



Mission Fulfillment Committee

December 2020

December 10, 2020

2:00 p.m.

Videoconference

MIS - DEC 2020

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BOARD OF REGENTS

DOCKET ITEM SUMMARY

Mission Fulfillment

December 10, 2020

AGENDA ITEM: Annual Report on the Status of University Research & Commercialization of Technology

Review

Review + Action

Action

Discussion

This is a report required by Board policy.

PRESENTERS: Christopher J. Cramer, Vice President for Research
Elizabeth Borer, Professor, Ecology, Evolution and Behavior, College of Biological Sciences, Twin Cities campus
Michael D. Lackey, Distinguished McKnight University Professor, Humanities Division, Morris campus

PURPOSE & KEY POINTS

The purpose of this item is delivery and discussion of the Annual Report on the Status of University Research & Commercialization of Technology.

Key topics of the report include:

- Systemwide Strategic Plan and research
- UMN research statistics and outcomes
- National and global comparative analysis
- Technology commercialization & economic innovation
- Incentives for research & MNtersections
- #ResearchIsTeaching

The report also addresses a broad set of strategic priorities that align with the Systemwide Strategic Plan, MPact 2025, 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.

BACKGROUND INFORMATION

The following Board policies require the president or delegate to provide an annual report on the status of University research and commercialization of intellectual property: *Commercialization of Intellectual Property Rights* and *Submitting and Accepting Sponsored Projects*.

2020

Annual Report on the Status of University Research and Commercialization of Intellectual Property



Christopher J. Cramer
Vice President for Research
12/10/2020

Each year the Vice President for Research provides the Annual Report on the Status of University Research and Commercialization of Intellectual Property for the Board of Regents, summarizing the University of Minnesota's research metrics for the past fiscal year, documenting the trends in research productivity, scholarship, and commercialization of intellectual property as well as benchmarking the University's performance and ranking among its peer group. In addition, the Vice President reports progress on a broad set of strategic priorities and national trends.

The FY2020 annual report includes:

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Message from the Vice President for Research Christopher J. Cramer

The University of Minnesota continues steadily to grow its research, technology commercialization, and corporate engagement activities, and continues also to rank in the top 10 of public research institutions (as measured by the US National Science Foundation based on annual research expenditures). Our faculty, students, and staff are breaking new ground in their scholarly and creative contributions to the arts, humanities, sciences, engineering, medicine, agriculture, law, business, and other fields as well, and in many instances they are tackling problems that are inspired by Minnesota, and discovering solutions that have global impact. As the firm Tripp Umbach noted in its March 2018 analysis, our research activities also have an *economic impact*; they delivered \$1.2 billion in FY2017, and given research growth rates of more than 7% per year since then, we may estimate that number is roughly \$1.5 billion today. University research continues to be an engine that drives economic growth in every county of the state.

Our achievements in the last fiscal year are a tribute to the ingenuity and resilience of our researchers. In a year during which we placed most of our research operations into temporary hibernation in response to COVID-19, **our FY2020 research awards exceeded those of FY2019**, a truly remarkable accomplishment.

Indeed, **we have an extraordinarily successful research record**, consistently ranking in the top 10 of public research institutions in terms of research awards and expenditures. We can build on having just passed \$1 billion in annual expenditures if we continue to invest in the *people* and *infrastructure* that contribute to our excellence. Thanks to recent strategic planning exercises at a variety of levels, we have clear goals and priorities to guide such investments and are finalizing metrics with which to measure them. **We must ensure that we continue to devote the resources necessary to sustain and enhance the research mission** (and we must be certain that we robustly advertise the benefits of this mission to stakeholders far and wide).

As noted above, **our research has global impact, but it especially addresses the needs of the state of Minnesota**, because we have (i) partnered with the state repeatedly to identify key areas of mutual research interest and (ii) responsibly and transparently stewarded state investments to achieve outcomes. Importantly, as the *only* major research university in the state, **we have engaged generations of students in our research mission**, and by so doing, we have injected into Minnesota's workforce individuals uniquely trained in critical thinking and problem solving, with many rising to high levels of leadership in civic, public, and private spheres, and many also successfully engaging in entrepreneurial activities that have advanced the state's economy.

Increasingly, the public is interested in seeing that its investments in research have a tangible impact on people's lives. While we must not lose sight of the foundational import of basic research, the results of which form the basis for translational activities, **we must provide appropriate support for applied and translational research**, and we must sustain an ecosystem where researchers with entrepreneurial interests can thrive, and **where productive engagement between the University and business and industry flourishes**.

Guided by its values of Partnership, Discovery, and Integrity, the Office of the Vice President for Research is privileged to support University researchers as they pursue excellence in their scholarly endeavors with an unwavering commitment to research ethics. The next year will see our continued dedication to this effort, as we align our resources to best advance the new systemwide strategic plan.

Systemwide Strategic Plan — Research

The research and discovery mission of the University provides for the generation and preservation of knowledge, understanding, and artistry through scholarly and creative activities that benefit students, researchers, and communities across the state, the nation, and the world. In addition, we remain ever cognizant of the degree to which the *research and discovery* mission is tightly coupled to the *teaching* and *public service* missions of the institution as well. It is the *synergies* across our tripartite mission that make us one of the top public research institutions in the world.

As part of the Systemwide Strategic Plan (SWSP), MPact 2025, 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. As the Office of the Vice President for Research assesses how best to support the goals and action items of the SWSP, we internally prioritize our efforts according to the degree that they:

- Enhance research excellence
- Promote and sustain research integrity
- Accelerate the transfer of knowledge for the public good

Within the context of our strategic priority to enhance research excellence, OVPR has gone further to define three tactical objectives. These objectives, chosen especially to support the SWSP MNtersection areas, build on existing research strengths, target emerging support opportunities, and recognize criticality to key internal and external stakeholders, involve growing the University’s research efforts in the areas of

- Clinical investigations and studies
- Sustainability in the face of global climate change
- Data science and informatics

The first two are effectively the research components of MNtersections Goals 1 and 2, while the third is a more cross-cutting commitment to infrastructure that is critically important to progress on MNtersections Goal 3 (advancing natural resources and agro-food systems to elevate human security and potential) but has broader applicability as well.

We assess progress on these priorities using various metrics discussed throughout this report,

most of which are under present consideration by the Board as it finalizes its work on the SWSP. In the case of **research excellence**, we employ institutional and disciplinary rankings, external awards and recognitions, and bibliometric measures, in several instances chosen to permit consistent comparison with our peers.

To ensure **research integrity**, we work closely with external accrediting bodies, federal agencies, and internal experts to ensure University research remains in compliance with all relevant ethical and regulatory standards (and, indeed, we seek to be at the forefront of defining optimal ethical practice in the face of emerging challenges and opportunities). To operationalize these goals, we craft an internal control structure that ensures good fiscal stewardship (Commitment 5 of the SWSP) while minimizing administrative burden; we seek to reduce administrative burden for our researchers so that they are free to engage in the advancement of scholarship and discovery.

Finally, mindful of our responsibility to **translate our discoveries to the public** as quickly as possible in order to advance the common weal, we work with researchers to facilitate the dissemination and development of their findings, which in some instances may include pursuing commercialization of inventions and technologies. This latter activity has the potential to generate income for OVPR, as well as the academic unit(s) of the inventor(s), although annual “profits” are not guaranteed, and indeed are extremely volatile in magnitude when accrued. Seeking to increase alternative sources of revenue is another component of Commitment 5 of the SWSP.

Research Statistics: Fiscal Year 2020

Analysis of Research Awards

University of Minnesota faculty and staff competed successfully for **\$876 million** in externally sponsored research awards in FY2020, up **1.5% from FY2019**. This \$13 million increase follows a sustained pattern of average growth since FY2012, and this year's total is a record level of awards in current dollars for the University. The average total amount received per research award also continues to increase from \$164,100 in FY2019 to \$167,800 per award in FY2020, which reflects the University's increasing number of higher-dollar awards. In FY2020, the University received 120 awards greater than \$1 million and these awards accounted for over one-third of this year's \$876 million total.

The University receives the majority of its research funding (61%) directly from federal sources and the remainder from a variety of non-federal entities. In FY2020, federal awards totaled \$535 million, which was a slight decrease compared to the prior year (\$3 million; 0.5%). Non-federal awards totaled \$341 million, which was an increase compared to the prior year (\$15 million; 4.7%) sufficient to offset the slight decline in federal funding (Table 1). The State of Minnesota was a particular contributor to this uptick in non-federal funding, driven in part by a typical biennial fluctuation and in part by investments in efforts undertaken by the University to combat the COVID-19 pandemic.

Table 1: Awards by Major Source (FY2013-2020)

| | 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 |

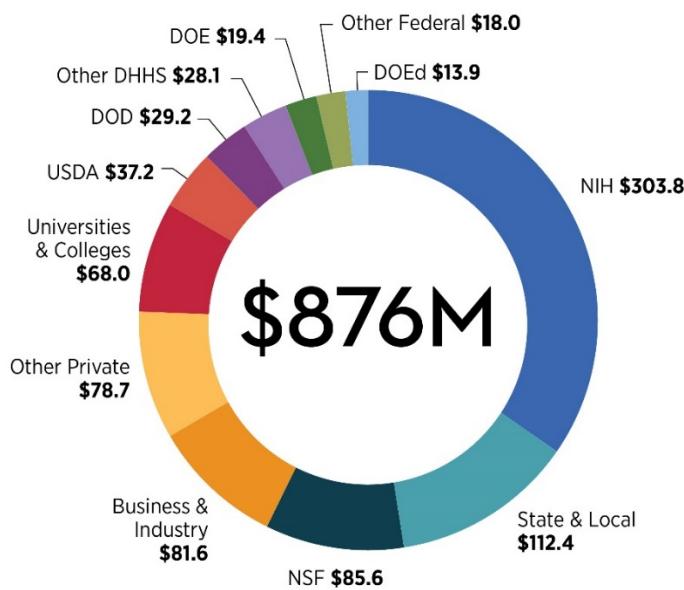
Dollar amounts in millions
Office of the Vice President for Research Data Services

Research awards from the National Institutes of Health (NIH), the University's largest single federal funding source, totaled \$303.8 million (Figure 1). This amount represents a slight decrease

(\$9 million; 2.9%) compared to the previous year. However, considering the three-year trend from FY2018 to FY2020, NIH research awards have increased from \$265.5 million to \$303.8 million (14.4%).

The National Science Foundation (NSF) is the second largest federal sponsor of University research, and University researchers competed successfully for \$85.6 million in FY2020, an \$8 million (10.2%) decrease compared to the previous year. The total number of awards received from NSF stayed flat in FY2020 compared to FY2019. Considering a three-year timeline, NSF awards to the University of Minnesota have increased from \$80.5 million in FY2018 to \$85.6 million in FY2020 (6%).

Figure 1: Awards by Source (FY2020)



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

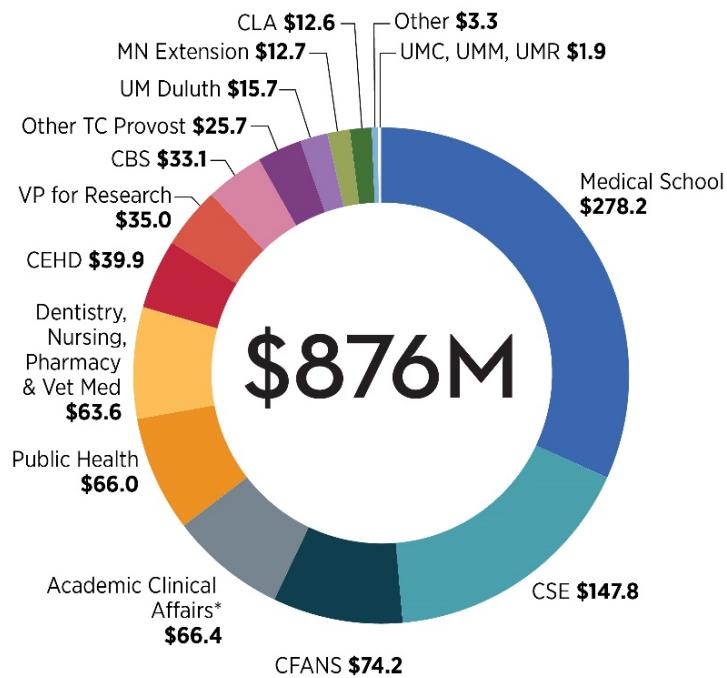
Business and industry (B&I) funding was up \$1 million (1.4%) in FY2020, increasing to \$81.6 million from \$80.4 million last year. The FY2020 funding level was consistent with those from the last several years (Table 1), a strong accomplishment given the negative effect of the pandemic on B&I spending in the final quarter of the fiscal year. The total number of B&I awards received by the University increased 11.1% to 1,812 this year compared with 1,631 in FY2019. Considering the last three years, total B&I award funding to the University of Minnesota has increased from \$64.1 million in FY2018 to \$81.6 million in FY2020 (27%).

State of Minnesota and Local Governments provided \$112.4 million in funding in FY2020, a significant (41%) increase from the year prior. The increase was primarily due to the State of

Minnesota's: 1) historical pattern of awarding more funding in the first year (FY2020) of each biennial budget cycle and 2) an \$18 million grant to provide rapid widespread coronavirus testing for Minnesota residents in collaboration with the Mayo Clinic.

Figure 2 illustrates how the University's \$876 million of externally 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 \$6.9 million (10.2%), the College of Biological Sciences (CBS), up \$3.0 million (10.0%), and the College of Pharmacy, up \$4.6 million (23.9%).

Figure 2: Awards by College & Campus (FY2020)

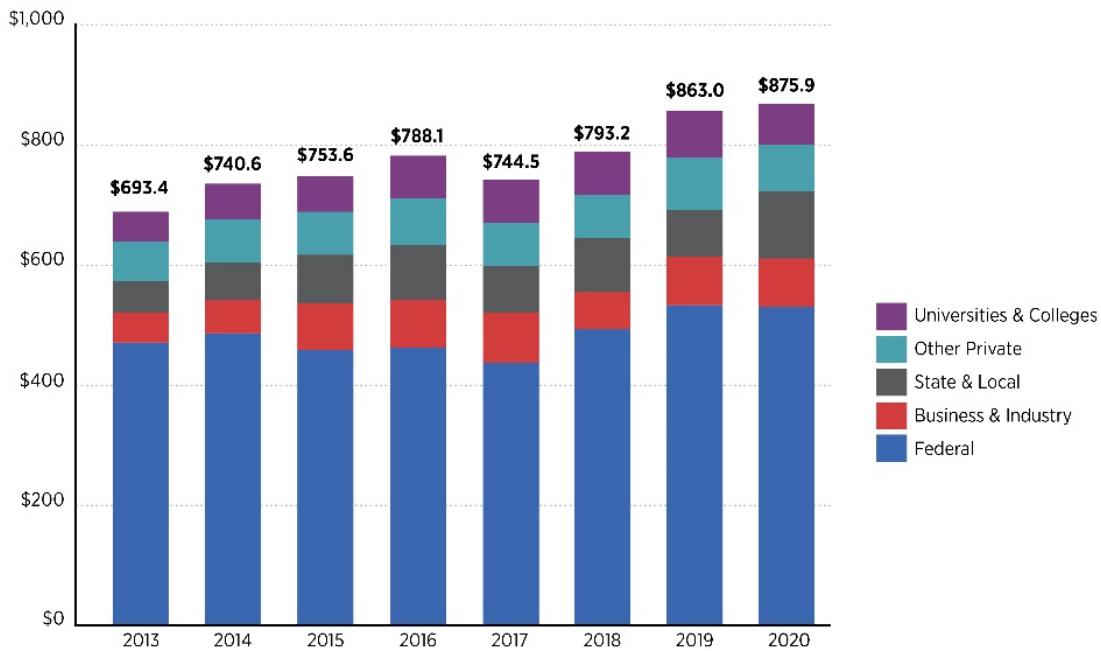


*Dollar amounts in millions
Office of the Vice President for Research Data Services*

Year-to-Year Trends

Figure 3 and Table 1 summarize the year-to-year distribution trend of the University's externally sponsored research awards for the years FY2013 to FY2020. As is common with award funding, there is considerable fluctuation that can occur between years caused most commonly by delays in federal funding cycle distributions and large awards that fund multiple years. **Over the eight year period, the University has seen award increases from all categories of grant sponsors.**

Figure 3: Awards by Major Source (FY2013-2020)



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

Included in this continued growth trajectory of award funding is another trend—an increasing number of higher-dollar awards (>\$1 million) received by the University. This trend, mentioned previously, is also reflected in the year-to-year increases seen in the University's average dollar amount received per award, which was \$167,800 in FY2020. Table 2 shows the growth in higher-dollar award activity coming to the University.

Table 2: Award Composition (FY2013-2020)

| FY | # of Awards | # of Awards <\$1M | # of Awards \$1M+ |
|------|-------------|-------------------|-------------------|
| 2013 | 4363 | 4276 | 87 |
| 2014 | 4700 | 4614 | 86 |
| 2015 | 4574 | 4485 | 89 |
| 2016 | 4663 | 4565 | 98 |
| 2017 | 4847 | 4763 | 84 |
| 2018 | 5031 | 4929 | 102 |
| 2019 | 5260 | 5144 | 116 |
| 2020 | 5220 | 5100 | 120 |

Office of the Vice President for Research Data Services

UMN Research Adapts to COVID-19

Many University of Minnesota researchers refocused their effort to address new, pandemic-related research projects in the spring of 2020. These ranged from determining the circulation patterns for indoor air particles, to monitoring drinking (and waste) water for the virus, to understanding the effects of pandemic stay-at-home measures on domestic violence. Many, such as those already studying coronaviruses, genomics, or filtration science, for example, were able to shift their existing work quickly to focus on the SARS-CoV-2 virus and COVID-19 disease, to terrific effect.

University researchers received 27 sponsored research awards related to COVID-19 in FY2020, including an \$18 million grant from the State of Minnesota to provide rapid widespread coronavirus testing for Minnesota residents in collaboration with the Mayo Clinic, a \$4.2 million grant from the National Institutes of Health to coordinate UK and EU clinical trials for treating COVID-19 with a combination of anti-inflammatory and anti-viral medications, and a grant from NIH that helped University researchers identify at an early stage how SARS-CoV-2 enters cells.

National and Global Analysis: R&D Peer Comparison

Analysis of Research Expenditures

According to the 2019 National Science Foundation Higher Education Research and Development (NSF HERD) Survey, the University maintained its top 10 status among public research universities, posting over \$1 billion in research expenditures in FY2019 (Table 3), a 6% increase over FY2018 (these data are pending official release by NSF in January 2021). **This falls in between our proposed 5% goal and 7% stretch goal for future growth in research expenditures currently under consideration by the Board for incorporation into the SWSP.**

Owing to survey reporting requirements imposed by NSF, the University's \$1.01 billion reported in Table 3 represents only research expenditures for the Twin Cities campus. When all UMN campuses are reported together, total systemwide R&D expenditures are 3% larger, at \$1.04 billion.

The NSF HERD survey is the primary source of comparative information on R&D expenditures at US colleges and universities. It is completed by over 900 universities and colleges every year, producing the most accurate statistics on US higher education R&D spending. 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 and nationally accepted basis for comparison.

Table 3: Top 20 US Public Research Universities

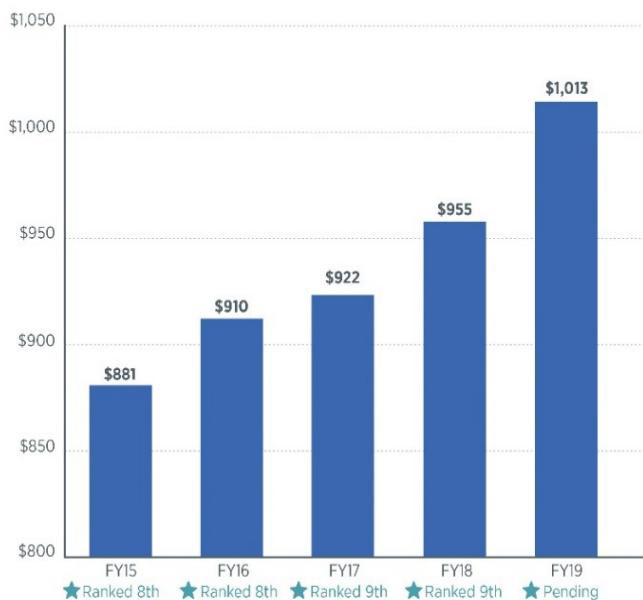
| | NSF / HERD 2019* | | CMUP 2019** | ARWU (Shanghai) 2020 | | |
|--------------------------------------|------------------|--------------------|---------------|----------------------|-----------|-----------|
| | Public | Expenditures | Public | World | US | US Public |
| Michigan | 1 | \$1,675,805 | 9 of 9 | 22 | 17 | 6 |
| UC San Francisco | 2 | \$1,595,098 | 5 of 8 | 21 | 16 | 5 |
| Washington | 3 | \$1,425,601 | 8 of 9 | 16 | 13 | 3 |
| UC San Diego | 4 | \$1,353,763 | 9 of 9 | 18 | 14 | 4 |
| UCLA | 5 | \$1,306,376 | 9 of 9 | 13 | 11 | 2 |
| Wisconsin | 6 | \$1,297,331 | 9 of 9 | 32 | 23 | 8 |
| North Carolina | 7 | \$1,153,773 | 9 of 9 | 30 | 21-22 | 7 |
| Maryland | 8 | \$1,096,600 | 5 of 9 | 53 | 31 | 15 |
| Pittsburgh | 9 | \$1,080,951 | 6 of 9 | 96 | 41 | 21 |
| MINNESOTA - TWIN CITIES | 10 | \$1,013,112 | 9 of 9 | 40 | 24 | 9 |
| Univ Texas M.D. Anderson Cancer Ctr. | 11 | \$969,496 | 2 of 8 | 67 | 34 | 17 |
| Georgia Tech | 12 | \$960,167 | 7 of 9 | 101-150 | 42-56 | 22-37 |
| Texas A&M | 13 | \$952,156 | 7 of 9 | 151-200 | 57-65 | 38-47 |
| Penn State | 14 | \$949,679 | 6 of 9 | 101-150 | 42-56 | 22-37 |
| Ohio State | 15 | \$929,250 | 9 of 9 | 101-150 | 42-56 | 22-37 |
| Florida | 16 | \$928,639 | 8 of 9 | 88 | 37 | 20 |
| UC Davis | 17 | \$804,282 | 5 of 9 | 91 | 39 | 21 |
| UC Berkeley | 18 | \$802,931 | 9 of 9 | 5 | 4 | 1 |
| Arizona | 19 | \$734,270 | 5 of 9 | 01-150 | 42-56 | 22-37 |
| Michigan State | 20 | \$725,708 | 6 of 9 | 101-150 | 42-56 | 22-37 |

*Due to delays from COVID-19, the 2019 NSF/Higher Ed R&D (HERD) official data release is expected January 2021.

**Center for Measuring University Performance (CMUP) data for FY2020 is not yet available. This table represents the latest available data (FY2019).

NSF's HERD data make clear that the University remains among an elite group of US public research universities ranking in the top 2% of colleges and universities reporting in the survey. Over the last five years, the University has experienced continuous and steady growth in R&D activity and impact (see Figure 4).

Figure 4: Five Year R&D Expenditures Trend (FY2015-2019)



Dollar amounts in millions

National Science Foundation's HERD Survey

*Ranking among US public research institutions

Table 3 also reports two other widely accepted and cited ranking systems, that of the Center for Measuring University Performance (CMUP) and that of the Academic Ranking of World Universities (ARWU). These systems rely 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. Both of these additional measures rank the University as highly competitive.

Technology Commercialization and Economic Innovation

As a comprehensive land grant research university, 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) facilitates the transfer of University research to licensee companies for the development of new products and services that benefit the public good, foster economic growth, and generate revenue to support the University's mission. Tech Comm collaborates with UMN faculty to protect and patent their intellectual property, and through its Venture Center, provides a range of support services for entrepreneurial researchers interested in forming startup companies. Tech Comm's work builds positive relationships with the private sector, deepening the

University's public impact and fostering entrepreneurship within the academy.

Tech Comm Highlights

The University's efforts to commercialize technology maintained a strong performance in FY2020, in spite of the disruptions caused by the pandemic. Indeed, the University launched 19 startup companies in FY2020, tied with FY2019's record number, and it also signed onto the AUTM COVID-19 Licensing Guidelines designed to get into the marketplace as quickly as possible UMN innovations capable of fighting the virus and the pandemic.

The University's technology transfer work has been recognized for its excellence in national and global performance, including being ranked:

- 22nd globally and 2nd among Big Ten public institutions ([2019 World's Most Innovative Universities](#))
- 8th in the US for "innovation impact" and 2nd among Big Ten Public Institutions ([George W Bush Institute](#), 2020)
- 17th globally for Universities Granted US Utility Patents and 4th among Big Ten public institutions ([National Academy of Inventors](#), 2019)
- 6th among all US public research institutions and 2nd in the Big Ten ([Milken Institute's "Best Universities for Technology Transfer" report](#), 2017)

Table 4: Technology Commercialization Data (FY2016-2020)

| | 2016 | 2017 | 2018 | 2019 | 2020 |
|--|--------|--------|--------|--------|--------|
| LICENSES & REVENUE | | | | | |
| New Licenses | 194 | 213 | 230 | 223 | 235 |
| Current Revenue Generating Agreements | 528 | 545 | 575 | 571 | 601 |
| STARTUPS | | | | | |
| Startup Companies Formed | 17 | 18 | 13 | 19 | 19 |
| INVENTIONS & PATENTS | | | | | |
| Invention Disclosures | 402 | 406 | 400 | 391 | 397 |
| New Patent Filings | 202 | 232 | 179 | 163 | 152 |
| New Patent Filing Rate* | 50% | 57% | 45% | 42% | 38% |
| Issued Patents (US and Foreign) | 168 | 147 | 186 | 187 | 182 |
| MN-IP | | | | | |
| MN-IP Research Agreements | 81 | 72 | 86 | 103 | 73 |
| Companies w/ MN-IP Research Agreements | 62 | 51 | 58 | 77 | 69 |
| Sponsored Research Commitments | \$12.2 | \$20.9 | \$21.3 | \$22.5 | \$27.9 |

*New Patent Filing Rate is the number of new patents filed during the fiscal year divided by the number of new disclosures in the same time period

Dollar amounts in millions

Technology Commercialization, Wellspring Sophia; U of M Enterprise Financial System

Technology Licensing

Table 4 shows FY2020 increases in key categories, including current revenue generating agreements, which increased by 5% (this and all subsequent comparisons are made relative to FY2019) and new licenses which increased by 5.4%. Under the MN-IP umbrella, the dollar level of all sponsored research commitments increased by 24%, although the number of research agreements and the number of companies having research agreements were down around 29% and 10% respectively. Tech Comm plans to explore these shifts as part of the University's ongoing corporate engagement efforts. Other licensing categories remained steady, including startups (same as last year), invention disclosures (up slightly), patent filing rate (down slightly), and issued patents (down slightly).

