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Academic and Student

Minnesota State Accelerated Mathematics Pathway Proposal

Project Title, Leader, & Location

Project Title:	Minnesota State Mathematics Pathways
Project Lead:	Greg Rathert, System Director of P20 and College Readiness
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System:	Minnesota State Colleges and Universities
Participating Institutions:	All 37 Minnesota State colleges and universities

The Area of Focus

Challenge:	Students who place into developmental mathematics have a low likelihood of completing college level mathematics. This is especially apparent among Black, Indigenous, People of Color (BIPOC), and Pell eligible students, who are assigned to developmental math courses at disproportionately higher rates. Prerequisite developmental course sequences have been shown to exacerbate these trends, adding both time and cost. In addition, a recent Minnesota State survey has revealed extensive variability in the mathematics courses required by our programs, inhibiting student transfer. The survey also shows that many colleges and universities continue to use College Algebra as the default math placement for students, including within pathways that do not traditionally need algebra or calculus.
Solution:	Develop and implement the Math Pathways Principles as articulated by the Dana Center and adopted by the Minnesota State pilot campuses at all Minnesota State colleges and universities. These principles include the following: • Aligned math pathways with default or recommended math requirements; • Meta-majors with default or recommended math requirements; • Multiple measures placement; • Enhanced advising for students who receive developmental education course placement • Co-requisite supports for those students; • Strategies to support students as learners are integrated into courses and are aligned across the institution; • Instruction incorporates evidence-based curriculum and pedagogy;

	• Math equity is a condition for equitable college access and success; • Support educators to address the role of bias and privilege in traditional school structures and to dislodge harmful preconceptions about student abilities.
Goal:	The goal of the project is to dramatically increase the number of students—especially BIPOC and low-income students—who immediately enroll in and successfully complete gateway math courses aligned to programs of study, by providing corequisite supports that are based on sound, research-informed design principles.: 1. All students, regardless of demographic background or college readiness, enter directly into relevant mathematics pathways aligned to their programs of study and/or meta-majors. 2. At least 75 percent of Minnesota State colleges and universities implement co-requisite structures that replace pre-requisite structures. a. At least two well-defined mathematics pathways—one algebra, one non-algebra—aligned to the Minnesota State Transfer Pathways framework. b. Algebra-based pathways need to be completed within one year; all other mathematics pathways need to be completed within a single semester within students' first year. c. Co-requisite structures serve at least 75% of students. 3. Reduce disparities in Pell-eligible and Black, Hispanic, Asian, and Native/ Indigenous students' placement in postsecondary remediation. 4. Reduce disparities in Pell-eligible and BIPOC students' college-level mathematics course completion.
Outcome:	100% of students need to complete a college gateway mathematics course do so by the end of their first year. Close educational equity gaps across race and ethnicity, socioeconomic status, and geographic location.
Project Start Date:	July 1, 2021
Target Completion Date:	December 20, 2024
Project Cost:	$3,355,900.00
Funding Request:	$2,371,200.00 *(71% of project total)*
Additional Research Questions:	Additional research questions to be investigated at one or more of the participating grant sites include: 1. The role and impact of targeted support structures on English language learners' gateway course success and completion. 2. The efficacy of alternate acceleration strategies on students' mathematics gateway course success and completion. 3. Cost/benefit analysis of co-requisite course model as compared with traditional course models.

Background

According to the most recent 2020 Degree and Certificate Completion Report, few (25.5%) Minnesota State college and university students complete a college-level mathematics course within their first year; the percentage is even lower among black (10.2%), Hispanic (11.8%), and two-year community college (17.2%) students. The takeaway is that mathematics completion continues to be a barrier to degree attainment among students across the system.

There is mounting evidence that the development of corequisite mathematics models will give students appropriate mathematical literacy and college-level curriculum in the areas of mathematics and critical thinking within their first semester, accelerating their time to degree attainment and enabling them to be better students, employees, and citizens of the 21st century. Quantitative Reasoning (QR) and Statistics courses provide students with these opportunities, but currently, many Minnesota State colleges and universities subscribe to the algebra-for-all mindset. Minnesota State has started work in this area this past year with the development of shared learner outcomes for QR and Statistics with which campuses with current QR and Statistics courses must align. In addition, campuses have developed models to ensure students can complete a college-level math course within their first year. Finally, five Minnesota State campuses were awarded a grant through Strong Start to Finish (SSTF) to develop and implement co-requisite courses within QR and Statistics pathways during the current 2020-2021 academic year. Given this work, this is a prime time for Minnesota State to engage faculty across our 37 colleges and universities to develop and implement a corequisite model to enable students to complete a college-level math course within their first semester. Currently, many programs and majors require algebra-based mathematics courses, so it is essential that we more fully develop alternative pathways to complete college-level mathematics in order to work with academic programs across the curriculum to advocate for the inclusion of QR and Statistics courses in their program math requirements when appropriate.

States that implement college-level math corequisite models report higher rates of successful completion of college-level math for students deemed “not college ready”. According to Complete College America’s Corequisite Remediation report, “states replacing traditional, remediation with corequisite models…students are completing transfer requirements in math at nearly three times the national average, and in half the time.” Engaging early adopters in the development of a QR/Stats corequisite framework will activate a task force that can scale this work at the system level. This work will prepare us to advocate for appropriate mathematics requirements by field of study which will allow more students to complete their math requirement with courses that are not primarily algebra-based in an accelerated timeframe, making relevant, timely, and accessible mathematics available to more students.

Anticipated Impacts on Field

To build awareness, promote its thought leadership, and strengthen external partnerships, Minnesota will develop and disseminate resources that support the implementation of the multiple mathematics pathways approach and shed light on related work. The system will strategically

document the work and related math pathways activities, including insights and observations, highlighting the progress and pitfalls associated with scaling the math pathway model. In addition, Minnesota will document the advocacy for specific strands of the math pathways approach, including web content, conference, and meeting presentations showcasing the learnings, progress, and outcomes of the work.

Work Plan

To increase the number and percentage of students completing a degree or certificate, Minnesota State colleges and universities will be charged with providing a co-requisite option to all students who place one level below college level so that they may complete a transfer-level gateway mathematics course within their first year. In addition, all students, regardless of college readiness, shall enter directly into a mathematics pathway aligned to their program of study. The core elements of the work are as follows:

Core elements of Comprehensive Course Redesign:

- Aligned math pathways with default or recommended math requirements
- Meta-majors with default or recommended math requirements
- Multiple measures placement
- Enhanced advising for those students still deemed underprepared
- Co-requisite supports for those students

Institutions implement structural and policy changes quickly and at scale.
Mathematics pathways are structured so that:

1. All students, regardless of college readiness, enter directly into mathematics pathways aligned to their programs of study.
2. Students complete their first college-level math requirement in their first year of college.
3. Educators are supported to address the role of bias and privilege in traditional school structures and to dislodge harmful preconceptions about student abilities.

