

UNIVERSITY OF MINNESOTA
Driven to DiscoverSM



A STRATEGIC PLAN

The University of Minnesota Twin Cities
Will be Preeminent in Solving the Grand Challenges
of a Diverse and Changing World

DRAFT | SEPTEMBER 12, 2014

September 2014

Office of the Senior Vice President for Academic Affairs and Provost
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The University of Minnesota, founded in the belief that all people are enriched by understanding, is dedicated to the advancement of learning and the search for truth; to the sharing of this knowledge through education for a diverse community; and to the application of this knowledge to benefit the people of the state, the nation and the world. The University's threefold mission of research and discovery, teaching and learning, and outreach and public service is carried out on multiple campuses and throughout the state.

Foreword

To the Twin Cities campus community and citizens of Minnesota,

Now the work begins.

The narrative you are about to read is a road map for reinvigorating the University of Minnesota. It's about setting a new direction, recommitting to excellence and stretching our goals. This is not just a collection of words. It is, rather, a document about our willingness to change.

The yearlong process to create this plan has been inclusive, argumentative, collaborative and provocative. The conversations were driven by a rejection of complacency and by a spirit of “good isn't good enough.”

The result—our new Grand Challenges agenda, which is articulated here—is ambitious and focused. It is intended to improve lives, solve problems, own a global perspective, renew our curriculum, touch our local communities in new ways, boost energy and creativity among our faculty and students, and to re-envision the work of the American land-grant research university. With hard work and collaboration, the goals of this plan are achievable.

We must produce the best-prepared, critical-thinking leaders of tomorrow, and support the world's leading creative thinkers, scholars, scientists, engineers, artists, and educators. We must embrace excellence with passion and look to change without fear.

Sincerely,



Eric W. Kaler
President

Introduction

This report presents to the Board of Regents and the campus community bold and thoughtful recommendations to advance the mission of the University of Minnesota–Twin Cities at a time of great change, challenge, and opportunity. The culmination of a campuswide planning process, the report delineates a strategic framework for making the most of our capacity—and responsibility—to drive transformative research, education, outreach and collaboration.

“The University of Minnesota–Twin Cities will be preeminent in solving the Grand Challenges of a diverse and changing world.” This overarching vision and four key goals comprise the core framework defined by the Strategic Planning Workgroup—faculty, staff, and students convened by President Kaler in fall 2013 to develop an ambitious plan that would chart our course for the future.

The plan’s goals define four areas of focus: 1) capitalizing on the breadth and quality of our research and our curricular strengths; 2) recruiting, retaining, and promoting field-shaping researchers and teachers; 3) fostering reciprocal engagement with our various communities and capitalizing on our specific location; and 4) promoting excellence and rejecting complacency at all levels of the institution.

This general framework emerged from months of thoughtful and invigorating discussion of the University’s innumerable strengths, the complex and inherently transdisciplinary character of many of today’s critical challenges, and the currents of change that are reshaping all of higher education. The workgroup’s discussions grew deeper and more richly nuanced as additional faculty, students, and staff were enlisted to help map issues and potential action steps for each goal area. The final report was also informed by campuswide forums; by discussions with the Board, senior leaders, and deans; and by many conversations with campus and community stakeholders.

This framework is intended to set a general direction for the next decade as we carry out a dual role. We are both Minnesota’s land-grant university—serving the public good—and its designated flagship research institution—keeping Minnesota at the forefront of emerging knowledge and educating the professionals and leaders of tomorrow. Our plan is to build on the many things we already do extraordinarily well and to leverage the exceptional opportunities and strategic strengths that differentiate us from other higher education institutions.

Few institutions are as comprehensive as ours, or as distinguished on so many levels: world-leading research, outstanding graduate and undergraduate teaching, and path-breaking interdisciplinary work. In our classrooms and research labs, in studios and seminars, in clinics and extension offices, and through collaborations in today’s unbounded virtual

spaces, our faculty, staff, and students already are deeply involved in addressing important and difficult issues—from disease to biodiversity to the pressing problems of hunger, poverty, and intolerance.

These and other critical challenges stretch across the boundaries of defined disciplines. Global in scope, they also are defining issues for our local communities and our state, region, and nation. They drive workforce needs and redefine the knowledge and skills demanded of our students, who must prepare for careers that may not have existed a few years ago. These complex challenges demand that we draw as creatively as possible on the wide-ranging expertise of our comprehensive university—from STEM fields and the humanities, from the social sciences and the arts, from professional expertise and practice.

This strategic plan articulates a ten-year vision to enhance both the excellence and the impact of our vitally important work, based on a range of our special opportunities and strengths. It does not prescribe new directions for all aspects of our many colleges, programs, and disciplines, nor does it outline administrative rearrangements. Instead, it sets a strategic course for the next decade and outlines a number of specific paths to move us forward.

The plan aims to make us more nimble, innovative, and integrative in order to better serve our students, our many stakeholders, and the public. It identifies new ways to encourage and advance collaborations in areas where we have the potential for major impact. It connects research and curricular strategies to ensure that our faculty do their best work and we provide our students with exciting educational opportunities. Even as we continue to develop deep expertise in specialized areas—and to nurture and celebrate single-discipline scholarship and creative work of focused excellence—we have important opportunities to foster transdisciplinary research and to develop the knowledge, skills, and agility that our students will need as tomorrow’s innovators, lifelong learners, and global citizens.

It is important to underscore that this plan is meant to be a starting point, to be a strategic foundation for ongoing transformative work. We will connect the campus strategic plan with collegiate and other unit-level plans and initiatives, and we will develop a shared understanding of the milestones by which we can best measure our progress.

As we do that, we must bear in mind that this plan is also intended to be dynamic, to be subject to recurrent reexamination and revision. We must be alert to new opportunities and willing to abandon failed experiments. Through robust conversations with the campus community, with the Board of Regents and our many partners and stakeholders, through unstinting effort, we will advance our mission, enlarge our shared aspirations, and meet the challenges and contingencies of a diverse and changing world.



Karen Hanson
Senior Vice President for Academic Affairs and Provost

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University of Minnesota Mission

The University of Minnesota, founded in the belief that all people are enriched by understanding, is dedicated to the advancement of learning and the search for truth; the sharing of this knowledge through education for a diverse community; and to the application of this knowledge to benefit the people of the state, the nation, and the world.

The University's mission, carried out on multiple campuses and throughout the state, is threefold:

- Research and Discovery
- Teaching and Learning
- Outreach and Public Service

University of Minnesota Board of Regents Policy, last amended 2008.

University of Minnesota Foundational Commitments & Principles

FOUNDATIONAL COMMITMENTS

- To **academic freedom**, supporting open intellectual inquiry and free expression and meeting the responsibilities entailed by such freedom
- To **trustworthiness** and honesty, maintaining individual and institutional integrity in all we do
- To **respect** for each individual
- To **diversity and inclusion**
- To **public engagement**, partnering with our communities locally, nationally, and across the world
- To **excellence** in the fulfillment of our mission

GUIDING PRINCIPLES

- We collaborate, consult, and cooperate—and take action
- We encourage bold, innovative, and creative responses to the challenges of today and tomorrow
- We promote access to our teaching, research, and service
- We are accountable to the State of Minnesota, to our publics, and to one another for the fulfillment of our mission, demonstrating that we are responsible stewards of public funding and public trust

This is Our Vision

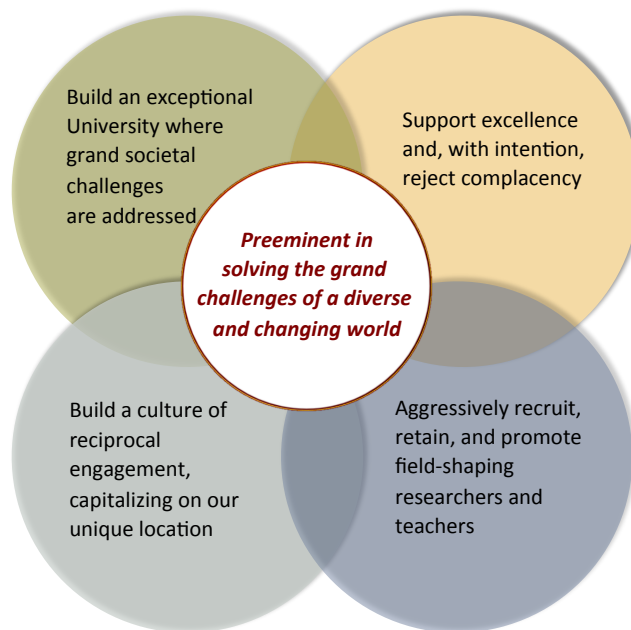
*The University of Minnesota Twin Cities
Will Be Preeminent in Solving the Grand Challenges
of a Diverse and Changing World*

We will:

- Use our depth and breadth to capitalize on our exceptional students, faculty, staff, and on our location in a vibrant metropolitan setting to generate and disseminate new knowledge, creative work, and insights.
- Create an educated populace able to identify, understand, and solve demanding problems.
- Leverage the power of divergent paths to knowledge and creativity in order to address the grand challenges of society.
- Partner with the communities and people of the state of Minnesota to benefit the common good.

Vision and Goals

In support of our vision—
and to build a stronger and more vitally engaged University—
we have four overarching goals:



The University of Minnesota Twin Cities Will Be Preeminent in Solving the Grand Challenges of a Diverse and Changing World

As a Vitaly Engaged 21st-Century Research University, We Will:

Leverage Our Breadth and Depth to Take on Society's Grand Challenges in Research, Creative Work, and Curriculum	Support Excellence and Reject Complacency	Aggressively Recruit, Retain, and Promote Field-Shaping Researchers and Teachers	Build a Culture of Reciprocal Engagement That Capitalizes on Our Location
<p>Marshal the University's research and creative capacity to address grand challenges critical to our state, nation, and world</p> <p>More coherent and coordinated approach to cross-disciplinary grand-challenges research</p> <p>To jump-start institutional transformation, broaden areas of interdisciplinary focus where we have robust work:</p> <ul style="list-style-type: none"> • Sustainable, Healthy, Secure Food • Advancing Industry While Conserving the Environment and Addressing Climate Change • Building Vibrant Communities that Enhance Human Potential and Collective Well-Being in a Diverse and Changing Society <p>Bottom-up support for emerging challenge work</p> <p>Recognize interdisciplinary work in P&T and regular evaluation</p> <p>Ensure resources are in place for research goals</p>	<p>Build on our strengths to create an invigorated culture at all levels—ambition, challenge, exploration, and innovation</p> <p>Better align our time and money with our strategic priorities</p> <p>Implement a broad campus climate initiative that simultaneously pursues diversity, accountability, and civility</p> <p>Remove obstacles: decrease administrative burdens, make stop-doing lists, streamline processes</p> <p>Improve communication: get better at expediting problem resolution; obtain timely and useful info from graduates for curriculum development and advising</p>	<p>Create a transformational culture of innovation in which there is flexibility as well as responsibility and accountability</p> <p>Invigorate the process for recruiting the best researchers and teachers: establish appropriate resources for recruiting and hiring and permit strategic flexibility; aggressive approach to partner hires; improve diversity</p> <p>Reinvigorate the faculty campus interview process</p> <p>Ensure our culture encourages transformational scholarship: excellence for department heads; incentives to keep field-shapers; more strategic use of faculty awards; recruit and mentor excellent grad students; regular reviews of centers; incentives for directing major interdisciplinary centers</p>	<p>Support dynamic University-community partnerships to advance discovery, create pathways for students, and benefit our state and world</p> <p>Build engagement culture: review criteria for evaluating engaged scholarship across units; include engagement in reviews of faculty members' research and teaching; review other policies/practices; expand training for faculty, staff, and students</p> <p>Convene community, business, and government partners around grand challenges</p> <p>Expand community-engaged grand-challenges learning and career pathways for students</p> <p>Make engagement more visible; create "front doors" for community and business stakeholders</p>

Report of the Strategic Planning Workgroup

University of Minnesota Twin Cities

DRAFT | SEPTEMBER 12, 2014

Prefatory Note

A Plan for the University of Minnesota–Twin Cities to be Preeminent in Solving the Grand Challenges of a Diverse and Changing World

President Kaler launched a planning process for the Twin Cities campus in the fall of 2013. To shape the plan, the University assembled a 30-member Strategic Planning Workgroup, which broadened to include nearly 200 faculty members, staff, and students. Over many months, our discussions—expansive and thoughtful, and informed by broader consultation with the campus and our external stakeholders—considered our institution’s strengths, the pressures facing universities, and the responsibilities and opportunities we have to bring our resources more powerfully to bear on the challenges of our global century.

The workgroup developed a vision and goals to guide strategic decision-making at the University over the next decade, and issue teams then mapped goals to recommended actions. We here present this work as an ensemble of the reports from the five teams, all of which were guided by the overarching vision that links the defined goals.

The plan involves a ten-year vision but highlights steps we can take over the next three to five years to advance this vision and to create a better, stronger, more vitally engaged, and more effective University. We intend this to be the starting point for action but also for further discussion, because this planning framework is meant to be a dynamic one. We will need to work together to implement the plan, and, throughout, we will need to be alert to new opportunities and willing to abandon failed experiments. Most of all, we will need to make sure that our efforts advance our mission, reflect our shared aspirations, serve our students and stakeholders, and meet the challenges and contingencies of a diverse and changing world.