Venture Center

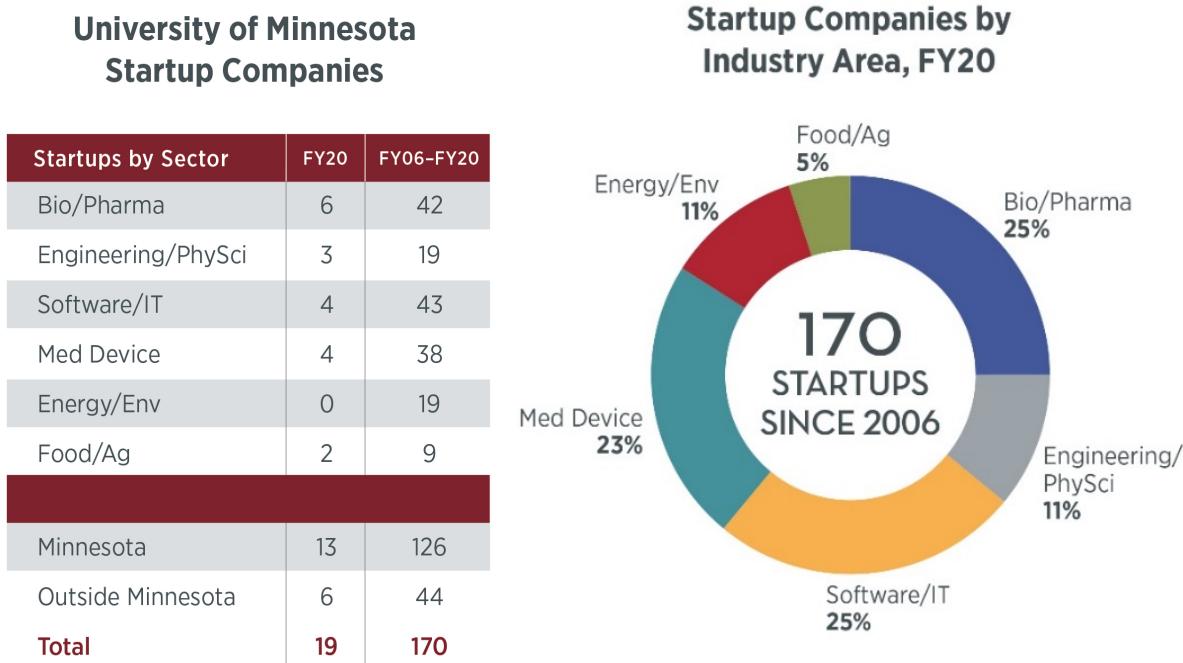
Over the last year, Tech Comm's Venture Center launched another 19 startup companies based on discoveries and inventions by University researchers. The new startups, which derive from inventions spanning many sectors (Table 5), contribute to the economy and the public good, both in Minnesota and across the globe.

The University has spun out 170 companies since FY2006, with operations across a diversity of fields and with 74% of them based in Minnesota. University startups had eight successful exits between 2017 and 2019, demonstrating the ability of UMN technologies to quickly attract the attention of established companies who see the potential for further development and broader marketing.

Other startup-related high points include:

- UMN's Discovery Launchpad, a startup business incubator, had 18 participants, with 12 completing the program in FY2020
- Tech Comm's Venture Center was named a "Community Builder" by the 2020 [Inno On Fire awards](#)
- Discovery Capital, a program to help provide matching investment capital to UMN companies, evaluated 14 opportunities in FY20, investing a total of \$1.2 million in six startups
- Three UMN startups received Minnesota Tekne Awards: Startup Division - Anatomic; AgTech Division - Calyxt; and Special SBIR Honoree – NovoClade

Table 5: Supporting Minnesota's Entrepreneurial Ecosystem



Launch Minnesota

Launch Minnesota is a new initiative spearheaded by Minnesota's Department of Employment and Economic Development (DEED) to help grow Minnesota's startup ecosystem. UMN Tech Comm has been a partner and adviser to DEED's initiative, hosting DEED officials at its own events, publicizing Launch Minnesota's programs, and having Executive Director Rick Huebsch serve on Launch Minnesota's Advisory Board. UMN's MIN-Corps program serves as the statewide technology entrepreneurship education partner for Launch Minnesota.

New Applied Venture Management Program – a Corporate Partnership

In FY2020, Tech Comm's Venture Center piloted a new program to mentor early-career women in entrepreneurship. The Applied Venture Management Program selected five 3M employees with diverse business experience to participate in a series of workshops and experiential programs designed to help them build entrepreneurial skills, including startup financing, pitching, and business consulting. Despite the challenges of the pandemic, the eight-month program proved highly successful and plans are now underway to recruit a cohort for 2021, partnering with 3M and other companies.

MIN-Corps

MIN-Corps is the University's site for the National Innovation Corps (I-Corps), a National Science Foundation initiative that prepares scientists and engineers to extend their focus beyond the university laboratory and accelerates the economic and societal benefits of research projects through commercialization. Some 984 unique individuals participated in MIN-Corps programs throughout the year. Since 2017, MIN-Corps has focused on adding women to its innovation team pipeline, with a Women Innovators Conference and outreach through a female leadership development program (Artemesia) and the UMN Center for Women in Medicine and Science.

MIN-Corps is an integral part of the innovation ecosystem, and partners with multiple units across the U, including the Tech Comm Venture Center, the Holmes Center for Entrepreneurship in the Carlson School of Management, and many colleges and departments. Some other recent indicators of success were that:

- Approximately 30% of the technologies in the Tech Comm Venture Center startup pipeline participated in MIN-Corps programs, consistent with the prior year
- UMN successfully nominated seven teams to the national I-Corps Teams cohorts in FY 2020 (total of 24 accepted since 2014)
- MIN-Corps attracted 292 registrants to the annual Women Innovators Conference targeted to STEM-trained students, faculty, and professionals
- MIN-Corps launched its first all-online Lean Launch Pad short course (Value Proposition Design) for researchers across the UMN system in January 2020, which then became the primary Lean Launch Pad platform for the State of Minnesota during the pandemic

UMN COVID-19 Technologies Offer Timely Solutions

The University of Minnesota continues to develop technologies to help in the fight against COVID-19. The Technology Commercialization team is assisting this effort by quickly moving [COVID-19 relevant innovations](#) into the marketplace, connecting potential industry partners with researchers, and adopting [AUTM's COVID-19 Licensing Guidelines to expedite the commercialization of pandemic-related inventions](#). Tech Comm has created a website devoted to [COVID-19 innovations](#) available for licensing, which lists 14 technologies, including:

- The [UMN Coventor](#) is a very low-cost, first-of-its-kind alternative to traditional ventilators, giving physicians another means to increase the oxygen levels in patients' blood. It was the first such ventilation device to receive FDA Emergency Use Authorization, and Boston Scientific manufactured several thousand of the devices for distribution by Medtronic and United Health Group. The Coventor's open-source design is available at no cost for both do-it-yourself health care providers and potential manufacturers.
- A UMN-developed [COVID-19 antibody test](#) uses an antigen from a portion of the

coronavirus that binds to receptors on human cells. Since the antigen has a high affinity for antibodies in COVID-19 patients, it is ideal for incorporating into test kits and can be easily scaled up for mass test kit production. UMN is using this technology to help Minnesota meet its goals for statewide COVID-19 testing.

- A UMN-developed deep learning artificial intelligence tool that helps radiologists and physicians rapidly identify COVID-19 patients through analysis of chest x-rays.

Corporate Engagement

The University's Systemwide Strategic Plan has identified enhancing opportunities for new businesses and startups, corporate partnerships, and technology commercialization as action items under its Commitment 2: Discovery, Innovation & Impact. Engagement with industry can advance discovery, bring new innovations to market, and spur economic growth in our local and regional communities.

In recent years, the University has aligned and increased corporate engagement work across the University through a high level Corporate Engagement Workgroup (CEW) that includes leaders from Technology Commercialization, the University of Minnesota Foundation, and corporate engagement staff from our colleges and campuses. This past year, the unified team launched an Industry Engagement portal (ie.umn.edu) to help industry representatives navigate the University's resources.

The portal allows interested potential partners to learn more about engaging the University across four areas: technology and innovation, offerings for executive and employee engagement, talent development, and visibility and branding for University audiences.

Coordinated, U-wide strategies that include all four areas of engagement have been implemented for more than 60 companies, including all of Minnesota's Fortune 500 firms. Nearly two-thirds of engaged companies have invested in more than one UMN unit. In addition, the CEW is conducting market research both inside and outside the University to better understand industry's needs and interests.

As is reflected previously in this report, the University continues to refine and grow its licensing, startup, and industry sponsored research work, and the University's multidimensional industry engagement initiative is helping it provide a unified and consistent interface with the private sector.

Incentives for Research and MNtersections

The Office of the Vice President for Research oversees a number of programs and initiatives designed to support and nurture a diverse research portfolio with investments aimed at incentivizing both growth and innovation. These programs provide a broad range of resource

opportunities designed to meet the needs of a diverse population of researchers. From smaller awards provided to jump-start new ideas to larger awards designed to incentivize collaborations across disciplines that address strategic needs—the latter usually inspired by Minnesota, but also typically having global impact—these awards seed research that has the potential to attract sustaining external support. Additional programs exist to leverage external support for which internal matching funds are required, to acquire critical infrastructure having the potential to accelerate the progress of multiple researchers, and to help translate the products of basic research closer to the marketplace when such translation has the potential to accelerate the transfer of knowledge for the public good.

OVPR Research Advancement Programs

Over the past five years, research advancement funding programs under the Office of the Vice President for Research (OVPR) have provided more than **\$38.4 million to researchers**.

Grant-in-Aid

The Grant-in-Aid of Research, Artistry, and Scholarship Program provides grants to support scholarly and artistic activities of faculty and their graduate students to foster excellence. Grant-in-Aid (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, \$13.2 million has been awarded through the GIA program. **For every dollar invested, \$3.40 in external funding was generated in fiscal years 2014-2018.**

Minnesota Futures

The Minnesota Futures program supports extraordinary research by nurturing interdisciplinary ideas. In FY2020, one grant was awarded for a total of \$249,000 for a project titled Emergence of Chronic Wasting Disease in Minnesota: Transmission across a landscape of plants, soils, water, and deer. The issue of chronic wasting disease has emerged as critical to the State of Minnesota in the last few years and has only grown more acute with the pandemic, which has reduced the state's ability to monitor the disease at the same time as more families have needed to rely on hunting as a source of food. 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, \$5.27 in external funding was generated in fiscal years 2013-2017.**

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 \$1.22 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 FY2020, over \$2.2 million was awarded to 12 research projects, reaching 12 departments, units, and centers; six colleges; and two campuses (Twin Cities and Duluth).** 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 including:

- The Light of Knowledge: Enhancing Informal Learning Engagement (Goldstein Museum, Cdes)
- Heirloom Holsteins for Functional Genomics Studies (Animal Science, CFANS)
- Acquisition of a System to Enable Research in Quantum Information (Electrical and Computer Engineering, CSE)
- Enhancing the Outdoor StreamLab: A full-scale eco-geomorphology laboratory (St. Anthony Falls Lab, CSE)
- 10,000 Families Study and Extension: Partnering with Minnesota communities for better health (Pediatrics, Medical School)
- Surface Characterization Instrumentation to Advance Interdisciplinary Research at the University of Minnesota-Duluth (Natural Resource Research Institute, UMD)

Rapid Response Grants

The OVPR COVID-19 Rapid Response Grants program was created and implemented quickly this past spring to catalyze and energize small-scale research projects designed to address and mitigate the risk associated with the coronavirus pandemic, including cascading impacts in communities. The primary focus of the grants was to fund research to inform near real-time decision making for professionals tasked with making operational response decisions. Twelve grants totaling \$100,000 were awarded. In one instance, \$10,000 from OVPR helped Prof. Abdennour Abbas craft an NSF RAPID Grant that was then selected for a \$200,000 award. The promising outcomes from the COVID-19 Rapid Response Grants prompted OVPR to design an analogous Social Justice Innovation Grant program in FY2021, results from which will be included in next year's annual report.

State of Minnesota Partnerships

Action item 2.3 of the SWSP is to increase state partnership funding.

MnDRIVE is one such research partnership between the University of Minnesota and the State of Minnesota that has supported five areas of research strength aligned with the state's key and

emerging industries to address grand challenges. In 2013, the state authorized an \$18 million recurring annual investment in four research areas: Robotics, Global Food, Environment, and Brain Conditions. In 2017, the state appropriated another \$4 million per year for a fifth research area: Cancer Clinical Trials.

MnDRIVE continues to be a unique, collaborative research model engaging transdisciplinary teams of researchers across the University to address the MnDRIVE topic areas in partnership with industry and other community stakeholders. To maximize relevance and impact, each of the MnDRIVE areas has committees and advisory boards that provide guidance on research objectives. Success metrics are tracked across all five research areas to assess impact on education, industry relationships, economic development, and quality of life for Minnesotans.

Other State of Minnesota partnerships include funds delivered specifically to support the works of the Center for Transportation Studies, the Natural Resources Research Institute, the Minnesota Aquatic Invasive Species Research Center, the Minnesota Invasive Terrestrial Plants and Pests Center, and others. As the Board considers the appropriate metric to monitor in the context of the SWSP, we have begun our preparations to report more deeply on this topic.

Strategic Partnerships and Research Collaborative (SPARC)

Formally launched in January 2019, SPARC is a research and innovation hub. It promotes and advances interdisciplinary partnerships, engaging University of Minnesota researchers and practitioners to take advantage of non-traditional and large-scale research opportunities.

SPARC promotes and advances external partnerships and projects that put our partners, faculty, staff, and students at the forefront of global innovation, impact, and change. SPARC provides a comprehensive supporting structure that allows local to global partners and faculty and staff from across the University system to build interdisciplinary and multi-sectoral programs to solve complex challenges.

SPARC has held 60 introductory meetings and “collision events” bringing together over 400 scholars and partners from different disciplines around project themes and opportunities. SPARC is currently working with several University of Minnesota teams on large-scale project proposals, strategic planning, and developing external partnerships. The team has been instrumental in working with teams in the UMN system to land research awards from NSF, DOD, CDC, and USAID. The SPARC team has worked with researchers from all five campuses and all UMTC colleges.

#ResearchIsTeachingUMN

A key goal of the University is to incentivize students to participate in research opportunities that are broadly available to them, and specific metrics are now being finalized to measure this as part

of the newly adopted SWSP. As Minnesota's only major research university, UMN prepares students to be the innovators of tomorrow by training them in the practices of research and discovery. And the training is *doing*: it is the students themselves who create new knowledge from their work, present their findings to national and international audiences, and contribute to the scholarly record in profound and meaningful ways. Major programs supporting student research experiences include:

- Undergraduate Research Opportunities Program (UROP)
- Research Experience for Undergraduates (REU)
- Interdisciplinary Doctoral Fellowships (Graduate School)
- Undergraduate major requirements
- Grand Challenges initiatives of the Twin Cities campus

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.

According to the 2018 Student Experience in the Research University (SERU) survey, 22.6% of UMN undergraduate students who responded to the survey (~30% response rate) reported that they have assisted faculty in conducting research.





ANNUAL REPORT

STATUS OF RESEARCH AND TECHNOLOGY COMMERCIALIZATION

UMN Vice President for Research Chris Cramer

December 10, 2020

A series of alternating gold and maroon triangular flags hang from a metal railing. Each flag features the University of Minnesota logo, which consists of a gold 'M' on a maroon background. The text 'UNIVERSITY OF MINNESOTA' is visible on the gold flags, and 'to Discover' is partially visible on the maroon flags.

UNIVERSITY
OF MINNESOTA

Driven to DiscoverSM



PARTNERSHIP DISCOVERY INTEGRITY

SYSTEMWIDE STRATEGIC PLANNING

UMN Systemwide Strategic Planning

Commitment 2 – Discovery, Innovation & Impact: Selected Action Items

| | |
|---|--|
| 2.1 Prioritize research opportunities for all students | 2.2 Increase multidisciplinary opportunities in research and curriculum |
| 2.1 Increase year-over-year funding growth for research and industry-sponsored awards | 2.2 Advance the arts and humanities through strategic collaborations |
| 2.1 Advance career outcomes for graduate students and postdocs | 2.3 Elevate national and international profile and standing while addressing societal needs |
| 2.2 Enhance opportunities for new businesses and start-ups, corporate partnerships, and technology commercialization | 2.3 Increase state partnership funding |

UMN Systemwide Strategic Planning

Commitment 3 – Mntersections Selected Action Items

| | |
|--|---|
| <p>3.1 Deepen impact in core areas of strength, including solutions, cures, and technology</p> | <p>3.2 Establish next generation systemwide Climate Action Plan for 2030</p> |
| <p>3.2 Demonstrate state and worldwide leadership in sustainability and environmental teaching, research, and convening power</p> | <p>3.3 Develop and deploy new techniques and partnerships for smart farming and sustainable food supplies, and natural resources</p> |
| <p>3.2 Develop system leadership and governance coordination for sustainability initiatives</p> | |

UMN & COVID-19

UMN RESEARCH SINCE MARCH

Extended Reduced Operations:

Limited to: COVID-19 research; certain biomedical/clinical research; maintaining critical research infrastructure and/or safety. All other work conducted from home on/online or suspended.

Has now transitioned to

Research Sunrise

Careful and coordinated return to on-campus research with reduced density, staggered shifts, social distancing and other safety measures in place.

An amazing pivot to COVID-Related Work:

- 27 COVID-19-related externally sponsored grants awarded in FY20
- Another 75 COVID-19-related research proposals submitted to funding agencies
- UMN awarded 87 rapid response grants for its researchers using repurposed internal funds in FY20. Ex., Coventor, portable aerosol hood, & artificial intelligence tool to analyze chest x-rays

COVID-19 INNOVATIONS

Enzyme-linked Immunosorbent Assay (ELISA) COVID-19 Antibody Test



This COVID-19 antibody test leverages the SARS-CoV-2 spike receptor-binding domain that is produced from stably transfected mammalian cell lines with a high yield and high purity. The antigen has a high affinity for antibodies in COVID-19 patients. Protein production can be easily scaled up for mass test kit production.

Invention number: 2020-301

Contact Kenny Karanja (kara0108@umn.edu) for more information.

Personal Protective Equipment

Low-cost, Easily Produced, Level 1 Isolation Gown



This one-size-fits-all isolation gown uses commercially available, FDA certified 2 mil virgin polyethylene film. The Gown for U is impervious to fluids and provides a barrier to infectious waste as defined for a level 1 gown. Design specifications are available.

Invention number: 2020-357

Contact Vaughn Schmid (schm2230@umn.edu) for more information.

MNmask Emergency-Use Face Masks



The design specifications include three styles of emergency-use face masks. All three styles use a specific filter media, components sourced from non-endangered supply chains, and a fabrication process that does not require specialized equipment or a highly skilled workforce.

Invention number: 2020-349

Contact Vaughn Schmid (schm2230@umn.edu) for more information.

Portable Testing Booth



This testing booth protects healthcare workers from viral exposure during testing procedures with a plastic barrier and a positive airflow through a HEPA filter. It minimizes the need to change PPE gear between patients allowing up to twice as many tests per day.

Invention number: 2020-359

Contact Doug Franz (franz417@umn.edu) for more information.

Polyamine-Containing Coatings to Deactivate COVID-19 on Surfaces



Specific polyamines (polyethylenimines or derivatives) are being developed to deactivate the COVID-19 virus on soft surfaces, such as PPEs, and hard surfaces, as quickly as possible.

Invention numbers: 2020-292, 2020-293

Contact Larry Micek (micek013@umn.edu) for more information.

Location & Symptom Mapping Tool



SafeDistance is a free, non-profit app and website that crowdsources symptom data to help detect, predict, and prevent the spread of COVID-19, while assuring your privacy. SafeDistance data provides recommendations to help communities make more informed decisions.

Invention number: 2020-282

Contact Andrew Morrow (amorrow@umn.edu) for more information.

techcomm.umn.edu/covid-innovations

COVID-19 INNOVATIONS

Enzyme-linked Immunosorbent Assay (ELISA) COVID-19 Antibody Test



This COVID-19 antibody test leverages the SARS-CoV-2 spike receptor-binding domain that has been expressed in transfected mammalian cell lines with a high yield and high purity. This allows for rapid detection of antibodies in COVID-19 patients. Protein production can be scaled up for kit production.

Contact Vaughn Schmid (schmid2230@umn.edu) for more information.



SafeDis is a location and symptom mapping tool designed to help decision makers quickly identify areas where COVID-19 is spreading. It uses data from SafeDis users to predict where new cases are likely to appear, helping to prevent outbreaks before they happen.

Taupe: [taupe@umn.edu](#)
workforce.
Invention number: 2020-349

Contact Vaughn Schmid (schmid2230@umn.edu) for more information.

Portable Testing Booth



Contact Doug Franz (franzd@umn.edu) for more information.

TECHNOLOGY COMMERCIALIZATION

UMN Technology Commercialization

In the face of the pandemic, The U of M's Technology Commercialization research institute reprioritized new tech additions to ensure that the innovations designed to prevent, diagnose, treat, and contain COVID-19 received immediate attention.

Due to the collaboration between university experts and industry leaders, many new COVID-related technologies are now available for commercialization, everything from a COVID-19 antibody test to a location and symptom mapping tool.

UMN COVID-19 RESPONSE BEYOND THE CLASSROOM

KEEPING THE PUBLIC INFORMED

Built the state's COVID-19 projection model, launched a multi-state COVID-19 hospitalization tracking project, and aided public understanding of the virus and the pandemic through expert commentary in the media

MEETING THE BIGGEST NEEDS

Leading clinical trials for a variety of therapeutics, designing new products and processes for critical needs like PPE and ventilators, and building critical knowledge through research on topics from the virus's biochemical mechanisms in cells to indoor air circulation to the pandemic's disparate impact on communities of color

FIGHTING COVID-19 TOGETHER

Partnered with the State of Minnesota and Mayo Clinic to vastly increase COVID-19 test availability and processing speed, and treated more than 17,000 COVID-19 patients at partner M Health Fairview hospitals and clinics

RESEARCH STATISTICS

UMN Research Enterprise Surpasses Billion-Dollar Milestone

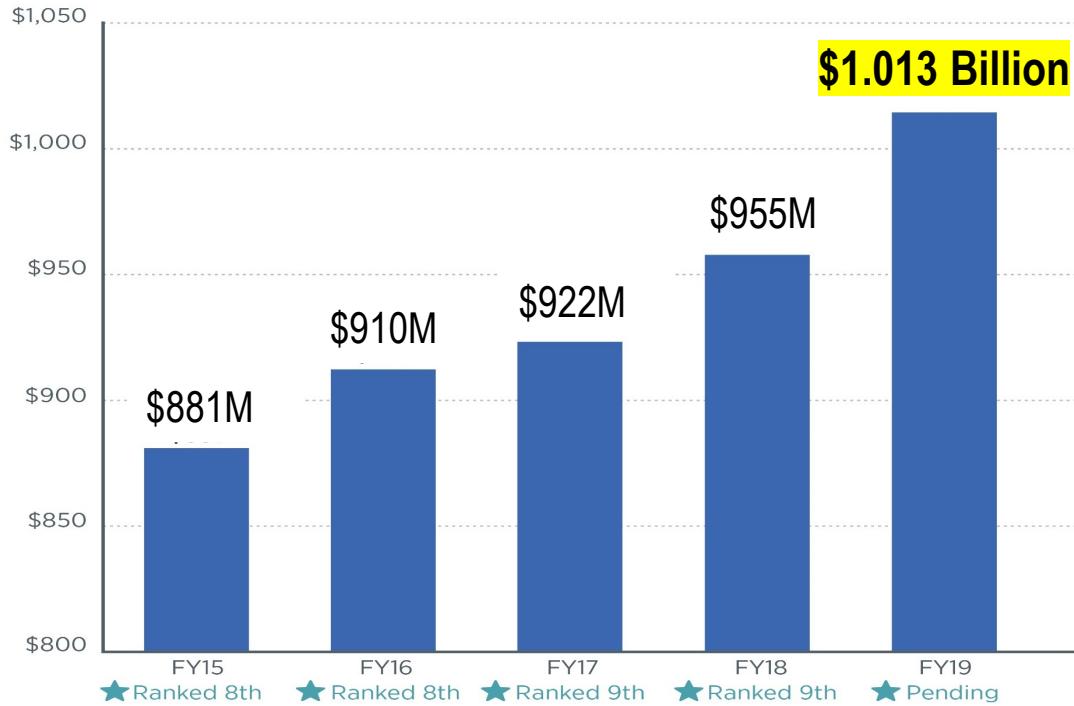
September 21, 2020

by Kevin Coss



The University of Minnesota's research expenditures surpassed the \$1 billion mark for the first time.

