Data Management Plan

1. *The types of data, samples, physical collections, software, curriculum materials, and other materials to be produced in the course of the project*
   The proposed 3D microfabrication method includes various advanced micromachining processes such as microlithography, metal-deposition of sputtering and electroplating, etching, 3D printing, and molding. As those methods and the study in this proposal will be conducted in PI's lab and will be handled with students who will involve with this project and the PI.
   The microfabrication process data will be saved and be used as a troubleshooting or optimizing purpose. An excel sheet will be created for data comparison purposes.
   The product characterization includes profiling surface roughness, distance, area, and 3D shaping. For those characterizations, a digital microscope (Zeiss Smartzoom 5) will be placed next to the microlithography system and will be available for PI and students. Each user will require the log-in for the microscope access and save their images both for the user's convenience as well as the data sharing among the project team members.

2. *The standards to be used for data and metadata format and content (where existing standards are absent or deemed inadequate, this should be documented along with any proposed solutions or remedies)*
   The experimental results and analysis of the data can be the results, photographs, detailed measurements, plots, and other types of data. The principal investigator will manage student's job responsibility considering a change that would occur, e.g., a student leaves or graduate the institution or project.

3. *Policies for access and sharing including provisions for appropriate protection of privacy, confidentiality, security, intellectual property, or other rights or requirements*
   Summaries of the results, photographs, detailed measurements, plots, and other types of data will be shared among students and the principal investigators for their use. When copyright permits, any publications resulting from this work will be posted on the PI's research website (jkkim.org) where it can be freely and readily accessed via the internet. Dissertations resulting from student involvement in this project will also be made publicly and freely available in the library at the University of North Texas.

4. *Policies and provisions for re-use, re-distribution, and the production of derivatives*
   Standard procedures and data produced by staff for training and sampling purposes will be allowed for re-use, re-distribution, and the production of derivatives among students, advising faculty, and their potential collaborators for their use. The data produced by users will be allowed for re-use, re-distribution, and the production of derivatives with permission from the owner and the student or department staff.

5. *Plans for archiving data, samples, and other research products, and for the preservation of access to them.*
   The collected data will be centrally archived with the PI's group for at least five years and will be made available to potential collaborators as needed. The raw data will be kept in the operation system (microscope images), and the backup storage for softcopy saving will be provided every six months. The student and the PI will be responsible for the management and retention of research data.