Institutions and departments engage in continuous improvement to ensure high-quality, effective instruction.
Students engage in a high-quality learning experience in math pathways designed so that:

4. Strategies to support students as learners are integrated into courses and are aligned across the institution.
5. Instruction incorporates evidence-based curriculum and pedagogy.
6. Math equity is a condition for equitable college access and success.

Realizing this vision necessitates four crucial steps, or phases, as outlined below.

Phase I: Case-making

To foster the awareness and engagement needed to implement the Dana Center Math Pathways Principles, the project will begin with an intentional outreach effort. This effort will include a project launch event inviting all campus stakeholders to learn about the benefits and best practices associated with these principles. The launch event will be supported by additional learning events for affinity groups to responsively address the questions and topics that are most relevant to campus faculty and staff. Lastly, resources developed by the Dana Center will be shared widely to increase knowledge and awareness and enhance the capacity of campus faculty and staff for future implementation. Activities will occur during the fall 2021 semester.

Phase II: Planning & Development

The second phase of the project will occur alongside the initial phase and focus on capacity building by building the structures and resources needed to advance implementation at each Minnesota State college and university. This will be initiated through the launch of a leadership team comprised of representative stakeholders from across the system. This leadership team will be charged with developing and refining the Dana Center Math Pathways Principles to advance equitable mathematics pathways at scale. The team will also draft a communication plan and research methodology to support implementation. To further support implementation, additional resources will be developed at this stage. Key documents, submission folders, and contact lists will be stored on a centralized SharePoint site.

Training workshops and seminars will be held to further build capacity and expertise to facilitate program mapping, comprehensive course redesign, and equity-based teaching and learning. These trainings will be jointly led by faculty coordinators, Dana Center staff, and members of the Minnesota State Office for Equity and Inclusion. Trainings will be offered to targeted audiences to tailor the content to each group's needs and interests.

During this phase, each college and university will establish local implementation teams. These teams will be charged with developing a plan in response to both the guiding principles established by the leadership team and local student data trends to ensure both equity and positive student impact. Teams will be guided through a structured process that includes data gathering and analysis, policy review, budgeting, program mapping, comprehensive course redesign, communication planning, and implementation monitoring and reporting. Local planning will be further supported through workshops, training webinars, and campus reporting/support calls. This phase is slated to conclude in Spring 2022 though additional resources and training opportunities will be made available throughout the lifespan of the project.

Phase III: Implementation

During the implementation phases, each college and university will enact the reforms needed to operationalize the Dana Center Math Pathways Principles. Activities will include aligning mathematics courses with programs of study, engaging in curriculum redesign, and evaluating and redesigning local student support structures and practices to maximize both equity and positive student impact. These efforts will be supported through ongoing training opportunities and resources made available by the System Office in partnership with the Dana Center. Implementation progress will be monitored and evaluated through structured reporting templates submitted to the Leadership Team. Implementation is targeted to be completed by Fall 2023.

Phase IV: Continuous Improvement

Minnesota State is committed to evidence-based decision-making within an ongoing process of continuous improvement. While identified as a standalone phase to ensure its visibility and importance, the elements of this process are infused throughout the project and will guide the shape and direction of the Minnesota State Mathematics Pathways framework throughout its lifespan. Work will include identifying specific goals and targets, developing process to measure progress toward these goals and targets both locally and at a system-level, and reporting findings broadly to foster continued awareness and engagement. This work will be coordinated by the Leadership Team and System Office research staff to ensure consistent and accurate reporting standards. Implementation is targeted to be completed by Fall 2024 to ensure time for data gathering and analysis.

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Table 1. Project Overview

Case-making	Planning & Development	Implementation	Continuous Improvement
System Office ☐ Project Launch Event ☐ Learning Events ☐ Guidebook **Campuses** ☐ Participate in planned events ☐ Evaluate and assess current practices	**System Office** ☐ SharePoint Project Site ☐ Formation of System Leadership Team ○ Regional Coordinators, ○ Project Manager, ○ Communications Coordinator, ○ System Office Liaisons, ○ Faculty SMEs, ○ Dana Center SMEs, ☐ Guiding Principles Roadmap ☐ Communication and Engagement Plan ☐ Establish the measures and methodology for evaluation. ☐ Training ○ Workshops ○ Training Webinars ▪ Faculty ▪ Advisors ○ Administrators (SAOs, SSAOs, Deans) ○ IR Staff **Campuses** ☐ Formation of Campus Teams ○ Team Leads ○ Team Charters ☐ Complete planning documents.	**System Office** ☐ Training ○ Workshops ○ Training Webinars ▪ Faculty ▪ Advisors ○ Administrators (SAOs, SSAOs, Deans) ○ IR Staff **Campuses** ☐ Curriculum redesign ☐ Alignment of math pathways with default or recommended math requirements ☐ Implementation of student support structures	**System Office** ☐ System-level data gathering and reporting ☐ Facilitate communication and data sharing ☐ Revise and refine system-level strategy based on data trends and analysis **Campuses** ☐ Campus-level data gathering and reporting ☐ Peer sharing ☐ Revise and refine local strategies based on data trends and analysis
Fall 2021	***Fall 2021-Spring 2022***	***Spring 2022-Fall 2023***	***Fall 2024***

Campus planning documents to be completed by the communicated deadline:

- ☐ Team Charter
- ☐ Team Roster
- ☐ Project Budgets
- ☐ Data Workbook
- ☐ Program Map
- ☐ Implementation Plan
- ☐ Communication and Engagement Plan
- ☐ Financial Sustainability Plan
- ☐ Progress Report

Timeline of Activities

A more complete summary of activities is outlined below. Note that in alignment with the principles of continuous improvement, planned activities and timelines will be further refined in response to emerging trends as well as the observed and reported needs of our Minnesota State colleges and universities.

AY 2021-2022: Case-making and Capacity Building

Initial system planning will occur during late-Spring 2021 into Summer 2021 in anticipation of a one-day kick-off workshop for institutional teams (faculty, administrators, & advisors) to establish plans to implement, improve, or grow mathematics co-requisites and math pathways in September. The kickoff convening will include case-making to frame the purpose and urgency behind this work. An enterprise-level steering team will be convened and regional faculty coordinators will be identified to help lead and support the project. In addition, faculty committees will be established for each of the major mathematics pathway areas (i.e., quantitative reasoning, statistics, and algebra) to establish guiding principles within each domain, facilitate course redesign, and identify professional and technical support needs.

