase Equilibria 482

Norton

Characterization of Metal and Debris Samples from the Shpack Landfill, Norton, Massachusetts 586

Notable

The Oak Ridge National Laboratory Registry of Notable Honors and Awards in Science and Engineering, 1943-May 1982, 4th Edition 571

nova

The Structure of Gene-Size Chromatin Fragments from the Macronucleus of Oxytricha nova 133

Novel

A Novel Method for Quantitative Cutaneous Toxicokinetics 101

Spread of Organisms with Novel Genotypes: Thoughts from an Ecological Perspective 701

Novikoff

A Yeast Endoribonuclease Stimulated by Novikoff Hepatoma Small Nuclear RNAs U1 and U2 254

Novobiocin

Studies on the Inhibition of Ultraviolet- and Methyl Methanesulfonate-Induced Damage in the DNA of Human Fibroblasts by Novobiocin 250

Nozzle

Non-Maxwellian Velocity Distributions and Molecular Beam Intensities in Sonic Nozzle Expansions 362

Np

Mobile Species of Pu, Am, Cm, Np, and Te in the Environment 453

NPDES

Guidance Manual for Department of Energy Compliance with the Clean Water Act: National Pollutant Discharge Elimination System (NPDES) 600

NRC

A Review of NRC Rules and Regulations Related to the Disposal of High-Level Radioactive Waste in Geologic Repositories 670

Nuclear

- Benzo(a)pyrene-Binding Proteins of Hamster Embryo Cell Nuclei: Comparison of Nuclear Isolation Procedures 142
- Expectation Values for Low Resolution Slit-Scan Flow Prescreening: Influence of Nuclear Shape and DNA Density 166
- A Yeast Endoribonuclease Stimulated by Novikoff Hepatoma Small Nuclear RNAs U1 and U2 254
- Occupational Risk from Nuclear Power 439
- Comparison of the Radiological Impacts of Thorium and Uranium Nuclear Fuel Cycles 556
- Cleanup and Treatment of Radioactively Contaminated Land Including Areas Near Nuclear Facilities - A Selected Bibliography 566
- Nuclear Facility Decommissioning and Site Remedial Actions - A Selected Bibliography Volume 3 575
- Eighteenth Nuclear Accident Dosimetry Intercomparison Study: August 10-14, 1981 614
- Technology and Cost of Termination Surveys Associated with Decommissioning of Nuclear Facilities 618

Nuclei

- Benzo(a)pyrene-Binding Proteins of Hamster Embryo Cell Nuclei: Comparison of Nuclear Isolation Procedures 142

Nucleoprotein

- Cell-Free Extracts That Induce Correct Transcription Initiation by RNA Polymerase II Convert SV40 DNA to Ordered Nucleoprotein Structures 239
- Conversion of Simian Virus 40 DNA to Ordered Nucleoprotein Structures by Extracts that Direct Accurate Initiation by Eukaryotic RNA Polymerase II 240

Nucleoside

- Salvage of the Modified Nucleoside Ribothymidine in Cultured Hamster Embryo Cells 139

Nucleosome

- Neutron Scattering and X-Ray Diffraction of Nucleosomes and Nucleosome - HMG Complexes 26
- Conformation of the HMG 14 Nucleosome Core Complex from Flow Birefringence 83
- Neutron Scattering Studies and Modeling of High Mobility Group 14 Core Nucleosome Complex 266

Nucleosomes

- Neutron Scattering and X-Ray Diffraction of Nucleosomes and Nucleosome - HMG Complexes 26

Nucleotide

- 3-Bromo-2-Ketoglutarate: A Substrate and Affinity Label for Diphosphopyridine Nucleotide-Dependent Isocitrate Dehydrogenase 12
- 3,4-Didehydro-2-Ketoglutarate: An Affinity Label for Diphosphopyridine Nucleotide-Dependent Isocitrate Dehydrogenase 14
- Compartmentation of the Nucleotide Pool 90

Nude

- Endocrine Morphology and Reproductive Function in Athymic Nude Mice 42
- Resistance of Germfree Athymic Nude Mice to Two-Stage Skin Carcinogenesis 102

Numerical

- An Interactive Statistical Distribution Analysis Program Utilizing Numerical and Graphical Methods 592

Nutrient

- The Effects of Acid Rain on Forest Nutrient Status 490
- Nutrient Spiralling in Streams: Implications for Nutrient Limitation and Invertebrate Activity 515
- Nutrient Spiralling in Streams: Implications for Nutrient Limitation and Invertebrate

- Activity 515
 Prescribed Fire: Effects on Water Quality and Forest Nutrient Cycling 529
 The Growth, Nutrient Absorption, and Moisture Status of Selected Woody Species in Coal Mine Spoil in Response to a Induced Infection by the Ectomycorrhizal Fungus *Pisolithus tinctorius* 718
 The Long-Term Nutrient Retention Properties of Forest Ecosystems: A Simulation Investigation 719
- O**
 Mutagenesis of Bacteriophage T7 In Vitro by Incorporation of O-6-Methylguanine during DNA Synthesis 47
 O-6-Methylguanine-DNA Methyl Transferase in Wild-Type and Ada Mutants of *E. coli* 157
 Removal of O(Sup 6)-Methylguanine from DNA by Human Liver Fractions 179
 In Vitro Replication of DNA Containing O-6-Methylguanine-Kinetic Evidence of Mutagenic Potential of the Alkylated Base 246
- Oak**
 Personnel Dosimetry Intercomparison Studies at the Oak Ridge National Laboratory 412
 Dosimetry Training Programs at Oak Ridge National Laboratory 413
 Cycling of Organic and Inorganic Sulfur in a Chestnut Oak Forest 489
 Effects of Sawlog vs. Whole-Tree Harvesting on the Nitrogen, Phosphorus, Potassium, and Calcium Budgets of an Upland Mixed Oak Forest 491
 Research Efforts on Environmental Transport of Hazardous Materials at Oak Ridge National Laboratory 537
 The Oak Ridge National Laboratory Registry of Notable Honors and Awards in Science and Engineering, 1943-May 1982, 4th Edition 571
 Publications of Life Sciences Synthetic Fuels of Oak Ridge National Laboratory 577
 Environmental Analysis of the Operation of Oak Ridge National Laboratory (X-10 Site) 627
 Oak Ridge National Laboratory Institutional Plan FY 1983-1988 642
 Biomedical and Environmental Sciences Programs at the Oak Ridge National Laboratory 643
 Radionuclide Characterization of Subsurface Soil on the Site of Building 3505 at Oak Ridge National Laboratory 647
 Resource Data Inventory for the Oak Ridge Area 688
 White-Tailed Deer (*Odocoileus virginianus*) on the Department of Energy's Oak Ridge Reservation: 1980 Status Report 705
 White-Tailed Deer (*Odocoileus virginianus*) on the Department of Energy's Oak Ridge Reservation: 1981 Status Report 706
 Survey of Cooling Towers Within Oak Ridge Operations for the Presence of Legionnaire's Disease Bacterium 712
- Oblate**
 Radiative Decay of Surface Plasmons on Oblate Spheroids 375
- Occupational**
 Occupational Radiation Exposures at a Fusion Power Station 323
 Occupational Risk from Nuclear Power 439
- October**
 Chemicals Identified in Human Biological Media, A Data Base: Third Annual Report, October 1981, Volume 3, Part 2 Records 3501-5271 557
 Chemicals Identified in Human Biological Media, A Data Base: Third Annual Report, October 1981, Volume 3, Part 1 558
 Chemicals Identified in Feral and Food Animals, A Data Base: First Annual Report - October 1981 562
 Gaseous Dielectrics Research and Applications Semiannual Report - October 1, 1981-March 31, 1982 583
 Health Risk Analysis - Proceedings of the Third Life Sciences Symposium, Gatlinburg, TN, October

- ber 27-30, 1980 644
 Presence of Pathogenic Microorganisms in Power Plant Cooling Waters Report for October 1, 1979, to September 30, 1981 711
- Odocoileus**
 White-Tailed Deer (*Odocoileus virginianus*) on the Department of Energy's Oak Ridge Reservation: 1980 Status Report 705
 White-Tailed Deer (*Odocoileus virginianus*) on the Department of Energy's Oak Ridge Reservation: 1981 Status Report 706
- Oil**
 Percutaneous Acute and Chronic Renal Toxicity Induced by Shale Oil and Petroleum Derived Jet and Diesel Fuel 53
 Renal Toxicity of Middle Distillates of Shale Oil and Petroleum in Mice 54
 Effects of the Water-Soluble Fraction of a Coal-Derived Oil on Pond Microcosms 490
 Enhanced Oil Recovery: Environmental Issues and State Regulatory Programs 510
 The Effect of Temperature on the Toxicity of the Water Soluble Fractions of Diesel Fuel No. 2 and H-Coal Crude Oil to *Daphnia magna* 713
- Oklahoma**
 Energy Analysis of Oklahoma Rangelands and Improved Pastures 496
- Oncogenic**
 Cell Shape Changes in Oncogenic Transformation 94
- oocyte**
 A Temporal Study at the Ultrastructural Level of the Developing Pro-oocyte of *Drosophila melanogaster* 78
- Oocytes**
 Cytogenetic Analysis of Mammalian Oocytes in Mutagenicity Studies 22
- Operating**
 Low-Level Waste Disposal: Facility Design, Construction, and Operating Practices, Washington, DC, September 29-30, 1982 - Abstracts 620
 Analysis of Environmental Issues Related to Small-Scale Hydroelectric Development. VI. Dissolved Oxygen Concentrations Below Operating Dams 659
- Operation**
 An Approach to Optimizing Reservoir Operation for Downstream Aquatic Resources 531
 Environmental Analysis of the Operation of Oak Ridge National Laboratory (X-10 Site) 627
- Operational**
 Environmetrics of the Long-Term Field Studies of the Environmental Water Quality Operational Studies 674
- Operations**
 Survey of Cooling Towers Within Oak Ridge Operations for the Presence of Legionnaire's Disease Bacterium 712
- Optical**
 Optical Properties of Liquid Pb and Bi between 0.6 and 3.7eV 351
 Laser-Optical Studies of the Spontaneous-Fission Isomer Am-240m 434
- Optimization**
 Partial Optimization of Electrochemical Etching Parameters for Highly Sensitive Cr-39 Fast Neutron Dosimeters 329
- Optimizing**
 An Approach to Optimizing Reservoir Operation for Downstream Aquatic Resources 531
- Oral**
 Dark Cells in Human Oral Leukoplakias 124
 Mathematical Studies of the Absorption into Blood of Am-241 following Oral Intubation into the Gut of Miniature Swine 305
- Orally**
 Estimates of Dose to Systemic Organs and GI Tract Based on Data from Miniature Swine Orally Intubated with a Single Dose of Am-241 Citrate 306

Ordered

Cell-Free Extracts That Induce Correct Transcription Initiation by RNA Polymerase II Convert SV40 DNA to Ordered Nucleoprotein Structures 239

Conversion of Simian Virus 40 DNA to Ordered Nucleoprotein Structures by Extracts that Direct Accurate Initiation by Eukaryotic RNA Polymerase II 240

Organic

A Simple Reverse Phase Column Clean Up for the Determination of Sulfate in Aqueous Leachates Containing Organic Compounds 1

Preparative Scale Organic Extraction and Mutagenicity Analysis of Fly Ash 140

Simple Model for Electron Inelastic Mean Free Path: Application to Condensed Organic Materials 300

Storage and Release of Organic Carbon in Peninsular Malaysia 459

Cycling of Organic and Inorganic Sulfur in a Chestnut Oak Forest 489

Transport of Organic Carbon to the Sea by Rivers of North America: A Synthesis of Existing Data 513

Organic Carbon Spiralling in Stream Ecosystems 514

Organics

Environmental Aspects of Organics in Selected Coal Conversion Solid Wastes 456

Organisms

Spread of Organisms with Novel Genotypes: Thoughts from an Ecological Perspective 701

Organometallic

Nonciliated Bronchiolar Epithelial (Clara) Cell Necrosis Induced by Organometallic Carbonyl Compounds 86

Organs

Estimates of Dose to Systemic Organs and GI Tract Based on Data from Miniature Swine Orally Intubated with a Single Dose of Am-241 Citrate 306

Origins

On Light, Colors, and Origins of Spectroscopy 138

Ornithine

Alpha-Difluoromethylornithine, an Irreversible Inhibitor of Ornithine Decarboxylase, Inhibits Tumor Promoter-Induced Polyamine Accumulation and Carcinogenesis in Mouse Skin 275

ORNL

Use of Gamma-Ray Detection Instrumentation in ORNL's Off-Site Radiological Survey Program 307

ORNL-ICRP Dosimetric Data Base 432

Findings of a Recent ORNL Review of Dosimetry for the Japanese Atomic-Bomb Survivors 600

Formulations of the Physiochemical Processes in the ORNL Unified Transport Model for Toxicants (UTM-TOX) (Interim Report) 657

Training Course No 1: The Implementation of FEMWATER (ORNL-5567) Computer Program Final Report 721

Training Course No. 2: The Implementation of FEMWASTE (ORNL-5601) Computer Program - Final Report 722

Orocol

Germination and Growth Effects of Hexavalent Chromium in Orocol (A Corrosion Inhibitor) on *Phaseolus vulgaris* 522

Effects of Orocol TL (a Corrosion Inhibitor) on Germination and Growth of Bush Beans 693

Oscillation

Oscillation Criteria for Nonlinear Bianchi Equations 419

Osmotic

The Response of Granulocytes to Osmotic Shrinkage 8

Ouabain

Uptake of Tritiated Ouabain from the Cell Surface into the Lysosomal Compartment of HeLa Cells 34

Outgrowths

- Detection of Ductal Dysplasia in Mammary Outgrowths Derived from Carcinogen-Treated Virgin Female BALB/c Mice 55

Output

- A Construct for Analysis of Ecosystem Perturbations Based on Input/Output Analysis 697

Ovariectomized

- Causes of Death and Their Contribution to Radiation-Induced Life Shortening in Intact and Ovariectomized Mice 258

Ovary

- The Ovary of *Fundulus heteroclitus* 25
 Stereo Electron Microscope Studies of Mitotic Chromosomes from Chinese Hamster Ovary Cells 134
 Protein Turnover and Phenotypic Expression in the Chinese Hamster Ovary Cell/Hypoxanthine-Guanine Phosphoribosyl Transferase (CHO/HGPRT) System 141
 Phenotypic Expression Time of Mutagen-Induced 6-Thioguanine Resistance in Chinese Hamster Ovary Cells (CHO/HGPRT System): Expression in Division Arrested Cell Cultures 172
 Calcium-Enhanced Cellular Uptake of Rat Liver S9 by Chinese Hamster Ovary Cells 253

Overall

- Aspergillus nidulans*: Systems and Results of Tests for Induction of Mitotic Segregation and Mutation. II. Haploid Assay Systems and Overall Response of All Systems. A Report of the U.S. EPA Gene-Tox Program 293

Oxide

- Multiphoton Ionization Photoelectron Spectroscopy: Xenon and Nitric Oxide 388

Oxygen

- The Reaction of Li with Oxygen in the Presence of He or Ar 370
 Analysis of Environmental Issues Related to Small-Scale Hydroelectric Development. VI. Dissolved Oxygen Concentrations Below Operating Dams 659

Oxygenase

- Inactivation of *Rhodospirillum rubrum* Ribulose Bisphosphate Carboxylase/Oxygenase by the Affinity Label 2-N-Chloroamino-2-Deoxypentitol 1,5-Bisphosphate 29
 2-Bromoacetylaminopentitol 1,5-Bisphosphate as an Affinity Label for Ribulose Bisphosphate Carboxylase/Oxygenase from *Rhodospirillum rubrum* 66
 Identification of an Active-Site Methionyl Residue in Ribulose Bisphosphate Carboxylase/Oxygenase 84
 Purification and Sequencing of Cyanogen Bromide Fragments from Ribulosebisphosphate Carboxylase/Oxygenase from *Rhodospirillum rubrum* 85
 Reexamination of the Binding Site for Pyridoxal 5'-Phosphate in Ribulose Biophosphate Carboxylase/Oxygenase from *Rhodospirillum rubrum* 95
 Ribulosebisphosphate Carboxylase/Oxygenase from *Rhodospirillum rubrum* 217

Oxytricha

- The Structure of Gene-Size Chromatin Fragments from the Macronucleus of *Oxytricha nova* 133

Ozonated

- Response of Chronically Ozonated Soybean Plants to an Acute Ozone Exposure 492

Ozone

- Compilation of a Biogenic Hydrocarbon Emissions Inventory for Evaluating Ozone Control Strategies in the San Francisco Bay Area 436
 Response of Chronically Ozonated Soybean Plants to an Acute Ozone Exposure 492
 Responses of Radish to Nitrogen Dioxide, Sulfur Dioxide, and Ozone in Combination at Three Concentrations 527
 Ozone Flux in *Glycine max* (L.) Merr.: Sites of Regulation and Relationship to Leaf Injury 543
 Variation in Plant Response to Ozone: A Conceptual Model of Physiological Events 544

Packaging

- In Vitro Packaging of Bacteriophage T7 DNA Requires ATP 152
 DNA Packaging In Vitro by an Isolated Bacteriophage T7 Procapsid 153

Pair

- DNA Repair in a Congenic Pair of Mice with Different Longevities 32

Pairs

- Stabilization of the Tertiary Structure of Yeast Phenylalanine tRNA by the Hexammine Cobaltic Ion: X-Ray Evidence for Hydrogen Bonding to Pairs of Guanine Bases in the Major Groove 96

palinuridae

- An Indexed Bibliography of the Spiny (Rock) Lobsters (Decapoda:palinuridae) 494

Panels

- Formaldehyde Release from Simulated Wall Panels Insulated with Urea-Formaldehyde Foam Insulation 340

Papillomas

- Keratin Modifications in Epidermis, Papillomas and Carcinomas during Two-Stage Carcinogenesis in the SENCAR Mouse 165
 Comparison of Complete Carcinogenesis and Tumor Initiation in Mouse Skin: The Induction of Papillomas by Tumor Initiation-Promotion a Reliable Short Term Assay 243

Parameter

- Parameter Constraints in a Stream Ecosystem Model: Incorporation of a Priori Information in Monte Carlo Error Analysis 517

Parameters

- Partial Optimization of Electrochemical-Etching Parameters for Highly Sensitive Cr-39 Fast Neutron Dosimeters 329
 Uncertainty Estimates for Site-Specific Atmospheric Diffusion Parameters 382
 The Influence of Food Concentration and Container Volume on Life History Parameters of *Diaptomus dorsalis* Marsh from Subtropical Florida 473

Parish

- Environmental Assessment, U.S. Ethanol Corporation - Loan Guarantee Application, East Baton Rouge Parish, Louisiana 633
 Environmental Assessment - Agrifuels Refining Corporation - Loan Guarantee Application, Iberia Parish, Louisiana 634

Participants

- Proceedings of the Fourth Annual Participants' Information Meeting on DOE Low-Level Waste Management Program 686

Particle

- Single Particle Detection: Gaseous Devices 347
 A Core Plasma Model of Charged Particle Track Formation in Insulators 402

Particles

- Comparison of Observed and Predicted Air Concentrations for 18.6 μ m Fluorescein Particles 374
 Comparison of Observed and Predicted Normalized Air Concentrations for Particles Released from a Height of 111 Meters 384
 Feasibility Studies for Improving Gas Insulation By Coating Contaminating Particles 395
 Energy Losses by Swift Charged Particles in the Bulk and at the Surface of Condensed Matter 400
 The Wake of Charged Particles in Condensed Matter 403
 Atmospheric Deposition and Plant Assimilation of Gases and Particles 405

Partitioning

- Energy Partitioning in Largemouth Bass under Conditions of Seasonally Fluctuating Prey Availability 447

Parvovirus

- Comparative Physicochemical and Biological Properties of Two Strains of Kilham Rat Virus, a Non-Defective Parvovirus 158

Parvoviruses

- Calibration of Denaturing Agarose Gels for Molecular Weight Estimation of DNA: Size Determination of the Single-Stranded Genomes of Parvoviruses 247

Passaged

- Immunological Properties of in Vitro Passaged Carcinomas and Propagated Clones from Different Cell Lines 114

Pastures

- Energy Analysis of Oklahoma Rangelands and Improved Pastures 496

Patch

- DNA Repair in Normal Human and Xeroderma Pigmentosum Group A Fibroblasts following Treatment with Various Methanesulfonates and the Demonstration of a Long-Patch (UV-Like) Repair Component 229

Pathogenesis

- Pathogenesis of Lesions Induced in Rat Lung by Chronic Tobacco Smoke Inhalation 93

Pathogenic

- Presence of Pathogenic Microorganisms in Power Plant Cooling Waters Report for October 1, 1979, to September 30, 1981 711

Pathological

- Separation of Epidermal Cells by Density Centrifugation: A New Technique for Studies on Normal and Pathological Differentiation 61

Paths

- Energy Losses and Inelastic Mean Free Paths of Low-Energy Electrons in Polyethylene 298
Simple Model for Electron Inelastic Mean Free Paths: Application to Condensed Organic Materials 300
Electron Inelastic Mean Free Paths in Several Solids for Energies from 200 eV to 10 keV 301
Photoemission and Electron Mean Free Paths in Liquid Formamide in the Vacuum UV 308
Yields and Mean Free Paths of Photoelectrons from Liquid Hexamethyl Phosphoric Thiamide 309

Pathway

- EPA Liquid Release Pathway Health Impact Code: Feasibility Study 591

Pathways

- Pathways for Efflux of Hexoses during Differentiation of LLC-PK1 Cells in Culture 277

Patterson

- Scientific Review and Critique of R. L. Patterson's: Production, Mortality, and Power-Plant Entrainment of Larval Yellow Perch in Western Lake Erie 715

Pb

- Optical Properties of Liquid Pb and Bi between 0.6 and 3.7eV 351

Peat

- Using Peat for Energy: Potential Environmental Constraints 526

Peer

- Peer Review Mechanism for the Toxicology Data Bank 288

Peninsular

- Storage and Release of Organic Carbon in Peninsular Malaysia 459

Perch

- Corrected Analysis of the Ability to Detect Reductions in Year-Class Strength of the Hudson River White Perch (*Morone americana*) Population 549
The Impact of Impingement on the Hudson River White Perch Population: Final Report 655
Scientific Review and Critique of R. L. Patterson's: Production, Mortality, and Power-Plant Entrainment of Larval Yellow Perch in Western Lake Erie 715

Percutaneous

- Percutaneous Acute and Chronic Renal Toxicity Induced by Shale Oil and Petroleum Derived Jet and Diesel Fuel 53

Perfluoroalkanes

- Pressure-Dependent Electron Attachment Rates in Perfluoroalkanes and Perfluoropropylene and Their Effect on the Breakdown Strength of These Gases 346

Perfluorocarbon

- Impulse Breakdown in Sulfur Hexafluoride, Sulfur Hexafluoride/Nitrogen and Sulfur Hexafluoride/Perfluorocarbon Mixtures 325
- Studies of Spark Decomposition Products of Sulfur Hexafluoride and Sulfur Hexafluoride/Perfluorocarbon Mixtures 407

Perfluoropropylene

- Pressure-Dependent Electron Attachment Rates in Perfluoroalkanes and Perfluoropropylene and Their Effect on the Breakdown Strength of These Gases 346

Peripheral

- Evaluation of Radiation-Induced Chromosomal Aberrations in Human Peripheral Blood Lymphocytes In Vitro 16

Peritoneal

- Antigen Presentation by Peritoneal Macrophages from Young Adult and Old Mice 183

Permits

- Guidance Manual for Department of Energy Compliance with Corps of Engineers Permits on Dredging and Filling Activities 660

Peroxidation

- Lipid Peroxidation of S9 and the CHO/HGRPT System 259

Peroxides

- Effects of Peroxides on Rodent Skin: Epidermal Hyperplasia and Tumor Promotion 126

Personnel

- Personnel Dosimetry Intercomparison Studies at the Health Physics Research Reactor: A Summary (1974-1980) 410
- Personnel Dosimetry Intercomparison Studies at the Oak Ridge National Laboratory 412

Perspective

- The Toxicology Information Response Center: A Ten-Year Perspective 292
- Spread of Organisms with Novel Genotypes: Thoughts from an Ecological Perspective 701

Perspectives

- The Carbon Dioxide Question: Perspectives for 1982 282
- Introduction and Perspectives of Plant Genetic and Cytogenetic Assays: A Report of the U.S. Environmental Protection Agency Gene-Tox Program 284

Perturbation

- Terrestrial Perturbation Experiments for Environmental Assessment 541

Perturbations

- A Construct for Analysis of Ecosystem Perturbations Based on Input/Output Analysis 697

Perturbed

- The Role of Lake and Reservoir Sediments as Sinks in the Perturbed Global Carbon Cycle 512

Petroleum

- Percutaneous Acute and Chronic Renal Toxicity Induced by Shale Oil and Petroleum Derived Jet and Diesel Fuel 53
- Renal Toxicity of Middle Distillates of Shale Oil and Petroleum in Mice 54
- Comparative Embryotoxicity and Teratogenicity of Petroleum and Petroleum Substitutes to Insects Developing in Contaminated Substrates 550
- Comparative Embryotoxicity and Teratogenicity of Petroleum and Petroleum Substitutes to Insects Developing in Contaminated Substrates 550

Petrology

- Metamorphic Petrology of the Negaunee Iron Formation, Marquette District, Northern Michigan: Mineralogy, Metamorphic Reactions, and Phase Equilibria 482

pH

- pH Effects on the Structure of the Inner Histones 27
 Effect of Rain pH Senescence, Growth, and Yield of Bush Bean 493

Phase

- A Simple Reverse Phase Column Clean Up for the Determination of Sulfate in Aqueous Leachates Containing Organic Compounds 1
 Binding of Monoclonal Antibody to Protein Antigen in Fluid Phase or Bound to Solid Supports 117
 Differential Responses of Log and Stationary Phase Human Fibroblasts to Inhibition of DNA Repair by Aphidicolin 249
 Metamorphic Petrology of the Negaunee Iron Formation, Marquette District, Northern Michigan: Mineralogy, Metamorphic Reactions, and Phase Equilibria 482

Phaseolus

- Germination and Growth Effects of Hexavalent Chromium Hexachloro (A Corrosion Inhibitor) on *Phaseolus vulgaris* 522

Phases

- Van der Waals Molecules - Linking the Gas and Liquid Phases 361
 Comparative Study of Electron Energy Deposition and Yields in Water in the Liquid and Vapor Phases 420

Phenols

- Evaporation of Phenols from Synthetic Liquid Fuel Spills 535

Phenotypic

- Protein Turnover and Phenotypic Expression in the Chinese Hamster Ovary Cell/Hypoxanthine-Guanine Phosphoribosyl Transferase (CHO/HGPRT) System 141
 Phenotypic Expression Time of Mutagen-Induced 6-Thioguanine Resistance in Chinese Hamster Ovary Cells (CHO/HGPRT System): Expression in Division Arrested Cell Cultures 172

Phenylalanine

- Stabilization of the Tertiary Structure of Yeast Phenylalanine tRNA by the Hexamine Cobaltic Ion: X-Ray Evidence for Hydrogen Bonding to Pairs of Guanine Bases in the Major Groove 96

Phlorizin

- Development of Na(Sup +)-Dependent Phlorizin Binding Sites in a Clone of LLC-PK1 Cells 6

PHOEL

- User's Manual for PHOEL-3, A Monte Carlo Computer Code for Calculating Initial Energies of Electrons and Positrons Produced in Water Irradiated by Photons with Energies Up to 1 GeV 615

Phorbol

- Effect of Phorbol Esters on Guinea Pig Skin In Vivo 19
 Effects of Phorbol Ester Tumor Promoters and Hyperplasiogenic Agents on Cytoplasmic Glucocorticoid Receptors in Epidermis 43
 The Control of Phospholipid Methylation by Phorbol Diesters in Differentiating Human Myeloid HL-60 Leukemia Cells 99
 Induction of Differentiation of Human Promyelocytic Leukemia (HL-60) Cells by Teleocidin B and Phorbol-13-Myristate-13-Acetate 108
 Cell Differentiation, Alterations in Polyamine Levels, and Specific Binding of Phorbol Diesters in Cultured Human Cells 109
 The Down-Modulation of Receptors for Phorbol Ester Tumor Promoter in Primary Epidermal Cells 251

phorbol

- The Down Regulation of Specific Binding of [20-H-3]phorbol 12,13,-dibutyrate and Phorbol Ester Induced Differentiation of Human Promyelocytic Leukemia Cells 252

Phorbol

- The Down Regulation of Specific Binding of [20-H-3]phorbol 12,13,-dibutyrate and Phorbol Ester Induced Differentiation of Human Promyelocytic Leukemia Cells 252

Phosphate

- Reexamination of the Binding Site for Pyridoxal 5'-Phosphate in Ribulose Biphosphate Carboxylase/Oxygenase from *Rhodospirillum rubrum* 95
- Cytotoxicity and Mutagenicity of Dimethylnitrosamine in Mammalian Cells (CHO/HGPRT System): Enhancement by Calcium Phosphate 173

Phospholipid

- The Control of Phospholipid Methylation by Phorbol Diesters in Differentiating Human Myeloid HL-60 Leukemia Cells 99

Phosphoribosyl

- Protein Turnover and Phenotypic Expression in the Chinese Hamster Ovary Cell/Hypoxanthine-Guanine Phosphoribosyl Transferase (CHO/HGPRT) System 141

Phosphoric

- Yields and Mean Free Paths of Photoelectrons from Liquid Hexamethyl Phosphoric Thiamide 309

Phosphorus

- Effects of Sawlog vs. Whole-Tree Harvesting on the Nitrogen, Phosphorus, Potassium, and Calcium Budgets of an Upland Mixed Oak Forest 491
- Effects of Municipal Sewage Sludge-Cake on Nitrogen and Phosphorus Distributions in a Pine Plantation 528

Photoacoustic

- Photoacoustic Study of Surface Plasmons in Metals 352
- Photoacoustic Determination of Light Scattering from Thin Ag Films in ATR Geometry 353

Photoelectron

- Multiphoton Ionization of Ammonia: Mass Analysis and Photoelectron Spectra 332
- Multiphoton Ionization Photoelectron Spectroscopy: Xenon and Nitric Oxide 388
- Photoelectron Spectrum of Hydrogen Sulfide following Multiphoton Ionization 389

Photoelectrons

- Yields and Mean Free Paths of Photoelectrons from Liquid Hexamethyl Phosphoric Thiamide 309

Photoemission

- Photoemission and Electron Mean Free Paths in Liquid Formamide in the Vacuum UV 308

Photoionization

- Photoionization of Fluoranthene in Dielectric Liquids 369
- Studies of Photoionization in Liquids Using a Laser Two-Photon Ionization Conductivity Technique 411

Photolysis

- Action Spectra for the Photolysis of 5-Indodeoxyuridine in DNA and Related Model Systems: Evidence for Short-Range Energy Transfer 196

Photon

- Cooperative Effects on Multiphoton Ionization and Third-Harmonic Generation in the Region near Three-Photon Resonance 398
- Studies of Photoionization in Liquids Using a Laser Two-Photon Ionization Conductivity Technique 411
- Photon and Neutron Fluence-to-Kerma Conversion Factors for ICR-1975 Reference Man Using Improved Elemental Compositions for Bone and Marrow of the Skeleton 601

Photons

- Chapter 3 - The Interaction of Photons with Surface Plasmons 401
- Monte Carlo Calculations of Initial Energies of Electrons in Water Irradiated by Photons with Energies up to 1 GeV 414

Calculated Initial Energies of Electrons in Si and Silicon Dioxide Irradiated by Photons with Energies up to 2 MeV	415
User's Manual for PHOEL-3, A Monte Carlo Computer Code for Calculating Initial Energies of Electrons and Positrons Produced in Water Irradiated by Photons with Energies Up to 1 GeV	615
Photoreactivation	
Photoreactivation in Two Closely Related Marine Fishes Having Different Longevities	280
Photosynthesis	
Effects of Chronic Air Pollution Stress on Photosynthesis, Carbon Allocation, and Growth of White Pine Trees	506
Phototaxis	
Positive Phototaxis in First Instar Hydropsyche cockerelli Banks (Trichoptera)	460
Photovoltaic	
Environmental Mobility of Toxic Substances Released from Photovoltaic-Associated Processes: Terrestrial Ecosystems	580
Physa	
Chronic Toxicity of the Azaarene Quinoline, a Synthetic Fuel Component, to the Pond Snail Physa heterostropha	509
Physical	
Physical Interactions of Isomeric Benzo(a)pyrene Diol-Epoxides with DNA	145
Physical Binding of Diol-Epoxide Derivatives of the Carcinogen Benzo(a)pyrene to DNA	147
Physical Characteristics of Soils of the Southern Region - Fullerton and Sequoia Series	687
Physicochemical	
Comparative Physicochemical and Biological Properties of Two Strains of Kilham Rat Virus, a Non-Defective Parvovirus	158
Physics	
Measurements of the TLD-Albedo Calibration Ratio Made at the Health Physics Research Reactor	337
Personnel Dosimetry Intercomparison Studies at the Health Physics Research Reactor: A Summary (1974-1980)	410
Physiochemical	
Coal Gasification Solid Wastes: Physiochemical Characterization	499
Formulations of the Physiochemical Processes in the ORNL Unified Transport Model for Toxicants (UTM-TOX) (Interim Report)	657
Physiological	
Variation in Plant Response to Ozone: A Conceptual Model of Physiological Events	544
Phytomass	
Simulated Water Budgets for an Irrigated Sycamore Phytomass Farm	463
Pieces	
Models and Risk from High-Level Waste Disposal - The Missing Pieces	365
Piedmont	
Geologic Setting of the Hillabee Metavolcanic Complex and Associated Stratabound Sulfide Deposits in the Appalachian Piedmont of Alabama	545
Pig	
Effect of Phorbol Esters on Guinea Pig Skin In Vivo	19
Pigmentosum	
DNA Repair in Normal Human and Xeroderma Pigmentosum Group A Fibroblasts following Treatment with Various Methanesulfonates and the Demonstration of a Long-Patch (UV-Like) Repair Component	248
Pike	
Baseline Environmental Characterization of Pike County Coal Gasification Facility Site	666
Pile	
Coal Pile Leachate Treatment	668

