Mission Fulfillment

December 2022

December 15, 2022

9:15 a.m.

Boardroom, McNamara Alumni Center

MIS - DEC 2022

BOARD OF REGENTS
DOCKET ITEM SUMMARY

Mission Fulfillment **December 15, 2022**

AGENDA ITEM: Board of Regents Policy: *Commercialization of Intellectual Property Rights*

☐ **Review** ☐ **Review + Action** ☒ **Action** ☐ **Discussion**

☐ *This is a report required by Board policy.*

PRESENTERS: Shashank Priya, Vice President for Research
Rick Huebsch, Executive Director, Technology Commercialization

PURPOSE & KEY POINTS

The purpose of this item is to act on the proposed amendments to Board of Regents Policy: *Commercialization of Intellectual Property Rights.* The proposed amendments are the result of a comprehensive review of the policy and consultation with the University community. No changes to the amendments have been made since the committee reviewed them in October.

The proposed amendments:

- Improve readability by rearranging sections and simplifying text.
- Codify in Board policy the University's ownership of "research data" and patented inventions (Section III).
- Increase support for University start-ups by increasing the per-company cap on equity securities (Discovery Capital) from $1.05M to $1.5M (Section VI).
- Eliminate superfluous text concerning the University holding a controlling equity interest in a private company.

Due to the number and breadth of the proposed revisions to the policy, the docket includes the current and revised policies as separate documents.

BACKGROUND INFORMATION

Board of Regents Policy: *Commercialization of Intellectual Property Rights* was adopted in 2007 and last amended in February 2022.

PRESIDENT'S RECOMMENDATION

The President recommends adoption of the proposed amendments to Board of Regents Policy: *Commercialization of Intellectual Property Rights.*

BOARD OF REGENTS POLICY:
Commercialization of Intellectual Property Rights

SECTION I. SCOPE.

This policy governs the University of Minnesota's (University) ownership and commercialization of intellectual property rights, subject to the exclusions provided in Section IX of this policy.

SECTION II. GUIDING PRINCIPLES.

The following principles shall guide the University in commercializing intellectual property rights under this policy:

(a) The primary mission of University research is the generation and dissemination of knowledge, and academic freedom requires that faculty, staff, and students be free to pursue areas of research and study without regard to the potential for the creation of inventions.
(b) The development and dissemination of new knowledge, technology, or scientific procedures resulting in innovative products, practices, and ideas is a valued supplement to scholarly publications.
(c) University commercialization activities shall not inhibit the ability of University researchers to pursue research of their choosing, to publish results of their work in a timely manner, and otherwise to exercise their rights of academic freedom.
(d) Licensing University-owned technology to private companies promotes the University's interest in successful commercial development of University-owned intellectual property. In some circumstances, a non-commercial method of distribution, such as open source sharing of technology or licensing for humanitarian needs, may be the preferred method of providing public access to, and use of, University discoveries.
(e) The University may use money earned from the commercialization of University-owned intellectual property to support commercial and other organizations that assist or promote such commercialization.

SECTION III. DEFINITIONS.

Subd. 1. Inventor.
Inventor means an individual who is employed by the University, who used substantial University resources to create technology, or who is otherwise subject to this policy. Visiting instructors and researchers, post-doctoral and other fellows, and students are subject to this policy and its exclusions.

Subd. 2. License Equity.
License Equity means securities acquired by the University under Section VI, Subd. 1(b) of this policy in connection with commercializing a technology.

Subd. 3. Net Income.
Net income means the gross monetary payments the University receives in consideration for granting rights in a technology less (a) the University's out-of-pocket expenditures (including legal and administrative fees) directly attributable to protecting, developing, and commercializing the technology, and (b) a fifteen percent (15 percent) technology commercialization administrative fee of the gross monetary payments to help defray the costs associated with operating the Technology Commercialization office. *Net income* includes the net cash proceeds received from the sale of License Equity. *Net income* does not include the net cash proceeds received from the sale of securities acquired under Section VI, Subd. 3, (a) and (b) of this policy. Fees, charges, and other monetary payments made to the University to compensate it for administering intellectual property agreements or seeking and maintaining intellectual property protection for technology shall not be considered monetary payments under this policy.

Subd. 4. Research Data.
Research Data means recorded factual material commonly accepted in the scientific or scholarly community as necessary to validate research findings, excluding preliminary analyses, drafts of scholarly or scientific work, plans for future research, peer reviews, communication with colleagues and physical objects. *Research Data* includes only recorded factual material that the University commercializes alone or jointly with technology.

Subd. 5. Substantial University Resources.
*Substantial University Resource*s means resources provided by the University that go above and beyond what is customarily provided to University employees or students. *Substantial University Resources* will vary by department/unit and context. To be substantial, the resources must be beyond the ordinary and must be more than what other members of the department or students in similar situations are regularly offered as support for their work.

Subd. 6. Student.
Student means an individual who is enrolled in a University course or who otherwise participated in a University educational activity.

Subd. 7. Technology.
Technology means the intellectual property and related rights in:

(a) a discovery or invention, patentable or not;
(b) software; and
(c) a trademark identifying a technology.

Subd. 8. University Official.
University Official means an individual defined by Board of Regents Policy: *Institutional Conflict of Interest.*

SECTION IV. ACADEMIC FREEDOM AND THE RIGHT TO PUBLISH.

To permit the registration, application for, and protection of the intellectual property rights in a technology, the University may request an inventor to delay the publication or public disclosure of a description of the technology for a brief period of time.

SECTION V. OWNERSHIP OF TECHNOLOGY.

Subd. 1. Ownership.
The University hereby claims and shall own all right, title, and interests in a technology created by an inventor in the course of their University employment or appointment or using substantial University resources and in research data generated or acquired by an inventor through research projects conducted at or under the auspices of the University, regardless of funding source.

Subd. 2. Ownership of Student-Created Technology.
The University does not claim ownership of a technology developed or research data generated or acquired by a student in connection with their participation in a University course or University educational activity. Notwithstanding the foregoing, the University hereby claims and shall own all right, title and interests in a technology developed and in research data generated or acquired by a student when:

(a) an external sponsor solely or partially funded the development of the technology;
(b) the technology was an improvement of a University-owned technology;
(c) the student used substantial University resources to develop the technology; or
(d) the student and an inventor jointly developed the technology.

In each such situation, the student shall be deemed under this policy an inventor of the technology, with all commensurate rights and obligations.

Subd. 3. Inventors' Assignments of Intellectual Property Rights in a Technology.
An inventor hereby irrevocably assigns to the University all of their rights, titles, and interests in a technology they created in the course of their University employment or appointment or they created using substantial University resources. An inventor shall cooperate with the University to effectuate this assignment.

SECTION VI. DELEGATIONS OF AUTHORITY.

Subd. 1. Commercialization.
The president or delegate is authorized to approve the University:

(a) assigning, waiving, licensing, or otherwise granting a person a right to practice the University's intellectual property rights covering a technology; and
(b) accepting equity securities and entering into related equity-ownership agreements in connection with commercializing a technology.

Subd. 2. Private Company Board Membership.
The president or delegate is authorized to approve the appointment of an individual to serve on behalf of the University as a voting member of the governing body of a privately held company commercializing a technology. The individual shall:

(a) have demonstrated experience and competence in technology commercialization and in company creation, management, and capitalization; and
(b) be reasonably insured against liability arising from service on the governing body.

The individual:

(a) shall not accept compensation (excluding reasonable reimbursement for service-related expenses) from the company for their service as a member of the governing body;
(b) shall comply with applicable Board of Regents (Board) and administrative policies and procedures;
(c) shall discharge fiduciary and contractual responsibilities to the company, subject to the performance of University duties as provided in Board and administrative policies and procedures if the individual is an employee of the University; and
(d) shall resign as a voting member of the governing body of the company prior to the company's becoming publicly held, unless the president or delegate approves an extension of the appointment.

Subd. 3. Financial Support.
The president or delegate is authorized to approve the following:

(a) the purchase of equity securities and securities that are convertible to equity securities of a company formed to develop and commercialize technology up to $1,500,000 per company. The securities may be purchased in one or a series of transactions.
(b) providing to a non-University person in a single project up to $250,000 from income the University earned from the commercialization of technology to directly encourage, promote or assist with the development or commercialization of technology.

SECTION VII. EQUITY SECURITIES.

Subd.1. Disposition of License Equity.
The University shall sell license equity as soon as practicable and in compliance with all applicable laws.

Subd. 2. Investment.
University officials shall not purchase or invest, directly or indirectly, in the equity securities of a non-public company commercializing a technology. University employees who are not University officials may purchase such equity securities if permitted under applicable Board and administrative policies.

SECTION VIII. NET INCOME DISTRIBUTION.

The University shall distribute the net income it received from commercializing a technology as follows:

(a) thirty-three and one-third percent to the inventors of the technology,
(b) twenty-five and one-third percent to the department, division, or center that supported the creation of the technology, to be spent in support of the inventor's research or directly related University work,
(c) eight percent to the collegiate unit that supported the creation of the technology, and
(d) thirty-three and one-third percent to the Office of the Vice President for Research, to be spent in support of the University's technology commercialization activities and to fund University research and scholarly activity.

The president or delegate may change the distribution to collegiate units or to departments, divisions, or centers if such cumulative amounts become disproportionate compared to their budgets or if there have been administrative organizational changes, including an inventor's movement among units or

departments. The president shall inform the Board in each instance after changing a distribution to a collegiate unit or to a department, division, or center.

SECTION IX. EXCLUSIONS.

Subd. 1. Copyright.
The University only claims ownership of copyrighted works as stated in Board of Regents Policy: *Copyright* and related administrative policies and procedures, except the University claims ownership of the intellectual property rights in software developed by inventors in this policy.

Subd. 2. Trademarks.
With the exception of intellectual property rights in University trademarks that identify University-owned plant varieties or that are commercialized in conjunction with other technology covered by this policy, this policy does not apply to the use of University-owned or licensed names, trademarks, or service marks as defined by Board of Regents Policy: *Founding Date, Corporate Name and Seal, and University Marks* and related administrative policies and procedures.

SECTION X. REPORTING.

The president or delegate shall report annually to the Board on University activities under this policy as a component of the annual report on the state of the University research enterprise.

SECTION XI. IMPLEMENTATION.

The president or delegate shall implement this policy and maintain appropriate administrative policies and procedures to administer it.

REVISION HISTORY

Adopted: December 14, 2007
Amended: December 10, 2010, February 14, 2014, June 12, 2015; February 11, 2022
Supersedes: Educational Materials dated April 14, 1967, Patent and Technology Transfer dated October 10, 1986, Intellectual Property adopted October 8, 1999, Use of Royalty Income to Support Technology Commercialization adopted March 12, 2004, and Acquiring Controlling Equity Interests in Technology Licensees adopted December 8, 2006.

BOARD OF REGENTS POLICY:
Commercialization of Intellectual Property Rights

SECTION I. SCOPE.

This policy governs patents and the ownership, commercialization, and dissemination of intellectual property rights in technology created at the University of Minnesota (University).

SECTION II. EXCLUSIONS.

Subd. 1. Copyright.
With the exception of the commercialization of intellectual property rights in software owned by the University, this policy shall not apply to the ownership or use of copyrighted works that are governed by other Board of Regents (Board) or administrative policies.

Subd. 2. Trademarks.
With the exception of intellectual property rights in University trademarks that identify University-owned plant varieties or that are commercialized in conjunction with other technology covered by this policy, this policy shall not apply to the use of University-owned or licensed names, trademarks, or service marks.

Subd. 3. Equity Interests.
This policy shall not apply (a) to the University's acquisition of equity securities in a publicly held company or appointment of a voting member to the governing body of a publicly held company or (b) to the acquisition of equity securities of a publicly held company by a University employee.

Subd. 4. Student-Created Technology.
This policy shall not apply to technology created or reduced to practice by University students to fulfill a University course requirement unless (i) the development of the technology was funded, in whole or in part, by an external sponsor; (ii) the technology was an improvement of an invention in which the University holds the intellectual property rights; (iii) a University faculty member or other University employee was a co-inventor of the technology; or (iv) substantial University resources were used to develop or reduce the technology to practice. This policy does not prohibit the University from conditioning participation in a University course or other University-sponsored activity on an individual's assigning to or licensing to the University the rights in technology created or reduced to practice in the course or activity.

SECTION III. DEFINITIONS.

Subd. 1. Inventor.
Inventor shall mean a University employee, student, or postdoctoral or other fellow who invents technology.

Subd. 2. Technology.
Technology shall mean the following items and their related intellectual property rights:

(a) a discovery or invention, patentable or not;
(b) software owned by the University; and
(c) trademarks owned by the University that identify University-owned or University-licensed plant varieties or that are commercialized in conjunction with other technology covered by this policy.

Subd. 3. University Official.
University official shall mean a person defined as a University official in Board of Regents Policy: *Institutional Conflict of Interest* and any person covered by administrative policies or procedures implementing that policy.

Subd. 4. Controlling Equity Interest.
Controlling equity interest shall mean the University's ownership of equity securities of a licensee sufficient to grant the University the power to direct the licensee's management. The University shall be considered to have a controlling equity interest in a licensee under this policy if:

(a) the University owns a majority of the voting equity interest in the licensee; or
(b) the University has the power to appoint a majority of the voting members of the governing body of the licensee.

Subd. 5. Licensee.
Licensee shall mean a for-profit, privately held company to which the University licenses or assigns intellectual property rights in University-owned technology.

Subd. 6. Net Income.
Net income shall mean the gross monetary payments the University receives in consideration for granting rights in the technology less (a) the University's out-of-pocket expenditures (including legal fees) directly attributable to protecting, developing, and transferring that technology and (b) a fifteen percent administrative fee of the gross monetary payments to help defray the costs associated with operating the Office of Technology Commercialization. Net income includes the net cash proceeds received from the sale of securities acquired under Section V, Subd. 6 of this policy. Net income does not include the net cash proceeds received from the sale of securities acquired under Section VII, Subd. 5 of this policy. Fees, charges, and other monetary payments made to the University to compensate it for administering intellectual property agreements or seeking and maintaining intellectual property protection for technology shall not be considered monetary payments under this policy.

SECTION IV. GUIDING PRINCIPLES.

The following principles shall guide the University in commercializing technology:

(a) The primary mission of University research is the generation and dissemination of knowledge, and academic freedom requires that faculty, staff, and students be free to pursue areas of research and study without regard to the potential for the creation of inventions.

(b) The development and dissemination of new knowledge, technology, or scientific procedures resulting in innovative products, practices, and ideas is a valued supplement to scholarly publications.
(c) University commercialization activities shall not inhibit the ability of University researchers to pursue research of their choosing, to publish results of their work in a timely manner, and otherwise to exercise their rights of academic freedom.
(d) Licensing University-owned technology to private companies promotes the University's interest in successful commercial development of University-owned intellectual property. In some circumstances, a non-commercial method of distribution, such as open source sharing of technology or licensing for humanitarian needs, may be the preferred method of providing public access to, and use of, University discoveries.
(e) The University may own a controlling equity interest and assert control over the direction and management of a licensee only when doing so (1) enhances the potential for the licensee to successfully develop and make available to the public useful products and services and (2) increases the potential value of the University's investment.

SECTION V. OWNERSHIP OF TECHNOLOGY.

Subd. 1. Ownership.
The University shall be the sole owner of all rights, titles, and interests (including intellectual property rights) in and to technology:

(a) created by University employees in the course of their employment;
(b) created by individuals, including employees, students, or post-doctoral or other fellows, using substantial University resources.

Subd. 2. Assignment of Intellectual Property Rights.
Inventors assign to the University all rights, titles, and interests, if any, in and to technology owned by the University.

Subd. 3. Ownership Under Third Party Agreements.
Ownership of and rights in technology are subject to the terms of written agreements between the University and third parties under which the University, solely or in collaboration, conducts research or other activities. Under these agreements, the University may claim, disclaim, or otherwise grant or accept rights in technology as appropriate and desirable.

Subd. 4. Waiver of University Rights.
Consistent with administrative policies and procedures, the president or delegate is authorized to waive or otherwise assign to an inventor all or part of the University's rights, titles, or interests in or to a technology created by the inventor.

Subd. 5. Rights to Publish.
At the University's request, inventors shall delay the publication or public disclosure of any descriptions of technology for a brief period of time to permit the registration, application for, and protection of the intellectual property rights in the technology.

Subd. 6. Rights to Third Parties.
The president or delegate may assign, license, or otherwise grant a third party the right to use technology royalty-free or in exchange for cash, stock or other securities, or other tangible or intangible property.

SECTION VI. DISTRIBUTION OF INCOME FROM COMMERCIALIZATION OF TECHNOLOGY.

The University shall share with inventors the net income from the commercialization of technology as follows:

(a) thirty-three and one-third percent to the inventors;
(b) twenty-five and one-third percent to the department, division, or center that supported the creation of the technology, to be spent in support of the inventor's research or directly related University work;
(c) eight percent to the collegiate unit that supported the creation of the technology; and
(d) thirty-three and one-third percent to the Office of the Vice President for Research, to be spent in support of the University's technology commercialization activities and to fund University research and scholarly activity.

The president or delegate may change the distribution to collegiate units or to departments, divisions, or centers if such amounts become disproportionate compared to their budgets or if there have been administrative organizational changes, including an inventor's movement among units or departments. The president or delegate also may distribute to inventors a portion of the net income from commercialization of technology in the form of a bonus or salary supplement.

SECTION VII. EQUITY, CONTROLLING INTERESTS, AND ASSISTANCE WITH COMMERCIALIZATION.

Subd. 1. Disposition of Equity Securities.
The University shall sell the equity securities acquired under Section V. Subd. 6. of this policy as soon as prudent and in strict compliance with all applicable federal and state laws.

Subd. 2. Acquiring a Controlling Equity Interest in the Commercialization of Technology.
In acquiring, as part of a transaction to commercialize technology, a majority or other equity interest in a company that grants the University the power to direct the company's management or the power to appoint a majority of the voting members of the governing body of the company, the following prohibitions shall apply:

(a) Except as permitted under Section VII. Subds. 4. and 5. of this policy or any other applicable Board policies, the University shall not make a cash investment in, lend money to, or guarantee the obligations of the company; and
(b) University officials shall not purchase or invest, directly or indirectly, in the equity securities of a licensee as long as the licensee is privately held, except that University employees who are not University officials may purchase or invest, directly or indirectly, in such equity securities if permitted under Board of Regents Policy: *Individual Business or Financial Conflict of Interest* and other applicable Board policies.

Subd. 3. Appointment of Voting Members to Governing Bodies as Part of the Commercialization of Technology.
The president or delegate may authorize the appointment of voting members to the governing bodies of privately held companies commercializing technology. The member shall:

(a) be an individual with demonstrated experience and competence in technology commercialization and in the creation, management, and capitalization of privately held companies; and
(b) be reasonably insured against liability arising from service on the governing bodies of such companies.

The member:

(a) shall not accept compensation for service as a member of the governing body of the company, but may accept reasonable reimbursement for service-related expenses;
(b) shall comply with applicable University policies and procedures;
(c) shall discharge fiduciary and contractual responsibilities to the company, subject to the performance of University duties as provided in Board and other University policy and procedures if the individual is an employee of the University; and
(d) shall resign as a voting member of the governing body of the company prior to the company's becoming publicly held, unless the president or delegate approves an extension of the appointment.

Subd. 4. Use of Technology Commercialization Income to Assist Commercialization by Non-University Entities.
The president or delegate may authorize non-University entities to use income the University earns from technology commercialization to directly encourage, promote, or assist with the commercialization and development of University intellectual property. The commitment of financial support for particular projects shall not exceed $250,000, consistent with Board of Regents Policy: *Reservation and Delegation of Authority*.

Subd. 5. Equity Investment to Support Commercialization by Non-University Entities.
The president or delegate may authorize an investment in the equity securities (including securities that are convertible to equity securities) of a company formed for the purpose of commercializing and developing University-owned technology. No such investment may exceed $1,050,000.

SECTION VIII. REPORTING.

The president or delegate shall report annually to the Board on University activities under this policy as a component of the annual report on the state of the University research enterprise.

SECTION IX. IMPLEMENTATION.

The president or delegate shall implement this policy and maintain appropriate policies and procedures to administer it.

REVISION HISTORY

Adopted: December 14, 2007
Amended: December 10, 2010, February 14, 2014, June 12, 2015; February 11, 2022
Supersedes: Educational Materials dated April 14, 1967, Patent and Technology Transfer dated October 10, 1986, Intellectual Property adopted October 8, 1999, Use of Royalty Income to Support Technology Commercialization adopted March 12, 2004, and Acquiring Controlling Equity Interests in Technology Licensees adopted December 8, 2006.

BOARD OF REGENTS
DOCKET ITEM SUMMARY

Mission Fulfillment **December 15, 2022**

AGENDA ITEM: Annual Report on the State of the University Research Enterprise

☐ **Review**	☐ **Review + Action**	☐ **Action**	☒ **Discussion**

☒ *This is a report required by Board policy.*

PRESENTERS: Shashank Priya, Vice President for Research

PURPOSE & KEY POINTS

The purpose of this item is for the committee to receive and discuss the Annual Report on the State of the University Research Enterprise.

Key topics of the report include:

- MPact 2025 Systemwide Strategic Plan research goals actions, measures, and progress
- State of the research enterprise
- Rankings and peer comparisons
- Technology commercialization and corporate engagement
- What's next – how can we become the next $1.5 billion research institution?

Key messages:

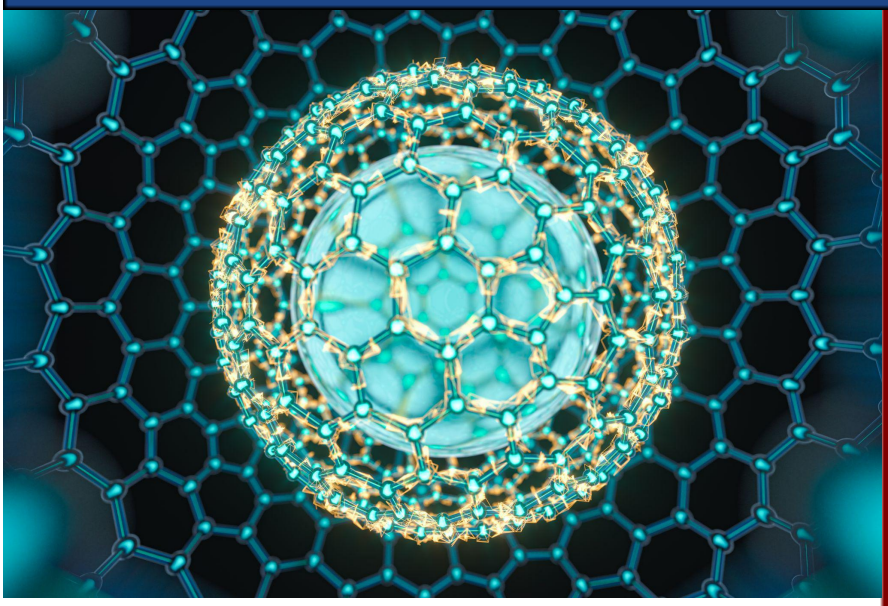
- The state of the University's research enterprise is strong, with record expenditures and the second largest award levels in the University's history in FY 2022.
- The University is part of an elite "billion-dollar research club," a 24-member group of US research universities with over a $1 billion in research expenditures as of the 2021 National Science Foundation Higher Education Research and Development (NSF HERD) Survey.
- The Office of the Vice President for Research is building research engagement strategies with federal, foundation, and industrial partners to help the University reach the next tier of research performance.
- The University is nationally and globally recognized for technology commercialization and innovation: the University achieved a single year record for both the number of startups launched and patents issued, while also celebrating the creation of the 200th startup since 2006–a significant milestone.
- A University planned 2030 Workshop will help frame the University's research strategy for addressing new social, economic, and global challenges before they arise, and allow the University to lead when it comes to the interests of potential funders and partners.

BACKGROUND INFORMATION

The Annual Report on the State of the University Research Enterprise is required by Board of Regents Policy: *Commercialization of Intellectual Property Rights* and Board of Regents Policy: *Submitting and Accepting Sponsored Projects.*

2022

Annual Report on the State of the University Research Enterprise



Shashank Priya
Vice President for Research
12/15/2022

The University of Minnesota's Vice President for Research provides the University's Board of Regents an annual report on the state of the university research enterprise. Included is the research enterprise's alignment with the President's strategic plan, fiscal year and temporal trends in key metrics, comparative rankings and comparisons, and illustrative examples of University research projects. The Vice President also shares his strategic priorities and concerns.