Affinity-based workshops will be held for key stakeholders groups to build capacity and support local planning and implementation. Workshops will occur both fall 2021 and spring 2022. These workshops will coincide with campus-based activities to help support implementation, including local team formation, budgeting, data gathering and analysis, goal setting, program mapping, implementation planning, communication and engagement planning, financial sustainability planning, and progress reporting. These activities will have deadlines identified by the steering team as well as an online document repository maintained by the system office to facilitate progress monitoring and targeted intervention and support as needed.

More specific project elements will also be supported through targeted webinars. Topics will include equity, curriculum design, transfer, and change leadership. Technical assistance will be provided to campuses throughout the duration of the project by the Dana Center, the regional coordinators, and the System Office.

AY 2022-2023: Local Planning and Curriculum Redesign

Since many faculty are off-contract during the summer, Year 2 will be kicked off with a one-day convening to promote engagement and excitement, re-orient stakeholders to the project's vision and goals, share emerging research and best practices, and facilitate networking and need-based training. Affinity based workshops and webinars will be offered to continue to support stakeholders in their planning and implementation efforts. The system's transfer pathways will continue to identify math course requirements as part of the system's transfer pathway review process, working toward requirements that align with industry needs. As part of the continuous improvement process, overall progress and campus needs will be monitored to inform and refine the structures and supports available to campuses.

In addition, project funds will support the Gates Foundation evaluation of the Dana Center's Corequisite Design Collaborative, a project to scale up corequisite course design at 3 MN institutions: St. Cloud State University, St. Cloud Technical & Community College and Fond du Lac Tribal and Community College. These dollars would help partially subsidize PDP participation for two years, enabling the colleges and Dana Center to have easy access to student level data for analysis.

AY 2023-2024: Implementation and Evaluation Planning

Year three will kick-off with a one-day convening, providing a forum to share proven and emerging practices, troubleshoot any issues or challenges, and support campuses in their required implementation efforts. Workshops and webinars will focus on continuous improvement to assist in the development of both enterprise- and campus-level evaluation structures and processes. Transfer work will continue alongside ongoing implementation of math pathways aligned to the guiding principles. Technical support will be ongoing and developed in response to observed and reported need.

Fall 2024: Evaluation and Reporting

The final phase of the project will feature a one-day convening to celebrate project completion; facilitate sharing of best practices and insights; facilitate data sharing; engage in strategic planning around next steps; and support campuses in ongoing sustainability efforts. Final data gathering and analysis will be conducted to support final reporting to both the project sponsor and internal and external stakeholders.

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Project Timeline

	Activity	Timeline
AY 2021-2022	Dana Center will conduct virtual check-in calls with the system leadership team. Additional calls with regional coordinators	Spring 2021- early Fall 2021
	One-day kick-off workshop for institutional teams (faculty, administrators, & advisors) to establish plans to implement, improve or grow mathematics co-requisites and math pathways – including case-making.	Late-September 2021
	One-day designing co-req workshop	October/November 2021
	One-day advisor workshop + advising working group	October/November 2021
	One-day data coaching workshop	October/November 2021
	4 webinars	Fall 2021 & Spring 2022
	Transfer convening plus ongoing transfer working group	March 2022
	FOCI series x 2 cohorts	Spring 2022
	Change Leadership with follow-up webinars	Spring 2022
	Advisor FOCI series x 3 cohorts	Spring 2022
	Curriculum Design workshop with 3 pathways committees	Spring 2022
	1-1 Technical Assistance to institutions	Ongoing
AY 2022-2023	Dana Center will conduct virtual check-in calls with the system leadership team. Additional calls with regional coordinators	Sept.-Oct. 2022
	One-day progress convening	Late-Sept.-October 2022
	One-day data coaching workshop	Fall 2022
	One-day workshop for advisors and math faculty + advising working group	Fall 2022
	Transfer convening plus ongoing transfer working group	Spring 2023
	One-day continuous improvement co-req workshop	Spring 2023
	One-day equity workshop	Spring 2023
	4 webinars	Fall 2022-Spring 2023
	FOCI – 5 cohorts with series TBD	Fall 2022-Spring 2023
	Ongoing work with 3 pathways committees	Fall 2022-Spring 2023
	1-1 Technical Assistance to institutions	Ongoing
	Dana Center Corequisite Design Collaborative	Fall 2022-Spring 2023
AY 2023-2024	Dana Center will conduct virtual check-in calls with the system leadership team. Additional calls with regional coordinators	Sept.-Oct. 2023
	One-day convening for leadership teams to share progress	Late-Sept.-October 2023
	Transfer convening plus ongoing transfer working group	Spring 2024
	1-day continuous improvement co-req workshop	Spring 2024
	1-day capstone event	Spring 2024
	Ongoing work with 3 pathways committees	Fall 2023-Spring 2024
	4 webinars	Fall 2023-Spring 2024
	1-1 Technical Assistance to institutions	Ongoing
AY 2024-2025	Final report	December 2024
	1-day celebratory convening to share progress, review data, and engage in sustainability planning	Spring 2025

Project Structure

The project will be coordinated by the Minnesota State System Office through the direction and support of a centralized leadership team comprised of the members listed below. This leadership team will meet regularly throughout the project and focus on developing the principles, guidelines, and resources needed to advance implementation.

Leadership Team

Name	Affiliation	Title	Role in this project	Primary Responsibility
Greg Rathert	Minnesota State System Office	System Director for P-20 and College Transitions	Project Lead	– Overall project owner – Owner of the budget – Provide overall direction and leadership to the project
Nicole Merz	Minnesota State System Office	Project Manager	Project Manager	– Support project leader and teams – Coordinate and help facilitate project partners and teams – Record and manage project issues – Facilitate completion of work tasks – Provide regular status updates to key stakeholder groups
3 (three) college or university Faculty Coordinators	Minnesota State Colleges and Universities	Mathematics Faculty	Subject Matter Expert	– Provide subject matter input and direction – Coordinate curriculum workshops by area (stats, QR, Alg, etc.) in partnership with Dana Center – Engage campus faculty in case-making – Provide presentations – Provide direction and support – Conduct site visits – Champion efforts of peers
College or University SAO	Minnesota State Colleges and Universities	Senior Academic Officer	Subject Matter Expert	– Provide subject matter input and direction
College or University SSAO	Minnesota State Colleges and Universities	Senior Student Affairs Officer	Subject Matter Expert	– Provide subject matter input and direction

College or University SEMO	Minnesota State Colleges and Universities	Senior Enrollment Management Officer	Subject Matter Expert	– Provide subject matter input and direction
2 (two) college or university institutional research staff	Minnesota State Colleges and Universities	Various	Subject Matter Expert	– Provide subject matter input and direction
4 (four) college or university student affairs staff (advising, admissions, registrar, disability services, etc.)	Minnesota State Colleges and Universities	Various	Subject Matter Expert	– Provide subject matter input and direction
Marta Mohr	Minnesota State System Office	Interim System Director for Transfer and Degree Audit Support	Subject Matter Expert	– Align work with Transfer Pathway goals and planning efforts
Andriel Dees (or designee)	Minnesota State System Office	Chief Diversity Officer	Subject Matter Expert	– Align work with Equity 2030 goals and planning efforts – Assist communication with chief diversity officers
Nancy Floyd (or designee)	Minnesota State System Office	Interim Senior System Director of Research	Subject Matter Expert	– Support and inform assessment and evaluation planning – Assist communication with campus research staff
Satasha Green-Stephen	Minnesota State System Office	Associate Vice Chancellor of Academic Affairs	Executive Project Sponsor	– Assist communication with executive leadership team and other stakeholder groups – Align work with Guided Pathways goals and planning efforts

Additional students, faculty, staff, and/or administrators may be invited to serve on the leadership team as subject matter experts and/or to participate as needed in sub-workgroups formed to complete specific tasks, such as training or communication planning.