Pine

- Sulfur and Nitrogen Uptake by Loblolly Pine Seedlings as Influenced by Soil Nitrogen and Sulfur Additions 495
- Effects of Chronic Air Pollution Stress on Photosynthesis, Carbon Allocation, and Growth of White Pine Trees 506
- Effects of Municipal Sewage Sludge-Cake on Nitrogen and Phosphorus Distributions in a Pine Plantation 528
- Use of Pine Foliage as an Indicator of Fluoride Accumulation from Uranium Hexafluoride Technologies 542

Pisolithus

- The Growth, Nutrient Absorption, and Moisture Status of Selected Woody Species in Coal Mine Spoil in Response to n Induced Infection by the Ectomycorrhizal Fungus *Pisolithus tinctorius* 718

PK

- A Model for the Differentiation of Na-Dependent Hexose Transport Capacity in a Population of LLC-PK(Sub 1) Cells 35

PK1

- Development of Na(Sup +)-Dependent Phlorizin Binding Sites in a Clone of LLC-PK1 Cells 6
- Pathways for Efflux of Hexoses during Differentiation of LLC-PK1 Cells in Culture 277

Plan

- Oak Ridge National Laboratory Institutional Plan FY 1983-1988 642

Plane

- The Scattering of a Plane Electromagnetic Wave by a Conducting Circular Cylinder 585

Planning

- Residential Conservation Service - Planning and Implementation Guide for Home Heating Suppliers 568
- Residential Conservation Service - Planning and Implementation Guide 569
- Interim Source Term Assumptions for Emergency Planning and Equipment Qualification 608
- Technical Considerations Related to Interim Source Term Assumptions for Emergency Planning and Equipment Qualification 609

Plant

- Introduction and Perspectives of Plant Genetic and Cytogenetic Assays: A Report of the U.S. Environmental Protection Agency Gene-Tox Program 284
- Prediction of Radionuclide Distribution Coefficient Values from Soil-Plant Concentration Ratios 302
- Plume Washout around a Major Coal-Fired Power Plant: Results of a Single Storm Event 437
- Plume Washout around a Major Coal-Fired Power Plant: Results of a Single Storm Event 438
- Atmospheric Deposition and Plant Assimilation of Gases and Particles 485
- Variation in Plant Response to Ozone: A Conceptual Model of Physiological Events 544
- Radiological Survey of the Former Bridgeport Brass Company Special Metals Extrusion Plant, Adrian, Michigan 594
- State-of-the-Art Assessment of Coal Preparation Plant Automation 622
- Investigation of Extrainment Stresses Using a Power Plant Simulator 661
- Presence of Pathogenic Microorganisms in Power Plant Cooling Waters Report for October 1, 1979, to September 30, 1981 711
- Scientific Review and Critique of R. L. Patterson's: Production, Mortality, and Power-Plant Entrainment of Larval Yellow Perch in Western Lake Erie 715

Plantation

- Effects of Municipal Sewage Sludge-Cake on Nitrogen and Phosphorus Distributions in a Pine Plantation 528

Plants

- Response of Chronically Ozonated Soybean Plants to an Acute Ozone Exposure 492
- Generic Environmental Assessment Report for Conventional Fuel-Alcohol Plants 672

Plasma

- A Core Plasma Model of Charged Particle Track Formation in Insulators 402

Plasmons

- Photoacoustic Study of Surface Plasmons in Metals 352
Radiative Decay of Surface Plasmons on Oblate Spheroids 375
Chapter 3 - The Interaction of Photons with Surface Plasmons 401

Plate

- Plate Assay for Chemical- and Radiation-Induced Mutagenesis of CAN1 in Yeast as a Function of Post-Treatment DNA Replication: The Effect of rad6-1 137
Modification of Salmonella/Pour-Plate Incorporation Assay for Mutagenesis Studies 198

Plume

- Plume Washout around a Major Coal-Fired Power Plant: Results of a Single Storm Event 437
Plume Washout around a Major Coal-Fired Power Plant: Results of a Single Storm Event 438

Plumes

- Evaluation of a Second Derivative UV-Absorption Spectrometer (DUVAS) for Analyzing Gases in Smoke Plumes 604

Plus

- Psoralen-Plus-Light Damage and Repair in Transforming DNA of Bacillus subtilis 79

plus

- Preparation of Enantiomers of (plus or minus)-Trans-7Beta, 8Alpha-Dihydroxy-9Alpha, 10Alpha-Epoxy-7,8,9,10-Tetrahydrobenzo[a]pyrene 110

PNCP

- Localization and Quantitation of Presumptive Neoplastic Cell Populations (PNCP) in Tracheas Exposed to Dimethylbenz(a)anthracene (DMBA) 150

Polar

- Electron Motion in High-Pressure Polar Gases: Ammonia 312
Electron Interactions with Polar Molecules 330
Excited States of Polar Negative Ions 331

Polarizabilities

- Electric Dipole Polarizabilities of Alkali Halide Dimers 371

Pollen

- Interpretation of Floodplain Pollen in Alluvial Sediments from an Arid Region 534

Pollutant

- The Contribution of Residential Wood Combustion to Local Airshed Pollutant Concentrations 381
Guidance Manual for Department of Energy Compliance with the Clean Water Act: National Pollutant Discharge Elimination System (NPDES) 680

Pollution

- Effects of Chronic Air Pollution Stress on Photosynthesis, Carbon Allocation, and Growth of White Pine Trees 506
Air Pollution Impacts on Forest Trees: Acid Deposition: Effects on Terrestrial Ecosystems 533

Polyamine

- Cell Differentiation, Alterations in Polyamine Levels, and Specific Binding of Phorbol Diesters in Cultured Human Cells 109
Alpha-Difluoromethylornithine, an Irreversible Inhibitor of Ornithine Decarboxylase, Inhibits Tumor Promoter-Induced Polyamine Accumulation and Carcinogenesis in Mouse Skin 275

Polyatomic

- Calculated Angular Distribution of Fragment Ions from Polyatomic Ion Collisions 2

Polychlorinated

- Evaluation of the Mutagenic Potential of Bacterial Polychlorinated Biphenyl Biodegradation Products 216

Polycyclic

Cell-Mediated Mutagenesis and Tumor-Initiating Activity of the Ubiquitous Polycyclic Hydrocarbon, Cyclopenta(c,d) Pyrene 201

Species Variance in the Metabolic Activation of Polycyclic Hydrocarbons 234

Polyethylene

Energy Losses and Inelastic Mean Free Paths of Low-Energy Electrons in Polyethylene 298

Polymerase

Cell-Free Extracts That Induce Correct Transcription Initiation by RNA Polymerase II Convert SV40 DNA to Ordered Nucleoprotein Structures 239

Conversion of Simian Virus 40 DNA to Ordered Nucleoprotein Structures by Extracts that Direct Accurate Initiation by Eukaryotic RNA Polymerase II 240

Pond

Bioaccumulation and Distribution of Tc-95m in an Experimental Freshwater Pond 450

Comparative Food Chain Behavior and Distribution of Actinide Elements in and around a Contaminated Fresh-Water Pond 479

Effects of the Water-Soluble Fraction of a Coal-Derived Oil on Pond Microcosms 480

Chronic Toxicity of the Azaarene Quinoline, a Synthetic Fuel Component, to the Pond Snail *Physa heterostrophia* 509

Pool

Compartmentation of the Nucleotide Pool 90

Pools

Soil Carbon Pools and World Life Zones 523

Poplar

Nitrogen Ion Utilization by Tulip Poplar (*Liriodendron tulipifera* L.) Seedlings 504

Population

A Model for the Differentiation of Na-Dependent Hexose Transport Capacity in a Population of LLC-PK(Sub 1) Cells 35

Structuring of a Predator Population through Temperature-Mediated Effects on Prey Availability 446

Corrected Analysis of the Ability to Detect Reductions in Year-Class Strength of the Hudson River White Perch (*Morone americana*) Population 549

The Impact of Impingement on the Hudson River White Perch Population: Final Report 655

User's Manual for STRIPE: A Computer Code for Simulating Striped Bass Young-of-the-Year Population in the Hudson River 673

Population-Level Effects of Multiple Stresses on Fish and Shellfish 683

Relative Stock Composition of the Atlantic Coast Striped Bass Population: Further Analysis 714

Research Needs to Assess Population-Level Effects of Multiple Stresses on Fish and Shellfish 716

Review and Analysis of Existing Modeling Approaches for Assessing Population-Level Effects of Multiple Stresses on Fish and Shellfish 717

Populations

Propagation of Normal Human Epithelial Cell Populations Using an in Vivo Culture System: Description and Applications 127

Localization and Quantitation of Presumptive Neoplastic Cell Populations (PNCP) in Tracheas Exposed to Dimethylbenz(a)anthracene (DMBA) 150

Concentration, Serotypic Profiles and Infectivity of Legionnaires' Disease Bacteria Populations in Cooling Towers 546

The Impact of Entrainment and Impingement on Fish Populations in the Hudson River Estuary - Volume II: Impingement Impact Analyses, Evaluations of Alternative Screening Devices, and Critiques of Utility Testimony Relating to Density-Dependent Growth, the Age-Composition of the Striped Bass Spawning Stock, and the LMS Real-Time Life Cycle Model 654

The Impact of Entrainment and Impingement on Fish Populations in the Hudson River Estuary

- Volume I - Entrainment Impact Estimates for Six Fish Populations Inhabiting the Hudson River Estuary 656
- The Impact of Entrainment and Impingement on Fish Populations in the Hudson River Estuary - Volume I - Entrainment Impact Estimates for Six Fish Populations Inhabiting the Hudson River Estuary 656
- The Impact of Entrainment and Impingement on Fish Populations in the Hudson River Estuary - Volume III - An Analysis of the Validity of the Utilities' Stock-Recruitment Curve-Fitting Exercise and "Prior Estimation of Beta" Technique 663
- Porcine**
- Development of Sodium-Independent Hexose Transport in a Cultured Line of Porcine Kidney Cells 5
- Porous**
- FECWATER: User's Manual of a Finite-Element Code for Simulating WATER Flow Through Saturated-Unsaturated Porous Media 723
- FECWASTE: User's Manual of a Finite-Element Code for Simulating WASTE Transport Through Saturated-Unsaturated Porous Media 724
- Positive**
- Positive Phototaxis in First Instar Hydropsyche cockerelli Banks (Trichoptera) 460
- Positrons**
- User's Manual for PHOEL-3, A Monte Carlo Computer Code for Calculating Initial Energies of Electrons and Positrons Produced in Water Irradiated by Photons with Energies Up to 1 GeV 615
- Post**
- Plate Assay for Chemical- and Radiation-Induced Mutagenesis of CAN1 in Yeast as a Function of Post-Treatment DNA Replication: The Effect of rad6-1 137
- Postmeiotic**
- A Possible Mechanism for Chemical Induction of Chromosome Aberrations in Male Meiotic and Postmeiotic Germ Cells of Mice 73
- Lack of Association between Induction of Dominant-Lethal Mutations and Induction of Heritable Translocations with Benzo(a)pyrene (BaP) in Postmeiotic Germ Cells of Male Mice 75
- Potassium**
- Effects of Sawlog vs. Whole-Tree Harvesting on the Nitrogen, Phosphorus, Potassium, and Calcium Budgets of an Upland Mixed Oak Forest 491
- Potent**
- Protein Modification Induced by Potent and Weak Tumor-Promoting Hyperplasogenic Agents 166
- Potential**
- Evaluation of the Mutagenic Potential of Bacterial Polychlorinated Biphenyl Biodegradation Products 216
- Unscheduled DNA Synthesis in Mammalian Germ Cells - Its Potential Use in Mutagenicity Testing 226
- In Vitro Replication of DNA Containing O-6-Methylguanine-Kinetic Evidence of Mutagenic Potential of the Alkylated Base 246
- Radiation-Induced Leukemogenesis in RFM-Un Strain Mice: A Potential Model for Retrovirus Sequence Transposition 261
- Synthesis and Biological Evaluation of 17-[I-131]Iodo-9-Telluraheptadecanoic Acid - A Potential Myocardial Imaging Agent 334
- Using Peat for Energy: Potential Environmental Constraints 526
- Methods of Removing Uranium from Drinking Water - A Literature Survey - Present Municipal Water Treatment and Potential Removal Methods 564
- A Multimedia Screening-Level Model for Assessing the Potential Fate of Chemicals Released to the Environment 605

- A Survey of Potential Health and Safety Hazards of Commercial-Scale Ethanol Production Facilities 617
- Regional Assessment of Potential Sensitivity of Soils in the Eastern United States to Acid Precipitation 692
- Potentials**
- Use of Vegetation to Ameliorate Building Microclimates: An Assessment of Energy Conservation Potentials 681
- Potentiates**
- Hyperoxia, But Not Thoracic X-Irradiation, Potentiates Bleomycin- and Cyclophosphamide-Induced Lung Damage in Mice 82
- Pour**
- Modification of Salmonella/Pour-Plate Incorporation Assay for Mutagenesis Studies 198
- Power**
- Stopping Power of Liquid Water for Low-Energy Electrons 299
- Occupational Radiation Exposures at a Fusion Power Station 323
- Calorimetric Measurement of Electron Stopping Power of Aluminum and Copper between 11 and 127 keV 345
- Plume Washout around a Major Coal-Fired Power Plant: Results of a Single Storm Event 437
- Plume Washout around a Major Coal-Fired Power Plant: Results of a Single Storm Event 438
- Occupational Risk from Nuclear Power 439
- Edge Effect on Breeding Forest Birds Along a Power Line Corridor 497
- Bird Community Ecology on Power-Line Corridors in East Tennessee 498
- Investigation of Extraintestinal Stresses Using a Power Plant Simulator 661
- Presence of Pathogenic Microorganisms in Power Plant Cooling Waters Report for October 1, 1979, to September 30, 1981 711
- Scientific Review and Critique of R. L. Patterson's: Production, Mortality, and Power-Plant Entrainment of Larval Yellow Perch in Western Lake Erie 715
- Practices**
- Low-Level Waste Disposal: Facility Design, Construction, and Operating Practices, Washington, DC, September 29-30, 1982 - Abstracts 620
- Precipitation**
- Regional Assessment of Potential Sensitivity of Soils in the Eastern United States to Acid Precipitation 692
- Precipitator**
- Embryotoxic and Teratogenic Effects of Aqueous Extracts of a Coal Gasification Electrostatic Precipitator 221
- Precision**
- Entrainment Mortality of Ichthyoplankton: Detectability and Precision of Estimates 548
- Precursor**
- Purification and Biosynthesis of Quench Spot, a Drosoperin Precursor in *Drosophila melanogaster* 50
- Predation**
- Influence of Prey Abundance on Size-Selective Predation by Bluegills 448
- Predation of *Chaoborus punctipennis* on Larvae of *Dorosoma* 667
- Predator**
- Structuring of a Predator Population through Temperature-Mediated Effects on Prey Availability 446
- Predicted**
- Comparison of Observed and Predicted Air Concentrations for 18.6 μ m Fluorescein Particles 374
- Comparison of Observed and Predicted Normalized Air Concentrations for Particles Released from a Height of 111 Meters 384
- Comparison of Observed and Predicted Sodium Air and Ground Concentrations 385

Prediction

Prediction of Radionuclide Distribution Coefficient Values from Soil-Plant Concentration Ratios 302

Predictive

How Predictive is the Mouse Spot Test for Heritable Gene Mutations? 203

Development of Predictive Models for Xenobiotic Bioaccumulation in Terrestrial Ecosystems 708

Preexposed

Localization of Specific Lesions in Dimethylbenz(a)anthracene-Preexposed Tracheal Explants 151

Pregnant

A Model of the 3-Month Pregnant Woman for Radiation Dose Estimation 427

Preliminary

Shallow-Land Burial of Low-Level Radioactive Wastes: Preliminary Simulations of Long-Term Health Risks 328

Health Effects of Dielectric Gases: Preliminary Report 590

Premolt

Ecdysone Metabolism in Premolt Land Crabs (*Gecarcinus lateralis*) 505

Preneoplastic

Dark Epithelial Cells in Preneoplastic Lesions of the Human Respiratory Tract 123

Histochemical Localization of Gamma-Glutamyltranspeptidase (GGT) and Concanavalin A in Normal, Preneoplastic and Neoplastic Epithelia 125

The Effect of Carcinogen Release Rate on the Incidence of Preneoplastic and Neoplastic Lesions of the Respiratory Tract Epithelium in Rats 237

Preparations

Membrane Preparations Used to Produce Anaerobic Conditions in Bacteriological Media 37

Preparative

Preparative Scale Organic Extraction and Mutagenicity Analysis of Fly Ash 140

Preparing

Guidelines for Preparing Environmental Analyses for Department of Energy NEPA Documents 671

Prescreening

Expectation Values for Low Resolution Slit-Scan Flow Prescreening: Influence of Nuclear Shape and DNA Density 160

Prescribed

Prescribed Fire: Effects on Water Quality and Forest Nutrient Cycling 529

Presentation

Antigen Presentation by Peritoneal Macrophages from Young Adult and Old Mice 183

Technical Background Information for the Environmental and Safety Report, Vol. 5: The 1977 Clinch River Sediment Survey - Data Presentation 648

Pressure

Electron Motion in High-Pressure Polar Gases: Ammonia 312

Pressure-Dependent Electron Attachment Rates in Perfluoroalkanes and Perfluoropropylene and Their Effect on the Breakdown Strength of These Gases 346

Presumptive

Localization and Quantitation of Presumptive Neoplastic Cell Populations (PNCP) in Tracheas Exposed to Dimethylbenz(a)anthracene (DMBA) 150

Prevention

Guidance Manual for Department of Energy Compliance with the Clean Air Act: Prevention of Significant Deterioration 703

Prey

Structuring of a Predator Population through Temperature-Mediated Effects on Prey

- Availability 446
 Energy Partitioning in Largemouth Bass under Conditions of Seasonally Fluctuating Prey Availability 447
 Influence of Prey Abundance on Size-Selective Predation by Bluegills 448
- Primary**
 Benzo(a)pyrene Metabolism in Primary Cultures of Mouse Epidermal Cells and Untransformed and Transformed Epidermal Cell Lines 46
 The Primary Structure of Genetic Variants of Mouse Hemoglobin 188
 The Down-Modulation of Receptors for Phorbol Ester Tumor Promoter in Primary Epidermal Cells 251
 The Effect of Reestablishing Tissue-Like Cell Associations on Hexose Uptake in Rat Tracheal Epithelial Cell Lines and Primary Cell Cultures 271
- primer**
 Studies on the Function of the Non-primer tRNAs Associated with the 70S RNA of Avian Myeloblastosis Virus 272
- Prior**
 The Impact of Entrainment and Impingement on Fish Populations in the Hudson River Estuary - Volume III - An Analysis of the Validity of the Utilities' Stock-Recruitment Curve-Fitting Exercise and "Prior Estimation of Beta" Technique 663
- Priori**
 Parameter Constraints in a Stream Ecosystem Model: Incorporation of a Priori Information in Monte Carlo Error Analysis 517
- Pro**
 A Temporal Study at the Ultrastructural Level of the Developing Pro-oocyte of *Drosophila melanogaster* 78
- Probability**
 The Effect of Stochastic Variation on Estimates of the Probability of Entrainment Mortality: Methodology, Results, and User's Guide 662
- Procapsid**
 DNA Packaging In Vitro by an Isolated Bacteriophage T7 Procapsid 153
- Proceedings**
 Gaseous Dielectrics III - Proceedings of the Third International Symposium on Gaseous Dielectrics, Knoxville, TN, March 7-11, 1982 582
 Proceedings of the Symposium on Uncertainties Associated with the Regulation of the Geologic Disposal of High-Level Radioactive Waste 603
 Proceedings of the Symposium on Low-Level Waste Disposal: Site Suitability Requirements 621
 Health Risk Analysis - Proceedings of the Third Life Sciences Symposium, Gatlinburg, TN, October 27-30, 1980 644
 Proceedings of the Third Annual Information Meeting DOE Low-Level Waste Management Program 685
 Proceedings of the Fourth Annual Participants' Information Meeting on DOE Low-Level Waste Management Program 686
 Proceedings of the 1981 Integrated Data Users Workshop 691
- Producers**
 Minnesota Alcohol Producers - Loan Guarantee Application, Blue Earth County, Minnesota 632
- Products**
 Turnover of Gene Products in the Control of Gene Expression 118
 Evaluation of the Mutagenic Potential of Bacteria Polychlorinated Biphenyl Biodegradation Products 216
 Studies of Spark Decomposition Products of Sulfur Hexafluoride and Sulfur Hexafluoride/

Perfluorocarbon Mixtures	487
Enhanced Benzo(a)pyrene Metabolism in Hamster Embryonic Cells Exposed in Culture to Fossil Synfuel Products	488
Profiles	
Concentration, Serotypic Profiles and Infectivity of Legionnaires' Disease Bacteria Populations in Cooling Towers	546
Programs	
Dosimetry Training Programs at Oak Ridge National Laboratory	413
Enhanced Oil Recovery: Environmental Issues and State Regulatory Programs	510
Publications in Biomedical and Environmental Sciences Programs - 1981	573
Biomedical and Environmental Sciences Programs at the Oak Ridge National Laboratory	643
Progress	
Biology Division Progress Report for Period of June 1, 1980 - July 31, 1982	554
Environmental Sciences Division Annual Progress Report for Period Ending September 30, 1981	652
Progression	
Mouse Myeloid Leukemia as an Experimental Model for Monitoring Progression of Leukemia and Chemotherapy	12
Changes in DNA Content of Rat Tracheal Epithelial Cells during Neoplastic Progression In Vitro	20
Development and Progression of Neoplastic Disease. Morphologic and Cell Culture Studies with Airway Epithelium	168
Project	
The Environmental Teratology Information Center's Data Extraction Project	295
Environmetrics of Synfuels: IV. Project Results Tracking Systems (PRTS)	707
Proliferation	
Effects of Retinoic Acid on Cell Proliferation and Cell Differentiation in a Rat Tracheal Epithelial Cell Line	119
Contact-Stimulated Proliferation of Cultured Mouse Epidermal Cells by 3T3 Feeder Layers: Inhibition by 12-O-Tetradecanoylphorbol-13-Acetate (TPA)	156
The Influence of Butylated Hydroxytoluene-Induced Cell Proliferation on Mouse Lung Damage after X-Rays or Fission Neutrons	268
Effect of Cis- and Trans-Dichlorodiammineplatinum(II) on Human Tumor Cell Proliferation in Diffusion Chambers in Vivo	296
Promoter	
Specificity and Mechanism(s) of Promoter Inhibitors in Multistage Promotion	245
The Down-Modulation of Receptors for Phorbol Ester Tumor Promoter in Primary Epidermal Cells	251
Alpha-Difluoromethylornithine, an Irreversible Inhibitor of Ornithine Decarboxylase, Inhibits Tumor Promoter-Induced Polyamine Accumulation and Carcinogenesis in Mouse Skin	275
Promoters	
Effects of Phorbol Ester Tumor Promoters and Hyperplasiogenic Agents on Cytoplasmic Glucocorticoid Receptors in Epidermis	43
Promotes	
Study of the Mechanism by Which a Cytoplasmic Membrane Preparation Promotes Septation in Irradiated Escherichia coli	76
Promoting	
Quantitative Evaluation of Dark Keratinocytes Induced by Several Promoting and Hyperplasiogenic Agents: Their Use as an Early Morphological Indicator of Tumor-Promoting Action	121
Quantitative Evaluation of Dark Keratinocytes Induced by Several Promoting and Hyperplasiogenic Agents: Their Use as an Early Morphological Indicator of Tumor-Promoting Action	121
Protein Modification Induced by Potent and Weak Tumor-Promoting Hyperplasogenic	

Agents	166
Adenoma Development in Mouse Lung following Treatment with Possible Promoting Agents	280
Promotion	
Inhibition of Mouse Skin Tumor Promotion by Several Inhibitors of Arachidonic Acid Metabolism	60
Modulation of Prostaglandin Synthesis and Tumor Promotion	62
Effects of Peroxides on Rodent Skin: Epidermal Hyperplasia and Tumor Promotion	126
Multistage Skin Tumor Promotion: Involvement of a Protein Kinase	148
Comparison of Complete Carcinogenesis and Tumor Initiation in Mouse Skin: The Induction of Papillomas by Tumor Initiation-Promotion a Reliable Short Term Assay	243
Specificity and Mechanism(s) of Promoter Inhibitors in Multistage Promotion	245
Promyelocytic	
Induction of Differentiation of Human Promyelocytic Leukemia (HL-60) Cells by Teleocidin B and Phorbol-13-Myristate-13-Acetate	108
The Down Regulation of Specific Binding of [20-H-3]phorbol 12,13,-dibutyrate and Phorbol Ester Induced Differentiation of Human Promyelocytic Leukemia Cells	252
Propagated	
Immunological Properties of in Vitro Passaged Carcinomas and Propagated Clones from Different Cell Lines	114
Propagation	
Propagation of Normal Human Epithelial Cell Populations Using an in Vivo Culture System: Description and Applications	127
Prostaglandin	
Modulation of Prostaglandin Synthesis and Tumor Promotion	62
Protection	
An Evaluation of the Host-Mediated Assay and Body Fluid Analysis - A Report of the U.S. Experimental Protection Agency Gene-Tox Program	136
Introduction and Perspectives of Plant Genetic and Cytogenetic Assays: A Report of the U.S. Environmental Protection Agency Gene-Tox Program	284
Protein	
Interaction of a DNA-Binding Protein, the Gene Product of D5 of Bacteriophage T5, with Double-Stranded DNA - Analysis by Metrizamide Gradient Centrifugation	71
Binding of Monoclonal Antibody to Protein Antigen in Fluid Phase or Bound to Solid Supports	117
Protein Turnover and Phenotypic Expression in the Chinese Hamster Ovary Cell/Hypoxanthine-Guanine Phosphoribosyl Transferase (CHO/HGPRT) System	141
Multistage Skin Tumor Promotion: Involvement of a Protein Kinase	148
Protein Modification Induced by Potent and Weak Tumor-Promoting Hyperplasogenic Agents	166
Proteinase	
Molt-Cycle Associated Changes in Calcium-Dependent Proteinase Activity that Degrades Actin and Myosin in Crustacean Muscle	162
Crustacean Calcium-Ion-Dependent Proteinase that Degrades Actin, Myosin, and Other Myofibrillar Proteins	163
Proteins	
Benzo(a)pyrene-Binding Proteins of Hamster Embryo Cell Nuclei: Comparison of Nuclear Isolation Procedures	142
Crustacean Calcium-Ion-Dependent Proteinase that Degrades Actin, Myosin, and Other Myofibrillar Proteins	163
Cytoskeletal Proteins from Tumorigenic and Nontumorigenic Rat Respiratory Tract Epithelial Cells	235

PRTS

Environmetrics of Synfuels: IV. Project Results Tracking Systems (PRTS) 707

Pseudogenes

Mouse Alpha-Like Pseudogenes are Assigned to Chromosome 15 and 17 131

Psoralen

Psoralen-Plus-Light Damage and Repair in Transforming DNA of *Bacillus subtilis* 79

pSV2gpt

A System for the Molecular Analysis of Mutation in pSV2gpt Transfected CHO Cells 264

Pt

Analysis and Refinement of the Microscale Synthesis of the Pt-195m-Labeled Antitumor Drug, cis-Dichlorodiammineplatinum(II), cis-DDP 343

Pu

Mobile Species of Pu, Am, Cm, Np, and Te in the Environment 453

Dissolution Characteristics of Pu-Contaminated Soils and Sediments in Lung Serum Simulant Solution 500

Public

Computer Processing of Public Comments on Proposed Federal Regulations 285

Publication

Limits for Intakes of Radionuclides by Workers. ICRP Publication 20, Supplement A to Part 3 443

Limits for Intakes of Radionuclides by Workers. ICRP Publication 30, Supplement B to Part 3 Including Addendum to the Supplements of Parts 1 and 2 444

Publications

Materials and Structures Program Publications Data Base 572

Publications in Biomedical and Environmental Sciences Programs - 1981 573

Publications of the Transportation Systems Utilization Division: A Bibliography 574

Publications of Life Sciences Synthetic Fuels of Oak Ridge National Laboratory 577

Environmental Sciences Division Publications - 1981 651

Puerto

A Description of FORICO, A Tropical Gap Dynamics Model of the Lower Montane Rain Forest of Puerto Rico 669

Pulmonary

Pulmonary Toxicity of Methylcyclopentadienyl Manganese Tricarbonyl (MMT): Nonciliated Bronchiolar Epithelial (Clara) Cell Necrosis and Alveolar Damage in the Mouse Rat and Hamster 81

Pulsed

Zone Refining of Nonsubstitutional Impurities during Pulsed Laser Annealing 440

punctipennis

Predation of *Chaoborus punctipennis* on Larvae of *Dorosoma* 667

Purification

Biosynthesis, Nonenzymatic Synthesis and Purification of the Intermediate in Synthesis of Sepiapterin in *Drosophila* 49

Purification and Biosynthesis of Quench Spot, a Drosoprotein Precursor in *Drosophila melanogaster* 50

Purification and Sequencing of Cyanogen Bromide Fragments from: Ribulosebisphosphate Carboxylase/Oxygenase from *Rhodospirillum rubrum* 85

Purple

Mechanism of Suppression in *Drosophila melanogaster*. 8. Comparison of Su(S) Alleles for Ability to Suppress the Mutants Purple, Vermilion, and Speck 112

pyrene

Benzo(a)pyrene Metabolism in Primary Cultures of Mouse Epidermal Cells and Untransformed and Transformed Epidermal Cell Lines 46

Cell Specific Activation and Detoxification of Benzo(a)pyrene by Two Clones Murine Testicular Cell Lines	59
Lack of Association between Induction of Dominant-Lethal Mutations and Induction of Heritable Translocations with Benzo(a)pyrene (BaP) in Postmeiotic Germ Cells of Male Mice	75
Preparation of Enantiomers of (plus or minus)-Trans-7Beta, 8Alpha-Dihydroxy-9Alpha, 10Alpha-Epoxy-7,8,9,10-Tetrahydrobenzo[a]pyrene	110
Benzo(a)pyrene-Binding Proteins of Hamster Embryo Cell Nuclei: Comparison of Nuclear Isolation Procedures	142
Time Course of Metabolism of Benzo(e)pyrene by Hamster Embryo Cells and the Effect of Chemical Modifiers	143
Covalent Binding of Isomeric Benzo(a)pyrene Diol-epoxides to DNA	144
Physical Interactions of Isomeric Benzo(a)pyrene Diol-Epoxides with DNA	145
Covalent Intercalative Binding of Benzo(a)pyrene-9,10-Diol-7,8-Epoxy to DNA	146
Physical Binding of Diol-Epoxy Derivatives of the Carcinogen Benzo(a)pyrene to DNA	147
Comparison of Levels of Benzo(a)pyrene 7,8-Diol-9,10-Epoxy (BPDE) Diastereomers and Enantiomers Covalently Bound in Vivo to Macromolecular Components of Whole Epidermis Versus the Basal Cell Layer	180
Comparison of Levels of Benzo(a)pyrene Diol Epoxide Diastereomers Covalently Bound In Vivo to Macromolecular Components of the Whole Epidermis Versus the Basal Cell Layer	181
A Fluorometric-HPLC Assay for Quantitating the Binding of Benzo(a)pyrene Metabolites to DNA	195
Pyrene	
Cell-Mediated Mutagenesis and Tumor-Initiating Activity of the Ubiquitous Polycyclic Hydrocarbon, Cyclopenta(c,d) Pyrene	201
pyrene	
Heterogeneity of Benzo(a)pyrene Metabolism in Human and Rodent Cell Culture	230
Benzo(a)pyrene Metabolites: Formation in Rat Liver Cell-Culture Lines, Binding to Macromolecules, and Mutagenesis in V79 Hamster Cells	232
Metabolic Rationale for the Weak Mutagenic and Carcinogenic Activity of Benzo(e)pyrene	233
Metabolism of 6-Nitrobenzo(a)pyrene by Hamster Embryo Cells and Rat Liver Microsomes	265
Enhanced Benzo(a)pyrene Metabolism in Hamster Embryonic Cells Exposed in Culture to Fossil Synfuel Products	408
Pyridine	
Surface-Enhanced Raman Scattering in Ag-Pyridine Sols	326
Pyridoxal	
Reexamination of the Binding Site for Pyridoxal 5'-Phosphate in Ribulose Biphosphate Carboxylase/Oxygenase from Rhodospirillum rubrum	95
Pyrimidodiazepine	
A Naturally Occurring Pyrimidodiazepine in Drosophila: Chemical and Spectral Properties and Relationship to Drosospterin	111
Pyriton	
Geology and Geochemistry of the Stratabound Sulfide Deposits of the Pyriton District, Alabama	540
Quadrivalents	
Synaptonemal Complex Analysis of Two X-7 Translocations in Male Mice. I. R3 and R5 Quadrivalents	10
Qualification	
Interim Source Term Assumptions for Emergency Planning and Equipment Qualification	608
Technical Considerations Related to Interim Source Term Assumptions for Emergency Planning and Equipment Qualification	609