FY2022 Annual Report Includes:

Message from the Vice President for Research

As a new vice president for research, I am pleased to report that the **state of the University's research enterprise is strong**, with record expenditures and the 2nd largest award levels in the University's history in FY2022. We are also seeing increasing success in bringing our researchers' inventions to market, with new milestones and accolades for our Tech Comm team and our innovators.

As I told the Board of Regents in October, I was drawn to the University because of its many research and innovation strengths, its location in a vibrant metro area with a strong base of Fortune 500 companies, its world-class medical research, campuses across the State, heavy focus on student success, and its membership in what I call the **"billion dollar research club,"** the 24-member group of US research universities with over a $1 billion in research expenditures as of the 2021 NSF HERD Survey.

I also shared with the Board that colleagues and mentors at Penn State and Virginia Tech had great respect for UMN and some even had ongoing partnerships with UMN researchers. In the short time I've been on the ground here, I've only become more impressed with the University's many research strengths as I tour research facilities and meet with field-leading faculty.

I'm in an enviable starting position here at the University of Minnesota. So what about the future? In the same NSF HERD survey, in 2021, there were only four universities that had research expenditures higher than $1.5 billion. How do we get to that next tier, a goal that takes us beyond the timeline of the MPact 2025 strategic plan? One way we can begin to build a strategy to get there is to look at the federal, foundation, and industrial research emphasis areas in the future years. In conjunction to enhancing the research base, we will continue to strengthen our research infrastructure and support services to enhance the probability of funding.

In the coming spring, we will hold a **2030 Workshop**, where the University research community, along with invited national leaders in academia, government, industry, and nonprofits, will have an opportunity to reflect upon where research trends and societal evolution will lead us in the not-too-distant future. It will help us frame our research strategy for addressing new social, economic, and global challenges before they arise, and allow us to lead rather than follow when it comes to the interests of potential funders and partners. We are starting to formalize the concept for the **2030 fund**, that will allow us to make investments in concepts that emerge at the workshop.

Another opportunity for growth is in the **national security space**, where, as you see below, we underperform in research funding with respect to peer institutions. We have work to do, internally and externally, to create an environment that will attract more national security research funding. It is my intention to get our research community more familiar with mission-driven agencies in DC and the many potential regional partners we have in the private sector, and, conversely, to raise the profile of the

University among key program officers and other key stakeholders in the national security space. We are developing a multifaceted strategy to better position ourselves for national security-related resources. This includes: developing partnerships with various institutions in the DC area, embedding our leaders on the prominent committees and boards, and organizing planning events on behalf of the agencies. We are also initiating the planning for developing infrastructure that will be required for performing restricted research.

National Security: An Area of Opportunity

Research Expenditures for Select Institutions by Source - FY2021

	DoD	HHS	NSF	All Fed
Georgia Tech	626.4	50.6	60.0	852.3
Penn State	263.7	149.3	68.9	622.5
U Maryland	116.4	345.7	54.8	713.3
UCLA	50.4	529.5	60.0	721.0
Texas A&M	59.5	205.7	111.6	528.1
UMN - TC	35.2	390.8	68.3	570.9

Amounts in millions of dollars
Compared with peers, UMN has had a relatively low level of DoD support.

Another initiative that is well underway is an **International Institute for Biosensing (IIB)**, which is bringing together an international coalition of experts from academia, nonprofits, industry, and government agencies to create a collective global effort to identify and overcome technical barriers for advancing biosensing research. Biosensing has application in key areas, including food safety, agriculture, the environment, healthcare, animal health, national security, and water quality. Already more than 100 researchers from 50 universities in 14 countries have expressed interest in participating with the institute, which will be headquartered at the University Minnesota. My office is supporting an internal request for proposals to support PhD students who will form the core of a UMN cohort that will meet regularly and be connected to national and international peers through the IIB. I am expecting that the IIB will be fully operational in fall 2023. It will provide fertile ground for developing collaborative proposals, both nationally and internationally, further enhancing potential future resources.

My office is also working to find the resources to **upgrade our aging infrastructure for pre-clinical research**, both in terms of facilities and IT systems. Within UMN Technology Commercialization, we are working to establish **gap and capital investment funding pools** for UMN-created inventions and companies through philanthropic and other sources. Other ideas under development are a faculty burden reduction committee, an artist-in-residence program for academic departments, and the relaunch of the Social Justice Impact Grants program. We are currently hiring for two

associate vice president positions that will complete our leadership team under a new organizational structure that we believe will build stronger connections with our largest area of research, the health sciences, and help to make the best use of investments across the research enterprise.

Our research infrastructure and support services need to grow in order to support the growth in research expenditures. This is critical at this stage of our research enterprise, in order to retain the existing talent and recruit new ones. If I am asked “What is the biggest challenge facing our research enterprise?”, my answer will be lack of investments in much needed research related resources. We are aiming to become a top 10 research university which will require us to become top 10 university infrastructure for research.

I look forward to helping our research community to grow, not only in terms of funding size, but also in terms of impact and innovation. To better capture the dynamic nature of our UMN research enterprise, our office is considering changing its name from the Office of the Vice President for Research (OVPR) to the Office for Research and Innovation in the coming months. That use of the word “for” instead of “of” is a deliberate one; at the end of the day it is the community of creative, brilliant and passionate scholars who make us a leading American research university. As vice president for research, I seek to be there “for” this community, providing a high level of service and creating new opportunities for their work.

Combined, these above-mentioned programs and initiatives will expand our research and innovation, which will not only impact the advancement of our UMN community but also our state and the nation.

MPact 2025 Progress: Research Powerhouse

Commitments

Commitments represents the intersection of our values and action. They are like a spine to which all else is connected, and are intended to freely complement and interact with one another. The Commitments help us to articulate our vision at the 100,000 feet level, as well as provide direction to frame our organizational identity. The Commitments are inspiring, unifying, and impactful, but not constraining.

1: STUDENT SUCCESS
Meeting all students where they are and maximizing their skills, potential, and well-being in a rapidly changing world.

2: DISCOVERY, INNOVATION & IMPACT
Channeling curiosity, investing in discovery to cultivate possibility, and innovating solutions while elevating Minnesota and society as a whole.

3: MNTERSECTIONS
Inspired by Minnesota to improve people and places at world-class levels.

4: COMMUNITY & BELONGING
Fostering a welcoming community that values belonging, equity, diversity, and dignity in people and ideas.

5: FISCAL STEWARDSHIP
Stewarding resources to promote access, efficiency, trust, and collaboration with the state, students, faculty, staff, and partners.

Progress Toward MPact 2025 Research Goals

As part of the University's MPact 2025 Systemwide Strategic Plan, the Board has adopted the following goals for **Commitment 2, Discovery, Innovation, and Impact**:

- Increase high-impact discovery and scholarship
- Drive creativity, collaboration, and entrepreneurial spirit
- Engage Minnesota

These goals, along with others included in **Commitment 3, MNtersections**, provide a framework for the research community, leadership, and external partners to align with the overall vision of MPact 2025. OVPR has been tasked to assess progress and report on the achievement of these research goals through the measures listed in the **MPact 2025 Progress Card**, specifically:

- **Action Item 2.1 Increase year-over-year funding growth for research and industry-sponsored awards.**
    - Target growth for sponsored research awards of 5% per year (stretch 7%) for next 5 years; maintain Top 10 public University expenditure ranking in HERD.
        - Baseline: $876 million sponsored research awards (FY2020); HERD ranking #10 among publics (FY2019)
        - December 2022 update: $1.05 billion sponsored research awards (20% increase FY2020 - FY2022); HERD ranking #14 among publics (FY2021)

- **Action Item 2.2 Increase multidisciplinary opportunities in research and curriculum**
    - Increase number of multidisciplinary grants and courses each year.
        - Baseline: 1,216 grants (FY2021)
        - December 2022 update: 1,259

- **Action Item 2.2 Enhance opportunities for new businesses and startups, corporate partnerships, and technology commercialization.**
    - Grow to 25 startups per year by 2025
        - Baseline: 19 (FY2020)
        - December 2022 update: 22
    - Increase $ of industry-sponsored awards.
        - Baseline: $81.6 million (FY2020)
        - December 2022 update: $92.6 million

- **Action Item 2.3 Increase state partnership funding.**
    - Increase state-sponsored research
        - Baseline: $412 million (over five years, FY2016-2020)
        - December 2022 update: $488.2 million (over five years, FY2018-2022)

- **Action Item 2.3 Elevate national and international profile and standing while addressing societal needs.**
    - Shanghai ARWU rankings goal: top 35 in world
        - Baseline: #40 world, FY2020
        - December 2022 update: #44 world

- **Action Item 3.1 Deepen impact in core areas of strength, including solutions, cures, and technology.**
    - Increase the number of medtech/health-science disclosures ***year over year***.
        - December 2021: 209
        - December 2022 update: 213

- **Action Item 3.3 Develop and deploy new techniques and partnerships for smart farming and sustainable food supplies, and natural resources.**
    - Increase the number of food, ag-tech, and natural resource-related disclosures ***year over year***.
        - December 2021: 29
        - December 2022 update: 30

In summary, the University research enterprise is making strong progress on achieving MPact 2025 goals and measures. There are, in addition to these research measures, other progress card goals that involve OVPR in partnership with the provost and senior vice president for finance and operations. Where appropriate, we have aligned our efforts with them to ensure success.

Research Statistics and Outcomes: Fiscal Year 2022

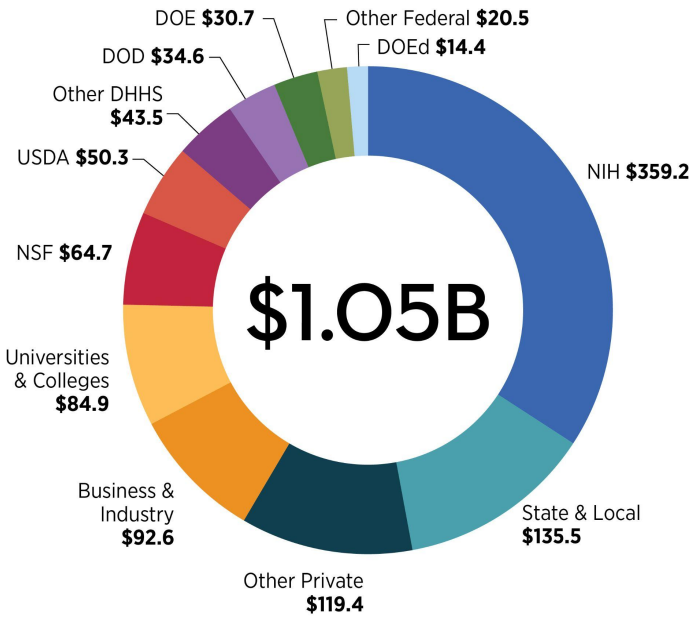
Fiscal Year Analysis of Sponsored Research Awards

University of Minnesota faculty and staff competed successfully for **$1.05 billion** in sponsored research awards in FY2022. That award level was the **University's second largest ever,** though down 8.6% from FY2021, the largest award level in the University's history. FY2021 included a very large $152 million award from Leidos Corporation that was an NIH pass-through award for a COVID-19 clinical trial, partly obscuring the University's overall positive growth trajectory, which was a **20% increase in awards between FY2020 and FY2022**.

The rosy two-year totals reflect the University's continued success in competing for high dollar awards (greater than $1 million) in FY2022, with 142 such awards accounting for 35% of this year's $1.05 billion total. This is significant because these high dollar awards represent a federal strategy of securing larger awards.

The University received over half of its sponsored research funding (59%) directly from federal sources. In FY2022, federal awards totaled $618 million, which was an increase ($14 million; 2.4%) compared to the prior year. Non-federal sources totaled $432 million which was a decrease (-$113 million; -21%) compared to the prior year in large part due to the aforementioned $152 million Leidos award received in FY2021.

Figure 1: Awards by Major Source (FY2022)



Dollar amounts in millions
Office of the Vice President for Research Data Services

Of the $618 million in federal research support, the National Institutes of Health (NIH) continued to be the University's largest single federal funding source, totaling $359.2 million (see Figure 1 above). This amount represents an increase ($4 million; 1.1%) compared to the previous year.

The National Science Foundation (NSF) is the second largest federal sponsor of University research totaling $64.7 million in FY2022. This total represents a $17.8 million (or 21.5%) decline from the previous year. According to national sources, part of the reason for this decline might be due to the fact that many NSF Awards planned for FY2022 were delayed because of uncertainty over federal appropriations levels. (The federal government was flat funded from October 1, 2021, through March 10, 2022, and it has again been flat funded from October 1, 2022 to the present.) However, going forward this is an area of opportunity for our enterprise growth.

In addition to NIH and NSF, other federal support comes from many other agencies including the US Department of Agriculture ($50.3 million) and the Department of Defense ($34.6 million).

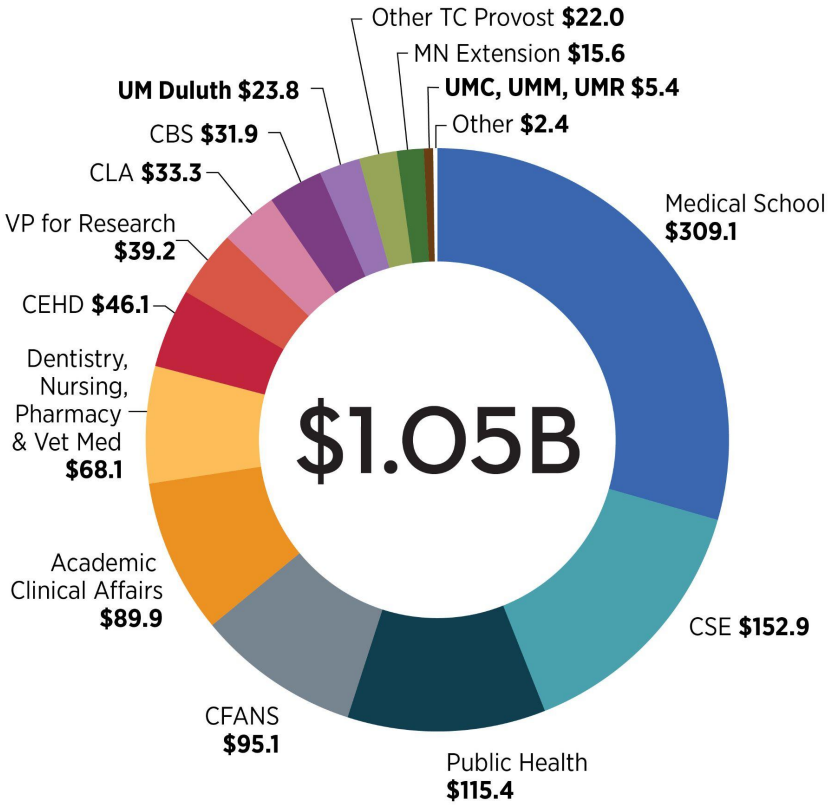
The $92.6 million in business and industry (B&I) funding was down $163 million (63.8%) in FY2022 when compared to the prior year, but again, this decline in B&I funding was driven by the COVID-19 pandemic related funding received in prior year through the company Leidos. The total number of B&I awards received by the University decreased 8.5% to 1,719 this year compared with 1,878 in FY2021.

The State of Minnesota and Local Government category provided $135.5 million in funding in FY2022, an increase (26.0%) from the year prior. The State of Minnesota comprises the majority of this total ($129.9 million).

Award Funding by U of M College and Campus

Figure 2 illustrates how the University's $1.05 billion of sponsored research funding is distributed within the University's colleges and campuses. This year, those colleges with the largest annual percentage increases in research funding include: the College of Food, Agricultural, and Natural Resource Sciences (CFANS), up $32.5 million to $95.1 million (51.9%), the College of Liberal Arts (CLA), up $12.8 million to $33.3 million (62.4%), and the College of Pharmacy, up $6.9 million to $24.8 million (38.6%). Funding for the Office of Academic Clinical Affairs increased by $12.8 million from FY2021 to FY2022. The Duluth campus increased its funding by $13.7 million or 136.7%.

Figure 2: Research Awards by College & Campus (FY2022)



Dollar amounts in millions
Office of the Vice President for Research Data Services

Year-Over-Year Trends

Table 1 and Figure 3 summarize the year-over-year distribution trend of the University's sponsored research awards for the years FY2013 to FY2022. Over the ten-year period (FY2013-FY2022), the University has generally seen an increasing award trajectory from all categories of research sponsors with the lone exception this year of B&I funding, due to the previously mentioned COVID-19 related Leidos grant.

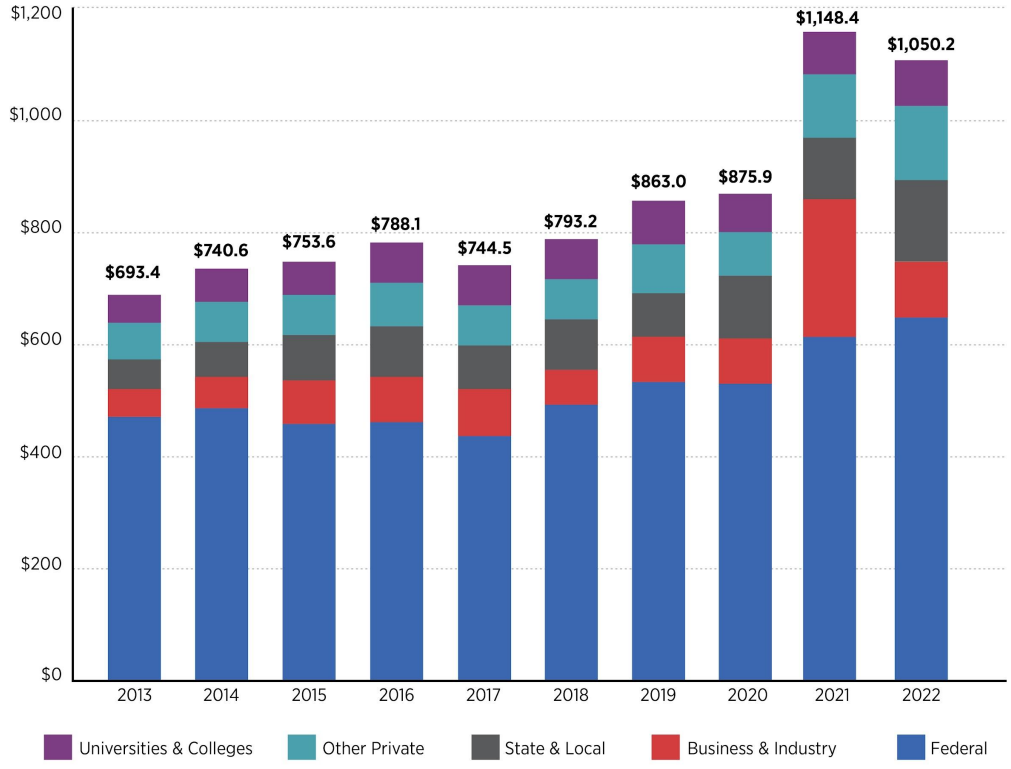
These increases meet the discovery, innovation, and impact Commitment 2 goals set forth in the University's MPact 2025 plan in several areas including: targeting growth for sponsored research awards of 5% per year, increased state-sponsored research, and increased industry-sponsored awards.

Table 1: Research Awards by Source Category (FY2013-2022)

	Federal	Business & Industry	State & Local	Other Private	Universities & Colleges	TOTAL
2013	$475.3	$47.6	$53.1	$67.4	$50.0	**$693.4**
2014	$490.2	$55.2	$64.6	$69.7	$60.9	**$740.6**
2015	$463.1	$78.0	$79.3	$72.4	$60.7	**$753.6**
2016	$466.3	$80.8	$90.9	$77.7	$72.4	**$788.1**
2017	$438.9	$83.9	$76.4	$72.3	$73.1	**$744.5**
2018	$494.5	$64.1	$90.3	$71.7	$72.5	**$793.2**
2019	$537.8	$80.4	$79.4	$86.5	$78.9	**$863.0**
2020	$535.3	$81.6	$112.4	$78.7	$68.0	**$875.9**
2021	$603.5	$255.5	$107.5	$107.1	$74.8	**$1,148.4**
2022	$617.9	$92.6	$135.5	$119.4	$84.9	**$1,050.2**

Dollar amounts in millions
Office of the Vice President for Research Data Services

Figure 3: Sponsored Awards by Source, FY2013-FY2022



Dollar amounts in millions
Office of the Vice President for Research Data Services

Overall, if we remove the anomaly from the prior year, year-over-year increases in externally-sponsored research across sources continues (see Table 1 below). Growth in research funding is specifically mentioned in the University's systemwide strategic plan, MPact 2025, which includes a goal to increase year-over-year funding for research and industry-sponsored awards.

The University continues to increase the number of high-dollar awards (>$1 million) that it receives, which is included in the overall continued growth trajectory of award funding. There was a 39% growth (102 to 142) in the number of higher-dollar awards coming to the University over the past five years.

National and Global Analysis: R&D Peer Comparison

Research and Development (R&D) Expenditures - NSF HERD Survey

The research world has two main metrics for research funding. The previously discussed sponsored award funding represents the amount of funding that researchers have won from external funding agencies in a given year, often for several years of research support, and research expenditure (hereafter called R&D) levels, which are a retrospective measure of how much an institution actually spent on research activities in a given year, including the amount of institutional funds expended.

The National Science Foundation Higher Education Research and Development (NSF HERD) Survey is the primary source of national comparative information on R&D expenditures in US higher education. Research institutions submit expenditure information to NSF, the numbers are reviewed, and NSF publishes the data, typically more than a year after the data is submitted.

The NSF HERD survey is completed annually by over 900 higher education institutions. While there is no single indicator or composite number that accurately represents the totality of research impact at an individual institution, the HERD survey data do provide a credible, uniform, and nationally-accepted basis for peer comparisons.

In NSF's most recent FY2021 survey, the University posted over $1.07 billion in R&D expenditures, a 2.9% increase over FY2020. That expenditure level resulted in the University ranking 14 among US public research universities, down from 13th in FY2020 (See Table 2 below. Note: the official FY2021 data are pending official release by NSF in April 2023).

Owing to HERD survey reporting requirements imposed by NSF, the University's $1.07 billion reported in Table 2 represents only research expenditures for the Twin Cities campus. When all UMN campuses are reported together, total systemwide R&D expenditures are 2.4% larger, or $1.10 billion.

What lessons can be drawn from the University's data and its ranking in the NSF HERD

ranking? Overall, NSF's HERD data places the University among an elite group of US public research universities—in the top 2.5% of the more than 900 colleges, universities, and institutes reporting in the survey.

Table 2: Top 20 US Public Research Institutions, Two Ranking Systems

	NSF / HERD 2021*		ARWU (Shanghai) 2022		
	Public	Expenditures	World	US	US Public
UC San Francisco	1	$1,710,036	19	15	4
Michigan	2	$1,639,645	28	19	6
Washington	3	$1,488,645	17	14	3
UCLA	4	$1,454,880	13	11	2
UC San Diego	5	$1,425,499	21	16	5
Wisconsin	6	$1,380,075	33	23	8
Ohio State	7	$1,236,111	101-150	40-54	21-26
North Carolina	8	$1,205,883	29	20	7
Texas A&M	9	$1,147,720	151-200	55-62	27-29
Maryland	10	$1,142,264	50	28	12
Pittsburgh	11	$1,135,416	82	36	18
Univ Texas M.D. Anderson Cancer Ctr.	12	$1,124,971	71	35	17
Georgia Tech	13	$1,114,481	151-200	55-62	27-29
MINNESOTA - TWIN CITIES	**14**	**$1,072,961**	**44**	**25-26**	**10**
Penn State	15	$970,544	101-150	40-54	21-26
Florida	16	$959,965	94	38	20
UC Berkeley	17	$846,872	5	4	1
UC Davis	18	$817,409	101-150	40-54	21-26
Texas	19	$779,348	37	24	9
Arizona	20	$770,031	101-150	40-54	21-26

Dollar amounts in thousands
All U of M Campuses Total: $1.10B
UC - San Francisco and M.D. Anderson Cancer Center are stand-alone medical schools without undergraduate education programs. Office of the Vice President for Research Data Services.

Unfortunately, there are three confounding factors in the attempt to draw further lessons from this year's data:

- The University's FY2021 HERD expenditures reflect the near-shutdown and slow-reopening of the University's research enterprise during that period. US

research universities did not uniformly ramp down research activities during the pandemic; research universities that took a less cautious approach to the pandemic had more researchers working in labs and, it is reasonable to assume, had relatively higher research expenditures during FY2021. That differential may have boosted their FY2021 rankings in comparison to the University of Minnesota, which took a more cautious approach, though the actual effect is hard to tease out in the data reported to NSF.