Provost Karen Hanson and the Strategic Planning Workgroup
September 2014

Strategic Planning Workgroup

Karen Hanson, Senior Vice President for Academic Affairs and Provost, Workgroup Chair*

Neil Anderson, Director, University of Minnesota Extension

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Renee Cheng, Associate Dean, College of Design; Professor, School of Architecture

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Kamil Ugurbil, Professor, Medical School

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Amelious Whyte, Senior Associate Vice Provost for Advocacy and Support, Student Affairs

Aks Zaheer, Professor, Carlson School of Management

**denotes executive committee member*

Report of the Strategic Planning Workgroup
University of Minnesota Twin Cities

Embracing Excellence/Rejecting Complacency

*We will create an invigorated culture—
a culture of ambition, challenge, exploration, and innovation*

Strategic Planning Workgroup

Embracing Excellence/Rejecting Complacency

Issue Team Members

- Brian H. Aukema, Associate Professor, Entomology
- Kenneth Baker, Building and Grounds Worker, Facilities Management
- Barbara Bezat, Archivist, University Libraries
- Connie Buechele, Information Technology Director, Carlson School of Management
- Mike G. Conzemius, Professor, Surgery, Veterinary Clinical Sciences
- David Ernst, Chief Information Officer, College of Education and Human Development
- Ann Hagen, Assistant Program Director, Diagnostic & Biological Sciences
- Holly Harrington, College of Liberal Arts Student Board President; Undergraduate Student, Psychology
- Emily Hoover, Professor and Head, Horticultural Science
- Cherrene Horazuk, Aide to Dean, Humphrey School of Public Affairs; President of AFSCME Local 3800
- Bill Iacono, Regents Professor, Psychology
- Jay Kiedrowski, Senior Fellow, Humphrey School of Public Affairs
- Sally Gregory Kohlstedt, Professor, History of Science and Technology
- Alexis Kuhr, Associate Professor, Art
- Becky Malkerson, Executive Vice President, Development, University of Minnesota Foundation
- Alon McCormick, Professor, Chemical Engineering and Materials Science
- Trevor Miller, Director, External Relations, College of Design
- Ryan Olson, Student Senate Consultative Committee Member, Undergraduate Student, Liberal Arts
- Mark Osborn, Assistant Professor, Pediatrics
- Ferd Schlapper, Director and Chief Health Officer, Boynton Health Service
- Yoji Shimizu, Distinguished University Teaching Professor, Laboratory Medicine and Pathology; Kay Chair in Biomedical Research; Director, Medical Scientist Training Program (M.D./Ph.D.)
- **Jakub Tolar**, Professor, Pediatrics; Cornea Chair, Pediatric Blood and Marrow Transplantation; Director, University of Minnesota Stem Cell Institute
- **Christopher Uggen**, Distinguished McKnight Professor, Sociology; Vice Chair, Faculty Consultative Committee
- Connie Wanberg, Faculty Excellence Chair and Professor, Human Resources and Industrial Relations
- Pamela Wheelock, Vice President for University Services and Chief Operations Officer

Strategic Planning Workgroup co-leads for this team are in bold.

Introduction

The University's strategic plan sets forth the bold vision to be "preeminent in solving the grand challenges of a diverse and changing world." To realize this vision and to advance the larger goal of an even stronger and more vital university, we must embrace excellence and reject complacency. The University of Minnesota needs to draw on its unique strengths and resources to challenge dynamics of the current University culture. Key steps are to respect failure as a means of learning, to remove barriers to performance, and to create the flexibility needed to meet the changing needs of the institution as well as the state and larger world in which it functions.

Organizations tend to develop remarkably similar processes and structures, so it is no surprise that most strategic-planning documents read as though they were stamped from the same flowchart-infused mold. President Kaler and Provost Hanson have made clear, however, that this University of Minnesota plan will not be—to be successful, cannot be—the same old call for vague and bland "apple pie virtues."

The goal of rejecting complacency states, very directly, both the source of the problem and the action to be taken.

Complacency can refer to an uncritical sense of self-satisfaction and disregard for actual deficiencies. It can refer to doing things a certain way because that is the way they have always been done. Complacency means ignoring change in the world around us and expecting the world to change for us, rather than expecting ourselves to adapt to the world's needs. It means assuming that responsibility for improvement lies with some higher authority, and that the individual merely needs to follow instructions without taking a personal interest in improving the outcome.

Examples of Complacency

The University of Minnesota has a long and spectacular history that has inspired generations and changed the world. Without question, there are many aspects of our University that work supremely well, and these need to be embraced as exemplars. A key ingredient to our success is optimism—the realization that much about this University is excellent and that we can build on our successes. Another key ingredient, however, is our willingness squarely to face and to acknowledge internal as well as external threats.

Externally, the pressures come from a changing society, economics, rapidly evolving educational technologies, shifting student demographics, and new global constraints and opportunities. Universities are no longer the unquestioned authorities for all things scientific, medical, artistic, and otherwise learned. The value of research-intensive institutions—and of public universities more generally—is questioned by legislators and the general public alike, amid rising student debt and perceptions that vast amounts of money, both from taxes and student tuition, are flowing into a largely unaccountable and vaguely superior and remote institution. Universities are asked to serve a society increasingly immersed in new technologies that have less and less to do with place-based

interactions—mobile devices, distance learning, social media. Both social expectations about the purposes and value of higher education and student and family expectations seem to be changing—and those changed expectations cannot be ignored.

Internally, we have self-created and self-maintained threats. A high level of accountability has at times led to sluggishness in responding to new opportunities or created barriers that must be surmounted in order to act. We have areas of the University that are among the best in the world, but others, never having attained such heights, merely plug along unexamined and unimproved. Struggling to deal with the complex student population, it is sometimes easier to diminish classroom expectations.

Rejecting

By “*reject*,” we mean “*refuse to accept*.” It is easy to identify problems, complain, and move on—without changing anything. If we reject complacency, once a problem has been identified, we don’t simply live with it. Each of us has the responsibility (and the authority) to look for ways to improve and then to take action. We must acknowledge personal accountability for outcomes, which will in turn engender pride of accomplishment for advances made. The imperative to reject complacency is meant to be direct and forceful. Rejection of complacency gives one power but also responsibility.

Examples of Rejecting

We see many examples of a destructive path elsewhere: indiscriminate budget cuts, de-skilling of faculty, grade inflation, inattention to research on teaching and learning, administrative bloat, and the exploitation of students, workers, and communities. It is hard to find good examples to follow.

It may be harder still to convince a skeptical University audience that “*strategic planning*”—that often heard about and seldom understood process—can bring actual change.

So, to begin, we reject the idea that the University cannot change. We reject that history must repeat itself with the failure of strategic planning efforts. In so doing, we embrace the University of Minnesota’s growth as a dynamic, creative environment where new ideas are encouraged, incubated, and put to the test.

As members of our issue team have presented and discussed ideas with colleagues, we have encountered powerful and passionate reactions ranging from “*It’s about time!*” to “*It feels like you’re putting a big target on my back!*”

In response, we established three principles, both to address such concerns and to guide strategies for change:

1. *Rejecting complacency must be a University-wide effort, involving faculty, staff, and students.* We cannot and will not simply point the finger at one class of University citizens. Broad participation and broad accountability are needed for real change.
2. *We need concrete action steps as well as a broader aspirational vision* if we are to cultivate an environment where resilience and creativity are normal, where risks of failure are acknowledged and learned from, and where there is protection for contrarian voices.

3. *We need courage*, as it takes greater courage to reject complacency than to extoll excellence.

Strategies

Transformative Vision

We will instill confidence and institutional pride by taking an atmosphere in which some feel disconnected, unable to change, and impeded in their work, and evolving it into a culture of ambition, challenge, exploration, and innovation.

Rationale: Our greatest discoveries at the University occur when we are inspired, absorbed in our work, and fully engaged—a post-doc’s “Eureka!” moment in the lab, an undergraduate student’s formulation of an argument she never thought she’d make, an info-tech staff member’s creation of a system that saves us all time and aggravation, or a professor’s great insight while doing participatory action research in the community. It is no coincidence that these are our most satisfying career moments—the times we say, “There is no place I’d rather be, and nothing I’d rather be doing.” A culture that supports such an atmosphere of achievement will produce more and qualitatively better high-impact research, teaching, and engagement.

Major Players

- Everyone will be involved, but leaders at all levels of the University will play a pivotal role. President Kaler and Provost Hanson are especially important in setting the tone, but this must be a University-wide effort.
- Office of the Provost
- Office of the Vice President for Research
- Deans and center directors
- Office for Human Resources
- University Relations and communications staff campuswide

Action Steps

- Use unit compacts and departmental budget requests to determine how units are constructing environments that support and sustain creativity and innovation, while rejecting complacency.
- Identify sensitive research metrics to address impact (e.g., scholarly citations but also public attention), in addition to raw productivity measures (e.g., grants, articles, exhibitions, and performances).
- Learn about and adapt knowledge from innovative organizations inside and outside higher education.
- Create new benchmarks for University performance on engagement and innovation in comparison with aspirational peers and our Committee on Institutional Cooperation peer institutions; identify areas of relative strength and weakness.

- Identify student and employee concerns and ideas to use in developing metrics to track change within units and in the University as a whole. For example: tracking over time responses to the survey item: *“I feel stimulated to be innovative and excel in my work.”*

“Must-Do” 1

Better align our time and money with our strategic priorities

Rationale: To recognize and support true scholarship and innovation, we must reward excellence and success through our merit systems, encourage risks and contrarian views, and step outside of our comfort zones as individuals and teams. Our time, money, and energy are too often frittered away—or simply spread too thin—because we fail to make difficult choices or to invest in our stated priorities. We must not allow urgent but trivial matters to squeeze out important and innovative research, teaching, and community engagement.

Major Players

- Office of the Provost
- Deans
- Office of the Vice President for Research
- Vice President for Health Sciences
- Office of Human Resources
- Finance and Planning

Action Steps

- Have clear priorities, clearly communicated, that allow everyone to understand how resources (time, money, etc.) are to be invested.
- Recognize that time is money. What may appear as cost savings in a quantifiable area may be wasteful of a far greater amount of valuable time and energy.
- Turn off projects that have run their course.
- Hold students to high academic standards. Develop a strategy to address “grade inflation” at the college and campus level.
- Take corrective action when students, staff, or faculty consistently fall short of expectations.
- Affirm and strengthen our reward and recognition systems, identifying and celebrating innovations that fulfill the University’s mission.
- Provide all employees with regular and meaningful feedback on their performance.
- Implement and maintain regular and meaningful post-tenure review of faculty.
- Provide appropriate retirement incentives as well as opportunities for the many emeritus faculty who wish to continue service to the University.
- Evaluate expanding use of differentiated workloads and rewards.
- Consider extending the one-year contracts for professional and administrative staff so as to increase engagement and risk-taking, and to reduce transaction costs.

- Identify employee concerns and ideas to use in developing metrics to track change. For example, tracking over time the response to the survey question: *“My time is used efficiently and I am able to do my work effectively.”*

“Must-Do” 2

Commit to a broad campus climate initiative that simultaneously pursues diversity, accountability, and civility

Rationale: We need to become a more welcoming place. Too often, “Minnesota nice” is code for passive-aggressive behavior and avoidance of difficult conversations. This stifles both accountability and innovation, while prolonging rather than addressing the underlying problems. Having the skills and authority to address abusive or problematic employee behavior at all levels will facilitate changing both the culture and the incentive systems.

We also need to consider both the general climate and culture of the University. We need more focused efforts to make good on our shared commitment to diversity. This includes ensuring that faculty, staff, and students at all levels reflect the diversity of fast-growing but underrepresented racial and ethnic groups in Minnesota.

Major Players

- Office of Human Resources
- Office for Equity and Diversity
- Office of the Provost
- Office of Admissions (at the undergraduate level) and schools and colleges (for post-baccalaureate work)
- Boynton Health Service
- College and school deans

Action Steps

- Conduct exit interviews with departing faculty, staff, and students to identify barriers and areas for improvement.
- Improve training for leaders and supervisors (including department heads) that teaches them how to conduct effective performance reviews and create participatory leadership. Establish greater conflict resolution capacity to expeditiously address abusive, obstructionist, and dilatory behavior.
- Make diversity and inclusiveness a cornerstone of efforts to improve the health and functioning of the University and to create more welcoming conditions for all members of our community.
- Provide opportunities and recognition for improvement or service projects for individuals and units.

- Identify survey items and other metrics to track disparities in satisfaction and engagement. For example: *"I am treated with respect and courtesy."*

"Quick-Win" 1

Remove the obstacles: decrease administrative burden, make a "stop doing" list, and streamline processes.

Rationale: Many hours are wasted on unneeded and unexplained paperwork and permissions, making University authorities seem both oppressive and out of touch. The president's "Operational Excellence" and the "risk recalibration" efforts of the Office of the Vice President for Research have helped in this regard, but we must go farther if we are to remove the routine blocks that needlessly delay our progress. New colleagues who have worked in other institutions—whether large or small, public or private—consistently tell us that it takes more time and effort to get things done at our University. Finding ways to expedite simple equipment purchases, efficiently submit grant applications, quickly appoint students to funded projects, renew software licenses, and reimburse minor expenses will save a tremendous number of person-hours.

Major Players

- Office of the Provost
- Vice President for Health Sciences
- Office of the Vice President for Research
- College deans
- Office of Human Resources
- University Services
- Information Technology
- Faculty governance

Action Steps

- Each unit or workgroup creates a "Stop Doing" list in addition to a "To-Do" list.
- Challenge each unit to reclaim and repurpose 25 percent of the time spent in meetings this year.
- In leadership training, provide advice and examples on how to remove barriers that get in the way of our ability to perform our core research, teaching, and service missions.
- Identify survey items and other metrics to track change. For example: *"I have the authority I need to do what is necessary to accomplish my goals."*

“Quick-Win” 2

Improve communication: Get better at expediting problem resolution by empowering troubleshooters on the ground. Obtain timely and useful information from graduates for use in curriculum development and advising.

Rationale: The University is a huge and complicated organization. Communication channels are both hard to identify and sometimes blocked. Creating innovative problem-solving avenues would help solve problems like being “stuck” in the unforgiving territory between the conflicting rules of different University units or in management issues that drag on too long, impeding the ability of staff to do their jobs effectively and efficiently. In addition to existing informational and feedback channels (including governance structures), there is a need for novel technological solutions and for troubleshooters throughout the University who have the vision and authority to identify and quickly rectify problems. This will make the attitude and values of leadership visible, while simultaneously giving people a voice in the new style of “adaptive” leadership at the University.

We must communicate more regularly with our past and recent graduates. Departments and programs seldom obtain detailed feedback about the aspects of our programs that have been most or least helpful to our graduates. The University is committed to educating our students to be successful and innovative, but unless we are able to keep up two-way communication and to collect academically relevant information from our recent alumni, it is difficult to see clearly just how effective our current curriculum and methods actually are.