Quality

- Prescribed Fire: Effects on Water Quality and Forest Nutrient Cycling 529
 Quality Assurance Program Manual for the Biology Division 555
 The Implications of a Stochastic Approach to Air Quality Regulations 637
 Environmetrics of the Long-Term Field Studies of the Environmental Water Quality Operational Studies 674
 Environmetrics of the Gasifier in Industry Program: III. Decision Support Systems for Quality Assurance Controls 675

Quantification

- Quantification of Surface Contamination: Principles and Applications 422

Quantitating

- A Fluorometric-HPLC Assay for Quantitating the Binding of Benz(a)pyrene Metabolites to DNA 195

Quantitation

- Quantitation and Analysis of Reverse Mutations at the HGPRT Locus in Cultured Mammalian Cells 72
 Localization and Quantitation of Presumptive Neoplastic Cell Populations (PNCP) in Tracheas Exposed to Dimethylbenz(a)anthracene (DMBA) 150

Quantitative

- A Novel Method for Quantitative Cutaneous Toxicokinetics 101
 Gene Mutation, Quantitative Mutagenesis and Mutagen Screening in Mammalian Cells: Study with the CHO/HGPRT System 103
 Determination of Growth Requirements of Non-Tumorigenic and Tumorigenic Tracheal Epithelial Cells Using a Semi-Automated Quantitative Method 120
 Quantitative Evaluation of Dark Keratinocytes Induced by Several Promoting and Hyperplasiogenic Agents: Their Use as an Early Morphological Indicator of Tumor-Promoting Action 121
 Use of Radioisotopes in Quantitative Studies of Lung Metabolism 197
 A Technique for Determining Some Quantitative Expressions of Dormancy in Seeds 530

Quench

- Purification and Biosynthesis of Quench Spot, a Drosoperin Precursor in *Drosophila melanogaster* 50

Question

- The Carbon Dioxide Question: An Introduction to the Literature 281
 The Carbon Dioxide Question: Perspectives for 1982 282
 The Carbon Dioxide Question: A Data Sampler 551

Quinine

- Quinine-Containing Isoacceptor of Tyrosine tRNA in *Drosophila melanogaster* 31

Quinoline

- Chronic Toxicity of the Azaarene Quinoline, a Synthetic Fuel Component, to the Pond Snail *Physa heterostrophus* 509

Quinolines

- An Analysis of Mutagenic Activity of Quinolines in the CHO/HGPRT System 215

R

- Scientific Review and Critique of R. L. Patterson's: Production, Mortality, and Power-Plant Entrainment of Larval Yellow Perch in Western Lake Erie 715

Radiation

- Evaluation of Radiation-Induced Chromosomal Aberrations in Human Peripheral Blood Lymphocytes In Vitro 16
 Ultraviolet Radiation Skin Carcinogenesis 69
 Studies on the Multistage Nature of Radiation Carcinogenesis 70
 Plate Assay for Chemical- and Radiation-Induced Mutagenesis of CAN1 in Yeast as a Function of Post-Treatment DNA Replication: The Effect of rad6-1 137
 DNA Repair and Chromosome Aberrations: Interactive Effects of Radiation and Chemicals 189

Mutation Frequencies in Male Mice and the Estimation of Genetic Hazards of Radiation in Men	212
Specific-Locus Mutation Frequencies in Mouse Stem-Cell Spermatogonia at Very Low Radiation Dose Rates	213
Radiation Histopathology, Vol. I & II - Book Review	256
Somatic Effects of Radiation	257
Causes of Death and Their Contribution to Radiation-Induced Life Shortening in Intact and Ovariectomized Mice	258
Radiation-Induced Leukemogenesis in RFM-Un Strain Mice: A Potential Model for Retrovirus Sequence Transposition	261
Radiation Carcinogenesis	267
Immunoselection of Tumor Cell Variants by Mice Suppressed with Ultraviolet Radiation	270
Occupational Radiation Exposures at a Fusion Power Station	323
A Model of the 3-Month Pregnant Woman for Radiation Dose Estimation	427
A Mobile Gamma-Ray Scanning System for Detecting Radiation Anomalies Associated with Radium-226 Bearing Materials	607
User's Manual for LPGS: A Computer Program for Calculating Radiation Exposure Resulting from Accidental Radioactive Releases to the Hydrosphere	623
Radiative	
Radiative Decay of Surface Plasmons on Oblate Spheroids	375
Two-State Models of Radiative Collisions and Related Ionization Effects	397
Radioactive	
Shallow-Land Burial of Low-Level Radioactive Wastes: Preliminary Simulations of Long-Term Health Risks	328
Uncertainties Associated with Geologic Disposal of High-Level Radioactive Waste	367
Framework for Evaluating the Utility of Incentive Systems for Radioactive Waste Repository Siting	435
Radioactive Wastes	449
Transportation of Radioactive Materials: The Legislative and Regulatory Information System	565
Proceedings of the Symposium on Uncertainties Associated with the Regulation of the Geologic Disposal of High-Level Radioactive Waste	603
User's Manual for LPGS: A Computer Program for Calculating Radiation Exposure Resulting from Accidental Radioactive Releases to the Hydrosphere	623
Incentives and the Siting of Radioactive Waste Facilities	630
A Review of NRC Rules and Regulations Related to the Disposal of High-Level Radioactive Waste in Geologic Repositories	670
Radioactively	
Cleanup and Treatment of Radioactively Contaminated Land Including Areas Near Nuclear Facilities - A Selected Bibliography	566
Radioactivity	
Identifying Critical Human Subpopulations by Age Groups: Radioactivity and the Lung	321
A Review of Uncertainty Estimates Associated with Models for Assessing the Impact of Breeder Reactor Radioactivity Releases	606
Radiochromatography	
Soil Radiochromatography Using Na-22, Sr-85, and Co-58	704
Radioiodinated	
A New, Well-Retained Myocardial Imaging Agent: Radioiodinated 15-(p-Iodophenyl)-6-Tellurapentadecanoic Acid	335
Radioisotopes	
Use of Radioisotopes in Quantitative Studies of Lung Metabolism	197

Radiological

- Use of Gamma-Ray Detection Instrumentation in ORNL's Off-Site Radiological Survey Program 307
- Environmental Behavior of Technetium in Soil and Vegetation. Implications for Radiological Assessments 483
- Comparison of the Radiological Impacts of Thorium and Uranium Nuclear Fuel Cycles 556
- Radiological Survey of the Former Kellex Research Facility, Jersey City, New Jersey 581
- Radiological Survey of the Former Bridgeport Brass Company Special Meta's Extrusion Plant, Adrian, Michigan 594
- Environmental Behavior of Technetium in Soil and Vegetation: Implications for Radiological Impact Assessment 595

Radionuclide

- Prediction of Radionuclide Distribution Coefficient Values from Soil-Plant Concentration Ratios 302
- Simulation of Radionuclide Transport in U.S. Agriculture 433
- The Influence of Geochemical Variables on Long-Lived Radionuclide Migration and Risk Assessment 454
- RAGBEEF: A FORTRAN IV - Implementation of a Time-Dependent Model for Radionuclide Contamination of BEEF 611
- Radionuclide Characterization of Subsurface Soil on the Site of Building 3505 at Oak Ridge National Laboratory 647

Radionuclides

- An Analysis of Reported Values of the Environmental Half-Time for Radionuclides Deposited on the Surfaces of Vegetation 386
- Limits for Intakes of Radionuclides by Workers. ICRP Publication 30, Supplement A to Part 3 443
- Limits for Intakes of Radionuclides by Workers. ICRP Publication 30, Supplement B to Part 3 Including Addendum to the Supplements of Parts 1 and 2 444
- Distribution and Relationship of Radionuclides to Streambed Gravels in a Small Watershed 457
- Results of Subsurface Investigation of Radionuclides in Soil in Finberg Field, Attleboro, Massachusetts 587

Radish

- Responses of Radish to Nitrogen Dioxide, Sulfur Dioxide, and Ozone in Combination at Three Concentrations 527

Radium

- A Mobile Gamma-Ray Scanning System for Detecting Radiation Anomalies Associated with Radium-226 Bearing Materials 607

rad6

- Plate Assay for Chemical- and Radiation-Induced Mutagenesis of CAN1 in Yeast as a Function of Post-Treatment DNA Replication: The Effect of rad6-1 137

RAGBEEF

- RAGBEEF: A FORTRAN IV - Implementation of a Time-Dependent Model for Radionuclide Contamination of BEEF 611

Rain

- The Effects of Acid Rain on Forest Nutrient Status 490
- Effect of Rain pH Senescence, Growth, and Yield of Bush Bean 493
- Factors Influencing Trace Metal, Sulfate, and Hydrogen Ion Concentrations in Rain 501
- A Description of FORICO, A Tropical Gap Dynamics Model of the Lower Montane Rain Forest of Puerto Rico 669

Raman

- Surface-Enhanced Raman Scattering in Ag-Pyridine Sols 326
- Surface-Enhanced Raman Scattering on Silver-Coated Teflon Sphere Substrates 336
- Multiple-Reflection Raman Gas Cell Design 376

Rangelands

- Energy Analysis of Oklahoma Rangelands and Improved Pastures 496

Rare

- Third-Harmonic Generation and Multiphoton Ionization in Rare Gases 387
 Vacuum Ultraviolet Spectroscopy of Molecules Using Third-Harmonic Generation in Rare Gases 390
 Vacuum Ultraviolet Spectroscopy of Molecules Using Third-Harmonic Generation in Rare Gases 391

Rat

- Changes in DNA Content of Rat Tracheal Epithelial Cells during Neoplastic Progression In Vitro 20
 Pulmonary Toxicity of Methylcyclopentadienyl Manganese Tricarbonyl (MMT): Nonciliated Bronchiolar Epithelial (Clara) Cell Necrosis and Alveolar Damage in the Mouse Rat and Hamster 81
 Pathogenesis of Lesions Induced in Rat Lung by Chronic Tobacco Smoke Inhalation 93
 Effects of Retinoic Acid on Cell Proliferation and Cell Differentiation in a Rat Tracheal Epithelial Cell Line 119
 Cloned cDNAs Specific to Flucocorticoid-Induced mRNAs of Rat Liver 135
 Comparative Physicochemical and Biological Properties of Two Strains of Kilham Rat Virus, a Non-Defective Parvovirus 158
 Molecular Mechanism of Extinction of Liver Specific Functions in Mouse Hepatoma x Rat Fibroblast Hybrids: Extinction of the Albumin Gene 178
 Benzo(a)pyrene Metabolites: Formation in Rat Liver Cell-Culture Lines, Binding to Macromolecules, and Mutagenesis in V79 Hamster Cells 232
 Cytoskeletal Proteins from Tumorigenic and Nontumorigenic Rat Respiratory Tract Epithelial Cells 235
 Calcium-Enhanced Cellular Uptake of Rat Liver S9 by Chinese Hamster Ovary Cells 253
 Effect of Carcinogen Dose on the Dynamics of Neoplastic Development in Rat Tracheal Epithelium 263
 Metabolism of 6-Nitrobenzo(a)pyrene by Hamster Embryo Cells and Rat Liver Microsomes 265
 The Effect of Reestablishing Tissue-Like Cell Associations on Hexose Uptake in Rat Tracheal Epithelial Cell Lines and Primary Cell Cultures 271

Rate

- Concanavalin A Alters the Turnover Rate of Tyrosine Aminotransferase in Cultured Hepatoma Cells 48
 The Effect of Carcinogen Release Rate on the Incidence of Preneoplastic and Neoplastic Lesions of the Respiratory Tract Epithelium in Rats 237

Rates

- Effect of Lung, Liver and Kidney Toxicants on Respiratory Rates of Mice 80
 Specific-Locus Mutation Frequencies in Mouse Stem-Cell Spermatogonia at Very Low Radiation Dose Rates 213
 Pressure-Dependent Electron Attachment Rates in Perfluoroalkanes and Perfluoropropylene and Their Effect on the Breakdown Strength of These Gases 346
 The Use of Soda-Lime for Measuring Respiration Rates in Terrestrial Systems 470
 A Timesaving Technique for Measuring Respiration Rates in Incubated Soil Samples 471

Rationale

- Metabolic Rationale for the Weak Mutagenic and Carcinogenic Activity of Benzo(e)pyrene 233

Ratios

- Prediction of Radionuclide Distribution Coefficient Values from Soil-Plant Concentration Ratios 302

Rats

Hyperkeratinization and Hyperplasia of the Forestomach Epithelium in Vitamin A Deficient

Rats 122

The Effect of Carcinogen Release Rate on the Incidence of Preneoplastic and Neoplastic Lesions of the Respiratory Tract Epithelium in Rats 237

Ray

Neutron Scattering and X-Ray Diffraction of Nucleosomes and Nucleosome - HMG

Complexes 26

Stabilization of the Tertiary Structure of Yeast Phenylalanine tRNA by the Hexamine Cobaltic Ion: X-Ray Evidence for Hydrogen Bonding to Pairs of Guanine Bases in the Major Groove 96

Use of Gamma-Ray Detection Instrumentation in ORNL's Off-Site Radiological Survey Program 307

A Mobile Gamma-Ray Scanning System for Detecting Radiation Anomalies Associated with Radium-226 Bearing Materials 607

Rays

Role of Base Damage in Aberration Formation Interaction of Aphidicolin and X-Rays 15

The Influence of Butylated Hydroxytoluene-Induced Cell Proliferation on Mouse Lung Damage after X-Rays or Fission Neutrons 268

Reaction

The Reaction of Li with Oxygen in the Presence of He or Ar 370

Reactions

Unique and Multiple Solutions of a Family of Differential Equations Modeling Chemical Reactions 429

Metamorphic Petrology of the Negaunee Iron Formation, Marquette District, Northern Michigan: Mineralogy, Metamorphic Reactions, and Phase Equilibria 482

Reactivity

Altered Tissue Reactivity and Interactions between Chemicals 278

Reactor

Measurements of the TLD-Albedo Calibration Ratio Made at the Health Physics Research Reactor 337

Personnel Dosimetry Intercomparison Studies at the Health Physics Research Reactor: A Summary (1974-1980) 410

A Review of Uncertainty Estimates Associated with Models for Assessing the Impact of Breeder Reactor Radioactivity Releases 606

Real

The Impact of Entrainment and Impingement on Fish Populations in the Hudson River Estuary - Volume II: Impingement Impact Analyses, Evaluations of Alternative Screening Devices, and Critiques of Utility Testimony Relating to Density-Dependent Growth, the Age-Composition of the Striped Bass Spawning Stock, and the LMS Real-Time Life Cycle Model 654

Receptors

Effects of Phorbol Ester Tumor Promoters and Hyperplasiogenic Agents on Cytoplasmic Glucocorticoid Receptors in Epidermis 43

The Down-Modulation of Receptors for Phorbol Ester Tumor Promoter in Primary Epidermal Cells 251

Records

Chemicals Identified in Human Biological Media, A Data Base: Third Annual Report, October 1981, Volume 3, Part 2 Records 3501-5271 557

Recruitment

The Impact of Entrainment and Impingement on Fish Populations in the Hudson River Estuary - Volume III - An Analysis of the Validity of the Utilities' Stock-Recruitment Curve-Fitting Exercise and "Prior Estimation of Beta" Technique 663

A Users's Guide for the Stock-Recruitment Model Validation Program 664

Recycling

- Recycling of Surface Sialoglycoconjugates in HTC and HeLa Cells 63
 Heterogeneous Recycling of Surface Sialoglycoproteins in HeLa Cells 64

Red

- Arthropod Associates and Macronutrient Status of the Red-Ink Sundew (*Drosera erythrorhiza* Lindl.) 426

Reducing

- Evaluation of Hydrotreatment as a Means of Reducing Biological Activity of Synfuel Related Materials 222

Reductions

- Corrected Analysis of the Ability to Detect Reductions in Year-Class Strength of the Hudson River White Perch (*Morone americana*) Population 549

Reestablishing

- The Effect of Reestablishing Tissue-Like Cell Associations on Hexose Uptake in Rat Tracheal Epithelial Cell Lines and Primary Cell Cultures 271

Reexamination

- Reexamination of the Binding Site for Pyridoxal 5'-Phosphate in Ribulose Biphosphate Carboxylase/Oxygenase from *Rhodospirillum rubrum* 95

Refinement

- Analysis and Refinement of the Microscale Synthesis of the Pt-195m-Labeled Antitumor Drug, cis-Dichlorodiammineplatinum(II), cis-DDP 343

Refining

- Zone Refining of Nonsubstitutional Impurities during Pulsed Laser Annealing 440
 Environmental Assessment - Agrifuels Refining Corporation - Loan Guarantee Application, Iberia Parish, Louisiana 634

Reflection

- Diffusion of Au into Sn Thin Films Studied by the Attenuated Total Reflection Method 310
 Multiple-Reflection Raman Gas Cell Design 376

Regeneration

- Crustacean Muscles: Atrophy and Regeneration during Molting 161

Region

- Cell-Mediated Mutagenicity in Chinese Hamster V79 Cells by Dibenzpyrenes and Their Bay-Region Disubstituted Fluorinated Derivatives 89
 Analysis of the Albino-Locus Region of the Mouse: IV. Characterization of 34 Deficiencies 207
 Cooperative Effects on Multiphoton Ionization and Third-Harmonic Generation in the Region near Three-Photon Resonance 398
 Interpretation of Floodplain Pollen in Alluvial Sediments from an Arid Region 534
 Physical Characteristics of Soils of the Southern Region - Fullerton and Sequoia Series 687

Regional

- Data Resources for Assessing Regional Impacts of Energy Facilities on Health and the Environment 519
 Regional Assessment of Potential Sensitivity of Soils in the Eastern United States to Acid Precipitation 692

Regions

- Acid Lipase-1 (Lip-1) is on Mouse Chromosome 19: Evidence for Homologous Regions on Human Chromosome 10 and Mouse 19 128

Registry

- The Oak Ridge National Laboratory Registry of Notable Honors and Awards in Science and Engineering, 1943-May 1982, 4th Edition 571

Regression

- Sequential Thymus Grafting of Aged Mice: Characterization of Growth, Regression and Enhancement of Immune Competence 182

Regulating

- An Analysis of Genetic Factors Regulating Life-Span in Congenic Mice 187

Regulation

- Regulation of Alpha-Fetoprotein and Transferrin Synthesis and Secretion in Mouse Hepatoma Cells 159
- Selective Effect of the Metallocarcinogen Beryllium on Hormonal Regulation of Gene Expression in Cultured Cells 184
- Regulation by Turnover of Na,K-ATPase in HeLa Cells 186
- The Down Regulation of Specific Binding of [20-H-3]phorbol 12,13,-dibutyrate and Phorbol Ester Induced Differentiation of Human Promyelocytic Leukemia Cells 252
- Ozone Flux in Glycine max (L.) Merr.: Sites of Regulation and Relationship to Leaf Injury 543
- Proceedings of the Symposium on Uncertainties Associated with the Regulation of the Geologic Disposal of High-Level Radioactive Waste 603

Regulations

- Computer Processing of Public Comments on Proposed Federal Regulations 285
- The Implications of a Stochastic Approach to Air Quality Regulations 637
- A Review of NRC Rules and Regulations Related to the Disposal of High-Level Radioactive Waste in Geologic Repositories 670

Regulatory

- Enhanced Oil Recovery: Environmental Issues and State Regulatory Programs 510
- Transportation of Radioactive Materials: The Legislative and Regulatory Information System 565
- Analysis of Proposed New IAEA Basis for Transportation Regulatory System Technical Report 612

Relationships

- Structure-Toxicity Relationships of Selected Dinitrogen-Containing Cyclic Compounds 219
- Structure-Toxicity Relationships of Selected Nitrogenous Heterocyclic Compounds. II: Dinitrogen Molecules 220
- Structure-Toxicity Relationships of Selected Nitrogenous Heterocyclic Compounds. III: Relations Using Molecular Connectivity 223

Release

- The Effect of Carcinogen Release Rate on the Incidence of Preneoplastic and Neoplastic Lesions of the Respiratory Tract Epithelium in Rats 237
- Formaldehyde Release from Simulated Wall Panels Insulated with Urea-Formaldehyde Foam Insulation 340
- Storage and Release of Organic Carbon in Peninsular Malaysia 459
- EPA Liquid Release Pathway Health Impact Code: Feasibility Study 591

Released

- Comparison of Observed and Predicted Normalized Air Concentrations for Particles Released from a Height of 111 Meters 384
- Environmental Mobility of Toxic Substances Released from Photovoltaic-Associated Processes: Terrestrial Ecosystems 580
- A Multimedia Screening-Level Model for Assessing the Potential Fate of Chemicals Released to the Environment 605

Releases

- A Review of Uncertainty Estimates Associated with Models for Assessing the Impact of Breeder Reactor Radioactivity Releases 606
- User's Manual for LPGS: A Computer Program for Calculating Radiation Exposure Resulting from Accidental Radioactive Releases to the Hydrosphere 623

Relevance

- The Relevance of Long Term Carcinogenic and Genetic Hazards to Emergency Control 68
- Relevance of the Mouse Spot Test as a Genotoxicity Indicator 204

Reliable

- Comparison of Complete Carcinogenesis and Tumor Initiation in Mouse Skin: The Induction of Papillomas by Tumor Initiation-Promotion a Reliable Short Term Assay 243

Remedial

- Nuclear Facility Decommissioning and Site Remedial Actions - A Selected Bibliography Volume 3 575

Remote

- An Evaluation of Remote Sensing Methods for Study of Variable Hydrologic Source Areas 679

Removing

- Methods of Removing Uranium from Drinking Water - A Literature Survey - Present Municipal Water Treatment and Potential Removal Methods 564

Renal

- Percutaneous Acute and Chronic Renal Toxicity Induced by Shale Oil and Petroleum Derived Jet and Diesel Fuel 53
Renal Toxicity of Middle Distillates of Shale Oil and Petroleum in Mice 54

Repair

- Ultraviolet-Induced Damage and Its Repair in Human DNA 28
DNA Repair in a Congenic Pair of Mice with Different Longevities 32
Effects of an Extract from the Sea Squirt Ecteinascidia turbinata on DNA Synthesis and Excision Repair in Human Fibroblasts 52
Psoralen-Plus-Light Damage and Repair in Transforming DNA of Bacillus subtilis 79
The Effect of Mutations in the uvrD Cistron of Escherichia coli on Repair Resynthesis 129
DNA Repair and Chromosome Aberrations: Interactive Effects of Radiation and Chemicals 189
The Use of Inhibitors of DNA Repair in the Study of the Mechanisms of Induction of Chromosome Aberrations 191
DNA Repair in Spermatocytes and Spermatids of the Mouse 224
DNA Repair in Normal Human and Xeroderma Pigmentosum Group A Fibroblasts following Treatment with Various Methanesulfonates and the Demonstration of a Long-Patch (UV-Like) Repair Component 248
DNA Repair in Normal Human and Xeroderma Pigmentosum Group A Fibroblasts following Treatment with Various Methanesulfonates and the Demonstration of a Long-Patch (UV-Like) Repair Component 248
Differential Responses of Log and Stationary Phase Human Fibroblasts to Inhibition of DNA Repair by Aphidicolin 249
DNA Repair Assays as Tests for Environmental Mutagens: A Report of the U.S. EPA Gene-Tox Program 287

Repeat

- Unusual Sequence Features in the Repeat Unit of (G+C)-Rich Crab Satellite DNA 65

Repeated

- Effects of Repeated Exposures to Aerosolized Diesel Fuel 39

Replication

- Plate Assay for Chemical- and Radiation-Induced Mutagenesis of CAN1 in Yeast as a Function of Post-Treatment DNA Replication: The Effect of rad6-1 137
In Vitro Replication of DNA Containing O-6-Methylguanine - Kinetic Evidence of Mutagenic Potential of the Alkylated Base 246

Reported

- An Analysis of Reported Values of the Environmental Half-Time for Radionuclides Deposited on the Surfaces of Vegetation 386

Repositories

- A Review of NRC Rules and Regulations Related to the Disposal of High-Level Radioactive Waste in Geologic Repositories 670

Repository

- Framework for Evaluating the Utility of Incentive Systems for Radioactive Waste Repository Siting 435

Representations

- Chaotic Models as Representations of Ecological Systems 518

Reproduction

- Assessment of Risks to Human Reproduction and to Development of the Human Conceptus from Exposure to Environmental Substances 570

Reproductive

- Endocrine Morphology and Reproductive Function in Athymic Nude Mice 42
Health Effects of Environmental Chemicals on the Adult Human Reproductive System - A Selected Bibliography with Abstracts 1963-1981 576

Requires

- In Vitro Packaging of Bacteriophage T7 DNA Requires ATP 152

Research

- Acute Cytotoxicity of Fossil-Energy-Related Comparative Research Materials 218
Scientific and Technical Information for Research and Development 291
Measurements of the TLD-Albedo Calibration Ratio Made at the Health Physics Research Reactor 337
Personnel Dosimetry Intercomparison Studies at the Health Physics Research Reactor: A Summary (1974-1980) 410
Risk Assessment Approaches: General Definitions, Limitations and Research Needs 423
Research Efforts on Environmental Transport of Hazardous Materials at Oak Ridge National Laboratory 537
Grouting Research for Uranium Mill Tailings 538
Radiological Survey of the Former Kellex Research Facility, Jersey City, New Jersey 581
Gaseous Dielectrics Research and Applications Semiannual Report - October 1, 1981 - March 31, 1982 583
High Voltage Research (Breakdown Strengths of Gaseous and Liquid Insulators) and Environmental Effects of Dielectric Gases Semiannual Report (April 1 - September 30, 1981) 584
Summary of Research on Coal Liquefaction Product Spills 676
Research Needs to Assess Population-Level Effects of Multiple Stresses on Fish and Shellfish 716

Reservation

- White-Tailed Deer (*Odocoileus virginianus*) on the Department of Energy's Oak Ridge Reservation: 1980 Status Report 705
White-Tailed Deer (*Odocoileus virginianus*) on the Department of Energy's Oak Ridge Reservation: 1981 Status Report 706

Reservoir

- The Role of Lake and Reservoir Sediments as Sinks in the Perturbed Global Carbon Cycle 512
An Approach to Optimizing Reservoir Operation for Downstream Aquatic Resources 531

Residential

- The Contribution of Residential Wood Combustion to Local Airshed Pollutant Concentrations 381
Health and Safety Impacts of Residential Wood Heat 418
Status of the Residential Conservation Service Program in Selected States as of December 1981 567
Residential Conservation Service - Planning and Implementation Guide for Home Heating Suppliers 568
Residential Conservation Service - Planning and Implementation Guide 569
Basic Considerations for Monitoring and Evaluating the Residential Conservation Service 626

Residue

- Identification of an Active-Site Methionyl Residue in Ribulose Bisphosphate Carboxylase/Oxygenase 84

Resilience

- Resilience and Inertia in Model Ecosystems: Tests of Some Hypotheses 710

Resistance

- Resistance of Germfree Athymic Nude Mice to Two-Stage Skin Carcinogenesis 102
- Phenotypic Expression Time of Mutagen-Induced 6-Thioguanine Resistance in Chinese Hamster Ovary Cells (CHO/HGPRT System): Expression in Division Arrested Cell Cultures 172
- Thermal Resistance of Juvenile Crayfish, *Cambarus bartoni* (Fabricius): Experiment and Model 462

Resistant

- Effect of Selection Cell Density on the Recovery of Mutagen Induced 6-Theoguanine Resistant Cells (CHO/HGPRT System) 171

Resolution

- Expectation Values for Low Resolution Slit-Scan Flow Prescreening: Influence of Nuclear Shape and DNA Density 160
- Production of L-[1-¹¹C]Valine by HPLC Resolution 424

Resonance

- Resonance Ionization Spectroscopy 348
- Resonance Ionization Spectroscopy for Low-Level Counting 350
- Cooperative Effects on Multiphoton Ionization and Third-Harmonic Generation in the Region near Three-Photon Resonance 398

Resource

- Energy Analysis of the Coal Fuel Cycle: Community Health and Resource Change in an Appalachian Coal County 425
- Chattanooga Shale: An Assessment of the Resource and Technology for the Recovery of Hydrocarbons and Minerals 640
- Resource Data Inventory for the Oak Ridge Area 688

Resources

- Data Resources for Assessing Regional Impacts of Energy Facilities on Health and the Environment 519
- An Approach to Optimizing Reservoir Operation for Downstream Aquatic Resources 531
- Environmental Assessment - Gulf Coast Resources, Inc. - Loan Guarantee Application, Lee County, Iowa 635

Respiration

- The Use of Soda-Lime for Measuring Respiration Rates in Terrestrial Systems 470
- A Timesaving Technique for Measuring Respiration Rates in Incubated Soil Samples 471

Respiratory

- Formaldehyde and Tumors in Hamster Respiratory Tract 38
- Effect of Lung, Liver and Kidney Toxicants on Respiratory Rates of Mice 80
- Dark Epithelial Cells in Preneoplastic Lesions of the Human Respiratory Tract 123
- Structural Anomalies of Highly Malignant Respiratory Tract Epithelial Cells 149
- Cytoskeletal Proteins from Tumorigenic and Nontumorigenic Rat Respiratory Tract Epithelial Cells 235
- The Effect of Carcinogen Release Rate on the Incidence of Preneoplastic and Neoplastic Lesions of the Respiratory Tract Epithelium in Rats 237

Response

- The Response of Granulocytes to Osmotic Shrinkage 8
- Dose-Response Curve for Ethylnitrosourea-Induced Specific-Locus Mutations in Mouse Spermatogonia 211
- The Toxicology Information Response Center: A Ten-Year Perspective 292
- Aspergillus nidulans*: Systems and Results of Tests for Induction of Mitotic Segregation and Mutation. II. Haploid Assay Systems and Overall Response of All Systems. A Report of the U.S. EPA Gene-Tox Program 293
- A General Linear Models Approach for Comparing the Response of Several Species in Acute Toxicity Tests 468

- Response of Chronically Ozonated Soybean Plants to an Acute Ozone Exposure 492
 Variation in Plant Response to Ozone: A Conceptual Model of Physiological Events 544
 Literature Review: Response of Fish to Thermal Discharge 578
 The Growth, Nutrient Absorption, and Moisture Status of Selected Woody Species in Coal Mine
 Spoil in Response to an Induced Infection by the Ectomycorrhizal Fungus *Pisolithus*
tinctorius 718

Responses

- Differential Responses of Log and Stationary Phase Human Fibroblasts to Inhibition of DNA
 Repair by Aphidicolin 249
 Responses of Radish to Nitrogen Dioxide, Sulfur Dioxide, and Ozone in Combination at Three
 Concentrations 527

Resynthesis

- The Effect of Mutations in the *uvrD* Cistron of *Escherichia coli* on Repair Resynthesis 129

Retained

- A New, Well-Retained Myocardial Imaging Agent: Radioiodinated 15-(p-Iodophenyl)
 -6-Tellurapentadecanoic Acid 335

Retention

- Interception and Retention of Technetium by Vegetation and Soil 344
 The Long-Term Nutrient Retention Properties of Forest Ecosystems: A Simulation
 Investigation 719

Retinoic

- Effects of Retinoic Acid on Cell Proliferation and Cell Differentiation in a Rat Tracheal Epithelial
 Cell Line 119

Retrovirus

- Radiation-Induced Leukemogenesis in RFM-Un Strain Mice: A Potential Model for Retrovirus
 Sequence Transposition 261
 Induction of Retrovirus Gene Expression in Mouse Cells by Some Chemical Mutagens 262

rev

- Effect of rev Genes on Chemically-Induced Frameshift Mutagenesis in *Saccharomyces*
Cerevisiae 132

Reverse

- A Simple Reverse Phase Column Clean Up for the Determination of Sulfate in Aqueous Leachates
 Containing Organic Compounds 1
 Quantitation and Analysis of Reverse Mutations at the HGPRT Locus in Cultured Mammalian
 Cells 72
 Reverse Transformation of Chinese Hamster Cells by Cyclic AMP and Hormones 105

Reversion

- Mutagenicity of 4,4'-Methylenedianiline (MDA) Derivatives in the Salmonella Histidine Rever-
 sion Assay 199

Review

- Radiation Histopathology, Vol. I & II - Book Review 256
 Peer Review Mechanism for the Toxicology Data Bank 288
 Coping with the Biomedical Literature - Book Review 354
 Review and Evaluation of Microcosms for Assessing Effects of Stress in Marine Ecosystems 445
 Transuranic Elements in the Environment - Book Review 467
 Literature Review: Response of Fish to Thermal Discharge 578
 Biological Effects of Static Magnetic Fields: A Selective Review with Emphasis on Risk
 Assessment 589
 Findings of a Recent ORNL Review of Dosimetry for the Japanese Atomic-Bomb
 Survivors 600
 A Review of Uncertainty Estimates Associated with Models for Assessing the Impact of Breeder
 Reactor Radioactivity Releases 606