- Several of the University's peers have also changed how they report to NSF, adding additional campuses based on a new state law (Maryland) or hospitals (Ohio State) to what they reported in previous years.

- As has been the case in recent years, the University is in a crowded section of the NSF HERD field (see Table 3), with the rankings of the number 9 institution (Texas A&M) and the number 14 institution (UMN) **separated by less than $75 million in expenditures** (or less than 7%). While the University strives to be among the top 10 public Universities, the small differential between ranked institution's spending, it could be argued, is less important than having expenditures that are extremely close to other high performing peers.

Table 3: Institutions Ranked 7 to 15 - HERD Survey

	NSF / HERD 2021*		ARWU (Shanghai) 2022		
	Public	Expenditures	World	US	US Public
Ohio State	7	$1,236,111	101-150	40-54	21-26
North Carolina	8	$1,205,883	29	20	7
Texas A&M	9	$1,147,720	151-200	55-62	27-29
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Penn State	15	$970,544	101-150	40-54	21-26

Dollar amounts represented in thousands

Academic Ranking of World Universities (ARWU)

Table 2 (above) also reports another widely accepted and cited ranking system— the Academic Ranking of World Universities (ARWU)—sometimes called the Shanghai index. This system relies on a number of indicators that serve as a proxy for accomplishments

and strengths relative to the best performing research institutions in the country and the world, respectively. With respect to research, the ARWU relies on the academic impact of peer-reviewed research, number of Nobel laureates, and related research measures. This additional measure ranks the University as highly competitive—#10 among US public research universities and 44th among all world universities, an MPact 2025 measure. The organization also produces a Global Ranking of Academic Subjects, focusing on scholarship within 54 specific academic fields. **Twelve subjects at the U of M were ranked in the top 25 globally, including ecology (ranked No. 2 in the world)**, management (No. 11), library and information science (No. 13), biotechnology (No. 14), mechanical engineering (No. 18), business administration and psychology (No. 19), statistics and veterinary science (No. 21), communication (No. 22), and economics and education (No. 24). Out of the 54 subjects ranked, 36 subjects at the U of M were recognized among the top 100 in the world.

Commercialization and Corporate Engagement

As a leading American research university and a land-grant institution, the University of Minnesota is committed to facilitating and accelerating the transfer of knowledge into the world where it can have the most impact and do the most good. University of Minnesota Technology Commercialization (Tech Comm), housed within the Office of the Vice President for Research, is playing a key role in technology transfer (e.g., licensing and patents), startup companies, and a revitalized corporate engagement effort at the University.

Commercialization Highlights

The University's efforts to commercialize technology maintained a strong performance in FY2022, in spite of the challenges of the pandemic and an economic downturn. The University continued to be innovative in a broad set of technology areas, and Tech Comm played a vital role in bringing those technologies to businesses of all sizes, reflected in the number of licensing deals and a new record number of startups.

In FY2022, Tech Comm marked a significant achievement by launching its 200th startup company since 2006. The milestone reflects the University's role as the largest single creator of startup companies in the state, with more than 70% of UMN startups locating in Minnesota and 10 companies either acquired or having gone public since 2017. Startup creation is a key indicator in the University's MPact 2025 strategic plan, and, with 22 startups created this past year, the University is on track to reach the MPact 2025's goal of 25 startups in the year 2025.

The University's technology transfer work has been recognized for its excellence in national and global performance, and these are a few of the Tech Comm team's recent accomplishments and recognitions:

1. **Record number** of startups (22) launched in a fiscal year
2. **Launched 200th startup** since 2006 in March, and finished FY22 with 212 startups
2. **Ranked most innovative university in the Heartland** by the Heartland Forward Institute - UMN was 5th out of the public universities and 10th overall.
3. **Ranked 16th** on the NAI list of Worldwide Universities Granted US Utility Patents (2021)
4. **Submitted 156** first patent filings and received 241 issued US and foreign patents
5. **Tekne Awards finalist** in the Technology Partnership category
6. **Piloted the Early Innovation Fund,** a competitive fund available to all UMN researchers to advance early stage innovations

Technology Licensing, Inventions, and Patents

Table 4 (below) shows FY2022 technology transfer metrics with a new record number of startups for the year. Even though the number of new licenses was down, gross revenue remained strong.

Table 4: Technology Commercialization Statistics (FY2018-2022)

Technology Commercialization Statistics, FY18-FY22

	2018	2019	2020	2021	2022
LICENSES & REVENUE					
New Licenses	230	223	235	236	211
Current Revenue Generating Agreements	575	571	601	575	469
Gross Revenue	$16.1	$20.7	$14.1	$17.4	$16.1
STARTUPS					
Startup Companies Formed	13	19	19	20	22
INVENTIONS & PATENTS					
Invention Disclosures	400	391	397	332	315
New Patent Filings	179	163	152	126	156
New Patent Filing Rate*	45%	42%	38%	38%	50%
Issued Patents (US and Foreign)	186	187	182	181	241
MN-IP					
MN-IP Research Agreements	86	103	73	60	53
Companies w/ MN-IP Research Agreements	58	77	69	51	43
Sponsored Research Commitments	$21.3	$22.5	$27.9	$15.3	$13.3

Dollar amounts in millions
Technology Commercialization, Wellspring Sophia; UMN Enterprise Financial System
*New Patent Filing Rate is number of new patents filed during the fiscal year divided by number of new disclosures in the same time period

The number of invention disclosures from faculty and other researchers dropped in FY2022 from a previous plateau of around 400 disclosures in the previous years. Over FY2020 and FY2021, the pandemic kept many UMN researchers from their facilities entirely—frequently for months—and then on-campus safety requirements limited the number of personnel in many facilities, which could have contributed to the FY2022 decline. In order to minimize the pandemic's disruption to invention disclosures, Tech Comm staff increased outreach to University researchers, reminding them to make disclosures as the first step in protecting potential inventions. A subset of disclosures in medtech/health science and in food, ag-tech, and natural resource areas are MPact 2025 measures for the University (see the MPact 2025 section above).

The new patent filing rate and the number of issued patents increased significantly from FY2021. The record level of patents issued could be due to higher quality patent applications filed over the past decade by University inventors, who have been able to draw on Tech Comm's growing expertise in protecting intellectual property across multiple industries. In FY2022, patent offices worldwide were also catching up from a backlog created by the pandemic to the benefit of the University, which has, in recent years, included more foreign filings in its patent portfolios in order to tap into markets beyond the United States.

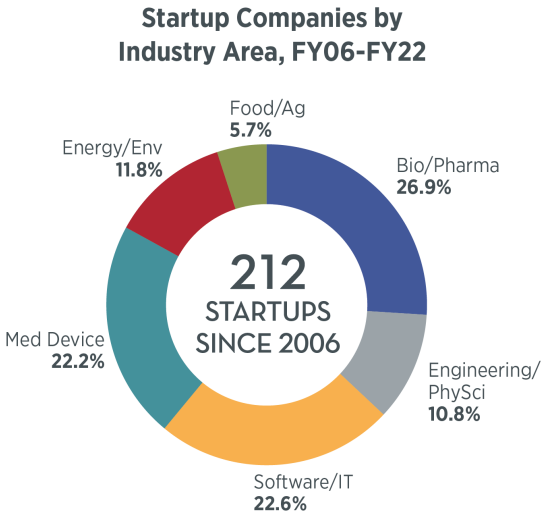
The number of MN-IP research agreements, companies w/MN-IP research agreements, and sponsored research commitments all fell in FY2022, possibly as knock-on effects of the pandemic at the University and at companies that sponsor research. The MN-IP agreement process is conducted by both Tech Comm and Sponsored Projects Administration (SPA) offices.

Venture Center

Over the last year, Tech Comm's Venture Center launched a record 22 startup companies based on discoveries and inventions by University researchers. As is typically the case, the University's new startups spanned many sectors (Figure 7 below).

Since 2006, Tech Comm's Venture Center has helped launch more than 212 startup companies with 76 percent still active, far above the average for startup success. Overall, UMN startups have raised more than $1.8 billion in investment capital, IPOs, and acquisitions and 10 UMN startups have been acquired or have gone public since 2017, underscoring the relevance and value of University ideas and technologies.

Figure 7: Startup Companies by Industry Area, FY06-FY22



University of Minnesota Startup Companies

Startups by Sector	FY22	FY06–FY22
Bio/Pharma	8	57
Engineering/PhySci	1	23
Software/IT	3	48
Med Device	5	47
Energy/Env	3	25
Food/Ag	2	12
Minnesota	12	152
Outside Minnesota	10	60
% in Minnesota	55%	72%
Total	22	212

Technology Commercialization, Wellspring Sophia

Discovery Launchpad MN

Discovery Launchpad MN (DLPMN) is a recently established startup incubator program based at the University of Minnesota that provides one-on-one coaching to help accelerate the growth of early-stage Minnesota companies beyond the University. The program leverages the knowledge, experience, connections, and success of Discovery Launchpad, the University's existing incubator for coaching and support specifically for companies commercializing technology stemming from University research.

DLPMN is a collaboration between Tech Comm's Venture Center and the state's Launch Minnesota program under the Department of Employment and Economic Development, which provides funding. During fiscal 2022, DLPMN coached eight startups from across Minnesota, providing small teams of executives in residence at the Venture Center to support the startups' refinement of strategy, market models, and pitch decks.

DLPMN is now working with its second cohort of non-University Launch MN startups and has completed strategic assessments of nine startups, of which seven entered the Launchpad and are completing its coaching process. Another of this cohort will enter coaching in January 2023. This month DLPMN will open its third cohort, inviting up to 15 additional startups from across the state to complete the strategic assessment process, and if appropriate, initiate the full DLPMN coaching experience.

New Early Innovation Fund

In May 2022, Tech Comm launched the Early Innovation Fund, a new competitive grant

program aimed at encouraging more University of Minnesota inventors to explore the commercial potential of their ideas. They received 74 applications across a broad range of fields, and half of the submissions were from inventors who were new to technology commercialization.

The Early Innovation Fund supports short-term projects that advance early-stage innovations. The program provides $3,000 to $10,000 per project and funds approximately 5 to 10 projects per cycle. Six projects received funding in the first cycle, spanning multiple fields, including pediatric neurology, mental health, bioprinting, environmental preservation, apparel design, and wind power. The program will award grants twice a year, in the spring and fall.

Corporate Engagement

The University of Minnesota Corporate Engagement Center (CEC) connects businesses, startups, entrepreneurs, and companies of all sizes with the vast resources of the University's research enterprise. As a strategic University priority, the CEC offers a unified and consistent point of contact for corporations and entrepreneurs interested in partnering with the University.

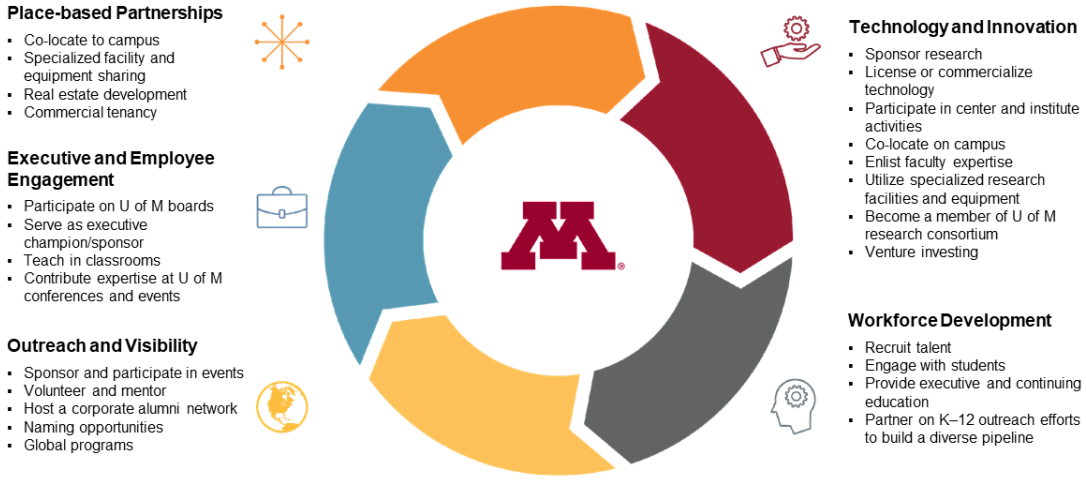
The Office of the Vice President for Research (OVPR), in partnership with University of Minnesota Foundation and many other partners across the University, has been tasked with leading many aspects of this commitment, including growing corporate partnerships, bringing new innovations to market, partnering in place-based initiatives, and having real impact on the economic growth of Minnesota and beyond.

CEC and its partners are also helping to grow public-private research collaborations by fostering a more entrepreneurial campus culture, and, through outreach to internal University of Minnesota audiences, they are helping faculty and others realize the mutual benefits of working with industry.

CEC remains focused on a portfolio of 60-70 large corporations, including all 16 of Minnesota's Fortune 500 companies, that can engage across the University for different objectives. Notably this year, the University signed a master agreement with Honeywell and continued to deepen engagement with Cisco Systems. Stratasys LTD also announced the donation of multiple 3D printers to the University's Visible Heart Laboratories.

The University also announced plans for a major agricultural research center in southern Minnesota that will focus on sustainable food technology. The Future of Advanced Agricultural Research in Minnesota (FAARM) is planned to be built in Mower County near Austin, Minnesota, and include both research facilities and hundreds of acres of fields. The total project cost is estimated at $220 million, with facility development occurring over the next five years. University leaders hope to secure capital project support from the State of Minnesota, as well as a variety of other public and private sources, including a pledged cornerstone commitment of $60 million already made by The Hormel Foundation.

This past spring, the University rolled out a new place-based partnership strategy to complement CEC's existing engagement areas of technology and innovation, talent development, visibility and branding, and executive and employee engagement. One aspect of the place-based partnership strategy envisions the University working with partners to create innovation districts, which are geographically-focused hubs of economic and social activity often near a research university where innovation, entrepreneurship, creativity, and placemaking intersect. Currently, the University is collaborating with the University of Minnesota Foundation as they work to develop a project adjacent to the Minneapolis East Bank campus, an innovation corridor that would provide places for collaboration between the Minneapolis and St. Paul campuses and the previously mentioned FAARM project.



CEC staff and partners across the University also helped generate $109.3 million in corporate philanthropy in FY2022.

OVPR Research Advancement Programs

The Office of the Vice President for Research oversees a number of programs and initiatives designed to support and nurture the University's research enterprise. Resources provided by the Research Advancement office provide a broad range of resource opportunities, from smaller awards provided to jump-start new ideas to larger awards designed to incentivize collaborations across disciplines that address strategic needs.

Ideally, Research Advancement awards seed research that has the potential to attract sustaining external support, but they also provide funding for projects important to our state and communities that do not have other potential resources. Research Advancement funds are also used to leverage external support where internal matching funds are required, to acquire critical infrastructure having the potential to accelerate the progress of multiple researchers, and to catalyze research impact. Over the past five years, Research

Advancement programs have provided more than $23.8 million to researchers ($35.8 million with RA program matching funds).

Grant-in-Aid

The Grant-in-Aid (GIA) of Research, Artistry, and Scholarship Program provides grants to support scholarly and artistic activities of faculty and their graduate students to foster excellence.

GIA projects represent the breadth and depth of University research in all disciplines and fields. While any faculty can apply for GIA funding, it plays an especially important role in providing new professors and emerging researchers with opportunities to pursue research and scholarship that may not yet have received external funding. In the past five years, $11.6 million has been awarded through the GIA program. For every dollar invested, $14.3 in external funding was generated in fiscal years 2016-2020.

Minnesota Futures

The Minnesota Futures program supports extraordinary research by nurturing interdisciplinary ideas. In FY2022, two grants were awarded for a total of $499,499. The title of the two projects were: “Investigating Epigenetic Mechanisms in the Development of Craniospinal Sarcoma" and “Lead Bioavailability and Ecological Remediation Across the Twin Cities.” Minnesota Futures awards are supported by technology commercialization revenue, and since 2008, the grants have supported research by faculty who go on to win substantial grants and whose innovations reach the market to potentially improve the lives of millions. For every dollar invested, $5.75 in external funding was generated in fiscal years 2016-2019. The Minnesota Futures program will be on hiatus for FY2023-FY2025 in order to support the International Institute for Biosensing (IIB) Initiative.

Grant Matching Funds

Some external funders require an institution to match funds to a specific grant activity. As grant processes become more competitive, the demand for such institutional matching funds continues to increase, resulting in higher levels of required institutional investment. The University works in partnership with colleges throughout the grant proposal process to coordinate the University’s total commitment in matching funds, which averages $1.26 million annually.

Research Infrastructure Investment Program

The Research Infrastructure Investment Program is one way the University ensures it maintains robust, state-of-the-art equipment to support research and academic endeavors. In FY2022, over $1 million was awarded to seven research projects, reaching seven departments, units, and centers, and four colleges. Colleges/centers are required to provide one-to-one matching funds for each award. Awards support research infrastructure, facilities, and support services over a variety of University research areas. Project examples include:

- Li-Cor Portable Photosynthesis System for High Throughput Analysis of Plant

Response to Environmental Change (Ecology, Evolution & Behavior, College of Biological Sciences)
- Biomolecular Imaging Instrumentation for Developmental Biology Research (Genetics, Cellular Biology & Development, College of Biological Sciences)
- R-GEN 200 Multimaterial Printer for the 3D Bioprinting Facility (PEDS Blood/Marrow Transplant, Medical School)
- Flow Cytometers for the Masonic Cancer Research Building (Lab Medicine Pathology, Medical School)
- Biomechanical Motion Analysis System (Mechanical Engineering, College of Science & Engineering)
- Transforming Precision Radiation Research through the Small Animal Radiation Research Platform (SARRP) (Radiation Oncology, Medical School)
- TSQ Quantis Plus Triple Quadrupole Mass Spectrometer (Medicinal Chemistry, College of Pharmacy)

Innovation Impact Case Award

A recent addition to OVPR's award programs is the Innovation Impact Case Award that recognizes research that has led to significant impact outside of academia and has made a meaningful difference in our communities. Impact is a fundamental aspect of almost all research programs and is more important than ever. The award celebrates work that solves challenges, benefiting individuals, communities, and organizations. Innovation and impact are defined broadly and inclusive of work in all disciplines. Award recipients received $10,000 per case. The following two awards were given in 2022:

- Swati S More, PhD, associate professor, Center for Drug Design, and Robert Vince, PhD, director, Center for Drug Design, whose research resulted in the development of a noninvasive, scalable tool for Alzheimer's detection using the retina of the eye, without use of any extraneous dyes.
- Sayan Biswas, PhD, the Benjamin Mayhugh Assistant Professor in Mechanical Engineering, and his research team at the UMN, in collaboration with Sandia National Laboratories, who developed an advanced low-temperature plasma igniter for automotive and aviation applications.

Given the many successful cases submitted, five honorable mention awards were also given out and recipients were invited to attend the awards ceremony.

Research Technical Staff Award

Established in spring 2022, the Research Technical Staff Award was created to recognize staff for their distinguished service to the University of Minnesota research community and celebrate exemplary leadership that positively impacted colleagues and advanced the University's research mission. Five staff members from across the University received awards in this first cycle, and each received a $1,000 personal honorarium:

- Adele Dimian, Research Associate, Institute on Community Integration and Associate Director, TeleOutreach Center (CEHD)

- Lane Johnson, Research Forester, Cloquet Forestry Center (CFANS)
- Kelley Kitto, Researcher, Department of Neuroscience (Med School)
- Megan Manion, Senior Research Fellow, Human Rights Center (Law School)
- Todd Schuster, Core Manager, Instrument Core Facility (Hormel Institute)

Research Is Teaching

American research universities offer unique and essential skills to students of all levels, from undergraduate through doctoral. Student involvement in research benefits the research, faculty researchers, the student, and the community. Research prepares students to be the innovators of tomorrow by training them in the practices of research and discovery. Accordingly, goal and action 2.1 of the University of Minnesota's MPact 2025 plan includes the goal to prioritize research opportunities for all students and in the most recent Student Experience in the Research University (SERU) survey, **41.1% of UMN undergraduate students who responded to the most recent survey reported that they have assisted faculty in conducting research.** The MPact 2025 plan goal for this measure is 50% by 2025 and the University is positioned to achieve this goal.

UMN programs supporting student research experiences include:

- Undergraduate Research Opportunities Program (UROP)
- Research Experience for Undergraduates (REU)
- Interdisciplinary Doctoral Fellowships (Graduate School)
- Undergraduate major requirements

Many of these programs are designed to tightly couple curricular offerings with ongoing research in order quickly to translate results from the field/lab/clinic to the classroom, thereby equipping students with the knowledge and expertise most in demand in the marketplace.

There are many touch points for students through the research enterprise including training in the world-class laboratories comprising cutting-edge tools, internship opportunities at partner industries and tech comm companies, increased opportunity for gaining competitive fellowships, enhanced job opportunities due to exposure to research information through funded projects, and entrepreneurship opporunities.

Annual Report on the State of the University Research Enterprise

FY2022: Vice President for Research, Shashank Priya

UNIVERSITY OF MINNESOTA
Driven to Discover℠

The Bottom Line

- The state of the University's research enterprise remains **strong and growing**
  - record expenditures
  - second largest research funding (award) levels in the University's history
- U is part of "**billion-dollar research club**" of 24 US research universities
  - Top 10 US Public (ARWU/Shanghai)
  - 12 fields of study in top 25 globally (ARWU/Shanghai)
  - Top 15 US public Universities (NSF HERD)
- **Nationally and globally recognized** for technology commercialization and innovation
  - Record startups and patents - surpassed 200th startup milestone
- Deepening **corporate engagement**
- **Diverse and impactful research** projects across UMN system
- Building on our strengths, growing new opportunities - **New Initiatives**

Pact 2025

Progress Toward MPact 2025 Research Goals

Pact 2025

Commitment 2 – Discovery, Innovation, and Impact

Action	Baseline	December 2022
2.1 Increase year-over-year funding growth for **research and industry-sponsored awards**	• **$876M sponsored research awards, FY2020** • **#10 among US publics, HERD Survey, FY2019**	**$1.05B sponsored research awards** **# 14 US publics**
2.2 Enhance opportunities for **new businesses and startups, corporate partnerships, and technology commercialization**	• **19 startups, FY2020** • **$81.6M business and industry awards, FY2020**	**22 startups** **$92.6M business and industry awards**

Pact 2025

Commitment 2 – Discovery, Innovation, and Impact

Action	Baseline	December 2022
2.3 Increase **State-Sponsored** Research	• **$412M, state-sponsored research awards, FY2016-2020**	**$488.2M, state-sponsored research awards, FY2018-2022**
2.3 **Elevate national and international profile** and standing while addressing societal needs	• **#40 in world, ARWU (Shanghai) ranking, FY2020**	**#44 in world**

Pact 2025

Commitment 3 – MNtersections

Action	Baseline	December 2022
3.1 Deepen **impact in core areas of strength**, including solutions, cures, and technology	• **209 med-tech/health-science disclosures, FY2021**	**213 disclosures, FY2022**
3.3 Develop and deploy new techniques and partnerships for **smart farming and sustainable food supplies, and natural resources**	• **29 Food, ag-tech, and natural resource-related disclosures, FY2021**	**30 disclosures, FY2022**

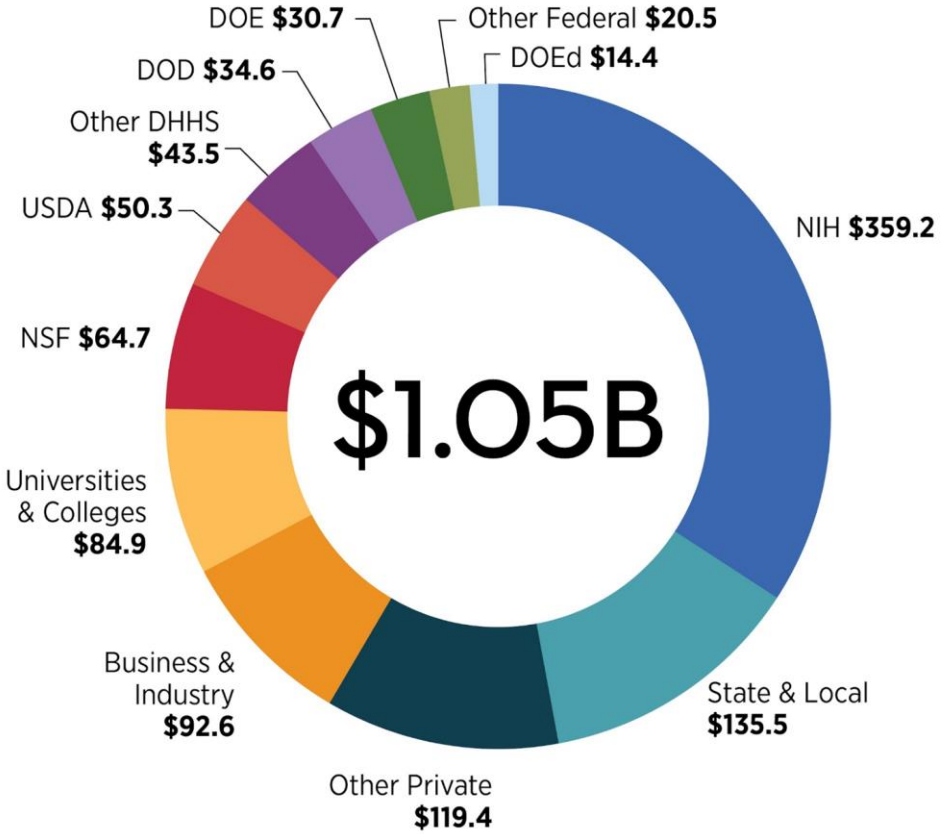
State of the Research Enterprise

FY 2022

Awards by Source

FY22, $ in millions

- **Second largest** sponsored award total in history
- 59% of awards from **direct federal sources**
- **DoD/Nat'l Security** an area of opportunity



Fighting Terrestrial Invasive Species

The **UMN Minnesota Invasive Terrestrial Pests and Plants Center** **(MITPPC)** will receive $6.23M over five years through the state's Environment and Natural Resources Trust Fund (ENRTF) to continue vital research addressing invasive terrestrial (land-based) species across the state, including the **mountain pine beetle**, **sudden oak death**, **jumping worms, emerald ash borer,** and **oak wilt**.