Campus Teams

Each college and university will establish a cross-functional project team that includes representation from multiple departments across both academic and student affairs. Each team will identify a project lead to coordinate and support implementation. The table below outlines the recommended roles to be included. Project team members will be responsible for local planning and implementation.

Title	Role in this project	Primary Responsibility
SAO	Executive project sponsor	– Assist communication with campus leadership team and other campus stakeholder groups
Project Lead	Project manager	– Coordinate and help facilitate project – Support project team – Record and manage project issues – Facilitate completion of work tasks – Provide regular status updates to the leadership team as directed
Mathematics Faculty	Subject Matter Expert	– Provide subject matter input and direction – Support completion of project goals and activities
Advisor	Subject Matter Expert	– Provide subject matter input and direction – Support completion of project goals and activities
Equity and Inclusion Officer	Subject Matter Expert	– Provide subject matter input and direction – Support completion of project goals and activities
Research Staff	Subject Matter Expert	– Provide subject matter input and direction – Support completion of project goals and activities
Other (e.g., records and registration, testing, disability services, admissions, students, etc.)	Subject Matter Expert	– Provide subject matter input and direction – Support completion of project goals and activities

Enabling Conditions

Supportive Legislature: The Minnesota legislature has taken an active role in advocating for student-centered reforms within the area of developmental education to strengthen our students' experiences and outcomes. This proactive stance has cultivated a culture of transformation and innovation within and across out system as colleges and universities strive to stay out in front of anticipated legislation.

Developmental Education Strategic Roadmap (DESR) Work: Goal 1 of the DESR outlines action items related to improving student completion of developmental education and entry into college-level courses by charging all 37 colleges and universities with redesigning developmental education curriculum to provide an option to students that includes a one-year pathway allowing students to complete developmental mathematics coursework, starting at the lowest aid eligible mathematics course, and a non-STEM college-level mathematics course (i.e. statistics, liberal arts math) within one academic year. A recent system survey found that these reform efforts are well underway.

In addition, the DESR calls for the establishment of course equivalencies within each of the respective developmental sequences to facilitate course transfer. Over the past year, a team of faculty from sixteen of our colleges and universities have developed shared learner outcomes (SLOs) for quantitative reasoning. The team is also developing SLOs in algebra and will develop SLOs in statistics in spring 2020. All campuses are charged with aligning their campuses curriculum in these areas into alignment with the published SLOs.

Recent and Ongoing Mathematics Reforms

1. Mathematics Shared Learner Outcomes (SLOs)—SLOs in quantitative reasoning, algebra, and statistics have been developed. All colleges and universities will align curriculum in these areas by the end of spring 2021.
2. CBMS Math Pathways – Minnesota State was one of 25 statewide teams participating in the CBMS Math Pathways Forum from 2019-2020. The goals of this work focused on creating opportunities for math faculty within K12 and higher education to collaborate and examine practices, examine and document the current alignment of mathematics content taught in high school with content of college-level mathematics courses, and recommend actions that will result in better alignment of high school mathematics course-taking options with the requirements of collegiate programs of study and workforce needs.
3. Collaboration Grant for Math Pathways –The Alternative Math Pathways Development project has introduced faculty, staff, and administrators from MN State campuses across the system to the case for a math pathways model that includes acceleration through corequisite structures. Over 70 participants from more than 20 campuses participated in a Dana Center workshop to help campus teams begin making plans for corequisite implementation, and teams will gather this spring to continue learning how to move toward a math pathways approach through workshops and webinars. The leadership team recently completed an inventory of the current math courses required by major at the seven universities in the system and will share findings with stakeholders in an effort to advocate for the appropriate math course to be included in each degree.
4. SSTF Grant for Minnesota State Mathematics Pathways—Strong Start to Finish awarded Minnesota State $291,500.00 to pilot co-requisite courses in statistics and quantitative reasoning at 5 campuses during the 2020-2021 academic year in partnership with the Charles A. Dana Center. Funded activities include campus planning and curriculum development, training workshops and webinars, and implementation.

Centralized System Office: Minnesota State has a centralized system office staffed to provide coordination of system-level change efforts. In addition, all 37 colleges and universities share a single

Board of Trustees who are entrusted with developing and maintaining system policy and procedure to facilitate consistency across our diverse and complex organization.

Equity 2030 Goal: The Minnesota State Board of Trustees and the Chancellor recently announced that by 2030, Minnesota State, together with our partners, will eliminate the educational equity gaps across race and ethnicity, socioeconomic status, and geographic location by the end of the decade at every Minnesota State college and university.. The plan focuses on 6 strategic dimensions across three distinct but overlapping themes (innovation, quality and technology). These dimensions include 1) enhanced access, 2) student academic success, 3) student engagement and support, 4) data-guided decision making, 5) financial resources and support, and 6) workforce diversity and talent development. In October 2020, the system office convened an expanded Equity 2030 Working Group to help connect the work happening in the system office Divisions. The Working Group is charged with identifying opportunities for coordination within the system office and assisting with communication around Equity 2030. The Working Group will build on the recommendations forwarded by the Chancellor's Fellows and work to develop prioritization and planning to share with members of the Chancellor's Cabinet.

Guided Pathways: In FY17 and 18, Minnesota State's Leadership Council committed to student success as a common focal point for enterprise work. This led to the redesign of Minnesota State's student success metrics and monitoring framework as well as an assessment of campus practices. The results of this work led to a call for the development of an evidence-based system-wide strategy for student success. In spring of 2019 a presidential workgroup guided the development and vetting of a strategic framework, now called the Guided Learning Pathways framework. The framework will go in front of Minnesota State's Board of Trustees for review and adoption in fall 2020.

Nationally, the Guided Learning Pathways approach has become a national reform movement. At its core, the approach focuses on clearly mapping programs so that course sequences, progress milestones and program learning outcomes are clear and students know what they need to do to prepare for further education or a career in their area of interest. In addition, student supports, including career and academic advising round out the approach.

