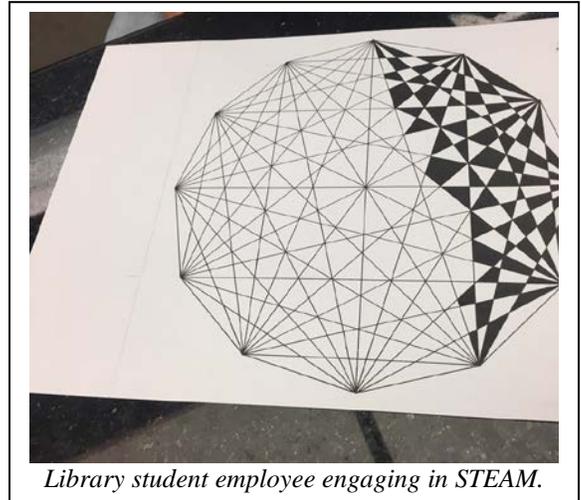


Library Pathway of Distinction #6
From STEM to STEAM:
A Collaboration with HASS & the Writing Center

Summary

Studies confirm that the liberal arts contribute to the effectiveness of STEM education by promoting skills such as communication, teamwork, leadership, creativity, and adaptability. As a multidisciplinary and a discipline-neutral space, academic libraries have long served as natural salons for promoting the liberal arts in higher education. While library arts programming is increasingly common for institutions with a broad-based curriculum, it has taken less hold at STEM-intensive institutions such as Mines. Via close collaboration with HASS, the Writing Center, and other liberal arts departments and student success units across campus, the library can serve as a distinctive, recognized center for celebrating and promoting the arts at Mines.



Library student employee engaging in STEAM.

The library is already active in STEAM programming via its popular Friday concert series and the occasional student gallery exhibit in the Book & Brew café area, but is seeking enhanced opportunities to collaboratively develop unique curricular and cocurricular STEAM initiatives, and to engage library users in entirely new ways. The library recently created a new, dedicated Engagement Librarian position as a demonstration of commitment to this strategic direction.

The following three broad initiatives, developed collaboratively with HASS and the Writing Center, will engage the campus by infusing STEAM throughout the Arthur Lakes Library:

1. Curricular Integration of Special Collections, Archives, and Museum Holdings

The library's Special Collections and Archives, as well as the museum's holdings, offer unique opportunities to support STEAM-centric instruction and research through **the incorporation of primary source materials into the existing Mines curriculum**. These archival materials - documents, correspondence, photographs, etc. - illustrate and provide context for a range of inquiry in societal, cultural, creative and underrepresented minority experiences. Anecdotal evidence shows that using primary source materials enhances learning and engages the student at a deeper level. The museum and library are thus uniquely positioned to support the existing Mines curriculum and wider communities through collections that make connections between the humanities and engineering, mining and resource extraction, and Mines history.

A dedicated STEM research course that integrates primary sources could further foster multiple information literacy skills, such as the development of appropriate research questions that can be answered via primary

sources (e.g., engineering trends; perspectives of engineers), and the employment of multiple techniques to discover answers to those research questions (e.g., literature reviews; digital humanities; data/text mining).

The library is supporting this commitment to primary source research instruction via subscription to several new primary source databases, including:

- [Gale Primary Sources](#)
- [Times Digital Archive](#)
- [Nineteen Century U.S. Newspapers](#)

Colorado's extensive engineering and mining history has generated many artifacts that directly relate to the social, economic, and political issues that our students will face in their future careers. While other institutions may offer similar programs, a Mines initiative would be truly distinctive in that our archival materials deal directly with the applied professions for which our students are preparing. The library and museum both hold physical resources that speak directly to social responsibility and other institutional emphases at Mines. This curricular initiative can be tailored to specifically engage our students with social responsibility to the Earth, Energy and the Environment

2. A Central Hub for Robust STEAM Programming

The Mines campus does not currently include any central space for the arts. A renovated and expanded engineering library can simultaneously serve as the central campus salon for creative expression and provide unique opportunities to promote STEAM in a multidisciplinary STEM learning environment. Many collaborative ventures can commence prior to a library renovation. Gathered ideas include but are not limited to:

- **Mines "Shut Up and Write" Night:** "Shut Up and Write" is a national movement to get people together and write (whatever they want!). The Writing Center is already developing this initiative and welcomes opportunities to hold it collaboratively with the library.
- Similarly, the Writing Center and the library can cosponsor a **"Shut Up and Read" Night**, an opportunity for students, faculty, staff, and community to come to the library and spend an hour or so just doing some pleasure reading.
- **Book Connection** – Connect students with recommended leisure books selected by faculty, staff, and even President Johnson
- Diverse, robust programming that showcases the new student-led **Common Read initiative** on campus.
- **Research Days** – A selection of days (paired with appropriate EPICS or NHV assignments) where students visit the library to conduct research and obtain feedback or guidance from a librarian. This type of opportunity could replace the more traditional in-class research instruction by offering real time feedback on research that students are actively working on. Faculty could offer extra credit or require a "sign off" by a librarian on their sources.
- **Research Parties** - Gathering supporting units (e.g., librarians, Writing Center, GSIs) to host an evening session with food 2-3 weeks before a writing assignment is due so that students can ask any questions and get the research done for their project
- Expanding use of library space beyond music concerts and poetry readings to further include **art exhibits, lectures, and student-centered events**.
- A multitude of **academic and/or social events** that support learning.
- **Showcase of department history/discipline history/ alumni and students accomplishments** in partnership with the History of Technology class

- **Alumni engagement** via guest lectures, casual talks about alumni life experiences, display of alumni art and other creative works.
- Developing **exhibits** centered on the above events to further highlight both the material and outcomes of the events (e.g. people’s writing and artwork from the readings; taking something out of the poem and making it).
- Partner with **student organizations** on all of the above to develop STEAM programming that reflects their needs and interests (e.g., Common Read program)
- Creating an event that allows students, faculty and staff to network, mingle, and socialize within the library, (e.g., “**Campus & Cocktails**”)
- Support for **creative brainstorming** – Provide students with creative outlets. For example, create a visual art wall from white board notes. Place glass white boards around the library for random creative expression.
- Consulting with faculty to further **incorporate STEAM within the current curriculum**.

3. Distinctive STEAM Spaces

The library’s May 2018 renovation vision document already details multiple new spaces to promote STEAM at a STEM institution, including art gallery space, lecture space, etc. Additional ideas developed since then through conversation with HASS and other departments include:

- **Dark room** to promote photography. Possibly integrate directly with the Mines curriculum (e.g., science photography).
- **Multimedia studio** dedicated to listening to or recording podcasts, vodcasts, STEM stories, etc.
- **Dedicated, rotating student art displays** around the library. Encourage students to create art. Perhaps offer related art classes.

Resources and Requirements

- Tailored physical spaces for the arts, ideally achieved via a full library renovation and expansion
- Staffing to organize, promote, and lead a robust schedule of STEAM programming.
- Effective, intentional campus-wide partnerships, as this pathway of distinction touches upon all disciplines; e.g., civil engineering, mining engineering, environmental engineering, HASS, economics, business, and geology. It will also require an increasingly close partnership between the library and the museum and within the library itself in order to ensure that we are providing the most relevant resources to our student body and their professors.