Major Players

- Office of the Provost
- Deans, center directors, and college and department offices
- University of Minnesota Alumni Association and University of Minnesota Foundation (as key partners)
- Office of Human Resources
- University Services
- University Relations and campuswide communications staff

Action Steps

- Include a “troubleshooting,” ombudsperson role in the responsibilities of a staff person in the President’s, the Provost’s, and/or the Deans’ offices. This person would build relationships at all levels of the schools and colleges to support problem-spotting and swift problem resolution.
- Enhance communications with students and graduates in their early career years—not only to cultivate dedicated alumni, but also to provide timely and systematic information to programs and advisors.
- Identify survey items and other metrics to track change. For example: *“The University is making progress in reducing the impediments to my success.”*

Final Thoughts

No amount of creative thinking and careful planning can effect the success of this project if the execution phase is not as creative and well-planned.

We entered our first campus listening session with some trepidation, concerned that the very idea of “Rejecting Complacency” would be precisely the sort of provocative and controversial message that itself gets rejected. As it turned out, however, these concerns were largely unfounded.

In our experience, University of Minnesota colleagues, students, and leaders are eager for improvement and share the courage needed to look in the mirror and conduct a rigorous self-examination. We present the idea of rejecting complacency—twinned with embracing excellence—as oriented toward future vigilance, not past critique; and lastly, we hope it serves as a reminder and acknowledgment that our University is aiming very high indeed.

Report of the Strategic Planning Workgroup
University of Minnesota Twin Cities

Grand Challenges—Research

*We will marshal the University of Minnesota's research and creative capacity
—our breadth and depth—to address grand challenges
critical to our state, nation, and world*

Strategic Planning Workgroup

Grand Challenges—Research

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Strategic Planning Workgroup co-leads for this team are in bold.

Introduction

Research is central to the vision of the University of Minnesota as preeminent in solving the grand challenges of a diverse and changing world. Building on the vision and goals outlined by the Strategic Planning Workgroup, the Grand Challenges—Research team was charged with evaluating potential research grand challenges, recommending how specific challenge topics would be chosen, and identifying areas of focus in which the University of Minnesota has core strengths and is well positioned to have major impact. More fundamentally, the team outlined strategies through which our University can best support research and creative work that addresses such challenges.

Transforming the University

Large collaborative efforts to address the world's most complex and critical challenges are crucial to advancing the University of Minnesota as a land-grant research university with both global and local impact. Creating a more coherent and coordinated cross-disciplinary approach to these challenges will both attract new recognition and new funding for the University and will provide invigorating new opportunities for faculty, students, and staff. It will enrich and strengthen the education we provide students and will enhance our collaborations with external stakeholders for the good of our state and the world.

The transformative strategic goal for the University is not simply identifying one or more Grand Challenges as a focus for concerted attention, though we will also do that. Our *institutionally* transformative goal is rather to make the difficult cultural and systemic changes that remove the substantial institutional and professional disincentives to undertaking such endeavors. Supporting this new kind of scholarship is fundamentally challenging—and will require the University to change policies and procedures within and across units involved in scholarship. Critical barriers and solutions are elaborated below.

Overarching Observations

- Our goal is not to discourage disciplinary and other forms of scholarship but rather to enhance and increase research opportunities by expanding the options for faculty and students who are passionate about addressing major challenges with high social or related impact. We identify unique barriers and risks associated with interdisciplinary grand-challenges efforts that need to be reduced—reduced, ideally, to the point where faculty can readily organize and advance efforts across disciplines and colleges, rather than avoiding or missing opportunities based on perceived or real barriers, risk aversion, or limited ability to access collaborators or resources.
- Many of our strategic action steps pertain to departmental and collegiate workloads, reward systems, and evaluation mechanisms that pose significant barriers to leveraging fully the breadth of talent at the University of Minnesota. We not only outline explicit mechanisms for recognizing interdisciplinary grand-challenge work in promotion and tenure (and annual merit review) but also identify creative ideas for extra-collegiate structures that have the resources

to support significant collaborative efforts. Extra-collegiate collaborations can be advanced by strategies such as cluster hires coordinated across diverse units and the creation of an interdisciplinary promotion-and-tenure “track” that allows faculty review to stretch across multiple colleges. The Institute on the Environment (IonE) is one good model that could be replicated; at the same time, the University should also explore and even experiment with multiple models or “nodes” of innovation/impact. The University should also consider mechanisms to provide faculty with workload flexibility so that they can move some of their effort into other University units.

- The University of Minnesota can best advance grand-challenges collaborations by allocating resources in ways that are synergistic with the budget allocations of existing colleges. For such efforts to succeed, they need to be net positive. Done right, a coordinated cross-university interdisciplinary approach to grand challenges of compelling public interest should provide opportunities for the University to access new funding sources through a coordinated and coherent approach to policymakers, funders, and corporate partners.
- Centers and institutes run the risk of becoming closed enclaves, especially once resources are allocated. Mechanisms for nurturing and growing collaborations and assuring continuous improvement through substantive evaluation of impact and outcomes (for both external and internal stakeholders) are critical. Centers and institutes that are not successful, along with those that have successfully completed their mission, should be closed.
- A key task will be promoting faculty and student awareness of the breadth of research and creative work across our large University. Effective strategies must be developed to foster the connections that lead to meaningful collaborations among faculty—and among graduate and undergraduate students—working in different areas of the University. Engagement and collaboration between University researchers and stakeholders outside the University must also be promoted. A number of models exist to effect such connections, but they are too infrequently used both within the University and with outside partners. Substantive collaborations with industry will be most effective if they are part of a concerted effort by the University to help organizations address pressing challenges. To realize its grand-challenges vision, the University must work more aggressively to facilitate collaborations that serve the needs of industry and the public and that provide faculty with opportunities for important work. This work must also be recognized appropriately in promotion-and-tenure and merit review policies.
- Grand-challenges research collaborations will require differing levels of support based on the stage and nature of the relevant ideas. Significant support may be required to propel and further elevate large existing teams, but some work may need only modest financial commitments or seed funding. The University should establish an appropriate plan for seeding and supporting collaborations and should give consideration to a mechanism that would allocate to each faculty member resources earmarked for collaborative activities (for example, 1/4 course and \$10,000 per year) with the condition that these resources could only be used—for student support, equipment, etc.—when pooled together with a sufficiently large and diverse team (say, five faculty from three colleges). This sort of mechanism must include mechanisms for oversight and accountability, but the idea is that it

would increase prospects for generating new and promising initiatives at a level where the work is in fact done.

We believe that reallocation of resources and the identification of new resources will be necessary to address the grand challenges. *Effective additional fundraising—from government, non-profit, and for-profit sectors and private donors—will be needed.* This will require integrating the grand-challenges work with existing resource efforts at the University—including those of government relations and the University of Minnesota Foundation—and identifying resources for support of (large-scale) proposal writing.

The Shape and Nature of Grand Challenges

Grand challenges are generally understood as the most important and complex problems facing local communities, states, nations, and the world. These are not only deep and difficult problems, but multifaceted challenges that require expertise and ideas drawn from many spheres and disciplines in order to be effectively addressed. The grand challenges the University might explicitly address are varied, and the collaborations they would require are likely to vary in scope, breadth, impact, disciplinary involvement, and other factors. Our list of suggestions—drawn from many sources, but by no means definitive or exhaustive—includes:

- Understanding the brain
- Curing cancer; curing diabetes; curing a major disease not already the focus of many broad-based efforts by other states/institutions
- Addressing critical environmental challenges/climate change/sustainability
- Ending war
- Ending poverty
- Advancing understanding of immigration and migration; addressing inequality; strengthening cultural understanding (race, ethnicity, national origin)
- Addressing challenges involving water; rivers; the Mississippi
- Addressing hunger; other food-related challenges, such as food safety, security, distribution
- Advancing robotics to solve human problems and enhance prosperity
- Using big data and informatics for social advancement
- Establishing zero-net-pollution communities
- Reestablishing Minnesota's claim to the best K–12 education in the nation
- Becoming the healthiest state in both mind and body; sustaining health and well-being on a larger scale
- Enhancing and transforming the social impact of the arts
- Reversing the biodiversity crisis

These are simply first examples. Many more challenges could be enumerated that would be particularly appropriate, given our resources; and, on the other hand, even this short illustrative list includes challenges likely to exceed the capabilities of the University.

This list is offered as a starting point, but in the context of our strong conviction that grand-challenges efforts should “come from the ground and grow upward.” The number of Grand Challenges the University of Minnesota can reasonably address is likely to be more than one or two, but perhaps fewer than ten.

Key Criteria for Grand Challenges

We recommend a set of general criteria for the evaluation and selection of the grand challenges that are to be designated institutional priorities. These criteria are neither necessary and sufficient conditions nor a complete list of potentially relevant criteria. Rather, they indicate the factors that would make collaborations in certain areas both transformative and strategic for the University. Strength in meeting some criteria may compensate for weakness in meeting others, but all of these criteria should be considered in evaluating potential directions. Many of the criteria focus specifically on the University’s relative advantage in pursuing some challenges rather than others. Roughly grouped, these criteria are:

- **Global impact:** Grand challenges are not trivial problems. They should be selected carefully, informed by a long-term vision and with an expectation of globally significant results. They must also be relevant locally to the University community and its greater Minnesota partners. Work on these challenges will require time and material resources. Investing in, engaging, having impact on, and eventually solving a particular grand challenge will give the University both immediate and long-lasting recognition that can be used to motivate and organize future grand challenge “victories.” Salient examples of effective solutions to grand challenges include alumnus Norman Borlaug’s techniques for revolutionizing farming and crop yields that have benefited billions of people worldwide, and Professor Bob Vince’s invention of the HIV drug abacavir that has helped to save the lives of millions of people.
- **Build on current faculty strength and leadership.** The grand challenges addressed by the University should both fit and leverage the existing scholarly strengths and activities of the faculty. Successful challenge-related efforts will emerge from what faculty are already pursuing, particularly if faculty have opportunities to strengthen connections with faculty and students from other areas. While we recognize the advantage of strategic recruiting and cluster hires to build research capacity in specified areas, we propose an 80%/20% rule: a challenge for which we don’t already have 80 percent of the faculty talent we need to build a productive collaboration is too far from our current strengths to tackle.

Grand-challenges leaders should be selected based on existing national and international reputations, clear evidence that their trajectory of contributions is still on the rise and that they are destined for the top awards and recognition in their fields (National Academies, Lasker, Nobel, MacArthur genius fellowships, National Humanities Medal, National Medal of Arts, and so forth). Grand-challenges support and focus can be expected to enhance the reputation of the University, providing advantages in recruitment of students, faculty, and staff as well as fundraising leverage that will enhance success.

- **Disciplinary diversity.** Research challenges must have impact on and involve more than one discipline. Success in addressing a grand challenge requires expertise from multiple

disciplines. The University should take advantage of its exceptional breadth of strengths and look for opportunities to bring together research perspectives and methodologies from diverse disciplines. Many of the grand challenges we suggest would draw on the expertise of faculty from the humanities, the arts, the social sciences, the STEM (science, technology, engineering, and mathematics) fields, and the professional schools.

- **Impact on the University and its reputation.** Challenges should be evaluated based on their potential to advance the University's scholarly leadership in the challenge area, as well as its national and global status. We must judge realistically whether we can be international leaders on the topic of the challenge, looking broadly at the resources and strategic assets we would bring—faculty, staff, students, financial resources, collaborators and partners, and local assets or advantages.
- **Suitability for a land-grant research university.** The University of Minnesota should be focusing on challenges that are not just problems of implementation or weakness of will, but that also require for their solution fundamental disciplinary advances. Issues of motivation, political efficacy, and will are crucial in any search for solutions to grand challenges, as are the complexities of implementation. Breakthrough discoveries or technologies that are not fully adopted are not truly solutions: for example, the epidemic obesity that leads to disease is a critical challenge precisely because its solution will require major advances in our understanding of human behavior. Yet the challenges we take up should always be ones that fundamentally require our research power.

What sets research universities apart from not-for-profits, government agencies, and other entities is our practice of addressing problems through open, shared advances in fundamental disciplines. As a land-grant institution, we embrace the challenge of bringing together basic and applied research with education, outreach and public engagement. We will make fundamental research advances, and those advances will actually make a positive difference in people's lives.

- **Interconnection with education.** To be appropriate for the University of Minnesota, a grand-challenge research problem should be one that engages students (undergraduate and graduate), postdoctoral students, fellows, and other trainees in innovative and groundbreaking ways. A key part of our mission is training future leaders, practitioners, and global citizens who can address complex and important challenges. The University must develop grand-challenges research collaborations that centrally involve graduate students, that intersect with curriculum, and that provide experiential learning opportunities for undergraduate students such as practicums, internships, and service-learning components.
- **Engagement of external constituencies.** One of the University of Minnesota's key strengths is its location in a vibrant and diverse state and metropolitan area. We are fortunate to be among foremost leaders in business, agriculture, medical technology, robotics, performing arts, public policy, and many other areas of inquiry and endeavor. We are a pivotal anchor institution for Minnesota, with a tradition of excellence and innovation that drives the state forward in education, health, economic vitality, and quality of life. We have the advantage of Minnesota's diverse communities, including large communities of Native American residents and of Somali, Hispanic, and Hmong immigrants. And as one of the few major public research

universities in a large and dynamic metropolitan region, we have unique opportunities to address educational and economic disparities through innovative public-private partnerships.

In addition to its many constituencies in Minnesota and the Midwest, our University also boasts a *global* network of national and international partners—government agencies, intergovernmental agencies, universities and private-sector and nonprofit partners that act with the University of Minnesota on a global stage. The University's ability to engage these many external constituencies in grand-challenges collaborations offers tremendous advantages for our institution, our students, and state.

- **Sustainability.** We recommend that dedication of effort to a grand challenge should be understood to involve support of that effort for at least 10 years—a timeline commensurate with the scale and complexity of these problems. Various challenges should be evaluated based on our capacity to sustain effort over time, whether that sustenance comes from grants from government agencies and foundations, support from industry, state funding, University development efforts, ticket sales and other user/patron charges, or other sources.

