Dean's Innovation Grants

Final Report

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Project Title: The Soundbox: A Music Engagement Lab

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Project Purpose

The Soundbox was designed as a public space within the Music Library where UNT community members can engage with various types of music technology to learn and create. The overall goal was to utilize Music Library space for public use in a way that increases engagement. The project was also meant to gather data about services that students may need or want access to.

Project Activities

The first task was to allocate a space within the Music Library's existing workspaces. It was desirable to have a space that is accessible but also securable, so the decision was made to put the Soundbox in room 422, which was partly filled with Gemtrac CD shelving and with student assistant workspaces. This space was deemed ideal because it is right next to what will be the new Music Library service desk currently in the planning stages, which should increase the Soundbox's visibility to patrons checking out items. Working with facilities and Tim Alexander at RCL we were able to clear this space and begin outfitting it with technology by January 2023.

The design of the Soundbox, both in terms of its physical layout and the services provided, went through many revisions throughout the project. We began by repurposing two iMac computers that were assigned to the Sound Preservation Studio and using them as Digital Audio Workstations (DAWs). With the Garageband software already installed on these machines and one audio interface, we were able to make one DAW that was fully capable of recording sound sources (with the interface) and one that could serve as an "in-the-box" production DAW. The rest of the space was filled out with various synthesizers and music-making devices from David Huff's personal collection that have continued to be rotated in and out as the room layout (and David's personal musical needs!) have changed.

Once the general layout had been chosen, we went through a period of "soft opening" during Spring 2023 that served as an entry point into gathering data and anecdotal information about

students' wants and needs surrounding music production services. Audio tracking student assistants Christopher Cortes and Benjamin Crager began to staff the space during limited opening hours.

Kristin Wolski organized several tabling events to perform outreach and spread the word about the Soundbox. These events included having synthesizers that people could interact with freely. We worked with Joshua Sylve in External Relations to design a system of "recipe cards" for users at tabling events to try out. These recipe cards were instructions for users to make specific sounds using only the hardware in front of them. This idea will be developed further, and we plan to integrate it into the Soundbox itself as standard supplemental materials that are available around all of the hardware and the DAWs.

Even though the Soundbox is envisioned to be for all majors, we did still find faculty in the Composition and Commercial Music Departments looking to us to help support their coursework. Most recently we hosted composition professor Dr. Andrew May's MUCP 4690/5690 course on the history of electronic music, and it was a success, and more workshops are being planned.

The DIG funds were all put towards hardware and software meant for forward facing services. The bulk of the funds went to purchase an assortment of Eurorack format modules that when combined can create a complete modular synthesizer. This modular synthesizer is tailored toward the beginner and encompasses all the most basic sound synthesis concepts. Thus, it excels as both a teaching tool and as gateway into using more advanced systems.

The software packages chosen were Ableton Live 11 Suite—a multitrack recording and music production sequencer—and Max 8—a visual programming environment for designing audio and multimedia systems. With two licenses of each we were able to turn both of the iMacs into fully outfitted DAWs. The combination of Ableton Live and Max ensure that the system is flexible enough to accommodate users creating popular and commercial styles as well as more experimental genres. These software suites plus the purchase of a second audio interface also allowed us to have parity of features between both Soundbox iMacs.

Finally, several sets of headphones, headphone mixers, and cables were purchased to round out the technical needs.

Below are summarized highlights of the project:
- Purchased and built a modular synthesizer
- Purchased software to turn two sound preservation computers into DAWs
- Purchased other hardware to support the studio (headphones, headphone mixers, audio interface, cables, etc.)
- Brought in personal gear to make available and show the potential
- Conducted tabling events to spread the word
- Collaborated with other departments to increase visibility and support technology (ER, TACO, COM)

- Hosted MUCP 4690/5690

Budget

Project Budget	TOTAL FUNDS EXPENDED
Equipment	*$3350*
Software	*$1616*
*Wages ***	*$0*
MAINTENANCE & OPERATION**	*$0*
Other (conference registrations)	*$0*
TRAVEL***	*$0*
Total	*$4966*

* For student assistant (graduate).

**Funds may not be used for professional memberships or journal subscriptions.

*** Travel funds may be used for site visits for research purposes or may be used for presenting a paper on this research project at a conference.

Project Outputs/Outcomes

The pilot project has served as the catalyst for creating a new service point in the Music Library where students can work on music and sound projects with specialized software and equipment, receive support for questions about audio and music production, and checkout audio equipment from a centralized location.