Photo: Caro Silvola

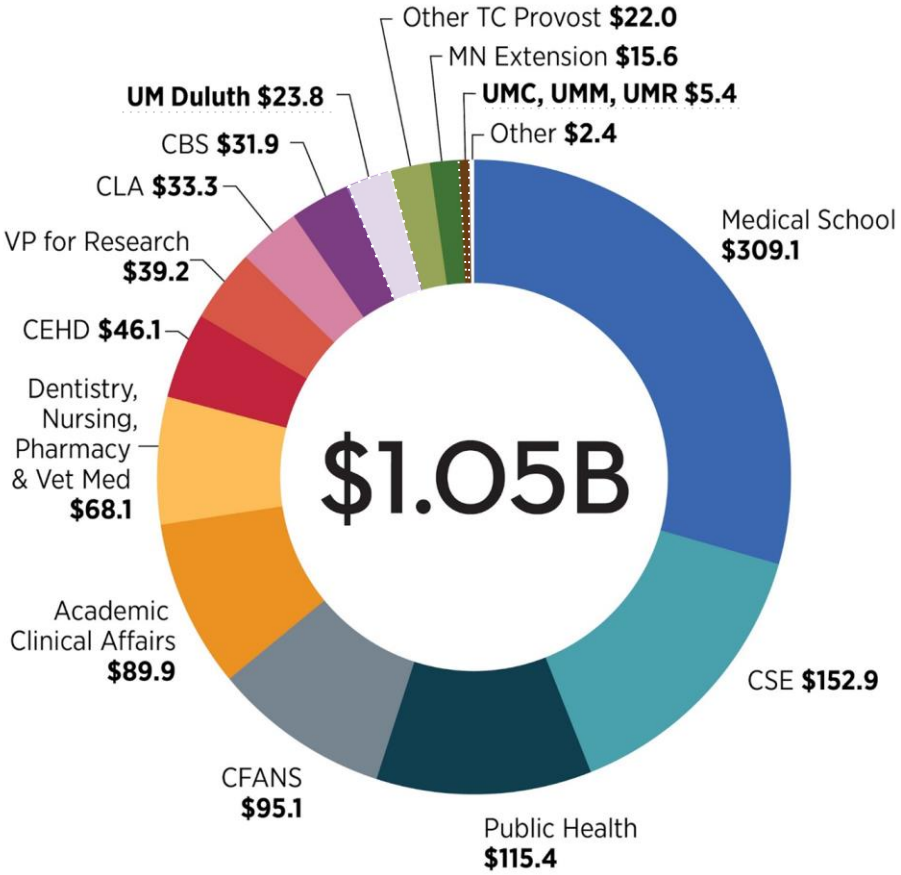
Awards by College and Campus

FY22, $ in millions

56% of award funding to medical and health-science related colleges

Units with significant research funding increases included:

- **UMN Duluth**, ↑ 137% ($13.7M)
- **College of Food, Agriculture, and Natural Resources** (CFANS), ↑ 52% ($32.5M)
- **College of Liberal Arts** (CLA), ↑ 62% ($12.8M)
- **College of Pharmacy**, ↑ 39% ($6.9M)



Robots Offer Personalized Care to Elderly Patients

A revolutionary robot developed at **UMN Duluth** is helping to provide emotional, physical, and cognitive support to the elderly, thanks to a partnership between **UMD Computer Science Professor Arshia Khan** and Monarch Healthcare group, which provided $1.16M to pilot the robots in their healthcare facilities.

Khan’s robots are programmed to meet the unique needs of individual residents, including monitoring a patient's vitals, offering medication, reminiscing about the past, and telling jokes.

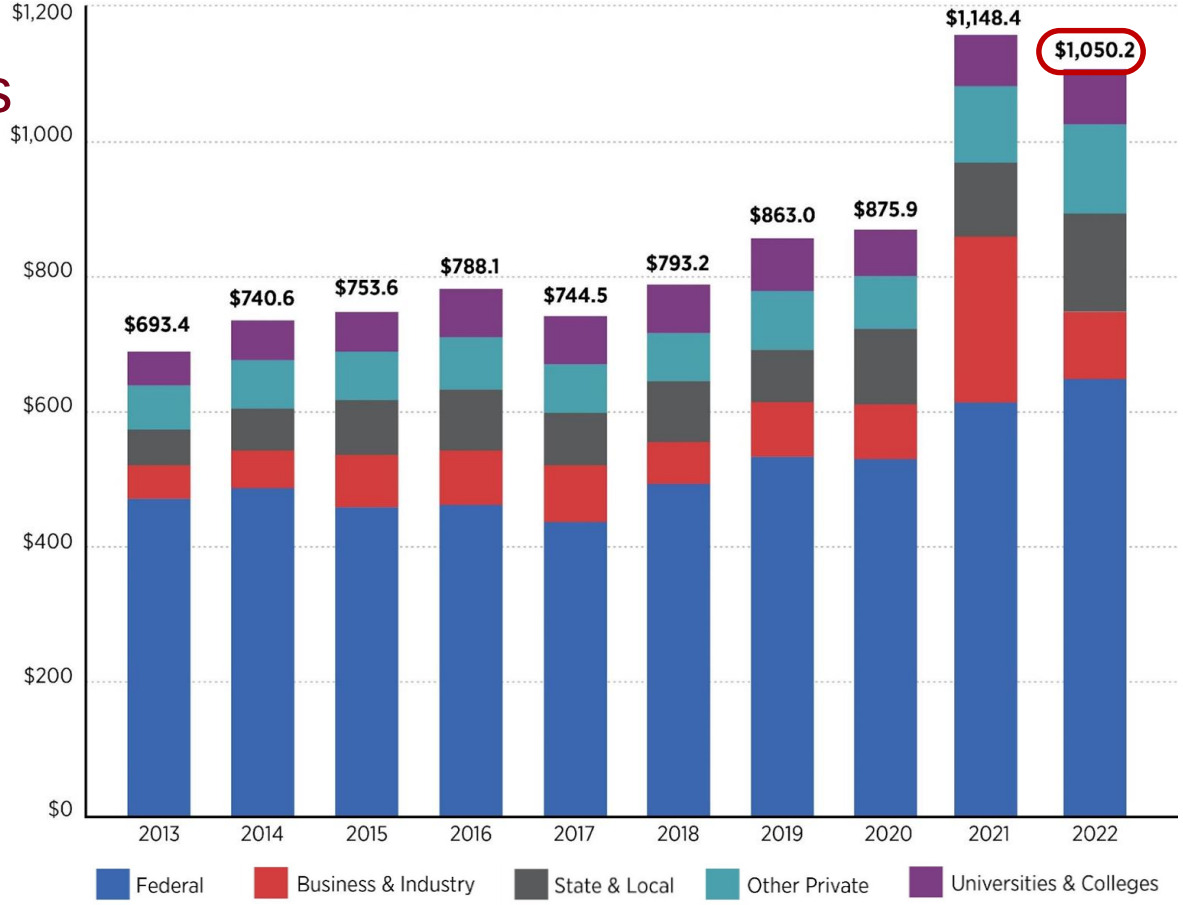
State of the Research Enterprise

Year-Over-Year Comparisons

Year-Over-Year Awards

FY22, $ in millions

- **Sustained growth:** +$175M, 20% from FY20
- 39% growth (102 to 142) in the number of **high-dollar awards** (over $1M) over five years
- Funding is up in **all categories** over five years



State of the Research Enterprise

Peer Comparisons

National and Global Rankings: NSF / HERD

	NSF / HERD 2021	
	Public	Expenditures
UC San Francisco	1	$1,710,036
Michigan	2	$1,639,645
Washington	3	$1,488,645
UCLA	4	$1,454,880
UC San Diego	5	$1,425,499
Wisconsin	6	$1,380,075
Ohio State	7	$1,236,111
North Carolina	8	$1,205,883
Texas A&M	9	$1,147,720
Maryland	10	$1,142,264

	NSF / HERD 2021	
	Public	Expenditures
Pittsburgh	11	$1,135,416
Univ Texas M.D. Anderson Cancer Ctr.	12	$1,124,971
Georgia Tech	13	$1,114,481
MINNESOTA - TWIN CITIES	**14**	**$1,072,961**
Penn State	15	$970,544
Florida	16	$959,965
UC Berkeley	17	$846,872
UC Davis	18	$817,409
Texas	19	$779,348
Arizona	20	$770,031

All UMN campuses: $1.10B

Dollar amounts in thousands

National and Global Rankings: NSF / HERD

Tightly Grouped: 5 other public universities within ± $75 million of Minnesota-Twin Cities

	NSF / HERD 2021*	
	Public	Expenditures
North Carolina	8	$1,205,883
Texas A&M	9	$1,147,720
Maryland	10	$1,142,264
Pittsburgh	11	$1,135,416
Univ Texas M.D. Anderson Cancer Ctr.	12	$1,124,971
Georgia Tech	13	$1,114,481
MINNESOTA - TWIN CITIES	**14**	**$1,072,961**
Penn State	15	$970,544

National and Global Rankings: ARWU (Shanghai)

	NSF / HERD 2021		ARWU (Shanghai) 2022		
	Public	Expenditures	World	US	US Public
UC San Francisco	1	$1,710,036	19	15	4
Michigan	2	$1,639,645	28	19	6
Washington	3	$1,488,645	17	14	3
UCLA	4	$1,454,880	13	11	2
UC San Diego	5	$1,425,499	21	16	5
Wisconsin	6	$1,380,075	33	23	8
Ohio State	7	$1,236,111	101-150	40-54	21-26
North Carolina	8	$1,205,883	29	20	7
Texas A&M	9	$1,147,720	151-200	55-62	27-29
Maryland	10	$1,142,264	50	28	12
Pittsburgh	11	$1,135,416	82	36	18
Univ Texas M.D. Anderson Cancer Ctr.	12	$1,124,971	71	35	17
Georgia Tech	13	$1,114,481	151-200	55-62	27-29
MINNESOTA - TWIN CITIES	14	$1,072,961	**44**	**25-26**	**10**
Penn State	15	$970,544	101-150	40-54	21-26
Florida	16	$959,965	94	38	20
UC Berkeley	17	$846,872	5	4	1
UC Davis	18	$817,409	101-150	40-54	21-26
Texas	19	$779,348	37	24	9
Arizona	20	$770,031	101-150	40-54	21-26

Dollar amounts in thousands

Global Comparisons - Top 25

UMN Ranked Academic Subjects by ARWU/Shanghai

- 2nd Ecology
- 11th Management
- 13th Library/information science
- 14th Biotechnology
- 18th Mechanical engineering
- 19th Business administration
- 19th Psychology
- 21st Statistics
- 21st Veterinary science
- 22nd Communication
- 24th Economics
- 24th Education

Improving Environmental Outcomes in the Minneapolis-St. Paul Urban Ecosystem

A collaborative research project led by **Sarah Hobbie** in the College of Biological Sciences will explore how urban residents and urban nature interact with one another and respond to ongoing rapid environmental and social change.

A $1.19M grant from NSF will allow the **Mpls.-St. Paul (MSP) Urban Long-Term Ecological Research Program (LTER)** to bring together researchers, educators, and local organizations to better understand and address environmental stressors on and social disparities in urban nature.

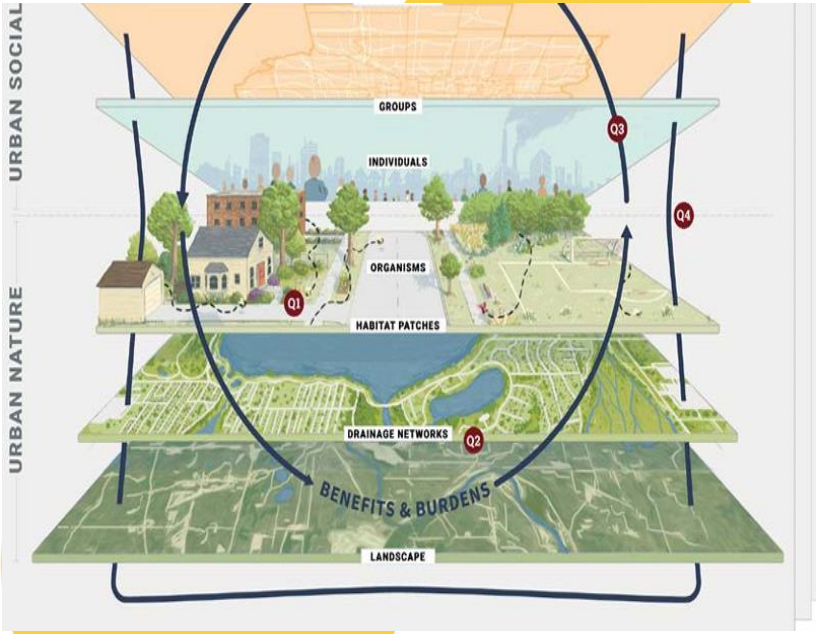


Illustration: Sean Quinn

Renewable Energy Storage for Grid Use and Resiliency

Building on long-time community partnerships, **University of Minnesota Morris** is embarking on a new partnership with Otter Tail Power Company (OTP) and microgrid control systems leader Open Access Technology International (OATI) to explore a large-scale energy storage project in Morris.

Two grants from the Minnesota Environment and Natural Resources Trust, totaling over $2.65M, will support the installation, demonstration, and research activities connected to the project.

State of the Research Enterprise

Technology Commercialization & Corporate Engagement

Technology Commercialization

- Record number of startups created (22)
- UMN inventors issued a record number of patents (241) by US & foreign authorities

	2018	2019	2020	2021	2022
LICENSES & REVENUE					
New Licenses	230	223	235	236	211
Current Revenue Generating Agreements	575	571	601	575	469
Gross Revenue	$16.1	$20.7	$14.1	$17.4	$16.1
STARTUPS					
Startup Companies Formed	13	19	19	20	22
INVENTIONS & PATENTS					
Invention Disclosures	400	391	397	332	315
New Patent Filings	179	163	152	126	156
New Patent Filing Rate*	45%	42%	38%	38%	50%
Issued Patents (US and Foreign)	186	187	182	181	241
MN-IP					
MN-IP Research Agreements	86	103	73	60	53
Companies w/ MN-IP Research Agreements	58	77	69	51	43
Sponsored Research Commitments	$21.3	$22.5	$27.9	$15.3	$13.3

Dollar amounts in millions
Technology Commercialization, Wellspring Sophia; UMN Enterprise Financial System
*New Patent Filing Rate is number of new patents filed during the fiscal year divided by number of new disclosures in the same time period

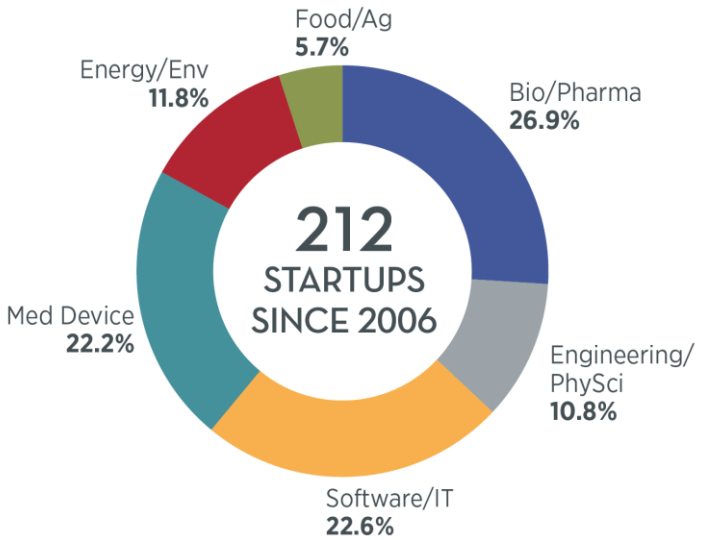
Technology Commercialization: Startups

University of Minnesota Startup Companies

Startups by Sector	FY22	FY06–FY22
Bio/Pharma	8	57
Engineering/PhySci	1	23
Software/IT	3	48
Med Device	5	47
Energy/Env	3	25
Food/Ag	2	12
Minnesota	12	152
Outside Minnesota	10	60
% in Minnesota	55%	72%
Total	**22**	**212**

*Surpassed 200 Startup Milestone

Startup Companies by Industry Area, FY06-FY22



Tech Comm Highlights

- **Heartland Forward** institute ranked UMN most innovative university in the Heartland
- **Ranked 16th** Worldwide for US Utility Patents (2021)
- **Tekne Awards finalist** with MN DEED's Launch Minnesota
- **Piloted** the Early Innovation Fund

Lab-Created Pediatric Heart Vessels that Grow with the Recipients

UMN team led by biomedical engineer **Robert Tranquillo,** received a $3.7M grant from the **US Department of Defense (DoD)** to prepare for a human clinical trial of bioengineered blood vessels that grow with a patient.

Vascular grafts could prevent the need for repeated surgeries/interventions in children with congenital heart defects.

The UMN startup company Vascudyne will manufacture the vascular grafts used in the clinical trial.

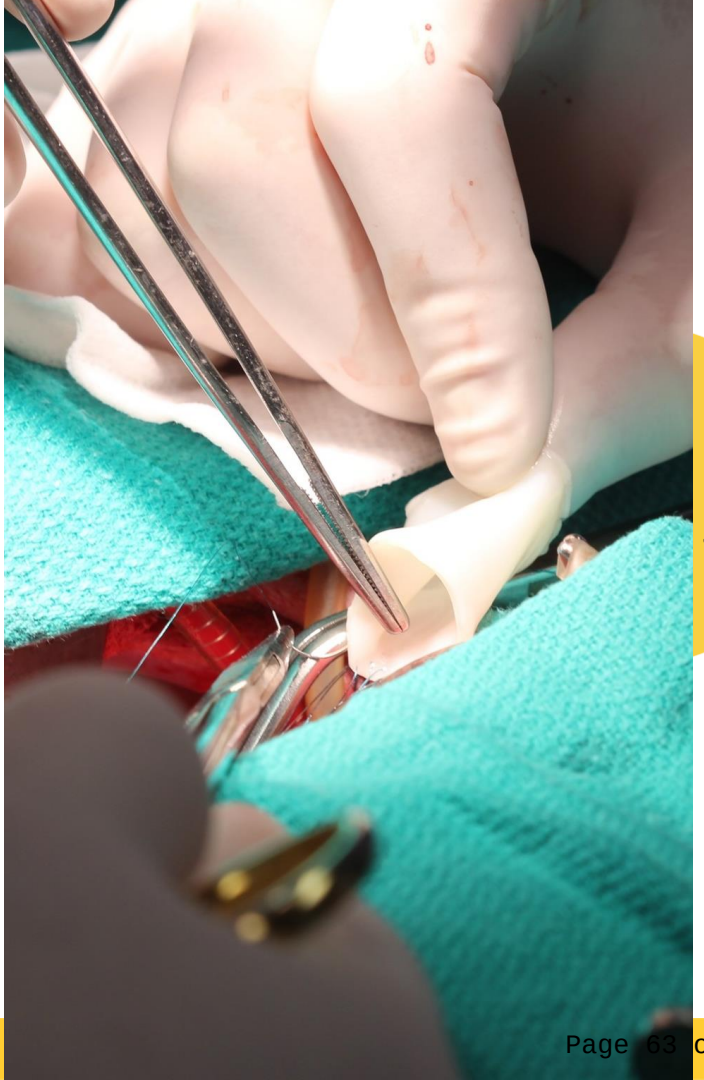


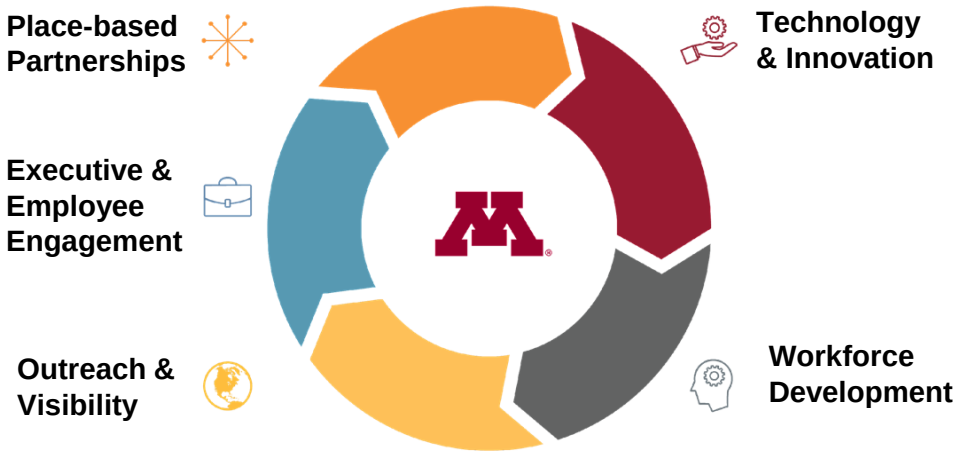
Photo: Zeeshan Syedain

Corporate Engagement Center (CEC)

***CEC** is a unified and consistent point of contact for corporations and entrepreneurs interested in partnering with the University. It is an initiative of OVPR in partnership with UMF, and includes collaboration with colleges and campuses across the system.*

FY22 highlights:

- Managing portfolio of 60-70 large corporations, including all 16 of MN's Fortune 500
- Added Place-based Partnerships function
- Honeywell master agreement
- Stratasys LTD Donations



cec.umn.edu

CEC: Future of Advanced Agricultural Research in Minnesota (FAARM)

The **Future of Advanced Agricultural Research in Minnesota (FAARM)** will be in Mower County near Austin and include both research facilities and hundreds of field acres, allowing an integrated approach to raising livestock and studying the interaction between animals, humans, crops, and climate.

The Hormel Foundation has pledged $60M toward the project.

CEC: Cisco Partnership Explores Video Conferencing Inequities

Through a partnership with **Cisco Systems**, **UMN computer scientists Stevie Chancellor and Loren Terveen** are developing an AI chatbot to help **reduce bias in video conference meetings**.

The project is based on their interviews with people who have used video conference tools and their experiences with bias in virtual meetings.

In 2021, UMN signed a master research agreement with Cisco, which has resulted in 18 funded UMN projects involving more than 30 faculty and researchers.

What's Next

How Can We Become a $1.5B Institution?

- National Security Research Strategy
- International Institute for Biosensing
- 2030 Workshop
- Strengthening our research support service/infrastructure

National Security: An Area of Opportunity

Compared with peers, UMN has had a relatively low level of DoD support

Research Expenditures for Select Institutions by Source - FY2021

	DoD	HHS	NSF	All Fed
Georgia Tech	626.4	50.6	60.0	852.3
Penn State	263.7	149.3	68.9	622.5
U Maryland	116.4	345.7	54.8	713.3
UCLA	50.4	529.5	60.0	721.0
Texas A&M	59.5	205.7	111.6	528.1
UMN - TC	35.2	390.8	68.3	570.9

Amounts in millions of dollars.