The Minnesota State GLP framework builds on national research and supports the overarching goal of Equity 2030 by providing an equity minded approach to assessing program design and delivery, comprehensive orientation and first-year experience and holistic advising and comprehensive student support components. The structure and implementation of the framework allows for the creation of a shared student success strategy that allows for institutional latitude and flexibility, while reflecting common characteristics of effective practice.

GLP is one of many strategies employed by the system to reach the Equity 2030 goal. The framework components encompass work that is already occurring both system wide as well as locally. The framework is not meant to add to that work, but help campuses identify gaps in current practices and support the use of equity-minded solutions. The overarching purpose of GLP is to establish a common student success strategy systemwide to support the realization of Equity 2030.

Policy Factors

Developmental Education Strategic Redesign (DESR): The DESR outlines the collective plan of Minnesota State for re-imagining and redesigning developmental education to best support student success statewide. The plan was developed in response to state legislation passed in Minnesota in 2017 requiring the Minnesota State Board of Trustees to prepare a plan that reforms developmental education offerings at system campuses to ultimately reduce the number of students who are assigned to developmental education courses. The plan describes seven strategic goal areas aimed at significantly increasing the success of all students in developmental education and college-level gateway courses, especially in regard to increasing overall college degree, certificate, and diploma completion. The first goal area of the plan specifically calls for the creation of a math pathways model aligned with students' program of study and to provide at least one option for a one-year pathway allowing students to complete developmental mathematics coursework. A recent survey found that 17 colleges and universities have already implemented co-requisites to support a one-year pathway in mathematics. Implementation of all strategies across the seven goal areas will be complete by Fall 2021.

Course Placement Policy: This year, Minnesota State revised course placement policy to include a multiple measures approach. Beginning fall 2020, all students will be assessed for course placement based on a multiple measures framework developed and adopted by the system's 37 colleges and universities through a multi-year, collaborative process. This will include combining students' cumulative high school GPA with a number of defined measures (Minnesota Comprehensive Assessment, SAT, ACT and ACCUPLACER scores). Additional planning is underway to extend the multiple measures course placement framework to more specifically address the needs of adult learners and English language learners. The goal of the multiple measures approach is to increase the number of students who place into and successfully complete college-level coursework.

Course Syllabi and Course Outlines Policy: Minnesota State outlines policy around the development, sharing, and posting of course syllabi and common course outlines. Per System Procedure 3.22.1, course outlines are developed collaboratively between campus administration and faculty and approved through local college or university academic standards and affairs councils. In addition, course syllabi are created by faculty members. As a result, it will be important to engage faculty at the grassroots level to promote both consistency and support.

Faculty Contracts: Minnesota State faculty are members of faculty unions (Minnesota State College Faculty for two-year faculty and Inter Faculty Organization and Minnesota State University Association of Administrative and Service Faculty for university faculty). The faculty contracts outline specific pay parameters for engaging in work outside of classroom teaching.

Degree and Certificate Completion: In 2015, the Minnesota legislature passed legislation mandating the annual reporting of disaggregated certificate and degree completion data. Beginning on January 15, 2016, Minnesota State Colleges and Universities (Minnesota State) submitted a comprehensive report detailing the system's plan to encourage and assist students to complete degrees, diplomas, or certificates in their chosen field of study. Minnesota State submits an update to this report each year to the legislature to monitor progress.

Challenges and Risks

Algebra for All Culture: While many states are shifting to clearly defined math pathways by meta-major, Minnesota remains entrenched in the algebra-for-all mindset. Many programs and majors unnecessarily require College Algebra, and advisors frequently recommend students take algebra courses to keep their options open. Statistics pathways are gaining traction throughout the system, and quantitative reasoning pathways are emerging at several schools. Many math faculty passionately defend their current multi-course, algebra-based paths. Change may be slower and more incremental for algebra-based courses and sequences, but progress is being made in this area through the work of the Developmental Education Strategic Roadmap Math Workgroup and the Alternative Math Pathways Development leadership team.

Campus Autonomy versus Consistency: The 37 colleges and universities that comprise Minnesota State are geographically and situationally diverse and serve populations of students with unique needs. Our leadership team will need to weigh campus's desire for flexibility in implementation with providing a consistent experience for our students and produce meaningful data from which we can plan for scaling systemwide. This is a challenge Minnesota State faces with all multi-campus and system level projects and, as a result, the system is quite adept at navigating the terrain as evidenced by the recent multiple measures and student support initiatives sponsored by Ascendium.

Academic Freedom: While Minnesota State strongly supports the academic freedom of faculty in the teaching of their courses, there are often tensions around the role academic freedom plays within system-oriented initiatives. For example, there are no common course numbering or course outline structures across the 37 Minnesota State colleges and universities. Any attempt to do so has been met with strong resistance to ensure that faculty are able to maintain their local autonomy and control over their curricula. Any academic reform thus requires careful consideration of the ways through which faculty can continue to apply their academic freedom within ways that promote consistency and "system-ness." In addition, the project is proactively structured to incorporate faculty at all levels, including within the steering team, pathway committees, regional coordination structure, and local campus implementation teams.

Advising Structures: Minnesota State currently has a culture and mindset that all students need algebra to progress in their academic and career endeavors. Our structures are built to support that mindset. One such structure includes advising. Campus advising teams are critical to the success of our project because they are typically one of the first staff people students encounter when applying to college and enrolling in their first set of courses. We plan to include advisors on the campus teams to ensure that they are learning about the benefits to alternative mathematics pathways and the co-requisite supports that will enable the student to succeed. This will ensure that students receive appropriate advising to enroll in the courses offered.

Declining Enrollments: With any change comes a certain amount of risk and this project is no different. Each campus will be taking the risk to invest in making changes to curriculum at a time when they are experiencing declining enrollments and financial strain. Offering system level support and funding to engage in the work will certainly offset a certain amount of risk. In addition, the development of campus

teams and engagement between the participating campuses to engage in dialogue around challenges and problem solving will assist with this as well.

Financial Sustainability: The ongoing viability of the project beyond the grant cycle hinges on the development of a sustainable financial model that balances student outcomes with the competing financial pressures and demands at each college and university. There is growing evidence that the upfront investments required to implement co-requisite mathematics course structures and the alignment of math courses to students' programs of study net long-term benefits through increased student retention and degree attainment. Thus, part of the risk associated with the long-term investment needed to sustain the project beyond the grant cycle is tied to the initial case-making and awareness building incorporated within the project structure. Nevertheless, part of the local implementation process will also guide campuses through a local financial planning process to enhance conversation between financial and academic stakeholders and develop a long-term vision for ongoing implementation.