UMTC R&D Expenditures, FY2015-FY2019



All Campuses:
\$1.04 Billion

Dollar amounts in millions, National Science Foundation's HERD Survey

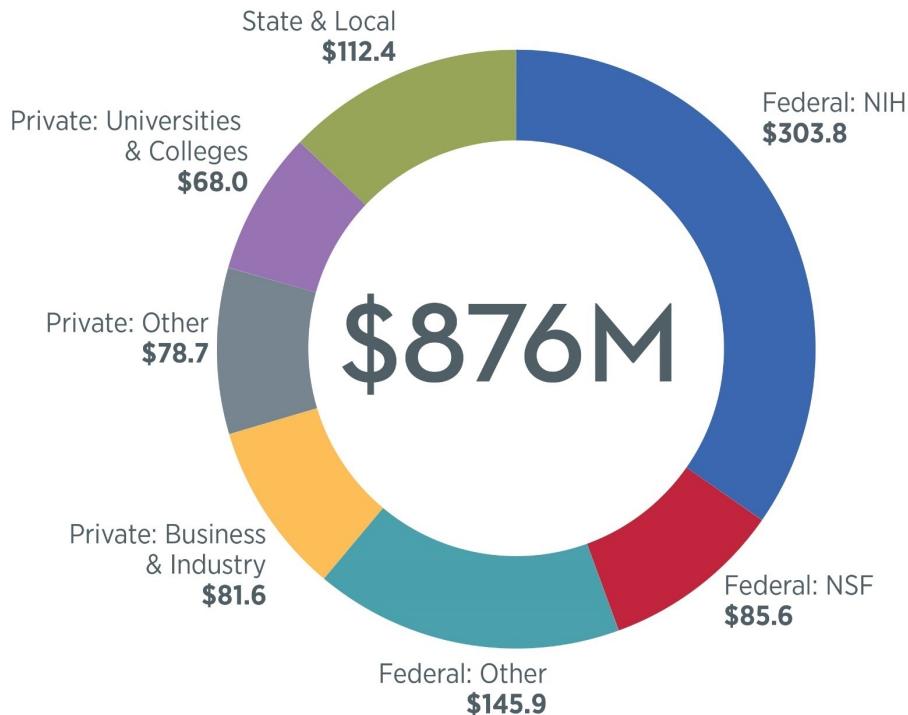
*Ranking among US public research institutions

NATIONAL RANKINGS

| | NSF / HERD 2019* | | CMUP 2019** | | ARWU (Shanghai) 2020 | | |
|---|------------------------------------|--------------|--------------------|---------------|----------------------|-----------|----------|
| | Public | Expenditures | Public | World | US | US Public | |
| Michigan | 1 | \$1,675,805 | 9 of 9 | 22 | 17 | 6 | |
| Wisconsin | 6 | \$1,297,331 | 9 of 9 | 32 | 23 | 8 | |
| North Carolina | 7 | \$1,153,773 | 9 of 9 | 30 | 21-22 | 7 | |
| Pittsburgh | 9 | \$1,080,951 | 6 of 9 | 96 | 41 | 21 | |
| All UMN campuses: \$1.04B | MINNESOTA - TWIN CITIES | 10 | \$1,013,112 | 9 of 9 | 40 | 24 | 9 |
| Univ Texas M.D. Anderson Cancer Ctr. | 11 | \$969,496 | 2 of 8 | 67 | 34 | 17 | |

CMUP: Center for Measuring University Performance • ARWU: Academic Ranking of World Universities
 Dollar amounts shown in thousands

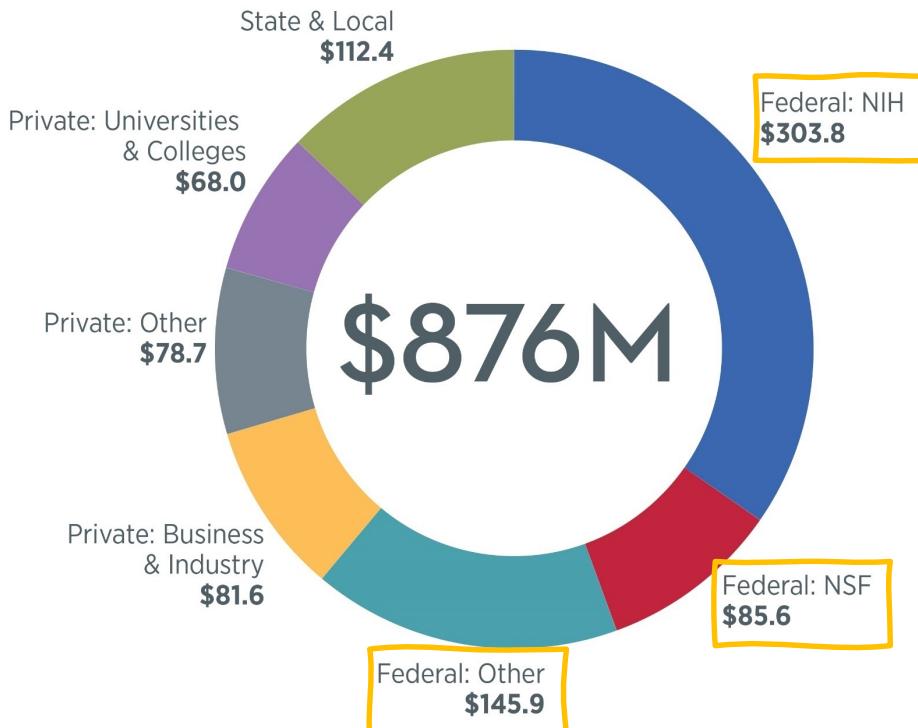
AWARDS BY SOURCE FY2020 (ALL CAMPUSES)



 \$13M / 1.5%
over previous year-
despite 3.5 months
of COVID-19

Federal agencies: NIH: National Institutes of Health • NSF: National Science Foundation
Dollar amounts shown in millions

AWARDS BY SOURCE FY2020 (ALL CAMPUSES)

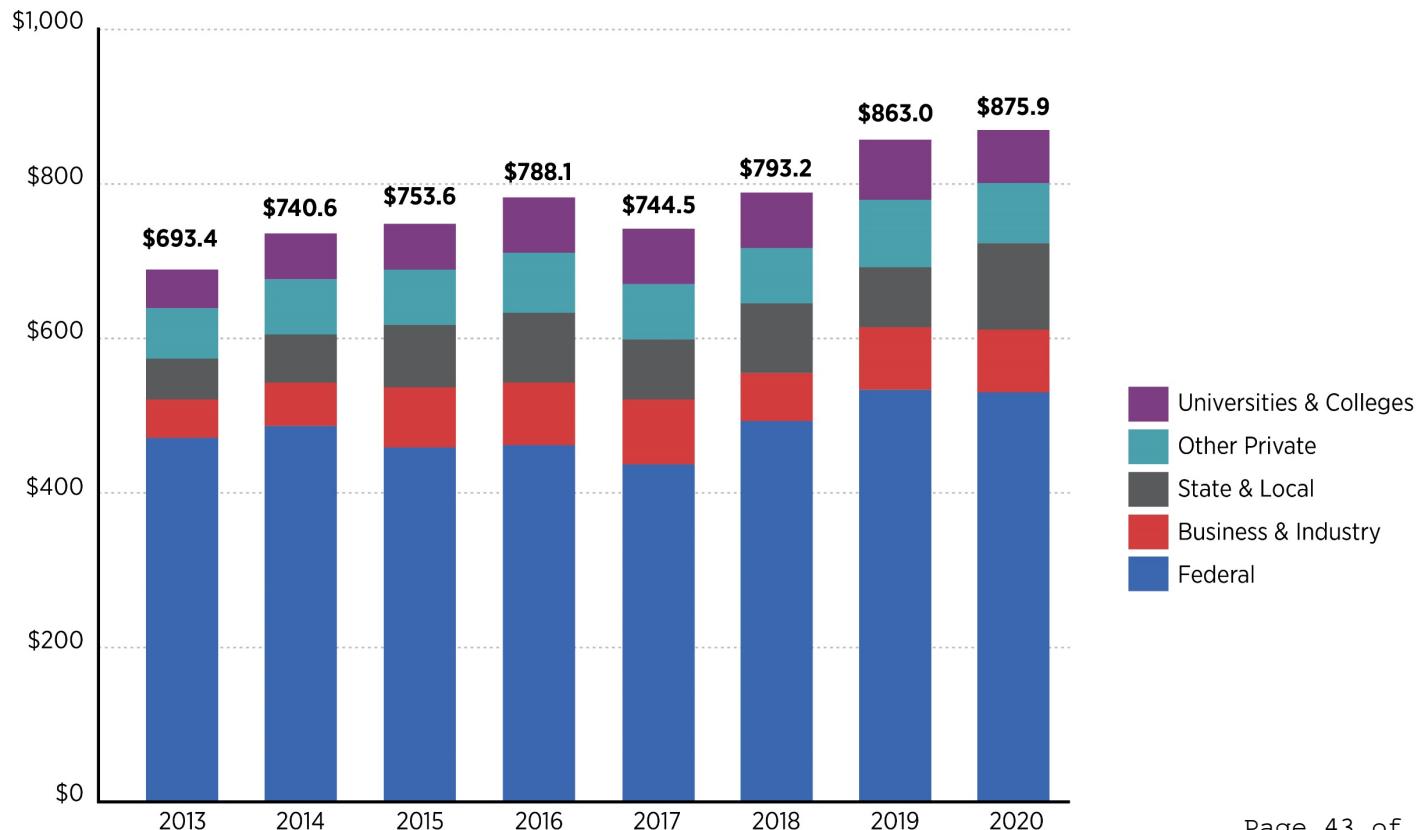


 \$13M/1.5%
over previous year-
despite 3.5 months
of COVID-19

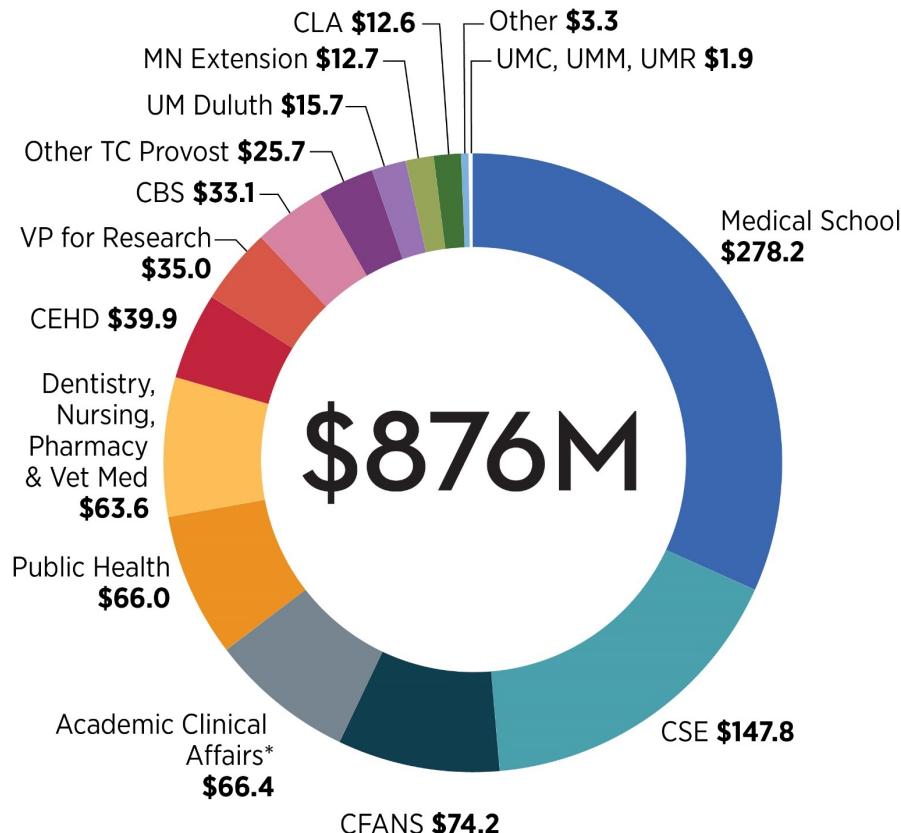
\$535M/61%
Federal awards

Federal agencies: NIH: National Institutes of Health • NSF: National Science Foundation
Dollar amounts shown in millions

AWARD COMPOSITION, FY2015-FY2019 (ALL CAMPUSES)



AWARDS BY COLLEGE FY2020 (ALL CAMPUSES)



TECHNOLOGY COMMERCIALIZATION & ECONOMIC INNOVATION

CORPORATE ENGAGEMENT: A Tech Comm, UMF, College, & Campus Partnership



Technology and
innovation



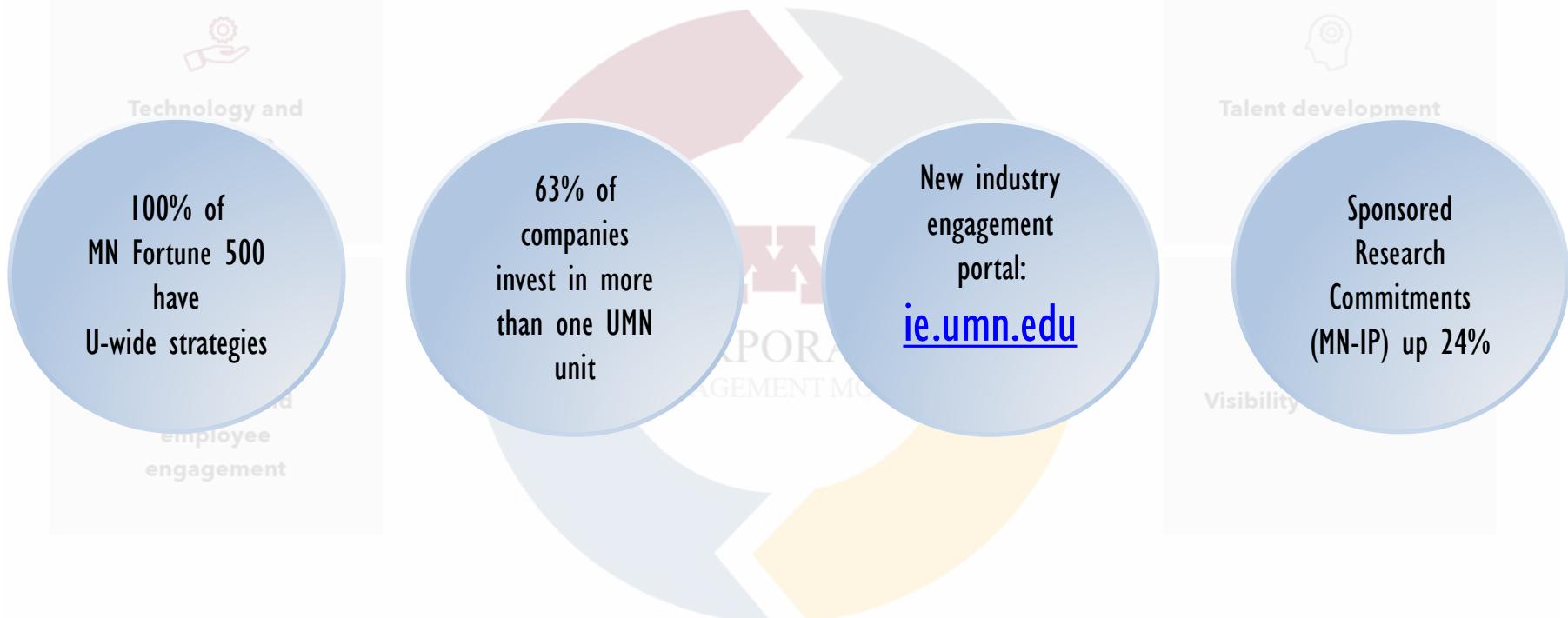
Executive and
employee
engagement

Talent development



Visibility and branding

CORPORATE ENGAGEMENT: A Tech Comm, UMF, College, & Campus Partnership



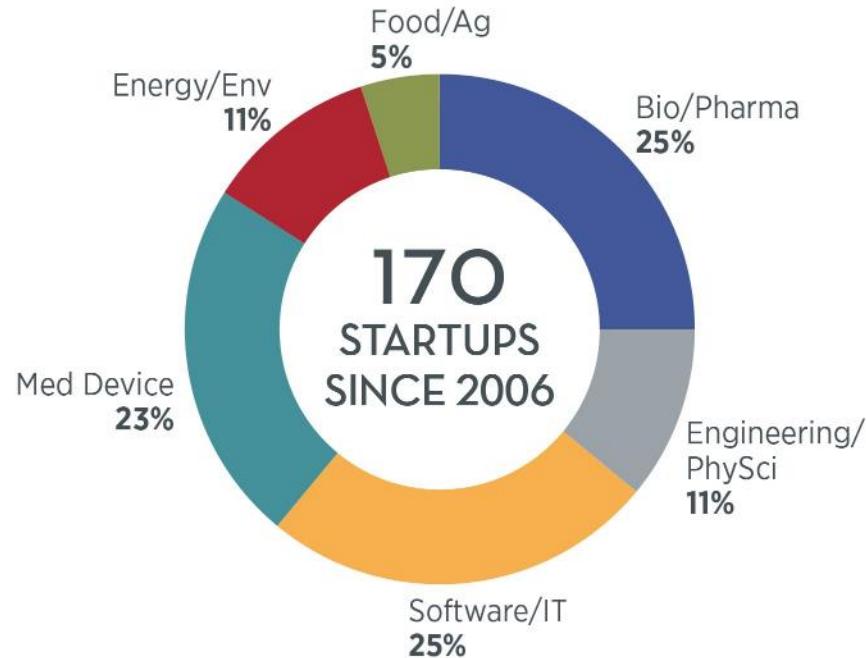
TECHNOLOGY COMMERCIALIZATION

| | 2016 | 2017 | 2018 | 2019 | 2020 |
|--|--------|--------|--------|--------|--------|
| LICENSES & REVENUE | | | | | |
| New Licenses | 194 | 213 | 230 | 223 | 235 |
| Current Revenue Generating Agreements | 528 | 545 | 575 | 571 | 601 |
| STARTUPS | | | | | |
| Startup Companies Formed | 17 | 18 | 13 | 19 | 19 |
| INVENTIONS & PATENTS | | | | | |
| Invention Disclosures | 402 | 406 | 400 | 391 | 397 |
| New Patent Filings | 202 | 232 | 179 | 163 | 152 |
| New Patent Filing Rate* | 50% | 57% | 45% | 42% | 38% |
| Issued Patents (US and Foreign) | 168 | 147 | 186 | 187 | 182 |
| MN-IP | | | | | |
| MN-IP Research Agreements (w/SPA) | 81 | 72 | 86 | 103 | 73 |
| Companies w/ MN-IP Research Agreements | 62 | 51 | 58 | 77 | 69 |
| Sponsored Research Commitments | \$12.2 | \$20.9 | \$21.3 | \$22.5 | \$27.9 |

* The New Patent Filing Rate is the number of new patents filed during the fiscal year divided by the number of new disclosures in the same time period
 Dollar amounts shown in millions

UNIVERSITY OF MINNESOTA STARTUP ACTIVITY

| Startups by Sector | FY20 | FY06-FY20 |
|--------------------|-----------|------------|
| Bio/Pharma | 6 | 42 |
| Engineering/PhySci | 3 | 19 |
| Software/IT | 4 | 43 |
| Med Device | 4 | 38 |
| Energy/Env | 0 | 19 |
| Food/Ag | 2 | 9 |
| Minnesota | 13 | 126 |
| Outside Minnesota | 6 | 44 |
| Total | 19 | 170 |



RESEARCH & STUDENTS

Mission

As the only Very High Research Activity university in the state, the University of Minnesota is known for its commitment to research, public service, and teaching. Each part of its mission is intertwined with and reinforced by the others.

#ResearchIsTeachingUMN



Research at the University of Minnesota addresses the needs of both the state and the nation.



The University of Minnesota's Land Grant Mission means it leverages its knowledge for the public good and works cooperatively with communities to understand and meet their needs.



The University of Minnesota emphasizes the importance of education in conjunction with research. This result is innovation and discovery from new and exciting places. At the University of Minnesota, **research *is* teaching** —we embed discovery in our curriculum!



Global Nutrient Study Explores Ecosystem Change, Fuels Learning

Prof. Elizabeth Borer, UMTC CBS



The Nutrient Network

A *global research cooperative*





The Nutrient Network

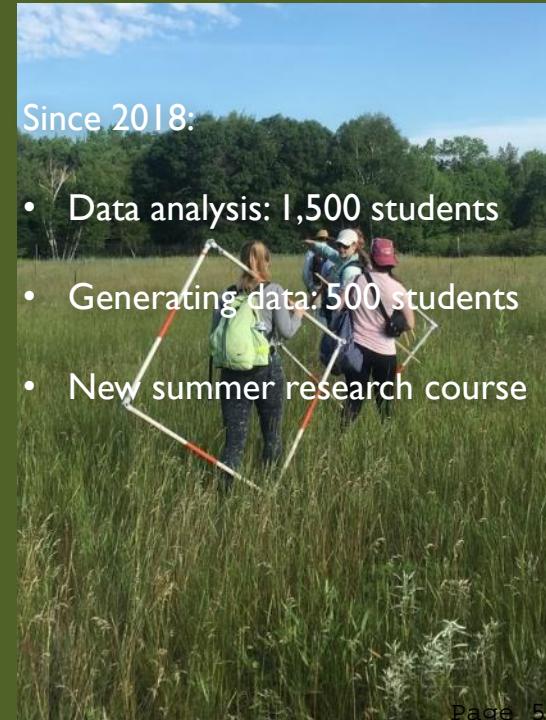
Undergraduate Research Experiences



As part of my lab group



In CBS classes





Biofiction: Tweaking History to Reveal Greater Meaning

Prof. Michael Lackey, UMM



UNIVERSITY OF MINNESOTA
Driven to DiscoverSM

research.umn.edu

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This presentation is available in alternative formats upon request. Direct requests to ovprcomm@umn.edu.



BOARD OF REGENTS

DOCKET ITEM SUMMARY

Mission Fulfillment

December 10, 2020

AGENDA ITEM: Strengthening Career Readiness and Outcomes for All Students

Review

Review + Action

Action

Discussion

This is a report required by Board policy.

PRESENTERS: Lisa Erwin, Vice Chancellor for Student Life and Dean of Students, Duluth campus
Becky Hall, Director, Career Services Administration, Twin Cities campus
Lincoln Kallsen, Assistant Vice President, Institutional Analysis
Scott Lanyon, Vice Provost and Dean of Graduate Education, Twin Cities campus

PURPOSE & KEY POINTS

This item will provide an overview of career services and outcomes across the University of Minnesota system. The discussion will address:

- Best practice career preparation initiatives across the system.
- Specific career outcome data for undergraduate and graduate students.
- Employer relationships.
- Future initiatives including the Post-Collegiate Outcomes (PCO) project that will allow the University to tell a more complete story of where graduates land.

BACKGROUND INFORMATION

The MPACT 2025 systemwide strategic plan includes a commitment to student career readiness and outcomes. The information in this presentation provides an update on the current career development initiatives across the University of Minnesota system and showcases the outcomes that have been measured to date.

University of Minnesota Board of Regents
Mission Fulfillment Committee
December 10, 2020

Strengthening Career Readiness and Outcomes for All Students

Career and the Systemwide Strategic Plan

The work to support students' career development spans academic and student affairs across each of our five University of Minnesota campuses. There are a number of ways the five system campuses currently collaborate in this work and that are described in these docket materials.

MPACT 2025 outlines a vision and road map for career preparation and outcomes for University of Minnesota students on all five campuses. The strategic plan provides new and exciting ways to build upon existing collaborative programs and structures, as well as to leverage high impact practices and strategies that are strengths in specific units. The following MPACT 2025 commitment and action items tie directly to career development:

Commitment 1 - Student Success:

- 1.2: Strengthen career readiness and outcomes for all students

Commitment 2 - Discovery, Innovation, & Impact:

- 2.1: Advance career outcomes for graduate students and postdocs.

Structure of Career Services Across the System

Career Services across the Twin Cities campus is decentralized, and based mostly out of the academic colleges, providing for a more industry-focused approach to work with students and employers. At the remaining system campuses, with the exception of Duluth having some collegiate-based internship program support, career services is a centralized function.

Additional Career Resources units on the Twin Cities campus include:

- Career Services Administration, which provides management of systemwide resources such as GoldPASS (our jobs, resume, employer, and career event management system), and delivery of campus or systemwide initiatives such as the University of Minnesota Job & Internship Fair.
- The Pre Health Student Resource Center, which serves undergraduate and prospective pipeline students of the Academic Health Center programs or other health-related areas of study, and
- CAPE, the Center for Academic Planning and Exploration, which serves undergraduate students who are exploring alternatives to highly competitive majors or who are highly undecided.

Role of Career Services Across the System and Best Practice Programs

Regarding career preparation, Career Services straddles the student and academic affairs spaces to engage our campus staff and faculty colleagues in the promotion of high impact career and educational practices to further the career development of our students, and position them well as they transition on to further education or into the workforce. Career Services units provide services to students at all points in their degree programs, and not just on the back-end as they approach graduation.

The most visible part of the work of Career Services is on the student career development side of the equation. Students are encouraged to engage with career services early to meet with counselors or coaches to explore the many options available to them, and work through the decision-making process. They do this through engagement in one on one counseling or coaching, or through enrollment in career exploration courses. Coaches and counselors use various methods of assessment to help students articulate their values, strengths, and interests. These counselors and coaches also help students enhance their job search skills. Both the College of Liberal Arts on the Twin Cities campus and the University of Minnesota Duluth have successful job skills coaching programs, highlighted below:

The *Twin Cities College of Liberal Arts (CLA)*, through its *Career Readiness Initiative*, frames a [set of 10 Core Career Competencies](#) that reflect the very essence of a liberal arts education—and the competitive advantage it offers in today's uncertain and dynamic economy. CLA staff equip their students to articulate these competencies and to translate them into the language of employers and others.

The University of Minnesota Duluth Career Connections program strengthens students' job search skills through coaching. Program staff partner with employers who volunteer time on campus (normal years) to provide input to students on their resumes and to help conduct practice interviews.

It is important to note that in addition to job search and career exploration, career services also works with students as they explore graduate and professional school options and prepare for the application and interview processes.

Another key function in the work of Career Services is in building relationships with employers and alumni. These relationships are an important component critical to networking and mentoring activities. Building these relationships is also essential to engaging the business community in the recruiting of our students and recent alumni at all degree levels. This recruiting happens most noticeably through job postings, on-campus recruiting (during "normal" times), and participation in job and internship fairs.

The *Hire and Recruit Webinar Series* is an example of a systemwide initiative led by *Career Services Administration (CSA)*. Employer relations staff host webinars for employer partners on topics such as: Hosting / Launching a Successful Internship Program and Diversifying Your Workforce through Hiring International Students. These two webinars were attended by over 500 and 1000 employers respectively.

Along with so many others this year in response to COVID-19, we quickly pivoted in March to deliver all of these services to both constituencies virtually. Both student and employer engagement in these virtual opportunities has been consistently high.