National Security: An Area of Opportunity

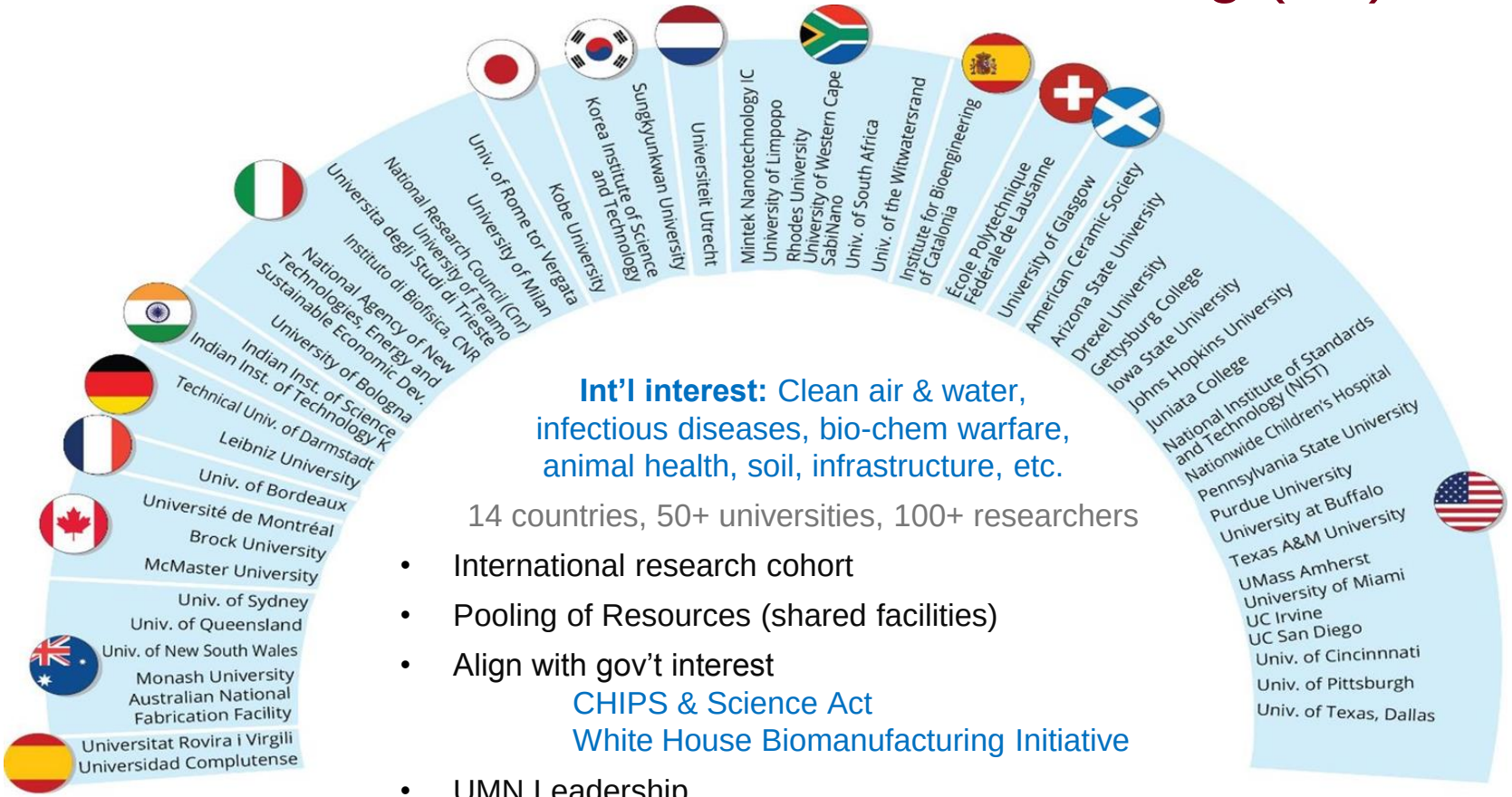
Creating **National Security Engagement strategy**

Opportunities: New funding, new partnership opportunities, opportunity for research impact

Challenges: Lack of secured space and data facilities, research policies/implementation, faculty trepidation

Word cloud based on UMN departments with DoD-supported projects, FY18-22

International Institute for Biosensing (IIB)



Int'l interest: Clean air & water, infectious diseases, bio-chem warfare, animal health, soil, infrastructure, etc.

14 countries, 50+ universities, 100+ researchers

- International research cohort
- Pooling of Resources (shared facilities)
- Align with gov't interest
  - CHIPS & Science Act
  - White House Biomanufacturing Initiative
- UMN Leadership

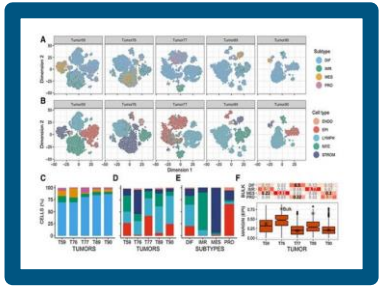
2030 Workshop

Planned for Spring 2023

- What are the research areas that occupy significant attention across academia, government, foundation and industry?
- **What will be the research areas that will play dominant roles in 2030?**
- Bring together visionaries to help imagine what research will be like in the future, help inform new areas of UMN focus
- Create 8-10 seed efforts in 2023

Example topics:

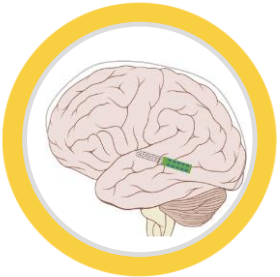
New Energy Technologies



Precision Medicine

Next Gen Transportation

Social Engineering



Neuroscience

Biomanufacturing

Other Initiatives

- Upgrade **infrastructure for pre-clinical research** — facilities and systems
- Expand **gap and capital investment funding pools** for UMN-created inventions and companies through philanthropy

- **Faculty Burden Reduction Committee**
- **Artist-in-residence** program for academic departments

- Relaunch **Social Justice Impact Grant** program
- Possible renaming: **Office for Research and Innovation**

Plans for the Upcoming Year

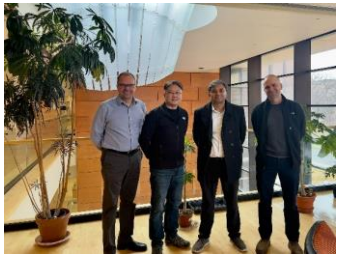
- Growing the research enterprise
  - Strengthening **Corporate Engagement Center** work
  - Planning creation of **gap fund** for accelerating UMN innovation
  - Creating **National Security Research Strategy**
  - Planning creation of **new consortia, centers and institutes**
  - New **seed funding opportunitie**s to enhance the pipeline for federal projects
  - Foster **new partnerships** with institutions and agencies in DC area
  - Enhancing external funding opportunities for **systemwide campuses**
  - **Partnering with MN state agencies** for increased social and economic impact
  - **Challenge:** Finding resources to sustain our research growth, in terms of services and systems, support staff, infrastructure and space

Questions for the Board

How can we accelerate the ability and speed of lab-based UMN inventions to reach the market?

How do we position UMN to lead scientific disciplines, nationally and internationally, in order to become leader across emerging topics.

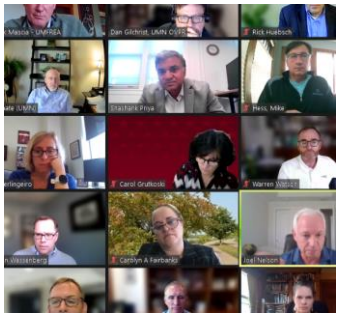










Office of the Vice President for Research

UNIVERSITY OF MINNESOTA

Driven to Discover℠

research.umn.edu

Image credits: As listed or IStock and UMN; Miromatrix; "Valley of Death" by Jetta Wong, Information Technology and Innovation Foundation (ITIF), CC-by-SA, simplified.

BOARD OF REGENTS
DOCKET ITEM SUMMARY

Mission Fulfillment **December 15, 2022**

AGENDA ITEM: Progress Toward MPact 2025 Enrollment Goals: Duluth

☐ **Review** ☐ **Review + Action** ☐ **Action** ☒ **Discussion**

☐ *This is a report required by Board policy.*

PRESENTERS: Rachel Croson, Executive Vice President and Provost
David McMillan, Interim Chancellor, Duluth campus

PURPOSE & KEY POINTS

This item is the third in a series of discussions on campus-specific enrollment goals as outlined in the MPact 2025 Systemwide Strategic Plan. This item, focused on the Duluth campus, will include:

- a review of enrollment trends and student demographics data;
- challenges, opportunities, and initiatives; and
- comparisons with competitors and peers.

More details about strategic enrollment management planning are included in the docket.

BACKGROUND INFORMATION

The committee most recently discussed systemwide undergraduate enrollment in June 2022; the Crookston campus progress toward enrollment goals in September 2022; and the Morris campus progress toward enrollment goals in October 2022.

Progress Toward MPact 2025 Enrollment Goals: Duluth

Board of Regents, Mission Fulfillment Committee
December 15, 2022

The following materials are intended to provide the Board of Regents with context and examples that support and help illustrate the presentation materials to be reviewed at the December 2022 Mission Fulfillment Committee meeting. The materials begin with a short narrative and an outline summary of the UMD Strategic Enrollment Management Plan.

The remaining docket materials cover:

- Core Marketing Themes
- Recent Accolades
- Recruitment Challenges
- Retention Priorities
- Data-Informed Student Success Initiatives
- MOHE Direct Admission
- SCSE Course-based Undergraduate Research Experiences (CURES)
- Pathway Initiatives
- On-campus Student Housing

David McMillan, Interim Chancellor
University of Minnesota Duluth

UMD 2022-26 Strategic Enrollment Management Plan

The UMD 2022-26 Strategic Enrollment Management (SEM) Plan, which was endorsed by Chancellor Black and Interim Executive Vice Chancellor Hietapelto in January 2022, is a guiding document supporting the UMD Strategic Plan through deliberative analysis of past enrollment trends, present challenges, and future objectives. This document is UMD's third iteration of a campus-level undergraduate enrollment management plan and is grounded in best practice and data-informed decision-making. It is shared at a time of significant disruption within higher education due to the COVID-19 pandemic as well as changes in student demographics and college-going behaviors and growing competition among institutions.

The 2022-2026 SEM Plan is intended to be both aspirational and realistic. UMD faces numerous challenges in maintaining and growing its undergraduate enrollment but is also uniquely positioned to deliver on a brand promise that is attractive and meaningful to prospective students and their families.

In spring 2022 a SEM Plan implementation work group was established and is comprised of the AVC for Enrollment Management, college associate deans, and representatives from Student Life and Finance and Operations. Plan progress and outcomes are shared with campus leadership and stakeholders via regular reports to the UMD Strategic Planning and Budget Committee.

The UMD 2022-2026 SEM Plan enrollment goal, objectives, strategies, and action items are highlighted on the following three pages.

2022-2026 Strategic Enrollment Management Plan

Goal: Grow undergraduate enrollment by seven percent or 575 students by fall 2026.

Objective: Increase the NHS fall and spring headcount to 2,172 by 2023-24 and 2,272 by 2025-26.

Objective: Maintain a fall and spring headcount transfer (NAS and IUT) entry cohort of 470 or more students annually.

Objective: Increase first-to-second-year retention to 81% by fall 2024.

Objective: Increase international undergraduate degree-seeking enrollment to at least 2.2% of the overall undergraduate population by fall 2025 (or an estimated total headcount of 177 to 190).

Objective: Maintain a campus four-year graduation rate of 45% or greater and achieve a six-year graduation rate of 65% or greater.

Strategies:

- ***Achieve UMD's vision of a student-centered, high-quality curricular, co-curricular, and integrated living-learning undergraduate experience*** (Goal 1 UMD Strategic Plan).

  We deliver on a common vision of the UMD undergraduate experience that is aligned with proven student success practices and can be clearly articulated to prospective students.

- ***Enhance market penetration and admitted student yield rates with a consistent brand promise that distinctly answers, Why UMD?***

  We effectively communicate UMD's compelling brand promise to our prospective students and their families and connect it to the factors important to them during the college selection process.

- ***Address affordability roadblocks in initial enrollment and in persistence to graduation.***

  We are vigilant in making UMD more affordable, and students understand the cost and value of their UMD degree and know strategies for reducing their loan debt.

- ***Provide equitable access and educational attainment for underrepresented students.***

  We consider the individual and their unique qualities, backgrounds, and goals, and we intentionally address the visible and invisible barriers that impede students' sense of belonging and academic success.

- ***Integrate student services, processes, tools, and experiences to deliver a student-centered experience.***

  We recognize that students are enrolled to achieve their educational goals, and we proactively address institutional roadblocks in their progress and ensure that the range of campus services students interact with are seamless and satisfying.

- ***Develop accountability structures supporting implementation of the SEM Plan, achievement of enrollment goals, and ongoing monitoring of student satisfaction.***

  We hold ourselves accountable for delivering an experience that matches students' expectations and aspirations, and we see the urgency in executing the UMD SEM Plan.

Strategy I: ***Achieve UMD's vision of a student-centered, high-quality curricular, co-curricular, and integrated living-learning undergraduate experience.***

Ia: ***Implement a campus-wide experiential learning plan based on high impact practices.***

70% of first-year students report participating in at least one HIP activity by NSSE 2026. (NSSE 2020 reported 56%)

77% of seniors report participating in at least two HIP activities by NSSE 2026. (NSSE 2020 reported 64%)

Ib: ***Enact strategies leading to early academic success.***

The overall campus 1000-level course DFW rate is reduced to less than 10% by fall 2023. (Fall 2020 rate 12.8%)

Also see Strategy V items.

Strategy II: ***Enhance market penetration and admitted student yield rates with a consistent brand promise that distinctly answers, Why UMD?***

IIa: ***Provide adequate marketing resources.***

Recruitment marketing budget increased to support delivery of a best-practice communication and yield plan.

IIb: ***Strengthen UMD's academic excellence brand identity.***

75% or more of prospective students rate UMD academic quality as Good or Excellent by 2025. (HR 2021 reported 70%)

IIc: ***Provide information and connections that allow admitted students to envision their personal fit with UMD.***

Enhanced marketing/comm plan developed by the fall 2023 cycle.

Facilitate academic and extracurricular networks for admitted students by the fall 2024 cycle.

IId: ***Provide engaging and easily understood program and major-level information on websites and printed materials.***

100% of academic program worksheets follow brand template by December 2022.

Program website audit conducted by November 2022.

IIe: ***Ensure faculty and staff possess the knowledge to deliver a compelling Why UMD? message.***

Key messages and data infographics shared with faculty/staff at least once each semester beginning fall 2022.

Strategy III: ***Address affordability roadblocks in initial enrollment and in persistence to graduation.***

IIIa: ***Assess discounting and COA strategies.***

Assessment completed by April 2023 by University Budge & Finance.

IIIb: ***Enhance prospective students' and families' understanding of their projected net price.***

Net price projections included in best-practice communication plan and personalized marketing plan by the fall 2023 cycle.

IIIc: ***Increase outreach to non-FAFSA filers to positively impact the percentage of UMD undergraduate filers.***

75% or more of continuing students file a FAFSA by fall 2023. (Fall 2021 71.3%)

IIId: ***Meet MPact 2025 goal to ensure average student debt for those who borrow is under the national average by at least $2,500.***

Data Literacy Institute project recommendations (April 2022):

Increase gift aid to middle two EFC quartiles.

Conduct targeted outreach to students on-track to be larger borrowers.

Reduce credit accumulation through clear, achievable degree pathways.

Increase faculty/staff awareness of factors contributing to higher student loan debt.

Increase financial wellness and loan education.

Strategy IV: ***Provide equitable access and educational outcomes for underrepresented students.***

IVa: ***Expand opportunities for all prospective students to visit campus and/or gain a sense of "me at UMD".***

A plan to increase admitted BIPOC student participation in hosted recruitment events to 40% or more implemented for the fall 2023 cycle. (Fall 2019 25%)

IVb: ***Continue to evaluate and eliminate barriers within the application process, such as standard test scores, official document requirements, and application fee.***

Items identified and resolved and associated outcomes tracked.

IVc: ***Meet the MPact 2025 outcome to reduce the gap between 4-year and 6-year graduation rates of Pell-eligible and non-Pell-eligible students to 5.3% and 3.4% by 2025.***

Data Literacy Institute project recommendation (April 2022):

Implement proactive coaching for Pell students on the cusp of academic probation/warning.

IVd: ***Meet the MPact 2025 outcome to reduce 4-year and 6-year graduation gaps between white and BIPOC students to 6.1% and 5.3% by 2025.***

Data Literacy Institute initiative (proposed solution to be shared Fall 2022).

Strategy V: ***Integrate student services, processes, tools, and experiences to deliver a student-centered experience.***

Va: ***Foster work groups that reduce campus silos.***

90% of work groups associated with SEM Plan implementation include representation from 4 or more units/departments.

Vb: ***Deliver proactive and trusted academic advising over the undergraduate lifespan.***

Complete benchmarking and evidence collection by October 2022. Followed by assessment of feasibility.

Vc: ***Deliver proactive, intrusive, and holistic coaching services for students with greatest risk of attrition.***

A proposal for expanded deployment of coaching services developed by November 2022.

Vd: ***Integrate new transfer student recruitment, transition, and course evaluation processes.***

An action plan aligned with transfer student best practices endorsed by AA leadership by November 2022.

Ve: ***Utilize you.umn.edu and survey data to improve existing services and programs that support student wellbeing and to identify new opportunities.***

Data-informed plan developed by December 2022.

Vf: ***Fully implement tools designed to support academic planning and collaborative service delivery.***

Implementation/ advancement plans developed for APLUS, grad planner, and schedule builder by December 2022.

Strategy VI: ***Implement SEM Plan accountability structures supporting implementation achievement of enrollment goals, and ongoing monitoring of student satisfaction.***

VIa: ***Charge a SEM Plan implementation work group.***

Work group charged by March 2022.

VIb: ***Develop a plan for adequate investment in SEM action items.***

Investment plan shared with Strategic Planning & Budget (SP&B) by January 2023.

VIc: ***Evaluate the consistency between the UMD brand promise and students' lived experience.***

88% or more of 2026 NSSE Senior respondents report they *would or probably would select UMD again if starting over*. (NSSE 2020 reported 82%)

VId: ***Foster data-informed decision making to inform key processes within recruitment and student progress.***

EM dashboard support plan developed beginning fall 2022.

Continuation of the Data Literacy Institute decided by fall 2022.

VIe: ***Assess student demand and program offerings/capacity to ensure future relevancy***

Program demand/capacity analysis completed every four years (previously completed 2014 and 2018).

VIf: ***Assign primary and secondary responsibility for SEM Plan action items.***

Responsibility centers designed and annual updates provided to AVCEM.

VIg: ***Submit an annual update of SEM Plan progress to SP&B.***

First update provided spring 2023.

Core Themes within Recruitment & Retention Marketing

UMD Enrollment Management

We're the mid-sized campus of the University of Minnesota System

Located in Duluth on the shores of Lake Superior, the area's beauty is matched only by its outdoor opportunities. We make the best of all that has to offer academically and recreationally - conducting research for clean water, encouraging local communities, and making wellness a priority.

They call us Bulldogs. Here's why that matters…

We develop persistence grounded in curiosity and discovery. We display confidence that brings out our best, with a sense of adventure that fosters independence. Bulldogs respect the planet and each other in ways that sustain us all. Being a Bulldog brings opportunity, creativity, championships, rewards, and a lifetime of connection to this place.

Duluth is a pretty cool place

Bulldogs get the benefits of city life while enjoying unlimited access to the great outdoors. Both rugged and refined, Duluth offers endless opportunities.

The Right Size for Exploring

Student experiences inside and outside the classroom contribute to career, skill, and identity development. By engaging in communities and opportunities that challenge and support your growth you will find a sense of belonging at UMD.

Powerful Preparation

We provide powerful preparation for meaningful lives and give you knowledge and experiences that set you up for success. You'll leave UMD with a world-class University of Minnesota degree having had the opportunity to do meaningful research with faculty, travel abroad, complete an internship, and participate in community, all of which are qualities employers seek and can take you anywhere you want to go.

Affordability & Cost Transparency

We know that going to college is an investment for you and your family and one for which we're committed to giving you a great return.

Bulldog Facts

- Academic excellence, 160+ majors/minors
- 16:1 student-to-faculty ratio
- Top research faculty & research opportunities
- 67% of classes enroll fewer than 30 students
- Military friendly designation
- Division I & II athletics plus club sports
- 250+ student organizations
- 51% of grads complete an internship or co-op
- The most spectacular location in the upper midwest

Recent Accolades for the University of Minnesota Duluth

November 2022 - UMD recognized as a **Most Engaged Campuses for College Student Voting** by ALL IN Campus Democracy Challenge, https://allinchallenge.org/

November 2022 - UMD ranked **#13 best college in Minnesota** by Intelligent, https://www.intelligent.com/.

July 2022 - UMD was listed as **Career Development Colleges of Distinction** by Colleges of Distinction, for their superior ability to think ahead about how their students will succeed after they graduate, https://collegesofdistinction.com/.

September 12, 2022 - **U.S. News and World Report lists of 2022-2023 Best Colleges**, https://www.usnews.com/best-colleges/rankings/regional-universities, because of its high rankings, as shown here:

- Regional Universities Midwest #33
- Top Public Schools - Regional Universities Midwest #6
- Best Colleges for Veterans - Regional Universities Midwest #14
- Social Mobility - Regional Universities Midwest #67
- Best Undergraduate Business #190
- Best Undergraduate Computer Science #215
- Best Undergraduate Engineering - No Doctorate #42

January 2022 - UMD ranked **#1 Return on Investment (ROI) for low-income students** among Minnesota's 4-year public institutions and #27 nationwide among 4-year public institutions by Georgetown University Center on Education and the Workforce ROI report, https://cew.georgetown.edu/cew-reports/lowincome/.

2022 - Duluth ranked **Top 10 cities for outdoor adventure** (2022 Washington Post)

2021– Named **#1 safest campus in Minnesota** by YourLocalSecurity.com, https://www.yourlocalsecurity.com/blog/safest-college-campuses-2021/.

2012- Present - UMD consistently ranks as a **Military Friendly University** (since 2012) by Military Friendly, https://www.militaryfriendly.com.

2021 - UMD ranked **#3 as a 'Best Value College in Minnesota** by Smart Asset, https://smartasset.com/student-loans/student-loan-calculator#Minnesota.

Recruitment Challenges

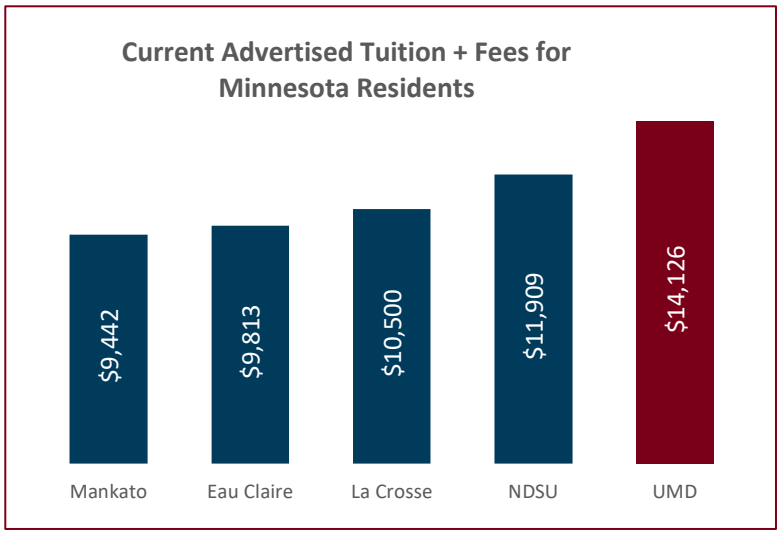
UMD's direct competitor group for undergraduate enrollment is determined based upon where our new high school admitted students choose to enroll. The list to the right indicates where those students attended in fall 2022. UMN Twin Cities enrolled nearly 23% of the students who did not enroll at UMD. This is equal to the total number of students enrolling at the next seven institutions listed.

Institutions enrolling 2% or more of UMD admitted students:

University of Minnesota Twin Cities
University of St Thomas
UW Madison
MSU-Mankato
UW Eau Claire
Iowa State University
North Dakota State University
UW La Crosse

The last three student cohorts experienced a nearly 1,000-student increase in admit overlap with the UMNTC compared to the previous four years. The UMD yield rate for students admitted to both campuses is 10%, and the yield rate for non-UMNTC admits is 36%. The overlap in the admission pool is another factor UMD is working to address and is an area that will benefit from a continued systemwide collaboration on enrollment strategy.

The graph to the right highlights the advertised Minnesota resident tuition and fees for a subset of UMD public competitor institutions.