Initiative Fatigue: The system has been coordinating numerous initiatives over the last few years, including comprehensive developmental education reform, multiple measures for course placement, comprehensive student support redesign, scaling of open educational resources, comprehensive equity planning and reform, guided pathways implementation, among others. This, in combination with the recent pandemic, has resulted in a growing sense of "initiative fatigue" among our campuses. To address, significant efforts will be made throughout the project 1) to clarify the rationale and purpose for adopting accelerate mathematics pathways and 2) to situate this work within the related initiatives to help campuses see how implementation supports advancement of, for example, Equity 2030 and Guided Pathways. In short, we must recognize as a system that we will not fully attain our desired goals in either equity or attainment unless we can successfully address the barriers associated with gateway mathematics course completion.

Evaluation

Plans for Project Evaluation: The evaluation will determine (1) whether the activities, tools, and resources implemented and provided by the Dana Center are necessary and sufficient to move IHEs to normative practice in mathematics pathways and (2) the extent to which math pathways policies and practices are normative practice at IHEs. The Minnesota State System Office, in collaboration with the Dana Center, will examine the progression of student outcomes (e.g., course enrollment and completion in college-level math) over the course of the project to further contextualize norming practices. Student outcomes will be disaggregated by race/ethnicity, gender, age, and socioeconomic status (i.e., Pell-eligibility) to model ways in which data are used to determine gaps in achievement and show the progression of student outcomes over time.

Evaluation reports will be presented annually. The Year 1 report will be formative feedback to Dana Center staff and higher education and K–12 stakeholders regarding the successes and barriers to norming mathematics pathways. The report for Year 2 and Year 3 will share findings related to norming practices around policies, advising, and course offerings aligned with a summative review of student enrollment and completion patterns within their first year by math pathway and disaggregated by

race/ethnicity, gender, age, and socioeconomic status so IHEs may reference these outcomes as they continue to norm practices beyond the project period.

Determinants of Success: Success of mathematics pathways normative practice is specific to each strand of work. The short-term outcomes and measures by dimension follow each explanation of what success looks like.

Mathematics Pathways Outcomes and Measures

If mathematics pathways are normative practice at the institutions, then we expect there to be consensus across documents, faculty, advisors, and students of the policies and practices showing students are advised into guided and math pathways that align with metamajors. There should be clear alignment of pathways policies and practices exhibited in the information from course catalogs and other enrollment media; students' course-taking patterns (as indicated by enrollment records); and feedback from faculty, advisors, and students. The following are short-term mathematics pathways outcomes:

1. Pathways policies and practices seamlessly align.
2. The applicability of math credits across institutions is seamless and predictable, including dual-credit offerings.

The following are measures for these outcomes:

- **Outcomes 1, 2, 3, and 4:** Content analysis of enrollment and course-taking patterns by metamajor; content analysis of transfer and applicability policies; content analysis of course catalogs, websites, and student enrollment and course-taking media; content analysis of advisor protocols.

Culture Outcomes and Measures

Certain shifts in institutional culture must be evident for there to be successful norming of mathematics pathways. A culture of normative pathways practice will be evident in the way faculty, advisors, students, and other key personnel discuss their awareness, understanding, and support of math pathways. Information about math pathways will be displayed publicly and shown as part of institutional practice rather than as a novel idea. Collaborations between policy organizations and IHEs around math pathways policies and practices will be reviewed and revised on an ongoing basis. Equity, or the placement and/or matriculation of underrepresented and underserved groups (e.g., Black, Latino, females, low income) in guided and math pathways, is part of planning and evaluation, and there are active policies and plans to address equity gaps. There will be evidence that personnel decisions regarding faculty and advisor assignment practices reflect math course offerings, showing that math pathways practices and courses are sustainable. The following are culture outcomes:

1. High level of awareness, understanding, and support is evident across stakeholder groups (e.g., policy agencies, IHEs).
2. Mathematics pathways policies and practices are reinforced, reviewed, and approved.
3. Equity is integral to planning, implementation, and evaluation.
4. Ongoing collaboration occurs between stakeholder groups (e.g., policy agencies, IHEs).
5. Institutional capacity to create conditions for sustainable change is increased.

6. IHE mission supports mathematics pathways policies and practices.
7. Accessible, clear, public, relevant guided/mathematics pathways information is displayed publicly via media such as websites, program catalogs, and information sheets (and not presented as something new or special).

The following are measures for these outcomes:

- **Outcome 1:** Surveys to measure awareness, understanding, and support of mathematics pathways.
- **Outcome 2:** Focus groups, interviews, and/or surveys with faculty, advisors, and students about advising, transfer and applicability practices, and course-taking patterns; content analysis of policy changes; content analysis of course catalogs and student enrollment and course-taking media.
- **Outcome 3:** Content analysis of meeting planning agendas and notes; content analysis of math enrollment, retention, and completion reports; focus groups, interviews, and/or surveys with faculty, advisors, and other key personnel about planning, implementation, and evaluation discussions and processes.
- **Outcome 4:** Focus groups, interviews, and/or surveys with faculty, advisors, and other key personnel about collaborative practices; content analysis of meeting planning agendas and notes.
- **Outcome 5:** Focus groups, interviews, and/or surveys with faculty, advisors, and other key personnel about conditions for mathematics pathways sustainability; review of faculty and advising hiring, assignment, and reassignment practices in math departments and math course offerings.
- **Outcome 6:** Review of mission statements; focus groups, interviews, and/or surveys with faculty, advisors, and other key personnel to determine how the characterize mathematics pathways.
- **Outcome 7:** Content analysis of course catalogs, websites, and student enrollment and course-taking media.

Structural Support Outcomes and Measures

Structural supports for math course offerings, content, and pedagogy and state and institutional policies must be in place for successful mathematics pathways normative practice. Success will be determined by the numbers of math pathways course offerings aligned with metamajors. At least two math pathways will be aligned for normative practice to be successful. The content and pedagogy of the course will include social and emotional learning (SEL) and other student success strategies. State leaders and IHEs and will collaborate on establishing and implementing policies for college readiness, placement, and declaring a major, including IHEs having policies in place for students who are not college ready in math to enroll in a college-level math course within their first year of enrollment. The following are structural support outcomes:

1. All IHEs offer at least two rigorous mathematics pathways aligned to programs of study.
2. All IHEs have structures that allow all students to earn a gateway math credit within the first year of enrolling.
3. State and institutional policies support mathematics pathway implementation.

4. Foundational student success strategies are aligned across institution so that students receive coherent and consistent support and instruction.
5. Math courses integrate SEL.