Student Outcomes: Bachelor's Degrees

Career success outcomes can include skill development, and post-collegiate measures including employment, continuing education, military or volunteer service. Outcomes success measures are often referred to simply as "placement rate" data. Placement is the most often thought of metric referencing job attainment within a certain window of time post-graduation.

First Destination - Career Outcomes

In 2019, NACE (the National Association of Colleges and Employers) published its [Standards and Protocols for the Collection and Dissemination of Graduating Students Initial Career Outcomes](#). In recognition of the diverse makeup of institutions of higher education, NACE drafted its guidelines to help institutions with the complexity of a five-campus system such as ours “to establish minimum standards and protocols to lay the foundation for further development and advancement in this vital area of evaluation.” Given the complexity of our institution, and the many different paths our students take, at a minimum, a more broadened definition of “placement” is warranted when referring to the successes of our students post-graduation.

More commonly referred to as career success outcomes, this metric should include employment, and also be inclusive of graduates pursuing continuing education, volunteer service, and even military service.

Provided this definition, for the Systemwide Class of 2019 (defined as Summer ‘18 - Spring ‘19), our overall “placement” rate is 94%.

Sources: UMTC, UMC, UMR - The Outcomes Survey; UMD - [Graduate Follow-up Report](#); UMM - [Morris Graduate Outcomes](#); CSE - [Career Outcomes and Salary Data](#); CSOM - [Employment Statistics](#)

Internships / Co-ops

One of the contributing factors to the success of our students achieving such high levels of success is their engagement in high-impact experiential learning. One key example of these types of experiences is internships / co-ops.

Systemwide, over two thirds of our undergraduate students from that same 2019 graduating cohort indicate participating in at least one internship / co-op experience.

It is important to note that internships and co-ops are only some of the most visible high-impact experiences that students engage in during their tenure as undergrads. Our students also take advantage of many other high-impact experiences which help them to both clarify their career decision-making, and further develop their professional skills sets, experiences such as student employment, learning abroad, service learning, engagement and / or leadership with student organizations, and also undergraduate research (which aligns with the Systemwide Strategic Plan Commitment 2.1’s Action item of prioritizing research opportunities for all students).

Alumni 5-10 Years Post Graduation Data

We know that early career outcomes measures are one piece of the story. But, while they ARE important indicators, they also do not give us the broader or more longitudinal story of our students’ success. Over time, as early alumni progress in their careers (or achieve career mobility), measures like salary and satisfaction tend to increase and even out across various disciplines at points 5- and 10-years out post-graduation.

To learn more about the career success measures of our 5- and 10-year out alumni, in 2019, we partnered systemwide across all five campuses in a pilot of the National Alumni Career Mobility Survey (NACM). The NACM survey was administered by the Career Leadership Collective, an outside consulting group

focused on using data to help career leaders weave career preparation into the campus experience.

From the nearly 1,200 survey respondents to NACM, the data supports the importance of engaging students in high-impact experiences.

- Alumni who had engaged in high-impact experiences such as student organizations, Greek Life, volunteer or service learning, undergraduate research, and capstone experiences indicated higher satisfaction with their current career than alumni who did not participate in those activities.
- Alumni who participated in any of those same activities, or study abroad, first-year seminars, or learning communities, had significantly higher agreement that their bachelor's degree helped to prepare them for their career.

Employer Data

Another source of information to help inform our work in Career Services is through our engagement with and through the feedback we receive from our employer partners.

Drawing from [GoldPASS](#), we have over 25,000 employer partners located throughout the world. There is a high concentration right here in Minnesota who seek out our graduates to help bolster our state's workforce through staying here post-graduation. Additionally, our students also have plenty of opportunities to connect with and to pursue employment with our far-reaching network of employers positioned across the globe.

In addition to GoldPASS, we also gather input through a bi-ennial survey of our employer partners, which was most recently conducted this past summer of 2020.

Of the nearly 750 employers we heard from:

- 61% are from for-profits, 19% from non-profits, and 18% are from the government or education sectors
- 29% were small businesses of 100 or fewer employees, 33% from mid-sized organizations up to 1,000 employees, and 38% were from larger sized organizations

Across a set of 14 various skills and learning and development outcomes, we ask employers to rank our students in terms of how they're showing up as entry-level talent. Five top areas of strength employers indicate our students show up with in the workplace include:

1. Functioning well as a team member
2. Learning new ideas quickly
3. Flexibility and adaptability
4. Professionalism
5. Valuing diversity and inclusion.

When asked what experiences are most important when assessing candidates, work experience, pre-professional work experiences, and engagement or leadership in student organizations rank most highly.

Of the employers surveyed, 80% offer internships and over 70% hire our graduate and professional students.

*Source: www.career.umn.edu/employers > What Other Employers Say

Outcomes: PhD and Postdoc

This year, the Graduate School contracted with Academic Analytics to discover the employment status of our PhD alumni and Postdoctoral Scholar alumni from the last ten years. Academic Analytics was able to find the employer for nearly 80% of those alumni. Just over 55% of those alumni for whom their employment status was determined, are employed in higher education with a little under half of those serving in tenured or tenure-track positions.

The global impact of the University of Minnesota can be seen by [this map](#) of where our alumni are employed. Each of our alumni is an ambassador for the University and for the State of Minnesota. In addition to this global impact, we have PhD and Postdoc alumni in all 50 states with approximately 20% staying in Minnesota to pursue their careers.

Having identified where our alumni are, our next step will be to survey them to solicit their suggestions about how graduate education could be improved to better prepare students for the careers that await them. The insights we gain from our alumni will be used to further develop the professional development offerings available to graduate students.

Post-Collegiate Outcomes Longitudinal Data Project

The Post-Collegiate Outcomes (PCO) project will allow the university to tell a more complete story of where our graduates land. It is not meant to replace the survey data (e.g., exit surveys), but provide a framework based on data sets that can provide the University with a longitudinal view of alumni outcomes that can capture the long term view of career trajectory while using survey data like NACM to supplement alumni outcomes not captured (e.g., career satisfaction, civic engagement). The approach is to use multiple non survey data sources to capture a large percentage of our alumni outcomes across the system and across all degree levels. With this information we can, for the first time, begin to paint a system-wide portrait of what our graduates are doing five, ten, and fifteen years after leaving the university. These sources also permit us to explore career pathways of University graduates longitudinally and for a much larger percentage of our graduates. Three of these data sources, SLEDS, Clearinghouse, and Emsi, and a future source, are described below:

SLEDS: [Minnesota has developed the Minnesota Statewide Longitudinal Education Data System](#)

(SLEDS) matching student data from pre-kindergarten through completion of postsecondary education and into the workforce. Employment outcomes represent only the graduates who worked in Minnesota as identified in the state's Unemployment Insurance wage records. About 95 percent of Minnesota businesses report wages, however people employed by federal agencies, self-employed, or employed in other states are excluded.

(Source, [Graduate Employment Outcomes DEED/MOHE website](#))

Received from SLEDS:

- UMN degrees/certificates awarded (2006-16): 152,588 records (includes holders of multiple degrees; unique students: 137,968)
- UMN completers' (2006-16) with employment records: across all years: 124,721

Examples of SLEDS knowledge rate:

- UMN completers' unique students (2006-16): 140,625 from central records vs. 137,968 from SLEDS: Missing 1.89%
- Any SLEDS employment data: n=124,721: (124,721/140,625=88.7%)
- SLEDS employment data 1-year after graduation (105,181/140,625= 74.8%)

National Student Clearinghouse (NSC) is a nonprofit and nongovernmental organization and the leading provider of educational data and reporting to help institutions meet compliance, administrative, student access, accountability, and analytical needs. The university uses the NSC StudentTracker service, as notably it is the only nationwide source of college enrollment and degree data. The data set has enrollment and degree information from more than 3,600 colleges and universities — enrolling over 99 percent of all students in public and private U.S. institutions — these institutions regularly provide enrollment and graduation data to the Clearinghouse. Through StudentTracker, you can query a University of Minnesota student's enrollment and degree attainment from other participating institutions' student data.

Submitted to Clearinghouse:

- Enrolled at UMN (Fall 2004-Fall 2017): 343,110

Received from NSC:

- 4,039,240 enrollment/degree/certificate records (multiple rows per person, UM+non-UMN) of which:
- 1,798,332 records (multiple rows per person, non-UMN) of which:
- unique headcount graduated (non-UMN): 115,423

Emsi: Economic Modeling, LLC is a labor market analytics firm and part of the STRADA education network. This web scraping service uses the open web and global professional profiles built with data posted online by individuals. Emsi matches an institution's past student records to its database of over 106 million professional profiles from web scraping to get detailed alumni outcome data at the program level. This data source will be able to provide individual level alumni data, including employment information (job titles, employers, locations) as well as self reported skill attainment.

Match Rates

- Normal match rate is approximately 40% for universities.
- University of Minnesota's alumni 2003-2018 match rate: System-wide (n=134,649 out of 215,426 or 62.5%)

U.S. Census Bureau Longitudinal Employer-Household Dynamics (LEHD) Post-Secondary Employment Outcomes (PSEO) Project: We are in early discussions with the Minnesota Office of Higher Education (MOHE) to determine if we can participate as a state (this would include Minnesota State, and possibly Minnesota Private College Council), but other state-systems of higher education and individual institutions have already participated in this experiment: Colorado, Texas, New York, and Penn State

systems; Institutions: University of Wisconsin Madison, University of Michigan Ann Arbor.

PSEO is a new set of statistics on the earnings and employment outcomes of graduates of select post-secondary institutions in the United States, and is constructed using LEHD data. Earnings outcomes report earnings by institution, degree field, degree level and graduation cohort for one, five and ten years after graduation. Employment Flows tabulations provide the destination industry and geography of employment for graduates of an institution by degree level, degree field, and graduation cohort, for one, five, and ten years after graduation. A limited number of institutions are available as part of the pilot release, but future updates will include additional post-secondary institutions. Interactive results are available: https://lehd.ces.census.gov/data/pseo_explorer.html

What's Next

Looking ahead, we recognize that there are opportunities to tell a more comprehensive and integrated systemwide career story utilizing the framework set forth in the strategic plan. We will continue to adapt our programs and services to meet career needs of our students due to the COVID-19 pandemic. While we have been able to pivot and offer career fairs and engagement opportunities with employers virtually, we recognize that students will need additional support and tools to succeed in a down economy. New and innovative ideas around alumni engagement and employer partnerships will help our students connect to the opportunities that exist with the state of Minnesota and beyond.



Strengthening Career Readiness and Outcomes for All Students

Board of Regents | Mission Fulfillment Committee | December 10, 2020

Lisa Erwin

Vice Chancellor for Student Life and
Dean of Students, Duluth Campus

Becky Hall

Career Services Administration, Twin Cities Campus

Lincoln Kallsen

Assistant Vice President, Institutional Analysis

Scott Lanyon

Vice Provost and Dean of Graduate Education



MPACT 2025: Connections to Career



Commitment 1: Student Success

1.2: Strengthen career readiness and outcomes for all students.

Commitment 2: Discovery, Innovation, & Impact

2.1: Advance career outcomes for graduate students and postdocs.

Career Development Services - Overview



Student Career Development

- Career exploration & decision-making - counseling / coaching, coursework
- Job search skills coaching
- Alumni networking / mentoring
- Graduate & professional school application preparation

Employer Relations

- Employer relations / business development
- Job postings and on-campus interviews
- Job & internship fairs



Outcomes: Bachelor's degrees



First Destination - Career Outcomes



**94% Career Success Outcomes Measure
(or Placement rate)**

Systemwide - Spring 2019

- Summer 2018 - Spring 2019

Includes several types of success

- Employed full time or part time
- Participating in an organized program of voluntary service
- Serving in the U.S. Armed Forces
- Enrolled in a program of ongoing education (often graduate school or professional education)

Based on 73% knowledge rate average

Internships / Co-ops



Over 2/3 of undergraduates report participating in at least one internship or co-op

Systemwide - Spring 2019

- Summer 2018 - Spring 2019

Availability of access to paid vs. unpaid opportunities may vary across

- Colleges/campuses
- Academic fields of study

Important for all students to have the opportunity for these and other high-impact, outside-of-classroom experiences, which help inform career decision-making

Data – Alumni 5 and 10 Years Post-Graduation



National Alumni Career Mobility survey

- Systemwide 2019 pilot (2009 and 2014 Cohorts)
- 1,200 alumni respondents
- High-impact experiences led to:
 - higher career satisfaction
 - higher agreement that BS degree helped prepare them for career

Employer Reach

Global



Biennial Employer Survey



749 respondents in 2020
Small businesses to Fortune 500 companies
Statewide, nationally, and internationally

80% offer internships
Over 70% hire our graduate and professional students

TOP 5 SKILL SETS

- Functioning well as a team member
- Learning new ideas quickly
- Flexibility and adaptability
- Professionalism
- Valuing diversity and inclusion

TOP EXPERIENCES WHEN ASSESSING CANDIDATES

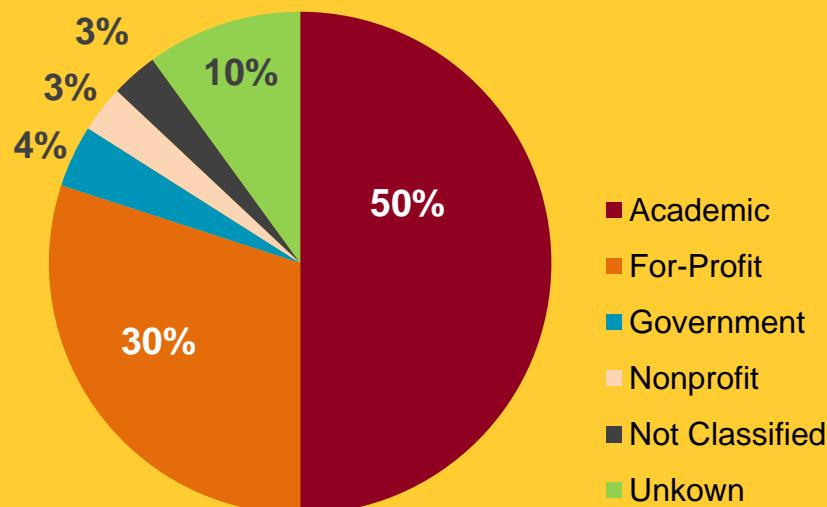
- Work experience
- Pre-professional work experience
- Engagement / leadership in student organizations

Outcomes: PhD & Postdoctoral Scholars

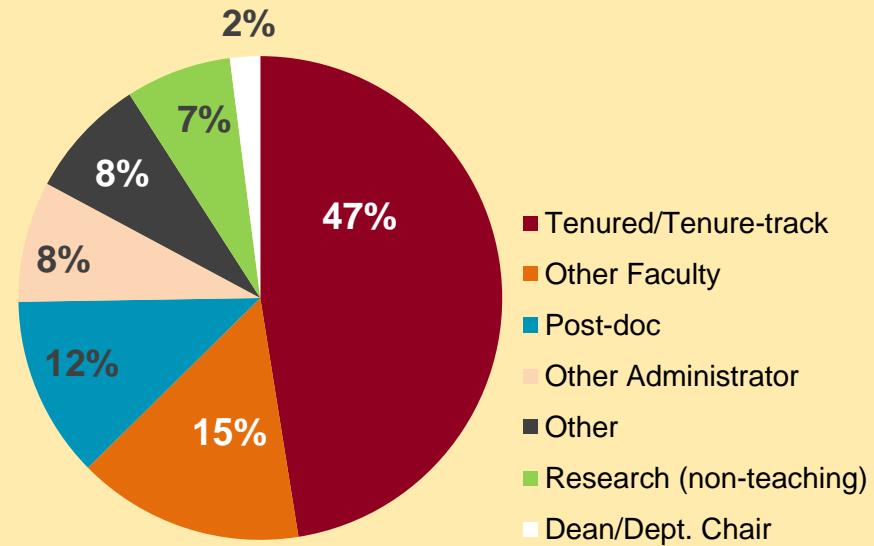


PhD & Postdoctoral Scholar Alumni (2009-2019)

Employment Sector of Ph.D. and Postdoc Alumni since 2009



Roles of Alumni in Academia



PhD & Postdoctoral Scholar Alumni (2009-2019)



What is next?



2021 Alumni Survey Tentative questions:

- Did you need your degree/degree-training to land your current job?
- What transferable skills should be acquired by students interested in pursuing the same career path?
- Would you be willing to send us a copy of your CV/Resume?

Post-Collegiate Outcomes Project



Broader data sources now becoming available...

Newly organized data sources

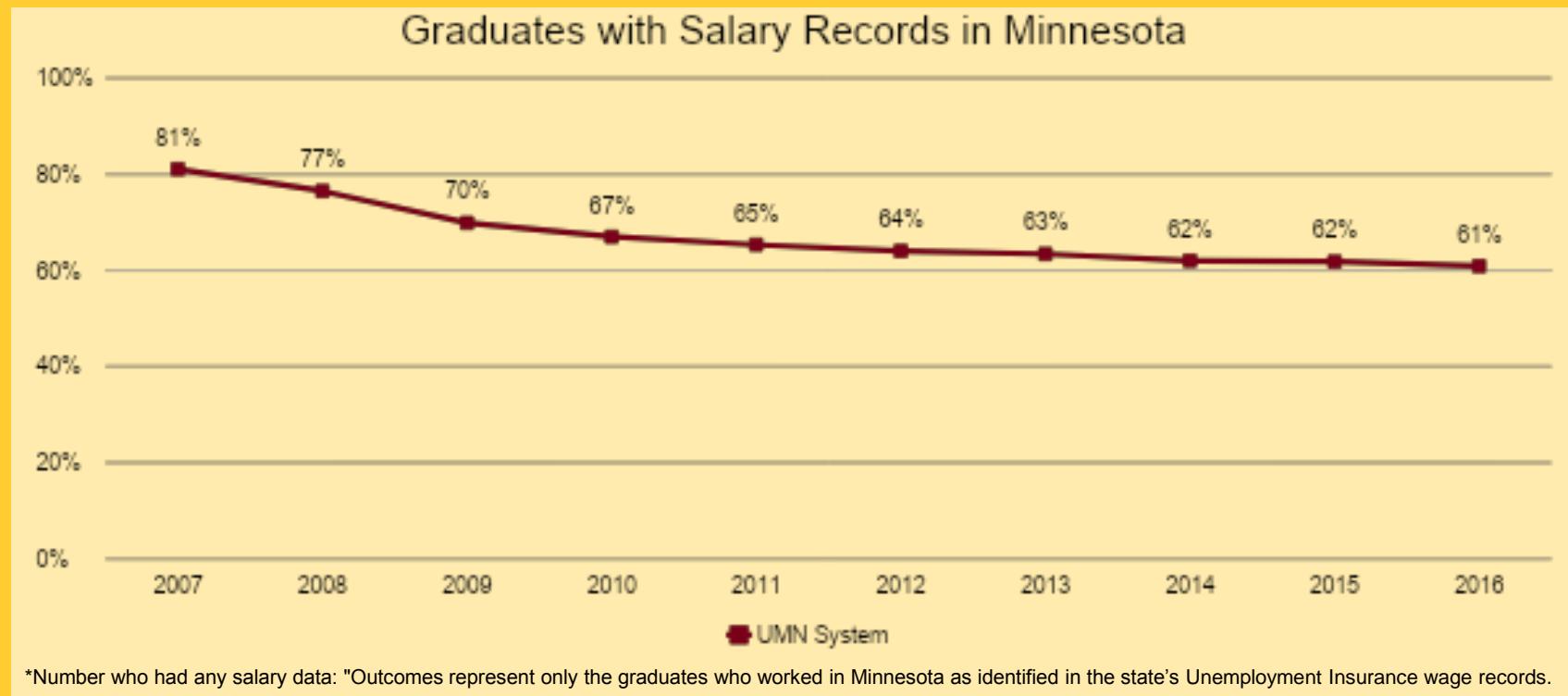
- SLEDS – Governed by the Minnesota P-20 Education Partnership
- Clearinghouse – Pursuit of additional education, including and beyond UMN
- Emsi – Labor market analytics (locale, employer, salary) at all degree levels

Potential future data source

- U.S. Census Bureau Longitudinal Employer-Household Dynamics Post-Secondary Employment Outcomes Project

SLEDS example: Percentage of Graduates Employed in Minnesota

Cohort of Students Tracked Over Time System-wide: Baccalaureate, 2007, N = 8,341



*Number who had any salary data: "Outcomes represent only the graduates who worked in Minnesota as identified in the state's Unemployment Insurance wage records."



Clearinghouse: Further degree attainment

Degree Received: UM Baccalaureate in 2007

31% received post baccalaureate degrees/certificates between 2007-2016

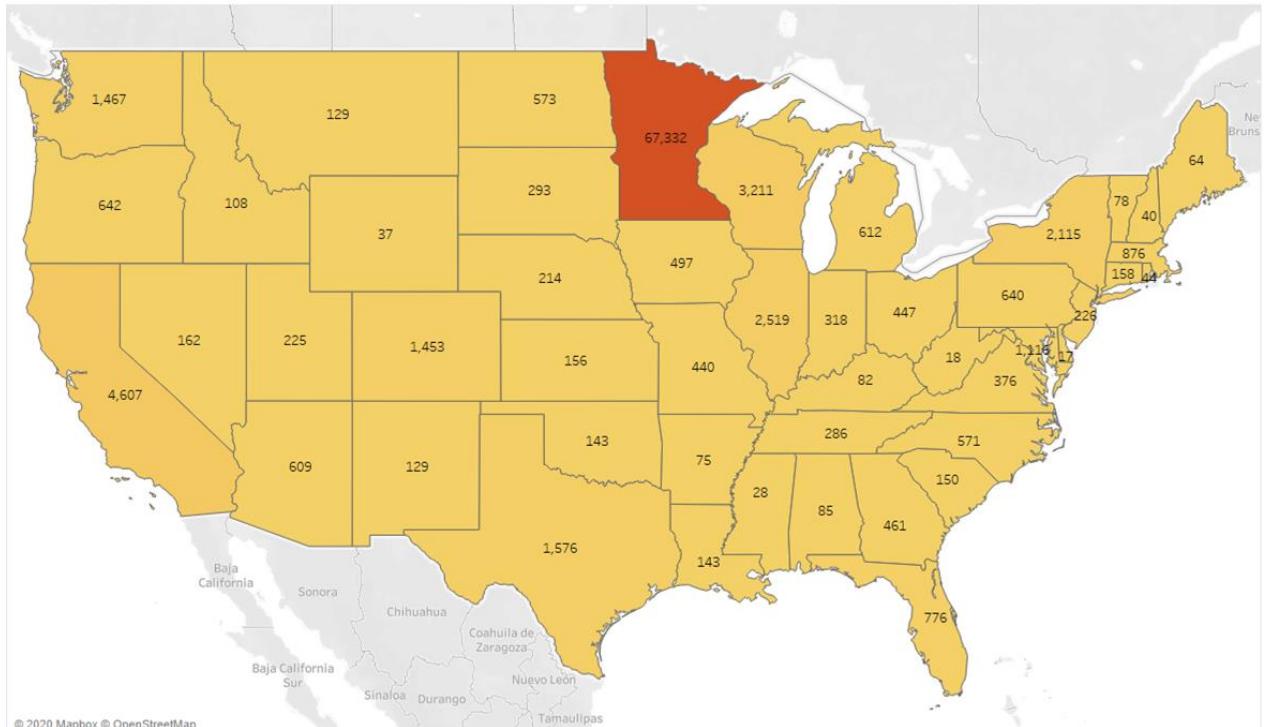


Total 2007 UM Baccalaureate N = 8,341



Emsi: Location of employment

n=134,649 alumni from 2003-2018



Closure / What's Next

- Helping students during the pandemic
- Alumni involvement
- Employers
- A more comprehensive system-wide career story





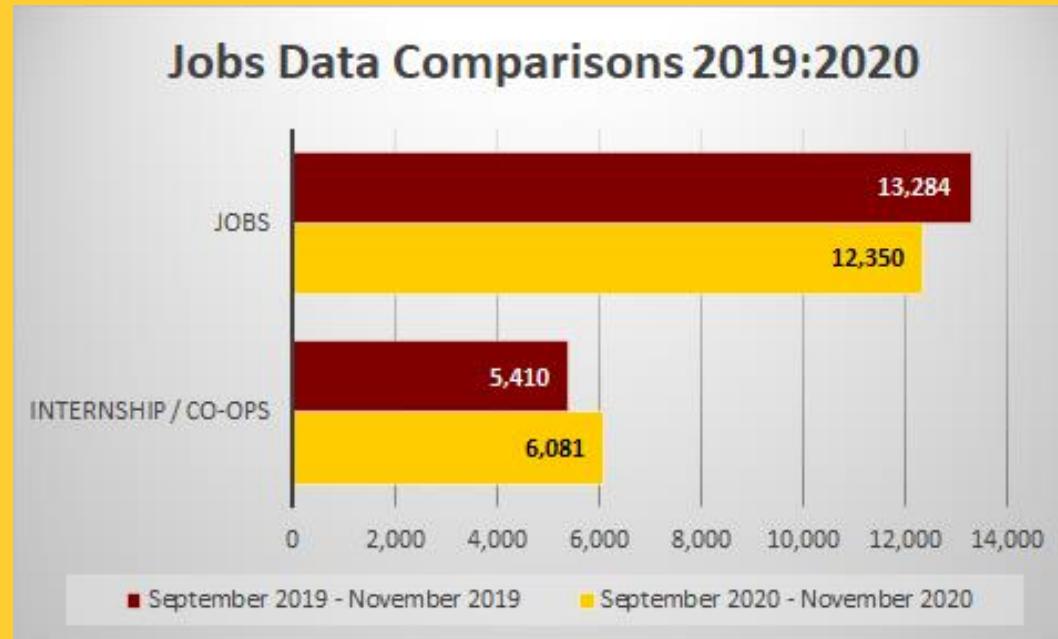
UNIVERSITY OF MINNESOTA

Driven to Discover®

Crookston Duluth Morris Rochester Twin Cities

The University of Minnesota is an equal opportunity educator and employer.

