A Bold New Vision

A world-class research institution deserves a world-class research library.

I. Summary

Built in 1953 and expanded in 1977, the current library structure is undersized with poor layout, is technologically outmoded, and no longer effectively embodies, supports, or enhances the Library’s mission or the innovative spirit of the Mines research community. Current faculty and staff have expressed a lack of satisfaction with the current physical library. Importantly, it also fails to appeal to potential Mines faculty and students as they consider their career and educational options.

The newly updated mission of the Arthur Lakes Library is to:

Foster a rich and responsive information environment that empowers learning, discovery, critical thinking, and knowledge creation for Mines and a sustainable global society.

In addition to developing superior collections, exceptional user services, and a robust digital presence, realizing this ambitious, user-centric mission will require an institutional commitment to a fully renovated and significantly expanded modern academic library that meets the collaborative and creative research and learning needs of today’s scholars. Providing the dramatically expanded and technology-infused individual and group study spaces for which students have expressed a strong need is foundational. A re-envisioned physical library will enhance and further the Mines research mission with creative and collaborative spaces that include but are not limited to:

- **Center for Scholarly Communications** – To advance digital scholarship, born digital collections, and a collaborative research paradigm, and to provide collaborative leadership in managing and disseminating the research output of Mines.
- **Mines IDEA Hub** – A business incubator/makerspace that fosters innovation and entrepreneurship between Mines faculty and students and the larger community with research consultation services, conference facilities, a multimedia production studio, data visualization platforms, presentation practice space, and office suites.
- **Student Success Center** – Unites CASA, writing, testing, tutoring, and research consultation services into a single integrated location to support the learning enterprise.
- **Culture Lab** – Offers robust intellectual and artistic programming, an art gallery, and more.
- **The Social Zone** – A casual student space that includes media and gaming lounges, meditation space, and more.
• **Book & Brew Café** – Expands the library coffee shop into a full service eatery. Student workers will learn real-world business management skills via collaboration with the IDEA Hub business incubator.

• **Centralized Special Collections and Archives** – Brings together and showcases the Library’s highly distinctive collections with displays, a reading room, event space, etc.

• **Faculty Lounge** – Provides a warm, collegial environment that brings faculty together to foster casual, cross-disciplinary connections. May include collocation with the Trefny Center.

• **Geospatial Data Center** – Advances the geospatial needs of Mines scholarly endeavors.

• **More** – Including but not limited to interactive instruction spaces, a data visualization wall, and other technology-infused features.

This paper details the limitations and challenges of the current library facility as well as a vision for a modern, dynamic, user-centric innovation and discovery center that advance the Mines vision to be:

**The premier institution, based on the impact of its graduates and research programs, in engineering and science relating to the earth, energy and the environment.**

II. **The Challenge**

A new library mission and vision.

The mission of libraries is a timeless one – to facilitate knowledge creation in their communities - yet all libraries must continuously transform and adapt if they are to continue to successfully fulfill this mission. The Arthur Lakes Library embraces its enduring mission to facilitate connections between scholars, knowledge resources, and information services, and to support world-class research and learning at the Colorado School of Mines.

The Library is also embracing entirely new opportunities to enhance and further those connections in the digital age. In order to more fully support the academic and research success of the Mines community, the Library has developed a bold new vision for its role and its future to be:

**The collaborative partner and intellectual nexus that bridges disciplines and communities across the Mines campus.**

The Library has also crafted an ambitious but achievable **strategic plan** to carry that vision forward in a clear and intentional manner over the coming years. This plan identifies seven user-centric, high-level goals that will advance the Library in pursuit of its vision [see Appendix A].
The continuing importance of the physical library.

It is natural to assume that in the digital age this bold new vision for libraries would be realized as a solely virtual platform. Paradoxically, physical library space has become more, not less important in the 21st century. The focus of physical libraries has transformed from an emphasis on access to collections to the creation of dynamic spaces where the people can directly connect with information and with each other in a variety of modes to generate shared understandings and ideas. As electronic information proliferates, the need for learners to interact with each other directly and personally has become essential.

Even when engaged in solo study activities, recent studies (Desender, Beurms, & Van den Bussche, 2015) confirm what is instinctively understood by all: Mental exertion is contagious. We study and learn better in the company of others, and we therefore actively seek this out. The Arthur Lakes Library is the recognized intellectual nexus of the Colorado School of Mines and the broader community and highly valued by Mines students as the campus destination for group and solo study activities.