- A Review of NRC Rules and Regulations Related to the Disposal of High-Level Radioactive Waste in Geologic Repositories 670
- Scientific Review and Critique of R. L. Patterson's: Production, Mortality, and Power-Plant Entrainment of Larval Yellow Perch in Western Lake Erie 715
- Review and Analysis of Existing Modeling Approaches for Assessing Population-Level Effects of Multiple Stresses on Fish and Shellfish 717
- RF**
- Absorption of RF and Microwaves on Spherical Multilayer Biological Systems 405
- RFM**
- Radiation-Induced Leukemogenesis in RFM-Un Strain Mice: A Potential Model for Retrovirus Sequence Transposition 261
- Rhodospirillum**
- Inactivation of *Rhodospirillum rubrum* Ribulose Bisphosphate Carboxylase/Oxygenase by the Affinity Label 2-N-Chloroamino-2-Deoxypentitol 1,5-Bisphosphate 29
- 2-Bromoacetylaminopentitol 1,5-Bisphosphate as an Affinity Label for Ribulose Bisphosphate Carboxylase/Oxygenase from *Rhodospirillum rubrum* 66
- Purification and Sequencing of Cyanogen Bromide Fragments from Ribulosebisphosphate Carboxylase/Oxygenase from *Rhodospirillum rubrum* 85
- Reexamination of the Binding Site for Pyridoxal 5'-Phosphate in Ribulose Biophosphate Carboxylase/Oxygenase from *Rhodospirillum rubrum* 95
- Ribulosebisphosphate Carboxylase/Oxygenase from *Rhodospirillum rubrum* 217
- Ribosylation**
- Poly(ADP-Ribosylation) in N,N-Diethylnitrosamine-Treated Mice 238
- Ribothymidine**
- Salvage of the Modified Nucleoside Ribothymidine in Cultured Hamster Embryo Cells 139
- Ribulose**
- Inactivation of *Rhodospirillum rubrum* Ribulose Bisphosphate Carboxylase/Oxygenase by the Affinity Label 2-N-Chloroamino-2-Deoxypentitol 1,5-Bisphosphate 29
- 2-Bromoacetylaminopentitol 1,5-Bisphosphate as an Affinity Label for Ribulose Bisphosphate Carboxylase/Oxygenase from *Rhodospirillum rubrum* 66
- Identification of an Active-Site Methionyl Residue in Ribulose Bisphosphate Carboxylase/Oxygenase 84
- Reexamination of the Binding Site for Pyridoxal 5'-Phosphate in Ribulose Biophosphate Carboxylase/Oxygenase from *Rhodospirillum rubrum* 95
- Ribulosebisphosphate**
- Purification and Sequencing of Cyanogen Bromide Fragments from Ribulosebisphosphate Carboxylase/Oxygenase from *Rhodospirillum rubrum* 85
- Ribulosebisphosphate Carboxylase/Oxygenase from *Rhodospirillum rubrum* 217
- Rich**
- Sequence Augmentation by Amplification of an (A+T)-Rich 142 bp Segment in a (G+C)-Rich Satellite DNA 18
- Sequence Augmentation by Amplification of an (A+T)-Rich 142 bp Segment in a (G+C)-Rich Satellite DNA 18
- Unusual Sequence Features in the Repeat Unit of (G+C)-Rich Crab Satellite DNA 65
- Rico**
- A Description of FORICO, A Tropical Gap Dynamics Model of the Lower Montane Rain Forest of Puerto Rico 669
- Ring**
- Ultrastructural Studies of Chironomus Salivary Gland Cells in Different States of Balbiani Ring Activity 175
- Risk**
- Factors Affecting Mutagenicity of Ethylnitrosourea in the Mouse Specific-Locus Test and Their

Bearing on Risk Estimation	208
Induced Mutations in Mice and Genetic Risk Assessment in Humans	227
Dominant Skeletal Mutations: Applications to Mutagenicity Testing and Risk Estimation	228
Information - The Critical Difference in Risk Analysis	290
Cardiovascular Risk from Exposure to Static Magnetic Fields	322
On Discussion of Risk of Energy Systems	355
Risk of Producing Energy - and Conserving It	356
Health Risk Associated with Energy Conservation	357
Models and Risk from High-Level Waste Disposal - The Missing Pieces	365
Risk Assessment Approaches: General Definitions, Limitations and Research Needs	423
Occupational Risk from Nuclear Power	439
The Influence of Geochemical Variables on Long-Lived Radionuclide Migration and Risk Assessment	454
Ecosystem Risk Analysis - A New Methodology	516
Environmental Risk Analyses of Wastewaters Produced by Synthetic Fuels Technologies	521
The Risk of Chemicals to Aquatic Environments	536
Biological Effects of Static Magnetic Fields: A Selective Review with Emphasis on Risk Assessment	589
Small is BRUTAL: The Risk/Energy Trade-Off for Automobiles	597
Risk Assessment of Coal Production: An Information System User's Manual	616
Health Risk Analysis - Proceedings of the Third Life Sciences Symposium, Gatlinburg, TN, October 27-30, 1980	644
Methodology for Environmental Risk Analysis	653

Risks

Shallow-Land Burial of Low-Level Radioactive Wastes: Preliminary Simulations of Long-Term Health Risks	328
AAAS Symposium Volume Series - Health Risks Associated with Energy Technologies	417
Assessment of Risks to Human Reproduction and to Development of the Human Conceptus from Exposure to Environmental Substances	570

River

Evidence for Upstream Dispersion of Adult Caddisflies (Trichoptera: Hydropsychidae) in the Columbia River	461
Corrected Analysis of the Ability to Detect Reductions in Year-Class Strength of the Hudson River White Perch (<i>Morone americana</i>) Population	549
Technical Background Information for the Environmental and Safety Report, Vol. 5: The 1977 Clinch River Sediment Survey - Data Presentation	648
The Impact of Entrainment and Impingement on Fish Populations in the Hudson River Estuary - Volume II: Impingement Impact Analyses, Evaluations of Alternative Screening Devices, and Critiques of Utility Testimony Relating to Density-Dependent Growth, the Age-Composition of the Striped Bass Spawning Stock, and the LMS Real-Time Life Cycle Model	654
The Impact of Impingement on the Hudson River White Perch Population: Final Report	655
The Impact of Entrainment and Impingement on Fish Populations in the Hudson River Estuary - Volume I - Entrainment Impact Estimates for Six Fish Populations Inhabiting the Hudson River Estuary	656
The Impact of Entrainment and Impingement on Fish Populations in the Hudson River Estuary - Volume I - Entrainment Impact Estimates for Six Fish Populations Inhabiting the Hudson River Estuary	656
The Impact of Entrainment and Impingement on Fish Populations in the Hudson River Estuary - Volume III - An Analysis of the Validity of the Utilities' Stock-Recruitment Curve-Fitting Exercise and "Prior Estimation of Beta" Technique	663
Methods to Assess Impacts on Hudson River Striped Bass: Final Report	665
User's Manual for STRIPE: A Computer Code for Simulating Striped Bass Young-of-the-Year Population in the Hudson River	673

- An Evaluation of Community Information Indices for Mississippi River Fisheries 694
 CHNHYD: A CHaNNel HYDrodynamic Model for Simulating Flows and Water Surface Elevations in a Stream/River Network 720

Rivers

- Transport of Organic Carbon to the Sea by Rivers of North America: A Synthesis of Existing Data 513

RNA

- Dosage Compensation of Serine-4 Transfer RNA in *Drosophila melanogaster* 17
 Cell-Free Extracts That Induce Correct Transcription Initiation by RNA Polymerase II Convert SV40 DNA to Ordered Nucleoprotein Structures 239
 Conversion of Simian Virus 40 DNA to Ordered Nucleoprotein Structures by Extracts that Direct Accurate Initiation by Eukaryotic RNA Polymerase II 240
 Studies on the Function of the Non-primer tRNAs Associated with the 70S RNA of Avian Myeloblastosis Virus 272

RNAs

- A Yeast Endoribonuclease Stimulated by Novikoff Hepatoma Small Nuclear RNAs U1 and U2 254

Robust

- Robust Analysis of Aggregation Error 477

Rock

- An Indexed Bibliography of the Spiny (Rock) Lobsters (Decapoda:palinuridae) 494

Rodent

- Effects of Peroxides on Rodent Skin: Epidermal Hyperplasia and Tumor Promotion 126
 Heterogeneity of Benzo(a)pyrene Metabolism in Human and Rodent Cell Culture 230

Rosenbluth

- Comparison of Bethe's Formula for Magnetic-Moment Transitions in Atoms with the Generalized Rosenbluth's Equation 373

Rotation

- Short Rotation Growth of Hardwoods for Energy Applications Across the United States - Field Results and Economics 464
 Short-Rotation Woody Crops as a Source of Energy 525
 The Short Rotation Woody Crops Program: 1982 Program Summary 695

Rouge

- Environmental Assessment, U.S. Ethanol Corporation - Loan Guarantee Application, East Baton Rouge Parish, Louisiana 633

rU

- The Poly rU Coil: A Minimum Energy Model That Matches Experimental Observations 98

rubrum

- Inactivation of *Rhodospirillum rubrum* Ribulose Bisphosphate Carboxylase/Oxygenase by the Affinity Label 2-N-Chloroamino-2-Deoxypentitol 1,5-Bisphosphate 29
 2-Bromoacetylaminopentitol 1,5-Bisphosphate as an Affinity Label for Ribulose Bisphosphate Carboxylase/Oxygenase from *Rhodospirillum rubrum* 66
 Purification and Sequencing of Cyanogen Bromide Fragments from Ribulosebisphosphate Carboxylase/Oxygenase from *Rhodospirillum rubrum* 85
 Reexamination of the Binding Site for Pyridoxal 5'-Phosphate in Ribulose Biophosphate Carboxylase/Oxygenase from *Rhodospirillum rubrum* 95
 Ribulosebisphosphate Carboxylase/Oxygenase from *Rhodospirillum rubrum* 217

Rules

- A Review of NRC Rules and Regulations Related to the Disposal of High-Level Radioactive Waste in Geologic Repositories 670

R3

- Synaptonemal Complex Analysis of Two X-7 Translocations in Male Mice. I. R3 and R5 Quadrivalents 10

R5

- Synaptonemal Complex Analysis of Two X-7 Translocations in Male Mice. I. R3 and R5
Quadrivalents 10

Saccharomyces

- Effect of rev Genes on Chemically-Induced Frameshift Mutagenesis in *Saccharomyces*
Cerevisiae 132

Safety

- Health and Safety Impacts of Residential Wood Heat 418
A Survey of Potential Health and Safety Hazards of Commercial-Scale Ethanol Production
Facilities 617
Technical Background Information for the Environmental and Safety Report, Vol. 5: The 1977
Clinch River Sediment Survey - Data Presentation 648

Salivary

- Ultrastructural Studies of Chironomus Salivary Gland Cells in Different States of Balbiani Ring
Activity 175

Salmonella

- Factors Influencing the Development of Spontaneous Mutant Colonies in the *Salmonella* Mutageni-
city Assay 4
Modification of *Salmonella*/Pour-Plate Incorporation Assay for Mutagenesis Studies 198
Mutagenicity of 4,4'-Methylenedianiline (MDA) Derivatives in the *Salmonella* Histidine Rever-
sion Assay 199

Salt

- Contribution of Unfrozen Fraction and of Salt Concentration to the Survival of Slowly Frozen
Human Erythrocytes: Influence of Cell Concentration 155

Salvage

- Salvage of the Modified Nucleoside Ribothymidine in Cultured Hamster Embryo Cells 139

Sampler

- The Carbon Dioxide Question: A Data Sampler 551

San

- Compilation of a Biogenic Hydrocarbon Emissions Inventory for Evaluating Ozone Control Strate-
gies in the San Francisco Bay Area 436

Satellite

- Sequence Augmentation by Amplification of an (A+T)-Rich 142 bp Segment in a (G+C)-Rich
Satellite DNA 18
Unusual Sequence Features in the Repeat Unit of (G+C)-Rich Crab Satellite DNA 65
Multiple Sites of Deletions and Insertions in Variants of a Complex Satellite DNA 241

Saturated

- FECWATER: User's Manual of a Finite-Element Code for Simulating WATER Flow Through
Saturated-Unsaturated Porous Media 723
FECWASTE: User's Manual of a Finite-Element Code for Simulating WASTE Transport
Through Saturated-Unsaturated Porous Media 724

Sauger

- Measurements of Growth and Consumption of Sauger (*Stizostedion canadense*): Implication for
Fish Energetics Studies 511

Sawlog

- Effects of Sawlog vs. Whole-Tree Harvesting on the Nitrogen, Phosphorus, Potassium, and Cal-
cium Budgets of an Upland Mixed Oak Forest 491

Scale

- Preparative Scale Organic Extraction and Mutagenicity Analysis of Fly Ash 140
Modeling Terrestrial Carbon Cycling at the Global Scale 474
A Survey of Potential Health and Safety Hazards of Commercial-Scale Ethanol Production
Facilities 617
Analysis of Environmental Issues Related to Small-Scale Hydroelectric Development. VI. Dis-
solved Oxygen Concentrations Below Operating Dams 659

Scan

Expectation Values for Low Resolution Slit-Scan Flow Prescreening: Influence of Nuclear Shape and DNA Density 160

Scanning

A Mobile Gamma-Ray Scanning System for Detecting Radiation Anomalies Associated with Radium-226 Bearing Materials 607

Scattering

Neutron Scattering and X-Ray Diffraction of Nucleosomes and Nucleosome - HMG Complexes 26

Neutron Scattering Studies and Modeling of High Mobility Group 14 Core Nucleosome Complex 266

Surface-Enhanced Raman Scattering in Ag-Pyridine Sols 326

Surface-Enhanced Raman Scattering on Silver-Coated Teflon Sphere Substrates 336

Photoacoustic Determination of Light Scattering from Thin Ag Films in ATR Geometry 353

The Scattering of a Plane Electromagnetic Wave by a Conducting Circular Cylinder 585

SCE

Incorporation of CldU and BrdU into DNA and the Induction of SCE and Mutations 92

Science

The Oak Ridge National Laboratory Registry of Notable Honors and Awards in Science and Engineering, 1943-May 1982, 4th Edition 571

Sciences

Publications in Biomedical and Environmental Sciences Programs - 1981 573

Publications of Life Sciences Synthetic Fuels of Oak Ridge National Laboratory 577

Biomedical and Environmental Sciences Programs at the Oak Ridge National Laboratory 643

Health Risk Analysis - Proceedings of the Third Life Sciences Symposium, Gatlinburg, TN, October 27-30, 1980 644

Environmental Sciences Division Publications - 1981 651

Environmental Sciences Division Annual Progress Report for Period Ending September 30, 1981 652

Scientific

Scientific and Technical Information for Research and Development 291

Scientific Review and Critique of R. L. Patterson's: Production, Mortality, and Power-Plant Entrainment of Larval Yellow Perch in Western Lake Erie 715

Screening

A Frog Embryo Teratogenesis Assay: Xenopus (FETAX) - A Model for Teratogen Screening 51

Gene Mutation, Quantitative Mutagenesis and Mutagen Screening in Mammalian Cells: Study with the CHO/HGPRT System 103

In Vitro Toxicity Screening of Dielectric Gases Using Mammalian Cells 329

A Multimedia Screening-Level Model for Assessing the Potential Fate of Chemicals Released to the Environment 605

The Impact of Entrainment and Impingement on Fish Populations in the Hudson River Estuary - Volume II: Impingement Impact Analyses, Evaluations of Alternative Screening Devices, and Critiques of Utility Testimony Relating to Density-Dependent Growth, the Age-Composition of the Striped Bass Spawning Stock, and the LMS Real-Time Life Cycle Model 654

Se

New Myocardial Imaging Agents - The Influence of Chain Length on the Heart Uptake of Se-75-Labeled Fatty Acids 363

Sea

Effects of an Extract from the Sea Squirt Ecteinascidia turbinata on DNA Synthesis and Excision Repair in Human Fibroblasts 52

Transport of Organic Carbon to the Sea by Rivers of North America: A Synthesis of Existing Data 513

Seasonally

- Energy Partitioning in Largemouth Bass under Conditions of Seasonally Fluctuating Prey Availability 447

Secretion

- Regulation of Alpha-Fetoprotein and Transferrin Synthesis and Secretion in Mouse Hepatoma Cells 159

Sediment

- Technical Background Information for the Environmental and Safety Report, Vol. 5: The 1977 Clinch River Sediment Survey - Data Presentation 648
 SEDMNT: A Sediment Transport Submodel Based on Hydrodynamic Principles for the Unified Transport Model 678

Sediments

- Dissolution Characteristics of Pu-Contaminated Soils and Sediments in Lung Serum Simulant Solution 500
 The Role of Lake and Reservoir Sediments as Sinks in the Perturbed Global Carbon Cycle 512
 Interpretation of Floodplain Pollen in Alluvial Sediments from an Arid Region 534

SEDMNT

- SEDMNT: A Sediment Transport Submodel Based on Hydrodynamic Principles for the Unified Transport Model 678

Seedlings

- Sulfur and Nitrogen Uptake by Loblolly Pine Seedlings as Influenced by Soil Nitrogen and Sulfur Additions 495
 Nitrogen Ion Utilization by Tulip Poplar (Liriodendron Tulipifera L.) Seedlings 504

Seeds

- A Technique for Determining Some Quantitative Expressions of Dormancy in Seeds 530

Segment

- Sequence Augmentation by Amplification of an (A+T)-Rich 142 bp Segment in a (G+C)-Rich Satellite DNA 18

Segregation

- Aspergillus nidulans: Systems and Results of Tests for Chemical Induction of Mitotic Segregation and Mutation. I. Diploid and Duplication Assay Systems. A Report of the U.S. EPA Gene-Tox Program 286
 Aspergillus nidulans: Systems and Results of Tests for Induction of Mitotic Segregation and Mutation. II. Haploid Assay Systems and Overall Response of All Systems. A Report of the U.S. EPA Gene-Tox Program 293

Selected

- Structure-Toxicity Relationships of Selected Dinitrogen-Containing Cyclic Compounds 219
 Structure-Toxicity Relationships of Selected Nitrogenous Heterocyclic Compounds. II. Dinitrogen Molecules 220
 Structure-Toxicity Relationships of Selected Nitrogenous Heterocyclic Compounds. III: Relations Using Molecular Connectivity 223
 Evaluation of Selected Monitoring Methods for Formaldehyde in Domestic Environments 378
 The Effects of Selected Hydraulic Structures on Fisheries and Limnology 455
 Environmental Aspects of Organics in Selected Coal Conversion Solid Wastes 456
 Cleanup and Treatment of Radioactively Contaminated Land Including Areas Near Nuclear Facilities - A Selected Bibliography 566
 Status of the Residential Conservation Service Program in Selected States as of December 1981 567
 Nuclear Facility Decommissioning and Site Remedial Actions - A Selected Bibliography Volume 3 575
 Health Effects of Environmental Chemicals on the Adult Human Reproductive System - A Selected Bibliography with Abstracts 1963-1981 576
 The Growth, Nutrient Absorption, and Moisture Status of Selected Woody Species in Coal Mine Spoil in Response to an Induced Infection by the Ectomycorrhizal Fungus Pisolithus tinctorius 718

Selection

Effect of Selection Cell Density on the Recovery of Mutagen Induced 6-Theoguanine Resistant Cells (CHO/HGPRT System) 171

Genetic Selection of American Sycamore for Biomass Production in the Mid-South Final Report for the Period March 9, 1979 - May 31, 1982 684

Selective

Selective Effect of the Metallo carcinogen Beryllium on Hormonal Regulation of Gene Expression in Cultured Cells 184

Influence of Prey Abundance on Size-Selective Predation by Bluegills 448

Biological Effects of Static Magnetic Fields: A Selective Review with Emphasis on Risk Assessment 589

Semi

Determination of Growth Requirements of Non-Tumorigenic and Tumorigenic Tracheal Epithelial Cells Using a Semi-Automated Quantitative Method 120

Semiannual

Gaseous Dielectrics Research and Applications Semiannual Report - October 1, 1981 - March 31, 1982 583

High Voltage Research (Breakdown Strengths of Gaseous and Liquid Insulators) and Environmental Effects of Dielectric Gases Semiannual Report (April 1-September 30, 1981) 584

SENCAR

Tumor-Initiating Activity of 4-Fluro-7, 12-Dimethylbenz(a)anthracene and 1,2,3, 4-Tetrahydro-7,12-Dimethylbenz(a)anthracene in Female SENCAR Mice 45

Keratin Modifications in Epidermis, Papillomas and Carcinomas during Two-Stage Carcinogenesis in the SENCAR Mouse 165

Senescence

Effect of Rain pH Senescence, Growth, and Yield of Bush Bean 493

Sensing

An Evaluation of Remote Sensing Methods for Study of Variable Hydrologic Source Areas 679

Sensitive

Test of Dichlorvos Using the Sensitive-Indicator Method for Dominant Skeletal Mutations in Mice 229

Partial Optimization of Electrochemical-Etching Parameters for Highly Sensitive Cr-39 Fast Neutron Dosimeters 329

Sensitivity

Spermatogenic Stage Sensitivity to 6-Mercaptopurine in the Mouse 174

The Induction of Chromosome Aberrations in Germ Cells: A Discussion of Factors That Can Influence Sensitivity to Chemical Mutagens 190

Regional Assessment of Potential Sensitivity of Soils in the Eastern United States to Acid Precipitation 692

Separation

Separation of Epidermal Cells by Density Centrifugation: A New Technique for Studies on Normal and Pathological Differentiation 61

Sepiapterin

Biosynthesis, Nonenzymatic Synthesis and Purification of the Intermediate in Synthesis of Sepiapterin in Drosophila 49

Mechanism of Suppression in Drosophila: Evidence for a Macromolecule Produced by the su(s)+ Locus That Inhibits Sepiapterin Synthase 113

Septation

Study of the Mechanism by Which a Cytoplasmic Membrane Preparation Promotes Septation in Irradiated Escherichia coli 76

September

High Voltage Research (Breakdown Strengths of Gaseous and Liquid Insulators) and Environmen-

- tal Effects of Dielectric Gases Semiannual Report (April 1-September 30, 1981) 584
- Low-Level Waste Disposal: Facility Design, Construction, and Operating Practices, Washington, DC, September 29-30, 1982 - Abstracts 620
- Environmental Sciences Division Annual Progress Report for Period Ending September 30, 1981 652
- Presence of Pathogenic Microorganisms in Power Plant Cooling Waters Report for October 1, 1979, to September 30, 1981 711
- Sequence**
- Sequence Augmentation by Amplification of an (A+T)-Rich 142 bp Segment in a (G+C)-Rich Satellite DNA 18
- Unusual Sequence Features in the Repeat Unit of (G+C)-Rich Crab Satellite DNA 65
- Radiation-Induced Leukemogenesis in RFM-Un Strain Mice: A Potential Model for Retrovirus Sequence Transposition 261
- Sequencing**
- Purification and Sequencing of Cyanogen Bromide Fragments from Ribulosebisphosphate Carboxylase/Oxygenase from *Rhodospirillum rubrum* 85
- Sequential**
- Sequential Thymus Grafting of Aged Mice: Characterization of Growth, Regression and Enhancement of Immune Competence 182
- Sequoia**
- Physical Characteristics of Soils of the Southern Region - Fullerton and Sequoia Series 687
- Series**
- AAAS Symposium Volume Series - Health Risks Associated with Energy Technologies 417
- Physical Characteristics of Soils of the Southern Region - Fullerton and Sequoia Series 687
- Serine**
- Dosage Compensation of Serine-4 Transfer RNA in *Drosophila melanogaster* 17
- Serotypic**
- Concentration, Serotypic Profiles and Infectivity of Legionnaires' Disease Bacteria Populations in Cooling Towers 546
- Serum**
- Dissolution Characteristics of Pu-Contaminated Soils and Sediments in Lung Serum Simulant Solution 500
- Service**
- Status of the Residential Conservation Service Program in Selected States as of December 1981 567
- Residential Conservation Service - Planning and Implementation Guide for Home Heating Suppliers 568
- Residential Conservation Service - Planning and Implementation Guide 569
- Basic Considerations for Monitoring and Evaluating the Residential Conservation Service 626
- Setting**
- Geologic Setting of the Hillabee Metavolcanic Complex and Associated Stratabound Sulfide Deposits in the Appalachian Piedmont of Alabama 545
- Sewage**
- Effects of Municipal Sewage Sludge-Cake on Nitrogen and Phosphorus Distributions in a Pine Plantation 528
- Shad**
- Impingement of Threadfin Shad: Effects of Temperature and Hydrography 507
- Synchronous Spawning of Threadfin Shad 508
- Shale**
- Percutaneous Acute and Chronic Renal Toxicity Induced by Shale Oil and Petroleum Derived Jet and Diesel Fuel 53
- Renal Toxicity of Middle Distillates of Shale Oil and Petroleum in Mice 54
- Chattanooga Shale: An Assessment of the Resource and Technology for the Recovery of Hydrocarbons and Minerals 640

Shallow

Shallow-Land Burial of Low-Level Radioactive Wastes: Preliminary Simulations of Long-Term Health Risks 328

Shallow Land Burial Handbook 646

Shellfish

Population-Level Effects of Multiple Stresses on Fish and Shellfish 683

Research Needs to Assess Population-Level Effects of Multiple Stresses on Fish and Shellfish 716

Review and Analysis of Existing Modeling Approaches for Assessing Population-Level Effects of Multiple Stresses on Fish and Shellfish 717

Shifts

Tellurium-125 Chemical Shifts of Symmetric and Unsymmetric Dialkyl Ditellurides 393

Shortening

Causes of Death and Their Contribution to Radiation-Induced Life Shortening in Intact and Ovariectomized Mice 258

Shpack

Characterization of Metal and Debris Samples from the Shpack Landfill, Norton, Massachusetts 586

Shrinkage

The Response of Granulocytes to Osmotic Shrinkage 8

Si

Calculated Initial Energies of Electrons in Si and Silicon Dioxide Irradiated by Photons with Energies up to 2 MeV 415

Sialoglycoconjugates

Recycling of Surface Sialoglycoconjugates in HTC and HeLa Cells 63

Sialoglycoproteins

Heterogeneous Recycling of Surface Sialoglycoproteins in HeLa Cells 64

Significant

Guidance Manual for Department of Energy Compliance with the Clean Air Act: Prevention of Significant Deterioration 703

Silicon

Calculated Initial Energies of Electrons in Si and Silicon Dioxide Irradiated by Photons with Energies up to 2 MeV 415

Silver

Surface-Enhanced Raman Scattering on Silver-Coated Teflon Sphere Substrates 336

Simian

Conversion of Simian Virus 40 DNA to Ordered Nucleoprotein Structures by Extracts that Direct Accurate Initiation by Eukaryotic RNA Polymerase II 240

Simulant

Dissolution Characteristics of Pu-Contaminated Soils and Sediments in Lung Serum Simulant Solution 500

Simulated

Formaldehyde Release from Simulated Wall Panels Insulated with Urea-Formaldehyde Foam Insulation 340

Simulated Water Budgets for an Irrigated Sycamore Phytomass Farm 463

Simulating

User's Manual for STRIPE: A Computer Code for Simulating Striped Bass Young-of-the-Year Population in the Hudson River 673

CHNHYD: A CHaNNel HYDrodynamic Model for Simulating Flows and Water Surface Elevations in a Stream/River Network 720

FECWATER: User's Manual of a Finite-Element Code for Simulating WATER Flow Through Saturated-Unsaturated Porous Media 723

FECWASTE: User's Manual of a Finite-Element Code for Simulating WASTE Transport Through Saturated-Unsaturated Porous Media 724

Simulation

- Simulation of Radionuclide Transport in U.S. Agriculture 433
 The Long-Term Nutrient Retention Properties of Forest Ecosystems: A Simulation Investigation 719

Simulations

- Shallow-Land Burial of Low-Level Radioactive Wastes: Preliminary Simulations of Long-Term Health Risks 328

Simulator

- Investigation of Extraintestinal Stresses Using a Power Plant Simulator 661

Single

- Effects of Single Exposures to Aerosolized Diesel Fuel 40
 Induction of Mammary Tumors in Virgin Female BALB/c Mice by Single Low Doses of 7,12-Dimethylbenz(a)anthracene (DMBA) 56
 Induction of Mammary Tumors in Virgin Female BALB/c Mice by Single Low Doses of 7,12-Dimethylbenz(a)anthracene 57
 Calibration of Denaturing Agarose Gels for Molecular Weight Estimation of DNA: Size Determination of the Single-Stranded Genomes of Parvoviruses 247
 Vicinage Effects in Ion Cluster Collisions with Condensed Matter and with Single Atoms 303
 Estimates of Dose to Systemic Organs and GI Tract Based on Data from Miniature Swine Orally Intubated with a Single Dose of Am-241 Citrate 306
 Single Particle Detection: Gaseous Devices 347
 Plume Washout around a Major Coal-Fired Power Plant: Results of a Single Storm Event 437
 Plume Washout around a Major Coal-Fired Power Plant: Results of a Single Storm Event 438
 On the Occurrence of Fungi in Loose-Fill Attic Insulation in Typical Single-Family Dwellings 588

Sinks

- The Role of Lake and Reservoir Sediments as Sinks in the Perturbed Global Carbon Cycle 512

Sister

- Sister Chromatid Differentiation Analysis of Cell Cycle Kinetics in Mouse Bone Marrow Cells 11
 The Induction of Specific Locus Mutations and Sister Chromatid Exchanges by 5-Bromo- and 5-Chloro-Deoxyuridine 91

Site

- Identification of an Active-Site Methionyl Residue in Ribulose Bisphosphate Carboxylase/Oxygenase 84
 Reexamination of the Binding Site for Pyridoxal 5'-Phosphate in Ribulose Biophosphate Carboxylase/Oxygenase from *Rhodospirillum rubrum* 95
 The Lung as a Site of Toxicological Interactions 279
 Use of Gamma-Ray Detection Instrumentation in ORNL's Off-Site Radiological Survey Program 307
 Uncertainty Estimates for Site-Specific Atmospheric Diffusion Parameters 382
 Hydrologic Factors and Sr-90 Transport at a Low-Level Waste Disposal Site 486
 Nuclear Facility Decommissioning and Site Remedial Actions - A Selected Bibliography Volume 3 575
 Initial Atmospheric Dispersion Modeling in Support of the Multiple-Site Incineration Study 596
 Abstracts of the Low-Level Waste Disposal: Site Characterization and Monitoring 619
 Proceedings of the Symposium on Low-Level Waste Disposal: Site Suitability Requirements 621
 Environmental Analysis of the Operation of Oak Ridge National Laboratory (X-10 Site) 627
 Radionuclide Characterization of Subsurface Soil on the Site of Building 3505 at Oak Ridge National Laboratory 647
 Baseline Environmental Characterization of Pike County Coal Gasification Facility Site 666

Sites

- Development of Na(Sup +)-Dependent Phlorizin Binding Sites in a Clone of LLC-PK1 Cells 6
- Multiple Sites of Deletions and Insertions in Variants of a Complex Satellite DNA 241
- Ozone Flux in *Glycine max* (L.) Merr.: Sites of Regulation and Relationship to Leaf Injury 543

Siting

- Framework for Evaluating the Utility of Incentive Systems for Radioactive Waste Repository Siting 435
- Incentives and the Siting of Radioactive Waste Facilities 630

Situ

- Evaluation and Critique of In Situ Experimental Systems for Investigating Effects of Stress in Lentic Ecosystems 650

Skeletal

- Dominant Skeletal Mutations: Applications to Mutagenicity Testing and Risk Estimation 228
- Test of Dichlorvos Using the Sensitive-Indicator Method for Dominant Skeletal Mutations in Mice 229

Skeleton

- Photon and Neutron Fluence-to-Kerma Conversion Factors for ICR-1975 Reference Man Using Improved Elemental Compositions for Bone and Marrow of the Skeleton 601

Skin

- Effect of Phorbol Esters on Guinea Pig Skin In Vivo 19
- Inhibition of Mouse Skin Tumor Promotion by Several Inhibitors of Arachidonic Acid Metabolism 60
- Ultraviolet Radiation Skin Carcinogenesis 69
- Resistance of Germfree Athymic Nude Mice to Two-Stage Skin Carcinogenesis 102
- Effects of Peroxides on Rodent Skin: Epidermal Hyperplasia and Tumor Promotion 126
- Multistage Skin Tumor Promotion: Involvement of a Protein Kinase 148
- Comparison of Complete Carcinogenesis and Tumor Initiation in Mouse Skin: The Induction of Papillomas by Tumor Initiation-Promotion a Reliable Short Term Assay 243
- Studies on the Mechanisms Involved in Multistage Carcinogenesis in Mouse Skin 244
- Alpha-Difluoromethylornithine, an Irreversible Inhibitor of Ornithine Decarboxylase, Inhibits Tumor Promoter-Induced Polyamine Accumulation and Carcinogenesis in Mouse Skin 275

Slit

- Expectation Values for Low Resolution Slit-Scan Flow Prescreening: Influence of Nuclear Shape and DNA Density 160

Sludge

- Effects of Municipal Sewage Sludge-Cake on Nitrogen and Phosphorus Distributions in a Pine Plantation 528