COVID Jobs Data



goldpass.umn.edu



COVID shifts

Virtual Fairs - Fall 2020

- 14 Career Fairs, 5 Graduate / Professional School Fair events

Virtual webinar benchmarking / advisement - ER's

- Training on virtual fair platforms for students
- Hire & Recruit Virtually at the U of MN webinar
- Employer Town Hall - pivoting due to COVID (85 companies)



Organizational Structure

Twin Cities – decentralized, hybrid model of service delivery*

- One or more collegiate units
- Career Services Administration
- Pre-Health Student Resource Center
- Center for Academic Planning and Exploration (CAPE) – exploring students

Duluth – centralized; collegiate unit internship program support

Morris – centralized

Crookston – centralized

Rochester - centralized

*Big 10+ Career Consortium - [UIUC](#), [Indiana](#), [Nebraska](#), [Ohio](#), [Wisconsin](#)



Employer Survey (additional)

Are you open to hiring international students?

- Full-time - Yes or sometimes - 61%
- Internship opportunities - Yes or sometimes - 70%

Minimum GPA required to interview candidates?

- 28% 3.0 GPA or above
- 60% GPA not a factor



Wish List

Career-related requirement for all students

- FYE or other curricular requirements, and experiential in some colleges / programs...
 - CSE - First Year Experience
 - Curricular - CSOM
 - UMC - experiential

Additional funding support for unpaid / underpaid internships

- May '19 cohort - between 26% - 30% reported as unpaid





BOARD OF REGENTS

DOCKET ITEM SUMMARY

Mission Fulfillment

December 10, 2020

AGENDA ITEM: Holistic Approach to Student Wellness

Review

Review + Action

Action

Discussion

This is a report required by Board policy.

PRESENTERS: Carl Anderson, Assistant Vice Provost for Student Affairs and Director & Chief Health Officer, Boynton Health, Twin Cities campus
Sandra Olson-Loy, Vice Chancellor for Student Affairs, Morris campus

PURPOSE & KEY POINTS

This item includes an overview of the results of the 2018 systemwide College Student Health Survey and outlines the University's approach on all five campuses to improve the health and wellbeing of students. Each campus deploys programming to meet the unique needs of their student populations, and students systemwide benefit from resources that support their physical health, mental health, and overall wellness.

The item also includes description of programs and strategic plans that have been put in place to address findings from the 2018 College Student Health Survey. The discussion will cover new initiatives, investments, and collaborations.

BACKGROUND INFORMATION

The Board previously discussed related topics at the following meetings:

- February 2020: *Student Mental Health, Part I*, Mission Fulfillment
- May 2018: *Student Health and Wellness Programs*, Mission Fulfillment

University of Minnesota Board of Regents
Mission Fulfillment Committee
December 10, 2020

Holistic Approach to Student Wellness

All campuses in the University of Minnesota system strive to support and improve the health and wellness of our students, staff, and faculty. The American College Health Association (ACHA) Healthy Campus 2020 model emphasizes an ecological approach to improve community health. While specific campus programs may differ in their approaches, successful healthy campus initiatives include

- A network of people working toward a common vision
- Priority health needs of your community
- A plan with strategies and action steps
- Community- and individual-focused interventions
- Tracking and evaluation of progress

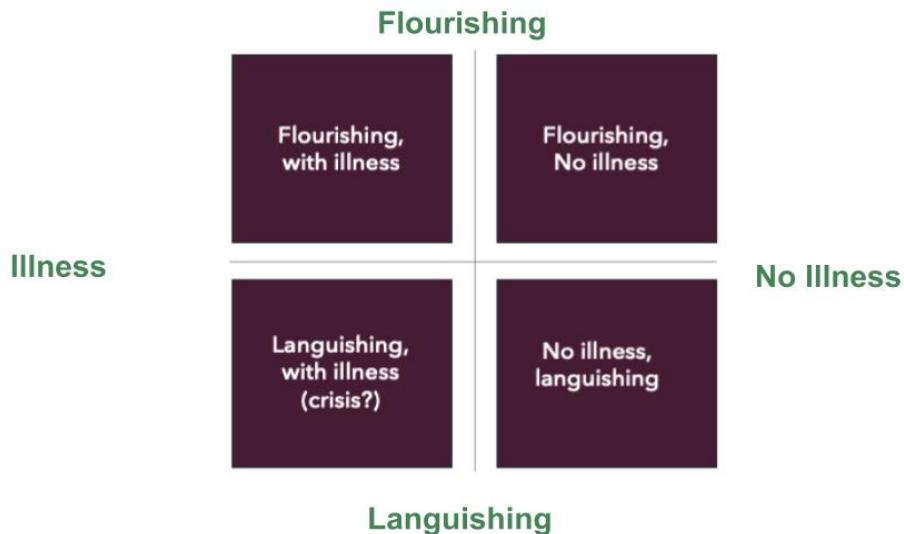
An ecological approach focuses on both population-level and individual-level determinants of health and interventions. It considers issues that are community-based and not just individually focused (National Association of Student Personnel Administrators [NASPA], 2004). Health is determined by influences at multiple levels (e.g., public policy, community, institutional, interpersonal, and individual) (McLeroy et al., 1988). Campus ecology provides a multifaceted view of the connections among health, learning, productivity, and campus structure.

Across the University of Minnesota system, our campus health and wellness programs include:

- | | |
|--|--|
| <ul style="list-style-type: none">• Health Services• Student Counseling• Recreation and Wellness• Financial Counseling• Disability Resources | <ul style="list-style-type: none">• Violence Prevention• Student Health Insurance• Camps Health Related Policies• Public Health |
|--|--|

Over the last decade, the national conversation on health has broadened from a focus on critical areas of physical health and mental health to a more holistic, multidimensional focus on wellness and wellbeing. The components often include physical and mental health as well as intellectual development, social relationships, and spirituality. (Gieck & Olsen, 2007; Granello & Witmer, 2012; Myers & Sweeney, 2008). A recent American College Health Foundation study found that “while many institutions are still utilizing traditional health education practices, there appears to be a movement toward more systemic, environmental approaches to wellbeing, including structural, organizational, and financial strategies, in addition to a range of policy initiatives” to foster wellbeing (Travia et al., 2020, p. 2). This work recognizes health much more broadly than “the absence of illness.”

A commonly accepted holistic model related to mental health, the Corey Keyes – Two Continua Model frames mental illness and health as related, but distinct, dimensions. One continuum indicates the presence or absence of mental illness, the other presence or absence of mental health. The model identifies three core components of positive mental health: feelings of happiness and satisfaction with life (emotional well-being), positive individual functioning in terms of self-realization (psychological well-being), and positive societal functioning in terms of being of social value (social well-being). Flourishing—high and optimal levels of well-being is possible with or without the presence of a diagnosed illness. Similarly, languishing—low levels of well-being—is possible with or without illness.



(<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2866965/>) (<http://www.midus.wisc.edu/findings/pdfs/380.pdf>)

College students often identify health and wellbeing concerns as key impediments to their academic performance and persistence (Neilson et al., 2005; UMN College Student Health Surveys). Our vision is to foster student wellness and wellbeing systemwide for success in college and in life, aligned with the definitions used in the University of Minnesota Duluth's wellbeing initiative.

Wellness "A conscious, self-directed and evolving process of achieving full potential."

The National Wellness Institute

Wellbeing "A state of good health, happiness, fulfillment, and purpose, judging one's life positively and feeling engaged."

Jim Purcell, Returns on Wellbeing Institute

Schreiner offered insights on flourishing for college students. Schreiner's work informed the UMN Morris framing of Morris Let's Thrive and shows, "thriving college students not only are academically successful, they also experience a sense of community and a level of psychological well-being that contributes to their persistence to graduation and allows them to gain maximum benefit from being in college" (Schreiner, 2010, p. 4). The Thriving Quotient's five factors follow:

The Thriving Quotient:

Engaged Learning + Academic Determination +

Positive Perspective + Social Connectedness + Diverse Citizenship

Current University work is also bringing greater recognition and understanding of the need for broader inclusion of culturally relevant wellbeing frameworks; scholarship on the application of critical race theory in mental health; contributing factors to the health disparities in BIPOC, LGBTQIA2S+, and other underrepresented communities; and access to culturally protective practices on campus. Efforts are underway to bring a trauma-informed lens to health and wellbeing service delivery this fall.

UMN College Student Health Survey

The results from the University of Minnesota's College Student Health Survey (CSHS) highlight the

health status and health-related behaviors of students enrolled in the participating institutions. These data offer a comprehensive look at the health conditions and health-related behaviors impacting students attending Minnesota's postsecondary schools. Identification of these health related issues is critical as the health of over 400,000 college students in Minnesota affects not only their academic achievement but also the overall health of our society.

University of Minnesota campuses use the survey data to:

- inform and determine priorities for health services, programs, policies and further evaluation
- inform departments and academic units of current health issues
- provide recommendations to administration
- provide researchers with existing data for further research and grant applications
- give credibility to funding requests for initiatives to meet student health needs

UMN students from each campus are randomly selected to complete the CSHS on a regular schedule. Response rates for the most recent survey from Spring 2018 are: UMN Crookston (aggregate of on-campus and online) 48.8%; UMN Duluth 43.4%; UMN Morris 53.6%; UMN Rochester 70.9%; and UMN Twin Cities 40.4%. The survey will be completed again on all UMN campuses in spring 2021. The Board of Regents reviewed mental health data from the 2018 survey at the February 2020 meeting. This presentation includes a focus on the survey's physical health and wellbeing data.

The 2018 survey found more students have access to health insurance, fewer use tobacco and high-risk drinking rates continue to drop—although high-risk drinking remains a problem. Mental health continues to be the top public health issue on campuses—significantly above other issues. The number of women reporting that they had experienced sexual assault increased.

Health Insurance and Health Care Utilization

Students' current health influences their ability to realize immediate goals of academic success and graduation, while future health affects their ability to accomplish longer-term goals of finding and sustaining a career. Access to health care has been shown to improve health. Although institutions of higher education differ in scope of services, each institution has a unique opportunity, and bears a certain responsibility, to address student health related issues and reduce healthcare access barriers.

In 2018, students attending the University of Minnesota reported an overall uninsured rate of 1.3% with a range from 0.8% to 2.7% uninsured. These rates are substantially lower than those reported in surveys from 2007 to 2013 and similar to 2015/2016 rates. This compares to a Minnesota statewide average for uninsured 18-25 year olds of 6.0% (male) and 6.3% (female) in [2015](#).

Access to the Student Health Benefit Plan throughout the UMN system continues to play an important role in achieving this objective. The goal has been to provide cost-effective coverage as an alternative to more expensive individual plans offered in the state insurance exchange (MNsure).

Average Number of Days of Poor Physical and Poor Mental Health Past 30 Days

Among all UMN students who completed the 2018 College Student Health Survey, students reported an average of 2.79 days of poor physical health in the past month, with campus population responses ranging from 2.54 days to 2.96 days. Students reported experiencing poor mental health an average of 6.44 days (range: 5.15 days to 7.96 days). The overall average number of poor physical health declined from an average of 3.09 days in 2015/2016 while the average days of poor mental health

increased from 5.84 reported in the same years. The 2017 [Minnesota statewide average](#) for 1.6 days of poor physical health and 3.7 mentally unhealthy days (for those 18-25 yo).

Impact of Health and Personal Issues on Academic Performance—Past 12 Months

The five most commonly reported health issues among students at the University of Minnesota are:

- **stress (74.5%)**
- excessive computer/internet use (48.7%)
- **sleep difficulties (47.3%)**
- mental health issues (39.4%) and
- financial difficulties (36.0%)

Students' concern for a family member or friend and upper respiratory infections also impact nearly one third of University students in a year (35.7% and 32.1% respectively).

Among students who report a particular issue, those with the greatest impact on academic performance are mental health issues (57.8%), any disability (54.8%), sleep difficulties (54.1%), stress (47.4%) and serious injury (45.3%). Students experiencing sexual assault and engaging in excessive computer/internet activity are also quite likely to see an impact on academics (44.3% and 41.0% respectively).

Each University campus has collaborative programs and initiatives to support students who are addressing these issues, though the breadth and scope of available resources varies. The 2018 results were similar to the results reported among students in the 2015 and 2016 surveys.

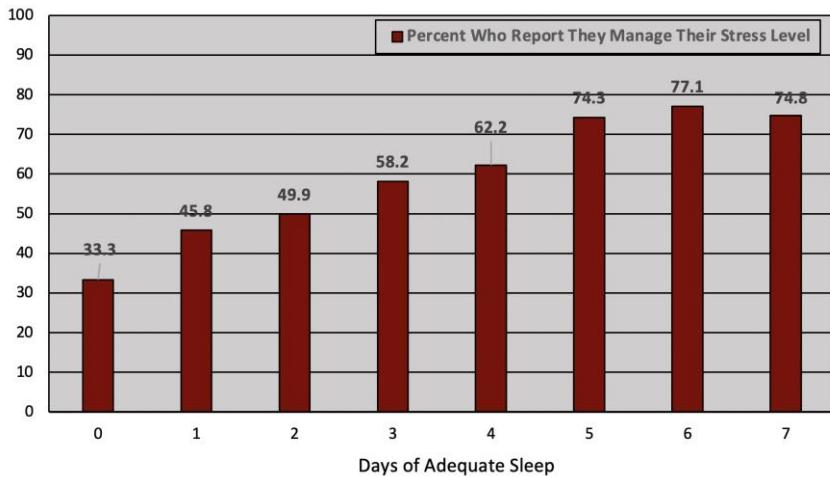
Ability to Manage Stress—Past 12 Months

As noted above, 74.5% of UMN students identified stress as an issue in their life in the previous year, nearly half (47.4%) of these students reporting that their stress impacted their academic performance. In 2018, 40.7% of UMN students report that they are unable to manage their stress level. Among these students, 14.3% report a diagnosis of depression within the past 12 months. Only 5.5% of students who are able to manage their stress report a diagnosis of depression.

Few Students Report Adequate Sleep—And Sleep's Relationship with Ability to Manage Stress

On average UMN students reported getting what they defined as adequate sleep on 3.37 of the most recent seven days—under half of their sleep nights. Adequate sleep was self-assessed by respondents based on how often in the past seven days they got enough sleep to feel rested when they woke up in the morning. The five UMN campuses averages ranged from 3.04 days of adequate sleep in the previous week to 3.52 days. The overall average declined a bit from the 3.42 days reported in 2015/2016 surveys.

Receiving adequate sleep appears to be associated with the students' ability to manage their stress level. Among University students who report receiving zero days of adequate sleep in the previous week, only 33.3% report having the ability to manage their stress level as compared to over 75% for those who report 6 or more days of adequate sleep.



High Risk Drinking

The high-risk drinking rate among University of Minnesota students in survey year 2018 was 25.8% ranging between 21.9% and 32.3%. Among all campuses the high-risk drinking rate was highest in survey year 2007 at 40.3%. For some young adults, college life includes an introduction to, or an increase in, the use of alcohol, marijuana, and other drugs. High-risk drinking is highest for those ages 21–25. It is difficult to draw conclusions about the reasons for the campus-by-campus differences in rates. The composition of the enrolled student population on a particular campus may play a part in these differences.

Marijuana Use -Past 30 days

After alcohol, marijuana is the illicit drug of choice for full-time college students, with more than half (50.4%) having used the drug at least once in their lifetime, more than one-third (37.9%) having used it in the past year, and one in five (21.1%) having used it in the past month (Johnston et al., 2015). Marijuana use is also strongly associated with lower GPA.

Among UMN students, the current user rate of any marijuana among students on the five campuses ranges from 6.5% (the average for UMC's on campus and online respondents) to 20.1%. The 2018 rates are lower than those reported in 2015-16 but still higher than those reported in surveys between 2007 and 2013. Current marijuana use is defined as any marijuana use in the past 30 days.

Physical Activity Level

More than one-half of all UMN students report levels of physical activity that place them in the CDC's high classification, meeting the Center's recommendations (41.0% at Crookston online and 58.3% for Crookston on-campus students, 57.0% at Morris, 56.9% at Rochester, 56.7% at Twin Cities). At UMD, more than three-fifths (60.8%) of students report levels of high levels of physical activity.

Nationwide, more than one-half (52.6%) of 18- to 24-year-olds report participating in 150 minutes or more of aerobic physical activity per week; for all adults, the rate is 50.2% (CDC, 2017). As we understand the positive correlation between physical activity and mental and physical health, each campus is committed to investments in programming to support this positive health behavior.

Food Insecurity

More than one in eight (13.8%) UMN students report experiencing a food shortage and lacking

money to get more within the past 12 months, up slightly from 12.7% in 2015 and 2016. Approximately one in five (20.3%) report worrying about whether their food would run out before they had money to buy more. This is comparable to the 2015 and 2016 rate of 20.9%.

A Note Regarding Mental Health

Mental health remains a critical issue in student health and wellbeing. Previous student health reports to the Board provided significant detail on increasing mental health concerns—at the UMN and nationally. Across the five UMN campuses, one in every three students (and in some populations one in every two students) has had at least one mental health diagnosis in their lifetime. The most common diagnoses are anxiety (with a range of 24.0% to 39.4% being diagnosed across campus populations) followed by depression (with a range of 19.6% to 32.6%). It should be noted that mental health diagnoses often co-exist.

The UMN Systemwide Mental Health Learning and Collaboration Network established in 2017-18 continues to share proactive, data-informed approaches to support student mental health. The group works to share emerging practices, expand successful pilot programs to additional campuses, and identify best common solutions while recognizing the unique student body, programs, geography, and resources of each campus. The network brings together vice chancellors/vice provost, and assistant provosts; directors and coordinators of health, wellness, counseling, mental health, and medical services; as well as counselors, therapists, case managers, and psychiatrists from the five UMN campuses.

Other Student Surveys of Interest

Housing Insecurity (non-CSHS data, Twin Cities undergraduates)

Housing insecurity is a lack of security in shelter resulting from high housing costs relative to income. Housing insecurity occurs on a spectrum, from those who worry whether they will be able to pay for the cost of housing to those who actually experience homelessness. In the 2018-2019 academic year, more than four in ten UMN-Twin Cities undergraduate student respondents (43.6%) reported worrying that they would not have enough money to cover the cost of their housing (Spring 2019 Undergraduate Pulse Survey, Office of Undergraduate Education).

More than one in three of these students (38.3%) reported taking one or more steps that put them at risk of losing their housing, such as not paying or delaying payment on a rent or utility bill or living with others beyond the expected house/apartment capacity. One half percent of the students reported experiencing homelessness that year, translating to an estimated 150 undergraduates.

2020 COVID Survey (Duluth and Twin Cities)

A survey was developed based on modifications to the Boynton Health College Student Health Survey adding in questions focused on issues related to COVID-19. The survey was distributed to a random sample of University of Minnesota undergraduate and graduate students enrolled on the Duluth and Twin Cities campuses. The survey was conducted between April 21, 2020 and May 5, 2020 and distributed to 7,668 students. A total of 2,067 students completed the survey for an overall response rate of 26.9%. The final survey population was 69.9% undergraduates, 28.0% graduate students and 2.1% who were non-degree seeking. The gender breakout was 58.3% female, 35.3% male and 2.1% selected a non-binary response option. Black, Indigenous and People of Color (BIPOC) represented 24.0% of the survey respondents and 7.8% reported being an international student.

The results of the survey are presented based on the aggregated responses from both the Duluth and Twin Cities campuses. In addition, the results are presented for students by disability status, ancestry/race, and sexual orientation. Disability status, ancestry/race and sexual orientation are based on self-reported responses to survey questions. Given the lower sample sizes among BIPOC students, it is not possible in some cases to use traditional inferential methods to determine whether any differences between student groups are statistically significant. Instead, we report the data using descriptive methods below.

Sleep: On average students reported obtaining slightly more than 4 days of adequate sleep within the past 7 days. The mean number of days of adequate sleep among all students from the 2018 CSHS was 3.42(1.9) days. Students who reported having no disability reported the highest mean days of adequate sleep (4.8 days) with the lowest mean days of adequate sleep (3.08 days) being reported among students identifying as having a American Indian/Alaska Native racial/ancestry background. Most studies looking at sleep have associated sleep quality and duration with better academic performance (Eliasson et al, 2010; Gilbert et al, 2010). Among all students who averaged less than 4 days of adequate sleep within the past seven days, 65.3% indicated that they were sleeping less than they normally are used to sleeping. Only 20.1% of students who averaged more than 4 days of adequate sleep reported sleeping less than normal for them.

Impact of Health and Personal Issues on Academic Performance During the Coronavirus Outbreak Past 30 Days:

In April 2020, among all students, the issues that had the highest prevalence rates were stress (80.0%), excessive computer/internet use (65.2%), mental health issue (52.8%), concern for family member or friend (50.7%) and sleep difficulties (50.5%). Among those students who reported having a particular issue, the health or personal issue that appeared to have the most profound impact from their perspective were: any disability (71.6%), mental health issue (65.3%), stress (63.6%), excessive computer/internet use (59.8%) and homelessness (59.1%).

Stress Related to Closing of Campus As a Result of the Coronavirus Outbreak: Students with a disability reported higher levels of stress (very stressful or extremely stressful) in their day-to-day life compared to students who reported having no disability (40.7% vs 16.6%, respectively). Higher levels of stress (very stressful or extremely stressful) in their day-to-day life by self-reported racial/ancestry designation were as follows: Middle Eastern (40.0%), Black/African American (32.0%), multiracial not including White (28.8%), multiracial including White (27.7%), Asian (17.2%), White (19.4%) and American Indian/Alaskan Native (16.6%).

Wellness Programs and University of Minnesota Strategic Planning

Each campus has a strategic commitment to holistic health and wellness programs and services aligned with the **MPACT 2025 Systemwide Strategic Plan** Commitment for Student Success

Measure: *Meeting all students where they are and maximizing their skills, potential, and well-being in a rapidly changing world.* The systemwide goal is to enhance our student experience, wellness, and success.

UMN Crookston, leveraging its small size, utilizes a highly collaborative model that draws connections between wellness professionals in counseling, health, and disability resource centers; collaboration with professionals in residence life, multicultural education, and the Student Success Center; and partnerships with local and regional healthcare and wellness providers. Varsity, club, and intramural athletic programs also play a key role. Completed in June 2016, the 36,070 square foot University Wellness and Recreation facility bolsters the teaching and learning mission of the university by fostering holistic wellness as an essential component of student learning, development, and success

UMN Duluth provides resources that best support each individual's physical, social, environmental, spiritual, intellectual, emotional, career, cultural, and financial success. UMD programming, services, and physical spaces support a holistic and inclusive environment that contributes to the well-being of the entire UMD campus community. UMD Health Services, an integrated physical and mental health unit, supports students in a holistic manner. Recreational Sports Outdoor Programs (RSOP) provides a wide range of indoor and outdoor programs that support the wellbeing and fitness of UMD students. RSOP operates out of various facilities within the Sports and Health Center (SpHC) as well as external locations on and off campus. RSOP capitalizes on the unique and spectacular natural environment in the programming offered to students. UMD students are integrally involved in promoting well-being. Examples include UMDSA's "Band Together" campaign (supporting student mental health), the Student Athlete Advisory Council's Green Bandana mental health campaign, and peer educators working in health education and financial literacy.

UMN Morris offers a holistic model infusing evidence-based mental health and wellbeing practices, skill building, information and resources into Morris students' curricular and co-curricular life through Morris Let's Thrive. A UMM strategic goal is to meet essential student needs that allow them to thrive through the provision of necessary programs, facilities, and services that prepare and encourage students, as well as faculty and staff, to maintain a healthy lifestyle and pursue wellbeing. UMM collaborates internally to provide comprehensive wellbeing initiatives beginning with students' first days on campus for orientation. At UMNMorris, the recreation and fitness center is a unique campus - community partnership with the Morris Area School District, the City of Morris and Stevens County. The Regional Fitness Center (RFC) offers group fitness classes, aquatic and gym recreation, a full-service workout room, competition and recreation pools, and personal training. One in five students participates in UMM's NCAA Division III Cougar Intercollegiate Athletics program.

UMN Rochester uses a Community of Wellbeing model of engagement that offers students a holistic suite of information, resources, programs, and professional services in support of student physical, social, and mental wellbeing.. Health and wellness related programs include Guided Meditation, Living on Purpose Yoga, Tai Chi, Living Learning Community Retreats, Counseling Connect and ethnic-based affinity groups, as well as monthly de-stress events. UMR also supports a Healthy Living Learning Community (HLLC) and HLLC sponsored events. Campus recreation, fitness, and personal training classes and instruction are available through a unique campus - community partnership with the Rochester YMCA through student fees.

UMN TwinCities has a strategic goal to meet essential student needs that allow them to thrive through the provision of necessary programs, facilities and services that prepare and encourage students, as well as faculty and staff, to maintain a healthy lifestyle and pursue wellbeing. UMTC collaborates internally to provide comprehensive wellbeing initiatives, focusing on health care, promotion and prevention, as well as physical, social and mental wellness. University Recreation and Wellness (RecWell) provides a variety of different wellness facilities on the campuses of Minneapolis and St. Paul. RecWell serves over 1.5 million patrons per year. Programs include Fitness & Wellness, Intramural Sports, Sport Clubs, Outdoor Adventures, Aquatics, Court Sports (Handball, Racquetball, and Squash), and Youth Programs. More than 150 Group Fitness and Personal Training classes and instruction are offered year round. The Earl E. Bakken Center for Spirituality and Healing works to advance the health and wellbeing of individuals, organizations and communities with a focus on wellbeing. Bakken Center undergraduate courses, graduate programs, and educational opportunities recognize that supporting wellbeing is not just about physical health. Rather, wellbeing is about finding balance in body, mind, and spirit. In this state, we feel content, connected, energized, resilient, and safe.

Programming During the Pandemic

As the pandemic has required a reduction in most in-person services this fall semester, many programs have pivoted to a virtual model. Telehealth services have been meeting most clinical service needs. Twin Cities campus has listed virtual program options on the Student Unions and Activities [website](#) including virtual PAWS, Student Counseling Services Workshops, Virtual RecWell, and #gopherfitfromhome, which includes group fitness classes, online yoga, and video workouts. The Nutritious U Food Pantry has been operating by taking orders online and facilitating pick-ups. At Morris, where 80% of students are taking at least one in person class, programs are conducting on-campus events with University physical distancing and COVID-19 mitigation guidelines in place as well as providing opportunities for on-line connections to recreation and wellbeing programs. Staff have expanded partnerships with Stevens County Food Shelf to support student food needs. Student Counseling appointments are on track with previous years through tele-health and in person. At Duluth, Champs Cupboard, the UMD student food shelf remains open, along with many campus activities and access to more than 250 club and group student organizations. UMR has amplified student counseling services through an expansion of both individual and group telehealth services. The University partnership with the Rochester YMCA has supported a range of new fitness classes and training exclusively for UMR students. The Crookston campus sponsors the Eagles Essentials food pantry and clothing closet, which is conveniently located adjacent to the Student Success Center. Wellness programming has continued following MDH and CDC guidelines.