The current student Library experience.

The current study experience of Mines students is far from a comfortable, functional, or esthetically inspiring one. Built in 1953 and extended in 1977, the Library has undergone only limited space renewal and infrastructure upgrades in the decades since. Additionally, the physical library no longer adequately supports the increasingly collaborative and technology-infused ways in which Mines community members now engage in learning, experimentation, and information discovery.
Students must endure uncomfortable, unvarying furniture in spaces that no longer meet modern code requirements. The library building fails to provide adequate lighting, sufficient outlets for mobile learning devices, or an appropriate amount of space for the current student population. A visitor to the Library during the popular evening hours will encounter students studying at uncomfortable 1970’s tables and chairs strung along dark basement hallways. They will find students sitting on the floor or bringing their own furniture, stringing up hammocks in vacant, low-ceiling spaces where collections once stood. They will see students hunting for electrical outlets and competing for the limited number of group and solo study rooms. They will observe students unsuccessfully seeking out quiet space in the midst collaborative group activities due to the lack of proper library zoning. They will recognize that our dedicated and high achieving students are valiantly making do with the current state of the Library. **Our students hold the Library in high regard. But they deserve better.**

In short, the Arthur Lakes Library, with its limited square footage, collections-centric layout, and worn infrastructure, is not meeting the needs of current students, does not reflect the university’s innovative spirit, and does not spark the spirit of potential future students.

The competition.

A majority of academic libraries in the state of Colorado and beyond have already undergone or are about to undergo complete physical renovations that transform their post-World War II-era libraries into exciting 21st century community laboratories of learning. As detailed in Figure 2 on the following page, Colorado universities have invested substantially in refurbishing outdated spaces and dramatically increasing the square footage of their libraries to facilitate the many new ways in which libraries are serving their users. Universities understand and are committed to the exciting new roles for the library on their campus, and know what has been confirmed in extensive national studies – that **the library is also one of the most important facilities on campus that factors into the enrollment decisions of prospective students** and their parents when visiting a campus:

![Ten Most Considered Facilities When Selecting a College](image1)

*Figure 1. Library as a major factor for prospective students (Reynolds & Cain, 2006).*
Figure 2. Colorado Academic Library Renovations

<table>
<thead>
<tr>
<th>Institution</th>
<th>2015-16 FTE*</th>
<th>Square Feet</th>
<th>Renovated</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Colorado College</td>
<td>2,067</td>
<td>69,600 + 24,717 → 94,317</td>
<td>2016-present</td>
<td>$45M</td>
</tr>
<tr>
<td>Western State</td>
<td>2,099</td>
<td>69,917</td>
<td>Pending</td>
<td>$10.5M requested (partial renovation)</td>
</tr>
<tr>
<td>Adams State</td>
<td>2,483</td>
<td>72,344 + 24,115 → 96,459</td>
<td>Pending</td>
<td>$14.5M requested (originally $19.1M)</td>
</tr>
<tr>
<td>Fort Lewis College</td>
<td>3,470</td>
<td>67,486</td>
<td>Pending</td>
<td>“Priority…in need of extensive repair and functionally obsolete.”</td>
</tr>
<tr>
<td>CSU-Pueblo</td>
<td>3,742</td>
<td>? (added 22,600)</td>
<td>2009-11</td>
<td>$24M</td>
</tr>
<tr>
<td>CU Anschutz Health Sciences</td>
<td>5,577</td>
<td>116,000</td>
<td>2007</td>
<td>$35M</td>
</tr>
<tr>
<td>CO School of Mines</td>
<td>5,809</td>
<td>47,191</td>
<td>Pending</td>
<td>$3.8M allocated</td>
</tr>
<tr>
<td>CMU - Mesa</td>
<td>7,752</td>
<td>68,000 + 26,000 → 94,000</td>
<td>2014-2015</td>
<td>$25M</td>
</tr>
<tr>
<td>UNC-Greeley</td>
<td>8,941</td>
<td>145,592</td>
<td>Pending</td>
<td>Under current discussion</td>
</tr>
<tr>
<td>DU – Anderson Commons</td>
<td>11,797</td>
<td>154,223</td>
<td>2013</td>
<td>$32M</td>
</tr>
<tr>
<td>CSU-Fort Collins</td>
<td>25,374</td>
<td>300,000K + 7,000 → 307,000</td>
<td>2012</td>
<td>$17.8M</td>
</tr>
<tr>
<td>Auraria Library**</td>
<td>31,997</td>
<td>180,000</td>
<td>2013-present</td>
<td>$36M</td>
</tr>
<tr>
<td>CU-Boulder</td>
<td>28,281</td>
<td>45,350 (one of five libraries)</td>
<td>2009</td>
<td>$5.2M (lowered due to recession)</td>
</tr>
</tbody>
</table>

