

(\$ in thousands)

Project Title	Priority Ranking	Funding Source	Project Requests for State Funds		
			2022	2024	2026
Higher Education Asset Preservation and Replacement (HEAPR)	1	GO	\$ 200,000	\$ 200,000	\$ 200,000
Chemistry Undergraduate Teaching Laboratory	2	GO	\$ 69,400	\$ 0	\$ 0
UMD Science Building Renewal - Design	3	GO	\$ 1,640	\$ 0	\$ 0
Total Project Requests			\$ 271,040	\$ 200,000	\$ 200,000
General Obligation Bonds (GO) Total			\$ 271,040	\$ 200,000	\$ 200,000

Higher Education Asset Preservation and Replacement (HEAPR)

AT A GLANCE**2022 Request Amount:** \$200,000**Priority Ranking:** 1**Project Summary:** This request is for funds to renew existing campus facilities and infrastructure in accordance with Minnesota Statutes, section 135A.046 Asset Preservation and Replacement.**Project Description**

The purpose and use of Higher Education Asset Preservation and Replacement (HEAPR) funds is defined in statute 135A.046 Asset Preservation and Replacement. Funds are intended to preserve and renew existing campus facilities by supporting five categories of projects: Accessibility, Health and Safety (e.g. hazardous material abatement, building code compliance), Building Systems (e.g. exterior envelope, mechanical, and electrical systems), Energy Efficiency, and Infrastructure. HEAPR funds are used throughout the University of Minnesota system. Funds are allocated to campuses and research stations based on facility need and overall quantity of space. The University regularly reports on the status of its HEAPR funding to Minnesota Management and Budget and the Legislature.

Project Rationale

HEAPR funds are essential in supporting the University of Minnesota's mission of teaching and learning, research and discovery, and outreach and public service. This mission will be compromised without continued, sustained reinvestment in buildings and infrastructure to extend and maximize useful life while ensuring the health, safety, and well-being of facility occupants and visitors.

Rigorous process ensures every HEAPR dollar supports the most urgent and impactful needs. Individual projects are identified and prioritized through the University's Facility Condition Assessment (FCA). The FCA is a comprehensive systemwide evaluation of the condition of campus facilities and infrastructure portfolio. FCA data is used to triage existing buildings into those that need long-term investments, those that need short-term investments, and those where no investment is required, in alignment with academic priorities.

HEAPR funds are used throughout the University of Minnesota system and are allocated to campuses and research stations based on facility need and overall space. Funds keep people safe and make the campuses accessible for all Minnesotans. Funds leverage the State's past investment in buildings and infrastructure by extending the functionality and useful life of those assets. HEAPR projects are green, since renewing an existing facility and maximizing useful life is always more sustainable than new construction. HEAPR dollars are flexible, allowing the University to respond quickly to emergencies and to respond to unique opportunities. Regulatory compliance items, e.g. elevators, storm water and building code compliance are funded with HEAPR allocations. HEAPR projects move faster, put people to work quicker, and provide different firms an opportunity to participate in design and

construction at the University of Minnesota.

Project Timeline

NA - project timelines vary by individual project.

Other Considerations

None

Impact on Agency Operating Budgets

No anticipated impact on operating budget.

Description of Previous Appropriations

The University includes HEAPR in each capital request. Over the previous 10 year period, the University received \$38.495 million in 2020, no appropriation in 2019, \$45 million in 2018, \$20.6 million in 2017, no appropriation in 2016, no appropriation in 2015, \$42.5 million in 2014, no appropriation in 2013 and \$50 million in 2012.

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Chemistry Undergraduate Teaching Laboratory**AT A GLANCE****2022 Request Amount:** \$69,400**Priority Ranking:** 2**Project Summary:** This project will demolish obsolete facilities and predesign, design, renovate and build an addition to Fraser Hall to advance process-oriented and active learning for undergraduate chemistry on the Twin Cities campus.**Project Description**

The program for the Chemistry Undergraduate Teaching Laboratories in Fraser Hall comprises approximately 117,000 gross square feet of new and renovated space including a five-story addition with a mechanical and electrical penthouse. The completed building will house 18 new chemistry teaching laboratories with associated collaboration space, lab preparation and support spaces, tutoring space, and offices.

The building creates community for the undergraduate chemistry students and faculty throughout. The first level supports commons, study, and tutoring spaces making the life of the building visible to passers-by and to students. The new entry across from Walter Library creates a transparent volume of student-centered spaces overlooking the river. Instructional laboratory spaces are mainly housed within the addition, with three inserted into the original law library reading room space. Organic Chemistry, General Chemistry, and Life Sciences laboratories are grouped together by floor.

Project Rationale

The Department of Chemistry serves students from every college on the Twin Cities campus. Greater than ten percent of the entire UMN undergraduate population enroll in lab courses that will be taught in the proposed facility each semester and more than 90 percent of students who take chemistry courses are pursuing degrees outside of chemistry. With fall semester enrollment in undergraduate chemistry lab courses projecting further growth, the Fraser Hall renovation project is critical to serving future undergraduate admissions growth.