The following are measures for these outcomes:

- **Outcome 1:** Content analysis of enrollment and course-taking patterns by metamajor; content analysis of course catalogs, websites, and student enrollment and course-taking media; content analysis of advisor protocols.
- **Outcome 2:** Content analysis of policy for earning gateway math course; percentages of students who complete gateway college math credit in one year or less, disaggregated by race/ethnicity and gender.
- **Outcome 3:** Content analysis of state and institutional policies.
- **Outcome 4:** Focus groups, interviews, and/or surveys with faculty, advisors, and other key personnel to determine the alignment of student success strategies across institutions
- **Outcome 5:** Student presurveys and postsurveys measuring changes in students SEL skills and success strategies.

Process Outcomes and Measures

IHEs must engage in particular processes for successful mathematics pathways normative practice. There will be a continuous feedback loop of reviewing disaggregated student enrollment, success, and retention data and using student outcome data to revise and create policies critical to math pathways success. Advising policies and practices will show students are equitably guided into math pathways and enrolled in courses that align with their major. Evidence of success will be shown in high retention ratings. The following are processes outcomes:

1. IHEs collect and use student data for continuous improvement with a strategic focus on using disaggregated data to close gaps in student achievement.
2. Mathematics pathways policies and practices are normative practices that are sustained over time.
3. Students routinely participate in a high-quality onboarding process that helps them connect to the institution, develop a sense of belonging, understand career options and institutional processes, and make well-informed decisions.
4. Student supports, especially advising, increase retention and help students make progress.

The following are measures for these outcomes:

- **Outcome 1:** Content analysis of meeting planning agendas and notes; content analysis of math enrollment, retention, and completion reports; focus groups, interviews, and/or surveys with faculty, advisors, and other key personnel about the use of student outcome data for planning purposes.
- **Outcome 2:** Checklist (and sources of evidence) of elements of normative practice (including indicators related to mathematics pathways practice, state and institutional policies, IHE structures, and processes).
- **Outcome 3:** Content analysis of onboarding materials, agendas, and enrollment records; focus groups, interviews, and/or surveys with students regarding onboarding processes

- **Outcome 4:** Content analysis of student support documents and media; student retention percentages of first year to second year (overall and in college-level math courses), disaggregated by race/ethnicity and gender.

Budget

Budget Timeline of Requesting Funds

	Period 1	Period 2	Period 3	
	AY 2021-2022	AY 2022-2023	AY 2023-2024	Totals
Personnel	$264,700	$264,700	$55,000	**$584,400**
Consultants	$191,500	$185,250	$103,250	**$480,000**
Travel				
Supplies/Materials				
Training/Meetings	$5,000	$5,000	$5,000	**$15,000**
Other Expenses	$10,000	$10,000	$10,000	**$30,000**
Indirect Cost Allocation on Above Direct Expenses (excluding consultants)	$24,400	$24,400	$24,400	**$73,200**
Direct Sub-grantee Costs	$1,136,100	$37,500		**$1,136,100**
Indirect sub-granted allowance (based on the total sub-granted direct cost amount)	$15,000			**$15,000**
Total	**$1,646,700**	**$526,850**	**$197,650**	**$2,333,700**

Note: See attached spreadsheet for full breakdown.

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Overview of Requested Funds

Item	Description	Unit Cost	Units	Total
Faculty Coordinators	3 Regional Coordinators; each at half-time release for 4 semesters	$2,750 per credit + 35% fringe = $3,712.50; 15 credits = $55,687.50	3 x .5 UFT = 1.5 UFT x 4 semesters	$334,200
Project Management	To fund dedicated project manager at .20 FTE position	$105,000.00 = 35% fringe = $141,750.00	.20 x 3 years	$85,100
Research	Staff time at System Office to support project data gathering and analysis	$101,843 + 35% fringe = $137,488.00	.40 x 3 years	$165,000
Convening Expenses	For travel, food, and material costs for meetings and events	250 participants x $20 per participant=$5,000 .00	3 events	$15,000
Indirect Costs on Direct Expenses	Costs associated with human resources, accounting, IT staff, etc.); organizational equipment and technology; rent; and utilities	15% of SO total		$73,200
Consultants	Partner with the Dana Center to facilitate workshops, training, and research support to advance project implementation	$480,000.00 *[see breakdown in section below]*	1	$480,000
Communication and Marketing	To fund semi-annual newsletter and/or website	$10,000.00	x 3 years	$30,000
Campus Implementation Funding – Tier 1 (Full Scale)	6 credits of faculty release for curriculum redesign ($3,657.50/ credit) + 3 credits of faculty release for coordination of program mapping and course alignment ($3,657.50/ credit)	$3,712.50/credit x 9 credits = $33,412.50	28 campuses	$935,600
Campus Implementation Funding – Tier 2 (Partial Adoption/Adaption)	3 credits of faculty release for curriculum redesign ($3,657.50/ credit) + 3 credits of faculty release for coordination of program mapping and course alignment ($3,657.50/ credit)	$3,712.50/credit x 6 credits = $22,275.00	9 campuses	$200,500
Campus PDP Pilots	Dana Center Corequisite Design Collaborative	$37,500	1 year	$37,500
Indirect sub-granted allowance (based on the total sub-granted direct cost amount)	Flat cost for managing subgrants	$5,000.00	1 year	$15,000
			Total	**$2,333,700**

Consultant Budget Overview

Activity - @$480,000
Fall 2021 – Summer 2022
Dana Center will conduct virtual check-in calls with the system leadership team. Additional calls with regional coordinators
One-day kick-off workshop for institutional teams (faculty, administrators and advisors) to establish plans to implement, improve or grow mathematics co-requisites and math pathways – including case-making.
One-day designing co-req workshop
One-day advisor workshop + advising working group
One-day data coaching workshop
Transfer convening plus ongoing transfer working group
4 webinars
FOCI series x 2 cohorts
Change Leadership with follow-up webinars
Advisor FOCI series x 3 cohorts
Curriculum Design workshop * 3 with ongoing work with 3 pathways committees
1-1 Technical Assistance to institutions
Fall 2022 – Summer 2023
Dana Center will conduct virtual check-in calls with the system leadership team. Additional calls with regional coordinators
One-day progress convening
One-day data coaching workshop
Transfer convening plus ongoing transfer working group
One-day workshop for advisors and math faculty + advising working group
One-day continuous improvement co-req workshop
One-day equity workshop
4 webinars
FOCI – 5 cohorts with series TBD
Ongoing work with 3 pathways committees
1-1 Technical Assistance to institutions
Fall 2023 – Summer 2024
Dana Center will conduct virtual check-in calls with the system leadership team. Additional calls with regional coordinators
Transfer convening plus ongoing transfer working group
One-day convening for leadership teams to share progress
1-day continuous improvement co-req workshop
1-day capstone event
Ongoing work with 3 pathways committees
4 webinars
1-1 Technical Assistance to institutions