* Source: CDHE, Sept. 2016 (http://highered.colorado.gov/Data/Reports.aspx)
** Auraria Library serves 3 downtown Denver campuses: Metro State; CU-Denver; CC-Denver

It is not just higher education institutions in Colorado that are embracing the central role that modern academic libraries play. At a campus conversation in April, Colorado School of Mines president Paul Johnson identified multiple institutions who fall into an aspirational cohort. These universities, too, have been actively investing in their academic libraries over the past decade:
This broad commitment to the role of modern academic libraries is best summarized in the recent words of campus leaders at institutions who have committed to undertaking major library renovations:

“The time is right for MIT to articulate a bold new vision for a modern research library. I’m asking the Future of Libraries Task Force to think broadly and creatively about the unique role MIT Libraries should play as a leader in defining the future of libraries.”

—Provost Martin A. Schmidt, MIT

(https://future-of-libraries.mit.edu/)

<table>
<thead>
<tr>
<th>Institution</th>
<th>Renovated</th>
</tr>
</thead>
<tbody>
<tr>
<td>MIT</td>
<td>2017 (master planning)</td>
</tr>
<tr>
<td>Harvey Mudd</td>
<td>2017 (master planning)</td>
</tr>
<tr>
<td>Carnegie Mellon</td>
<td>2017</td>
</tr>
<tr>
<td>Olin</td>
<td>2015 (updates)</td>
</tr>
<tr>
<td>Stanford</td>
<td>2014</td>
</tr>
<tr>
<td>Case Western</td>
<td>2006 (law library renovation)</td>
</tr>
<tr>
<td></td>
<td>2014 (main library updates)</td>
</tr>
<tr>
<td>Johns Hopkins</td>
<td>2012</td>
</tr>
<tr>
<td>WPI</td>
<td>2012</td>
</tr>
<tr>
<td>Rose Hulman</td>
<td>2010</td>
</tr>
<tr>
<td>Rice</td>
<td>2008</td>
</tr>
<tr>
<td>Lehigh</td>
<td>2008</td>
</tr>
<tr>
<td>RPI</td>
<td>2005</td>
</tr>
<tr>
<td>Cal Tech</td>
<td>?</td>
</tr>
</tbody>
</table>
“For generations of students, the Sorrells Library has been at the heart of their work, providing access to information spaces for serious study, and an opportunity to work alongside specialist librarians. This remodeling begins to deliver spaces that meet the needs of 21st century students — spaces for collaboration and innovation, a venue for quiet study, and innovative technology.”

— Keith Webster, Dean of University Libraries, Carnegie Mellon

III. The Vision

Method

To better align the Library’s mission, services, space, and collections with the strategic direction of Mines, the Library conducted a 12-week, intensive strategic visioning and planning effort in early Spring 2017. This initiative included multiple activities to solicit stakeholder perspectives, including eight brown-bag discussions with faculty, staff, students, and community regarding the Library’s strategic direction and renovation plans. The library staff engaged in deep self-reflection:

- Conducting a SWOT (strengths, weakness, opportunities, and threats) analysis
- Completing an in-depth individual assignment to conceptualize library renovation features and aspects,
- Identifying emerging library trends via a review of the literature.
- Reviewing historical inputs from 2012-2016 renovation conversations.
- Undertaking field trips to recently renovated academic libraries in the greater Denver area to see firsthand how other Colorado institutions are reinventing the library experience.

The Library also engaged directly with the Undergraduate Student Government (USG) and Graduate Student Government (GSG) to directly solicit student needs and desires with respect to library facilities and services. Earlier (2012-2016) campus conversations regarding the need for a library renovation in were also taken into consideration (Appendix C).