Selecting Our Next Grand Challenges

The selection of a full set of grand challenges to be addressed by the University should involve more perspectives than those of the planning committee members alone. We do, however, recommend criteria for such selections. In addition to the points noted above, selected grand-challenges should:

- Involve a diverse cross-section of disciplines around a large problem that has both a societal impact and the potential to make contributions to individual fields of study. We recognize the value of deep disciplinary challenges (for example, finding with greater certainty the origins of the universe), but believe that such work has been well supported historically at our University.
- Have a local element—a reason it makes sense for the University of Minnesota to pursue them and for the State of Minnesota to care about the outcome. At the same time, selected challenges should also have a global impact.

Addressing a grand challenge requires cooperation across the University and sharing resources. Silos will hinder our success. To make the University a model of integrative learning and discovery, the University must fine-tune its mechanisms for resource allocation to support ambitious cross-disciplinary work and must embrace the cultural changes that will allow faculty and students to be more agile in their scholarly work.

As faculty then conduct research—and teach and engage with students—across departmental and collegiate units, tenure and promotion reviews must recognize interdisciplinary work. We might need to reconsider our treatment of multiple-author publications, for example. Center grants and training grants should be seen as pertinent in faculty evaluation.

These recommendations for fundamental institutional changes will require cooperation from colleges, departments and centers, and appropriate administrative oversight. Serious discussions involving all administrators and our shared governance committees will also be required to assess specific next steps.

Strategies

Transformational Vision

The University will create a more coherent and coordinated cross-disciplinary approach to advance the success of grand challenges research

As we have emphasized, achieving the transformational grand-challenges vision for the University will require cultural and systemic changes over time, as well as specific, sequenced decisions about areas of focus for grand-challenges research.

“Must-Do” 1

Change policies to recognize contributions to interdisciplinary (including grand-challenge) efforts as part of promotion and tenure and regular evaluation.

The University must review unit 7.12 promotion-and-tenure statements and unit criteria for annual merit reviews to remove any disincentives to grand-challenges efforts.

“Must-Do” 2

Establish a fund-raising effort to meet the research challenge goals.

This should include funding for infrastructure needs, as well as for “university professors” (faculty with a home stretching across more than one college) who would be best positioned to lead interdisciplinary, grand-challenges research. Development efforts should consider novel sources of funding, such as “social impact bonds” by which private and public funders “invest” in long-term work likely to achieve real impact on critical social issues.

“Quick-Win” 1

Jump-start institutional transformation by elevating and broadening select existing areas of interdisciplinary strength and focus that instantiate a “Grand Challenge” approach.

Given the symbiotic nature of grand-challenges research and institutional transformation, it is important to step into action immediately, even though it is likely that a process for selecting our next challenges will take 8–12 months. Accordingly, we must elevate recognition that there are already important interdisciplinary efforts under way, in grand-challenge areas, where the University and state have made significant investments. These efforts are logical places to start the process of transformation through which institutional progress—and faster progress toward solutions of global problems—can be made.

We propose that the University move forward immediately with three broad grand-challenges collaborations:

- ***Sustainable, Healthy, Secure Food.*** The MNDrive Food core area already engages significant University strength in agriculture, food security, and public health. The University has a long

history in food security and health, with major scientific contributions from Borlaug and faculty members Ron Phillips and Ancel Keys. We have hundreds of faculty and students working in the area of food production, post-production, and both basic and applied areas of nutrition. We have a large footprint in research applied to global food production.

We also have the great advantage of an engaged community—including Fortune 500 and private food companies, farmers, commodity groups, and non-governmental organizations dealing with issues involving food, health, and the environment. As an identified grand challenge, this topic has the potential to broaden engagement even further. New directions might range from considering the role of K–12 education in promoting healthy eating and understanding of food systems, to better historical understanding of dietary and agricultural practices (including how cultures co-evolved with diets to provide sustainable nutrition), to greater integration of food and diet into medical research and practice, to engineering and technology advances to better support feeding a growing world.

Virtually every college at our university has a role in addressing this grand challenge. As an example, through the Institute for Advanced Study, faculty and students from multiple disciplines of the liberal arts, public health, law, and public policy are engaged (with varied community partners) in work related to land use, food systems, and sustainability frameworks. And every initiative of MNDrive has a relationship to this challenge: robotics for precision agriculture; environmental issues around food production; and neuromodulation, which is involved in the regulation of food intake (addressing, e.g., eating disorders and obesity).

- ***Advancing Industry while Conserving the Environment and Addressing Climate Change.***

Both IonE and the MNDrive Industry and Environment core area already engage significant University strengths across a diverse set of disciplines focused on issues of climate change, ground and water pollution, and other environmental degradation. This area might include the significant collaborative work under way in IonE and elsewhere on the topic of renewable energy. Notably, these efforts are characterized by both pragmatism and intellectual rigor, aiming to transform industrial practice in ways that are environmentally sound while still making good business sense.

As an identified grand challenge, this topic can embrace scholarship from across the University, from basic science and engineering related to climate science and pollution remediation to cultural studies and philosophy, from agriculture and business to economics and psychology, from health and medicine to the arts.

- ***Building Vibrant Communities that Enhance Human Potential and Collective Well-Being in a Diverse and Changing Society.*** Outstanding interdisciplinary work is under way across the University to meet the critical challenges of enhancing human capital and social well-being at a time of profound social, economic, and technological change. These efforts draw on expertise, innovative scholarship, and campus-community collaborations involving the College of Liberal Arts, College of Design, the College of Education and Human Development, Humphrey School of Public Affairs, Law School, Center for Urban and Regional Affairs, Extension, and the Minnesota Population Center, among other units.

The University is well placed to elevate and better integrate this important work and thus enhance its impact. With state, national, and global communities increasingly urban, our location in a major metropolitan area—unique among peer institutions—provides us with an unparalleled opportunity to identify and shape best practices that both directly benefit our state and also provide helpful models to the nation and the world. The broad goals of developing human capital and increasing social capacity in order to support economic vitality and a high quality of life can be pursued through community design, enhanced cross-cultural communication and understanding, and attention to the problems of existing opportunity gaps. A coordinated effort in these areas that builds on our current strengths is also well-positioned to attract new public and private investments and to leverage the expertise and resources of many private and public partners.

These challenges—broad and multifaceted as they are—are only a starting point. Beyond the opportunities posed by these three initially identified challenges, there are substantial strengths in the University that can be tapped to unleash the University’s full potential for transforming society through research. It is important to have an open, iterative process to allow other challenges to emerge, including ones that may emerge directly from the arts and humanities, from medicine and health sciences, from education, and from all the other units of this campus.

In total, at any given time, the University should be able to support as many as 5–10 grand challenges, *with each integrating research, education, and outreach*, and with new challenges emerging as prior efforts succeed or are phased out or as we recognize new problems we have a responsibility to address.

“Quick Win” 2

Provide bottom-up support for emerging interdisciplinary (potential grand-challenge) problems.

There is a clear need for groups of faculty to quickly and easily attain the resources needed to seed small collaborations or pursue new funding sources. These types of efforts can sometimes be funded by departmental or collegiate discretionary funds, if the projects are local. But with interdisciplinary projects, there is the added complication of having to address the “balance of support” from different units. Historically, small grants for interdisciplinary work have been available from the Graduate School or the Office of the Vice President for Research (OVPR), but they have had infrequent deadlines, overly cumbersome applications, and inefficient review processes that consume yet more faculty time. A lightweight mechanism that would make such initial support more easily available would energize faculty creativity. The University should take steps to consider lightweight centers or faculty-allocated collaborative resources (for example, and as described above, resources to be deployed in specific conditions and with well-defined oversight and accountability). Activities seed-funded in this way might include the following, which are meant to be representative and illustrative, not limiting:

- Starting an interdisciplinary course or seminar to train undergraduate and/or graduate students through interaction with a diverse set of faculty across disciplines. Several committee members discussed the difficulty of getting such courses approved and getting

them allocated as part of a faculty member's workload. This led to the idea of providing teaching resources (time and enough money for teaching assistants) as one of the models for support.

- Starting an interdisciplinary research exploration group. When taking on a challenging topic such as health disparities or immigration, a necessary first step is to get people together, find other experts in the University, and study or explore the scope of the problem, the resources and techniques available within our campus, and the ways in which collaboration might be effective.

For a group forming in this way, the major need might be a research assistant or staff member to organize efforts, search out collaborators, gather and disseminate resources, etc. A group might also seek space for collaboration (of the sort exemplified by the hosting function of the Institute for Advanced Study and the idea-seeding centers of other universities).

We are not providing an inflexible or exhaustive list of appropriately supported activities. We are suggesting the desirability of mechanisms to quickly request, justify, and receive resources (perhaps with the involvement of the provost's office) to seed collaborative efforts. As efforts are supported, we will track what resources are most valuable and most effective, and we will modify our practices accordingly.

Rationale

Transforming the University's culture doesn't happen through planning meetings and committees; it happens by putting ideas into practice. The grand-challenge approach is too important to wait another year to start—and waiting doesn't achieve transformational change.

Starting with existing challenge-related investments will allow us to gain experience with the processes and mechanisms of supporting grand challenge work, even as we seed and nurture additional challenges that can be ripe for selection in the next year or two. Following these recommendations will help us achieve our grand challenge vision—a vision which will invigorate the University's research and teaching and enhance its reputation worldwide.

Major Players

One of the key administrative questions is where such challenge selection and support will be housed in the university. Given the close integration of research and teaching, as well as the key support needed by collegiate deans, we recommend centralizing the support for and administration of grand challenges in the provost's office. Other administrative units—OVPR, University Services, Health Sciences, Budget and Finance, etc.—will also need to be closely involved.

Action Steps

- The president and provost will determine clear responsibility for oversight of the grand-challenges program.

- A quick assessment of the three recommended initial challenges will make possible final selection and promotion of challenge areas in early fall. Processes for choosing new challenges will be launched.
- Mechanisms for bottom-up funding will be formulated and made available during this academic year.

Report of the Strategic Planning Workgroup
University of Minnesota Twin Cities

Grand Challenges–Curriculum

We will prepare University of Minnesota students to meet society's grand challenges through new models of engaged, place-based education designed for tomorrow's leaders

Strategic Planning Workgroup

Grand Challenges Curriculum

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Introduction

The integration of grand challenges into curricula at our university will transform not only the content of a University of Minnesota education but also the means by which we organize and build further connections across our institution. It will become a defining strength of our University.

Our approach will not only develop exciting new structures for student learning opportunities, important as that is. It will also make the Grand Challenges Curriculum a catalyst for culture change, a 21st-century evolution of our research university's land-grant mission, and a model for other higher education institutions to align themselves more fully with the challenges of our communities and our world.

- The Grand Challenges Curriculum is intended to infuse energy and incentives into efforts to advance a culture change at the University of Minnesota emphasizing inspiration, engagement, action, and impact.
- The University will benefit from a visible and coherent hallmark or "showcase" identity linked to grand challenges. This will highlight the University's distinctive strengths, innovation, and leadership to draw motivated students, faculty, staff, and resources.
- The Grand Challenges Curriculum advances a multidisciplinary approach to higher education that integrates and celebrates diverse expertise, methods, and perspectives.

The Strategic Planning Workgroup's Grand Challenges Curriculum issue team included students, faculty, and staff from 12 colleges and from the University Honors Program, Institute on the Environment (IonE), Graduate School, and Office of Undergraduate Education. The diverse affiliations of participants allowed ideas to be vetted from a variety of perspectives. Many team members had direct experience developing and engaging in interdisciplinary courses, programs, and other curricular and co-curricular efforts.

Our approach to building a Grand Challenges Curriculum is phased and scalable. It recognizes that the infusion of grand challenges across the curriculum will require time, the generation and movement of resources, and the evolution of structures to effectively govern and administer courses, programs, workshops, and other components. Significant campuswide engagement efforts will be needed to ensure that the Grand Challenges Curriculum is further informed by students, faculty, and staff with expertise and responsibility pertinent to key components. We should especially draw on the perspectives of students, faculty, and staff who are already engaged in education, research, and outreach activities that align well with grand challenges. Their insights and engagement are critical to creating buy-in and to developing strong models illustrating the intent and impact of grand-challenges education at the University of Minnesota.

The University's Grand Challenges Curriculum will engage students at both undergraduate and graduate/post-baccalaureate levels. For undergraduates, the plan is to ensure that all students will

receive a basic exposure to grand challenges and that those with deeper interest will have opportunities to build further knowledge and experience. This approach will rely on both existing and new curricular and co-curricular opportunities to link more intentionally classroom, research, engagement, and practice opportunities so as to create a more meaningful and multifaceted learning experience.

For students at the post-baccalaureate level, the focus will be on creating opportunities for students to engage with grand challenges by breaking down barriers that may limit students' ability to pursue opportunities outside of their programs, departments, and colleges. We use the term *post-baccalaureate* broadly, to refer to all programs of study beyond the bachelor's degree, including traditional master's and Ph.D. programs, professional degree programs such as the J.D., M.D., D.D.S., and others, and programs beyond the bachelor's that may lead to certificates or be preparatory to further study.

There are students in all these circumstances who may be motivated to pursue curricular learning opportunities focused on grand challenges. Implementation at this level emphasizes the development of these new curricular and co-curricular options, ones that would allow students the flexibility to align this work on grand challenges with a range of specialized degree programs. The post-baccalaureate Grand Challenges Curriculum may have classroom components, but will place particular emphasis on teaching, research, engagement, and practice experiences that help prepare students for 21st-century professional and academic careers.

At both the undergraduate and post-baccalaureate levels, the goal of the Grand Challenges Curriculum is to help students develop a foundational set of knowledge, skills, and values. The focus is on competencies that prepare students to recognize grand challenges, assess possible points of intervention, and take action. These foundational competencies can be applied across a range of potential grand-challenge topics. To achieve these ends, we must develop appropriate pedagogies, supported through curricular and co-curricular coordination. In sum, the Grand Challenges Curriculum will offer critical interdisciplinary training and at the same time build students' capacity to use their disciplinary knowledge in pursuit of integrated solutions to big and difficult problems.

The strategic action steps below outline an integrated set of strategies to infuse grand challenges across the curriculum. While some pieces can be pursued individually, the strategies are intended as a suite of approaches that, when fully implemented, will connect with the full range of our students, support connections across faculty and disciplines, position the University of Minnesota as an educational innovator, and advance our complex land-grant and research missions. Importantly, the curriculum recommendations will be pursued as part of a broader alignment of the University of Minnesota with work on grand challenges, including strategies focused on research and campus-community engagement. A Grand Challenges Curriculum can best be advanced in the context of field-shaping research and a reciprocal approach to public engagement that builds long-term collaborations to address society's grand challenges.