In-Kind Match

System Office				
Item	**Description**	**Unit Cost**	**Units**	**Total**
Project Coordination	To fund project-related costs for System Director of P20 and College Readiness at .20 position	$115,500.00 + .35 fringe = $155,925	.50 x 3 years	$233,900.00
Project Support	To fund project-related costs for Director of College Transitions at .20 position	$105,402.00 + .35 fringe = $142,292.70	.25 x 3 years	$106,800.00
Facilities and IT support for 3 system-wide convenings	For costs associated with event space and A/V technology support	$1,200.00	x 3 events	$3,600.00
Printing and materials	Folders, name tags, and printing/handouts for convenings	$3.00	x 750 participants	$2,300.00
Indirect Costs	Costs associated with human resources, accounting, IT staff, etc.); organizational equipment and technology; rent; and utilities	50% of 15% of SO total		$73,200.00
			Subtotal	*$419,800*
Campuses				
Item	**Description**	**Unit Cost**	**Units**	**Total**
Convening costs	Materials and light food/beverage service to support local planning and implementation meetings	$50	16 meetings x 37 colleges and universities	$29,600.00
PDP Pilots	Access to PDP	$1,000	2 campuses	$2,000.00
Research Support	Staff time to conduct local data gathering, analysis, and reporting	$62,400 + .35 fringe = $84,240.00	.10 x 3 years x 37 colleges and universities	$311,700.00
Indirect Costs	Costs associated with human resources, accounting, IT staff, etc.); organizational equipment and technology; rent; and utilities	15% of campus total		$221,700.00
			Subtotal	*$565,000.00*
			Total	**$984,800.00**

Supplemental Information

Table 6: Developmental Education (DE) Completion Rate by Subject
Minnesota State Colleges and Universities

Subject	Fall 2010	Fall 2011	Fall 2012	Fall 2013	Fall 2014	Fall 2015	Fall 2016	Fall 2017	Fall 2018	Change
DE Math-1st Year	30.5%	31.0%	31.3%	33.7%	41.0%	42.7%	43.6%	42.7%	44.2%	**13.7**
DE Writing-1st Year	59.3%	59.7%	60.1%	59.7%	61.0%	62.8%	64.0%	63.5%	64.6%	**5.3**
DE Reading-1st Year	55.7%	56.0%	55.8%	55.5%	60.3%	60.6%	61.4%	61.3%	60.0%	**4.3**

Table 7: Developmental Education (DE) Completion Rate by Student Group and Subject
Minnesota State Colleges and Universities

Subject & Student Group	Fall 2010	Fall 2011	Fall 2012	Fall 2013	Fall 2014	Fall 2015	Fall 2016	Fall 2017	Fall 2018	Change
DE Math-White/NR	34.3%	35.3%	35.4%	37.9%	43.9%	46.7%	48.1%	47.1%	49.8%	15.5
DE Math-SOC & AI	21.6%	22.3%	23.7%	26.2%	35.5%	35.8%	36.7%	36.6%	37.0%	15.4
DE Writing-White/NR	64.7%	64.9%	66.6%	66.8%	66.0%	69.3%	68.7%	69.6%	69.4%	4.7
DE Writing-SOC & AI	52.7%	53.6%	53.3%	52.9%	56.8%	57.3%	60.0%	59.4%	61.5%	8.8
DE Reading-White/NR	61.7%	61.5%	63.3%	62.4%	67.1%	67.6%	66.9%	66.7%	66.7%	5.0
DE Reading-SOC & AI	49.5%	50.9%	49.4%	50.2%	55.7%	56.7%	58.2%	58.7%	57.3%	7.8
DE Math-No Pell	38.3%	39.3%	39.3%	39.9%	47.1%	48.3%	49.4%	49.3%	51.3%	13.0
DE Math-Pell	25.6%	26.0%	26.2%	29.1%	36.9%	38.3%	39.1%	38.3%	39.7%	14.1
DE Writing-No Pell	66.9%	68.8%	69.1%	68.8%	68.0%	69.4%	68.4%	69.0%	68.9%	2.0
DE Writing-Pell	56.0%	55.6%	56.2%	55.9%	57.7%	58.9%	61.2%	60.8%	62.8%	6.8
DE Reading-No Pell	64.3%	64.4%	65.5%	64.8%	67.0%	67.7%	65.5%	67.0%	64.4%	0.1
DE Reading-Pell	52.3%	52.1%	52.3%	51.8%	57.7%	58.0%	60.1%	59.5%	58.8%	6.5

Table 8: First Year College Level (CL) Course Completion Rate by Subject
Fall Entering Undergraduate Degree, Diploma and Certificate Seeking Students
Minnesota State Colleges and Universities

Subject	Fall 2010	Fall 2011	Fall 2012	Fall 2013	Fall 2014	Fall 2015	Fall 2016	Fall 2017	Fall 2018	Fall 2019	Change
CL Math	19.6%	20.6%	20.8%	21.2%	22.8%	23.5%	24.5%	24.5%	24.5%	25.5%	5.9
CL Writing	38.1%	38.7%	38.0%	38.8%	39.2%	40.1%	39.9%	39.4%	39.0%	40.0%	1.9

Table 9: First Year College Level (CL) Course Completion Rate by Student Group and Subject
Fall Entering Undergraduate Degree, Diploma and Certificate Seeking Students
Minnesota State Colleges and Universities

Subject and Student Group	Fall 2010	Fall 2011	Fall 2012	Fall 2013	Fall 2014	Fall 2015	Fall 2016	Fall 2017	Fall 2018	Fall 2019	Change
CL Math-White/NR	22.2%	23.5%	23.7%	24.2%	26.1%	26.8%	27.8%	28.2%	28.2%	29.2%	7.0
CL Math-SOC & AI	11.4%	12.0%	12.6%	13.5%	14.8%	15.8%	16.9%	16.8%	17.3%	18.5%	7.1
CL Writing-White/NR	41.1%	42.0%	41.1%	41.5%	41.7%	42.4%	41.8%	41.1%	40.6%	41.2%	0.1
CL Writing-SOC & AI	29.2%	29.5%	29.8%	32.0%	33.2%	35.2%	35.7%	36.0%	36.2%	37.8%	8.6
CL Math-No Pell	26.6%	28.4%	28.6%	28.1%	29.8%	30.2%	30.4%	31.2%	30.9%	32.0%	5.4
CL Math-Pell	15.0%	15.0%	15.4%	16.1%	17.6%	18.1%	19.2%	19.6%	19.8%	20.5%	5.5
CL Writing-No Pell	44.2%	45.7%	45.2%	44.9%	44.9%	45.4%	44.1%	43.3%	42.0%	43.8%	-0.4
CL Writing-Pell	35.4%	34.7%	34.0%	35.1%	35.9%	37.0%	37.3%	37.7%	38.2%	38.9%	3.5

SOC & AI: Students of color and American Indian students
White/NR: White and nonresident alien students
Pell: Pell eligible students No Pell: Not Pell eligible