We have been able to build two digital audio workstations (DAWs) based around iMac computers, each with audio interfaces and MIDI controllers that allow users to work on music or sound design projects.

Other Results (if applicable)

The project has helped us identify areas of need that may inform the creation of other services.

One common request by Soundbox visitors is for spaces where recording acoustic sources (voice, instruments) is possible. The Soundbox is currently a headphone-only space because of the lack of acoustic treatment and soundproofing in the Music Library spaces, which makes it impossible to fulfill such requests. Thus, future library renovation plans should take into consideration the building of soundproofed spaces large enough for one to two users to record acoustic sources such as instruments and outfitted with technology geared specifically towards music production.

Additionally, there is a desire for isolated rooms where people can work on music production without headphones. This kind of an environment would not require the kind of sound isolation that an acoustic recording space would necessitate, but it would still require some sort of sound isolation if live monitoring were to be used, to avoid the playback from the room bleeding out into the rest of the library spaces.

Because we have sound preservation equipment running in other parts of the Soundbox, some people's attention was drawn to the analog tape machines, indicating that there is some interest in working with these types of legacy formats. Dr. May's history of electronic music course has traditionally had a section where students are given the opportunity to work with tape and compose using methods of early electronic music pioneers. Thus, they have expressed interest in having their students use the tape machines that are in the Soundbox and in the Sound Preservation Studio at the Library Annex during the tape technique portions of their history of electronic music courses. This is a potential service point that would be focused on specific coursework and that would involve very little expense on the part of the library outside of potentially moving the tape machines (or the entire Sound Preservation Studio) back to Willis Library.

Anecdotal Information

The Soundbox has been very well received among students and faculty. Students from several majors, including music, media arts, computer science, electrical engineering, and business have visited the Soundbox or become "regulars." The number of non-music majors who have expressed interest in the Soundbox has shown that the plan to make it an equitable space was well-founded and that music making with technology is an interest that goes beyond the College of Music.

Dr. Andrew May, professor of composition and expert in the field of music technology, has offered an endorsement letter that is attached as an appendix to this report. Their thoughts and commentary provide an insightful glimpse into some specific ways in which a service point like the Soundbox can support music composition coursework in the future.

Best Practices

We made several trips to UNT Surplus in the process of developing the Soundbox and were able to source a few pieces of technology that are substantial additions to the space. Additionally, we were able to find smaller utilities and accessories such as power cabling and furniture. When trying to put together a technology-based service point like this, it is a good idea to use all the means at your disposal to source technology and utilities where you can find them. Doing so has allowed us to dedicate the DIG funding solely towards unique items such as modular synthesizers and DAW software that really could not be acquired any other way.

While the use of personal assets and equipment may not constitute a best practice, it does have a history at academic institutions, including at UNT in particular. Merrill Ellis, UNT professor of composition from 1962 to 1981, started what is now the Center for Experimental Music and Intermedia (CEMI) as a small electronic music studio in his house on Mulberry Street in Denton, furnished with equipment he procured himself. In similar fashion, the Soundbox has emerged as a "grass roots" effort that has grown based on the contributions of Music Library staff and student assistants.

Because the equipment has been available from David Huff's personal collection, it has been a means to test out the basic premise of the Soundbox without having to fully commit to funding and infrastructure. This approach is not something that just anyone will be able to do, but it does bring up concerns of donor relations and building relationships with community members who might have access to or willingness to donate or loan technology for this kind of a pilot project. In that same vein, it could be a model for broadening the scope of what donations can be and how they can be used.

Program Continuity

The Soundbox was always envisioned as a new and ongoing service point in the Music Library.

After having hosted Andrew May's electronic composition class, we see a future vision of what the Soundbox could be coalescing around the idea of a hands-on repository for music technology of different periods. One could imagine the Soundbox having a physical timeline like a museum would, starting with the working Edison cylinder machines held by the Music Library's Special Collections, moving through other legacy recording technologies and on to synthesizers and computer-based DAWs. Such an approach could offer unique and tangible ways of allowing users to engage with Music Library collections.

The limited opening hours were originally meant to be expanded once more student assistant time could be allotted, but the potential of using the Soundbox as a lab to host particular courses might make those limited opening hours necessary if it is deemed to be an advantageous use of library space. That being said, we do want to have the largest window of open hours that we can have within times that work best for student traffic and budgetary constraints.