Smoke

- Pathogenesis of Lesions Induced in Rat Lung by Chronic Tobacco Smoke Inhalation 93
- Evaluation of a Second Derivative UV-Absorption Spectrometer (DUVAS) for Analyzing Gases in Smoke Plumes 604

Sn

- Diffusion of Au into Sn Thin Films Studied by the Attenuated Total Reflection Method 310

Snail

- Chronic Toxicity of the Azaarene Quinoline, a Synthetic Fuel Component, to the Pond Snail *Physa heterostropha* 509

Snails

- Bioaccumulation of Tc-95m in Fish and Snails 451

Soda

- The Use of Soda-Lime for Measuring Respiration Rates in Terrestrial Systems 470

Sodium

- Development of Sodium-Independent Hexose Transport in a Cultured Line of Porcine Kidney Cells 5
- Development of Sodium Ion-Dependent Hexose Transport In Vitro 33
- Comparison of Observed and Predicted Sodium Air and Ground Concentrations 385

Soft

- Relationship of Vanadium, Cadmium, Lead, Nickel, Cobalt and Soft Water to Myocardial and Vascular Toxicity and Cardiovascular Disease 202

Softness

- Chemical Softness and Acute Metal Toxicity in Mice and Drosophila 430

Soil

- Prediction of Radionuclide Distribution Coefficient Values from Soil-Plant Concentration Ratios 302
- Interception and Retention of Technetium by Vegetation and Soil 344
- A Timesaving Technique for Measuring Respiration Rates in Incubated Soil Samples 471
- Environmental Behavior of Technetium in Soil and Vegetation. Implications for Radiological Assessments 483
- Sulfur and Nitrogen Uptake by Loblolly Pine Seedlings as Influenced by Soil Nitrogen and Sulfur Additions 495
- Soil Carbon Pools and World Life Zones 523
- Summaries of Soil Carbon Storage in World Life Zones 524
- Results of Subsurface Investigation of Radionuclides in Soil in Finberg Field, Attleboro, Massachusetts 587
- Environmental Behavior of Technetium in Soil and Vegetation: Implications for Radiological Impact Assessment 595
- Radionuclide Characterization of Subsurface Soil on the Site of Building 3505 at Oak Ridge National Laboratory 647
- Soil Radiochromatography Using Na-22, Sr-85, and Co-58 704

Soils

- Dissolution Characteristics of Pu-Contaminated Soils and Sediments in Lung Serum Simulant Solution 500
- Physical Characteristics of Soils of the Southern Region - Fullerton and Sequoia Series 687
- Regional Assessment of Potential Sensitivity of Soils in the Eastern United States to Acid Precipitation 692

Solid

- Binding of Monoclonal Antibody to Protein Antigen in Fluid Phase or Bound to Solid Supports 117
- Solid Sorbent for Formaldehyde Monitoring 379
- Environmental Aspects of Organics in Selected Coal Conversion Solid Wastes 456
- Composition and Toxicity of Solid Waste Leachates from Industrial Coal Gasifiers 465
- Ecotoxicity of Coal Gasifier Solid Wastes 466
- Coal Conversion Solid Waste Disposal 475
- Coal Conversion Solid Waste Disposal 476
- Characterization of Covalent Constituents in a Coal Conversion Solid Waste 484
- Coal Gasification Solid Wastes: Physiochemical Characterization 499

Solids

- Electron Inelastic Mean Free Paths in Several Solids for Energies from 200 eV to 10 keV 301

Sols

- Surface-Enhanced Raman Scattering in Ag-Pyridine Sols 326

Soluble

- Effects of the Water-Soluble Fraction of a Coal-Derived Oil on Pond Microcosms 480
- The Effect of Temperature on the Toxicity of the Water Soluble Fractions of Diesel Fuel No. 2 and H-Coal Crude Oil to Daphnia magna 413

Solution

- Vacuum Ultraviolet Absorption Spectra of Aromatic Molecules in Solution 368
 Dissolution Characteristics of Pu-Contaminated Soils and Sediments in Lung Serum Simulant
 Solution 500

Solutions

- Nonzero Solutions of Nonlinear Integral Equations Modeling Infectious Disease 428
 Unique and Multiple Solutions of a Family of Differential Equations Modeling Chemical
 Reactions 429

Somatic

- Somatic Effects of Radiation 257

Sonic

- Non-Maxwellian Velocity Distributions and Molecular Beam Intensities in Sonic Nozzle
 Expansions 362

Sons

- Environmental Assessment - D. W. Small and Sons, Inc. - Loan Guarantee Application, Androscoggin County, Maine 628

Sorbent

- Solid Sorbent for Formaldehyde Monitoring 379

Source

- Uncertainties in LWR Accident Source Term Estimation 392
 Short-Rotation Woody Crops as a Source of Energy 525
 Interim Source Term Assumptions for Emergency Planning and Equipment Qualification 608
 Technical Considerations Related to Interim Source Term Assumptions for Emergency Planning
 and Equipment Qualification 609
 An Evaluation of Remote Sensing Methods for Study of Variable Hydrologic Source Areas 679

South

- Environmental Assessment - Eastern Ethanol Corporation - Loan Guarantee Application, Williamsburg County, South Carolina 624
 Environmental Assessment - Energy Conversion Corporation - Loan Guarantee Application, Hampton County, South Carolina 625
 Genetic Selection of American Sycamore for Biomass Production in the Mid-South Final Report for the Period March 9, 1979 - May 31, 1982 684

Southern

- Physical Characteristics of Soils of the Southern Region - Fullerton and Sequoia Series 687

Soybean

- Uptake and Metabolism of C-14 Anthracene by Soybean (Glycine max) 472
 Response of Chronically Ozonated Soybean Plants to an Acute Ozone Exposure 492

Span

- An Analysis of Genetic Factors Regulating Life-Span in Congenic Mice 187

Spark

- Studies of Spark Decomposition Products of Sulfur Hexafluoride and Sulfur Hexafluoride/
 Perfluorocarbon Mixtures 407

Sparked

- Detection of Sulfur Tetrafluoride in Sparked Sulfur Hexafluoride 406

Spawning

- Synchronous Spawning of Threadfin Shad 508
 The Impact of Entrainment and Impingement on Fish Populations in the Hudson River Estuary - Volume II: Impingement Impact Analyses, Evaluations of Alternative Screening Devices, and Critiques of Utility Testimony Relating to Density-Dependent Growth, the Age-Composition of the Striped Bass Spawning Stock, and the LMS Real-Time Life Cycle Model 654

Species

- Species Variance in the Metabolic Activation of Polycyclic Hydrocarbons 234

- Mobile Species of Pu, Am, Cm, Np, and Te in the Environment 453
 A General Linear Models Approach for Comparing the Response of Several Species in Acute Toxicity Tests 468
 Genesis of Bimodal Size Distributions in Species Cohorts 469
 Manual for Department of Energy Compliance with the Endangered Species Act 699
 The Growth, Nutrient Absorption, and Moisture Status of Selected Woody Species in Coal Mine Spoil in Response to an Induced Infection by the Ectomycorrhizal Fungus *Pisolithus tinctorius* 718

Specificity

- Specificity and Mechanism(s) of Promoter Inhibitors in Multistage Promotion 245

Speck

- Mechanism of Suppression in *Drosophila melanogaster*. 8. Comparison of Su(S) Alleles for Ability to Suppress the Mutants Purple, Vermilion, and Speck 112

Spectra

- Action Spectra for the Photolysis of 5-Iododeoxyuridine in DNA and Related Model Systems: Evidence for Short-Range Energy Transfer 196
 Multiphoton Ionization of Ammonia: Mass Analysis and Photoelectron Spectra 332
 Vacuum Ultraviolet Absorption Spectra of Aromatic Molecules in Solution 368

Spectral

- A Naturally Occurring Pyrimidodiazepine in *Drosophila*: Chemical and Spectral Properties and Relationship to Drosopterin 111

Spectrometer

- Evaluation of a Second Derivative UV-Absorption Spectrometer (DUVAS) for Analyzing Gases in Smoke Plumes 604

Spectroscopy

- On Light, Colors, and Origins of Spectroscopy 138
 Resonance Ionization Spectroscopy 348
 Resonance Ionization Spectroscopy for Low-Level Counting 350
 Multiphoton Ionization Photoelectron Spectroscopy: Xenon and Nitric Oxide 388
 Vacuum Ultraviolet Spectroscopy of Molecules Using Third-Harmonic Generation in Rare Gases 390
 Vacuum Ultraviolet Spectroscopy of Molecules Using Third-Harmonic Generation in Rare Gases 391
 Synchronous Luminescence Spectroscopy: Methodology and Applicability 421

Spectrum

- The Influence of Split Dose Fractionation Interval on the Carcinogenic Effects of Fission Spectrum Neutrons 269
 Photoelectron Spectrum of Hydrogen Sulfide following Multiphoton Ionization 389

Sperm

- Difference in the Ratio of Dominant-Lethal Mutations to Heritable Translocations Produced in Mouse Spermatids and Fully Mature Sperm after Treatment with Triethylenemelamine (TEM) 74
 Chromosome Aberrations in Decondensed Sperm DNA 193
 The Use of Alkaline Elution To Study DNA Damage in Developing Mouse Sperm after Exposure to Methyl Methanesulfonate 225

Spermatids

- Difference in the Ratio of Dominant-Lethal Mutations to Heritable Translocations Produced in Mouse Spermatids and Fully Mature Sperm after Treatment with Triethylenemelamine (TEM) 74

- DNA Repair in Spermatocytes and Spermatids of the Mouse 224

Spermatocytes

- DNA Repair in Spermatocytes and Spermatids of the Mouse 224

Spermatogenic

- Spermatogenic Stage Sensitivity to 6-Mercaptopurine in the Mouse 174

Spermatogonia

- Effect of Dose Fractionation on Specific-Locus Mutation Induction by Ethylnitrosourea in Mouse Spermatogonia 209
- Effect of Dose Fractionation on the Ethylnitrosourea Induction of Specific-Locus Mutations in Mouse Spermatogonia 210
- Dose-Response Curve for Ethylnitrosourea-Induced Specific-Locus Mutations in Mouse Spermatogonia 211
- Specific-Locus Mutation Frequencies in Mouse Stem-Cell Spermatogonia at Very Low Radiation Dose Rates 213

Sphere

- Surface-Enhanced Raman Scattering on Silver-Coated Teflon Sphere Substrates 336

Spherical

- Absorption of RF and Microwaves on Spherical Multilayer Biological Systems 405

Spheroids

- Radiative Decay of Surface Plasmons on Oblate Spheroids 375

Spills

- Evaporation of Phenols from Synthetic Liquid Fuel Spills 535
- Summary of Research on Coal Liquefaction Product Spills 676

Spiny

- An Indexed Bibliography of the Spiny (Rock) Lobsters (Decapoda:palinuridae) 494

Spiralling

- Organic Carbon Spiralling in Stream Ecosystems 514
- Nutrient Spiralling in Streams: Implications for Nutrient Limitation and Invertebrate Activity 515

Split

- The Influence of Split Dose Fractionation Interval on the Carcinogenic Effects of Fission Spectrum Neutrons 269

Spoil

- The Growth, Nutrient Absorption, and Moisture Status of Selected Woody Species in Coal Mine Spoil in Response to an Induced Infection by the Ectomycorrhizal Fungus *Pisolithus tinctorius* 718

Spontaneous

- Factors Influencing the Development of Spontaneous Mutant Colonies in the Salmonella Mutagenicity Assay 4
- Laser-Optical Studies of the Spontaneous-Fission Isomer Am-240m 434

Spot

- Workshop on the Practical Application of the Mammalian Spot Test in Routine Mutagenicity Testing of Drugs and Other Chemicals 21
- Purification and Biosynthesis of Quench Spot, a Drosoperin Precursor in *Drosophila melanogaster* 50
- How Predictive is the Mouse Spot Test for Heritable Gene Mutations? 203
- Relevance of the Mouse Spot Test as a Genotoxicity Indicator 204
- Supermutagenicity of Ethylnitrosourea in the Mouse Spot Test - Comparison with Methylnitrosourea and Ethylnitrosourethane 206

Spread

- Spread of Organisms with Novel Genotypes: Thoughts from an Ecological Perspective 701

Squirt

- Effects of an Extract from the Sea Squirt *Ecteinascidia turbinata* on DNA Synthesis and Excision Repair in Human Fibroblasts 52

Sr

Formation of Freshwater Fe-Mn Coatings on Gravel and the Behavior of Co-60, Sr-90, and Cs-137 in a Small Watershed 458

Hydrologic Factors and Sr-90 Transport at a Low-Level Waste Disposal Site 486

Hydrologic Factors and Sr-90 Transport: A Case Study 487

Soil Radiochromatography Using Na-22, Sr-85, and Co-58 704

St

Environmental Assessment, New Energy Corporation of Indiana - Loan Guarantee Application, St. Joseph County, Indiana 631

Stability

Mutation Induction in Arrested CHO Cell Cultures: Stability of Mutagenic Damage 169

Stabilization

Stabilization of the Tertiary Structure of Yeast Phenylalanine tRNA by the Hexamine Cobaltic Ion: X-Ray Evidence for Hydrogen Bonding to Pairs of Guanine Bases in the Major Groove 96

Stage

Resistance of Germfree Athymic Nude Mice to Two-Stage Skin Carcinogenesis 102

Keratin Modifications in Epidermis, Papillomas and Carcinomas during Two-Stage Carcinogenesis in the SENCAR Mouse 165

Spermatogenic Stage Sensitivity to 6-Mercaptopurine in the Mouse 174

Static

Cardiovascular Risk from Exposure to Static Magnetic Fields 322

Biological Effects of Static Magnetic Fields: A Selective Review with Emphasis on Risk Assessment 589

Station

Occupational Radiation Exposures at a Fusion Power Station 323

Stationary

Differential Responses of Log and Stationary Phase Human Fibroblasts to Inhibition of DNA Repair by Aphidicolin 249

Statistical

An Interactive Statistical Distribution Analysis Program Utilizing Numerical and Graphical Methods 592

Status

Arthropod Associates and Macronutrient Status of the Red-Ink Sundew (*Drosera erythrorhiza* Lindl.) 426

The Effects of Acid Rain on Forest Nutrient Status 490

Status of the Residential Conservation Service Program in Selected States as of December 1981 567

White-Tailed Deer (*Odocoileus virginianus*) on the Department of Energy's Oak Ridge Reservation: 1980 Status Report 705

White-Tailed Deer (*Odocoileus virginianus*) on the Department of Energy's Oak Ridge Reservation: 1981 Status Report 706

The Growth, Nutrient Absorption, and Moisture Status of Selected Woody Species in Coal Mine Spoil in Response to an Induced Infection by the Ectomycorrhizal Fungus *Pisolithus tinctorius* 718

International Survey of the Status of Technology of Critical Components for Coal Liquefaction Processes 725

Stem

Specific-Locus Mutation Frequencies in Mouse Stem-Cell Spermatogonia at Very Low Radiation Dose Rates 213

Steps

Toxicology Data Bank Steps up Efforts 294

Stereo

Stereo Electron Microscope Studies of Mitotic Chromosomes from Chinese Hamster Ovary Cells 134

Stick

- Testing for Competition: A Critique of De Vita's Use of the Broken-Stick Model 532

Stimulated

- Intracellular Glycosylation of Vitellogenin in the Liver of Estrogen-Stimulated *Xenopus laevis* 77
- Contact-Stimulated Proliferation of Cultured Mouse Epidermal Cells by 3T3 Feeder Layers: Inhibition by 12-O-Tetradecanoylphorbol-13-Acetate (TPA) 156
- A Yeast Endoribonuclease Stimulated by Novikoff Hepatoma Small Nuclear RNAs U1 and U2 254

Stizostedion

- Measurements of Growth and Consumption of Sauger (*Stizostedion canadense*): Implication for Fish Energetics Studies 511

Stochastic

- The Implications of a Stochastic Approach to Air Quality Regulations 637
- The Effect of Stochastic Variation on Estimates of the Probability of Entrainment Mortality: Methodology, Results, and User's Guide 662

Stock

- The Impact of Entrainment and Impingement on Fish Populations in the Hudson River Estuary - Volume II: Impingement Impact Analyses, Evaluations of Alternative Screening Devices, and Critiques of Utility Testimony Relating to Density-Dependent Growth, the Age-Composition of the Striped Bass Spawning Stock, and the LMS Real-Time Life Cycle Model 654
- The Impact of Entrainment and Impingement on Fish Populations in the Hudson River Estuary - Volume III - An Analysis of the Validity of the Utilities' Stock-Recruitment Curve-Fitting Exercise and "Prior Estimation of Beta" Technique 663
- A Users's Guide for the Stock-Recruitment Model Validation Program 664
- Relative Stock Composition of the Atlantic Coast Striped Bass Population: Further Analysis 714

Stopping

- Stopping Power of Liquid Water for Low-Energy Electrons 299
- Calorimetric Measurement of Electron Stopping Power of Aluminum and Copper between 11 and 127 keV 345

Storage

- Storage and Release of Organic Carbon in Peninsular Malaysia 459
- Summaries of Soil Carbon Storage in World Life Zones 524

Storm

- Plume Washout around a Major Coal-Fired Power Plant: Results of a Single Storm Event 437
- Plume Washout around a Major Coal-Fired Power Plant: Results of a Single Storm Event 438

Strain

- Radiation-Induced Leukemogenesis in RFM-Un Strain Mice: A Potential Model for Retrovirus Sequence Transposition 261

Strains

- Comparative Physicochemical and Biological Properties of Two Strains of Kilham Rat Virus, a Non-Defective Parvovirus 158

Stranded

- Interaction of a DNA-Binding Protein, the Gene Product of D5 of Bacteriophage T5, with Double-Stranded DNA - Analysis by Metrizamide Gradient Centrifugation 71
- Calibration of Denaturing Agarose Gels for Molecular Weight Estimation of DNA: Size Determination of the Single-Stranded Genomes of Parvoviruses 247

Stratabound

- Geology and Geochemistry of the Stratabound Sulfide Deposits of the Pyriton District, Alabama 540
- Geologic Setting of the Hillabee Metavolcanic Complex and Associated Stratabound Sulfide Deposits in the Appalachian Piedmont of Alabama 545

Strategies

Compilation of a Biogenic Hydrocarbon Emissions Inventory for Evaluating Ozone Control Strategies in the San Francisco Bay Area 436

Cartographic Evaluation of Environmental Management Strategies 481

Stream

Cold Trapping Efficiencies for Collection of Tritiated Water Entrained in a Gaseous Stream 399

Organic Carbon Spiralling in Stream Ecosystems 514

Parameter Constraints in a Stream Ecosystem Model: Incorporation of a Priori Information in Monte Carlo Error Analysis 517

CHNHYD: A CHaNNel HYDrodynamic Model for Simulating Flows and Water Surface Elevations in a Stream/River Network 720

Streambed

Distribution and Relationship of Radionuclides to Streambed Gravels in a Small Watershed 457

Streams

Nutrient Spiralling in Streams: Implications for Nutrient Limitation and Invertebrate Activity 515

Guidance for the Use of Artificial Streams to Assess the Effects of Toxicants in Freshwater Systems 700

Strength

Pressure-Dependent Electron Attachment Rates in Perfluoroalkanes and Perfluoropropylene and Their Effect on the Breakdown Strength of These Gases 346

Corrected Analysis of the Ability to Detect Reductions in Year-Class Strength of the Hudson River White Perch (*Morone americana*) Population 549

Strengths

High Voltage Research (Breakdown Strengths of Gaseous and Liquid Insulators) and Environmental Effects of Dielectric Gases Semiannual Report (April 1-September 30, 1981) 584

Stress

Review and Evaluation of Microcosms for Assessing Effects of Stress in Marine Ecosystems 445

Effects of Chronic Air Pollution Stress on Photosynthesis, Carbon Allocation, and Growth of White Pine Trees 506

Evaluation and Critique of In Situ Experimental Systems for Investigating Effects of Stress in Lentic Ecosystems 650

Stresses

Investigation of Extraintest Stressors Using a Power Plant Simulator 661

Population-Level Effects of Multiple Stresses on Fish and Shellfish 683

Research Needs to Assess Population-Level Effects of Multiple Stresses on Fish and Shellfish 716

Review and Analysis of Existing Modeling Approaches for Assessing Population-Level Effects of Multiple Stresses on Fish and Shellfish 717

STRIPE

User's Manual for STRIPE: A Computer Code for Simulating Striped Bass Young-of-the-Year Population in the Hudson River 673

Striped

The Impact of Entrainment and Impingement on Fish Populations in the Hudson River Estuary - Volume II: Impingement Impact Analyses, Evaluations of Alternative Screening Devices, and Critiques of Utility Testimony Relating to Density-Dependent Growth, the Age-Composition of the Striped Bass Spawning Stock, and the LMS Real-Time Life Cycle Model 654

Methods to Assess Impacts on Hudson River Striped Bass: Final Report 665

User's Manual for STRIPE: A Computer Code for Simulating Striped Bass Young-of-the-Year Population in the Hudson River 673

Relative Stock Composition of the Atlantic Coast Striped Bass Population: Further Analysis 714

Strontium

Strontium-90 in Bone: A Case Study in Age-Dependent Dosimetric Modeling 372

Structural

Structural Anomalies of Highly Malignant Respiratory Tract Epithelial Cells 149

Structure

pH Effects on the Structure of the Inner Histones 27

Stabilization of the Tertiary Structure of Yeast Phenylalanine tRNA by the Hexammine Cobaltic Ion: X-Ray Evidence for Hydrogen Bonding to Pairs of Guanine Bases in the Major Groove 96

The Structure of Gene-Size Chromatin Fragments from the Macronucleus of *Oxytricha nova* 133

The Primary Structure of Genetic Variants of Mouse Hemoglobin 188

Structure-Toxicity Relationships of Selected Dinitrogen-Containing Cyclic Compounds 219

Structure-Toxicity Relationships of Selected Nitrogenous Heterocyclic Compounds. II. Dinitrogen Molecules 220

Structure-Toxicity Relationships of Selected Nitrogenous Heterocyclic Compounds. III: Relations Using Molecular Connectivity 223

Antischistosomal Analogs of Hycanthone. 2. Structure of 2-[2-(Diethylamino)ethyl]-2H-[1]-Benzothioipyran [4,3,2-cd]Indazole-5-Methanol Monohydrate 276

Structures

Cell-Free Extracts That Induce Correct Transcription Initiation by RNA Polymerase II Convert SV40 DNA to Ordered Nucleoprotein Structures 239

Conversion of Simian Virus 40 DNA to Ordered Nucleoprotein Structures by Extracts that Direct Accurate Initiation by Eukaryotic RNA Polymerase II 240

The Effects of Selected Hydraulic Structures on Fisheries and Limnology 455

Materials and Structures Program Publications Data Base 572

Structuring

Structuring of a Predator Population through Temperature-Mediated Effects on Prey Availability 446

Su

Mechanism of Suppression in *Drosophila melanogaster*. 8. Comparison of Su(S) Alleles for Ability to Suppress the Mutants Purple, Vermilion, and Speck 112

su

Mechanism of Suppression in *Drosophila*: Evidence for a Macromolecule Produced by the su(s) + Locus That Inhibits Sepiapterin Synthase 113

Sublethal

Recovery of Immune Competence Following Sublethal X-Irradiation of Young and Old Mice: A Model for Studying Age-Related Loss of Immunologic Homeostasis 185

Submodel

SEDMNT: A Sediment Transport Submodel Based on Hydrodynamic Principles for the Unified Transport Model 678

Subpopulations

Identifying Critical Human Subpopulations by Age Groups: Radioactivity and the Lung 321

Substances

Assessment of Risks to Human Reproduction and to Development of the Human Conceptus from Exposure to Environmental Substances 570

Environmental Mobility of Toxic Substances Released from Photovoltaic-Associated Processes: Terrestrial Ecosystems 580

Substitutes

Comparative Embryotoxicity and Teratogenicity of Petroleum and Petroleum Substitutes to Insects Developing in Contaminated Substrates 550

Substrate

- 3-Bromo-2-Ketoglutarate: A Substrate and Affinity Label for Diphosphopyridine Nucleotide-Dependent Isocitrate Dehydrogenase 13

Substrates

- Surface-Enhanced Raman Scattering on Silver-Coated Teflon Sphere Substrates 336
Comparative Embryotoxicity and Teratogenicity of Petroleum and Petroleum Substitutes to Insects Developing in Contaminated Substrates 550

Subsurface

- Results of Subsurface Investigation of Radionuclides in Soil in Finberg Field, Attleboro, Massachusetts 587
Radionuclide Characterization of Subsurface Soil on the Site of Building 3505 at Oak Ridge National Laboratory 647

subtillis

- Psoralen-Plus-Light Damage and Repair in Transforming DNA of *Bacillus subtilis* 79

Subtropical

- The Influence of Food Concentration and Container Volume on Life History Parameters of *Diaptomus dorsalis* Marsh from Subtropical Florida 473

Succession

- Forest Succession Models and Their Ecological and Management Implications 552

Suitability

- Proceedings of the Symposium on Low-Level Waste Disposal: Site Suitability Requirements 621

Sulfate

- A Simple Reverse Phase Column Clean Up for the Determination of Sulfate in Aqueous Leachates Containing Organic Compounds 1
Factors Influencing Trace Metal, Sulfate, and Hydrogen Ion Concentrations in Rain 501

Sulfide

- Photoelectron Spectrum of Hydrogen Sulfide following Multiphoton Ionization 389
Geology and Geochemistry of the Stratabound Sulfide Deposits of the Pyriton District, Alabama 540
Geologic Setting of the Hillabee Metavolcanic Complex and Associated Stratabound Sulfide Deposits in the Appalachian Piedmont of Alabama 545

Sulfur

- Impulse Breakdown in Sulfur Hexafluoride, Sulfur Hexafluoride/Nitrogen and Sulfur Hexafluoride/Perfluorocarbon Mixtures 325
Impulse Breakdown in Sulfur Hexafluoride, Sulfur Hexafluoride/Nitrogen and Sulfur Hexafluoride/Perfluorocarbon Mixtures 325
Impulse Breakdown in Sulfur Hexafluoride, Sulfur Hexafluoride/Nitrogen and Sulfur Hexafluoride/Perfluorocarbon Mixtures 325
Detection of Sulfur Tetrafluoride in Sparked Sulfur Hexafluoride 406
Detection of Sulfur Tetrafluoride in Sparked Sulfur Hexafluoride 406
Studies of Spark Decomposition Products of Sulfur Hexafluoride and Sulfur Hexafluoride/Perfluorocarbon Mixtures 407
Studies of Spark Decomposition Products of Sulfur Hexafluoride and Sulfur Hexafluoride/Perfluorocarbon Mixtures 407
Cycling of Organic and Inorganic Sulfur in a Chestnut Oak Forest 489
Sulfur and Nitrogen Uptake by Loblolly Pine Seedlings as Influenced by Soil Nitrogen and Sulfur Additions 495
Sulfur and Nitrogen Uptake by Loblolly Pine Seedlings as Influenced by Soil Nitrogen and Sulfur Additions 495
Responses of Radish to Nitrogen Dioxide, Sulfur Dioxide, and Ozone in Combination at Three Concentrations 527
Atmospheric Sulfur Deposition: Environmental Impact and Health Effects 702

Summaries

Summaries of Soil Carbon Storage in World Life Zones 524

Summary

Personnel Dosimetry Intercomparison Studies at the Health Physics Research Reactor: A Summary (1974-1980) 410

Summary of Research on Coal Liquefaction Product Spills 676

The Short Rotation Woody Crops Program: 1982 Program Summary 695

Sundew

Arthropod Associates and Macronutrient Status of the Red-Ink Sundew (*Drosera erythrorhiza* Lindl.) 426

Supermutagenicity

Supermutagenicity of Ethylnitrosourea in the Mouse Spot Test - Comparison with Methylnitrosourea and Ethylnitrosourethane 206

Supplements

Limits for Intakes of Radionuclides by Workers. ICRP Publication 30, Supplement B to Part 3 Including Addendum to the Supplements of Parts 1 and 2 444

Suppliers

Residential Conservation Service - Planning and Implementation Guide for Home Heating Suppliers 568

Support

Initial Atmospheric Dispersion Modeling in Support of the Multiple-Site Incineration Study 596

Environmetrics of the Gasifier in Industry Program: III. Decision Support Systems for Quality Assurance Controls 675

Supports

Binding of Monoclonal Antibody to Protein Antigen in Fluid Phase or Bound to Solid Supports 117

Suppress

Mechanism of Suppression in *Drosophila melanogaster*. 8. Comparison of Su(S) Alleles for Ability to Suppress the Mutants Purple, Vermilion, and Speck 112

Suppressed

Immunoselection of Tumor Cell Variants by Mice Suppressed with Ultraviolet Radiation 270

Suppression

Mechanism of Suppression in *Drosophila melanogaster*. 8. Comparison of Su(S) Alleles for Ability to Suppress the Mutants Purple, Vermilion, and Speck 112

Mechanism of Suppression in *Drosophila*: Evidence for a Macromolecule Produced by the su(s)+ Locus That Inhibits Sepiapterin Synthase 113

Surface

Uptake of Tritiated Ouabain from the Cell Surface into the Lysosomal Compartment of HeLa Cells 34

Recycling of Surface Sialoglycoconjugates in HTC and HeLa Cells 63

Heterogeneous Recycling of Surface Sialoglycoproteins in HeLa Cells 64

Surface-Enhanced Raman Scattering in Ag-Pyridine Sols 326

Surface-Enhanced Raman Scattering on Silver-Coated Teflon Sphere Substrates 336

Photoacoustic Study of Surface Plasmons in Metals 352

Radiative Decay of Surface Plasmons on Oblate Spheroids 375

An Examination of Two Methods for Estimating the Transfer of Aerosols from the Troposphere to the Earth's Surface 383

Energy Losses by Swift Charged Particles in the Bulk and at the Surface of Condensed Matter 400

Chapter 3 - The Interaction of Photons with Surface Plasmons 401

Quantification of Surface Contamination: Principles and Applications 422

CHNHYD: A CHaNnel HYDrodynamic Model for Simulating Flows and Water Surface Elevations in a Stream/River Network 720

Surfaces

An Analysis of Reported Values of the Environmental Half-Time for Radionuclides Deposited on the Surfaces of Vegetation 386

Survey

Use of Gamma-Ray Detection Instrumentation in ORNL's Off-Site Radiological Survey Program 307

Methods of Removing Uranium from Drinking Water - A Literature Survey - Present Municipal Water Treatment and Potential Removal Methods 564

Radiological Survey of the Former Kellex Research Facility, Jersey City, New Jersey 581

Radiological Survey of the Former Bridgeport Brass Company Special Metals Extrusion Plant, Adrian, Michigan 594

A Survey of Potential Health and Safety Hazards of Commercial-Scale Ethanol Production Facilities 617

International Survey of Coal Preparation Technology 639

Technical Background Information for the Environmental and Safety Report, Vol. 5: The 1977 Clinch River Sediment Survey - Data Presentation 648

Survey of Cooling Towers Within Oak Ridge Operations for the Presence of Legionnaire's Disease Bacterium 712

International Survey of the Status of Technology of Critical Components for Coal Liquefaction Processes 725

Surveys

Technology and Cost of Termination Surveys Associated with Decommissioning of Nuclear Facilities 618

Survival

Survival of Mammary Epithelial Cells from Virgin Female BALB/c Mice Following in Vivo Gamma Irradiation 3

Contribution of Unfrozen Fraction and of Salt Concentration to the Survival of Slowly Frozen Human Erythrocytes: Influence of Cell Concentration 155

Survivors

Dosimetry for the Japanese Atomic Bomb Survivors 360

Findings of a Recent ORNL Review of Dosimetry for the Japanese Atomic-Bomb Survivors 600

SV40

Cell-Free Extracts That Induce Correct Transcription Initiation by RNA Polymerase II Convert SV40 DNA to Ordered Nucleoprotein Structures 239

Swift

Coherent States and the Interaction of Swift Ions with Condensed Matter 324

Energy Losses by Swift Charged Particles in the Bulk and at the Surface of Condensed Matter 400

Swine

Mathematical Studies of the Absorption into Blood of Am-241 following Oral Intubation into the Gut of Miniature Swine 305

Estimates of Dose to Systemic Organs and GI Tract Based on Data from Miniature Swine Orally Intubated with a Single Dose of Am-241 Citrate 306

Switches

Gases for Possible Use in Diffuse-Discharge Switches 313

Gases for Possible Use in Diffuse-Discharge Switches 314

Sycamore

- Simulated Water Budgets for an Irrigated Sycamore Phytomass Farm 463
 Genetic Selection of American Sycamore for Biomass Production in the Mid-South Final Report
 for the Period March 9, 1979 - May 31, 1982 684

Symmetric

- Tellurium-125 Chemical Shifts of Symmetric and Unsymmetric Dialkyl Ditellurides 393

Symposium

- AAAS Symposium Volume Series - Health Risks Associated with Energy Technologies 417
 Gaseous Dielectrics III - Proceedings of the Third International Symposium on Gaseous Dielectrics, Knoxville, TN, March 7-11, 1982 582
 Proceedings of the Symposium on Uncertainties Associated with the Regulation of the Geologic Disposal of High-Level Radioactive Waste 603
 Proceedings of the Symposium on Low-Level Waste Disposal: Site Suitability Requirements 621
 Health Risk Analysis - Proceedings of the Third Life Sciences Symposium, Gatlinburg, TN, October 27-30, 1980 644