Affordability is a significant consideration for many families. A 2021 white paper *Why You're Worth It: Nine lessons on communicating your value proposition to increasingly price-sensitive families,* published by EAB Enrollment Services, cites cost of attendance as an increasingly important factor in student choice of school, with a reported 31% indicating cost as very important in 2004 compared to 51% in 2019.

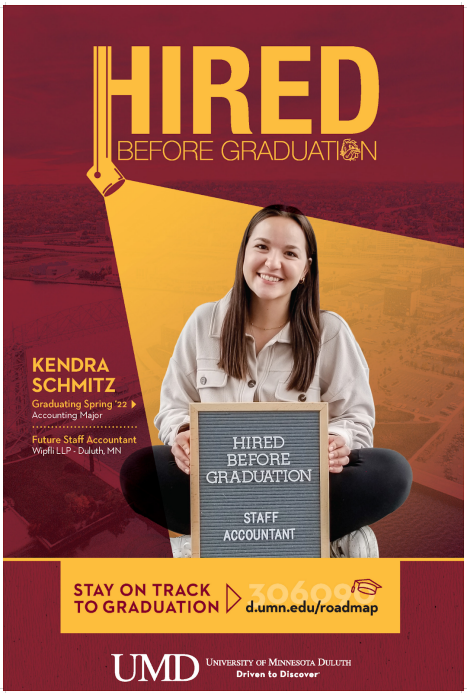
Early and frequent value messaging is critical in maintaining UMD as a top choice as students and families are assessing affordability. A key priority for UMD in early 2023 is to update our value proposition to further differentiate ourselves within the regional marketplace and to increase brand awareness and affinity. UMD has already increased financial education to prospective students and families with targeted outreach to first generation families.

Retention Priorities: Helping Students Thrive

High Impact Practices (HIP): College deans have committed to increasing student participation in HIPs within the next three years with the goal of 77% or more of seniors participating in at least two HIP activities. Activities include internships, diversity/global learning, undergraduate research, and a variety of forms of community-based learning.

DFW Rate Initiatives: Early academic success provides the foundation for persistence to graduation. Data-informed priorities are being enacted to move UMD's 1000-level course DFW rates from 12.8% (2020) to less than 10% by fall 2023.

Wellness & Wellbeing Initiatives: Based on a recognized correlation between student wellbeing and student success, enhanced efforts are underway to connect students to existing wellness programs and services and to identify gaps and additional ways to provide support. UMD Student Life is focused on supporting students in developing habits of wellbeing and wellness and in educating stakeholders of this critical component within the student success framework.



Above: *Employing a coordinated approach to student retention marketing, positive messages contribute to continuing student retention.*

American Indian Learning Resource Center (AILRC): After a series of staff retirements and the transition back to fully in-person operations, the AILRC has experienced a period of renewal. Delivering on its mission to enrich the cultural, academic, supportive, and social environment of the campus, the AILRC staff provide supportive services to empower and aid in the success of American Indian and Alaskan Native students.

Orientation, Advisement & Registration (OAR) Program: The OAR program worked through the unique challenges of the pandemic with virtual delivery due to COVID protocols. Based upon what was learned from that experience, as well as feedback from students and families, the Fall 2022 OAR multi-pronged program adopted a blended virtual and in-person approach receiving high satisfaction from students and positive reviews from campus partners and resulting in UMD's lowest summer melt rate, i.e., the percentage of students who withdraw after orientation.

Academic Advising: A recent study of advising models at UMD's competitor institutions points to an opportunity to further enhance professional advising services. Additional stakeholder engagement will take place on this topic over the remainder of the current academic year.

Success Coaching: Success coaching provides a central resource to students at greater risk for attrition through holistic consideration of students' academic, financial, and personal goals and needs. The Bulldog Resource Center's *MaximizeYou* coaching program provides a model for further expansion. Also linked to the coaching program is use of student success analytics developed by ASR that allow for early identification of students most at risk of attrition. Strategies for overcoming staff capacity limitations are currently under consideration.

Data-Informed Student Success Initiatives

In 2021-22, UMD was one of five institutions nationally to participate in a 24-week Data Literacy Institute (DLI) in a collaboration with the Association of Public and Land-grant Universities (APLU) and the Association for Institutional Research (AIR). The project is an innovative, sustainable approach designed to enhance the ability of faculty and staff to identify and adopt evidence-based practices and policies to remove obstacles and to scale strengths to advance student success outcomes. Eighteen UMD faculty, staff, and administrators completed the institute and participated in one of the following three student success group projects aligned with MPACT 2025.

1. Graduation Rates: reduce gap between four-year and six-year graduation rates of Pell-Eligible and non-Pell-eligible students by 50% by 2025.
2. Reduce Disparities: reduce four-year and six-year graduation gaps between white and BIPOC students.
3. Student Debt: Reduce the average undergraduate student debt (for those who borrow) to less than $25,000 upon graduation. (MPACT target was later revised to*, ensure the average student debt for those who borrow is under the national average by at least $2,500*)

Outcomes from two of the projects were incorporated in the 2022-2026 UMD SEM Plan. A third project is still underway.

The DLI is being sustained at UMD through development of a self-paced Canvas course using the AIR-developed training materials. The online course will be available to all UMD faculty and staff beginning in December 2022.

Above: *More than 1,800 guests participated in UMD Campus Preview October 26-28, 2022. Early introduction to campus resources, such as the Academic Writing and Learning Center, supports a successful tranition to college learning.*

MOHE Direct Admission

The stated goal of the Minnesota Office of Higher Education Fall 2023 Direct Admission program is to encourage all high school seniors to think of themselves as "college material" by offering them a direct admissions opportunity. The program also seeks to reduce anxiety around the question of "Will I get in?" and to encourage exploration of Minnesota colleges and universities. While the pilot program is experiencing some implementation pains, UMD has thus far received inquiries from 595 participants.

Anticipating that the Direct Admission program will be renewed for the 2024 recruitment cycle, UMD is intentionally reaching out through our dual enrollment program College In The Schools (CITS) partner high schools to encourage engagement with the program. Just three of our current CITS high schools opted in to the 2023 Direct Admission program, while many others were unaware of the program. Completion of UMD coursework through CITS and participation in the Direct Admission program is an advantageous combination for students.

As is the national trend, equity gaps exist in Minnesota dual enrollment programs by race/ethnicity and income level. UMD is also working with our CITS partner high schools to assess participation inequities and work toward higher participation among traditionally underrepresented populations.

SCSE Course-based Undergraduate Research Experiences (CURES)

Research is a central experience for STEM students at UMD. Research is classified as a high impact practice, and we know that these experiences are one of the most impactful activities that students can engage in during college. Undergraduate research experiences in Swenson College have launched successful scientists and engineers that are changing lives in Minnesota and beyond. Alumni include doctors and business leaders, scientists and engineers who have advised United States presidents and Nobel prize winners. A common experience of many of our alumni is research they conducted as an undergraduate student. Currently about 40% of Swenson students report having had a research experience by the time they graduate. Many of these opportunities are targeted to juniors and seniors and they rely on students having the time and the means to find and access these experiences.

Above and Below: Learning through scientific discovery and design.

This past summer Swenson College received a very generous philanthropic gift that will provide all Swenson students with the opportunity to engage in authentic research experiences and transform the way science and engineering courses are taught at UMD. This gift is the largest program gift ever received at UMD and over the next five years SCSE will be engaged in a project to ensure that 100% of Swenson students engage in authentic research experiences from the time they walk in our doors to the time they cross the stage at graduation. Providing equitable access to these high impact research experiences is a priority and will transform STEM education at UMD.

Course-based Undergraduate Research Experiences (CUREs) provide students with the opportunity to build individual ownership of research projects and practice the process of scientific discovery and design in a classroom setting. These courses will have students think and work like scientists, engineers, and mathematicians by collecting and analyzing data, creating and revising models and arguments, and communicating their findings to peers and stakeholders outside of the classroom. They will be making discoveries that are relevant to industry and our society and could affect policies and actions. A CUREs approach also builds in collaborative work. Science and engineering are inherently collaborative fields as we build solutions to make the world a better place. Students in CUREs will work across majors to make discoveries and create solutions together.

Pathway Initiatives

International Degree Completion Programs**:** 2+2 degree completion programs allow students at partner institutions abroad to begin their studies at their home university and transfer to UMD after two years of lower division coursework. These partnerships are currently in the final stages of development with two public universities in Vietnam, allowing students to transfer to UMD in the disciplines of Economics and Business. Other partnernships are currently being discussed that will include additional disciplines.

International Accelerator Program**:** UMD is in the early stages of developing an international accelerator program, housed at the Duluth campus and serving all UMN campuses. International students will enter our System campuses through multiple tracks and at varying levels of English proficiency and receive additional preparation in academic English. Upon meeting English proficiency requirements, these students will matriculate as degree-seeking.

Transfer Credit Evaluation: A recent transfer course evaluation project is aimed at enhancing the institution's domestic and international reputation for being transfer friendly. Project outcomes include a more timely and consistent process for transfer course decisions and improved transfer of general education credits. In addition, UMD colleges have developed transfer guides with our top feeder community colleges to assist prospective transfer students in course selection and successful transfer to UMD.

College & Program Pathways**:** Colleges have implemented initiatives and practices that help students into our programs, as well as guiding them beyond our programs. Below is a sampling.

- Tribal Administration and Governance major and online Psychology major pathways for students who have already completed an AA degree or the Minnesota Transfer Curriculum.
- Guiding readiness for successful transfer to the UMNTC Master of Nursing degree for SCSE majors as well as CEHSP Exercise and Rehabilitation Sciences and Psychology majors.
- Certificate in Business Administration credential for non-LSBE students that also serves to meet the prerequisites for entry into the MBA program.
- LSBE partnership with the College of Pharmacy to provide Duluth Pharmacy students with an option to earn an MBA degree while completing their pharmacy education.
- 3+2 agreements with UW-La Crosse and UW-Superior for completion of engineering degrees through SCSE.
- A 3 + 4 program offers undergraduates the option for the completion of both the Bachelor of Science (B.S.) and Doctor of Pharmacy (PharmD) degrees in a total of seven years.

Integrated Degree Programs (IDP): IDPs provide an attractive pathway for undergraduate students to remain at UMD for an additional year to earn their master's degrees by allowing students to "double-count" up to nine credits of advanced coursework toward both their undergraduate and graduate degrees. Consistent academic rigor and timely completion of the undergraduate degree are maintained. IDPs are available for students in Business, as discussed earlier with the 4+1 MBA (BAcc/MBA or BBA/MBA), Chemical Engineering (BSChE/MSChE), Electrical Engineering (BSEE/MSEE), Mechanical Engineering (BSME/MSME) and Civil Engineering (BSCE/MSCE). This opportunity is limited to UMD students with GPAs above 3.30, who would typically apply in spring of their junior year to begin IDP participation in fall semester of their final year.

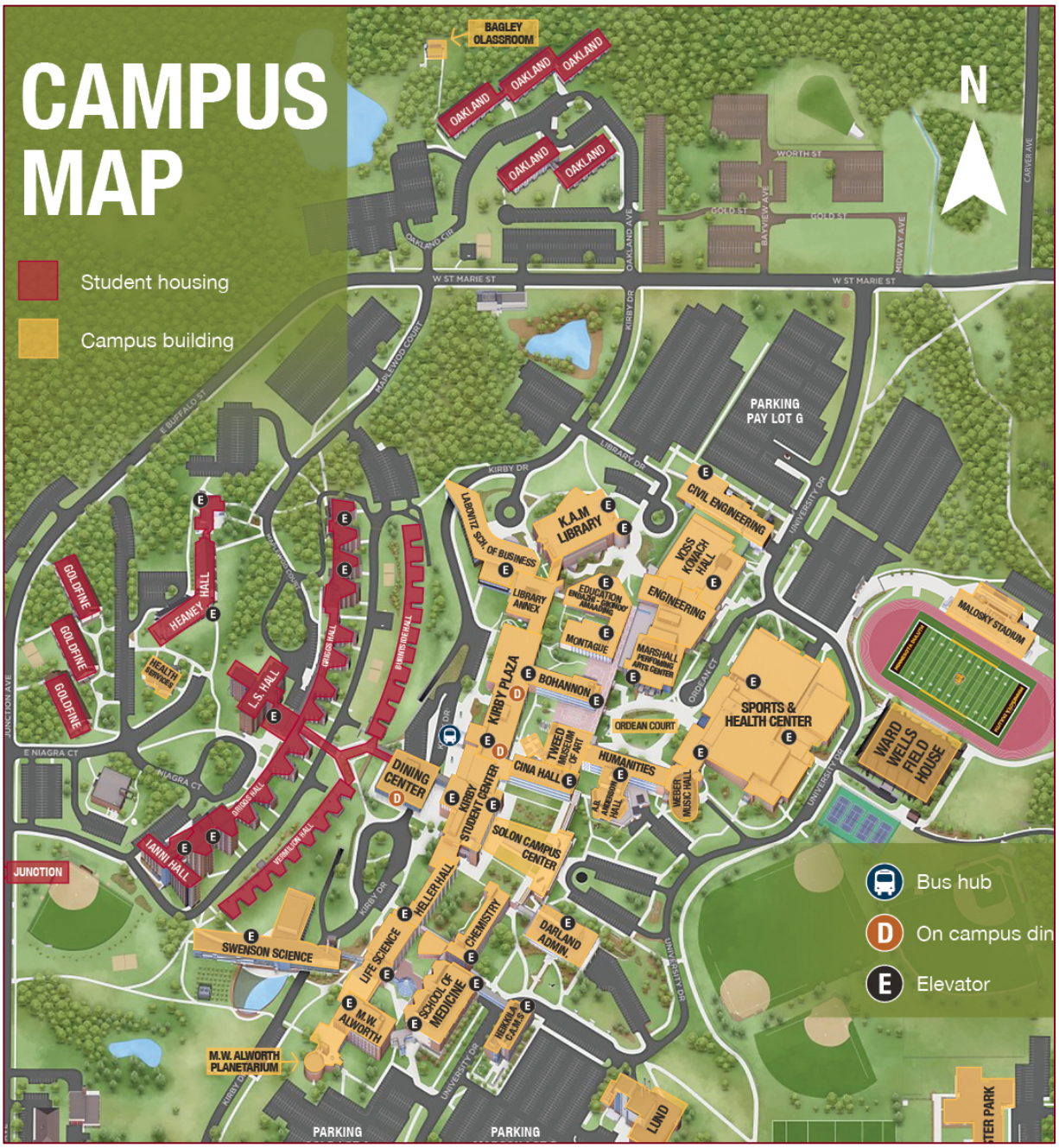
On-campus Student Housing

A variety of furnished housing is available at UMD for students who wish to live in University residence halls and apartments. The University offers housing to approximately 1,850 students in traditional residence halls and approximately 1,100 students in apartment-style units. All

Highlighted in maroon in the map below,

Residence halls include Burntside Hall, Griggs Hall, Ianni Hall, Lake Superior Hall, and Vermilion Hall.

Apartments include Goldfine Apartments, Heaney Hall, Junction Apartments, and Oakland Apartments.



Progress Toward MPact 2025 Enrollment Goals:

Duluth

Board of Regents | Mission Fulfillment Committee | December 15, 2022

Rachel Croson
Executive Vice President
and Provost

David McMillan
University of Minnesota Duluth
Interim Chancellor

MPact 2025

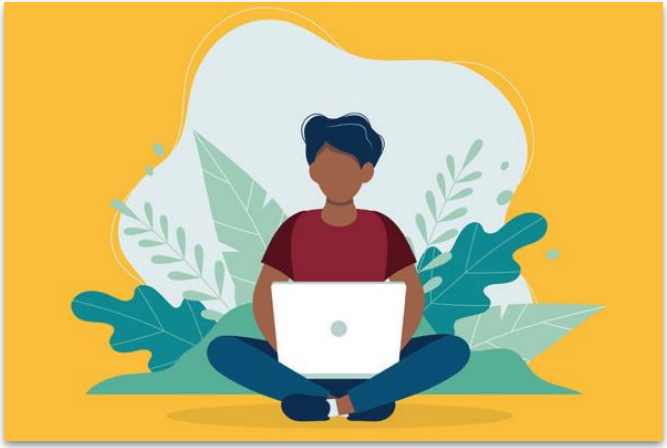
Commitment 1: Student Success

Action

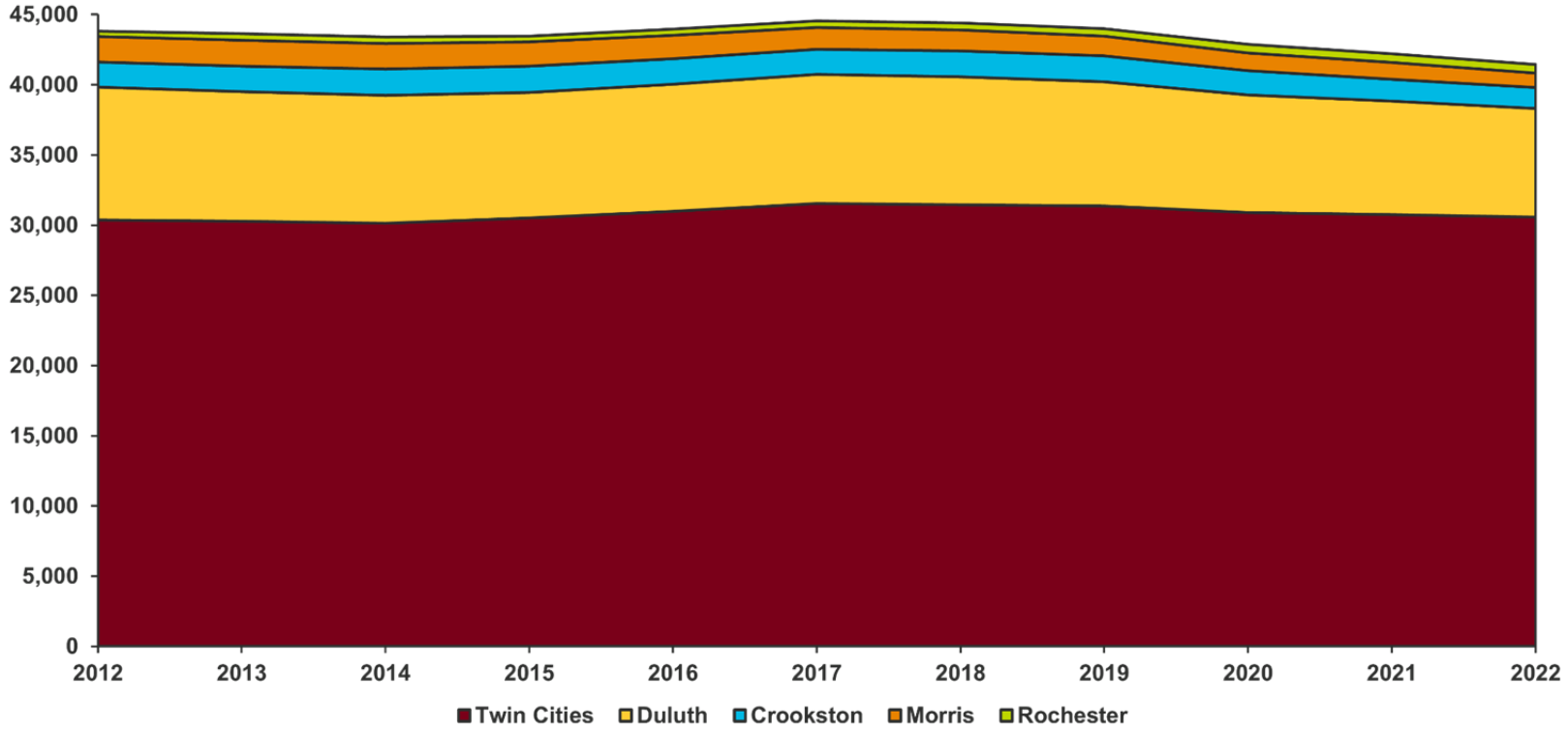
Establish comprehensive systemwide strategic enrollment strategy.

Metric

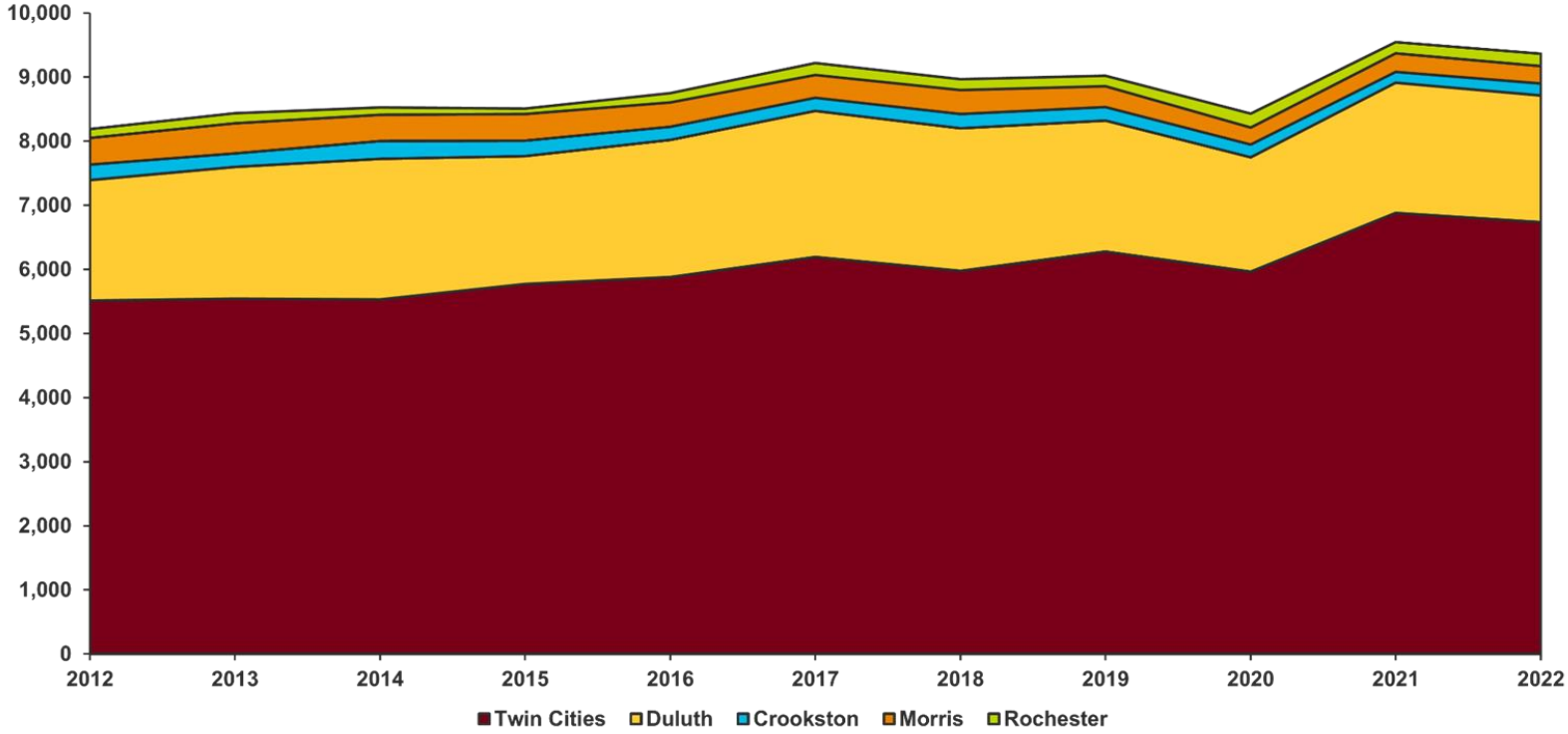
Meet undergraduate enrollment goals for each campus by Fall 2025.