Currently, chemistry laboratory courses are taught in Smith and Kolthoff Halls. These outdated facilities were designed in the early 1900's, and have undergone a series of small remodels and renovations since. These facilities are not optimized for modern chemistry laboratory teaching, which involves students working in teams using active, collaborative, and/or process-oriented and project-based learning methods in an environment that meets the University's standards for safety and energy efficiency.

The undergraduate chemistry teaching pedagogy has evolved to an interactive, guided-inquiry, group

teaching methodology which requires collaborative space that is not present in the chemistry laboratories being used today; many of which, while partially renovated in the 1980's, are nearly 100 years old. The current chemistry instructional labs include only class lab and class lab service space. The proposed teaching labs are designed to incorporate collaborative space components into this module.

Project Timeline

Design: July 2020 - July 2022

Construction: July 2022 - June 2024

Opening for classes: - August 2024

Other Considerations

Fraser Hall is identified as a future renewal building in the University's strategic facility renewal plan. This category directs University staff to maintain the building for emergency and life safety conditions while redirecting limited renewal funds to other priorities, in anticipation of a future full building renewal project.

The strategic plan for the Department of Chemistry includes accommodating sufficient capacity for current and future projections of student demand for laboratory instruction in the core physical sciences. Modern chemistry teaching laboratories will enable the department to undertake substantial improvements in undergraduate education that reflect current evidence based instructional methods, while creating improved spaces for student teacher interaction.

Undergraduate chemistry serves a very large population of students in Science, Technology, Engineering and Math (STEM) and STEM-related fields such as the health sciences. The Minnesota Department of Employment and Economic Development projects significant continued growth in employment across all of these sectors and sub-disciplines. As examples, these professions include physicians, veterinarians, nurses, dentist, pharmacists, chemists, chemical engineers, materials scientists, biologists, biochemists, pharmacologists, environmental health and safety officers, laboratory technicians in industry, health care, state regulatory agencies, patent attorneys, science policy experts, and high school science teachers.

Impact on Agency Operating Budgets

Annual facility and utility expenses are projected to increase by approximately \$990,000.

Description of Previous Appropriations

The University received design funding of \$3.286 million in 2020.

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UMD Science Building Renewal - Design

AT A GLANCE**2022 Request Amount:** \$1,640**Priority Ranking:** 3

Project Summary: This request is for funding to predesign and design a renewal of the former Chemistry Building on University of Minnesota Duluth (UMD) campus. A comprehensive renovation of this largely vacant and obsolete building will provide students and faculty in the Swenson College of Science and Engineering with collaborative spaces for learning, active learning classrooms, laboratories, and research spaces.

Project Description

The project will involve the renovation of up to 53,000 gross square feet of the former Duluth Campus Chemistry Building. The Swenson College of Science and Engineering (SCSE) is the third largest college in the University of Minnesota system and serves over 3,000 undergraduate students and 250 graduate students with space allocated across the UMD campus. The building renovation will provide additional active learning classrooms, classroom laboratory spaces, and state of the art research labs for faculty in Chemistry and Biochemistry, Earth and Environmental Sciences, Material Sciences, and Computer Science. Classrooms will be designed to support active and collaborative student learning. The building will also house the SCSE Academic Advising office, as well as faculty and graduate student offices for the Computer Sciences Department.

Project Rationale

The former Chemistry Building is a 70-year old facility and is the oldest on the UMD campus. This facility has great potential to be repurposed and modernized to become the new UMD Science Building and to serve students for decades to come. At the same time, this project will address a critical capital renewal need in the heart of the campus.

Student interest and demand for computer science fields of study continue to be strong, and renovated space for the Computer Sciences Department will bring the department to the front of the campus to showcase their programs and provide room for growth. Current capacity limitations result in turning away qualified computer science students. This project would allow the program to increase capacity and better meet student and workforce demand. According to the U.S Bureau of Labor Statistics, employment of computer and information research scientists is projected to grow 15 percent between 2019 to 2029 - which is much faster than the average growth for all other occupations. At UMD, 100% of computer science graduates are employed or continuing their education after graduation and 90% of these graduates remain in MN.

The building will also house the Swenson College of Science and Engineering Academic Advising

office. The college currently has three professional academic advisors that serve over 3000 undergraduate students. This new space will allow for expansion of academic advising for SCSE students and provide a location that increases accessibility for these critical services.

Project Timeline

Pre-design: August 2021 - January 2022

Design: July 2022 - October 2022

Other Considerations

The project will strengthen the UMD's capacity to provide skilled Science, Technology, Engineering and Math (STEM) graduates to fill critical workforce demands across the state of Minnesota. The employment outlook by the Minnesota Department of Employment and Economic Development shows a projected 5 - 10% growth in the need for STEM jobs between 2018 and 2028. This project will help meet the demand for STEM workforce in Minnesota for decades to come.

According to the U.S Bureau of Labor Statistics, employment of computer and information research scientists is projected to grow 15 percent between 2019 to 2029 - which is much faster than the average growth for all other occupations. Increased capacity for the Computer Science Department can help keep pace with workforce demand.

Impact on Agency Operating Budgets

The request is for design funding only so there is no operating budget impact. Operating costs will be estimated when the design is complete and construction funding is requested.

Description of Previous Appropriations

N/A

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