Strategies

Transformational Vision

We will evolve Liberal Education Requirements to integrate grand challenges.

The integration of grand challenges into the undergraduate curriculum offers a tremendous opportunity to infuse the University's emerging grand-challenges orientation across the courses, programs, departments, colleges, centers, and people that make up the University of Minnesota. This approach to curriculum will provide for students a new and exceptionally meaningful set of educational experiences, ensuring that their time at the University is exciting and fulfilling while building their capacity for important contributions and achievements both during and after their college years.

The University's framework of Liberal Education Requirements is currently the primary curricular mechanism for connecting with the full range of undergraduate students. These core requirements ensure that all students investigate the world from new perspectives, learn ways of thinking and skills that will be useful in many areas of life, and grow as active citizens and lifelong learners. Integrating a grand-challenges vision into Liberal Education Requirements will provide all 30,000 undergraduate students with exposure to grand challenges as an integrative part of their education. Student Learning Outcomes (SLO) are another way to reach all of our undergraduate students; we recommend examination of the alignment between the knowledge, skills, and values critical to challenge-based curriculum and the current Student Learning Outcomes.

Rather than focusing on particular grand-challenge topics, the integration of grand challenges into liberal education will focus on providing the foundational knowledge, skills, and values that are central to identifying, assessing, and engaging with grand challenges. Technology-facilitated pedagogy—such as flipped classrooms, distance learning, and gamification (using gaming elements and frameworks in learning and problem-solving contexts)—is highly compatible with the interdisciplinary cross-cultural learning required by a Grand Challenge Curriculum and may serve to expand the capacity of faculty to reach a very large audience.

Currently, the Liberal Education Requirements are organized into two categories—Diversified Core and Designated Themes. The Diversified Core provides exposure to several broadly defined disciplinary areas and is intended to equip students with a range of tools for approaching problems and making a difference in their communities, their state, and the world. The Core requires students to complete courses in seven areas: 1) Arts/Humanities, 2) Biological Science, 3) Historical Perspective, 4) Literature, 5) Mathematical Thinking, 6) Physical Science, and 7) Social Sciences.

The Designated Themes address topics identified as central to understanding contemporary life, and prepare students to be knowledgeable, ethical, and engaged citizens. Students are required to complete four courses chosen from among five areas: 1) Civic Life and Ethics, 2) Diversity and Social Justice in the United States, 3) The Environment, 4) Global Perspectives, and 5) Technology and Society.

For both the core and theme requirements, students select courses from lists of offerings that align with the key requirement areas, with a number of courses fulfilling both core and theme requirements.

In creating a cornerstone for the Grand-Challenges Curriculum, we will evolve the existing themes to focus on building the knowledge, skills, and values needed to address grand challenges. This approach would integrate significantly with the existing themes, with an evolved set of requirements and courses accomplishing a number of goals:

- To orient, prepare, and inspire students to think about how they can contribute to addressing grand challenges
- To deliver a more interconnected and coherent set of courses that positions students to engage with grand challenges
- To provide exposure to a variety of grand-challenge topics
- To position students to better understand how liberal education and grand challenges align with and complement their disciplinary knowledge

Anticipating further campus discussion about the details of an evolved liberal education approach, these strategies are presented as a suggestive outline rather than as a firm prescription.

We might, for example, reorganize theme areas into a sequence of four course categories. Each of the four course categories would include a variety of options that students could pursue, with a defined set of common core objectives and learning outcomes developed by an existing or new administrative/oversight body focused on grand-challenges education. One way to phase in this approach would be to develop the course categories and offer a small set of course options under each course category. The preliminary set of courses could be implemented as a pilot for a limited number of students—for example, students in the University Honors Program or a select group of students who opt-in to a grand-challenges liberal education pilot. This would allow for targeted evaluation and an orderly shift of faculty's curricular responsibilities, a shift that would build the course offerings over time. Such an approach would inform an eventual move toward updating Liberal Education Requirements for all students.

- 1) **Course Category 1—First-Year Seminar:** Courses in this category would introduce students to grand challenges—how they are defined, how they are shaped by context, and how they evolve over time. These introductory courses could accommodate large numbers of students, with breakout sections (e.g. labs, discussions) tied to specific grand-challenge topics in order to allow the application of more general seminar content to topics in which students may be particularly interested.

Courses would likely be team taught and enhanced by technology such as smart classrooms, online collaborations, gaming strategies, and other tools. Such courses would offer ideal opportunities for blending liberal education themes and grand-challenge approaches. For example, thinking about some grand challenges and their potential solutions implies thinking from global perspectives about issues concerning the interaction of technology and society, issues which in turn often have significant implications for diversity, social justice, and the

environment. Addressing these issues will further involve ethical judgments and civic engagement.

- 2) **Course Categories 2 and 3—Second- and Third-Year Skills Courses:** Rather than focusing on technical skills, these courses would aim at building ethical sensitivity and a capacity for engagement and collaboration, along with an appreciation of diverse approaches to problem solving. “Problem Skills” course options would include a variety of courses focused on different approaches to problems (e.g. design thinking, action research), but there would be a consistent course objective centered on comparing/contrasting diverse methodologies. “People Skills” course options would focus on building skills to engage with others to address grand challenges: collaborating across disciplines, building intercultural competence, promoting leadership, and enhancing communication. As with the problem skills courses, a limited number of consistent course objectives would be incorporated into all course options. For both problem and people skills courses, grand-challenge topical breakouts would be ideal for advancing applied skills. Emphasis on skills alone is not sufficient, however, so paying attention to the existing liberal education themes would be important for the full development of objectives for courses in this category.
- 3) **Course Category 4—Fourth-Year Experiential Learning Opportunity:** Capstone-type courses would be developed to engage groups of students in experiential learning related to specific grand-challenge topics. In the capstone courses, students would have the opportunity to work collaboratively in cross-disciplinary teams, applying their disciplinary knowledge and liberal education background to key grand challenges. Students would work with communities, public and private organizations, businesses, policymaking bodies, and other entities, with these experiences structured by our commitment to reciprocal engagement. Experiential learning opportunities would be diverse, appealing to students from across the University’s large range of disciplines. Beyond traditional course-based options, experiential learning opportunities might also involve study abroad, service learning, internships, and research—for example, faculty-mentored projects through the Undergraduate Research Opportunities Program. Technology-enhanced learning will also be important to learning experiences in this category. With interactive online tools, students can work remotely with ongoing faculty guidance and support, or can be on campus while engaging with communities and scholars located elsewhere.

We anticipate that courses in each of the categories above will be offered by a variety of departments and colleges, potentially including professional schools which have traditionally offered few undergraduate courses. To support team teaching, the costs of teaching assistants, advisors, expansion of interactive technology, and relevant administrative structures, the distribution of course enrollment revenues will need to be evaluated. The University will need cross-college administrative structures, with oversight from the provost, to engage faculty in developing course objectives and to ensure that grand-challenges integration goals are fully realized.

The Sustainability Studies minor is a potential model for such a sequence of courses. Students pursuing this minor take a large-enrollment, three-credit introductory survey (SUST 3003:

Sustainable People, Sustainable Planet), then select three elective courses from four subject categories (economics and policy, social science and humanities, biophysical sciences, and design and technology), and finally complete a three-credit capstone course involving experiential learning (SUST 4004: Sustainable Communities).

Graduate teaching assistants will be crucial to the implementation of the liberal education proposal. They will support many of the courses and play expanded roles in the first-year seminar and in the fourth-year experiential opportunity, facilitating breakout discussion and work sections and supporting or perhaps leading experiential opportunities.

These teaching assignments will thus also provide graduate students with valuable insights about distinctive pedagogies, as well as opportunities to share and to deepen expertise in specific grand-challenge topics. Grand-challenge teaching assistant positions could be an important recruitment tool and source of financial support for post-baccalaureate students interested in challenge-based teaching and learning. This teaching opportunity should be effectively linked to graduate seminars focused on developing instructors with this special capacity to teach a challenge-based curriculum.

As a means of phasing in the liberal education proposal, the fourth-year experiential learning opportunities could be piloted first, with instructors offering interested students opportunities related to grand-challenges competencies and themes. We believe that experiential learning is central to a grand challenges education and will be a visible and meaningful preliminary step to building out a Grand Challenges Curriculum. Experiential learning opportunities could be accomplished through existing and new courses, as well as through coordination with the University Honors Program, Learning Abroad Center, Center for Service Learning, Undergraduate Research Opportunities Program, and other existing programs.

As an interim step toward the full development of the grand challenges liberal education components, a brief workshop—or perhaps a one-credit course offering—should precede the pilot of the experiential learning opportunity. This would provide a useful orientation to grand-challenges education and to the problem and people skills that would be needed in a fully built-out curriculum.

“Must-Dos”

This section highlights two “must-do” elements of the Grand Challenges Curriculum: develop co-curricular opportunities and establish a grand-challenges scholars program. As noted above, these strategies are part of a suite of approaches that amount to an integrated whole. The “must-dos” are meant to be pursued along with the liberal education proposal and the quick wins outlined in the next section.

“Must-Do” 1

Develop grand-challenges co-curricular educational, research, and engagement opportunities

Co-curricular opportunities make essential contributions to the delivery of a Grand-Challenges Curriculum and more broadly advance the University’s focus on grand challenges and exceptional

opportunities for students. Co-curricular education, research, and engagement opportunities enhance students' experience and provide important pathways to deeper knowledge of specific grand-challenge issues.

As a complement to the classroom-based aspects of grand challenges curricular strategies, the University should develop related opportunities at both the undergraduate and post-baccalaureate levels. These opportunities might focus on education, research, engagement, or a combination of these. It is possible to realign some existing opportunities with grand challenges. The Center for Service Learning and the Learning Abroad Center could play key roles, and should highlight some of their offerings that relate to grand-challenge topics. The Undergraduate Research Opportunities Program should expand and promote research opportunities specific to grand challenges.

At the post-baccalaureate level, graduate research assistantships should be developed to support funded research on grand-challenge topics. There are a number of University-wide research centers already addressing some of the grand challenges; they can provide a range of educational, research, and engagement opportunities for students. College and/or department-based internship, engagement, and/or practicum programs can also evolve or be expanded to support grand-challenges opportunities for students.

Co-curricular efforts with a focus on engagement will also afford opportunities to build new and deepen existing connections with communities, organizations, business and industry, and other entities, both locally and globally. Connecting development of the grand-challenges experiential learning courses with the development of co-curricular service learning initiatives will strengthen campus-community relationships and enhance the University's capacity to engage with grand challenges locally and around the world.

"Must-Do" 2

Develop a Grand Challenges Scholars Program

A Grand Challenges Scholars Program should be created to develop credentials and account for the activities of the grand-challenges work. This program will organize, communicate, and promote student learning opportunities connected to the grand challenges, and it will track both curricular and co-curricular experiences that students might pursue. Under such a program, students could receive a non-degree credential documenting substantial engagement with grand challenges.

The Community Engaged Scholars Program is a relevant University of Minnesota model: participating students perform a specified number of community-engagement hours, participate in a workshop, enroll in service-learning courses, complete reflections on community-engagement experiences, and participate in a seminar. Students in the Community Engaged Scholars Program receive a non-degree certificate, a notation on their transcript, and a program-specific cord to wear at graduation.

A Grand Challenges Scholars Program could be designed along similar lines, with students selecting from a variety of University options—including courses, research experiences, engagement

opportunities, workshops, learning abroad, and other academic experiences—that align with their interests and are complementary to their degree programs. The Scholars Program credential will be attractive to students seeking interdisciplinary experiences and a means to distinguish themselves in professional or academic job markets. The Grand Challenges Scholars Program could serve both undergraduate and post-baccalaureate students. For undergraduates, the Scholars Program should require that they pursue experiences beyond the grand-challenge courses proposed as updates to the Liberal-Education Requirements.

For post-baccalaureate students, the Scholars Program should incorporate new grand challenges-focused workshops designed to build foundational knowledge, skills, and values that position students to engage with grand challenges. Here, the University of Minnesota’s Boreas Leadership Program, administered by the Institute on the Environment, is a potential model. The program offers non-credit workshops on communications and media, systems thinking and tools, integrative leadership, and public skills such as negotiation and engaging in the legislative process. Students who complete required activities and workshops receive a non-degree certificate. Participants also benefit from networking activities and speaker events. The Grand Challenges Scholars Program could incorporate similar opportunities, along with advising, resume review, and social events.

Pursuing a Grand Challenges Scholars Program will require input and encourage participation from a wide variety of academic units and centers. It will also rely on the development of the curricular and co-curricular components of the grand challenges proposal outlined in this report. An administrative or governance structure to implement grand challenges across the curriculum could also advance development of the Scholars Program and oversee its implementation.

“Quick-Wins”

Rounding out the overall Grand Challenges Curriculum proposal are a pair of more immediate recommendations to raise the visibility of the University’s embrace of grand challenges, begin purposefully to engage students in this work, and produce initial curricular building blocks important to an integrative grand-challenges approach. High-priority “quick wins” include additional seminar offerings and the development of undergraduate minors focused on grand-challenges topics

“Quick-Win” 1

Develop additional University seminars focused on grand-challenge topics

New challenge-oriented seminars will engage students with grand-challenge topics and provide opportunities to explore relevant theory, history, methods, critiques, and other content. These elective seminars should be informed by the existing challenge seminars offered through the University Honors Program—for example, “Can We Feed the World Without Destroying It?” (HCOL 3803H). Expanding the number of seminars will increase the number of topics that can be addressed and allow more students to enroll in them. Seminars should be developed at both the undergraduate and post-baccalaureate levels and should afford students across degree programs and disciplines the opportunity to enroll in a grand-challenges seminar of interest to them.

Seminars should be designed to support the integration of multiple disciplines in the course's teaching, content, and enrollment. Team teaching will ensure the availability of relevant expertise and foster students' understanding of cross-disciplinary and transdisciplinary approaches to the grand-challenge topic addressed in the seminar. Course content should be drawn from multiple disciplinary perspectives, and the seminars should support a critical examination of methods as well as dialogue about the evolution of the grand challenge over time and space. Students should be recruited from multiple disciplines. To ensure a relevant mix of disciplines, seats might be allocated to colleges and/or an application process might be used to place students in these courses.