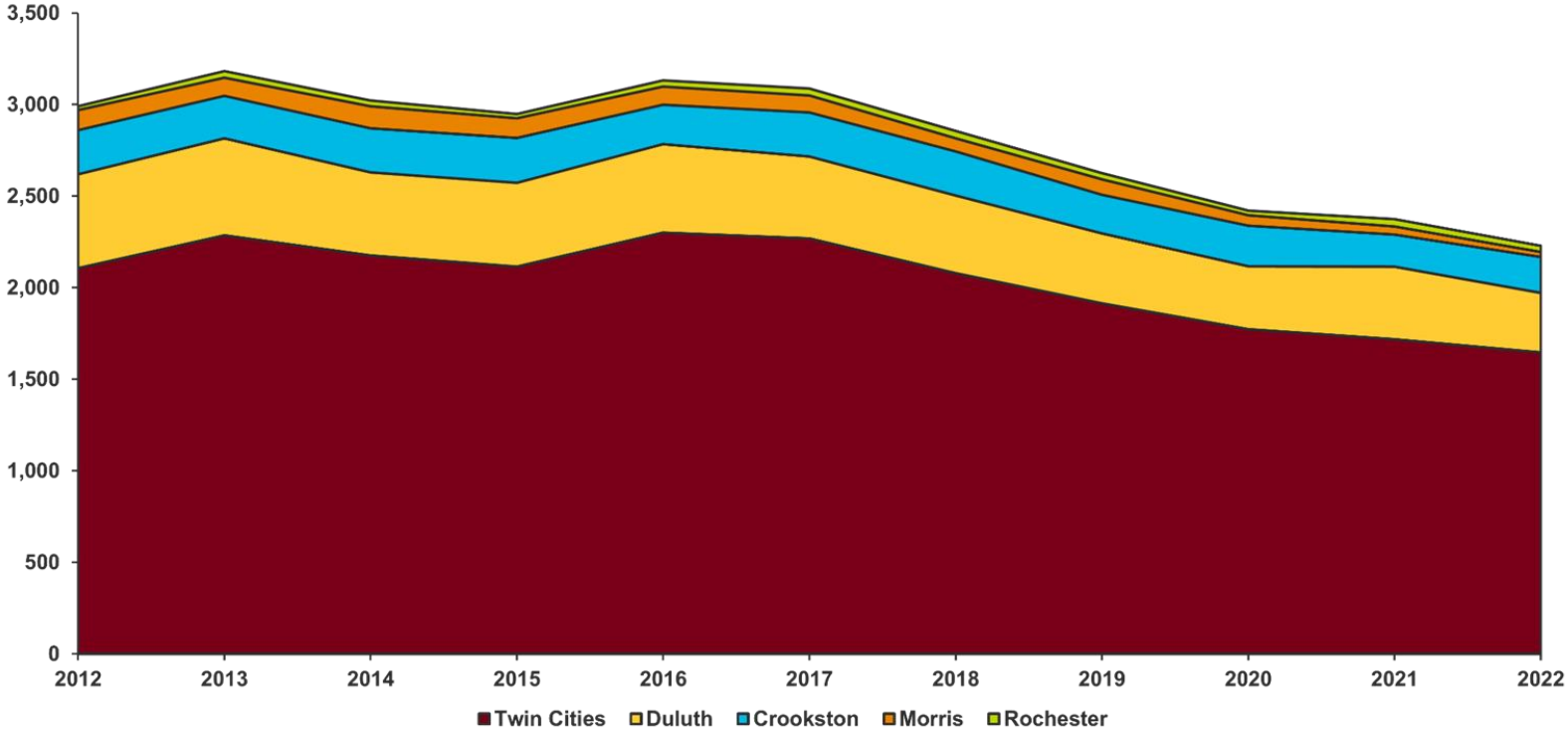
Fall Semester Undergraduate Headcount Enrollment



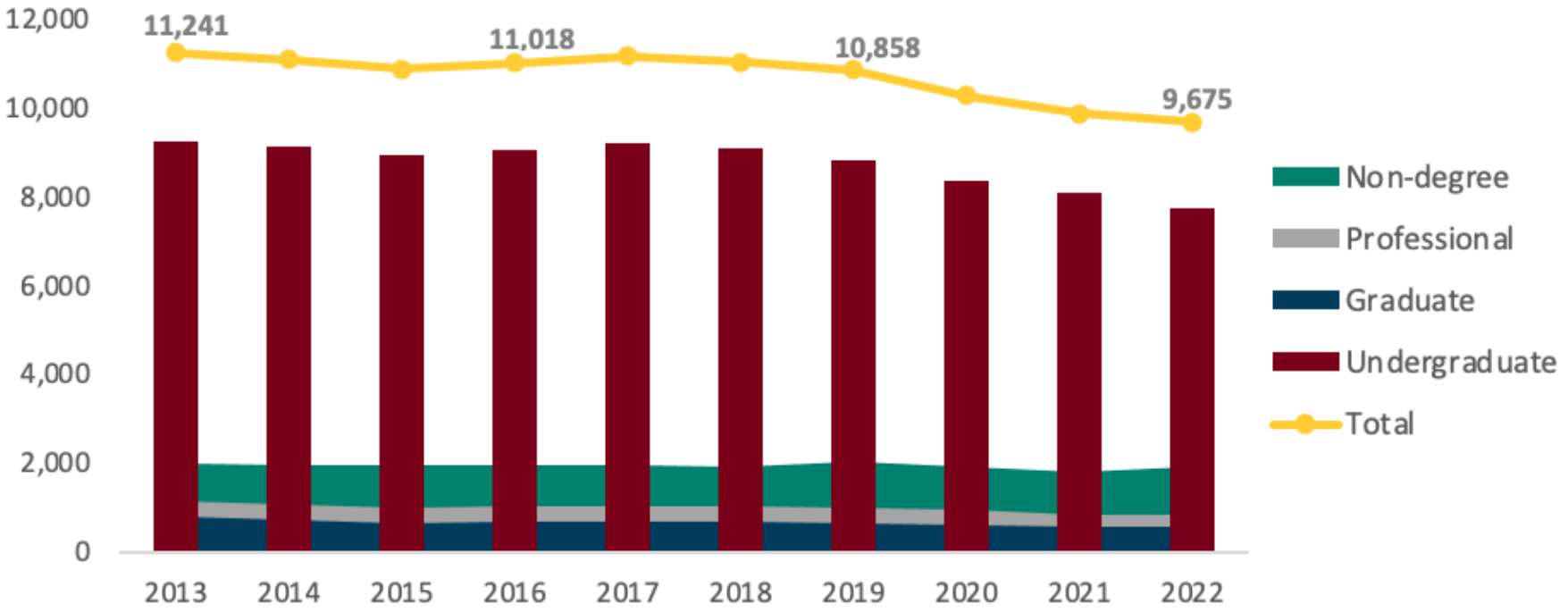
Fall Semester New Freshmen (NHS) Headcount Enrollment



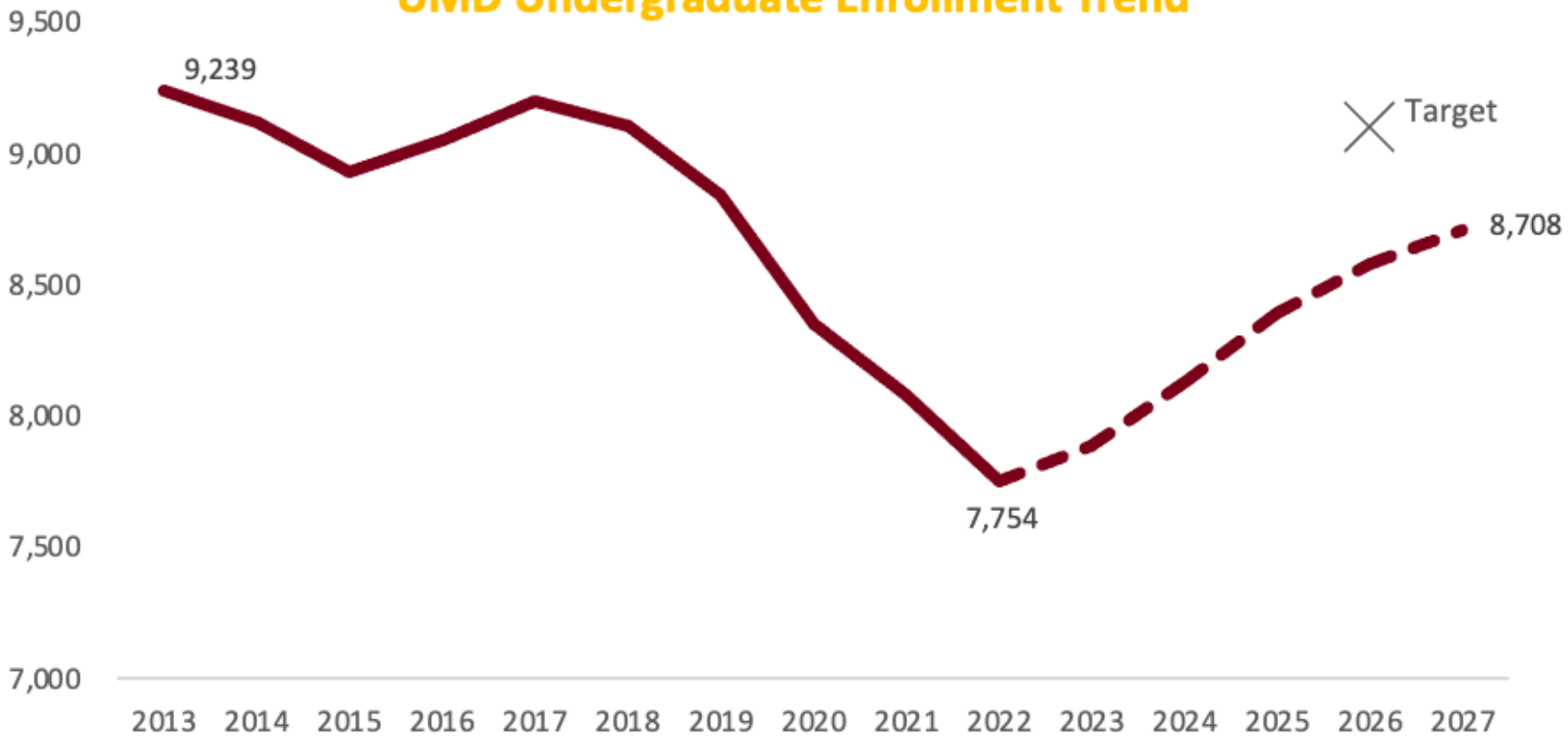
Fall Semester New Transfer (NAS) Headcount Enrollment



UMD Ten-year Fall Semester Enrollment by Academic Level



UMD Undergraduate Enrollment Trend



Undergraduate Demographics

UG Enrollment	7,754
Average Age	20
Gender	3,752 female (48.4%) | 3,992 male (51.5%)
BIPOC	1,092 (14.1%)
Home Location	3,666 TC Metro (47.3%) 2,928 Greater MN (37.8%) 801 Wisconsin (10.3%) 258 Other US (3.3%) 101 International (1.3%)
First Generation	2,045 (26.4%)
Pell-Eligible	1609 (20.8%)
Division I & II Athletes	356
Full-time Enrollment	94.3%

Enrollment Challenges

Recruitment

- High school demographics & community college enrollment
- Differentiating UMD from primary competitors
- Price relative to regional public peers

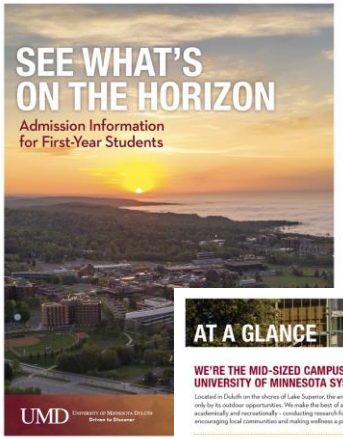
Retention

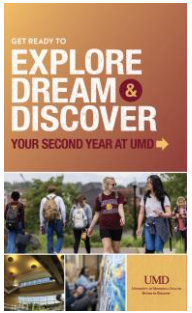
- Staff capacity
- COVID-19 impacts
- Student preparedness, wellbeing, and engagement

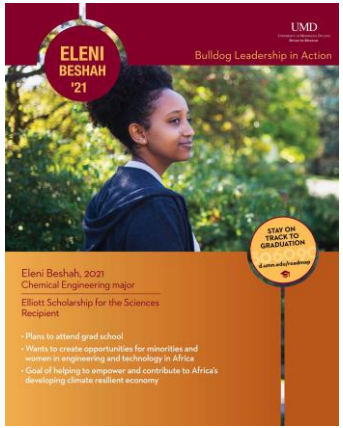
Enrollment Opportunities

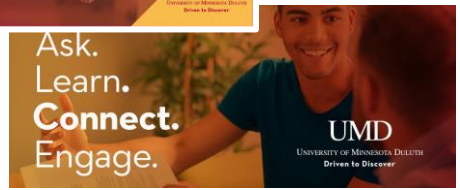
- Refreshed recruitment marketing and communication plan
  - Earlier cost of attendance, estimated net cost, & financial education
  - Reintroducing waivers & enhancing use of scholarship dollars
  - Our value proposition
- Reduced application barriers
  - MOHE direct admission pilot
  - Streamlined application fee waiver process
  - Self-selection of ACT submission
- Expanded recruitment efforts for underrepresented populations
- International initiatives

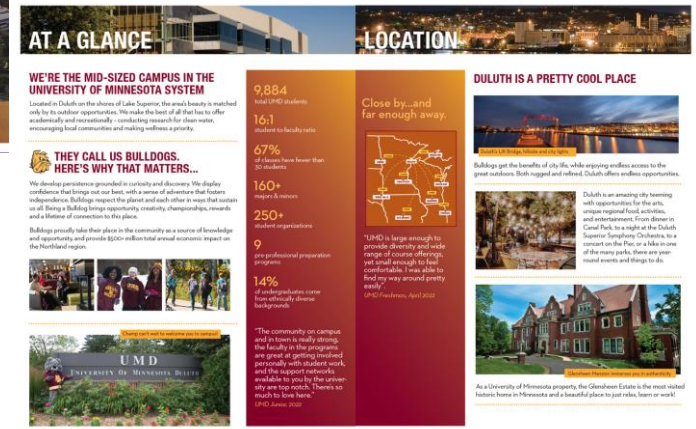
Recruitment Marketing Creatives

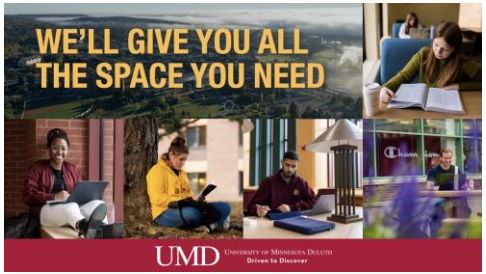








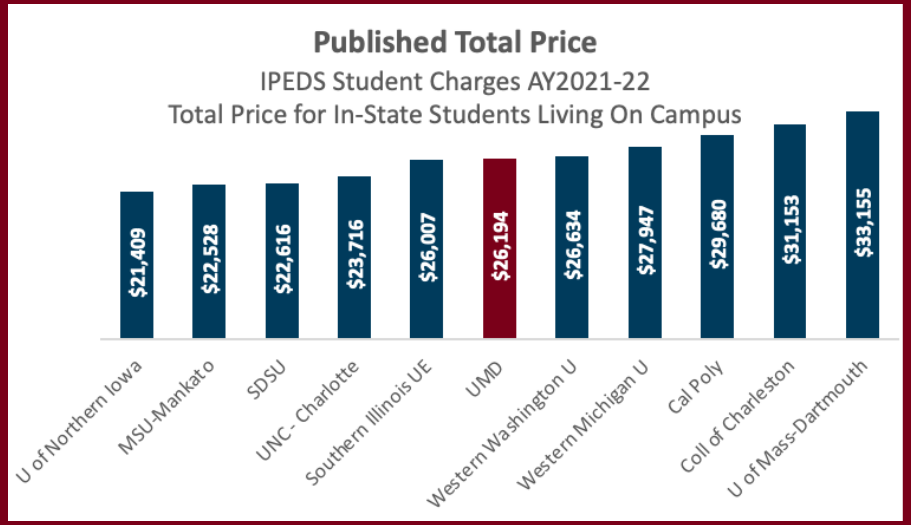


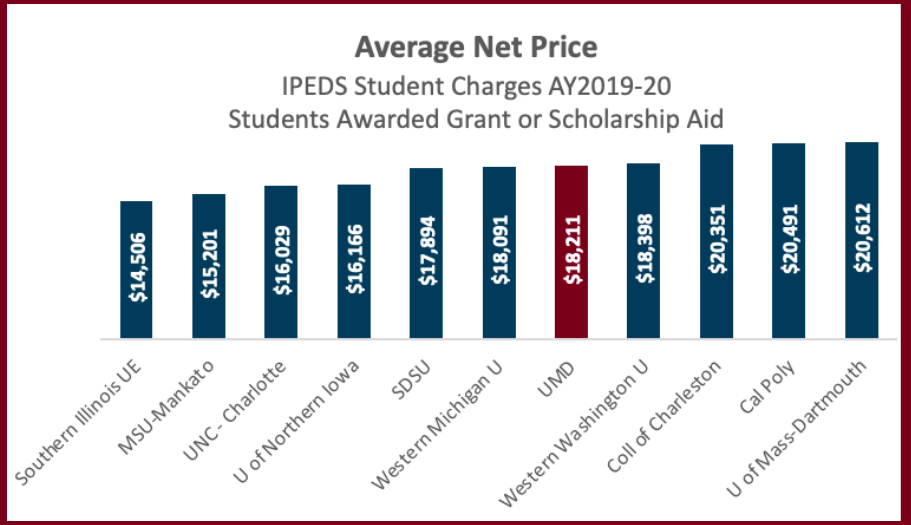


Retention Initiatives & Opportunities

- High Impact Practices (HIP)
  - SCSE CURES
- DFW rate initiatives
- Wellness, wellbeing & engagement
- Academic advising and success coaching
- Pathway initiatives

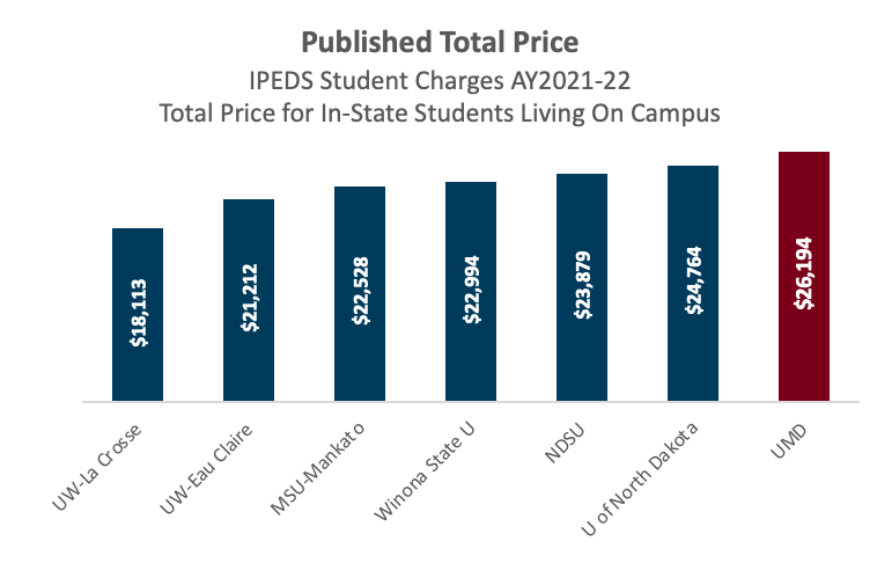
Pricing vs. National Peers

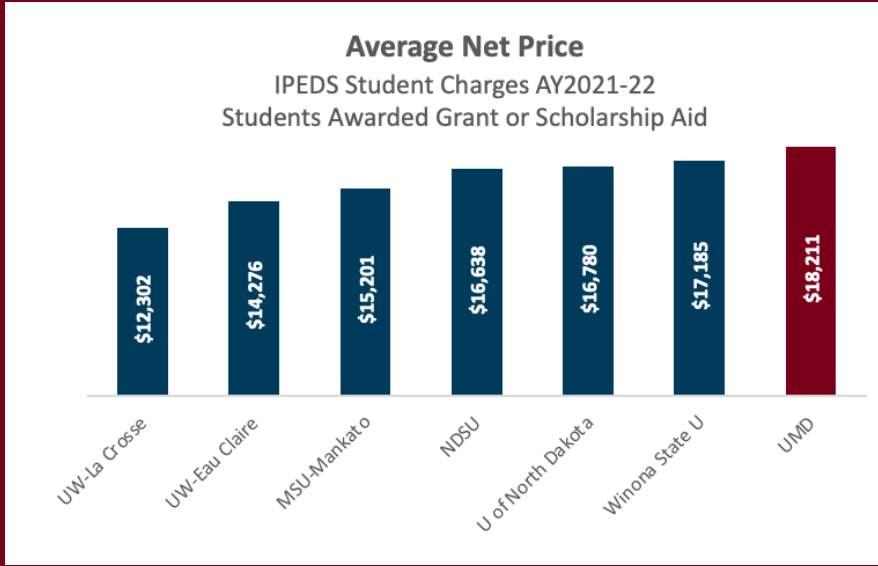




An eleventh UMD peer institution, U of Michigan Dearborn, was excluded due to incomplete comparison data.

Pricing vs. Regional Public Competitors





Two-Year Priorities

- Retention
- Recruitment
  - Revisit UMD's value proposition
  - Merit scholarship strategies
  - Focus on our competition
  - Pathway initiatives

Discussion

1

Thoughts, perspectives on competing in the over supplied **regional comprehensive** market as demographics worsen?

2

How do you see **UMD best positioning itself** within the range of academic opportunities and experiences the UMN System offers?

BOARD OF REGENTS
DOCKET ITEM SUMMARY

Mission Fulfillment **December 15, 2022**

AGENDA ITEM: Consent Report

☐ **Review** ☒ **Review + Action** ☐ **Action** ☐ **Discussion**

☐ *This is a report required by Board policy.*

PRESENTERS: Rachel Croson, Executive Vice President and Provost

PURPOSE & KEY POINTS

The purpose of this item is to seek approval of new academic programs and program additions, program deletions and discontinuations, and/or program changes; and conferral of tenure for new hires, as outlined below.

I. Request for Approval of New Academic Programs

- Medical School (Twin Cities campus)—requests approval to create a fellowship in Transplant Infectious Diseases
- College of Education and Human Development (Twin Cities campus)—requests approval to create a Master's of Education in Early Care and Education degree
- School of Nursing (Twin Cities campus)—requests approval to create an Adult Gerontological Acute Care Nurse Practitioner (AGACNP) Post Graduate Certificate
- School of Public Health (Twin Cities campus)—requests approval to create a Bachelor of Arts in Public Health degree
- College of Science and Engineering (Twin Cities campus)—requests approval to create an undergraduate minor in Management of Technology

II. Request for Approval of Changed Academic Plans

- College of Continuing and Professional Studies (Twin Cities campus)—requests approval to discontinue the Integrated Food Systems Leadership (IFSL) subplan and add a Self-Design subplan in the Applied Sciences Leadership M.P.S. degree
- College of Design (Twin Cities campus)—requests approval to add a Product Design subplan in the Design Ph.D degree
- College of Design (Twin Cities campus)—requests approval to add three subplans in the Apparel Design B.S. degree
- College of Food, Agriculture and Natural Resource Sciences (Twin Cities campus)—requests approval to discontinue all subplan options in the Fisheries, Wildlife, and Conservation Biology B.S. degree

- College of Liberal Arts (Twin Cities campus)—requests approval to change the name of the Hmong Studies subplan in the Asian and Middle Eastern Studies B.A. degree and undergraduate minor to Southeast Asian Studies
- College of Liberal Arts (Twin Cities campus)—requests approval to change the name of the Classics B.A. and undergraduate minor to the Classical and Near Eastern Religions and Cultures B.A. and undergraduate minor
- College of Liberal Arts (Twin Cities campus)—requests approval to change the name of the Classics Civilizations subplan in the Classics B.A.
- College of Liberal Arts (Twin Cities campus)—requests approval to discontinue the Greek and Latin subplan and add the Modern Hebrew subplan in the Classics B.A.
- College of Liberal Arts (Twin Cities campus)—requests approval to change the name of the History/Literature subplan in the Theater Arts B.A. degree to History/Dramaturgy
- Humphrey School of Public Affairs (Twin Cities campus)—requests approval to change the academic degree-granting college for the Master of Human Rights degree from the Graduate School to the Humphrey School of Public Affairs
- School of Public Health (Twin Cities campus)—requests approval to discontinue the Clinical Biological and Social Behavioral subplan options in the Epidemiology Ph.D. degree
- Morris campus—requests approval to change the name of the Management B.A. and undergraduate minor to the Business and Management B.A. and undergraduate minor
- Morris campus—requests approval to add four new subplans to the Philosophy B.A. degree

III. Request for Approval of Discontinued Academic Plans

- School of Dentistry (Twin Cities campus)—requests approval to discontinue the Advanced Dental Therapy Post Baccalaureate Certificate
- College of Liberal Arts (Twin Cities campus)—requests approval to discontinue the Bachelor of Arts degree in Biblical Studies
- College of Liberal Arts (Twin Cities campus)—requests approval to discontinue the Technical Communications undergraduate Certificate

IV. Request for Conferral of Tenure for New Hires

- Kristinbruk Artinger, professor with tenure, Department of Diagnostic and Biological Sciences, School of Dentistry, Twin Cities campus
- Greta Bauer, professor with tenure, Department of Family Medicine and Community Health, Medical School, Twin Cities campus
- Amanda Dalola, associate professor with tenure, Institute of Linguistics, College of Liberal Arts, Twin Cities campus
- Kate Paesani, associate professor with tenure, Department of French and Italian, College of Liberal Arts, Twin Cities campus
- Sunil Rao, professor with tenure, Division of Biostatistics, School of Public Health, Twin Cities campus
- Wayne Soon, associate professor with tenure, Department of Surgery, Medical School, Twin Cities campus

V. Request for Approval of Human Fetal Tissue Research Report to the Minnesota Legislature

The purpose of this item is to seek approval of the Human Fetal Tissue Research Report to the Minnesota Legislature. The complete report is provided in the docket materials.