Fitness Center Usage – 2019-2020

| Campus | Total Student Visits | Unique Students Users | Unique Students as % of Enrollment | Notes |
|----------------|----------------------|-----------------------|------------------------------------|---|
| UMN Crookston | 4,383 | 304 | 46% | New University Wellness and Recreation facility completed in 2016. |
| UMN Duluth | 195,921 | 9,247 | 90% | UMD's Recreational Sports Outdoor Program has a wide array of on and off campus facilities, making visits difficult to track. Baseline surveys, entry data, and activity registration were aggregated. |
| UMN Morris | 10,413 | 600 | 44% | UMM's campus/community Regional Fitness Center is a key student fitness space. The RFC was closed from 3/17 - 6/23/20 due to COVID 19. Aug - Oct 2020 use is trending above fall '19. |
| UMN Rochester | 1517 | 198 | 32% | UMR partners with the Rochester Area Family Y to provide intramural, fitness and recreation services for UMR students. |
| UMN TwinCities | 637,656 | 26,238 | 53% | University Recreation and Wellness (RecWell) serves over 1.5 million patrons per year student utilization at 62% of UMTG enrollment. RecWell facilities closed from March 17-July 19 due to COVID-19 and reopened on July 20, 2020. |

Student Health Insurance

The University of Minnesota provides eligible students on all UMN campuses with access to high-quality health plans at minimal cost. The UMN Office of Student Health Benefits (OSHB), under Boynton Health in the UMTC Office for Student Affairs, offers affordable healthcare plans designed to meet the unique needs of students and their dependents on each system campus. OSHB administers health, dental and other benefits and enrollment for all eligible University students, graduate assistants, and Academic Health Center residents, fellows and interns.

Student Health Advisory Boards

Student advisory boards or committees are in place across the system to promote student engagement in health and wellness.

UMN Crookston utilizes a variety of groups including the Wellness Center Committee consisting of faculty, student affairs educators, and students who coordinate educational programs, peer counseling staff with offices and office hours located within residence hall facilities, and a sexual violence prevention team to address social norm interventions and programming

UMN Duluth's Student Health Advisory Committee is a group of dedicated students who act as a student voice to Health Services and school administration. Members meet weekly to discuss current issues and brainstorm solutions, and often volunteer additional time on special projects. The Student Advisory Board for RSOP provides feedback and guidance to the staff, assists with communication, and serves as the voice of UMD students in terms of programming.

At UMN Morris, a Student Mental Health and Wellbeing Quality Initiative team engaged students, faculty, and staff in crafting a new model to infuse evidence-based mental health and wellbeing knowledge, skills, and practices within student's academic and co-curricular life. The Campus Assembly's Student Affairs Committee brings student, faculty, and staff input to campus wellness.

The UMN Rochester Healthy Campus Tactical Group serves their community in seeking ways to create and promote high priority and holistic wellness opportunities, programs and initiatives. This group devises the prioritization of wellness goals and action steps as to best communicate and integrate wellness principles and encourage healthy practices, with the aim of enhancing both the personal and collective well-being of the campus.

At UMN Twin Cities, the Student Affairs Student Mental Health Advisory Committee represents students' needs and ideas. Members include undergraduate, graduate and professional students who speak for registered student government groups: Minnesota Student Association, Professional Student Government and Council of Graduate Students. In addition, Boynton's Student Health Advisory Committee members represent similar campus constituents to make recommendations related to health and wellness, and share feedback with Boynton to improve the health of the university community.

Systemwide Wellbeing Initiatives

Learn to Live

Learn to Live is a systemwide, on-line mental health assessment and cognitive behavioral therapy tool encompassing five areas: Stress, Anxiety, & Worry; Depression, Social Anxiety, Insomnia, and

Substance Use. The program provides free, confidential support for UMN students on all campuses. It includes access to assessments, cognitive behavioral therapy tools, and coaches who can provide unlimited personalized support via text, email, and phone. The two areas with highest utilization are the Stress, Anxiety, & Worry module followed by the Depression module.

Learn to Live platforms let students identify teammates—friends or family they choose to keep them motivated and mindfulness moments—brief text messages. UMN has partnered with Learn to Live since 2017. Over 5000 UMN students accessed Learn to Live in 2019-2020—10% of our 56,000. Over 4000 students completed a comprehensive assessment and over 1400 engaged in at least one therapy module. Learn to Live also offers on-demand webinars for students, faculty, and staff, and added COVID-19 resources to its program offerings last spring.

YOU@College

Student affairs leaders from the five UMN campuses recently completed an RFP to launch a system-wide web-based health and wellbeing platform. YOU@College (YOU) was selected as our student well-being portal offering tools, dynamic content, and resources built to align with on-campus health and wellness programs and resources. After careful vetting and review with Purchasing, University Information Security, and OGC, an agreement was signed with You@College in late September. Project implementation began in October for a soft launch in spring and full roll out for Fall 2021.

You@ College is highly personalized and will help UMN students find the campus and community content and resources tailored to their individual needs. The application is designed to activate healthy student behavior with a multi-dimensional approach to wellbeing, individualized for each system campus. UMN systemwide student affairs You@ College desired outcomes follow.

1. Students will have a greater awareness and increase their utilization of campus-based wellbeing resources, programs and services;
2. Students will take action and develop healthy behaviors;
3. Students will have a greater social connection to others; and
4. University staff and faculty will have access to real-time information about student behaviors and needs to better inform decision making, resource allocation and program/service offerings.

The tool draws upon an upstream approach and engaging user experience. It is organized into three primary sections: *Succeed*—academic success and career preparedness; *Thrive*—physical and mental health; and *Matter*—sense of purpose and connection to campus. YOU at College is confidential, protects student data and privacy, and the tool is available 24/7, 365 days per year. Students choose what they would like to share in the application to support their personal wellness goals.

In addition to providing research-based content, YOU incorporates wellbeing resources unique to each campus to support students, including student groups and other peer-based organizations. By compiling campus specific content into a tool for mobile and desktop use, YOU@College functions as an embedded resource in the campus community serving a diverse set of needs to promote inclusivity goals. Impact and evaluation components will allow students to rate the tool's value: what skills are they learning or practicing? How relevant is the tool to their identities?



Holistic Approach to Student Wellness

Board of Regents | Mission Fulfillment Committee | December 10, 2020

Carl Anderson

Assistant Vice Provost, Office for Student Affairs,
Director & Chief Health Officer, Boynton Health,
University of Minnesota Twin Cities

Sandra Olson-Loy

Vice Chancellor for Student Affairs,
University of Minnesota Morris



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MPACT 2025: Connections to Student Health and Wellness

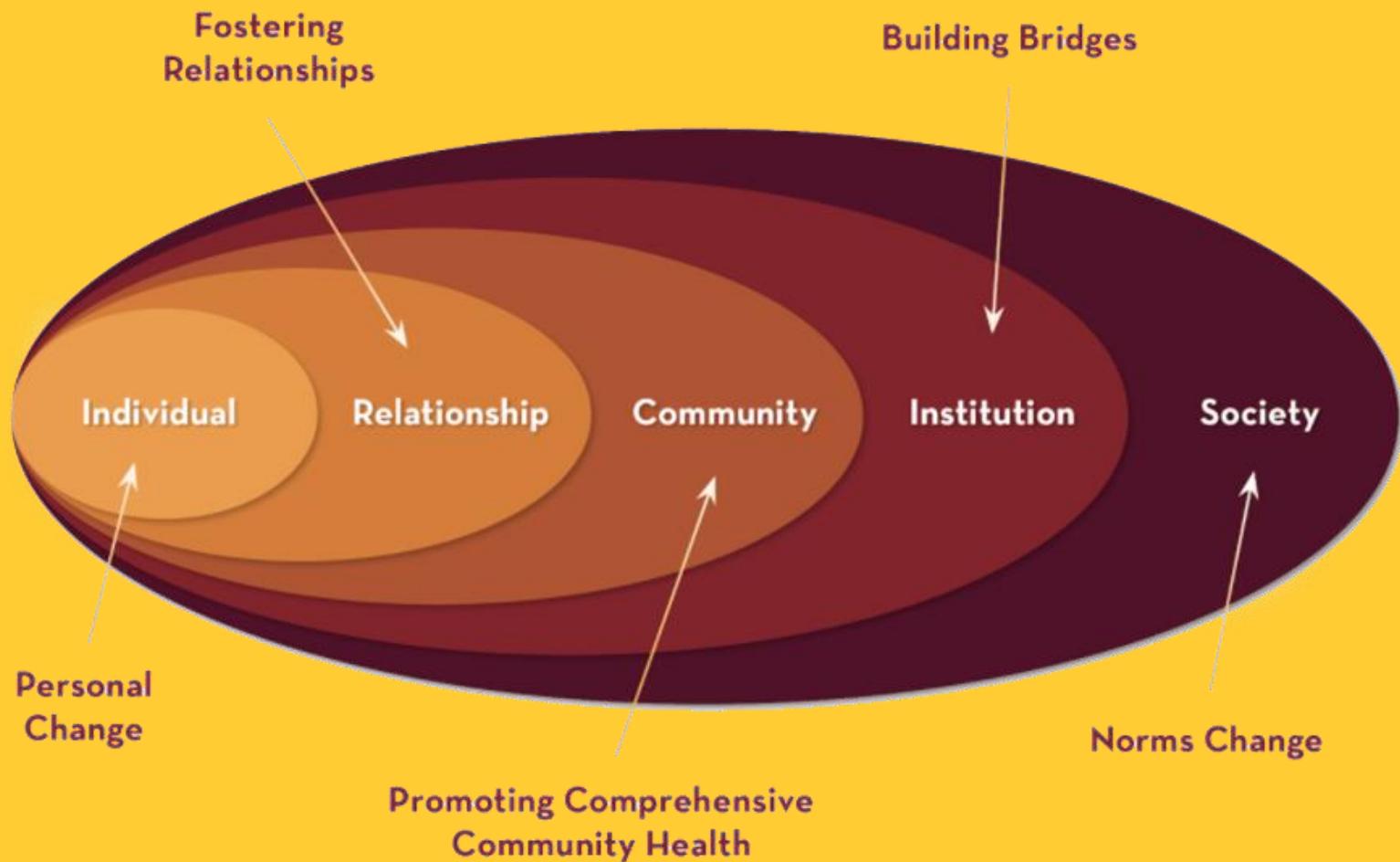


Commitment 1: Student Success

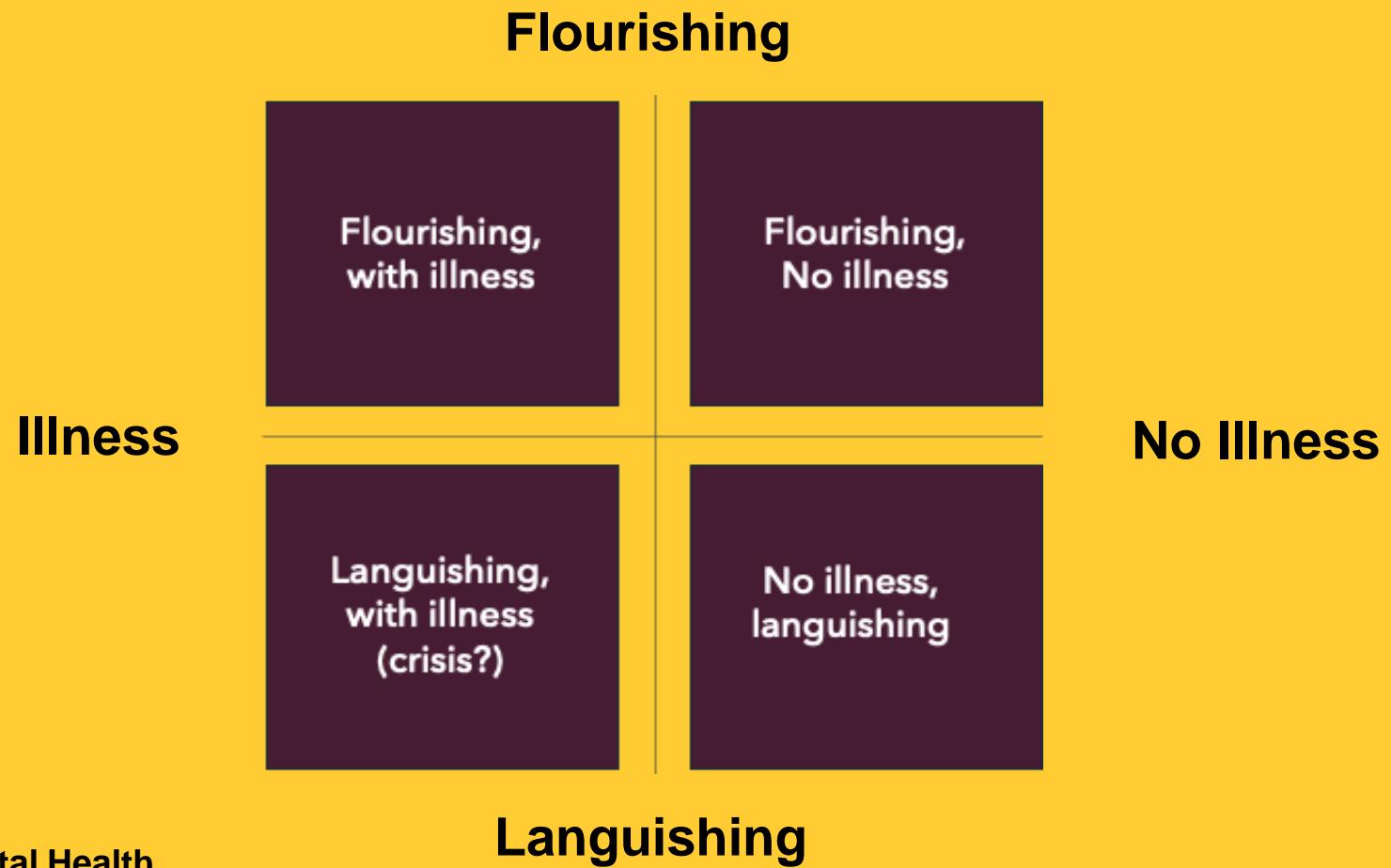
1.2: Enhance student experience, wellness, and success.

- Establish systemwide mental health initiative.
- Strengthen career readiness and outcomes for all students.
- Establish a holistic approach to student wellness.

An Ecological / Public Health Approach



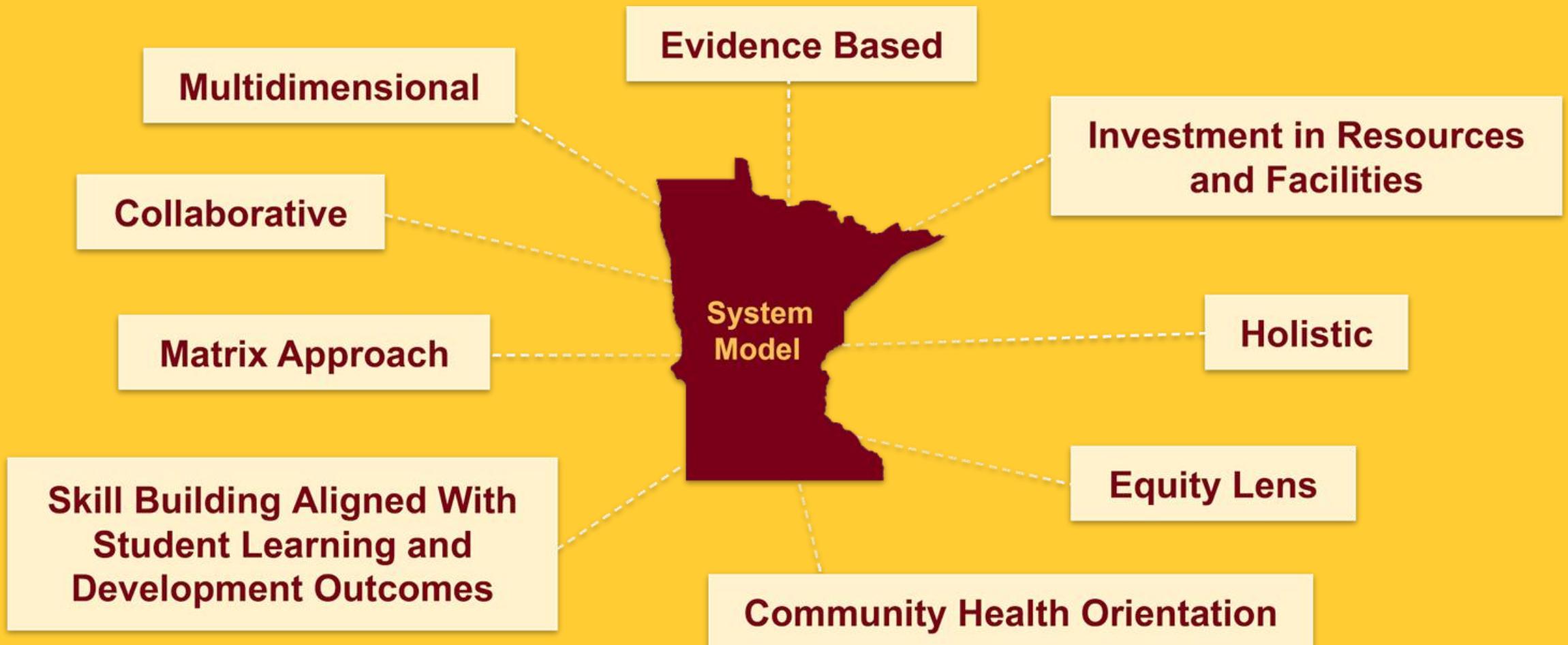
Multi-dimensional Model of Health and Wellbeing



Corey Keyes
Two Continua Model for Mental Health



System Model for Health and Wellness — Fundamental Elements



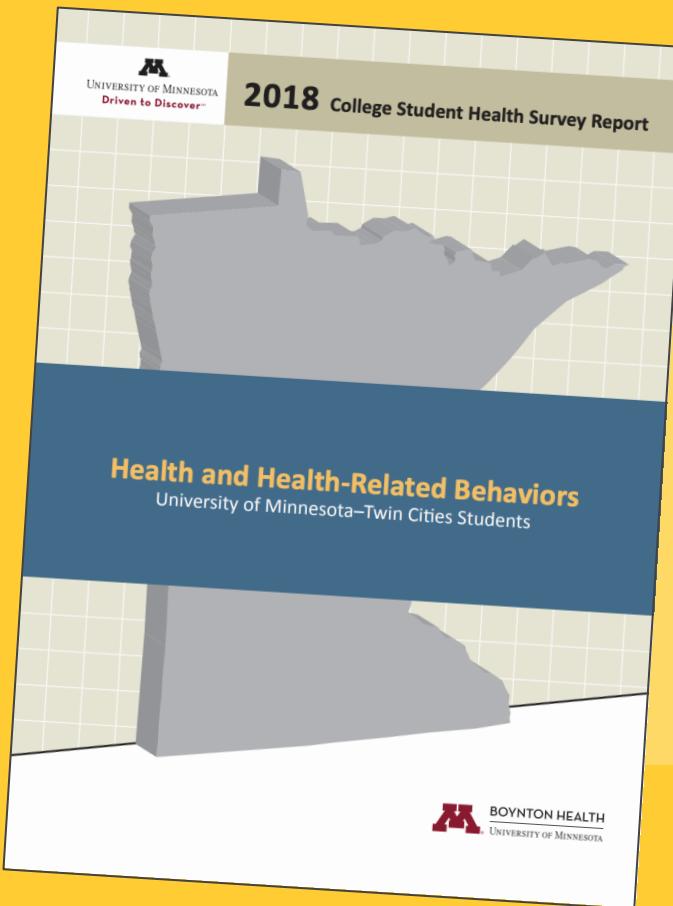
Access to Health Care Improves Health and Supports Student Success



Policy: Mandatory student health fees and third party billing to health insurance, on most campuses to eliminate or minimize out of pocket expenses

Programs: Student medical and mental health services, recreation, and engagement activities on each UM campus

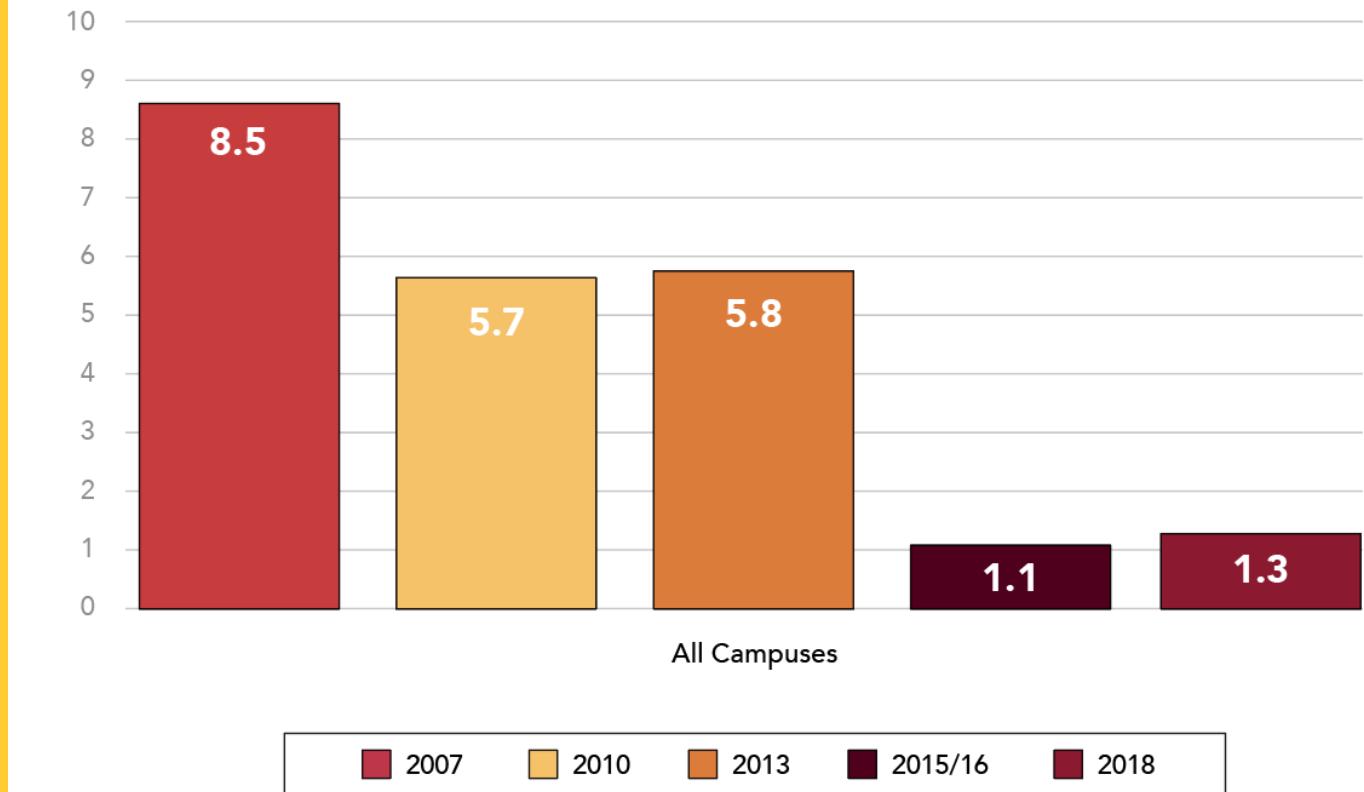
College Student Health Survey



**Reporting:
Spring 2018**

**Next Survey:
Spring 2021**

Health Insurance Status — % Uninsured



*Does not include international students.