Syn

- Base Displacement in AAF and AF Modified dCpdG: Syn and Anti Guanine 342

Synaptemal

- Synaptemal Complex Analysis of Two X-7 Translocations in Male Mice. I. R3 and R5
 Quadrivalents 10

Synchronous

- Synchronous Luminescence Spectroscopy: Methodology and Applicability 421
 Synchronous Spawning of Threadfin Shad 508

Synfuel

- Evaluation of Hydrotreatment as a Means of Reducing Biological Activity of Synfuel Related Materials 222
 Enhanced Benzo(a)pyrene Metabolism in Hamster Embryonic Cells Exposed in Culture to Fossil Synfuel Products 408
 Preparation of Environmental Analyses for Synfuel and Unconventional Gas Technologies 696

Synfuels

- Environmetrics of Synfuels: IV. Project Results Tracking Systems (PRTS) 707

Synthase

- Mechanism of Suppression in Drosophila: Evidence for a Macromolecule Produced by the su(s)+ Locus That Inhibits Sepiapterin Synthase 113

Synthesis

- Generation and Characterization of Variants of Mouse Hepatoma Cells with Defects in Hepato-Specific Gene Expression. I. Albumin Synthesis Variants 41
 Mutagenesis of Bacteriophage T7 In Vitro by Incorporation of O-6-Methylguanine during DNA Synthesis 47
 Biosynthesis, Nonenzymatic Synthesis and Purification of the Intermediate in Synthesis of Sepiapterin in Drosophila 49
 Biosynthesis, Nonenzymatic Synthesis and Purification of the Intermediate in Synthesis of Sepiapterin in Drosophila 49
 Effects of an Extract from the Sea Squirt Ecteinascidia turbinata on DNA Synthesis and Excision Repair in Human Fibroblasts 52
 Modulation of Prostaglandin Synthesis and Tumor Promotion 62
 Regulation of Alpha-Fetoprotein and Transferrin Synthesis and Secretion in Mouse Hepatoma Cells 159
 Induction and Expression of Mutations in Mammalian Cells in the Absence of DNA Synthesis and Cell Division 170
 Unscheduled DNA Synthesis in Mammalian Germ Cells - Its Potential Use in Mutagenicity

Testing	226
Synthesis of 15-(p-Iodophenyl)-6-Tellurapentadecanoic Acid: A New Myocardial Imaging Agent	333
Synthesis and Biological Evaluation of 17-[I-131]Iodo-9-Telluraheptadecanoic Acid - A Potential Myocardial Imaging Agent	334
Analysis and Refinement of the Microscale Synthesis of the Pt-195m-Labeled Antitumor Drug, cis-Dichlorodiammineplatinum(II), cis-DDP	343
Transport of Organic Carbon to the Sea by Rivers of North America: A Synthesis of Existing Data	513
Synthetic	
Chronic Toxicity of the Azaarene Quinoline, a Synthetic Fuel Component, to the Pond Snail <i>Physa heterostroph</i>	509
Environmental Risk Analyses of Wastewaters Produced by Synthetic Fuels Technologies	521
Evaporation of Phenols from Synthetic Liquid Fuel Spills	535
Publications of Life Sciences Synthetic Fuels of Oak Ridge National Laboratory	577
System	
Effect of Metabolic Activation on the Cytotoxicity and Mutagenicity of 1,2-Dibromoethane in the CHO/HGPRT System	23
Cytotoxicity and Mutagenicity of Five Antitumor Compounds (Ellipticines) in the CHO/HGPRT System	44
Gene Mutation, Quantitative Mutagenesis and Mutagen Screening in Mammalian Cells: Study with the CHO/HGPRT System	103
A Multiphasic Chinese Hamster Mutational System	104
Propagation of Normal Human Epithelial Cell Populations Using an in Vivo Culture System: Description and Applications	127
Protein Turnover and Phenotypic Expression in the Chinese Hamster Ovary Cell/Hypoxanthine-Guanine Phosphoribosyl Transferase (CHO/HGPRT) System	141
Effect of Selection Cell Density on the Recovery of Mutagen Induced 6-Thioguanine Resistant Cells (CHO/HGPRT System)	171
Phenotypic Expression Time of Mutagen-Induced 6-Thioguanine Resistance in Chinese Hamster Ovary Cells (CHO/HGPRT System): Expression in Division Arrested Cell Cultures	172
Cytotoxicity and Mutagenicity of Dimethylnitrosamine in Mammalian Cells (CHO/HGPRT System): Enhancement by Calcium Phosphate	173
Flip-Flop Hydrogen Bonding in Partially Disordered System	214
An Analysis of Mutagenic Activity of Quinolines in the CHO/HGPRT System	215
Lipid Peroxidation of S9 and the CHO/HGPRT System	259
A System for the Molecular Analysis of Mutation in pSV2gpt Transfected CHO Cells	264
The Development and Application of an Image Analyzing and Processing System	404
Transportation of Radioactive Materials: The Legislative and Regulatory Information System	565
Health Effects of Environmental Chemicals on the Adult Human Reproductive System - A Selected Bibliography with Abstracts 1963-1981	576
A Mobile Gamma-Ray Scanning System for Detecting Radiation Anomalies Associated with Radium-226 Bearing Materials	607
Analysis of Proposed New IAEA Basis for Transportation Regulatory System Technical Report	612
Risk Assessment of Coal Production: An Information System User's Manual	616
Guidance Manual for Department of Energy Compliance with the Clean Water Act: National Pollutant Discharge Elimination System (NPDES)	680
Systemic	
Estimates of Dose to Systemic Organs and GI Tract Based on Data from Miniature Swine Orally Intubated with a Single Dose of Am-241 Citrate	306

Systems

- Action Spectra for the Photolysis of 5-Iododeoxyuridine in DNA and Related Model Systems: Evidence for Short-Range Energy Transfer 196
- Aspergillus nidulans: Systems and Results of Tests for Chemical Induction of Mitotic Segregation and Mutation. I. Diploid and Duplication Assay Systems. A Report of U.S. EPA Gene-Tox Program 286
- Aspergillus nidulans: Systems and Results of Tests for Chemical Induction of Mitotic Segregation and Mutation. I. Diploid and Duplication Assay Systems. A Report of the U.S. EPA Gene-Tox Program 286
- Aspergillus nidulans: Systems and Results of Tests for Induction of Mitotic Segregation and Mutation. II. Haploid Assay Systems and Overall Response of All Systems. A Report of the U.S. EPA Gene-Tox Program 293
- Aspergillus nidulans: Systems and Results of Tests for Induction of Mitotic Segregation and Mutation. II. Haploid Assay Systems and Overall Response of All Systems. A Report of the U.S. EPA Gene-Tox Program 293
- Aspergillus nidulans: Systems and Results of Tests for Induction of Mitotic Segregation and Mutation. II. Haploid Assay Systems and Overall Response of All Systems. A Report of the U.S. EPA Gene-Tox Program 293
- On Discussion of Risk of Energy Systems 355
- Fluctuation Experiments on Atomic and Molecular Systems Using the One-Atom Detector 358
- Absorption of RF and Microwaves on Spherical Multilayer Biological Systems 405
- Framework for Evaluating the Utility of Incentive Systems for Radioactive Waste Repository Siting 435
- The Use of Soda-Lime for Measuring Respiration Rates in Terrestrial Systems 470
- Chaotic Models as Representations of Ecological Systems 518
- Publications of the Transportation Systems Utilization Division: A Bibliography 574
- Evaluation and Critique of In Situ Experimental Systems for Investigating Effects of Stress in Lentic Ecosystems 650
- Environmetrics of the Gasifier in Industry Program: III. Decision Support Systems for Quality Assurance Controls 675
- Guidance for the Use of Artificial Streams to Assess the Effects of Toxicants in Freshwater Systems 700
- Environmetrics of Synfuels: IV. Project Results Tracking Systems (PRTS) 707

S9

- Calcium-Enhanced Cellular Uptake of Rat Liver S9 by Chinese Hamster Ovary Cells 253
- Lipid Peroxidation of S9 and the CHO/HGRPT System 259

Tagging

- Tagging Materials for Detection of Explosives 317

Tailed

- White-Tailed Deer (*Odocoileus virginianus*) on the Department of Energy's Oak Ridge Reservation: 1980 Status Report 705
- White-Tailed Deer (*Odocoileus virginianus*) on the Department of Energy's Oak Ridge Reservation: 1981 Status Report 706

Tailings

- Grouting Research for Uranium Mill Tailings 538

Tc

- Bioaccumulation and Distribution of Tc-95m in an Experimental Freshwater Pond 450
- Bioaccumulation of Tc-95m in Fish and Snails 451

Te

- Mobile Species of Pu, Am, Cm, Np, and Te in the Environment 453

Technetium

- Interception and Retention of Technetium by Vegetation and Soil 344

Environmental Behavior of Technetium in Soil and Vegetation. Implications for Radiological Assessments	483
Environmental Behavior of Technetium in Soil and Vegetation: Implications for Radiological Impact Assessment	595
Technical	
Scientific and Technical Information for Research and Development	291
Technical Considerations Related to Interim Source Term Assumptions for Emergency Planning and Equipment Qualification	609
Analysis of Proposed New IAEA Basis for Transportation Regulatory System Technical Report	612
Technical Analysis of the Use of Biomass for Energy Production	641
Technical Background Information for the Environmental and Safety Report, Vol. 5: The 1977 Clinch River Sediment Survey - Data Presentation	648
Technologies	
AAAS Symposium Volume Series - Health Risks Associated with Energy Technologies	417
Environmental Risk Analyses of Wastewaters Produced by Synthetic Fuels Technologies	521
Use of Pine Foliage as an Indicator of Fluoride Accumulation from Uranium Hexafluoride Technologies	542
Preparation of Environmental Analyses for Synfuel and Unconventional Gas Technologies	696
Technology	
Technology and Cost of Termination Surveys Associated with Decommissioning of Nuclear Facilities	618
International Energy Technology Assessment - Atmospheric Fluidized-Bed Combustion	638
International Survey of Coal Preparation Technology	639
Chattanooga Shale: An Assessment of the Resource and Technology for the Recovery of Hydrocarbons and Minerals	640
International Survey of the Status of Technology of Critical Components for Coal Liquefaction Processes	725
Teflon	
Surface-Enhanced Raman Scattering on Silver-Coated Teflon Sphere Substrates	336
TEHM	
AGTEHM: Documentation of Modifications to the Terrestrial Ecosystem Hydrology Model (TEHM) for Agricultural Applications	677
Teleocidin	
Induction of Differentiation of Human Promyelocytic Leukemia (HL-60) Cells by Teleocidin B and Phorbol-13-Myristate-13-Acetate	108
Telluraheptadecanoic	
Synthesis and Biological Evaluation of 17-[1-131]Iodo-9-Telluraheptadecanoic Acid - A Potential Myocardial Imaging Agent	334
Tellurium-123m Labeled-9-Telluraheptadecanoic Acid: A Possible Cardiac Imaging Agent	394
Tellurapentadecanoic	
Synthesis of 15-(p-Iodophenyl)-6-Tellurapentadecanoic Acid: A New Myocardial Imaging Agent	333
A New, Well-Retained Myocardial Imaging Agent: Radioiodinated 15-(p-Iodophenyl)-6-Tellurapentadecanoic Acid	335
Tellurium	
Tellurium-125 Chemical Shifts of Symmetric and Unsymmetric Dialkyl Ditellurides	393
Tellurium-123m Labeled-9-Telluraheptadecanoic Acid: A Possible Cardiac Imaging Agent	394
TEM	
Difference in the Ratio of Dominant-Lethal Mutations to Heritable Translocations Produced in Mouse Spermatids and Fully Mature Sperm after Treatment with Triethylenemelamine (TEM)	74

Temperature

Structuring of a Predator Population through Temperature-Mediated Effects on Prey

Availability 446

Impingement of Threadfin Shad: Effects of Temperature and Hydrography 507

The Effect of Temperature on the Toxicity of the Water Soluble Fractions of Diesel Fuel No. 2 and

H-Coal Crude Oil to *Daphnia magna* 713

Temporal

A Temporal Study at the Ultrastructural Level of the Developing Pro-oocyte of *Drosophila*

melanogaster 78

Tennessee

Bird Community Ecology on Power-Line Corridors in East Tennessee 498

Food Habits of Bobcats in Eastern Tennessee 539

Environmental Assessment - Tennol, Inc. - Loan Guarantee Application, Marion County,

Tennessee 636

Tennol

Environmental Assessment - Tennol, Inc. - Loan Guarantee Application, Marion County,

Tennessee 636

Teratogen

A Frog Embryo Teratogenesis Assay: *Xenopus* (FETAX) - A Model for Teratogen

Screening 51

Teratogenesis

A Frog Embryo Teratogenesis Assay: *Xenopus* (FETAX) - A Model for Teratogen

Screening 51

Teratogenic

Embryotoxic and Teratogenic Effects of Aqueous Extracts of a Coal Gasification Electrostatic

Precipitator 221

Teratogenicity

Comparative Embryotoxicity and Teratogenicity of Petroleum and Petroleum Substitutes to Insects

Developing in Contaminated Substrates 550

Teratology

The Environmental Teratology Information Center's Data Extraction Project 295

Term

The Relevance of Long Term Carcinogenic and Genetic Hazards to Emergency Control 68

Long-Term Morphologic and Biochemical Features of Experimentally Induced Lung Fibrosis in the Mouse 87

Experimental Lung Fibrosis in the Mouse: Long-Term Morphologic and Biochemical Features 88

The Need to Develop a Short-Term Chinese Hamster In Vivo Specific Locus Mutational Assay 106

Comparison of Complete Carcinogenesis and Tumor Initiation in Mouse Skin: The Induction of Papillomas by Tumor Initiation-Promotion a Reliable Short Term Assay 243

Shallow-Land Burial of Low-Level Radioactive Wastes: Preliminary Simulations of Long-Term Health Risks 328

On the Long-Term Behaviour of Iodine 129 in the Terrestrial Environment 364

Uncertainties in the Assessment of Long-Term Collective Dose and Health Effects 366

Uncertainties in LWR Accident Source Term Estimation 392

Interim Source Term Assumptions for Emergency Planning and Equipment Qualification 608

Technical Considerations Related to Interim Source Term Assumptions for Emergency Planning and Equipment Qualification 609

Environmetrics of the Long-Term Field Studies of the Environmental Water Quality Operational Studies 674

Evaluation of Short-Term Exposure to Heated Water and Chlorine for Control of the Asiatic Clam (*Corbicula fluminea*) 689

The Long-Term Nutrient Retention Properties of Forest Ecosystems: A Simulation Investigation 719

Termination

Technology and Cost of Termination Surveys Associated with Decommissioning of Nuclear Facilities 618

Ternary

Ternary Gas Dielectrics 316

Terrestrial

On the Long-Term Behaviour of Iodine 129 in the Terrestrial Environment 364
 The Use of Soda-Lime for Measuring Respiration Rates in Terrestrial Systems 470
 Modeling Terrestrial Carbon Cycling at the Global Scale 474
 Air Pollution Impacts on Forest Trees: Acid Deposition: Effects on Terrestrial Ecosystems 533
 Terrestrial Perturbation Experiments for Environmental Assessment 541
 Environmental Mobility of Toxic Substances Released from Photovoltaic-Associated Processes: Terrestrial Ecosystems 580
 Agricultural Production in the United States by County: A Compilation of Information from the 1974 Census of Agriculture for Use in Terrestrial Food-Chain Transport and Assessment Models 613
 AGTEHM: Documentation of Modifications to the Terrestrial Ecosystem Hydrology Model (TEHM) for Agricultural Applications 677
 Development of Predictive Models for Xenobiotic Bioaccumulation in Terrestrial Ecosystems 708
 Xenobiotic Bioaccumulation by Terrestrial Vertebrates: A Bibliography for Food Chain Modeling 709

Tertiary

Stabilization of the Tertiary Structure of Yeast Phenylalanine tRNA by the Hexamine Cobaltic Ion: X-Ray Evidence for Hydrogen Bonding to Pairs of Guanine Bases in the Major Groove 96

Testicular

Cell Specific Activation and Detoxification of Benzo(a)pyrene by Two Clones Murine Testicular Cell Lines 59

Testimony

The Impact of Entrainment and Impingement on Fish Populations in the Hudson River Estuary - Volume II: Impingement Impact Analyses, Evaluations of Alternative Screening Devices, and Critiques of Utility Testimony Relating to Density-Dependent Growth, the Age-Composition of the Striped Bass Spawning Stock, and the LMS Real-Time Life Cycle Model 654

Tetradecanoylphorbol

Contact-Stimulated Proliferation of Cultured Mouse Epidermal Cells by 3T3 Feeder Layers: Inhibition by 12-O-Tetradecanoylphorbol-13-Acetate (TPA) 156

Tetrafluoride

Detection of Sulfur Tetrafluoride in Sparked Sulfur Hexafluoride 496

Tetrahydro

Tumor-Initiating Activity of 4-Fluoro-7,12-Dimethylbenz(a)anthracene and 1,2,3,4-Tetrahydro-7,12-Dimethylbenz(a)anthracene in Female SENCAR Mice 45

Tetrahydrobenzo

Preparation of Enantiomers of (plus or minus)-Trans-7Beta, 8Alpha-Dihydroxy-9Alpha, 10Alpha-Epoxy-7,8,9,10-Tetrahydrobenzo[a]pyrene 110

Thalassemia

Mouse Models of Human Thalassemia 7

Theoguanine

Effect of Selection Cell Density on the Recovery of Mutagen Induced 6-Theoguanine Resistant Cells (CHO/HGPRT System) 171

Theory

Tracer Theory with Applications in Geosciences - Part I 690

Thermal

Thermal Resistance of Juvenile Crayfish, *Cambarus bartoni* (Fabricius): Experiment and Model 462

Literature Review: Response of Fish to Thermal Discharge 578

These

Pressure-Dependent Electron Attachment Rates in Perfluoroalkanes and Perfluoropropylene and Their Effect on the Breakdown Strength of These Gases 346

Thiamide

Yields and Mean Free Paths of Photoelectrons from Liquid Hexamethyl Phosphoric Thiamide 309

Thin

Diffusion of Au into Sn Thin Films Studied by the Attenuated Total Reflection Method 310

Photoacoustic Determination of Light Scattering from Thin Ag Films in ATR Geometry 353

Thioguanine

Phenotypic Expression Time of Mutagen-Induced 6-Thioguanine Resistance in Chinese Hamster Ovary Cells (CHO/HGPRT System): Expression in Division Arrested Cell Cultures 172

Third

Multiphoton Ionization and Third-Harmonic Generation in Atoms and Molecules 318

Third-Harmonic Generation and Multiphoton Ionization in Rare Gases 387

Vacuum Ultraviolet Spectroscopy of Molecules Using Third-Harmonic Generation in Rare Gases 390

Vacuum Ultraviolet Spectroscopy of Molecules Using Third-Harmonic Generation in Rare Gases 391

Cooperative Effects on Multiphoton Ionization and Third-Harmonic Generation in the Region near Three-Photon Resonance 398

Chemicals Identified in Human Biological Media, A Data Base: Third Annual Report, October 1981, Volume 3, Part 2 Records 3501-5271 557

Chemicals Identified in Human Biological Media, A Data Base: Third Annual Report, October 1981, Volume 3, Part 1 558

Gaseous Dielectrics III - Proceedings of the Third International Symposium on Gaseous Dielectrics, Knoxville, TN, March 7-11, 1982 582

Health Risk Analysis - Proceedings of the Third Life Sciences Symposium, Gatlinburg, TN, October 27-30, 1980 644

Proceedings of the Third Annual Information Meeting DOE Low-Level Waste Management Program 685

Thoracic

Hyperoxia, But Not Thoracic X-Irradiation, Potentiates Bleomycin- and Cyclophosphamide-Induced Lung Damage in Mice 82

Thorium

Comparison of the Radiological Impacts of Thorium and Uranium Nuclear Fuel Cycles 556

Thoughts

Spread of Organisms with Novel Genotypes: Thoughts from an Ecological Perspective 701

Threadfin

Impingement of Threadfin Shad: Effects of Temperature and Hydrography 507

Synchronous Spawning of Threadfin Shad 508

Thymus

Sequential Thymus Grafting of Aged Mice: Characterization of Growth, Regression and Enhancement of Immune Competence 182

Time

Time Course of Metabolism of Benzo(e)pyrene by Hamster Embryo Cells and the Effect of Chemical Modifiers 143

Phenotypic Expression Time of Mutagen-Induced 6-Thioguanine Resistance in Chinese Hamster

- Ovary Cells (CHO/HGPRT System): Expression in Division Arrested Cell Cultures 172
- An Analysis of Reported Values of the Environmental Half-Time for Radionuclides Deposited on the Surfaces of Vegetation 386
- RAGBEEF: A FORTRAN IV - Implementation of a Time-Dependent Model for Radionuclide Contamination of BEEF 611
- The Impact of Entrainment and Impingement on Fish Populations in the Hudson River Estuary - Volume II: Impingement Impact Analyses, Evaluations of Alternative Screening Devices, and Critiques of Utility Testimony Relating to Density-Dependent Growth, the Age-Composition of the Striped Bass Spawning Stock, and the LMS Real-Time Life Cycle Model 654
- Timesaving**
- A Timesaving Technique for Measuring Respiration Rates in Incubated Soil Samples 471
- tinctorius**
- The Growth, Nutrient Absorption, and Moisture Status of Selected Woody Species in Coal Mine Spoil in Response to an Induced Infection by the Ectomycorrhizal Fungus Pisolithus tinctorius 718
- Tissue**
- The Effect of Reestablishing Tissue-Like Cell Associations on Hexose Uptake in Rat Tracheal Epithelial Cell Lines and Primary Cell Cultures 271
- Altered Tissue Reactivity and Interactions between Chemicals 278
- TL**
- Effects of Orocot TL (a Corrosion Inhibitor) on Germination and Growth of Bush Beans 693
- TLD**
- Measurements of the TLD-Albedo Calibration Ratio Made at the Health Physics Research Reactor 337
- TN**
- Gaseous Dielectrics III - Proceedings of the Third International Symposium on Gaseous Dielectrics, Knoxville, TN, March 7-11, 1982 582
- Health Risk Analysis - Proceedings of the Third Life Sciences Symposium, Gatlinburg, TN, October 27-29, 1980 644
- Tobacco**
- Pathogenesis of Lesions Induced in Rat Lung by Chronic Tobacco Smoke Inhalation 93
- Tomography**
- Electron Microscope Tomography: Transcription in 3-D 176
- Towers**
- Concentration, Serotypic Profiles and Infectivity of Legionnaires' Disease Bacteria Populations in Cooling Towers 546
- Survey of Cooling Towers Within Oak Ridge Operations for the Presence of Legionnaire's Disease Bacterium 712
- Tox**
- An Evaluation of the Host-Mediated Assay and Body Fluid Analysis - A Report of the U.S. Experimental Protection Agency Gene-Tox Program 136
- Introduction and Perspectives of Plant Genetic and Cytogenetic Assays: A Report of the U.S. Environmental Protection Agency Gene-Tox Program 284
- Aspergillus nidulans: Systems and Results of Tests for Chemical Induction of Mitotic Segregation and Mutation. I. Diploid and Duplication Assay Systems. A Report of the U.S. EPA Gene-Tox Program 286
- DNA Repair Assays as Tests for Environmental Mutagens: A Report of the U.S. EPA Gene-Tox Program 287
- Aspergillus nidulans: Systems and Results of Tests for Induction of Mitotic Segregation and Mutation. II. Haploid Assay Systems and Overall Response of All Systems. A Report of the U.S. EPA Gene-Tox Program 293
- TOX**
- Formulations of the Physiochemical Processes in the ORNL Unified Transport Model for Toxicants (UTM-TOX) (Interim Report) 657

Toxic

- Environmental Mobility of Toxic Substances Released from Photovoltaic-Associated Processes:
Terrestrial Ecosystems 580

Toxicants

- Effect of Lung, Liver and Kidney Toxicants on Respiratory Rates of Mice 80
Formulations of the Physiochemical Processes in the ORNL Unified Transport Model for Toxicants
(UTM-TOX) (Interim Report) 657
Guidance for the Use of Artificial Streams to Assess the Effects of Toxicants in Freshwater
Systems 700

Toxicity

- Metal Ion Toxicity in *Drosophila* 30
Percutaneous Acute and Chronic Renal Toxicity Induced by Shale Oil and Petroleum Derived Jet
and Diesel Fuel 53
Renal Toxicity of Middle Distillates of Shale Oil and Petroleum in Mice 54
Pulmonary Toxicity of Methylcyclopentadienyl Manganese tricarbonyl (MMT): Nonciliated
Bronchiolar Epithelial (Clara) Cell Necrosis and Alveolar Damage in the Mouse Rat and
Hamster 81
A Method for In Vitro Cutaneous Toxicity Evaluation 115
Relationship of Vanadium, Cadmium, Lead, Nickel, Cobalt and Soft Water to Myocardial and
Vascular Toxicity and Cardiovascular Disease 202
Structure-Toxicity Relationships of Selected Dinitrogen-Containing Cyclic Compounds 219
Structure-Toxicity Relationships of Selected Nitrogenous Heterocyclic Compounds. II. Dinitrogen
Molecules 220
Structure-Toxicity Relationships of Selected Nitrogenous Heterocyclic Compounds. III: Relations
Using Molecular Connectivity 223
In Vitro Toxicity Screening of Dielectric Gases Using Mammalian Cells 339
Chemical Softness and Acute Metal Toxicity in Mice and *Drosophila* 430
Composition and Toxicity of Solid Waste Leachates from Industrial Coal Gasifiers 465
A General Linear Models Approach for Comparing the Response of Several Species in Acute Tox-
icity Tests 468
Chronic Toxicity of the Azaarene Quinoline, a Synthetic Fuel Component, to the Pond Snail *Physa*
heterostrophia 509
The Effect of Temperature on the Toxicity of the Water Soluble Fractions of Diesel Fuel No. 2 and
H-Coal Crude Oil to *Daphnia magna* 713

Toxicokinetics

- A Novel Method for Quantitative Cutaneous Toxicokinetics 101

Toxicological

- The Lung as a Site of Toxicological Interactions 279

Toxicology

- Peer Review Mechanism for the Toxicology Data Bank 288
The Toxicology Information Response Center: A Ten-Year Perspective 292
Toxicology Data Bank Steps up Efforts 294

TPA

- Contact-Stimulated Proliferation of Cultured Mouse Epidermal Cells by 3T3 Feeder Layers: Inhi-
bition by 12-O-Tetradecanoylphorbol-13-Acetate (TPA) 156

Trace

- Factors Influencing Trace Metal, Sulfate, and Hydrogen Ion Concentrations in Rain 501

Tracer

- Tracer Theory with Applications in Geosciences - Part I 690

Tracheal

- Changes in DNA Content of Rat Tracheal Epithelial Cells during Neoplastic Progression In
Vitro 20

Effects of Retinoic Acid on Cell Proliferation and Cell Differentiation in a Rat Tracheal Epithelial Cell Line	119
Determination of Growth Requirements of Non-Tumorigenic and Tumorigenic Tracheal Epithelial Cells Using a Semi-Automated Quantitative Method	120
Localization of Specific Lesions in Dimethylbenz(a)anthracene-Preexposed Tracheal Explants	151
Effect of Carcinogen Dose on the Dynamics of Neoplastic Development in Rat Tracheal Epithelium	263
The Effect of Reestablishing Tissue-Like Cell Associations on Hexose Uptake in Rat Tracheal Epithelial Cell Lines and Primary Cell Cultures	271
Tracheas	
Localization and Quantitation of Presumptive Neoplastic Cell Populations (PNCP) in Tracheas Exposed to Dimethylbenz(a)anthracene (DMBA)	150
Track	
A Core Plasma Model of Charged Particle Track Formation in Insulators	402
Tracking	
Environmetrics of Synfuels: IV. Project Results Tracking Systems (PRTS)	707
Tract	
Formaldehyde and Tumors in Hamster Respiratory Tract	38
Dark Epithelial Cells in Preneoplastic Lesions of the Human Respiratory Tract	123
Structural Anomalies of Highly Malignant Respiratory Tract Epithelial Cells	149
Cytoskeletal Proteins from Tumorigenic and Nontumorigenic Rat Respiratory Tract Epithelial Cells	235
The Effect of Carcinogen Release Rate on the Incidence of Preneoplastic and Neoplastic Lesions of the Respiratory Tract Epithelium in Rats	237
Estimates of Dose to Systemic Organs and GI Tract Based on Data from Miniature Swine Orally Intubated with a Single Dose of Am-241 Citrate	306
Trade	
Small is BRUTAL: The Risk/Energy Trade-Off for Automobiles	597
Training	
Dosimetry Training Programs at Oak Ridge National Laboratory	413
Training Course No 1: The Implementation of FEMWATER (ORNL-5567) Computer Program Final Report	721
Training Course No. 2: The Implementation of FEMWASTE (ORNL-5601) Computer Program - Final Report	722
Trans	
Preparation of Enantiomers of (plus or minus)-Trans-7Beta, 8Alpha-Dihydroxy-9Alpha, 10Alpha-Epoxy-7,8,9,10-Tetrahydrobenzo[a]pyrene	110
Effect of Cis- and Trans-Dichlorodiammineplatinum(II) on Human Tumor Cell Proliferation in Diffusion Chambers in Vivo	296
Transcription	
Electron Microscope Tomography: Transcription in 3-D	176
Cell-Free Extracts That Induce Correct Transcription Initiation by RNA Polymerase II Convert SV40 DNA to Ordered Nucleoprotein Structures	239
Transfected	
A System for the Molecular Analysis of Mutation in pSV2gpt Transfected CHO Cells	264
Transfer	
Dosage Compensation of Serine-4 Transfer RNA in Drosophila melanogaster	17
Action Spectra for the Photolysis of 5-Iododeoxyuridine in DNA and Related Model Systems: Evidence for Short-Range Energy Transfer	196
An Examination of Two Methods for Estimating the Transfer of Aerosols from the Troposphere to the Earth's Surface	383

Transferase

- Protein Turnover and Phenotypic Expression in the Chinese Hamster Ovary Cell/
Hypoxanthine-Guanine Phosphoribosyl Transferase (CHO/HGPRT) System 141
O-6-Methylguanine-DNA Methyl Transferase in Wild-Type and Ada Mutants of E.
coli 157

Transferrin

- Regulation of Alpha-Fetoprotein and Transferrin Synthesis and Secretion in Mouse Hepatoma
Cells 159

Transformation

- Cell Shape Changes in Oncogenic Transformation 94
Reverse Transformation of Chinese Hamster Cells by Cyclic AMP and Hormones 105

Transformed

- Benzo(a)pyrene Metabolism in Primary Cultures of Mouse Epidermal Cells and Untransformed
and Transformed Epidermal Cell Lines 46

Transforming

- Psoralen-Plus-Light Damage and Repair in Transforming DNA of *Bacillus subtilis* 79

Transitions

- Comparison of Bethe's Formula for Magnetic-Moment Transitions in Atoms with the Generalized
Rosenbluth's Equation 373

Translocations

- Synaptonemal Complex Analysis of Two X-7 Translocations in Male Mice. I. R3 and R5
Quadrivalents 10
Difference in the Ratio of Dominant-Lethal Mutations to Heritable Translocations Produced in
Mouse Spermatids and Fully Mature Sperm after Treatment with Triethylenemelamine
(TEM) 74
Lack of Association between Induction of Dominant-Lethal Mutations and Induction of Heritable
Translocations with Benzo(a)pyrene (BaP) in Postmeiotic Germ Cells of Male Mice 75

Transport

- Development of Sodium-Independent Hexose Transport in a Cultured Line of Porcine Kidney
Cells 5
Development of Sodium Ion-Dependent Hexose Transport In Vitro 33
A Model for the Differentiation of Na-Dependent Hexose Transport Capacity in a Population of
LLC-PK(Sub 1) Cells 35
A Model for Cadmium Transport and Distribution in CHO Cells 341
Simulation of Radionuclide Transport in U.S. Agriculture 433
Hydrologic Factors and Sr-90 Transport at a Low-Level Waste Disposal Site 486
Hydrologic Factors and Sr-90 Transport: A Case Study 487
Transport of Organic Carbon to the Sea by Rivers of North America: A Synthesis of Existing
Data 513
Research Efforts on Environmental Transport of Hazardous Materials at Oak Ridge National
Laboratory 537
Agricultural Production in the United States by County: A Compilation of Information from the
1974 Census of Agriculture for Use in Terrestrial Food-Chain Transport and Assessment
Models 613
Formulations of the Physiochemical Processes in the ORNL Unified Transport Model for Toxicants
(UTM-TOX) (Interim Report) 657
SEDMNT: A Sediment Transport Submodel Based on Hydrodynamic Principles for the Unified
Transport Model 678
SEDMNT: A Sediment Transport Submodel Based on Hydrodynamic Principles for the Unified
Transport Model 678
FECWASTE: User's Manual of a Finite-Element Code for Simulating WASTE Transport
Through Saturated-Unsaturated Porous Media 724

Transportation

Transportation of Radioactive Materials: The Legislative and Regulatory Information System 565

Publications of the Transportation Systems Utilization Division: A Bibliography 574

Analysis of Proposed New IAEA Basis for Transportation Regulatory System: Technical Report 612

Transposition

Radiation-Induced Leukemogenesis in RFM-Un Strain Mice: A Potential Model for Retrovirus Sequence Transposition 261