BACKGROUND INFORMATION

Approvals are sought in compliance with Board of Regents Policy: *Reservation and Delegation of Authority* as follows:

- Academic program changes: Article I, Section V, Subd. 2.
- Tenure and/or promotion recommendations: Article I, Section V, Subd. 1.
- Approval of any report to the State of Minnesota that impacts the University's autonomy or addresses the performance of the University and/or its major initiatives: Article I, Section I, Subd. 7.

PRESIDENT'S RECOMMENDATION

The President recommends approval of the Consent Report.

University of Minnesota Board of Regents
Mission Fulfillment Committee
December 15, 2022
Consent Report: Academic Program Changes

I. Request for Approval of New Academic Plans

Medical School (Twin Cities Campus)—requests approval to create a fellowship in Transplant Infectious Diseases, effective summer 2023. The fellowship program will provide a comprehensive curriculum to train infectious disease providers to perform research, to care for patients with immunocompromising conditions, and to become leaders in the transplant community. This program is for fellows who, after completion of a general two-year infectious disease fellowship, are interested in an additional one-year training dedicated to the care of solid organ transplant and hematopoietic cell transplant recipients. The curriculum includes six months of clinical inpatient and outpatient training and six months of research. The creation of this fellowship is in response to an increasing demand for subspecialists with specific expertise in the care of immunocompromised hosts. The University of Minnesota is an academic leader in transplantation and one of the largest in the nation allowing for adequate exposure and exemplary experience to perform a large number of transplants, a pivotal component for training. The fellow will be a clinical instructor and candidates will interview for the position. The program will be financially supported through clinical revenue and supplemented by the Department of Medical Education Office and the Division Director of Infectious Diseases.

College of Education and Human Development (Twin Cities Campus)—requests approval to create a Master's of Education in Early Care and Education degree, **effective spring 2023**. This non-licensure M.Ed. provides students with a robust preparation for work in the field of early childhood education. The degree combines coursework in cutting-edge child development research with opportunities to engage in supervised applied work with young children and options to create individualized areas of study. The program will be a complement to the current M.Ed in Early Childhood Education, which leads to Minnesota state teaching credential, by providing a parallel program that allows students to access a M.Ed degree focused on the application of developmental science in careers with young children and families, while freeing students from the full requirements of attaining MN state teaching requirements for the full scope of the birth - grade 3 developmental period. A number of other early childhood professionals have inquired about advanced degrees in order to advance their careers through the acquisition of a master's degree, but have no interest in the state licensure credential. This program is ideal for students who want to be leaders (administrators, trainers, etc.) in the early childhood field outside of the Minnesota public school system. The program will be offered in a major face-to-face/classroom modality and makes use of existing courses and resources.

School of Nursing (Twin Cities Campus)—requests approval to create an Adult Gerontological Acute Care Nurse Practitioner (AGACNP) Post Graduate Certificate, effective summer 2023. This post-graduate certificate program offers students with a Doctor of Nursing Practice (DNP) degree in a clinical nursing specialty the opportunity to complete an additional specialized area of study. Completion of required coursework and practice hours provides eligibility to take the certification examination. There are two AGACNP programs in the state of Minnesota. Both of these programs are located in greater Minnesota (Duluth and Rochester) and serve the health systems in those areas. Hospitals in the Twin Cities have asked the School of Nursing to offer this program to meet a growing demand for this skill set. The resources needed to offer this post-graduate certificate specialty are largely faculty and preceptors. In August 2021, the School of Nursing hired a full-time faculty who is certified as a AGACNP. In addition, the key leaders at MHealth Fairview, Allina, and Health Partners have all provided strong support to offer the specialty and have committed their sites and preceptors. The 13- to 16-credit post-graduate certificate program will be adequately supported through tuition and fees generated by this new certificate program and be offered in a partially online delivery modality. The addition of this certificate would be one of nine specialty post-graduate certificates offered by the School of Nursing.

School of Public Health (Twin Cities Campus)—requests approval to create a Bachelor of Arts in Public Health degree, effective fall 2023. The Public Health B.A. is a robust undergraduate degree focused on increasing student knowledge of multiple fields that create effective public health strategies to prevent disease, promote health in communities, and eliminate inequalities. Graduates from this program will be able to describe the foundational principles of public health; understand basic methods for gathering and analyzing public health data; demonstrate understanding of how public health and social justice share common goals; and communicate in both community and professional settings. This junior-admitting program prepares graduates for entry-level positions in the public health workforce with employment at local health departments, not-for-profit agencies, healthcare systems, or standalone research entities. Students interested in pursuing clinical degrees in other health-related fields would also benefit from this program. In addition, students interested in pursuing a terminal degree (a Master of Public Health or doctoral degree) in public health should consider this degree program as an introduction to the knowledge paradigms used in the field. Undergraduate public health education is burgeoning across the nation; however, few of the institutions that offer this degree also have an accredited, top-10 ranked School of Public Health (SPH) graduate training program. This undergraduate degree would be the only one in the five-state region that is housed in a full School of Public Health. It is anticipated that this major would receive applicants from other institutions wishing to transfer into the program, including those from community colleges that offer two-year, preparatory degrees in public health. The SPH has already provided financial support to instructors to develop new undergraduate public health courses designated for this major. It is also committed to developing an undergraduate student services staff to manage admissions, orientation, and advising, and to collaborate with the existing career center staff to support student internship opportunities. These student services professionals will be incorporated into the SPH Student Services office, which is also augmented by career development, admissions for the graduate

program, and alumni relations. The degree will be offered in classroom (majority in-person) modality.

College of Science and Engineering (Twin Cities Campus)—requests approval to create an undergraduate minor in Management of Technology, effective spring 2023. The proposed minor provides a path for students to gain an understanding of business and innovation practices in emerging and global technology-driven companies. Management of Technology (MOT) educates students to serve as leaders in the innovation economy with the knowledge, skills, and confidence to develop, scale, and deliver breakthrough solutions to real-world problems. They will be prepared to do so within a range of organizational contexts. The MOT minor adds value to the primary engineering degree by helping students develop a leadership and innovation mindset. As with all proposals, other colleges on the Twin Cities campus were consulted and in this case, the Carlson School of Management in particular was supportive of the new minor. The minor will be offered in a primarily classroom (in-person) modality using existing courses and resources in the College of Science and Engineering's Technology Leadership Institute.

II. Request for Approval of Changed Academic Plans

College of Continuing and Professional Studies (Twin Cities Campus)—requests approval to discontinue the Integrated Food Systems Leadership (IFSL) subplan and add a Self-Design subplan in the Applied Sciences Leadership M.P.S. degree, effective spring 2023. The IFSL Post-Baccalaureate Certificate program was previously discontinued in September 2022 due to lack of enrollment, therefore this subplan track in the M.P.S. degree, which consisted of courses from the IFSL program, are no longer offered. There are no students impacted by this change. The Self-Design subplan track is for students who may be pursuing careers in fields beyond food, including sustainability, water, technology, etc. Students must take a total of 12 credits chosen in consultation with the Director of Graduate Studies for this track. Courses may be taken from multiple colleges.

College of Design (Twin Cities Campus)—requests approval to add a Product Design subplan in the Design Ph.D degree, effective fall 2023. The Product Design subplan is an interdisciplinary blending of elements from industrial design, engineering, business, and humanities. Coursework in the subplan will deepen theoretical and practical knowledge of product design, along with giving hands-on advanced product design experience.

College of Design (Twin Cities Campus)—requests approval to add three subplans in the Apparel Design B.S. degree, effective fall 2023. The addition of Fashion Design, Technical Design, and Fashion and Technical Design subplan tracks are part of a curricular reconfiguration for the degree program that will allow students more flexibility in course sequencing and latitude for electives in or out of the major.

College of Food, Agricultural and Natural Resource Sciences (Twin Cities Campus)—requests approval to discontinue all subplan options in the Fisheries, Wildlife, and Conservation Biology B.S. degree, effective spring 2023. The faculty voted to discontinue all subplans, which

include Conservation Biology, Fisheries and Aquatic Sciences, Wildlife, and Pre-Veterinary Medicine, in order to create a more streamlined major curriculum to provide students flexibility to study according to their interests. This is part of a curricular restructuring, and courses within these former subplans will continue to exist. Current students have the option to continue with the requirements that were in place when they enrolled in the major or transition to the new requirements.

College of Liberal Arts (Twin Cities Campus)—requests approval to change the name of the Hmong Studies subplan in the Asian and Middle Eastern Studies B.A. degree and undergraduate minor to Southeast Asian Studies, effective spring 2023.

College of Liberal Arts (Twin Cities Campus)—requests approval to change the name of the Classics B.A. and undergraduate minor to the Classical and Near Eastern Religions and Cultures B.A. and undergraduate minor, effective spring 2023.

College of Liberal Arts (Twin Cities Campus)—requests approval to change the name of the Classics Civilizations subplan in the Classics B.A., effective spring 2023. The Classical Civilizations subplan will change its name to the Classical and Near Eastern Religions and Culture subplan. The name change is part of a curricular restructure.

College of Liberal Arts (Twin Cities Campus)—requests approval to discontinue the Greek and Latin subplan and add the Modern Hebrew subplan in the Classics B.A., effective spring 2023. The subplan discontinuation is part of a curricular restructure.

College of Liberal Arts (Twin Cities Campus)—requests approval to change the name of the History/Literature subplan in the Theater Arts B.A. degree to History/Dramaturgy, effective spring 2023.

Humphrey School of Public Affairs (Twin Cities Campus)—requests approval to change the academic degree-granting college for the Master of Human Rights degree from the Graduate School to the Humphrey School of Public Affairs, effective fall 2023. The Master of Human Rights is an interdisciplinary professional master's degree with shared oversight and administration among the Humphrey School and the College of Liberal Arts. The Graduate School no longer serves as a degree-granting college and the Humphrey School will now serve in this capacity for the shared degree program.

School of Public Health (Twin Cities Campus)—requests approval to discontinue the Clinical Biological and Social Behavioral subplan options in the Epidemiology Ph.D. degree, effective fall 2023. This reflects a curricular reconfiguration at the recommendation of the specialized accrediting body for the Ph.D. program to provide curricular alternatives and options within the degree and not as separate subplan tracks. The curriculum will remain unchanged and coursework will continue to exist within the larger degree plan.

Morris Campus—requests approval to change the name of the Management B.A. and undergraduate minor to the Business and Management B.A. and undergraduate minor, effective fall 2023. The name change is part of a curricular restructuring. As part of the restructuring, there will be no required subplans and the **two existing subplans, Financial and Organizational Management, and Global Business, will be discontinued,** effective fall 2023.

Morris Campus—requests approval to add four new subplans to the Philosophy B.A. degree, effective fall 2023. The Philosophy, Standard; Philosophy, Computer and Data Studies; Philosophy, Legal Studies; and Philosophy, Politics and Environment are subplan tracks within the B.A. degree that will complement the philosophy curriculum major, which includes coursework in the history of philosophy, metaphysics and logic, epistemology, and values. Selection of one of the subplan tracks is required for this major.

III. Request for Approval of Discontinued Academic Plans

School of Dentistry (Twin Cities Campus)—requests approval to discontinue the Advanced Dental Therapy Post Baccalaureate Certificate, effective spring 2023. This certificate program was designed for dental therapists who received a baccalaureate or master's degree in dental therapy from the University of Minnesota School of Dentistry between the years 2011 and 2014. There are no eligible candidates for admission into this program moving forward and no students currently enrolled.

College of Liberal Arts (Twin Cities Campus)—requests approval to discontinue the Bachelor of Arts degree in Biblical Studies, effective spring 2023. The Biblical Studies B.A. degree is being discontinued due to lack of interest and low enrollment. Students with interest in Biblical Studies will be directed to consider the Classical and Near Eastern Religions and Cultures B.A.

College of Liberal Arts (Twin Cities Campus)—requests approval to discontinue the Technical Communications undergraduate certificate, effective spring 2023. The discontinuation is due to consistent low enrollment. There are currently no students enrolled in the certificate. Students with an interest in the Technical Communications will be directed to information about the Undergraduate Minor in Technical Writing and Communication.

University of Minnesota Board of Regents
Mission Fulfillment Committee
December 15, 2022

Consent Report: Request to Grant Tenure to New Hires

The Executive Vice President and Provost recommends six external hires for tenure and faculty rank as outlined below. The decision of the Board of Regents to confer tenure and rank for any individual faculty hire with tenure becomes effective on the first day of that faculty member's academic appointment at the University.

Kristinbruk Artinger, professor with tenure, Department of Diagnostic and Biological Sciences, School of Dentistry, Twin Cities campus
Professor Artinger's research focuses on the molecular biology and genetics of craniofacial development. She earned her Ph.D. in 1995 from the University of California, Irvine. Currently, she is a tenured professor at the University of Colorado, Denver.

Greta Bauer, professor with tenure, Department of Family Medicine and Community Health, Medical School, Twin Cities campus
Professor Bauer is an internationally recognized expert in transgender and non-binary health, with additional expertise in intersectionality and in the methodologies of research in these complex areas. She earned her Ph.D. from the University of Minnesota in 2003. Previously, Professor Bauer was a tenured professor at Western University.

Amanda Dalola, associate professor with tenure, Institute of Linguistics, College of Liberal Arts, Twin Cities campus
Professor Dalola's research is grounded in sociolinguistic theory and methods with a focus on ways of articulating and conceptually organizing sounds of speech. She earned her Ph.D. in 2014 from the University of Texas at Austin. Prior to joining the University of Minnesota, Professor Dalola was an associate professor at the University of South Carolina.

Kate Paesani, associate professor with tenure, Department of French and Italian, College of Liberal Arts, Twin Cities campus
Professor Paesani's research focuses on text-based curriculum and instruction, social justice in language education, and language teacher development, couched within the frameworks of multiliteracies pedagogy and sociocultural theory. She earned her Ph.D. from Indiana University in 2001. Previously, Professor Paesani was a tenured associate professor at Wayne State University.

Sunil Rao, professor with tenure, Division of Biostatistics, School of Public Health, Twin Cities campus
Professor Rao's research interests include the analysis of high-dimensional data, machine learning, precision medicine/precision public health, small area estimation, and health

disparities. He earned his Ph.D. in statistics from the University of Toronto in 1994. Currently, Professor Rao is a tenured professor at the University of Miami.

Wayne Soon, associate professor with tenure, Department of Surgery, Medical School, Twin Cities campus

Professor Soon's research focuses on the history of wartime medicine and society and the history of health insurance and medical practices in East Asia. He earned his Ph.D. in 2014 from Princeton University. Professor Soon joins the University of Minnesota from Vassar College where he is a tenured associate professor.

University of Minnesota

Human Fetal Tissue Research

Report to the Minnesota Legislature 2023

University of Minnesota Human Fetal Tissue Research

Report of the Minnesota Legislature

As required by Minnesota Statute 137.47 which went into effect on July 1, 2017.

Submitted by:

Board of Regents

Prepared by:

The report was prepared by staff in the Office of Academic Clinical Affairs with the assistance of staff in the Office of the Vice President for Research at the University of Minnesota.

Report Preparation Costs:

Per the requirements set forth in Minnesota Statue 3.197, the cost to prepare this report was $300.

Purpose:

During the 2017 Minnesota legislative session, a law was passed requiring the Board of Regents of the University of Minnesota to submit an annual report to the chairs and ranking minority members of the higher education policy and finance, health and human services, and human services policy and finance committees. The report is required to disclose specific information regarding university research projects which access donated human fetal tissue (reporting requirements noted below).

Background:

In February 2016, the University of Minnesota instituted new requirements for researchers accessing donated human fetal tissue. The Office of the Vice President of Research and the Vice President of the Academic Health Center (now the Office of Academic Clinical Affairs) administered oversight of human fetal tissue research jointly.

Per the requirements, researchers requesting access to human fetal tissue were required to apply for permission to conduct research using human fetal tissue from the Fetal Tissue Research Committee (FTR) prior to commencing their studies. Approval from the Institutional Review Board (IRB) continued to be required if the research project met the criteria established under federal law.

The Anatomy Bequest Program, a university anatomical donation program, became responsible for the acquisition, tracking and final disposition of the tissue.

In January 2018, the University of Minnesota updated the fetal tissue policies to reflect the new requirements associated with the enactment of Minnesota Statute 137.47. The revisions also broadened the scope of the policies to include educational uses, clarified the responsibilities of researchers, delineated newly required duties among the administrative units, and provided an opportunity to make housekeeping changes.

Report Requirements:

Per the requirements of Minnesota Statute 137.47, the following information must be included in this report: all fetal tissue research proposals submitted to the FTR or IRB, including any written narrative required under 137.47, subd.2; whether the research proposal involved aborted fetal tissue; action by the FTR or IRB on all fetal tissue research proposals, including whether the proposal was approved by the FTR or IRB; and a list of all new or ongoing fetal tissue research projects at the university. The list must include the date the project was approved by the FTR or IRB, the source of funding for the project, the goal or purpose of the project, whether the fetal tissue used is aborted fetal tissue or non-aborted fetal tissue, the source of the fetal tissue used, references to any publicly available information about the project, and references to any publications resulting from the project.

Per Minnesota State Statute 137.47, all required disclosures relating to University of Minnesota research projects which access donated human fetal tissue can be referenced below.

New Fetal Tissue Research Requests Submitted to the Fetal Tissue Research Committee and/or the Institutional Review Board:

There were no new research requests involving access to donated human fetal tissue submitted to the FTR or IRB in 2022.

Previously Reported Research Update:

A research request which was approved by the FTR in 2020 and disclosed in the University's 2021 and 2022 legislative reports, titled *Understanding Developmental Origins of Human Skull Base Tumors* (FTR Application Number 2002-37902B), has not been funded and has not acquired human fetal tissue. The researcher has confirmed that they will not be moving forward with this project.

All other previously reported research projects were either never initiated or were discontinued prior to 2022.

BOARD OF REGENTS
DOCKET ITEM SUMMARY

Mission Fulfillment **December 15, 2022**

AGENDA ITEM: Information Items

☐ **Review** ☐ **Review + Action** ☐ **Action** ☒ **Discussion**

☐ *This is a report required by Board policy.*

PRESENTERS: Rachel Croson, Executive Vice President and Provost

PURPOSE & KEY POINTS

University, Student, Faculty, and Staff Activities and Awards

A report of select activities among faculty, staff, and students at the local, regional, national, and global level in the areas of teaching, research, outreach, and other academic achievements at the University is included in the docket materials.

University of Minnesota Board of Regents
Mission Fulfillment Committee
December 15, 2022

Information Report: Report of University Faculty, Staff, and Student Activities and Awards

University Highlights

The University of Minnesota is partnering with the State of Minnesota to invest $34.5 million in venture capital programs. The University will develop the application process, stand up an office, and facilitate a selection process that ensures fair and open access to Minnesota businesses.

The School of Nursing received a three-year, $1.5-million grant from the Health Resources and Services Administration to increase the number of doctorally prepared American Indian/Alaska Native nurses.

The Center for Public Health Systems in the School of Public Health has entered into a $4.7-million cooperative agreement from the Health Resources and Services Administration and the Centers for Disease Control and Prevention to address the need for increased workforce capacity for emergencies. The collaboration is called the Consortium for Workforce Research in Public Health.

The University has been recognized as an Achieve Twin Cities 2022 Community Partner. The University was recognized for providing 27 paid internships for Minneapolis youth through Step Up, which connects young people with valuable workplace skills, mentors, and professional support and networks.

University of Minnesota researchers have been awarded $21 million by the National Institutes of Health for a three-year project that will bring together eight institutions for research on human vagus nerve stimulation.

The School of Public Health has received a $2.5 million grant from the National Institutes of Health to address sexual and gender minority policies and to provide training for the long-term services and support staff.

The College of Pharmacy has received a $750,000 grant over three years from the McKesson Foundation to support the launch of two initiatives designed to better support minority doctor of pharmacy students and to enhance the diversity of the pharmacy workforce.

The University of Minnesota Crookston has been named an Innovation & Economic Prosperity University by the Association of Public and Land-grant Universities. The national designation acknowledges public research universities working with public- and private-sector partners in their states and regions to support economic development.

The School of Nursing received the Health Professions Higher Education Excellence in Diversity (HEED) Award from *INSIGHT Into Diversity Magazine* for the seventh consecutive year. The school was one of only 16 nursing schools to receive the HEED Award, which honors U.S. nursing, public health, medical, dental,

pharmacy, osteopathic, veterinary, and other health schools and centers that demonstrate an outstanding commitment to diversity and inclusion.

U of M startup BKB Floral Foam won first place at the 2022 MN Cup startup competition, beating out 90 semifinalists and receiving $50,000 in funding. The startup produces compostable floral foams as a sustainable alternative to traditional foams.

Faculty and Staff Awards and Activities

Steven Ruggles, regents professor in the College of Liberal Arts, has been honored by the John D. and Catherine T. MacArthur Foundation as one of this year's MacArthur Fellows. This fellowship is regarded as one of the nation's most prestigious awards for intellectual and artistic achievement.

Nidhi Kohli, John P. Yackel Professor of Educational Measurement and Assessment in the Department of Educational Psychology's quantitative methods in education program; Simon Rosser, professor in the School of Public Health; and Tetyana Shippee, associate professor in School of Public Health's Division of Health Policy and Management, have received a $2.5M+ National Institutes of Health (NIH) grant for their project "Training the Long-Term Services and Supports Dementia Care Workforce in Provision of Care to Sexual and Gender Minority Residents."

John Robert Warren, sociologist from the University's Institute for Social Research and Data Innovation, is one of the experts from eight universities that will be involved in an upcoming study of Alzheimer's Disease and related dementias (ADRD) with a $50.3 million grant to better understand how education and other early life factors impact the likelihood of developing Alzheimer's and related dementias.

Lars Hansen, associate professor in the College of Science and Engineering, is one of only five scientists nationwide to win a 2022 American Geophysical Union James B. Macelwane Medal. This award honors the recipients' contributions to the earth and space science fields based on their research, impact, and creativity as well as service, outreach, and diversity.

Matthew Clark, associate professor in the College of Food, Agricultural and Natural Resource Sciences, is leading a team made up of researchers from 13 different institutions across the country, with a $10 million grant awarded by the U.S. Department of Agriculture to follow up on their work with VitisGen2, a collaborative project focused on cultivating disease-resistant grapes that can be grown sustainably.

Tiffany Wolf, assistant professor in the College of Veterinary Medicine, and researchers have received a $732,000 grant from the Minnesota Environment and Natural Resources Trust Fund to study chronic wasting disease, a fatal and highly contagious neurological disease that affects deer.

Marti DeLiema, assistant professor in the School of Social Work, will serve as Principal Investigator on a study titled "Assessing the implementation and outcomes of temporary account holds on elder financial exploitation in Minnesota," which was awarded a two-year federal grant of $200,000 by the U.S. Department of Health and Human Services' Administration for Community Living.

Cara Santelli, associate professor in the College of Science and Engineering, received the 2022 "Post Tenure" Outstanding Geobiologist Award from the Geobiology and Geomicrobiology Division of the Geologic Society of America.

Joseph Gaugler, professor in the School of Public Health, has been named the new editor-in-chief of The Gerontologist by the Gerontological Society of America, effective January 2023.

Lois Hendrickson, associate librarian, and Emily Beck, assistant librarian, have been awarded a Minnesota Historical & Cultural Heritage grant in the amount of $103,162 from the Minnesota Historical Society. They will serve as co-PIs on a project titled "Access to Historical Healthcare Artifacts," complete catalog records, enrich descriptions, and create reference photos of 4,000 medical instruments to document the history of medical practice and experiences of health care in Minnesota from c.1850-1950.

Kathryn Schreiner, associate professor at the University of Minnesota Duluth, has been named a fellow in the fourth cohort of the IAspire Leadership Academy. The academy is part of the Aspire Alliance's Institutional Change Initiative led by the APLU and the University of Georgia.