The insights from these many activities will inform a future library renovation; these can be shared upon request.
Guiding Principles

As we work together with all stakeholders to successfully shape a modern academic library that is fully integrated and engaged with, fully supported by, and fully meeting the needs and aspirations of its community, we are guided by a set of overarching principles:

1. **Think more expansively (and yes - more expensively).**

   The originally planned $3.8 million partial renovation would enable campus units such as CASA, the writing center, and testing services to relocate to the Library. This collocation of services with a shared mission for student success is an established trend in academic libraries and one that is enthusiastically embraced by the Mines library faculty and other stakeholders. **However, this limited funding level does not enable any substantial refurbishing of existing, student-centered library space; indeed, it results in a reduction of the Library’s already inadequate square footage dedicated to open study space and study rooms.** The undergraduate and graduate student governments of Mines have expressed their concern about this loss of study space and lack of an overarching vision for the library renovation, resulting in a memorandum dated November 29, 2016 (Appendix D).

   The scope and budget for the library renovation should be enhanced to provide a true collaborative environment for the Mines community. This means a substantial expansion of the Library’s inadequate square footage to better meet the needs of the current student population, with an eye to plans for increased future enrollment in the decades to come. The chart on page 4 (also Appendix B) suggests that the square footage of the Arthur Lakes Library is at best half of what it should be to serve today’s student population. An increased footprint is essential if the Library is to both incorporate centralized student success center services, add entirely new specialty services identified within the Library’s strategic plan, and plan for future enrollment growth.

2. **Think more experimentally.**

   In January and February 2017, library stakeholders identified a multitude of features they seek in a renovated library (partially listed in Appendix E); collectively, they communicate a future-forward space that is flexible, adaptive, inspirational, aspirational, and ambitious. The space shall reflect a healthy and vibrant Mines community; in short, they both express and support the pioneering spirit of Mines STEM-based research mission. These features are united by several common precepts:

   - **Technology-infused.** Almost all space in a library should be informed by technology, from study rooms with technology amenities to data visualization walls, to an abundance of outlets to support mobile devices.
   - **Leading-edge innovative.** The Library should also provide platforms for different disciplines to test and apply cutting-edge software and tools, especially those designed for enabling collaborative learning and research.
   - **Adaptable.** Library furnishings should allow users to adapt space to meet their needs, quickly and easily.
   - **Flexible.** Building design should incorporate the ability for the Library to change and adapt over time, as the knowledge creation landscape continues to shift.
• **Universal design and sustainability.** These primary foundational principles to guide the renovation.

3. **Design for the user.**

The library should be envisioned and designed with a sense of *place*, and a deep recognition that users will have ever varying space and place requirements to support different knowledge creation activities. In addition to providing traditional space to house physical collections, the Library must provide a broad range of user-centric spaces and places, including:

1. **Quiet zones** that provide individual, contemplative spaces.
2. **Collaboration and makerspace zones** that enable groups to jointly craft new knowledge.
3. Service zones that provide professional, face-to-face assistance to support research and academic success.
4. **Specialty zones that advance the mission of Mines**, such as the Idea Hub and others those noted in section I.
5. **Space between places.** Library users desire and need room to spread out, both for their own work zone and between the work zones of others. Collaboration, quiet, and specialty zones also need to be set apart from each other to provide visual affordances and control noise dynamics.

4. **Think esthetically.**

Esthetics matter. Esthetics express the values and aspirations of a community, both to itself, to future potential community members, and to the broader world. Esthetics influence one’s mindset. One’s surrounding environment can encourage the spirit to soar and to aim for new heights. It directly supports the knowledge creation process. “The library should become a physical manifestation of the university's philosophies” Sens (2013).” And as noted earlier, library esthetics are also a strong selling point with the power to attract, recruit, and retain top students and faculty. The library should reinforce the university’s values and the university brand. Library stakeholders have identified multiple interior and exterior esthetic features that would directly contribute to the library environment and, therefore, their library experience (see Appendix E).

IV. **Summary**

Carl Sagan once famously said,

* I think the health of our civilization, the depth of our awareness about the underpinnings of our culture, and our concern for the future, can all be tested by how well we support our libraries.

The world-class institution that is the Colorado School of Mines deserves a world-class library that not just contributes to and enhances the research contributions of Mines scholars, but also fully communicates and reflects its future-forward values and philosophy. This can only be realized via an institutional commitment to a fully renovated and significantly expanded modern academic library.
V. References


VI. Appendices (separate file)

A. Arthur Lakes Library Mission, Vision Values and 2017-2020 Strategic Plan

B. Academic Library Renovations in Colorado

C. 2012-2016 Vision Documents
   c. Town Hall Meeting Findings Booklet (2016)

D. USG/GSG Joint Memorandum (11/29/16)

E. Renovation Features – Spring 2017 (source: stakeholder discussions and library staff brainstorming)