Transuranic

Transuranic Elements in the Environment - Book Review 467

Trapping

Cold Trapping Efficiencies for Collection of Tritiated Water Entrained in a Gaseous Stream 399

Tree

Effects of Sawlog vs. Whole-Tree Harvesting on the Nitrogen, Phosphorus, Potassium, and Calcium Budgets of an Upland Mixed Oak Forest 491

Trees

Effects of Chronic Air Pollution Stress on Photosynthesis, Carbon Allocation, and Growth of White Pine Trees 506

Air Pollution Impacts on Forest Trees: Acid Deposition: Effects on Terrestrial Ecosystems 533

Tricarbonyl

Pulmonary Toxicity of Methylcyclopentadienyl Manganese Tricarbonyl (MMT): Nonciliated Bronchiolar Epithelial (Clara) Cell Necrosis and Alveolar Damage in the Mouse Rat and Hamster 81

Trichoptera

Positive Phototaxis in First Instar Hydropsyche cockerelli Banks (Trichoptera) 460

Evidence for Upstream Dispersion of Adult Caddisflies (Trichoptera: Hydropsychidae) in the Columbia River 461

Triethylenemelamine

Difference in the Ratio of Dominant-Lethal Mutations to Heritable Translocations Produced in Mouse Spermatids and Fully Mature Sperm after Treatment with Triethylenemelamine (TEM) 74

Tritiated

Uptake of Tritiated Ouabain from the Cell Surface into the Lysosomal Compartment of HeLa Cells 34

Cold Trapping Efficiencies for Collection of Tritiated Water Entrained in a Gaseous Stream 399

Experimental Procedure for Examining the Kinetics of Tritium Gas Conversion to Tritiated Water 610

Tritium

Derivation of Dose Conversion Factors for Tritium 602

Experimental Procedure for Examining the Kinetics of Tritium Gas Conversion to Tritiated Water 610

tRNA

Quinine-Containing Isoacceptor of Tyrosine tRNA in Drosophila melanogaster 31

Stabilization of the Tertiary Structure of Yeast Phenylalanine tRNA by the Hexammine Cobaltic Ion: X-Ray Evidence for Hydrogen Bonding to Pairs of Guanine Bases in the Major Groove 96

tRNAs

Studies on the Function of the Non-primer tRNAs Associated with the 70S RNA of Avian Myeloblastosis Virus 272

Tropical

- A Description of FORICO, A Tropical Gap Dynamics Model of the Lower Montane Rain Forest of Puerto Rico 669

Troposphere

- An Examination of Two Methods for Estimating the Transfer of Aerosols from the Troposphere to the Earth's Surface 383

Tulip

- Nitrogen Ion Utilization by Tulip Poplar (*Liriodendron Tulipifera* L.) Seedlings 504

Tulipifera

- Nitrogen Ion Utilization by Tulip Poplar (*Liriodendron Tulipifera* L.) Seedlings 504

Tumor

- Effects of Phorbol Ester Tumor Promoters and Hyperplasiogenic Agents on Cytoplasmic Glucocorticoid Receptors in Epidermis 43
- Tumor-Initiating Activity of 4-Fluoro-7, 12-Dimethylbenz(a)anthracene and 1,2,3, 4-Tetrahydro-7,12-Dimethylbenz(a)anthracene in Female SENCAR Mice 45
- Inhibition of Mouse Skin Tumor Promotion by Several Inhibitors of Arachidonic Acid Metabolism 60
- Modulation of Prostaglandin Synthesis and Tumor Promotion 62
- Quantitative Evaluation of Dark Keratinocytes Induced by Several Promoting and Hyperplasiogenic Agents: Their Use as an Early Morphological Indicator of Tumor-Promoting Action 121
- Effects of Peroxides on Rodent Skin: Epidermal Hyperplasia and Tumor Promotion 126
- Multistage Skin Tumor Promotion: Involvement of a Protein Kinase 148
- Protein Modification Induced by Potent and Weak Tumor-Promoting Hyperplasiogenic Agents 166
- Cell-Mediated Mutagenesis and Tumor-Initiating Activity of the Ubiquitous Polycyclic Hydrocarbon, Cyclopenta(c,d) Pyrene 201
- Comparison of Complete Carcinogenesis and Tumor Initiation in Mouse Skin: The Induction of Papillomas by Tumor Initiation-Promotion a Reliable Short Term Assay 243
- Comparison of Complete Carcinogenesis and Tumor Initiation in Mouse Skin: The Induction of Papillomas by Tumor Initiation-Promotion a Reliable Short Term Assay 243
- The Down-Modulation of Receptors for Phorbol Ester Tumor Promoter in Primary Epidermal Cells 251
- Associations between Tumor Types in Irradiated BALB/c Female Mice 255
- Immunoselection of Tumor Cell Variants by Mice Suppressed with Ultraviolet Radiation 270
- Alpha-Difluoromethylornithine, an Irreversible Inhibitor of Ornithine Decarboxylase, Inhibits Tumor Promoter-Induced Polyamine Accumulation and Carcinogenesis in Mouse Skin 275
- Effect of Cis- and Trans-Dichlorodiammineplatinum(II) on Human Tumor Cell Proliferation in Diffusion Chambers in Vivo 296

Tumorigenic

- Determination of Growth Requirements of Non-Tumorigenic and Tumorigenic Tracheal Epithelial Cells Using a Semi-Automated Quantitative Method 120
- Determination of Growth Requirements of Non-Tumorigenic and Tumorigenic Tracheal Epithelial Cells Using a Semi-Automated Quantitative Method 120
- Cytoskeletal Proteins from Tumorigenic and Nontumorigenic Rat Respiratory Tract Epithelial Cells 235

Tumors

- Formaldehyde and Tumors in Hamster Respiratory Tract 38
- Induction of Mammary Tumors in Virgin Female BALB/c Mice by Single Low Doses of 7,12-Dimethylbenz(a)anthracene (DMBA) 56
- Induction of Mammary Tumors in Virgin Female BALB/c Mice by Single Low Doses of 7,12-Dimethylbenz(a)anthracene 57

turbinata

- Effects of an Extract from the Sea Squirt *Ecteinascidia turbinata* on DNA Synthesis and Excision Repair in Human Fibroblasts 52

Turnover

Concanavalin A Alters the Turnover Rate of Tyrosine Aminotransferase in Cultured Hepatoma Cells 48

Turnover of Gene Products in the Control of Gene Expression 118

Protein Turnover and Phenotypic Expression in the Chinese Hamster Ovary Cell/
Hypoxanthine-Guanine Phosphoribosyl Transferase (CHO/HGPRT) System 141

Regulation by Turnover of Na,K-ATPase in HeLa Cells 186

Tyrosine

Quinine-Containing Isoacceptor of Tyrosine tRNA in *Drosophila melanogaster* 31

Concanavalin A Alters the Turnover Rate of Tyrosine Aminotransferase in Cultured Hepatoma Cells 48

T5

Interaction of a DNA-Binding Protein, the Gene Product of D5 of Bacteriophage T5, with Double-Stranded DNA - Analysis by Metrizamide Gradient Centrifugation 71

T7

Mutagenesis of Bacteriophage T7 In Vitro by Incorporation of O-6-Methylguanine during DNA Synthesis 47

In Vitro Packaging of Bacteriophage T7 DNA Requires ATP 152

DNA Packaging In Vitro by an Isolated Bacteriophage T7 Procapsid 153

Ubiquitous

Cell-Mediated Mutagenesis and Tumor-Initiating Activity of the Ubiquitous Polycyclic Hydrocarbon, Cyclopenta(c,d) Pyrene 201

UCC

Calibration of the Indium Foil Used for Criticality Accident Dosimetry in the UCC-ND
Employee Identification Badge 649

Ultrastructural

A Temporal Study at the Ultrastructural Level of the Developing Pro-oocyte of *Drosophila melanogaster* 78

Ultrastructural Studies of Chironomus Salivary Gland Cells in Different States of Balbiani Ring Activity 175

Ultraviolet

Ultraviolet-Induced Damage and Its Repair in Human DNA 28

Ultraviolet Radiation Skin Carcinogenesis 69

Studies on the Inhibition of Ultraviolet- and Methyl Methanesulfonate-Induced Damage in the DNA of Human Fibroblasts by Novobiocin 250

Immunoselection of Tumor Cell Variants by Mice Suppressed with Ultraviolet Radiation 270

Vacuum Ultraviolet Absorption Spectra of Aromatic Molecules in Solution 368

Vacuum Ultraviolet Spectroscopy of Molecules Using Third-Harmonic Generation in Rare Gases 390

Vacuum Ultraviolet Spectroscopy of Molecules Using Third-Harmonic Generation in Rare Gases 391

um

Comparison of Observed and Predicted Air Concentrations for 18.6 um Fluorescein Particles 374

Un

Radiation-Induced Leukemogenesis in RFM-Un Strain Mice: A Potential Model for Retrovirus Sequence Transposition 261

Uncertainties

Uncertainties in the Assessment of Long-Term Collective Dose and Health Effects 366

Uncertainties Associated with Geologic Disposal of High-Level Radioactive Waste 367

Uncertainties in LWR Accident Source Term Estimation 392

Assessing Model Uncertainties 478

Proceedings of the Symposium on Uncertainties Associated with the Regulation of the Geologic Disposal of High-Level Radioactive Waste 603

Uncertainty

- Uncertainty Estimates for Site-Specific Atmospheric Diffusion Parameters 382
 A Review of Uncertainty Estimates Associated with Models for Assessing the Impact of Breeder
 Reactor Radioactivity Releases 606

Unconventional

- Preparation of Environmental Analyses for Synfuel and Unconventional Gas Technologies 696

Unfrozen

- Contribution of Unfrozen Fraction and of Salt Concentration to the Survival of Slowly Frozen
 Human Erythrocytes: Influence of Cell Concentration 155

Unified

- Formulations of the Physiochemical Processes in the ORNL Unified Transport Model for Toxicants
 (UTM-TOX) (Interim Report) 657
 SEDMNT: A Sediment Transport Submodel Based on Hydrodynamic Principles for the Unified
 Transport Model 678

Unique

- Unique and Multiple Solutions of a Family of Differential Equations Modeling Chemical
 Reactions 429
 New Myocardial Imaging Agents: A Unique Approach 598
 New Myocardial Imaging Agents: A Unique Approach 599

Unit

- Unusual Sequence Features in the Repeat Unit of (G+C)-Rich Crab Satellite DNA 65
 The Functional Unit of the Arom Conjugate in Neurospora 116
 Environmental Studies of Materials from the H-Coal Liquefaction Process Development
 Unit 658

Unsaturated

- FECWATER: User's Manual of a Finite-Element Code for Simulating WATER Flow Through
 Saturated-Unsaturated Porous Media 723
 FECWASTE: User's Manual of a Finite-Element Code for Simulating WASTE Transport
 Through Saturated-Unsaturated Porous Media 724

Unscheduled

- Unscheduled DNA Synthesis in Mammalian Germ Cells - Its Potential Use in Mutagenicity
 Testing 226

Unsymmetric

- Tellurium-125 Chemical Shifts of Symmetric and Unsymmetric Dialkyl Ditellurides 393

Untransformed

- Benzo(a)pyrene Metabolism in Primary Cultures of Mouse Epidermal Cells and Untransformed
 and Transformed Epidermal Cell Lines 46

Unusual

- Unusual Sequence Features in the Repeat Unit of (G+C)-Rich Crab Satellite DNA 65

Upland

- Effects of Sawlog vs. Whole-Tree Harvesting on the Nitrogen, Phosphorus, Potassium, and Cal-
 cium Budgets of an Upland Mixed Oak Forest 491

Upstream

- Evidence for Upstream Dispersion of Adult Caddisflies (Trichoptera: Hydropsychidae) in the
 Columbia River 461

Uptake

- Uptake of Tritiated Ouabain from the Cell Surface into the Lysosomal Compartment of HeLa
 Cells 34
 Calcium-Enhanced Cellular Uptake of Rat Liver S9 by Chinese Hamster Ovary Cells 253
 The Effect of Reestablishing Tissue-Like Cell Associations on Hexose Uptake in Rat Tracheal
 Epithelial Cell Lines and Primary Cell Cultures 271
 New Myocardial Imaging Agents - The Influence of Chain Length on the Heart Uptake of

- Se-75-Labeled Fatty Acids 363
- Uptake and Metabolism of C-14 Anthracene by Soybean (Glycine max) 472
- Sulfur and Nitrogen Uptake by Loblolly Pine Seedlings as Influenced by Soil Nitrogen and Sulfur Additions 495
- Uranium**
- Grouting Research for Uranium Mill Tailings 538
- Use of Pine Foliage as an Indicator of Fluoride Accumulation from Uranium Hexafluoride Technologies 542
- Comparison of the Radiological Impacts of Thorium and Uranium Nuclear Fuel Cycles 556
- Methods of Removing Uranium from Drinking Water - A Literature Survey - Present Municipal Water Treatment and Potential Removal Methods 564
- Urea**
- Formaldehyde Release from Simulated Wall Panels Insulated with Urea-Formaldehyde Foam Insulation 340
- User**
- User's Manual for PHOEL-3, A Monte Carlo Computer Code for Calculating Initial Energies of Electrons and Positrons Produced in Water Irradiated by Photons with Energies Up to 1 GeV 615
- Risk Assessment of Coal Production: An Information System User's Manual 616
- User's Manual for LPGS: A Computer Program for Calculating Radiation Exposure Resulting from Accidental Radioactive Releases to the Hydrosphere 623
- The Effect of Stochastic Variation on Estimates of the Probability of Entrainment Mortality: Methodology, Results, and User's Guide 662
- User's Manual for STRIPE: A Computer Code for Simulating Striped Bass Young-of-the-Year Population in the Hudson River 673
- FECWATER: User's Manual of a Finite-Element Code for Simulating WATER Flow Through Saturated-Unsaturated Porous Media 723
- FECWASTE: User's Manual of a Finite-Element Code for Simulating WASTE Transport Through Saturated-Unsaturated Porous Media 724
- Users**
- A Users's Guide for the Stock-Recruitment Model Validation Program 664
- Proceedings of the 1981 Integrated Data Users Workshop 691
- Utilities**
- The Impact of Entrainment and Impingement on Fish Populations in the Hudson River Estuary - Volume III - An Analysis of the Validity of the Utilities' Stock-Recruitment Curve-Fitting Exercise and "Prior Estimation of Beta" Technique 663
- Utility**
- Framework for Evaluating the Utility of Incentive Systems for Radioactive Waste Repository Siting 435
- The Impact of Entrainment and Impingement on Fish Populations in the Hudson River Estuary - Volume II: Impingement Impact Analyses, Evaluations of Alternative Screening Devices, and Critiques of Utility Testimony Relating to Density-Dependent Growth, the Age-Composition of the Striped Bass Spawning Stock, and the LMS Real-Time Life Cycle Model 654
- UTM**
- Formulations of the Physiochemical Processes in the ORNL Unified Transport Model for Toxicants (UTM-TOX) (Interim Report) 657
- UV**
- DNA Repair in Normal Human and Xeroderma Pigmentosum Group A Fibroblasts following Treatment with Various Methanesulfonates and the Demonstration of a Long-Patch (UV-Like) Repair Component 248
- Photoemission and Electron Mean Free Paths in Liquid Formamide in the Vacuum UV 308
- Evaluation of a Second Derivative UV-Absorption Spectrometer (DUVAS) for Analyzing Gases in Smoke Plumes 604

- uvrD**
The Effect of Mutations in the uvrD Cistron of Escherichia coli on Repair Resynthesis 129
- U1**
A Yeast Endoribonuclease Stimulated by Novikoff Hepatoma Small Nuclear RNAs U1 and U2 254
- U2**
A Yeast Endoribonuclease Stimulated by Novikoff Hepatoma Small Nuclear RNAs U1 and U2 254
- Vacuum**
Photoemission and Electron Mean Free Paths in Liquid Formamide in the Vacuum UV 308
Vacuum Ultraviolet Absorption Spectra of Aromatic Molecules in Solution 368
Vacuum Ultraviolet Spectroscopy of Molecules Using Third-Harmonic Generation in Rare Gases 390
Vacuum Ultraviolet Spectroscopy of Molecules Using Third-Harmonic Generation in Rare Gases 391
- Validation**
A Users's Guide for the Stock-Recruitment Model Validation Program 664
- Validity**
The Impact of Entrainment and Impingement on Fish Populations in the Hudson River Estuary - Volume III - An Analysis of the Validity of the Utilities' Stock-Recruitment Curve-Fitting Exercise and "Prior Estimation of Beta" Technique 663
- Valine**
Production of L-[1-11C]Valine by HPLC Resolution 424
- Values**
Expectation Values for Low Resolution Slit-Scan Flow Prescreening: Influence of Nuclear Shape and DNA Density 160
Prediction of Radionuclide Distribution Coefficient Values from Soil-Plant Concentration Ratios 302
An Analysis of Reported Values of the Environmental Half-Time for Radionuclides Deposited on the Surfaces of Vegetation 386
- Vanadium**
Relationship of Vanadium, Cadmium, Lead, Nickel, Cobalt and Soft Water to Myocardial and Vascular Toxicity and Cardiovascular Disease 202
- Vapor**
Evaluation of a Modified CEA Instruments, Inc. Model 555 Analyzer for the Monitoring of Formaldehyde Vapor in Domestic Environments 377
Comparative Study of Electron Energy Deposition and Yields in Water in the Liquid and Vapor Phases 420
- Variability**
Imprecision in Estimates of Dose from Ingested Cs-137 Due to Variability in Human Biological Characteristics 409
Flow Variability and Hillslope Hydrology 488
- Variable**
DNA Backbone Conformation in AAF Modified dCpdG: Variable Conformational Modes of Achieving Base Displacement 24
An Evaluation of Remote Sensing Methods for Study of Variable Hydrologic Source Areas 679
- Variables**
The Influence of Geochemical Variables on Long-Lived Radionuclide Migration and Risk Assessment 454
- Variance**
Species Variance in the Metabolic Activation of Polycyclic Hydrocarbons 234

Variants

- Generation and Characterization of Variants of Mouse Hepatoma Cells with Defects in Hepato-Specific Gene Expression. I. Albumin Synthesis Variants 41
- Generation and Characterization of Variants of Mouse Hepatoma Cells with Defects in Hepato-Specific Gene Expression. I. Albumin Synthesis Variants 41
- The Primary Structure of Genetic Variants of Mouse Hemoglobin 188
- Multiple Sites of Deletions and Insertions in Variants of a Complex Satellite DNA 241
- Immunoselection of Tumor Cell Variants by Mice Suppressed with Ultraviolet Radiation 270

Vascular

- Relationship of Vanadium, Cadmium, Lead, Nickel, Cobalt and Soft Water to Myocardial and Vascular Toxicity and Cardiovascular Disease 202

Vegetation

- Interception and Retention of Technetium by Vegetation and Soil 344
- An Analysis of Reported Values of the Environmental Half-Time for Radionuclides Deposited on the Surfaces of Vegetation 386
- Environmental Behavior of Technetium in Soil and Vegetation. Implications for Radiological Assessments 483
- Atmospheric Deposition of Metals to Forest Vegetation 502
- Environmental Behavior of Technetium in Soil and Vegetation: Implications for Radiological Impact Assessment 595
- Use of Vegetation to Ameliorate Building Microclimates: An Assessment of Energy Conservation Potentials 681

Velocity

- Non-Maxwellian Velocity Distributions and Molecular Beam Intensities in Sonic Nozzle Expansions 362

Vermilion

- Mechanism of Suppression in *Drosophila melanogaster*. 8. Comparison of Su(S) Alleles for Ability to Suppress the Mutants Purple, Vermilion, and Speck 112

Vertebrates

- Xenobiotic Bioaccumulation by Terrestrial Vertebrates: A Bibliography for Food Chain Modeling 709

Vicinage

- Vicinage Effects in Ion Cluster Collisions with Condensed Matter and with Single Atoms 303

Virgin

- Survival of Mammary Epithelial Cells from Virgin Female BALB/c Mice Following in Vivo Gamma Irradiation 3
- Detection of Ductal Dysplasia in Mammary Outgrowths Derived from Carcinogen-Treated Virgin Female BALB/c Mice 55
- Induction of Mammary Tumors in Virgin Female BALB/c Mice by Single Low Doses of 7,12-Dimethylbenz(a)anthracene (DMBA) 56
- Induction of Mammary Tumors in Virgin Female BALB/c Mice by Single Low Doses of 7,12-Dimethylbenz(a)anthracene 57

virginianus

- White-Tailed Deer (*Odocoileus virginianus*) on the Department of Energy's Oak Ridge Reservation: 1980 Status Report 705
- White-Tailed Deer (*Odocoileus virginianus*) on the Department of Energy's Oak Ridge Reservation: 1981 Status Report 706

Virus

- Comparative Physicochemical and Biological Properties of Two Strains of Kilham Rat Virus, a Non-Defective Parvovirus 158
- Conversion of Simian Virus 40 DNA to Ordered Nucleoprotein Structures by Extracts that Direct Accurate Initiation by Eukaryotic RNA Polymerase II 240
- Studies on the Function of the Non-primer tRNAs Associated with the 70S RNA of Avian Myeloblastosis Virus 272

Vita

Testing for Competition: A Critique of De Vita's Use of the Broken-Stick Model 532

Vitamin

Hyperkeratinization and Hyperplasia of the Forestomach Epithelium in Vitamin A Deficient Rats 122

Vitellogenin

Intracellular Glycosylation of Vitellogenin in the Liver of Estrogen-Stimulated *Xenopus laevis* 77

Vitro

Evaluation of Radiation-Induced Chromosomal Aberrations in Human Peripheral Blood Lymphocytes In Vitro 16

Changes in DNA Content of Rat Tracheal Epithelial Cells during Neoplastic Progression In Vitro 20

Development of Sodium Ion-Dependent Hexose Transport In Vitro 33

Mutagenesis of Bacteriophage T7 In Vitro by Incorporation of O-6-Methylguanine during DNA Synthesis 47

Immunological Properties of in Vitro Passaged Carcinomas and Propagated Clones from Different Cell Lines 114

A Method for In Vitro Cutaneous Toxicity Evaluation 115

In Vitro Packaging of Bacteriophage T7 DNA Requires ATP 152

DNA Packaging In Vitro by an Isolated Bacteriophage T7 Procapsid 153

In Vitro Replication of DNA Containing O-6-Methylguanine-Kinetic Evidence of Mutagenic Potential of the Alkylated Base 246

In Vitro Toxicity Screening of Dielectric Gases Using Mammalian Cells 339

Vivo

Survival of Mammary Epithelial Cells from Virgin Female BALB/c Mice Following in Vivo Gamma Irradiation 3

Effect of Phorbol Esters on Guinea Pig Skin In Vivo 19

The Need to Develop a Short-Term Chinese Hamster In Vivo Specific Locus Mutational Assay 106

Propagation of Normal Human Epithelial Cell Populations Using an in Vivo Culture System: Description and Applications 127

Comparison of Levels of Benzo(a)pyrene 7,8-Diol-9,10-Epoxy (BPDE) Diastereomers and Enantiomers Covalently Bound in Vivo to Macromolecular Components of Whole Epidermis Versus the Basal Cell Layer 180

Comparison of Levels of Benzo(a)pyrene Diol Epoxide Diastereomers Covalently Bound In Vivo to Macromolecular Components of the Whole Epidermis Versus the Basal Cell Layer 181

Effect of Cis- and Trans-Dichlorodiammineplatinum(II) on Human Tumor Cell Proliferation in Diffusion Chambers in Vivo 296

Voltage

Gas Breakdown and High-Voltage Insulating Gases 315

High Voltage Research (Breakdown Strengths of Gaseous and Liquid Insulators) and Environmental Effects of Dielectric Gases Semiannual Report (April 1-September 30, 1981) 584

Volume

AAAS Symposium Volume Series - Health Risks Associated with Energy Technologies 417

The Influence of Food Concentration and Container Volume on Life History Parameters of *Diaptomus dorsalis* Marsh from Subtropical Florida 473

Chemicals Identified in Human Biological Media, A Data Base: Third Annual Report, October 1981, Volume 3, Part 2 Records 3501-5271 557

Chemicals Identified in Human Biological Media, A Data Base: Third Annual Report, October 1981, Volume 3, Part 1 558

Chemicals Identified in Human Biological Media, A Data Base, Volume IV 559

Nuclear Facility Decommissioning and Site Remedial Actions - A Selected Bibliography Volume

3 575

The Impact of Entrainment and Impingement on Fish Populations in the Hudson River Estuary - Volume II: Impingement Impact Analyses, Evaluations of Alternative Screening Devices, and Critiques of Utility Testimony Relating to Density-Dependent Growth, the Age-Composition of the Striped Bass Spawning Stock, and the LMS Real-Time Life Cycle Model 654

The Impact of Entrainment and Impingement on Fish Populations in the Hudson River Estuary - Volume I - Entrainment Impact Estimates for Six Fish Populations Inhabiting the Hudson River Estuary 656

The Impact of Entrainment and Impingement on Fish Populations in the Hudson River Estuary - Volume III - An Analysis of the Validity of the Utilities' Stock-Recruitment Curve-Fitting Exercise and "Prior Estimation of Beta" Technique 663

vulgaris

Germination and Growth Effects of Hexavalent Chromium in Orocol (A Corrosion Inhibitor) on *Phaseolus vulgaris* 522

V79

Cell-Mediated Mutagenicity in Chinese Hamster V79 Cells by Dibenzpyrenes and Their Bay-Region Disubstituted Fluorinated Derivatives 89

Benzo(a)pyrene Metabolites: Formation in Rat Liver Cell-Culture Lines, Binding to Macromolecules, and Mutagenesis in V79 Hamster Cells 232

W

Environmental Assessment - D. W. Small and Sons, Inc. - Loan Guarantee Application, Androscoggin County, Maine 628

Waals

Van der Waals Molecules - Linking the Gas and Liquid Phases 361

Wake

The Wake of Charged Particles in Condensed Matter 403

Wall

Formaldehyde Release from Simulated Wall Panels Insulated with Urea-Formaldehyde Foam Insulation 340

Washington

Low-Level Waste Disposal: Facility Design, Construction, and Operating Practices, Washington, DC, September 29-30, 1982 - Abstracts 620

Washout

Plume Washout around a Major Coal-Fired Power Plant: Results of a Single Storm Event 437

Plume Washout around a Major Coal-Fired Power Plant: Results of a Single Storm Event 438

Waste

Models and Risk from High-Level Waste Disposal - The Missing Pieces 365

Uncertainties Associated with Geologic Disposal of High-Level Radioactive Waste 367

Framework for Evaluating the Utility of Incentive Systems for Radioactive Waste Repository Siting 435

Composition and Toxicity of Solid Waste Leachates from Industrial Coal Gasifiers 465

Coal Conversion Solid Waste Disposal 475

Coal Conversion Solid Waste Disposal 476

Characterization of Covalent Constituents in a Coal Conversion Solid Waste 484

Hydrologic Factors and Sr-90 Transport at a Low-Level Waste Disposal Site 486

Proceedings of the Symposium on Uncertainties Associated with the Regulation of the Geologic Disposal of High-Level Radioactive Waste 603

Abstracts of the Low-Level Waste Disposal: Site Characterization and Monitoring 619

Low-Level Waste Disposal: Facility Design, Construction, and Operating Practices, Washington, DC, September 29-30, 1982 - Abstracts 620

Proceedings of the Symposium on Low-Level Waste Disposal: Site Suitability Requirements 621

Incentives and the Siting of Radioactive Waste Facilities	630
A Review of NRC Rules and Regulations Related to the Disposal of High-Level Radioactive Waste in Geologic Repositories	670
Proceedings of the Third Annual Information Meeting DOE Low-Level Waste Management Program	685
Proceedings of the Fourth Annual Participants' Information Meeting on DOE Low-Level Waste Management Program	686
WASTE	
FECWASTE: User's Manual of a Finite-Element Code for Simulating WASTE Transport Through Saturated-Unsaturated Porous Media	724
Wastes	
Shallow-Land Burial of Low-Level Radioactive Wastes: Preliminary Simulations of Long-Term Health Risks	328
Radioactive Wastes	449
Environmental Aspects of Organics in Selected Coal Conversion Solid Wastes	456
Ecotoxicity of Coal Gasifier Solid Wastes	466
Coal Gasification Solid Wastes: Physiochemical Characterization	499
Geohydrochemical Considerations in Land Disposal of Low-Level Wastes	553
Wastewaters	
Environmental Risk Analyses of Wastewaters Produced by Synthetic Fuels Technologies	521
Water	
Relationship of Vanadium, Cadmium, Lead, Nickel, Cobalt and Soft Water to Myocardial and Vascular Toxicity and Cardiovascular Disease	202
Density Effect in Liquid Water	297
Stopping Power of Liquid Water for Low-Energy Electrons	299
Cold Trapping Efficiencies for Collection of Tritiated Water Entrained in a Gaseous Stream	399
Monte Carlo Calculations of Initial Energies of Electrons in Water Irradiated by Photons with Energies up to 1 GeV	414
Comparative Study of Electron Energy Deposition and Yields in Water in the Liquid and Vapor Phases	420
Simulated Water Budgets for an Irrigated Sycamore Phytomass Farm	463
Comparative Food Chain Behavior and Distribution of Actinide Elements in and around a Contaminated Fresh-Water Pond	479
Effects of the Water-Soluble Fraction of a Coal-Derived Oil on Pond Microcosms	480
Prescribed Fire: Effects on Water Quality and Forest Nutrient Cycling	529
Methods of Removing Uranium from Drinking Water - A Literature Survey - Present Municipal Water Treatment and Potential Removal Methods	564
Methods of Removing Uranium from Drinking Water - A Literature Survey - Present Municipal Water Treatment and Potential Removal Methods	564
Experimental Procedure for Examining the Kinetics of Tritium Gas Conversion to Tritiated Water	610
User's Manual for PHOEL-3, A Monte Carlo Computer Code for Calculating Initial Energies of Electrons and Positrons Produced in Water Irradiated by Photons with Energies Up to 1 GeV	615
Environmetrics of the Long-Term Field Studies of the Environmental Water Quality Operational Studies	674
Guidance Manual for Department of Energy Compliance with the Clean Water Act: National Pollutant Discharge Elimination System (NPDES)	680
Evaluation of Short-Term Exposure to Heated Water and Chlorine for Control of the Asiatic Clam (<i>Corbicula fluminea</i>)	689
The Effect of Temperature on the Toxicity of the Water Soluble Fractions of Diesel Fuel No. 2 and H-Coal Crude Oil to <i>Daphnia magna</i>	713
CHNHYD: A CHaNNel HYDrodynamic Model for Simulating Flows and Water Surface Elevations in a Stream/River Network	720

WATER

FECWATER: User's Manual of a Finite-Element Code for Simulating WATER Flow Through Saturated-Unsaturated Porous Media 723

Waters

Presence of Pathogenic Microorganisms in Power Plant Cooling Waters Report for October 1, 1979, to September 30, 1981 711

Watershed

Distribution and Relationship of Radionuclides to Streambed Gravels in a Small Watershed 457
Formation of Freshwater Fe-Mn Coatings on Gravel and the Behavior of Co-60, Sr-90, and Cs-137 in a Small Watershed 458

Wave

The Scattering of a Plane Electromagnetic Wave by a Conducting Circular Cylinder 585

Weak

Protein Modification Induced by Potent and Weak Tumor-Promoting Hyperplasogenic Agents 166
Metabolic Rationale for the Weak Mutagenic and Carcinogenic Activity of Benzo(e)pyrene 233

Weight

Calibration of Denaturing Agarose Gels for Molecular Weight Estimation of DNA: Size Determination of the Single-Stranded Genomes of Parvoviruses 247

Western

Scientific Review and Critique of R. L. Patterson's: Production, Mortality, and Power-Plant Entrainment of Larval Yellow Perch in Western Lake Erie 715

Wet

The Interaction of Wet and Dry Deposition with the Forest Canopy 503

White

Effects of Chronic Air Pollution Stress on Photosynthesis, Carbon Allocation, and Growth of White Pine Trees 506
Corrected Analysis of the Ability to Detect Reductions in Year-Class Strength of the Hudson River White Perch (*Morone americana*) Population 549
The Impact of Impingement on the Hudson River White Perch Population: Final Report 655
White-Tailed Deer (*Odocoileus virginianus*) on the Department of Energy's Oak Ridge Reservation: 1980 Status Report 705
White-Tailed Deer (*Odocoileus virginianus*) on the Department of Energy's Oak Ridge Reservation: 1981 Status Report 706

Wild

O-6-Methylguanine-DNA Methyl Transferase in Wild-Type and Ada Mutants of *E. coli* 157

Wildlife

Guidance Manual for Department of Energy Compliance with the Fish and Wildlife Coordination Act 698

Williamsburg

Environmental Assessment - Eastern Ethanol Corporation - Loan Guarantee Application, Williamsburg County, South Carolina 624

Woman

A Model of the 3-Month Pregnant Woman for Radiation Dose Estimation 427

Wood

The Contribution of Residential Wood Combustion to Local Airshed Pollutant Concentrations 381
Health and Safety Impacts of Residential Wood Heat 418

Woody

Short-Rotation Woody Crops as a Source of Energy 525
The Short Rotation Woody Crops Program: 1982 Program Summary 695

- The Growth, Nutrient Absorption, and Moisture Status of Selected Woody Species in Coal Mine Spoil in Response to an Induced Infection by the Ectomycorrhizal Fungus *Pisolithus tinctorius* 713