At the post-baccalaureate level, seminars could be arranged in a two-course sequence. The first semester would build shared understanding and would include critical examination of potential approaches to solving a grand challenge. The second semester would then engage students in addressing some aspect of the grand-challenge via an experiential learning opportunity. The May and December semester breaks and the summer terms should also be an option for offering a second experiential course.

For both undergraduate and post-baccalaureate seminars, graduate teaching assistants can provide an important support function. As noted earlier, grand-challenges teaching assistantships will also provide important learning and financial opportunities for post-baccalaureate students. Joint seminars that engage both undergraduate and graduate students should also be considered.

As part of its normal budget process, the University must identify a flexible, recurring source of funds to facilitate team teaching, cross-listed courses, and the encouragement of enrollment in courses outside of a student's home college. In addition, an administrative and governance structure that aligns faculty with grand-challenges priorities should be pursued, with oversight from the provost. Finally, efforts to advance research on grand-challenge topics should be integrated with the development of seminar courses, in order to maximize synergies of course content, funding, and expertise.

"Quick Win" 2

Develop undergraduate minors focused on grand-challenge topics

We should develop a set of topical minors to advance curricular development aligned with grand-challenges. Other recommendations are higher priorities and would likely have greater long-term impact, but the development of minors will be relatively easy to pursue and is thus recommended as a quick win. A set of undergraduate minors aligned with grand challenges will increase the visibility of the University's engagement with grand challenges, provide opportunities for students to tackle grand challenges, and build networks of interested faculty and courses salient to this strategic goal.

Minors could be organized around a set of required and elective courses, perhaps including grand-challenge topical seminars among those required. The development of core competencies for the minor will require engagement of faculty from varied disciplines, departments, and colleges. An administrative and governance structure will be needed to support recruitment, teaching, and

advising for the minor. Minors will likely draw on many existing courses that pertain to the specific grand-challenge topic, but could also include one or more new courses beyond the seminars described above. Tuition revenue should be allocated in a way that ensures sufficient resources to support the minor.

Minors can provide opportunities for students to develop expertise in a grand challenge that is complementary to studies in the major field or fields. Students will value grand-challenge minors as an opportunity to gain interdisciplinary perspectives, build deeper knowledge of a grand challenge, and network with faculty and students whose interests and/or disciplines enrich and connect with their own. The effort required to build and administer grand-challenge minors will create fresh constituencies and collaborative groups that will further advance education, research, and community engagement efforts.

Because grand-challenge topics will evolve over time, a template for minor fields should be designed. Faculty, staff, centers, or others involved in building a minor could use the template structure as they identify competencies, courses, and other curricular components. Existing interdisciplinary minors could serve as models for new ones.

We focus on the development of undergraduate minors as the initial priority, because of the larger number of students and available courses at this level. In addition, minors are more often pursued at the undergraduate level than at the post-baccalaureate level. At the post-baccalaureate level, academic programs tend to emphasize core courses and external courses complementary to a research agenda, with the additional consideration of time-to-degree outcomes. The University should assess interest in grand-challenge minors among post-baccalaureate students to determine when and if it might be appropriate to expand minors beyond undergraduates. Credentials other than minors should also be considered.

Implementation Considerations

The Grand Challenges Curriculum cannot succeed in isolation; it must be nested in a broader integration of grand-challenges strategies and goals across the University's functions, internal structure, and public identity. Most critically, the curriculum should be developed in close conjunction with grand-challenge research. Both research and curricular strategies should draw on—though they will never encompass—the wide range of intellectual expertise, methodologies, and resources that shape the academic profile of the University of Minnesota. The shift toward explicit engagement with grand challenges involves a cultural change. The curriculum will be both a driver of that change as well as a result of it.

Strategies to develop grand-challenges curricula will be greatly enhanced through discussion and refinement by faculty, students, and staff across our large and complex institution. This is the first step in a broad campus effort that will lead to pilot testing, revision, and implementation. The recommended changes are significant and potentially touch everyone at the University. Consequently, they must be shaped by broad engagement and informed by expertise from every quarter. They must reflect the highest aspirations of the University.

In particular, the University of Minnesota must consider how grand-challenges curricular strategies will draw on or augment the resources of individual colleges and what central mechanisms (or incentives) may be needed to enhance cross-collegiate collaborations and desired outcomes. Many practicalities must be considered in structuring and delivering an excellent education that is also affordable, efficient, relevant, and intentional in preparing students for a range of post-baccalaureate opportunities and careers.

The recommendations that touch upon the current Liberal Education Requirements and Student Learning Outcomes will need especially careful and thoughtful exploration. These requirements have been recently revised, with a great deal of energy invested in this. The scope and scale of liberal education and SLO planning makes further revision complex, as changes can easily lead to unintended consequences. In undertaking a phased approach—a pilot program focused on the four grand-challenge course categories—the University can undertake bold and productive experimentation that will not disrupt the current liberal-education and SLO system.

Success measures or metrics as well as evaluation criteria, are critical; however, we believe they should evolve at the same time as we build new courses, programs, and curricular approaches. Target metrics for participation and timelines for change will be most effective if placed within a larger context of pedagogical initiatives and logistical parameters.

Grand-challenge teaching and learning is by nature networked and collaborative. The speed and scope of digital technology has begun to change some aspects of higher education but arguably has not yet fundamentally transformed the way we teach and learn. Technology has enormous potential to advance grand-challenge curricular aspirations and the overall excellence and impact of University of Minnesota educational programs. The implementation process should emphasize innovative technology to challenge conventional teaching and learning.

We have noted several existing University models of interdisciplinary and/or challenge-based approaches to student learning. These models will help us identify promising paths as well as systemic obstacles that may be relevant to the development of a Grand Challenges Curriculum. These exceptional models have sometimes been seeded by interdisciplinary grants, but it is still generally the case that University systems have not been designed to support and sustain these sorts of innovative programs.

Creating a University where interdisciplinary, cross-cultural, and integrated learning is the norm rather than the exception will require major changes in the administrative infrastructure of the institution. Cross-collegiate agreements for revenue and cost sharing, processes for cross-listing of course offerings, mechanisms for collaborative faculty teaching, and support for co-curricular activities can be cumbersome and require an enormous effort each time a new program or course is proposed. Developing template MOUs, establishing financial incentives, and creating advising infrastructures are among the many administrative support requirements that will be key to achieving the University we envision, a research university that imaginatively leverages all of its strengths to address society's grand challenges.

*Report of the Strategic Planning Workgroup
University of Minnesota Twin Cities*

Recruit/Retain Field-Shapers

*We will create a University of transformational opportunity—
a culture of innovation in which there is flexibility
as well as responsibility and accountability*

Strategic Planning Workgroup

Recruit/Retain Field-Shapers

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Strategic Planning Workgroup co-leads for this team are in bold.

Introduction

The University of Minnesota must recruit and retain field-shaping researchers and teachers, those individuals best positioned to solve the grand challenges of a diverse and changing world. One focus must be on identifying and strengthening opportunities and incentives for bringing high-profile achievers and innovators to the University, and another on identifying key problems that can impede the retention of field shapers once they are hired. Because field-shaping researchers and teachers typically are highly sought after, retaining our best and brightest must be an ongoing priority. Simply put, if we hope to keep faculty of the highest caliber, our institutional commitment cannot end after we hire them. We must work relentlessly to reduce impediments to faculty success and to create a culture that sustains and nourishes field shapers.

Our issue team included a broad cross-section of University faculty, with representatives from most colleges and over 25 academic departments, as well as staff and students. Moreover, our team included some field shapers in various career stages, from undergraduate and graduate students to teaching specialists, tenure-track professors, chairs and department heads, Regents Professors, deans, and vice provosts. As a result, our discussions were informed by a great deal of relevant experience and a wide range of perspectives.

We identified key incentives, from pay to flexibility, but focused as well on a number of cultural issues that are sometimes barriers to success and retention. We considered a broad range of ideas and concretized those considerations into high-priority recommendations we think most likely to advance our institutional aspirations and goals. Some strategies can be advanced easily and some will require more effort. Implemented correctly, these strategies can help us create an “ideal state” in which top faculty and staff researchers and teachers from across the country—and indeed, from around the world—will seek out the University of Minnesota because of its reputation, its limitless opportunities, and its commitment to excellence. If we raise our profile in all these dimensions, we are confident that we will be able to attract the field-shaping researchers and teachers capable of leading this institution into the brightest future.

Strategies

A unique strength of the University of Minnesota Twin Cities is its remarkable breadth combined with its location in a major and vibrant metropolitan area. Our breadth and our location are not sufficient, however, to recruit, retain, and promote field-shaping researchers and teachers. The University must also become known as a place where transformational work can and does occur. Field-shapers want to have impact and want to make a significant and lasting contribution to society. Attracting and retaining field-shapers can only happen if the University is known both internally and externally as a “University of transformational opportunity.”

Transformational Vision

We will create a “University of transformational opportunity”

A university of transformational opportunity is one where there is flexibility accompanied by responsibility and accountability. It is one where field-shapers are encouraged to innovate, are rewarded for good ideas, are supported in their desire to take risks and push boundaries, and are not penalized for small failures on their way to large success. It is a university where “yes” is heard more often than “no.” In short, it is a university that vigorously embraces a culture of innovation.

A university of transformational opportunity by its very nature directly benefits students—both undergraduate and post-baccalaureate—because field-shaping research and field-shaping teaching are complementary endeavors. Top faculty want to work with the best and the brightest, the most eager, motivated, and energetic students. Graduate students weigh many factors in selecting a program, but the opportunity to work with field-shaping faculty is a key consideration for the very best students. A faculty of field-shaping researchers and teachers enhances the exceptional education we are able to offer to undergraduate students as a world-class research university. By working to improve the quality and opportunities of our faculty, we will improve the quality and opportunities of our students.

We intentionally do not express our desire to transform the University as a quest to improve our rankings. While we live in a rankings-conscious world, and while rankings (including those of public research universities) cannot be ignored, targeting a particular place in the rankings does little to affect institutional culture. A high ranking is likely to be the outcome or byproduct of a high-functioning University. We will focus our efforts on advancing the latter rather than chasing the former, confident as we are that a university of transformational opportunity *will* be recognized for its merits. Our call is for a culture shift at the University of Minnesota, one in which we create a University that is known to all as a center of excellence—an institution that welcomes, encourages, and cultivates the highest level of scholarly and professional activity.

All colleges and schools, and the University as a whole, will explicitly identify and define where we can and should make our most significant contributions. Colleges, individually and in collaboration, should identify a reasonable number of areas where we have unique opportunities to become field shaping or where we are already recognized as field shaping. The identification of these opportunities for transformational work can then be used to direct resources, to engage local and global partners and stakeholders, and to provide additional specificity to the strategies recommended below. Although our exceptional breadth is a great strength, we cannot do everything equally well and we need to be conscious of the danger of spreading ourselves too thin.

Our priorities must be to build pipelines to recruit and retain the best field-shaping researchers and teachers, develop field-shapers from within, support field-shaping work with an infrastructure and culture of high expectations, and reduce barriers to interdisciplinary partnerships. Implementation of these recommendations will move us toward being the “University of transformational opportunity” that we collectively must expect the University of Minnesota to be.

"Must-Dos"

Two broad "must-dos" require attention, one addressing recruiting and the other focused on retention. Some related action items are long-term while others can be quick wins and are noted as such.

Some strategies will involve questions of resources. While implementation of the University's strategic vision and goals could generate new funds from funding agencies or donors if the implementation is sufficiently exciting and well executed, it is prudent to plan under the assumption that the pool of resources at the University is approximately constant. Before an action is taken, we must recognize that allocating resources to one initiative is likely to mean a reduction elsewhere. We must achieve consensus that reallocations will ultimately benefit the University.

"Must Do" 1

Invigorate the process for recruiting the best researchers and teachers

To bring the very best researchers and teachers to the University of Minnesota, we must improve the process by which we recruit and hire faculty.

Supporting Recommendation 1:

Establish appropriate financial resources for recruiting and hiring field-shaping teachers and researchers and permit strategic flexibility in negotiating hiring packages that will be attractive to high-priority candidates.

Rationale: We recognize that the University of Minnesota cannot always compete financially with the public and private universities that have the deepest pockets. Nevertheless, competitive compensation packages are important in attracting the very best, and the flexibility to enhance financial rewards can give the University an important competitive edge.

Action Steps

- Create a fund at the central or college level for special-case recruiting to attract the very best candidates.
- Provide departments and colleges with more flexibility for recruiting and hiring. For example, allow hiring packages that offer enhanced inducements and novel support for important work.

Supporting Recommendation 2

Improve the diversity of faculty hires.

Rationale: We cannot expect to be preeminent in addressing the challenges of a diverse and changing world unless the University of Minnesota can draw on the full range of talents, expertise, perspectives, and interests of diverse researchers and teachers nationally and globally. Consistent with our mission, institutional values, and strategic vision, the University must be a place where all faculty feel welcome and encouraged to thrive. We must aggressively and deliberately promote diversity in faculty recruiting and in our ongoing practices of faculty development and support.

Action Steps

- Develop college-specific and department-specific guides for active recruitment of faculty of color, and other underrepresented faculty, including best-practices strategies for building diverse candidate pools.
- Hold department heads and academic administrators accountable for improving the participation of diverse candidates in recruitment pools and for improving diversity in the ranks of faculty and staff.
- Create an inclusive climate and culture so that all feel valued and supported; strengthen department mentoring programs, cross-disciplinary networking opportunities, and implement other best-practice strategies to build social connection and support career development.
- Support strong efforts to improve the recruitment and retention of students of color and other underrepresented students, both to nurture a diverse population of future scholars and field-shapers and to help build the vibrantly diverse 21st-century campus that will attract a culturally diverse faculty of the highest caliber.

Supporting Recommendation 3

Develop an aggressive approach to partner hires

Rationale: Many field-shapers come with partners or spouses. The University of Minnesota must be at least as good as peer institutions in providing attractive partner hire packages. The breadth of the University and our Twin Cities location gives us a distinct advantage over our peers in terms of the availability of professional opportunities for the partners of sought-after faculty, but we have not sufficiently capitalized on this advantage.