Access to Health Care Improves Health

- Health insurance is an important determinant of access to care.
- Policy: UMN students required to carry health insurance
- Program: UMN Student Health Benefit Plan
- Minimal cost for campus health services
- Need to monitor with the elimination of the federal mandate in 2018





2020-2021
STUDENT HEALTH BENEFIT PLAN

Twin Cities Campus



Student Health Benefits
UNIVERSITY OF MINNESOTA

Student Health Benefit Plan



Impact of Health and Personal Issues on Academic Performance — Past 12 Months

All Campuses (Survey Year 2018)

| Health or Personal Issue | % Report Having the Issue | % Report the Issue Impacted Academics (Among Those Who Report Having the Issue) |
|---|---------------------------|--|
| Stress | 74.5 | 51.3 |
| Excessive Computer/Internet Use | 48.7 | 41.0 |
| Sleep Difficulties | 47.3 | 54.1 |
| Mental Health Issue (Depression, Anxiety, etc.) | 39.4 | 57.8 |
| Financial Difficulties | 36.0 | 27.1 |
| Alcohol Use | 18.2 | 12.1 |
| Any Disability (Learning, ADD/ADHD, Physical, etc.) | 11.4 | 54.8 |
| Marijuana Use | 9.3 | 16.3 |
| Food Insecurity | 8.0 | 27.7 |
| Sexual Assault | 3.6 | 44.3 |
| Homeless | 1.0 | 27.5 |



Association between Health or Personal Issue and Grade Point Average

Students who report the issue impacted their academics report statistically lower Grade Point Averages than students who report not having the issue and students who report having the issue but indicated it did not impact their academics.

| Health or Personal Issue | Reported Grade Point Average | | | Statistics |
|-------------------------------|------------------------------|-------------------------|-------------------------------------|--------------------------------|
| | Report Not Having the Issue | Report Having the Issue | Report the Issue Impacted Academics | |
| Stress: Mean (sd) | 3.42(.47) | 3.49(.44) | 3.27(.52) | $F(2,4596)=97.34;$ $p=.000$ |
| Sleep Difficulties: Mean (sd) | 3.45(.45) | 3.42(.50) | 3.26(.52) | $F(2,4600)=65.54;$ $p=.000$ |



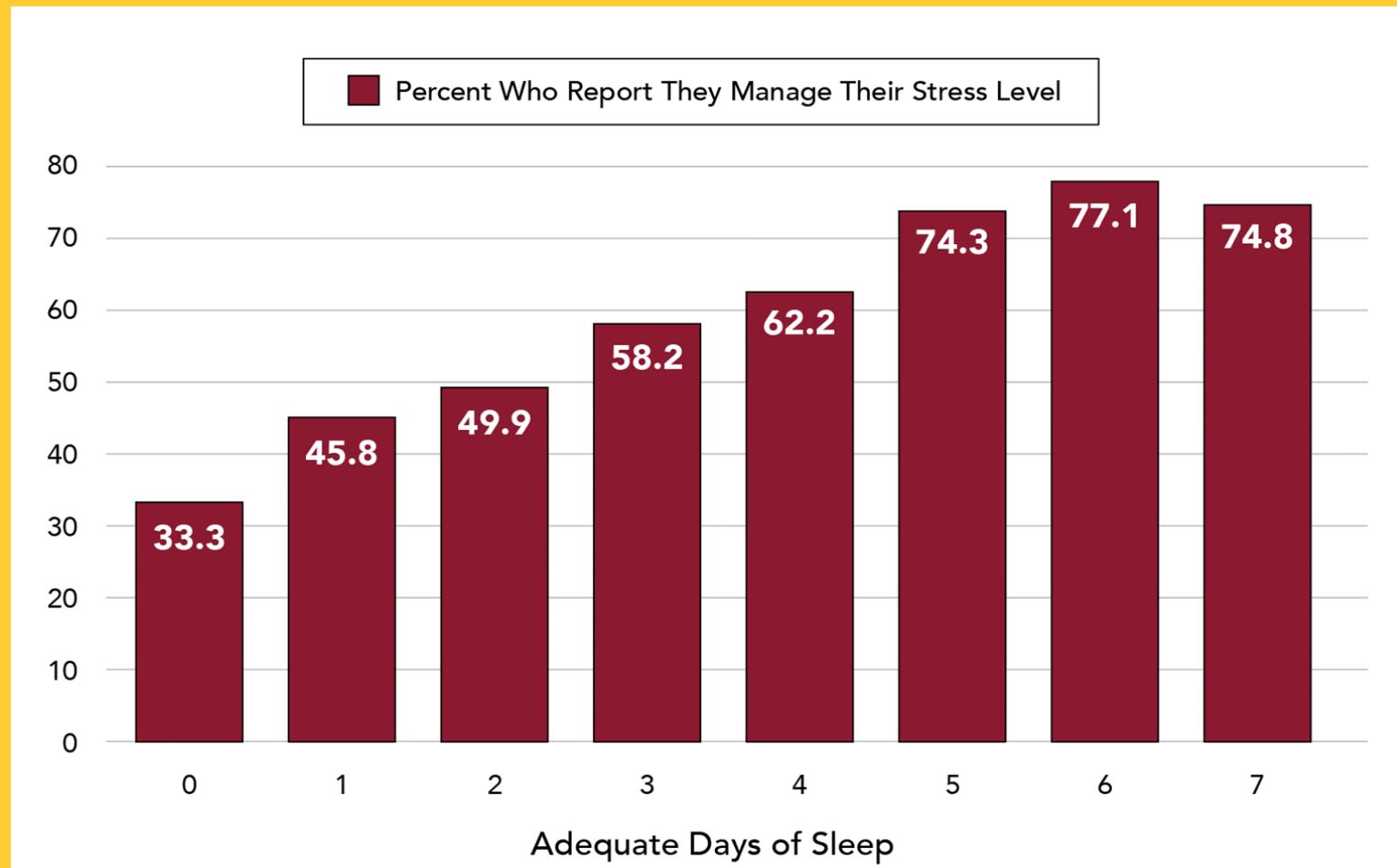
Adequate Sleep Over the Past 7 Days

Overall University of Minnesota students report getting 3.37 days of adequate sleep based on the previous seven days. The means range from 3.04 days to 3.52 days.

| Days of Adequate Sleep Mean (Standard deviation) | | | | |
|---|-----------|-----------|-----------|-------------|
| Crookston | Duluth | Morris | Rochester | Twin Cities |
| 3.36(2.0) | 3.52(1.9) | 3.28(2.0) | 3.04(2.0) | 3.37(1.9) |



Adequate Sleep and Ability to Manage Stress — All Campuses

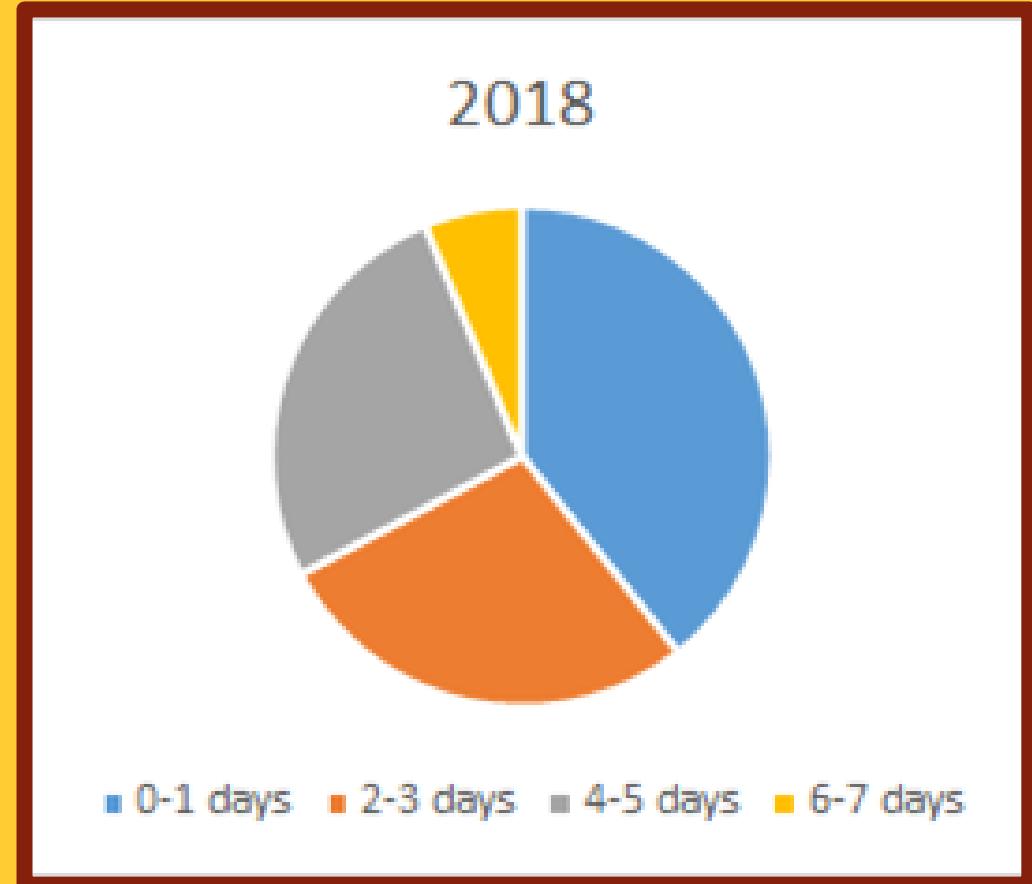
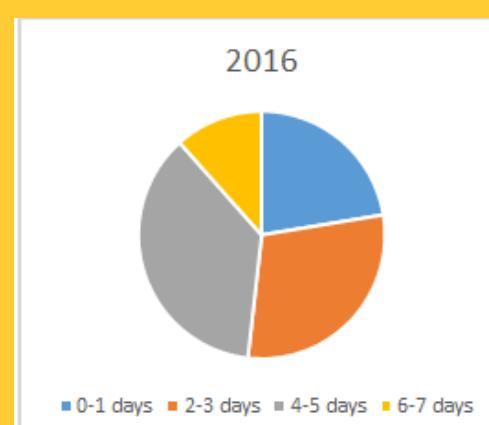
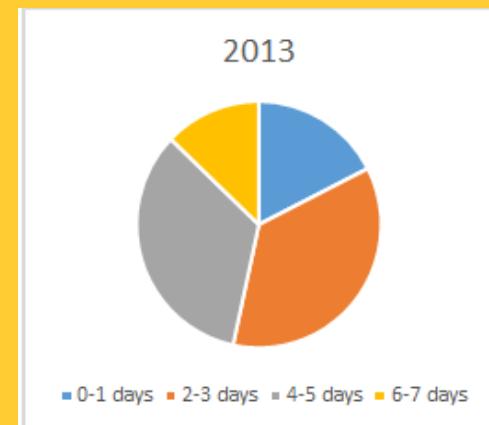
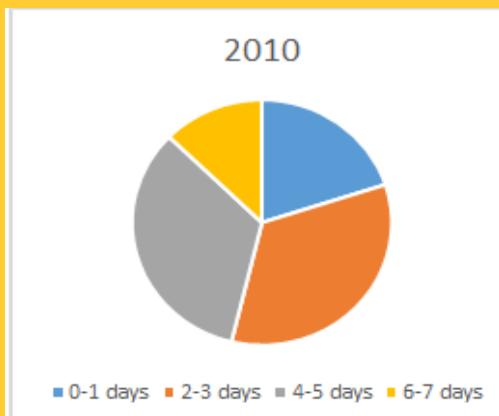
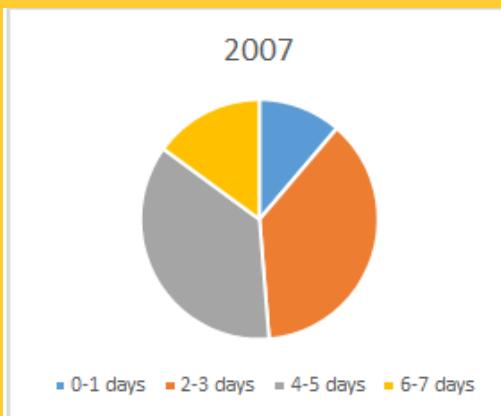


Days of Adequate Sleep:
Reported experience within
the past seven days.

Ability to Manage Stress:
Reported experiences
within the past 12 months.

*Management of stress is
based on student's
perception of their stress
level and their ability to
manage that stress.*

UM Morris Students — Adequate Sleep in the Last 7 Days



Sleep Habits, Sleep Apps & Nap Zones – UMD and Other Campuses

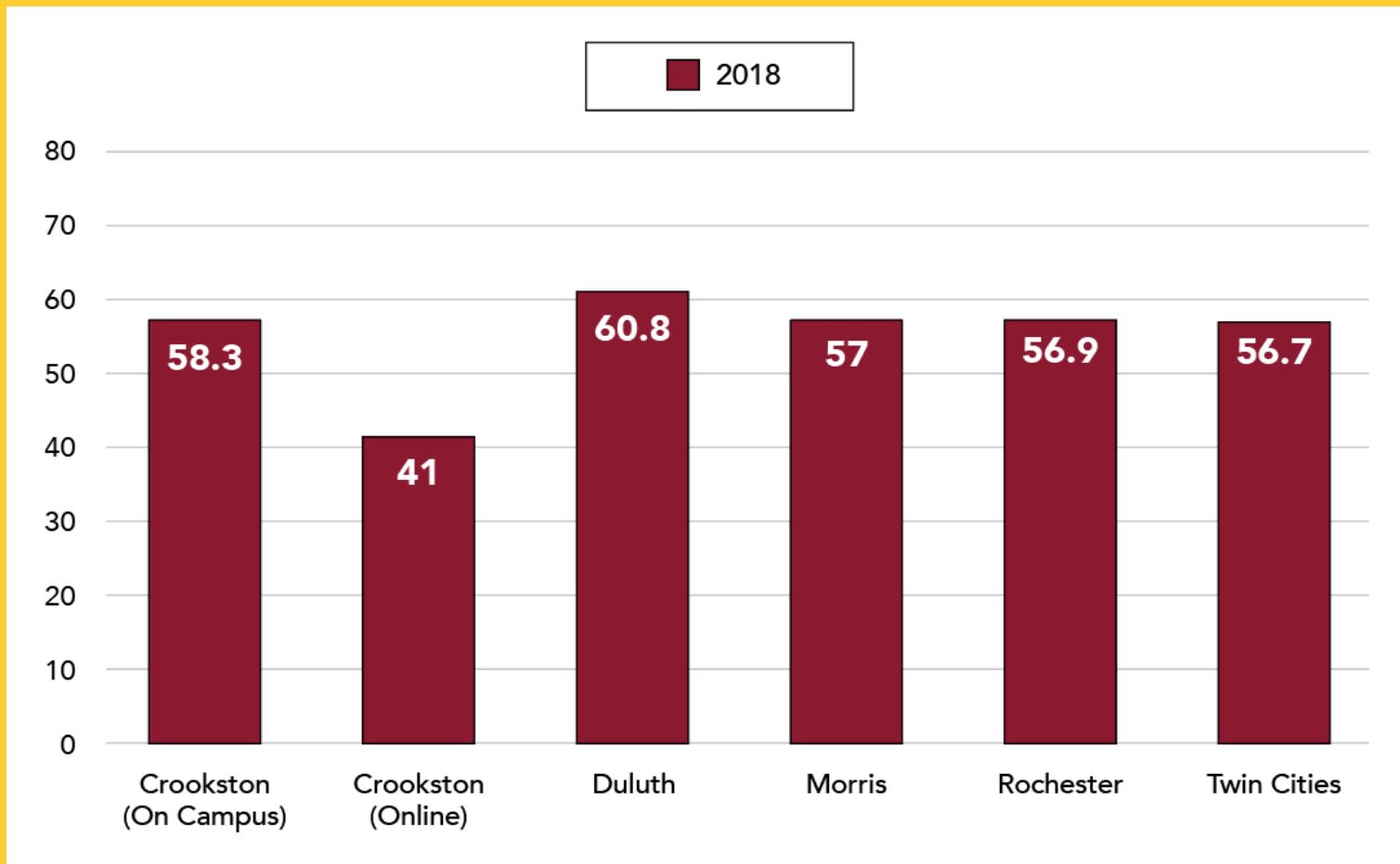


- **Nap Zones** in Kirby Student Center offered daily based on popularity
- **Free sleep apps** promoted via a poster campaign developed by the Student Health Advisory Committee
- **Earlier Homework Deadline:** Pilot program launched promoting 10 p.m. homework deadline to evaluate impact on bedtime/sleep related behavior

UMD Health Services
UNIVERSITY OF MINNESOTA DULUTH
Driven to Discover



Physical Activity



% engage in moderate (150 minutes) or vigorous (75 minutes) intensity physical activity every week and muscle-strengthening activities two or more days a week

Physical activity boosts physical health, mental health, and cognitive function

- **Policy:** Student fee supported fitness facilities and programs
- **Programs:** Recreation and Fitness Centers; Athletics, Intramurals, and Club Sports; Outdoor Recreation Programs



Recreation Center Utilization 2019–2020

| Campus | Total Student Visits | Unique Students Who Utilized All Programs | Unique Students as a Percentage of Enrollment |
|-------------|----------------------|---|---|
| Crookston | 4,383 | 304 | 46% |
| Duluth | 195,921 | 9,247 | 90% |
| Morris | 10,413 | 600 | 44% |
| Rochester | 1517 | 198 | 32% |
| Twin Cities | 637,656 | 26,238 | 53% |



Ensuring Services During the Pandemic



Pandemic impact on health and wellness

- More students with issues
- More students with issues report academic impact

Pivot to virtual programs and services

- Individual and Group Telehealth
- Virtual Fitness through Rec Centers
- Student Counseling Service Workshops
- Student Activities
- Online Yoga
- Food Pantries
- Community Partnerships

Safe access to health services through sunrise plans

Modified eligibility for student health insurance

Greater System Collaborations to Support Student Health and Wellbeing

Physical Health

- Health Promotion Sleep Initiatives
- Influenza Vaccinations

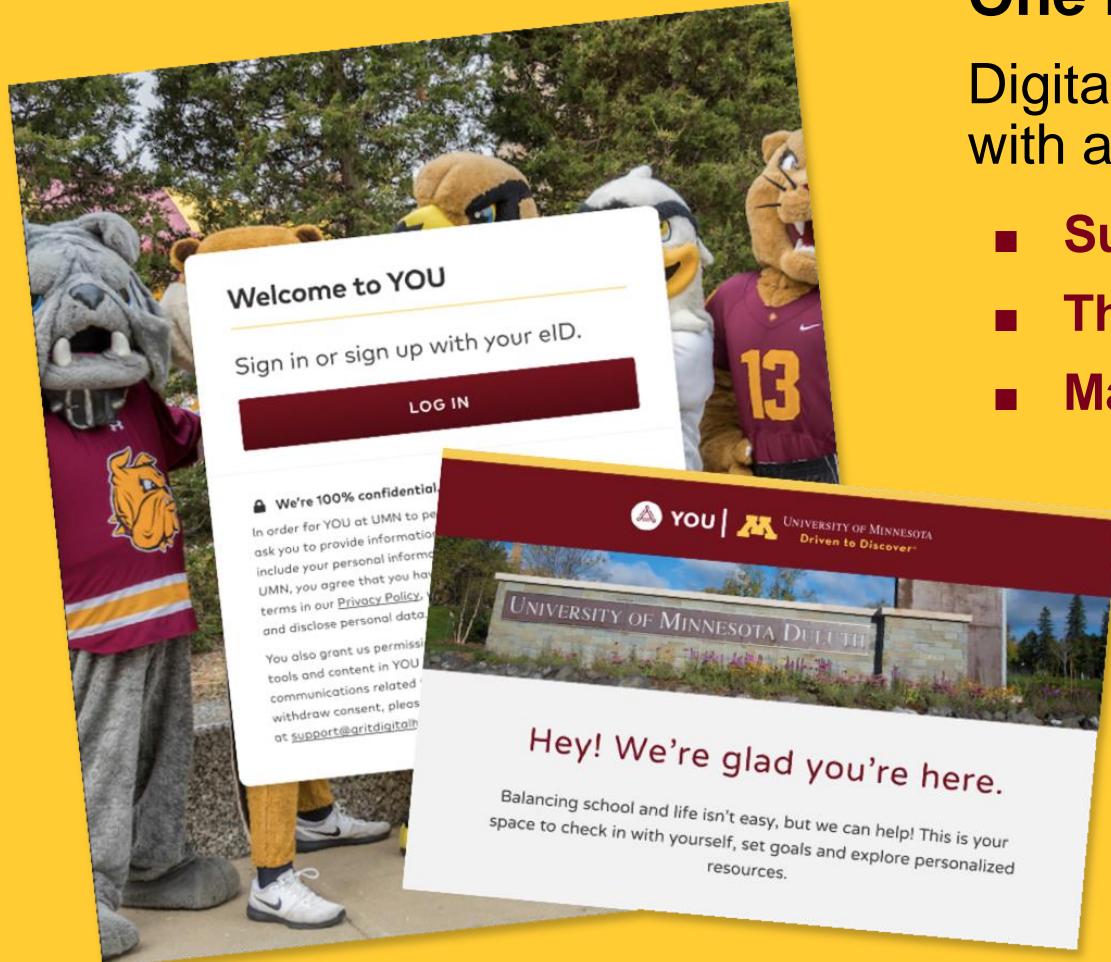
Mental Health

- Systemwide Mental Health Collaboration and Learning Network
- Learn to Live online mental health assessments and learning modules
- Telepsychiatry (Twin Cities, Morris, Duluth)

Programs and Systems

- College Student Health Survey
- Student Health Benefit Plan
- President's Initiative to Prevent Sexual Misconduct
- Electronic Health Records (Twin Cities and Morris), Titanium (Morris, Crookston, Duluth)
- You@College (new in 2021)





One Platform for the System

Digital tool that will **activate healthy student behavior** with a multi-dimensional approach to wellbeing

- **Succeed** — academics, career, and finances
- **Thrive** — physical, mental, and emotional wellbeing
- **Matter** — purpose, relationships, communities, globally

Customized Approach

Individualized experience for each campus and student



Where we need continued engagement:

- Initiatives that help students manage stress
- Strategies to foster holistic health behaviors
 - Sleep and Physical Activity
- Use of data to inform and evaluate our work
- Support for continued system collaborations



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Crookston Duluth Morris Rochester Twin Cities

The University of Minnesota is an equal opportunity educator and employer.



BOARD OF REGENTS

DOCKET ITEM SUMMARY

Mission Fulfillment

December 10, 2020

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

To seek Board approval of new academic programs and program additions, program deletions and discontinuations, and/or program changes; conferral of tenure for outside hires; and the approval of the human fetal tissue research report to the Minnesota legislature.

I. Request for Approval of New Academic Programs

- College of Education and Human Development (Twin Cities campus)—Create a B.S. degree in Physical Activity and Health Promotion
- Crookston campus—Create undergraduate minor in Sustainability

II. Request for Approval of Changed Academic Programs

- Carlson School of Management (Twin Cities campus)—Create a Global Medical Industry subplan in the M.B.A degree
- College of Continuing and Professional Studies (Twin Cities campus)—Deliver the M.P.S. in Applied Sciences Leadership completely online
- College of Design (Twin Cities campus)—Discontinue the Housing Studies subplan in the M.A., M.S. and Ph.D. degrees in Design
- College of Design (Twin Cities campus)—Create an Architecture subplan in the Ph.D. degree in Design
- College of Food, Agriculture and Natural Resource Sciences (Twin Cities campus)—Create an Integrated Degree Program option in the B.S. and M.S. degrees in Applied Economics
- College of Food, Agriculture and Natural Resource Sciences and the Carlson School of Management (Twin Cities campus)—Create an Integrated Degree Program option in the B.S. degree in Agriculture and Food Business Management and M.S. degree in Applied Economics degree
- College of Liberal Arts, Humphrey School of Public Affairs, and the School of Public Health (Twin Cities campus)—Create a dual M.H.R./M.P.H degree
- The College of Science and Engineering (Twin Cities campus)—Move the academic home of the Bioinformatics and Computational Biology Ph.D. and M.S. degrees and graduate minor from the Graduate School to the College of Science and Engineering

- College of Veterinary Medicine (Twin Cities campus)—Deliver the Integrated Food Systems Leadership Post-baccalaureate Certificate fully online
- Medical School (Twin Cities campus) —Change name of the Renal Transplant Fellowship to the Transplant Nephrology Fellowship
- School of Public Health (Twin Cities campus) —Change name of the Management Fundamentals Post-baccalaureate Certificate to the Healthcare Management Post-baccalaureate Certificate
- College of Liberal Arts (Duluth campus)—Deliver the M.T.A.G. degree fully online
- College of Liberal Arts (Duluth campus)—Deliver the M.T.R.E.S degree fully online
- Morris Campus—Create Green Sustainable subplan in the Chemistry B.A. degree

III. Request for Approval of Discontinued Academic Programs

- College of Biological Sciences (Twin Cities campus)—Discontinue the graduate minor in Microbial Ecology
- College of Continuing and Professional Studies (Twin Cities campus)—Discontinue the graduate minor in Biological Sciences
- College of Design (Twin Cities campus)—Discontinue the Post-baccalaureate Certificate in in Housing Studies

IV. Request for Approval of Faculty Appointments with Tenure

- Boyen Huang, associate professor with tenure, Department of Primary Dental Care, School of Dentistry
- Nichole Klatt, professor with tenure, Department of Surgery, Medical School

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

The complete report is provided in the docket materials.

BACKGROUND INFORMATION

Academic program proposal review and approval is governed by University of Minnesota Policy 2.2.4: Review of Proposals for New, Changed, and Discontinued Academic Programs. Approval by the Board of Regents is required for the establishment of new academic programs; addition of formal tracks and of new sites for existing academic programs; discontinuance/merger of existing programs; and changes in program titles/degree designation.

Board of Regents Policy: *Reservation and Delegation of Authority*, calls for tenure and/or promotion recommendations to be brought before the Mission Fulfillment Committee for action.

Board of Regents Policy: *Reservation and Delegation of Authority*, Article I, Section I, Subd. 7 reserves to the Board authority to approve and submit 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.

PRESIDENT'S RECOMMENDATION

The President recommends approval of the Consent Report.

University of Minnesota Board of Regents
Mission Fulfillment Committee
December 10, 2020

Consent Report: Request for New, Changed, and Discontinued Programs

I. Request for Approval of New Academic Programs

College of Education and Human Development (Twin Cities campus)—Create a B.S. degree in Physical Activity and Health Promotion

The College of Education and Human Development on the Twin Cities campus requests approval to create a Bachelor of Science (B.S.) degree in Physical Activity and Health Promotion (PAHP), effective fall 2022. The PAHP program, in the School of Kinesiology, will prepare students to collect and analyze data to plan, implement, monitor, and evaluate programs designed to encourage physical activity and healthy lifestyles. Graduates will have the knowledge and skills to utilize scientific findings to understand the effect of physical activity and healthy lifestyles on improving physical and mental health. Related careers include health coaching, worksite wellness, personal fitness training, and other health promotion related fields. Physical activity and health professions are projected to grow seven to 18 percent over the next decade. The need for a highly knowledgeable workforce in this field has driven national growth in students seeking this major and pursuing additional credentials in this area. The School of Kinesiology is ranked in the top ten of the over 850 Kinesiology programs in the country and locating the PAHP major in our school will provide students with access to cutting edge research with a focus on physical activity. Due to strategic hires over the past decade, the School of Kinesiology will make use of existing faculty lines and resources to support the development and delivery of the new PAHP B.S. degree.

Crookston campus—Create undergraduate minor in Sustainability

The Crookston campus requests approval to create an undergraduate minor in Sustainability, effective fall 2021. The minor is a collaboration among four departments: Agriculture and Natural Resources; Business; Humanities, Social Sciences, and Education; and Math, Science and Technology, and will provide students with a fundamental understanding of the three pillars of sustainability- economic growth, environmental stewardship, and social progress. The minor will be offered in both an in-person modality on the UMC campus, and offer an online subplan option, making it available to students across the University of Minnesota system. Sustainability courses from across the system have been included in the minor making it flexible and complementary to many majors. The proposed minor makes use of existing resources.

II. Request for Approval of Changed Academic Programs

Carlson School of Management (Twin Cities campus)—Create a Global Medical Industry subplan in the M.B.A degree.

The Carlson School of Management on the Twin Cities campus requests approval to create a Global Medical Industry subplan in the Master of Business Administration (M.B.A.) degree, effective fall 2021. Coursework and experiences for students selecting this primarily online subplan option emphasize health sector development, delivery, and financing of care in a global environment. Students from North America, Asia and Europe will engage in the critical analysis of new medical technologies. A Global Medical Valuation Lab is the key feature and program capstone and provides a rich international experience for students. The subplan provides a focus on principles in finance, marketing, and applied economics combined with specialized business case courses in medical device, pharmaceuticals, health insurance and information technology.