October 4, 2023

I am writing to share my gratitude for the Soundbox lab, and the opportunities it affords UNT students and faculty. I have been on the Music Composition faculty since 2005, and directed the Center for Experimental Music and Intermedia (CEMI) for 13 of the 18 years I have been here. The Soundbox complements and extends the capacity of existing facilities, both at the UNT Libraries and the College of Music, in ways that invite new cohorts and new projects and contribute to students' investment in learning, research and creative work. I hope the significant work that has been done so far will continue to grow into the future.

I am currently teaching a seminar on History and Technology of Electronic Music, in which I give students hands-on experience with the formative technologies in the field, helping them to a deeper understanding of how the repertoire and tools of electronic music developed, and why current technologies look, sound, and function in the ways they do. I have been teaching this class since 2007, and have improvised the lab/studio environment for it with a combination of historical equipment in CEMI, much of which is in rather poor condition, and equipment of my own. Had I known more about the Soundbox, I would have tried to teach the class there instead; it is an insightfully designed facility combining old and new technologies at the highest level, and a perfect environment for teaching and learning this material.

It is worth noting that students in my class were the ones who suggested we use the Soundbox for the unit on voltage-controlled analog synthesis; their enthusiasm and excitement was palpable. Dr. David Huff, who designed and built the facility (and generously installed excellent equipment from his own home studio to round out the equipment already available at the library and the equipment funded by the 2022 Dean's Innovation Grant), gave an excellent introduction to the lab this past Monday, as well as teaching a wonderful class on fundamentals of voltage controlled analog synthesis. The class will convene in the Soundbox again this coming Monday, and we are all looking forward to it.

The Music Library is the only facility on campus that maintains high quality analog recording equipment, necessary for archiving the unique collection of recordings documenting music at UNT over the decades. Combining this with analog synthesis instruments, digital controls for some instruments, high-quality audio reproduction, and modern computer hardware and software, Dr. Huff has created an unique environment in which the history of electronic music practices is physically manifest, and the connections between old and new interfaces are not only visibly and audibly evident, but available for hands-on teaching, learning, research, and artistic production. Such facilities can sometimes be found at the best-funded of the historic centers for electronic music (Stanford, CalArts, Princeton, University of Chicago, and the like), but they require unusual knowledge of the field, investment in design and maintenance, and commitment to a holistic approach. Dr. Huff encompasses this range of skills, and has laid the foundations of a truly beautiful environment. Students' responses to the Soundbox make it clear that it will be used well, and produce unique results.

"Everything old is new again," as they say; analog equipment has become popular again (as have LP records!) over the last decade or two, and has become a permanent part of the craft of electronic music. There is a thriving industry making such equipment, and a strong market for skilled musicians and designers in this space. Having a studio where students can learn and practice these skills will prepare them for exciting professional opportunities, in addition to deepening their understanding of the fundamentals underlying modern digital music technologies. While CEMI is UNT's primary locus of electronic music, its mission focuses on innovation and experimentation with new and cutting-edge digital technologies; given limited budgets, CEMI has not been able to justify making these opportunities a priority. The Soundbox represents a bridge between preservation of past practices, cultivation of relevant skills for the present day, and preparation for future directions that my colleagues and I have long wished we could provide (as an example, David Stout, who directs the Initiative for Advanced Research in Technology and the Arts (iARTA), has an extensive home studio of analog synthesis equipment which he uses deftly in his own music – but he cannot teach these skills effectively with the tools currently available in the CEMI facility).

Using Moog, Buchla, Doepfer, and other designers' instruments currently available in the Soundbox will be an opportunity of increasing interest among the Music cohort as we build the newly inaugurated program in Commercial and Popular Music. It will also bring students who are not enrolled in music but love working with synthesized sound into the conversation, giving them opportunities to learn and create that would otherwise be impossible in the already overloaded CEMI studios – even if we had the equipment!

In short, I am grateful for the opportunities the Soundbox makes available not only to my students but to the campus as a whole, and for the skill, expertise, and generosity with which Dr. Huff has designed and implemented the facility. We have discussed his hopes for future development of the Soundbox, and his ideas are well-conceived and practical. I hope the UNT Libraries will continue to support this valuable project, which integrates so many perspectives and so much of UNT's history of innovation in the field of electronic music.

Sincerely,

Dr. Andrew May

Associate Professor of Music (Composition Studies)