Workers

- Limits for Intakes of Radionuclides by Workers. ICRP Publication 30, Supplement A to Part 3 443
- Limits for Intakes of Radionuclides by Workers. ICRP Publication 30, Supplement B to Part 3 Including Addendum to the Supplements of Parts 1 and 2 444

Workshop

- Workshop on the Practical Application of the Mammalian Spot Test in Routine Mutagenicity Testing of Drugs and Other Chemicals 21
- Proceedings of the 1981 Integrated Data Users Workshop 691

World

- Soil Carbon Pools and World Life Zones 523
- Summaries of Soil Carbon Storage in World Life Zones 524

Xenobiotic

- Development of Predictive Models for Xenobiotic Bioaccumulation in Terrestrial Ecosystems 708
- Xenobiotic Bioaccumulation by Terrestrial Vertebrates: A Bibliography for Food Chain Modeling 709

Xenon

- Multiphoton Ionization Photoelectron Spectroscopy: Xenon and Nitric Oxide 388

Xenopus

- A Frog Embryo Teratogenesis Assay: *Xenopus* (FETAX) - A Model for Teratogen Screening 51
- Intracellular Glycosylation of Vitellogenin in the Liver of Estrogen-Stimulated *Xenopus laevis* 77

Xeroderma

- DNA Repair in Normal Human and Xeroderma Pigmentosum: Group A Fibroblasts following Treatment with Various Methanesulfonates and the Demonstration of a Long-Patch (UV-Like) Repair Component 248

Yeast

- Stabilization of the Tertiary Structure of Yeast Phenylalanine tRNA by the Hexamine Cobaltic Ion: X-Ray Evidence for Hydrogen Bonding to Pairs of Guanine Bases in the Major Groove 96
- Plate Assay for Chemical- and Radiation-Induced Mutagenesis of CAN1 in Yeast as a Function of Post-Treatment DNA Replication: The Effect of rad6-1 137
- A Yeast Endoribonuclease Stimulated by Novikoff Hepatoma Small Nuclear RNAs U1 and U2 254

Yellow

- Scientific Review and Critique of R. L. Patterson's: Production, Mortality, and Power-Plant Entrainment of Larval Yellow Perch in Western Lake Erie 715

Yield

- Effect of Rain pH Senescence, Growth, and Yield of Bush Bean 493

Yields

- Yields and Mean Free Paths of Photoelectrons from Liquid Hexamethyl Phosphoric Thiamide 309
- Comparative Study of Electron Energy Deposition and Yields in Water in the Liquid and Vapor Phases 420

Zone

- Zone Refining of Nonsubstitutional Impurities during Pulsed Laser Annealing 440

Zones

- Soil Carbon Pools and World Life Zones 523
- Summaries of Soil Carbon Storage in World Life Zones 524

Journal Reference Index

- Acta Crystallogr. B38, 548-53 (1982) 276
- Am. Ind. Hyg. Assoc. J. 43, 533-9 (1982) 322
- Am. Ind. Hyg. Assoc. J. 43, 547-552 (1982) 377
- Am. J. Pathol. 109, 321-5 (1982) 151
- Am. J. Physiol. 242 (Cell Physiol 11), C94-C101 (1982) 5
- Am. J. Public Health 72, 613 (1982) 355
- Am. Midl. Nat. 108, 187-93 (1982) 462
- Am. Nat. 119, 435-7 (1982) 532
- Am. Nat. 120, 259-63 (1982) 518
- Am. Nat. 120, 628-52 (1982) 515
- Am. Rev. Respir. Dis. 126, 281-5 (1982) 82
- Am. Soc. Civil Eng. 108, No.FE6, 1301-11 (1982) 476
- AMBIO 11, 38-42 (1982) 452
- Anal. Chem. 54, 1495-8 (1982) 379
- Anal. Chim. Acta 135, 179-92 (1982) 317
- Anal. Quant. Cytol. 25, 115-22 (1982) 160
- Ann. Bot. 50, 459-63 (1982) 530
- Annals of the International Commission on Radiological Protection 7(1-3): 1-440 (1982) 443
- Annals of the International Commission on Radiological Protection 8(1-3): 41-78 (1982) 444
- APCA J. 32, 1126-31 (1982) 340
- Appl. Opt. 21, 577-9 (1982) 376
- Appl. Opt. 21, 949-54 (1982) 352
- Appl. Phys. Lett. 41, 147-9 (1982) 313
- Appl. Spectrosc. 36, 576-81 (1982) 421
- Aquat. Insects 4, 55-9 (1982) 460
- Aquat. Insects 4, 61-6 (1982) 461
- Arch. Biochem. Biophys. 218, 592-602 (1982) 159
- Arch. Biochem. Biophys. 219, 422-37 (1982) 85
- Arch. Environ. Contam. Toxicol. 11, 353-61 (1982) 220
- Arch. Environ. Contam. Toxicol. 11, 408-17 (1982) 219
- Arch. Environ. Contam. Toxicol. 11, 577-81 (1982) 216
- Arch. Environ. Contam. Toxicol. 11, 735-47 (1982) 480
- Arch. Toxicol. 49, 185-90 (1982) 199
- Atmos. Environ. 16, 1761-9 (1982) 501

- Atmos. Environ. 16, 889-910 (1982) 485
- Aust. J. Ecol. 7, 13-22 (1982) 426
- Biochem. Biophys. Acta 696, 201-7 (1982) 272
- Biochem. Biophys. Acta 697, 78-82 (1982) 96
- Biochem. Biophys. Acta 698, 199-203 (1982) 27
- Biochem. Biophys. Res. Commun. 106, 779-85 (1982) 274
- Biochem. Biophys. Res. Commun. 107, 642-8 (1982) 254
- Biochem. Biophys. Res. Commun. 109, 262-8 (1982) 195
- Biochem. Genet. 20, 199-208 (1982) 188
- Biochemistry 21, 1238-43 (1982) 50
- Biochemistry 21, 1380-5 (1982) 95
- Biochemistry 21, 3243-52 (1982) 97
- Biochemistry 21, 3681-9 (1982) 13
- Biochemistry 21, 3690-7 (1982) 14
- Biochemistry 21, 3892-9 (1982) 49
- Biochemistry 21, 5700-6 (1982) 111
- Biochim. Biophys. Acta 699, 31-7 (1982) 236
- Biochim. Biophys. Acta 697, 229-34 (1982) 249
- Biochim. Biophys. Acta 698, 134-9 (1982) 139
- Biochim. Biophys. Acta 699, 40-8 (1982) 31
- Biochim. Biophys. Acta 716, 140-50 (1982) 107
- Biochim. Biophys. Acta 721, 94-100 (1982) 48
- Biol. Conserv. 23, 79-94 (1982) 498
- Biopolymers 21, 1167-88 (1982) 98
- BioScience 32, 181-4 (1982) 118
- BioScience 32, 601-5 (1982) 231
- Bull. Am. Soc. Inf. Sci. 8, 31 (1982) 289
- Bull. Environ. Contam. Toxicol. 28, 373-8 (1982) 223
- Bull. Environ. Contam. Toxicol. 28, 39-45 (1982) 466
- Bull. Mar. Sci. 32, 376-7 (1982) 467
- Can. J. Fish. Aquat. Sci. 39, 1175-84 (1982) 446
- Can. J. Fish. Aquat. Sci. 39, 1396-403 (1982) 511
- Can. J. Fish. Aquat. Sci. 39, 782-5 (1982) 549
- Cancer Res. 42, 1646-9 (1982) 89
- Cancer Res. 42, 1753-60 (1982) 55
- Cancer Res. 42, 1769-73 (1982) 296
- Cancer Res. 42, 2579-86 (1982) 46
- Cancer Res. 42, 3050-5 (1982) 262

Cancer Res. 42, 4164-5 (1982)	166	Cell Tissue Kinet. 15, 473-82 (1982)	119
Cancer Res. 42, 4176-81 (1982)	165	Cell 30, 817-23 (1982)	113
Cancer Res. 42, 4505-10 (1982)	338	Cell. Immunol. 70, 1-10 (1982)	183
Cancer Res. 42, 4511-8 (1982)	263	Chem. Biol. Interact. 40, 275-85 (1982)	143
Cancer Res. 42, 4591-9 (1982)	149	Chem. Eng. News 60, 33-5 (1982)	294
Cancer Res. 42, 473-6 (1982)	184	Chem. Phys. Lett. 88, 572-5 (1982)	369
Cancer 50, 107-13 (1982)	123	Chem. Phys. Lett. 91, 268-70 (1982)	320
Carcinogenesis 3, 1031-7 (1982)	144	Chem. Phys. Lett. 92, 197-201 (1982)	336
Carcinogenesis 3, 111-4 (1982)	108	Chem. Phys. Lett. 93, 453-9 (1982)	388
Carcinogenesis 3, 1135-41 (1982)	181	Chem. Phys. Lett. 93, 460-7 (1982)	358
Carcinogenesis 3, 1243-5 (1982)	60	Chem. Phys. 67, 75-81 (1982)	362
Carcinogenesis 3, 287-92 (1982)	145	Chemico-Biol. Interactions 40, 113-9 (1982)	24
Carcinogenesis 3, 635-9 (1982)	232	Chromosoma 87, 149-64 (1982)	10
Carcinogenesis 3, 651-5 (1982)	45	Chromosoma 87, 49-75 (1982)	78
Carcinogenesis 3, 671-6 (1982)	19	Circulation 65, 305-10 (1982)	394
Carcinogenesis 3, 7-14 (1982)	248	Comput. Biomed. Res. 15, 97-110 (1982)	341
Carcinogenesis 3, 763-6 (1982)	201	Copeia 4, 952-5 (1982)	508
Carcinogenesis 3, 847-50 (1982)	20	Crit. Rev. Environ. Control. 12, 69-89 (1982)	455
Carcinogenesis 3, 875-80 (1982)	99	Cryobiology 19, 676-7 (1982)	154
Carcinogenesis 3, 993-8 (1982)	251	Cryobiology 19, 677-8 (1982)	9
Cell Biol. 95, 14a (1982)	271		

Cryobiology 19, 678 (1982)	8	Environ. Int. 7, 409-18 (1982)	445
Cryobiology 19, 679 (1982)	155	Environ. Int. 8, 143-51 (1982)	378
Cytogenet. Cell Genet. 32, 291 (1982)	128	Environ. Manage. 6, 155-62 (1982)	548
Cytogenet. Cell Genet. 32, 293 (1982)	130	Environ. Manage. 6, 43-54 (1982)	541
Cytogenet. Cell Genet. 32, 294 (1982)	131	Environ. Manage. 6, 431-9 (1982)	507
Cytogenet. Cell Genet. 33, 20-6 (1982)	191	Environ. Mutagenesis 4, 300-1 (1982)	132
Cytogenet. Cell Genet. 33, 74-80 (1982)	73	Environ. Mutagenesis 4, 301-2 (1982)	92
Dev. Biol. 92, 386-97 (1982)	162	Environ. Mutagenesis 4, 305 (1982)	259
Earth Surf. Landforms 7, 91-4 (1982)	488	Environ. Mutagenesis 4, 306 (1982)	253
Ecol. Modelling 16, 51-65 (1982)	517	Environ. Mutagenesis 4, 316-7 (1982)	203
Ecology 63, 1771-9 (1982)	477	Environ. Mutagenesis 4, 328-9 (1982)	264
Econ. Geol. 77, 318-27 (1982)	545	Environ. Mutagenesis 4, 346-7 (1982)	141
Econ. Geol. 77, 328-40 (1982)	540	Environ. Mutagenesis 4, 347 (1982)	169
Electrophoresis 3, 210-3 (1982)	247	Environ. Mutagenesis 4, 347-8 (1982)	225
Environ. Exp. Bot. 22, 329-37 (1982)	493	Environ. Mutagenesis 4, 351-2 (1982)	209
Environ. Exp. Bot. 22, 349-57 (1982)	472	Environ. Mutagenesis 4, 352 (1982)	229
Environ. Geol. 4, 53-63 (1982)	487	Environ. Mutagenesis 4, 353 (1982)	104
Environ. Geol. 4, 99-116 (1982)	457	Environ. Mutagenesis 4, 376 (1982)	11
Environ. Int. 7, 165-77 (1982)	510	Environ. Mutagenesis 4, 391-2 (1982)	44
Environ. Int. 7, 197-202 (1982)	522	Environ. Mutagenesis 4, 395 (1982)	215
Environ. Int. 7, 203-6 (1982)	535	Environ. Mutagenesis 4, 406 (1982)	140

Environ. Mutagenesis 4, 413-4 (1982)	198	Fed. Proc. 41, 1295 (1982)	90
Environ. Mutagenesis 4, 421-34 (1982)	172	Fed. Proc. 41, 1403 (1982)	273
Environ. Mutagenesis 4, 627-37 (1982)	171	Fed. Proc. 41, 1415 (1982)	35
Environ. Mutagenesis 4, 7-18 (1982)	173	Fed. Proc. 41, 1448 (1982)	241
Environ. Pollut. (Series B) 4, 219-29 (1982)	484	Fed. Proc. 41, 1449 (1982)	135
Environ. Res. 27, 1-9 (1982)	416	Fed. Proc. 41, 685 (1982)	147
Environ. Res. 29, 389-98 (1982)	222	Fed. Proc. 41, 686 (1982)	246
Environ. Sci. Health A17, 153-67 (1982)	218	Fluoride 15, 14-20 (1982)	542
Environ. Sci. Technol. (ES & T) 16, 728-31 (1982) 499		For. Sci. 28, 17-30 (1982)	463
Environ. Sci. Technol. 16, 214-7 (1982)	483	For. Sci. 28, 725-31 (1982)	495
Environ. Technol. Lett. 3, 193-8 (1982)	509	Forest Ecol. Manage. 4, 79-94 (1982)	547
Environ. Toxicol. Chem. 1, 167-77 (1982)	516	Forest Sci. 28, 60-70 (1982)	506
Eur. J. Cell Biol. 27, 161-9 (1982)	175	Gen. Comp. Endocrinol. 47, 323-32 (1982)	505
Eur. J. Cell Biol. 27, 170-6 (1982)	134	Genet. Res. 40, 19-32 (1982)	112
Eur. J. Phys. 3, 25-9 (1982)	324	Genetics 100, 427-53 (1982)	207
Exp. Eye Res. 34, 509-16 (1982)	242	Genetics 100, 633-40 (1982)	74
FEBS Lett. 142, 162-6 (1982)	29	Genetics 102, 525-37 (1982)	17
Fed. Proc. 41, 1-7 (1982)	197	Geochim. Cosmochim. Acta 46, 1333-43 (1982) 458	
Fed. Proc. 41, 1178 (1982)	84	Health Phys. 42, 165-77 (1982)	405
Fed. Proc. 41, 1293 (1982)	239	Health Phys. 42, 257-66 (1982)	451

Health Phys. 42, 3-18 (1982)	410	J. Appl. Ecol. 19, 361-70 (1982)	497
Health Phys. 42, 537-9 (1982)	359	J. Appl. Phys. 53, 7362-6 (1982)	310
Health Phys. 43, 126 (1982)	306	J. Bacteriol. 152, 534-7 (1982)	157
Health Phys. 43, 225-9 (1982)	329	J. Biol. Chem. 257, 14811-6 (1982)	71
Health Phys. 43, 307-22 (1982)	372	J. Biol. Chem. 257, 3501-5 (1982)	66
Health Phys. 43, 355-62 (1982)	374	J. Biol. Chem. 257, 8122-9 (1982)	63
Health Phys. 43, 631-45 (1982)	409	J. Biol. Chem. 257, 8919-21 (1982)	116
Health Phys. 43, 663-8 (1982)	500	J. Biol. Chem. 257, 95-103 (1982)	77
Health Phys. 43, 845-52 (1982)	414	J. Cell Biol. 95, 210a (1982)	18
Hydrobiologia 89, 215-23 (1982)	473	J. Cell Biol. 95, 212a (1982)	65
In Vitro 18, 283-4 (1982)	120	J. Cell Biol. 95, 283a (1982)	235
In Vitro 18, 289 (1982)	230	J. Cell Biol. 95, 30a (1982)	6
Ind. J. Chem. 21B, 275-8 (1982)	110	J. Cell Biol. 95, 31a (1982)	277
Inst. Electr. Electron. Eng. Trans. Electr. Insul. E1-17, 284-6 (1982)	406	J. Cell Biol. 95, 327a (1982)	94
Int. J. Biochem. 14, 231-3 (1982)	238	J. Cell Biol. 95, 361a (1982)	163
Int. J. Environ. Anal. Chem. 11, 61-65 (1982)	1	J. Cell Biol. 95, 419a (1982)	64
Int. J. Environ. Stud. 18, 211-22 (1982)	459	J. Cell Biol. 95, 66a (1982)	176
Int. J. Quantum Chem.: Quantum Biol. Symp. 9, 125-36 (1982)	342	J. Cell Biol. 95, 70a (1982)	133
J. Am. Coll. Toxicol. 1, 71-84 (1982)	280	J. Cell Biol. 95, 85a (1982)	26
J. Am. Coll. Toxicol. 1, 83-99 (1982)	243	J. Cell. Biochem. 18, 507-13 (1982)	142
		J. Cell. Biochem. 18, 99-119 (1982)	244

- J. Cell. Physiol. 110, 84-92 (1982) 34
- J. Cell. Physiol. 112, 76-82 (1982) 156
- J. Chem. Educ. 59, 895-99 (1982) 349
- J. Chem. Phys. 76, 2653-61 (1982) 312
- J. Chem. Phys. 76, 3614-22 (1982) 370
- J. Chem. Phys. 76, 3967-73 (1982) 390
- J. Chem. Phys. 76, 5208-13 (1982) 308
- J. Chem. Phys. 76, 5648-9 (1982) 389
- J. Chem. Phys. 77, 3666-73 (1982) 331
- J. Chem. Phys. 77, 4350-2 (1982) 309
- J. Chem. Phys. 77, 5542-8 (1982) 380
- J. Chem. Phys. 77, 68-76 (1982) 332
- J. Cool. Tower Inst. 3, 25-33 (1982) 546
- J. Cutaneous Pathol. 9, 43-9 (1982) 61
- J. Econ. Geol. 77, 60-81 (1982) 482
- J. Electron Spectrosc. Relat. Phenom. 28, 177-94 (1982) 300
- J. Electrostat. 12, 147-52 (1982) 411
- J. Environ. Qual. 11, 134-41 (1982) 344
- J. Environ. Qual. 11, 52-7 (1982) 527
- J. Environ. Sci. Health A17, 541-52 (1982) 423
- J. Environ. Sci. Health A17, 737-66 (1982) 456
- J. Exp. Med. 156, 1025-41 (1982) 270
- J. Gen. virol. 61, 43-54 (1982) 158
- J. Immunol. Methods 55, 1-12 (1982) 117
- J. Invest. Dermatol. 79, 30-4 (1982) 126
- J. Invest. Dermatol. 79, 378-82 (1982) 43
- J. Med. Chem. 25, 613-8 (1982) 334
- J. Mol. Spectrosc. 92, 127-40 (1982) 368
- J. Morphol. 173, 1-16 (1982) 25
- J. Natl. Cancer Inst. 69, 1155-61 (1982) 237
- J. Natl. Cancer Inst. 69, 1199-203 (1982) 57
- J. Nucl. Med. 23, 29-33 (1982) 424
- J. Nucl. Med. 23, 553-4 (1982) 256
- J. Nucl. Med. 23, 88 (1982) 427
- J. Nucl. Med. 23, 904-8 (1982) 335
- J. Oral Pathol. 11, 228-36 (1982) 124
- J. Org. Chem. 47, 3004-6 (1982) 333
- J. Range Manage. 35, 637-43 (1982) 496
- J. Tennessee Acad. Sci. 57, 26-8 (1982) 504
- J. Tennessee Acad. Sci. 57, 29-32 (1982) 539
- J. Virol. 43, 1138-42 (1982) 153

J. Virol. 43, 365-7 (1982)	152	Mutat. Res. 96, 15-30 (1982)	72
J. Water Pollut. Control 54, 1002-23 (1982)	449	Mutat. Res. 96, 233-42 (1982)	16
JNCI 69, 117-29 (1982)	93	Mutat. Res. 97, 155-61 (1982)	21
Lab. Invest. 46, 438-49 (1982)	87	Mutat. Res. 98, 1-48 (1982)	286
Lab. Invest. 46, 82A (1982)	125	Mutat. Res. 98, 287-318 (1982)	287
Mech. Ageing Dev. 18, 125-34 (1982)	187	Mutat. Res. 98, 319-74 (1982)	136
Mech. Ageing Dev. 18, 59-66 (1982)	200	Mutat. Res. 98, 49-94 (1982)	293
Mech. Ageing Dev. 19, 141-6 (1982)	32	Mutat. Res. 99, 1-12 (1982)	284
Mech. Chem. Carcinog., 331-49 (1982)	234	Nature 296, 581-3 (1982)	214
Med. Phys. 9, 644 (1982)	360	Nature 298, 156-9 (1982)	523
Methods Enzymol. 90, 522-8 (1982)	217	Nonlinear Anal. Theory Appl. 6, 625-36 (1982)	419
Mutat. Res. Lett. 105, 309-12 (1982)	164	Nucl. Acids Res. 10, 5695-709 (1982)	83
Mutat. Res. 103, 359-65 (1982)	260	Nucl. Acids Res. 10, 6207-19 (1982)	250
Mutat. Res. 106, 113-22 (1982)	170	Nucl. Instrum. Methods 198, 133-8 (1982)	402
Mutat. Res. 92, 193-204 (1982)	206	Nucl. Instrum. Methods 198, 81-91 (1982)	400
Mutat. Res. 92, 411-6 (1982)	91	Nucl. Instrum. Methods 201, 395-401 (1982)	431
Mutat. Res. 93, 339-52 (1982)	137	Nucl. Instrum. Methods 203, 459-65 (1982)	415
Mutat. Res. 94, 155-63 (1982)	75	Nucl. Sci. Eng. 82, 206-19 (1982)	553
Mutat. Res. 94, 165-78 (1982)	174	Nucl. Technol./ Fusion 2, 723-39 (1982)	323
Mutat. Res. 94, 285-97 (1982)	129	Nucleic Acids Res. 10, 5533-52 (1982)	240
Mutat. Res. 95, 377-88 (1982)	23		

Oecologia 53, 179-86 (1982)	543	Proc. Am. Assoc. Cancer Res. 23, 59 (1982)	150
Oecologia 54, 141-8 (1982)	489	Proc. Am. Assoc. Cancer Res. 23, 61 (1982)	146
OIKOS 38, 266-72 (1982)	514	Proc. Am. Assoc. Cancer Res. 23, 63 (1982)	180
Organometallic 1, 513 (1982)	393	Proc. Am. Assoc. Cancer Res. 23, 80 (1982)	265
Pedobiologia 23, 321-30 (1982)	470	Proc. Am. Assoc. Cancer Res. 23, 95 (1982)	69
Philos. Mag. 45, 347 (1982)	403	Proc. Am. Soc. Exp. Biol. 41, 1329 (1982)	305
Photochem. Photobiol. 35, 459-65 (1982)	196	Proc. Natl. Acad. Sci. USA 79, 5162-5 (1982)	179
Phys. Med. Biol. 27, 539-52 (1982)	321	Proc. Natl. Acad. Sci. USA 79, 5258-62 (1982)	266
Phys. Rev. A 25, 1775-6 (1982)	373	Proc. Natl. Acad. Sci. USA 79, 6028-32 (1982)	275
Phys. Rev. A 25, 1943-62 (1982)	303	Proc. Natl. Acad. Sci. 78, 1722-5 (1982)	252
Phys. Rev. A 25, 2056-63 (1982)	387	Proc. Natl. Acad. Sci. 79, 3589-91 (1982)	211
Phys. Rev. A 26, 2460-7 (1982)	345	Proc. Natl. Acad. Sci. 79, 3592-3 (1982)	210
Phys. Rev. A 26, 356-71 (1982)	398	Proc. Natl. Acad. Sci. 79, 539-41 (1982)	213
Phys. Rev. B 25, 2930-2 (1982)	326	Proc. Natl. Acad. Sci. 79, 542-4 (1982)	212
Phys. Rev. B 25, 6130-8 (1982)	351	Proc. Natl. Acad. Sci. 79, 7440-4 (1982)	47
Phys. Rev. B 26, 5953-6 (1982)	375	Propag. Cell Popul. 108, 231-9 (1982)	127
Phys. Rev. B 26, 6421-30 (1982)	353	Quat. Res. 18, 52-71 (1982)	534
Phytopathology 72, 387-9 (1982)	492	Radiat. Phys. Chem. 20, 51-6 (1982)	361
Proc. Am. Assoc. Cancer Res. 23, 221 (1982)	12	Radiat. Prot. Dosim. 2, 249-52 (1982)	337
Proc. Am. Assoc. Cancer Res. 23, 230 (1982)	56		
Proc. Am. Assoc. Cancer Res. 23, 269 (1982)	114		

Radiat. Res. 89, 25-31 (1982)	299	Surf. Interface Anal. 4, 52-5 (1982)	301
Radiat. Res. 89, 32-7 (1982)	297	Tellus 34, 176-86 (1982)	513
Radiat. Res. 89, 428-32 (1982)	268	Tellus 34, 490-9 (1982)	512
Radiat. Res. 89, 53-64 (1982)	185	Teratogenesis Carcinog. Mutagenesis 2, 1-11 (1982)	221
Radiat. Res. 89, 618-43 (1982)	258	Teratology 25, 37A (1982)	51
Radiat. Res. 90, 433-6 (1982)	298	Teratology 25, 40A (1982)	58
Radiat. Res. 91, 409 (1982)	3	Teratology 25, 80A (1982)	295
Radiat. Res. 91, 411 (1982)	269	The Gerontol. 22, 235 (1982)	182
Radiat. Res. 92, 396-404 (1982)	255	The Pharmacol. 24, 145 (1982)	115
Radiat. Res. 92, 47-60 (1982)	420	The Toxicologist 2, 165 (1982)	59
Radiachim. Acta 31, 27-36 (1982)	343	The Toxicologist 2, 179 (1982)	80
Rev. Sci. Instrum. 53, 112-4 (1982)	399	The Toxicologist 2, 180 (1982)	53
Science 215, 1609-11 (1982)	502	The Toxicologist 2, 190 (1982)	101
Science 215, 661-3 (1982)	529	The Toxicologist 2, 46 (1982)	88
Scientometrics 4, 171-2 (1982)	354	The Toxicologist 2, 50 (1982)	39, 40
SIAM J. Math. Anal. 13, 112-21 (1982)	428	The Toxicologist 2, 85 (1982)	30
SIAM J. Math. Anal. 13, 122-33 (1982)	429	Toxicol. Appl. Pharmacol. 63, 461-9 (1982)	430
Soil Sci. Soc. Am. J. 46, 1114-6 (1982)	471	Toxicol. Appl. Pharmacol. 65, 11-22 (1982)	81
Soil Sci. Soc. Am. J. 46, 1304-9 (1982)	491	Toxicol. Appl. Pharmacol. 65, 84-91 (1982)	54
Somatic Cell Genet. 8, 363-76 (1982)	178	Toxicol. Lett. 14, 85-92 (1982)	86
Somatic Cell Genet. 8, 451-64 (1982)	41		

Toxicology 24, 9-14 (1982)	38	Trans. Am. Nucl. Soc. 41, 66 (1982)	537
Toxicon 20, 703-8 (1982)	52	Trans. Am. Nucl. Soc. 41, 74-5 (1982)	382
Trans. Am. Fish. Soc. 111, 384-8 (1982)	469	Trans. Am. Nucl. Soc. 43, 309-10 (1982)	538
Trans. Am. Fish. Soc. 111, 453-61 (1982)	448	Trans. Am. Nucl. Soc. 43, 362-4 (1982)	392
Trans. Am. Fish. Soc. 111, 549-58 (1982)	447	Trans. Am. Nucl. Soc. 43, 431-3 (1982)	432
Trans. Am. Nucl. Soc. 41, 232-3 (1982)	365	Trans. Am. Nucl. Soc. 43, 47-8 (1982)	413
Trans. Am. Nucl. Soc. 41, 235-6 (1982)	307	Trans. Am. Nucl. Soc. 43, 81-2 (1982)	385
Trans. Am. Nucl. Soc. 41, 46-8 (1982)	439	Trends Pharmacol. Sci. 3, 333-5 (1982)	279
Trans. Am. Nucl. Soc. 41, 49-50 (1982)	418	Virchows Archiv 40, 387-94 (1982)	122
Trans. Am. Nucl. Soc. 41, 50-51 (1982)	357	Water Resour. Res. 18, 449-61 (1982)	490
Trans. Am. Nucl. Soc. 41, 53-4 (1982)	302	Water Resour. Res. 18, 705-12 (1982)	531

INTERNAL DISTRIBUTION

1—6. S. I. Auerbach	36—41. E. L. Preston
7. H. P. Carter	42—82. C. R. Richmond
8—13. K. E. Cowser	83—88. G. D. Robbins
14. D. E. Ferguson	89. W. D. Shults
15. W. Fulkerson	90—91. Central Research Library
16. A. Gill	92—93. Laboratory Records Dept.
17—22. R. A. Griesemer	94. Laboratory Records ORNL-RC
23. E. B. Howard	95. ORNL Patent Office
24—29. S. V. Kaye	96. ORNL Y-12 Technical Library
30—35. J. B. Moody	

EXTERNAL DISTRIBUTION

97. Assistant Manager for Energy Research and Development, Oak Ridge Operations, Department of Energy, P.O. Box E. Oak Ridge, TN 37830
98. N. F. Barr, Human Health and Assessments Division, Office of Health and Environmental Research, Department of Energy, Washington, DC 20545
99. W. Bartley, Office of Energy Research, Department of Energy, Washington, DC 20545
100. R. W. Davies, Office of Assistant Secretary for Environmental Protection, Safety, and Emergency Preparedness, Department of Energy, Washington, DC 20545
101. C. Ebbecke, Acting Director, Program Control Staff, Office of Assistant Secretary for Environmental Protection, Safety, and Emergency Preparedness, Department of Energy, Washington, DC 20545
102. C. W. Edington, Office of Health and Environmental Research, Department of Energy, Washington, DC 20545
103. V. A. Fassel, Deputy Director, Ames Laboratory, Iowa State University, Ames, IA 50010
104. P. House, Director, Office of Environmental Assessment, Office of Assistant Secretary for Environmental Protection, Safety, and Emergency Preparedness, Department of Energy, Washington, DC 20545
105. J. Hummer, Office of Health and Environmental Research, Department of Energy, Washington, DC 20545
106. L. Johnson, Idaho National Engineering Laboratory, EG&G Idaho, P.O. Box 1625, Idaho Falls, ID 83415
107. R. K. Jones, Inhalation Toxicology Research Institute, Lovelace Foundation for Medical Education and Research, P.O. Box 5890, Albuquerque, NM 87115
108. P. Krey, Environmental Measurements Laboratory, Department of Energy, 376 Hudson Street, New York, NY 10014
109. J. E. Leiss, Office of Energy Research, Department of Energy, Washington, DC 20545
110. O. R. Lunt, Director, Laboratory of Biomedical and Environmental Sciences, University of California, 900 Veteran Avenue, Los Angeles, CA 90024
111. J. N. Maddox, Office of Energy Research, Department of Energy, Washington, DC 20545
112. J. Maher, Office of Nuclear Safety, Office of Assistant Secretary for Environmental Protection, Safety, and Emergency Preparedness, Department of Energy, Washington, DC 20545
113. H. McCammon, Office of Health and Environmental Research, Department of Energy, Washington, DC 20545
114. R. O. McClellan, Director, Inhalation Toxicology Research Institute, Lovelace Foundation for Medical Education and Research, P.O. Box 5890, Albuquerque, NM 87115
115. M. L. Minthorn, Office of Health and Environmental Research, Department of Energy, Washington, DC 20545

- 116. D. Monti, Office of Quality Assurance, Office of Assistant Secretary for Environmental Protection, Safety, and Emergency Preparedness, Department of Energy, Washington, DC 20545
- 117. D. Patterson, Director, Office of Operational Safety, Office of Assistant Secretary for Environmental Protection, Safety, and Emergency Preparedness, Department of Energy, Washington, DC 20545
- 118. H. Rossi, College of Physicians and Surgeons, Columbia University, 630 W. 168th St., New York, NY 10032
- 119. J. Snow, Office of Energy Research, Department of Energy, Washington, DC 20545 DC 20545
- 120. R. J. Stern, Office of Assistant Secretary for Environmental Protection, Safety, and Emergency Preparedness, Department of Energy, Washington, DC 20545
- 121. J. E. Thiessen, Office of Health and Environmental Research, Department of Energy, Washington, DC 20545
- 122. L. J. Tilly, Center for Energy and Environmental Research, University of Puerto Rico, Caparra Heights Station, San Juan, Puerto Rico 00935
- 123. A. Trivelpiece, Office of Energy Research, Department of Energy, Washington, DC 20545
- 124. W. A. Vaughan, Assistant Secretary for Environmental Protection, Safety, and Emergency Preparedness, Department of Energy, Washington, DC 20545
- 125. R. W. Wood, Office of Health and Environmental Research, Department of Energy, Washington, DC 20545
- 126—281. Given distribution as shown in TID-4500, Biology and Medicine, under Category UC-48.