College of Continuing and Professional Studies (Twin Cities campus)—Deliver the M.P.S. in Applied Sciences Leadership completely online

College of Continuing and Professional Studies on the Twin Cities campus requests approval to deliver the Master of Professional Studies in Applied Sciences Leadership completely online, effective spring 2021. This program was primarily online (80%) with a brief residency component but proposes to be a fully online Master's degree. The college plans for and allocates resources for online delivery options. Online delivery allows the college to provide broader alternatives to current and prospective students.

College of Design (Twin Cities campus)—Discontinue the Housing Studies subplan in the M.A., M.S. and Ph.D. degrees in Design

The College of Design on the Twin Cities campus requests approval to discontinue the Housing Studies subplan in the Master of Arts (M.A.), Master of Science (M.S.), and Doctor of Philosophy (Ph.D.) degrees in Design, effective fall 2021. The request to discontinue is due to low enrollment and the programs are no longer accepting students in this subplan. The four students currently in the subplan will graduate by spring of 2021.

College of Design (Twin Cities campus)—Create an Architecture subplan in the Ph.D. degree in Design

The College of Design on the Twin Cities campus requests approval to create a subplan in Architecture in the Doctor of Philosophy (Ph.D.) degree in Design, effective fall 2021. Architecture has become an increasingly research-based discipline and practice. An architecture subplan addresses the growing need to educate research-oriented architects and educators. The subplan proposal makes use of existing courses and resources.

College of Food, Agriculture and Natural Resource Sciences (Twin Cities campus)—Create an Integrated Degree Program option in the B.S. and M.S. degrees in Applied Economics

The College of Food, Agriculture and Natural Resource Sciences on the Twin Cities campus requests approval to create a B.S./M.S. Integrated Degree Program in the Bachelor of Science and Master of Science in Applied Economics degrees, effective fall 2021. The integrated B.S./M.S. provides preparation for students pursuing a career in applied economics and offers the opportunity to earn an undergraduate and graduate degree in five years.

College of Food, Agriculture and Natural Resource Sciences and the Carlson School of Management (Twin Cities campus)—Create an Integrated Degree Program option in the B.S. degree in Agriculture and Food Business Management and M.S. degree in Applied Economics degree

The College of Food, Agriculture and Natural Resource Sciences and the Carlson School of Management on the Twin Cities campus request approval to create a B.S./M.S. Integrated Degree Program option in the Bachelor of Science(B.S.) degree in Agriculture and Food Management (a collaborative undergraduate degree offered via CFANS and CSOM) and the Master of Science (M.S.) degree (offered via CFANS) in Applied Economics, effective fall 2021. The integrated B.S./M.S. emphasizes education in applied economics and provides preparation for students wishing to pursue a career in agribusiness, and offers the opportunity to earn an undergraduate and graduate degree in five years.

College of Liberal Arts, Humphrey School of Public Affairs, and the School of Public Health (Twin Cities campus)—Create a dual M.H.R./M.P.H degree

The College of Liberal Arts, the Humphrey School of Public Affairs, and the School of Public Health on the Twin Cities campus request approval to create a dual Master of Human Rights (M.H.R.) degree and Master of Public Health Practice (M.P.H.) degree option, effective fall 2021. The Master of Human Rights is an existing interdisciplinary professional degree program of CLA and the Humphrey School that prepares students to enter or advance in careers in the field of international human rights with a course of study that combines education in critical thinking about human rights with professional level public policy courses. The Public Health Practice Master's Degree program educates professionals on public health principles, and practices in agencies and organizations that create, advocate, legislate, and administer health services and public health programs. There is demand for collaborative study in both fields. The proposed program builds on existing dual degree opportunities among the colleges and makes use of existing courses and resources.

The College of Science and Engineering (Twin Cities campus)—Move the academic home of the Bioinformatics and Computational Biology Ph.D. and M.S. degrees and graduate minor from the Graduate School to the College of Science and Engineering

The College of Science and Engineering on the Twin Cities campus in collaboration with the University of Minnesota Rochester campus requests approval to move the academic home of the Bioinformatics and Computational Biology graduate degree programs from the

Graduate School to the College of Science and Engineering, effective fall 2020. The move includes the following degrees and minor:

- Master of Science (M.S.) degree in Bioinformatics and Computational Biology
- Doctor or Philosophy (Ph.D.) degree in Bioinformatics and Computational Biology
- Graduate Minor in Bioinformatics and Computational Biology Minor

The BICB program is a collaborative interdisciplinary graduate program supported by the University of Minnesota-Twin Cities and the University of Minnesota-Rochester. The College of Science and Engineering will replace the Graduate School as the degree-granting, academic authority for BICB with responsibilities for ensuring the quality, rigor, and integrity of the academic program and student experience. The University of Minnesota-Rochester will continue to act as the administrative authority and program site for the BICB program, providing primary staff support and administrative oversight for the program. Relocation of the academic home aligns with the restructuring of Graduate School degree program responsibilities in 2011.

College of Veterinary Medicine (Twin Cities campus)—Deliver the Integrated Food Systems Leadership Post-baccalaureate Certificate fully online

The College of Veterinary Medicine on the Twin Cities campus requests approval to deliver the Integrated Food Systems Leadership Post-baccalaureate Certificate completely online, effective spring 2021. This program was previously primarily (80%) online. Fully online delivery allows the college to provide broader alternatives to current and prospective students.

Medical School (Twin Cities campus) —Change name of the Renal Transplant Fellowship to the Transplant Nephrology Fellowship

The Medical School on the Twin Cities campus requests approval to change the name of the Renal Transplant Fellowship to the Transplant Nephrology Fellowship, effective spring 2021. The change more accurately reflects the naming standards for the recognized specialty within the field as well within the program division.

School of Public Health (Twin Cities campus) —Change name of the Management Fundamentals Post-baccalaureate Certificate to the Healthcare Management Post-baccalaureate Certificate.

The School of Public Health on the Twin Cities campus requests approval to change the name of the Management Fundamentals Post-baccalaureate Certificate to the Healthcare Management Post-baccalaureate Certificate, effective spring 2021. The proposed name better reflects the healthcare market and more closely aligns with the Master of Healthcare Administration (M.H.A.) degree for those who may seek an advanced degree in the future.

College of Liberal Arts (Duluth campus)—Deliver the M.T.A.G. degree fully online

The College of Liberal Arts on the Duluth campus requests approval to deliver the Master of Tribal Administration and Governance (M.T.A.G.) degree completely online, effective fall 2021. The M.T.A.G. program was previously delivered primarily (80%) online. Program faculty and students have found the fully online delivery to be a more practical fit, allowing

the college to provide broader alternatives to meet the needs of current and prospective students.

College of Liberal Arts (Duluth campus)—Deliver the M.T.R.E.S degree fully online

The College of Liberal Arts on the Duluth campus requests approval to deliver the Master of Tribal Resource and Environmental Stewardship (M.T.R.E.S.) degree completely online, effective fall 2021. The M.T.R.E.S. program was previously delivered primarily (80%) online. Program faculty and students have found the fully online delivery to be a more practical fit, allowing the college to provide broader alternatives to meet the needs of current and prospective students.

Morris Campus—Create Green Sustainable subplan in the Chemistry B.A. degree

The Morris Campus requests approval to create a Green Sustainable subplan in the Bachelor of Arts (B.A.) degree in Chemistry, effective fall 2021. The new subplan will be one of three subplan options in the Chemistry degree program. Coursework will emphasize green chemistry, biodiversity, and sustainable applications to global problems.

III. Request for Approval of Discontinued Academic Programs

College of Biological Sciences (Twin Cities campus)—Discontinue the graduate minor in Microbial Ecology

The College of Biological Sciences on the Twin Cities campus requests approval to discontinue the graduate minor in Microbial Ecology, effective spring 2021. The request to discontinue is due to lack of student interest and enrollment. There are no current students pursuing this minor.

College of Continuing and Professional Studies (Twin Cities campus)—Discontinue the graduate minor in Biological Sciences

The College of Continuing and Professional Studies on the Twin Cities campus requests approval to discontinue the graduate minor in Biological Sciences, effective spring 2021. The request to discontinue is due to lack of enrollment. There are no current students pursuing this minor and admission has been closed.

College of Design (Twin Cities campus)—Discontinue the Post-baccalaureate Certificate in Housing Studies

The College of Design on the Twin Cities campus requests approval to discontinue the Post-baccalaureate Certificate in Housing Studies, effective fall 2021. The Design graduate faculty voted to formally discontinue the Housing Studies Post-baccalaureate Certificate program. The request to discontinue is due to lack of enrollment. There are no students currently pursuing this degree.

University of Minnesota Board of Regents
Mission Fulfillment Committee
December 10, 2020

Consent Report: Request to Grant Tenure to External Hires

The Executive Vice President and Provost recommends Boyen Huang and Nichole Klatt 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.

Boyen Huang, associate professor with tenure, Department of Primary Dental Care, School of Dentistry

Dr. Huang is a distinguished researcher whose career has focused on biological and sociobehavioral risk factors for oral conditions such as dental and craniofacial anomalies, traumatic dental injuries, telehealth and non-nutritive sucking behavior. He earned his Ph.D. in 2004 from the University of London. Dr. Huang joins the University of Minnesota from Charles Sturt University, Australia, where he was a professor of dentistry.

Nichole Klatt, professor with tenure, Department of Surgery, Medical School

Dr. Klatt is a scientific leader at the forefront of HIV and microbiome research. She studies the intersection of mucosal immunology, HIV infection and the human microbiome. She earned her Ph.D. in immunology and molecular pathogenesis from Emory University in 2008. Previously, Dr. Klatt was an associate professor and vice-chair of research in the department of pediatrics at the University of Miami.

University of Minnesota

Human Fetal Tissue Research

Report to the Minnesota Legislature

2021

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. Oversight of human fetal tissue research became administered jointly by the Office of the Vice President of Research and the Vice President of Academic Clinical Affairs (formerly Academic Health Center).

Per the new requirements, researchers requesting to access 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 and/or in the attached table.

New Research Requests Submitted to the Fetal Tissue Research Committee:

One new application was reviewed and subsequently approved by the FTR in 2020. The *Understanding Developmental Origins of Human Skull Base Tumors* research project (FTR Application Number 2002-37902B) was granted access to acquire human fetal tissue which was donated following an elective pregnancy termination. This research project has not yet begun. As such, no research expenses have been incurred nor has any fetal tissue been acquired.

As required under Minnesota law, the IRB reviewed the FTR's decision. The IRB concluded that the researcher and the FTR committee had considered all alternatives to the use of human fetal tissue.

The required reporting information regarding this study can be found in Table 1: *New or Ongoing University of Minnesota Research Projects Utilizing Donated Human Fetal Tissue*.

Previously Reported Research Update:

The following actions occurred in 2020:

- The *Zika Virus Infection of Human Fetal Brain Cells* (FTR Application Number: 001) research project has completed the genetic data analysis process since the last report. The active research is now complete, with possible publications to follow based on the research results. The Anatomy Bequest Program arranged for the cremation of the fetal tissue per university policy.
- The *Expression of Cyp26b1 and Slc6a4 in Developing Human Brains* (FTR Application Number: 003) research project remained discontinued in 2020 due to lack of funding. The Anatomy Bequest Program arranged for the return of the fetal tissue microscope slides to the Human Developmental Biology Resource located at the Newcastle University as previously determined by a material transfer agreement.
- To date none of the approved protocols have resulted in a publication.
- Public grant information remains unavailable since the research was privately funded.
- We are not aware of any references to other publicly available information about the projects.

| FTR Application Number and Title | Application Approval Date | Research Goal | Funding Source | Tissue Procurement Source |
|---|--|---|--|---|
| 001-Zika Virus Infection of Human Fetal Brain Cells | 5/18/2016 ¹ 3/30/2017 ² 10/27/2017 ³ 5/3/2018 ⁴ | The goal of this project is to determine whether the Zika virus can directly infect cells that are found in the human fetal brain. At the present time there is an association between the presence of the Zika virus and damage to the developing human brain, but no direct evidence. We will determine the ability of the Zika virus to infect each of the different types of cells that are found in the fetal brain. Once we identify what types of cells can be infected then we will study the molecular mechanisms that are involved in the infection process. An understanding of these molecular mechanisms will allow us to begin consider what drugs might prevent the Zika virus from infecting the brain. | Privately funded | Birth Defects Research Laboratory -University of Washington Human Developmental Biology Resource- Newcastle University (No tissue was received from this source) |
| 2002-37902B- Understanding Developmental Origins of Human Skull Base Tumors | 6/19/2020 (FTR and IRB) | Cancer occurs as a result of transformation from a previously normal cell. We use new technology (“single cell genomics”) that allows us to view all genes expressed in <i>individual</i> cells. Our goal is to compare the genes expressed in individual cells between human tumors and normal cells undergoing fetal development, so that we can map the origin of specific human cancers. Insights into the origin for cancer allows us to understand the underlying biology of cancer formation and provides a framework on how to prevent or treat these cancers in new ways. | No expenses have yet been incurred. This research will be privately funded once initiated. | None |

Table 1: New or Ongoing University of Minnesota Research Projects Utilizing Donated Human Fetal Tissue

¹Application approved prior to MN Statute 134.47 effective date, IRB review of FTR decision was not required..

²Amendment to application requesting to add Newcastle as a procurement source

³Amendment to application requesting to add additional types of tissue to project

⁴Amendment to application requesting to remove 4 researchers from project



BOARD OF REGENTS

DOCKET ITEM SUMMARY

Mission Fulfillment

December 10, 2020

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

This report highlights 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.

Completed Comprehensive Review of Board Policy

The purpose of this item is to inform the committee that comprehensive reviews of the following Board policies are complete and the policy implementer recommends that no changes be made at this time:

- [Board of Regents Policy: Animal Care and Use](#)
- [Board of Regents Policy: Reserve Officers Training Corps](#)

Each policy is available by following the links.

If there are items that the committee would like addressed, those will be recorded and referred back to the policy implementer. If the committee raises no additional items, the comprehensive review process will be complete, and the date of last comprehensive review will be noted within the policy. The president and policy implementers have the ability to recommend changes outside of the comprehensive review process as needed (e.g., changes resulting from the implementation of the Systemwide Strategic Plan).

BACKGROUND INFORMATION

The report of select activities appears as a regular item on the Mission Fulfillment Committee agenda.

**University of Minnesota Board of Regents
Mission Fulfillment Committee
December 10, 2020**

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

University Highlights

The U.S. Department of Defense has awarded \$87.5 million to create a Manufacturing Innovation Institute sited on the University's St. Paul Campus, with satellite locations in Berkley, CA and Cambridge, MA. The institute (BioMade) will be dedicated to boosting nonmedical bioindustrial manufacturing in the United States and will be supported by a seven-year award that includes at least \$87.5 million in federal funds and is being matched by more than \$180 million in cost sharing from non-federal sources.

The Twin Cities, Morris, and Duluth campuses have collaborated on the Environmental Stewardship, Place & Community Initiative, which has been awarded a \$1,077,000 grant from the Andrew Mellon Foundation.

The University was awarded \$3 million from The U.S. Environmental Protection Agency to examine residue in the Great Lakes, part of the EPA's \$14 million to restore areas of concern in the environment.

U.S. News and World Report has named the Crookston campus has the top Midwest Top Public Regional College for 2020.

The Association for the Advancement of Sustainability in Higher Education has named the Duluth campus a top research performer in response to the campus's Sustainability Tracking, Assessment & Rating System report. .

The University's School of Nursing Doctorate of Nursing Practice (DNP) program will be assisting colleagues at Minnesota State, as St. Cloud State University develops their own DNP degree. This cross-system collaboration will create a new educational opportunity for nurses, particularly registered nurses in the CentraCare Health System, who are seeking leadership and advanced practice positions in rural, underserved areas.

Researchers in the College of Education and Human Development on the Twin Cities campus have partnered with the Minnesota Department of Health to create the First Responder Toolkit, an app that helps manage the mental, physical and social health of first responders. The app is currently used in all 50 states.

The Crookston campus in partnership with the White Earth Tribal and Community College was awarded \$500,000 from the US Department of Health and Human Services to offer Head Start Staff opportunities to earn an associate of arts degree (WETCC) or bachelor's degree (UMN Crookston).

The University received an NSF grant for \$12.5 million to establish a first-of-its-kind institute, the Biology Integration Institute (BII), where biologists will study changes in biodiversity as it is influenced by climate change.

The University has received \$1.5 million to improve the academic outcomes of Asian Americans and Pacific Islanders from the U.S. Department of Education.

The University has launched Immigrants in COVID America project, a web resource that addresses health disparities.

The Medical School has received a grant from the National Institute of Mental Health for \$6.6 million to develop a brain implant to treat mental health disorders.

The Crookston campus's Veden Center for Rural and Economic Development has developed the Mano Amiga program, a program that offers classes and assistance to Latino entrepreneurs and businesses, with a \$100,000 grant from the USDA Rural Development agency.

The Rochester campus and Mayo Clinic have partnered to offer the Invest in Success Scholars Program, a joint scholarship program that will offer experiences including scholarships, mentorships, internships, work studies and job opportunities.

The College of Pharmacy has received a \$1 million grant. The grant is shared with its consortium partners to provide the Bois Forte Reservation with services related to substance abuse prevention, treatment, and recovery.

The Medical School's Center for Women in Medicine and Science has received the Emerging Leadership Award for an Organization, one of four annual awards from the Association of American Medical Colleges' Group on Women in Medicine and Science.

The Duluth campus Medical School's student-led Family Medicine Interest Group has received the 2020 Program of Excellence Award from the American Academy of Family Physicians.

The School of Public Health will develop the Public Health Center of Excellence on Dementia Caregiving with \$2.5 million in support from the Centers for Disease Control and Prevention. The center will be led by Professor Joseph Gaugler.

The Medical School has received \$6.2 million in partnership with the Van Andel Institute from the Aligning Science Across Parkinson's initiative to study the correlation between aging and Parkinson's disease.

The School of Nursing received the Health Professions Higher Education Excellence in Diversity Award from INSIGHT Into Diversity Magazine. The School has received this award for the fifth consecutive year and is only one of 11 American Association of Colleges of Nursing member schools and 46 institutions nationwide to receive this award.

College of Science and Engineering researchers on the Twin Cities campus have received the NSF Cyber Physical Systems grant for \$1.2 million to develop a safety tracking system for smart scooters.

The University will lead a \$2 million NSF grant, Global Quantum Leap (GQL), an international network to accelerate quantum sciences.

The College of Science and Engineering on the Twin Cities campus has received a \$1 million donation from Polaris Inc. for project-based opportunities and scholarships for underrepresented students.

The University has partnered with the Minnesota Department of Agriculture (MDA) with its grant from the USDA to help market the products of farmers and agriculture businesses.

The Humphrey School of Public Affairs on the Twin Cities campus will collaborate with the Peace Research Institute of Oslo for three years. Funded by the Norwegian Ministry of Foreign Affairs, researchers will study conflict and find ways of reducing it.

The Law School received a \$2.3M gift from the Robina Foundation to endow a Dean's Innovation Fund.

Faculty and Staff Awards & Activities

Ruifeng Cao, assistant professor in the Medical School on the Duluth campus, and his lab have received a NIH grant for \$1.8 million over five years to study neurological diseases and sleep problems.

Michael Osterholm, professor and director of the Center for Infectious Disease Research and Policy, will help determine economic and public health steps amid Covid-19 as a member of Transition COVID-19 Advisory Board, selected by President-elect Joseph Biden.

Maggie Towle, Interim Vice Provost for Student Affairs and Dean of Students on the Twin Cities campus, has been awarded the Susan Yung Maul Distinguished Service Award, established as the highest honor presented by the Association of College Unions International, Region V.

Lisa Erwin, Vice Chancellor for Student Life and Dean of Students at the Duluth campus, received NASPA's Region IV-East Scott Goodnight Award presented to outstanding chief student affairs officers.

Valery Forbes, Dean of the College of Biological Sciences on the Twin Cities campus, received an NSF Understanding the Rules of Life program grant in collaboration with University of Massachusetts Medical School, the University of Nevada Las Vegas, and the Broad Institute.

Ruby Nguyen, associate professor in the School of Public Health on the Twin Cities campus, has created a public health class for incarcerated residents in the Minnesota state prison system.

Daniel Weisdorf, professor in the Medical School, received the 2020 Charles Bolles Bolles-Rogers Award from the Twin Cities Medical Society Foundation.

Two College of Science and Engineering (Twin Cities campus) startups won awards at the 2020 MN Cup startup competition. BlueCube Bio took the grand prize and CounterFlow Technologies took runner-up.

Carol Lange, professor in the Medical School, has received a three year \$500,000 grant from METAvivor. She will research how steroid hormone receptors affect breast cancer.

Lucinda Johnson, associate director of the Water Research Group at the Natural Resources Research Institute, was appointed to the Advisory Council on Climate Change by Governor Tim Walz.

The Twin Cities campus has become a certified Bee Campus. Researchers in the Bee Lab continue their work to expand pollinator conservation.

Lynda Lahti Anderson and MacDonald Metzger, Institute on Community Integration, have received a grant from the U.S. Embassy in Kinshasa, Democratic Republic of the Congo, for \$278,000.

University researchers led by Marco Pravetoni, associate professor in the department of pharmacology on the Twin Cities campus, have received a NIH grant for \$2.4 million to develop a vaccine and antibodies for fentanyl.

University researchers have created 3D-printed heart models, a medical breakthrough in patient-specific modeling.

Twin Cities campus professors Paul Dauenhauer, chemical engineering, and Damien Fair, in the Institute of Child Development, received \$625,000 "genius grants" from the MacArthur Foundation.

Ralph Lemon, alumnus of the College of Liberal Arts on the Twin Cities campus and acclaimed dance artist, is one of the 21 MacArthur Fellows of 2021.

Malgorzata Marjanska, professor in the department of radiology on the Twin Cities campus, has been named a 2021 Fulbright U.S. Scholar.

Cheryl Olman, a professor in the College of Liberal Arts on the Twin Cities campus, started the Classroom Partners Program at Murray Middle School in St. Paul. This will provide extra assistance to the teachers in the form of volunteers that will help student success in the classroom.

Katy Kozhimannil, professor of health policy and management and director of the Rural Health Research Center, has been given the Heinz Award for Public Policy. This prestigious award includes \$250,000.

Charles Day, James Robinson, and Edward ÍTedÍ Hinchcliffe, researchers at The Hormel Institute on the Twin Cities campus, have won the Marit Mary Swenson Award for Pediatric DMG/DIPG from the Society for Neuro-Oncology.

Rachel Hardeman, associate professor in the School of Public Health on the Twin Cities campus, has received the Planned Parenthood's Courage Award, given to those who advance Planned

Parenthood's vision. Hardeman received this due to her work for reproductive healthcare for all and bringing awareness to systematic racism in healthcare.

Christine Mueller, professor and Senior Executive and Associate Dean for Academic Programs - in the School of Nursing, has been appointed to the National Academies of Sciences, Engineering, and Medicine Committee on the Quality of Care in Nursing Homes.

School of Nursing Professor Cheryl Robertson is this year's recipient of the Faye Abdellah Leadership Award by the Friends of the National Institute of Nursing Research. This award is presented to an individual who has made a lasting impact on nursing science.

Robin Austin and Martin Michalowski, assistant professors in the School of Nursing, were named Fellows of American Medical Informatics Association.

Niloufar Hadidi, an associate professor in the School of Nursing, was chosen as a Distinguished Educator in Gerontological Nursing from the National Hartford Center of Gerontological Nursing Excellence Recognition Program.

Tai Mendenhall, a College of Education and Human Development associate professor, received the Excellence in Professional/Clinical Practice Award from the Families and Health Section of the National Council on Family Relations.

Melissa Stone, professor Humphrey School of Public Affairs, received the 2020 Award for Distinguished Achievement and Leadership in Nonprofit and Voluntary Action Research, for her dedication to the Public and Nonprofit Leadership Center and the Nonprofit Management Certificate Program.

Joan S. Howland, professor of law and Associate Dean for Information Technology, was elected to a second three-year term to the American Bar Association's House of Delegates.

Peter Mitsch, Chief Financial Officer of the Medical School and University of Minnesota Physicians, was named the 2020 CFO of the year by the Minneapolis/St. Paul Business Journal.

Student Awards & Activities

The Crookston campus athletic department had 52 student-athletes earn the 2019-20 Division 2 Athletics Directors Association Academic Achievement Awards. This is the highest number of recipients received in 13 years.

Brightside, a Twin Cities campus student group founded in 2014, has begun delivering produce on a pay-what-you-can basis to families with needs stemming from the pandemic.

Bob Blake, a Twin Cities campus graduate student, created Solar Bear Solar Panel Installation Services and the nonprofit Native Sun Community Power Development, staffed and run by members of the REd Lake tribe, combines renewable energy efforts with Ojibwe language and culture.

Delilah Robb, a Twin Cities campus graduate student, is part of the Indian Health Board's campaign, "Honor Your Body and Your Culture" which encourages discussion around sexual health culture.

The Black Student Union's first homecoming was held virtually at the end of October. The event highlighted discussions about intersectional and cultural issues as well as performances from Young M.A. and Jaboukie Young-White.

Mohamed Amin Ahmed, a student in the College of Liberal Arts on the Twin Cities campus, received the U.S. State Department Bureau of Global Affairs the Citizen Diplomacy Award in recognition of his role in strengthening US foreign policy and relationships.

Vanessa GoodThunder, College of Liberal Arts on the Twin Cities campus alumna, was interviewed on Minnesota Public Radio for her work in helping people explore their culture and language through her Dakota language immersion program in Morton, Minnesota.

Erin Suski, a student in the College of Design on the Twin Cities campus, created The Maroon Shirt for the University of Minnesota Alumni Association. The Maroon Shirt has released yearly shirts for University alumni fundraising since 2017.

Frances Daniels, a Law School student, was awarded a \$5,000 AccessLex scholarship. AccessLex is a nonprofit organization that seeks to expand legal education.

Sharie Cassioppi, a Law School student, was awarded the Human Rights Fellowship by World Without Genocide, a St. Paul-based human rights organization.