Action Steps

- Provide flexible hiring packages, consistent with supporting recommendation #1
- Benchmark what peer institutions are doing
- Maintain a robust central fund and process for partner hires
- Develop strategies to facilitate introductions to community and corporate partners that could increase placement opportunities for partners

Supporting Recommendation 4—“a Quick Win”

Reinvigorate the faculty campus interview process

Rationale: We must rethink the way we handle one of the most important touchpoints of faculty recruitment, the on-campus interview. We want to ensure that all prospects who visit the campus are provided with all the information they need to understand and evaluate the career opportunities afforded by the University and the many advantages of our vibrant metropolitan location.

Action Steps

- The campus interview process should include a personalized meeting with a specialist from the Office for Human Resources who can provide an engaging introduction to the many benefits of working on our campus and living in the Twin Cities. This should include everything from a good overview of University benefits to information on partner employment opportunities, schooling for children, cultural opportunities, and community resources geared to diverse interests, faith traditions, and so forth. Building this into the interview process will create a more meaningful and personalized experience for candidates, help them to appreciate all the Twin Cities has to offer, and convey that their partners and families will also find this to be a great place to live. It will treat candidates as whole people.

Candidates should routinely hear that the University of Minnesota is in the heart of a dynamic metro area that is a hub for education and culture and that it is in close proximity to the best urban park system in the country. They should be made aware that the Twin Cities boasts exceptional bicycling and walking trails, is one of the most LGBT-friendly metro areas in the country, has a diversified economy with a high concentration of Fortune 500 and major private companies, is renowned for civic engagement, and is a notably vibrant center for the arts, major league sports, and so on. Candidates should also learn about the breadth of the University, its exceptional resources, and the opportunities it affords for interdisciplinary scholarship and collaborations with a wide range of public and private partners.

Most faculty only learn such information randomly, if at all, in casual conversations with others during a campus visit. The University will strengthen its ability to recruit the best researchers and teachers by more effectively presenting the strengths and opportunities of our campus and region. Candidates should get a package of individualized information (and not simply a generic package put together by a local chamber of commerce), along with a personalized interview with a knowledgeable administrator who can both elicit and answer questions. In other words, we must highlight the non-monetary, intangible advantages of being at the University of Minnesota Twin Cities.

“Must-Do” 2

Improve the University environment and culture so there is support for transformational scholarship

The University’s recent employee engagement survey revealed that faculty love their jobs but are not entirely satisfied with their working environment. This is troubling, because to retain the very best researchers and teachers (as well as staff), and to have all working at their full potential, the environment and culture must be supportive.

Supporting Recommendation 1

Commit to a program of excellence for department heads and chairs

Rationale: Effective department heads or chairs are essential to the recruitment, retention, and development of field-shapers and are key to creating a departmental culture and incentives enabling field-shapers to thrive. Even with the evolution towards interdisciplinary work that transcends department and college boundaries, all faculty and staff in teaching and research roles have a home academic department; most identify closely with that department.

Action Steps

- Better define and communicate to faculty the role of the department chair/head. This includes clarifying the department's own expectations for how the role functions as well as the expectations of deans (and more broadly, of the provost).
- Determine the attributes of a top-performing chair/head.
- Recognize and reward department heads/chairs to make these posts desirable positions. For example, the head/chair position could come with post-doc support so that the head's/chair's research program could continue.
- Streamline administrative work so that routine matters consume less of the head's/chair's time and effort.
- Provide department heads/chairs with leadership training aimed at creating a department culture where field-shapers are cultivated, recognized, and rewarded—and where academic risk-taking is embraced. This will build on the existing training sponsored by the provost's office.
- Train department heads/chairs to identify future field shapers and expand programs to develop them; field shapers are not only recruited, they must also be grown internally.
- Provide department heads/chairs with expert training in strategies to recruit, retain, and promote the success of diverse faculty and students.
- Examine criteria for selecting department heads and chairs.
- Examine how heads/chairs conduct annual reviews for tenured faculty and how they promote career development.
- Determine what length of term is most appropriate for a department head/chair. For example, some units have three-year rotating positions; three years is very likely too short a term to effect strong developmental leadership in the unit.
- Department heads and chairs operate within the current University structure. We must carefully examine this structure and determine whether structural changes would facilitate field-shaping research and teaching that capitalizes on our strengths.

Supporting Recommendation 2

Establish appropriate financial incentives to retain field-shaping teachers and researchers

Rationale: While intangibles play the most important role in retaining the very best faculty and staff, financial incentives can and should be used to ensure that those at the peak of creativity and

productivity are recognized and rewarded. At the same time, we need to find ways to avoid having compensation inequalities produce resentment.

Action Steps

- Examine current policies and procedures for compensating faculty and staff researchers and teachers.
- Examine the role that merit plays in salary increases. Most colleges use a narrow spread to allocate salary increases, but perhaps the spread should be wider.
- Create a fund at the central or college level for special retention cases.

Supporting Recommendation 3—a “Quick Win”

Reconsider practices and strategies for internal University faculty awards and endowed chairs

Rationale: Our current mix of faculty recognition programs and awards—including Regents Professors, McKnight awards, endowed chairs, and other significant awards—may not be optimal for recognizing and retaining top scholars. Moreover, current award programs are too often considered in isolation from broader contexts or strategic goals.

Action Steps

- Examine the entire portfolio of internal awards and be creative in developing the optimal use of these valuable resources.
- Develop a strategy for targeted fundraising to increase the number of endowed chairs, with one goal being to connect to the University’s broader grand-challenges paradigm.

Supporting Recommendation 4—a “Quick Win”

Aggressively seek external faculty awards

Rationale: Faculty awards not only recognize top performers. They also bring recognition to the University. The University of Minnesota historically has been well behind its peers with respect to external faculty awards. This is not because of the quality of our faculty but rather because insufficient effort has been devoted to identifying and applying for external awards. Currently, awards processes are too often seen as a burden for the nominee and the colleagues of the nominee who are responsible for putting together the award package. Minnesota reticence—and the “Minnesota humble” attitude—is not helpful on this front. Instead, we must actively and aggressively go after awards.

Action Steps

- Examine peer universities and peer departments to determine best practices for pursuing awards that will recognize the distinction of our faculty and University.
- Devote resources and effort at the central and college level to implementing an awards nomination process.

Supporting Recommendation 5

Recruit, retain, advise, and mentor excellent graduate students and postdocs

Rationale: Field-shaping researchers need to work with the very best graduate students, and the very best graduate students will only go to institutions that support field-shaping researchers. Universities cannot have one without the other. It is the same for postdoctoral students. The best graduate students and postdocs are attracted to a dynamic university that is home to exciting, groundbreaking research and that also offers competitive financial support packages, particularly for Ph.D. students. Further, graduate students and postdocs are attracted to a university that is known for excellence in mentoring its graduate students.

Action Steps

- Move towards guaranteed, multi-year—possibly up to five-year—support packages for incoming Ph.D. students to ensure the University is competitive with peer institutions. Move toward full (50-percent) assistantship support for Ph.D. students, which will ease tensions between students and their research advisors.
- Provide graduate students with opportunities to intersect with grand-challenges research collaborations, as well as with teaching opportunities that may emerge as the grand-challenges curriculum is developed.
- Provide faculty with guidance on best practices in mentoring graduate students.
- Increase the number of internal awards for the very best Ph.D. students.
- Aggressively pursue external Ph.D. student fellowships so that we are on the same level as the best of our peer institutions.

Supporting Recommendation 6

Ensure that the University is known as the place for doing interdisciplinary research and teaching

Rationale: Many young field shapers and postdocs are inherently interdisciplinary and are not tied to traditional department boundaries. To attract the next generation of exciting field-shapers, the University of Minnesota must be perceived as highly welcoming to and encouraging of interdisciplinary work. Moreover, receptivity to interdisciplinary research and teaching and institutional support for transdisciplinary collaborations is a prerequisite for our institution's becoming preeminent in solving the grand challenges of a diverse and changing world.

Action Steps

- Identify and reduce lingering barriers to interdisciplinary research and teaching.
- Review the University's faculty tenure policy—specifically, sections 7.11 (tenure criteria), 9.2 (promotion to professor criteria) and 7a (review of faculty performance)—and department-level 7.12 statements (tenure criteria) to determine how they shape the environment for interdisciplinary work; revise if revision is needed.
- Identify a flexible, recurring source of funding to support interdisciplinary teaching and research.

- Ensure that incentives for interdisciplinary research and teaching do not inhibit the innovative work of field-shapers who flourish within their established disciplinary boundaries; there must be flexibility in our conception of the University of Minnesota as a university of transformational opportunity.

Supporting Recommendation 7

Conduct regular reviews of academic initiatives, including centers.

Rationale

Too many centers and initiatives function at the University as if they have been chartered to exist in perpetuity. Because resources for initiatives are limited, and because the university is renewed by a continual supply of new ideas, it is critical that we establish a culture where centers are not necessarily expected to last forever.

Action Steps

- Strongly enforce a five-year horizon as a campuswide standard for centers or major initiatives. Each should start with an expected lifespan of five years (or less). Extension beyond the first five years requires meaningful justification.
- Ensure that all campus and college units carry out regular and meaningful reviews of centers that draw on central or collegiate resources. (This is an existing policy standard that should be strongly enforced.)

Supporting Recommendation 8

Provide incentives and support for faculty who direct major multi-investigator, multi-disciplinary research programs

Rationale: The work to develop large-scale, multi-investigator grant applications is huge, as is the work to run large and complex research centers successfully. If incentives were in place, we would see more such efforts. The message to faculty will be clear: We value such centers and those who step up to lead them. Large centers are increasingly important in attracting external funding for contemporary research, and large multi-investigator centers typically promote interdisciplinary research goals.

Action Steps

- Provide grant-writing support for large proposals. (The Office of the Vice President for Research, the Office of the Vice President for Health Sciences, and the provost's office could take the lead in identifying new strategies or leveraging existing resources for this purpose).
- Move toward excellence in grant support offices at the unit, college, and University level, with excellence measured by how well investigators are supported and how well the process of grant submission and grant administration is facilitated.
- Create principles and guidelines for reduced (redirected) workload for research center directors.

Supporting Recommendation 9

Encourage innovations in teaching and recognize and reward innovators

Rationale: Teaching and research are fundamentally intertwined at the University of Minnesota. To attract field-shaping teachers to our classrooms, studios, and labs, the University of Minnesota must be an institution where excellence in teaching is recognized and valued, and where innovation in teaching practice is encouraged.

Renown for the University as an institution that promotes and facilitates innovative teaching practices will help in attracting field-shaping researchers. Moreover, providing students with outstanding educational experiences directly reflective of our research excellence is central to our mission. We must continue to ensure that graduate students are taught and mentored by field-shapers and that undergraduates also have opportunities to learn from top faculty. This should occur not only in structured courses, but also through research collaborations such as the Undergraduate Research Opportunities Program and through experiential learning and service experiences that engage students with local and global communities.

Action Steps

- Examine the University incentives in place to foster and reward excellent and innovative teaching; modify if necessary.
- Consider flexible workloads that conduce to excellence in teaching, with openness to adjusting the relative balance between teaching, research, and service.
- Provide incentives so that field-shaping researchers want to be engaged in leading-edge teaching (with special emphasis on interdisciplinary collaborations addressing critical challenges).
- Promote collaborative teaching. Field-shapers are often excited by the opportunity to collaborate with a colleague on an educational initiative.

Supporting Recommendation 10—a “Quick Win”

Significantly reduce work activities that do not directly support teaching, research, and outreach

Rationale: Administrative procedures and internal service activities have become far too burdensome and take time away from teaching, research, and outreach. This may in part reflect a broader culture that has become increasingly risk-averse and less trusting of faculty, staff, and administration. However, sub-optimal use of committees and meetings also contributes to a growing administrative burden on everyone. We need collectively to create a University environment that reduces administrative burdens and encourages experimentation, including embracing appropriate levels of risk. This is where field-shapers will thrive.

Action Steps

- Reduce administrative burden for low-risk processes.
- Seek to reduce the number of University committees.
- Consider reducing the number of faculty on various committees.

- Provide department heads with training on making inclusive, “participatory” decisions without setting up committees.
- Establish a natural sunset for activities, including centers and standing committees, where appropriate.

Supporting Recommendation 11—a “Quick Win”

Enhance faculty retirement incentives

Rationale: Many departments have faculty who would like to retire but might be uncertain about their financial status or a potential loss of identity. Older faculty often have exceptional scholarly records; by virtue of their long careers, experience, and accomplishments their salaries also tend to be higher than those of less senior colleagues. We must develop or enhance strategies and incentives to support the transitions of older colleagues toward winding down their formal academic careers. This should include identifying meaningful opportunities for faculty to contribute in emeritus roles should they wish to do so. New support strategies around retirement are consistent with the goal of supporting faculty at all stages of their careers—one key to making the University an attractive “home” for outstanding faculty. This will also help create a dynamic and transformational academic culture. In a world with constrained resources, we must work not to stifle the pipeline of fresh ideas and diversified perspectives that can come especially from hiring younger faculty and field-shapers at earlier career stages.

Action Steps

- Research how older faculty members at the University perceive their careers as well as how they envision retirement.
- Benchmark peer institutions with respect to retirement incentives.
- Work with faculty to define retirement options that fit a variety of preferences and needs; create or revitalize incentives or strategies to support these options. These must include opportunities and support that would make it attractive for colleagues to work as emeritus faculty, if that is what they choose.

Report of the Strategic Planning Workgroup
University of Minnesota Twin Cities

Grand Challenges—Reciprocal Engagement

*We will leverage our location and build a culture of engagement
for the mutual benefit of the University and our communities*

Strategic Planning Workgroup

Grand Challenges— Reciprocal Engagement

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Introduction

The University of Minnesota's vision for 21st-century excellence recognizes the strategic advantage we have as a land-grant research university located in a major metropolitan area. Few of our peer institutions are based in large cities. Our Twin Cities campus is at the heart of a vibrant metropolis that ranks first in the number of Fortune 500 companies per capita (and is home to leading private companies such as Carlson and Cargill). Our region is renowned for its arts and nonprofit sectors and more generally for its abundant cultural and natural resources. Our campus straddles one of the world's great rivers and adjoins a national park. We are an anchor institution for a globally competitive region and state with notable strengths in areas critical to today's knowledge economy—including biosciences, medical devices, and agriculture and food production.

Ours is also an increasingly diverse region, with the largest urban Native American population in the country and growing African-American, Latino and Chicano, and Asian-American populations. Our communities continue to be transformed by immigration, with populations from, in particular, Latin America, Asia, and Africa significantly enriching the mix. The Twin Cities now has the largest number of people of Somali descent outside of Somalia and the nation's largest urban Hmong-American population. Indeed, we are at the heart of a global Midwest.

In this dynamic environment, the University has unparalleled opportunities to advance community-engaged research and teaching that has high local and global relevance and impact. Our location affords us remarkable opportunities to leverage our breadth of strengths—alongside those of diverse communities, vital cultural organizations, and global businesses—to solve the most urgent and complex problems of today's societies, to foster innovation and economic growth, to offer our students critical workplace and volunteer experiences, and to enhance quality of life.

Many of today's most critical global challenges have strong local resonance, such as those related to hunger and food production, the environment, civic engagement and urban community vitality. Furthermore, our collaborations with leading employers such as 3M, Land O'Lakes, Cargill, United Health, and General Mills—and with a great variety of other public and private partners, from the Guthrie Theater to state agencies to local non-profits—can create 21st-century learning and career pathways for our students. These pathways contribute to economic vigor and community well-being and ensure that our students are well prepared to be tomorrow's leaders—innovators, problem-solvers, and global citizens.

We must fully leverage the special opportunities of our location and the full range of our state and regional assets—communities, businesses, government and nonprofit partners, and cultural assets from performance groups to museums and libraries. Moreover, we must do this with a spirit of reciprocity, guided by a commitment to engagement that insures mutual benefit. Further, we must expand and deepen our institution's capacity for effective reciprocal engagement with a wide and diverse range of partners and stakeholders.

We do already have great strengths in outreach and engagement. Understood in the broadest sense, University engagement activities include all the ways we interact with external constituencies, whether communities or corporations, arts groups or policymakers, agribusiness or alumni. The University's Ten-Point Plan for Advancing and Institutionalizing Public Engagement has been recognized as a model by the Research Universities Network for Community Engagement. That plan expressly seeks to maximize the potential of reciprocal engagement to produce cutting-edge, significant research that addresses some of the most complex and difficult issues in society.

Since 2006, the University has received the Carnegie Foundation's Community Engagement Classification recognizing significant commitment to reciprocal public engagement. The classification defines engagement as collaboration with local, regional/state, national and global partners "for the mutually beneficial exchange of knowledge and resources in a context of partnership and reciprocity" and notes that the purpose of these partnerships is "to enrich scholarship, research, and creative activity; enhance curriculum, teaching and learning; prepare educated, engaged citizens; strengthen democratic values and civic responsibility; address critical societal issues; and contribute to the public good" (Carnegie Foundation for the Advancement of Learning).

Engagement activities fitting this definition are ubiquitous, carried out by colleges and cross-collegiate centers in the form of collaborations between the University and industry, through international research partnerships and K-12 outreach, in our clinical programs and in continuing education, through Extension and our many research and outreach centers, to cite just some examples. The University's health sciences have been a particularly vital hub for engagement, with more than 1,500 clinical training partnerships across the state and scores of community-engaged research and outreach initiatives. Our community partners are thus also many and diverse, local and global. They include governmental institutions; towns and neighborhoods; non-profit organizations; corporations and small businesses; community councils; native communities; and so on.

Innovative work increasingly requires community engagement, and this engagement is at the core of some of the University's most ambitious research initiatives, such as the Clinical and Translational Science Institute and the MnDRIVE initiative to advance discoveries and treatments for brain conditions. Community engagement can also play a key role in building the deeply meaningful student experiences that will distinguish a first-rate, place-based education in the 21st century, preparing our students to be effective leaders and informed citizens.

Enhancing Reciprocal Engagement

Although the University is justifiably proud of the many collaborative relationships with community partners of varied types, we have yet to reach our full potential. Our internal and external stakeholders have sometimes noted serious impediments to the practice of fully engaged teaching and scholarship. To achieve our strategic goals, we must enhance support for engagement in our academic units and do more to capitalize on ways in which our particular location can help us develop truly exceptional teaching, groundbreaking research, and effective, meaningful outreach.

Fundamentally, we must ensure that our internal communities—students, staff, faculty, and administrators—continue to develop the knowledge and relationships needed for the success of

engagement efforts. Although we recognize that not every faculty member, staff member, or student will become involved in engaged scholarship or work with external communities, those who are involved must operate with best practices. Our articulation and institutionalization of best practices will build on efforts already under way through the Office for Public Engagement (OPE), the Office for the Vice President for Research (OVPR), Extension, and the Global Programs and Strategy Alliance (GPS Alliance).

We must also devise strategies and structures to make it easier for external stakeholders to connect and collaborate with the University. One salient initiative is the recent collaboration between the OVPR and the University of Minnesota Foundation (UMF) (in conjunction with collegiate units and other key stakeholders across the University), focused on building multidimensional and sustained relationships with business and industry partners.

We must also strengthen strategies and structures that support our communities through improved public access to the University's scholarship, educational, and cultural resources. Salient examples are wide-ranging, including the educational and cultural programs of Extension; the outreach of our professional schools through clinics, hospitals, and continuing education; the new Northrop, and the Bell Museum of Natural History. Other salient examples include broad community-based collaborations such as the Urban Research and Outreach-Engagement Center and many educational access programs—Kids on Campus, the STEM (science, technology, engineering, and mathematics) Center in the College of Education and Human Development, and the College Readiness Consortium, just to name a few.

Strategies

Transformational Vision

We will build a University culture of engagement that strongly supports community-engaged scholarship and dynamic University-community partnerships

Support and recognition for engagement is uneven across academic departments. While there may not be equal interest across academic units in engaged scholarship, there should at least be consistent and openly agreed upon standards for support and assessment of this work within units so engaged. Such scholarship needs to be evaluated consistently within units and across the University, maintaining respect for discipline-specific contexts. There should be clear statements within academic units about the role of engaged scholarship in annual reviews and in matters of promotion and tenure. A more consistent culture, environment, and set of standards for engaged scholarship will advance the University's land-grant and research missions and enhance the rigor and relevance of the education we provide students.

We must also increase faculty and student training in engagement activities. Public engagement training is needed to equip scholars and students to do engaged work in a way that is respectful of the community and fosters good relationships between the community and the University. Integrated training opportunities—including an “engagement pipeline” involving undergraduates, graduate students, faculty and staff—are needed so that the University of Minnesota can develop

and nurture a larger cohort of students and scholars who are well versed in community-engaged research, teaching, and the translation of research. Moreover, since many funding agencies now require demonstrations of “public relevance” or involvement with community partners, this training can assist University faculty, staff and students seeking grant funding that requires or supports community engagement.

We must also provide opportunities for more faculty and students to develop mutually beneficial relationships with businesses, government agencies, and public and private organizations of many varieties. This will increase the economic impact of the university and provide avenues for new forms of research collaboration and as well as enhanced educational experiences and career development for our students.

Action Steps

- Develop criteria for evaluating engaged scholarship and education as well as other faculty/staff collaborations with communities and stakeholders; the Provost’s Office should work with deans, chairs, and tenure committees to determine how best to do this.
- Include engagement activities in annual reviews of faculty members’ research and teaching (as distinct from or in addition to service and outreach).
- Review 7.12 promotion-and-tenure statements across academic units to assess how engagement activities are articulated in faculty reviews. Disseminate best practices so that all statements contain clear definitions and guidelines.
- Enhance faculty, student, and staff training in reciprocal engagement; in particular, develop a summer institute on reciprocal engagement to train graduate students and faculty in best practices. (This recommendation builds upon initiatives already developed by OPE to support faculty development; it could also draw on campus-community workshops offered by the Community Service Learning Center.)

Supporting Recommendation

Review current practices of engagement with community partners; identify and strengthen support of best practices and require clear articulation of focus; look for opportunities to make dialogue with partners and stakeholders a regular and robust part of our culture.

Mutual respect and trust, transparency and accountability, flexibility, and authentic commitment to sustainable relationships—these are all core components of reciprocal engagement. Simply put, the University has a responsibility—consistent with its mission as a land-grant research university, as a state-chartered institution, and as one of the region’s largest employers—to invest in the well-being of the state and to develop and maintain exemplary relationships with its many constituencies and stakeholders.

We are aware of interactions in which community partners have felt devalued or valued only for their potential to help secure grant funding or to provide a site for a student field placement. Focus groups and roundtable discussions convened by the OVPR, UMF, and colleges and academic programs have found that, among business and industry stakeholders, and among other community

members and organizations, the University has not always been perceived as an ideal partner. Partners and potential partners have mentioned challenges related to accessibility, information sharing, and coordination of contacts between and within the University. Specific concerns among external stakeholders include perceptions that the University is bureaucratic, difficult to connect with, or focused narrowly on University goals or on “one-off” projects not linked to the broader interests of our partners..

This suggests we have more to do to leverage the strengths and resources of our location, to build meaningful and productive collaborations with our communities to benefit them, our students, and our institution as a whole.

Our University has structures, policies, and practices that may have evolved for good reasons, but they need to be regularly reviewed to ensure that they do not hinder strong reciprocal engagement with our partners. Several units, including OVPR and the Foundation, have undertaken such reviews, in collaboration with internal and external stakeholders, and we recommend that the University look for additional opportunities to remove impediments to important and mutually beneficial partnerships.

Both OPE and OVPR, among others, can help identify best practices to facilitate dialogue with stakeholders and help to make such conversations a routine part of our activities. They can serve as bridges between University departments and community partners. Faculty, students, and staff who have distinguished themselves in the eyes of University peers and community stakeholders as respectful and effective partners should also be enlisted to help formulate best practices. Of course, it is important that our partners and stakeholders be actively involved as well in this identification of best practices.

Action Steps

- Review policies and procedures that have an impact on community partners and their ability to engage with the University.
- Determine how to consult with community partners and stakeholders about University initiatives, policies, and other matters in which they have a strong stake or interest.
- Create vehicles for convening more community consultations at the beginning of new research projects or educational initiatives, or when anticipated changes in policies or practices might affect adjacent communities. Mechanisms for consultations with the business community and the non-profit sector should also be robust.

“Must Do” 1

Convene community, government, and corporate partners around grand-challenges priorities

The University of Minnesota has unique credibility and capacity for convening large-scale, cross-sector discussions and collaborations. The adoption of the University’s new strategic plan presents an ideal moment to convene campus-community partnerships to address grand challenges. This will raise the University’s profile with stakeholders as a key collaborative partner, and this, in turn, will enhance our ability to realize our ambitions at the local, regional, and global level. Engaging

partners “at the front end” will build trust with stakeholders and will lead to research and teaching collaborations that harness the full power of a land-grant research institution in a vibrant and diverse metropolitan area.

The University has played such a convening role to great effect in the past. For example, in collaboration with the African American Leadership Forum, General Mills, and other lead partners, the University helped convene a series of robust community conversations about educational disparities in the Twin Cities, and that gave rise to Generation Next, a broad-based achievement gap initiative co-chaired by President Kaler and General Mills Foundation President Kim Nelson.

The University also has convened roundtables around interrelated issues related to food—food production, food safety, and the global challenge of feeding an increasing worldwide population and addressing food insecurity closer to home. These discussions—which have included stakeholders from industry, interdisciplinary faculty and staff, and diverse community partners—have been an important foundation for broadening University-community collaborations to address these challenges.

Convening broad campus-community conversations is often a catalyst for multi-sector and multidisciplinary collaborations. The University’s River Life program, for example, engages wide-ranging partners to explore issues related to the sustainability of the Mississippi River. The collaborations have included campus and community historians, scientists, geographers, environmentalists, and artists.

Convening conversations with regional stakeholders about grand challenges will illuminate important interconnections between regional issues and global grand challenges. The Minneapolis-St. Paul Regional Economic Development Partnership (Greater MSP) and other community advocacy groups are natural allies in this effort. We need to promote the multi-pronged and scalable approaches required to address complex challenges and steward synergistic partnerships grounded on both campus and community strengths.

These conversations will also offer extraordinary opportunities for students through experiential learning aligned with the grand-challenges curricular goals (see “Must-Do” 2 below). University and community stakeholders working together also will better understand how grand-challenges research and education can be matched with local, national, and international funding opportunities and priorities.

Action Step

- The president and provost should determine how best to convene broad campus-community discussions that align with the vision, goals, and opportunities identified during the strategic planning process.

“Must Do” 2

Expand community-engaged grand-challenges pathways for students

At a time when point-and-click approaches to higher education are heavily advertised and promoted, the University’s grand-challenges vision reaffirms the value of a residential, place-based

research university. As we become more fully engaged with our communities and with the most pressing and complex problems in the world, our location in one of the richest, most vital growth areas in the country gives us unprecedented opportunities to create new collaborative ventures that offer new learning and career avenues for students.

Two-way avenues not only bring students to campus from diverse communities but also have the potential to keep them reciprocally engaged with metro-area neighborhoods, organizations, and businesses. The result will be an enriched educational experience, with unparalleled internship, volunteer, service learning, and post-graduation employment opportunities in industries and organizations across all sectors of the economy, from the arts to agriculture, from health care to high finance, from high tech to high touch, from local and home-grown to global and multi-national.

This kind of engaged, on-site experiential learning, which integrates “high-touch” learning and discovery with equally high-touch real-world application, can and must be enhanced by developments in technology, but it has depth beyond the digital. A campus deeply and broadly engaged with diverse communities and industries, both locally and globally, is a place where students can develop the higher-level competencies they will need for life and work in a volatile and unpredictable 21st-century global knowledge economy—including critical thinking and problem solving, technological literacy, multicultural awareness and cultural competency, interpersonal and communication skills, creativity and innovation, teamwork and the capacity to negotiate diverse perspectives.

The expansive asset base in the Twin Cities—social, cultural, and economic—offers career and service opportunities for students across every conceivable sphere. The region’s internationally engaged businesses, small and large arts organizations, non-profits, and multifaceted communities also expose students to diverse cultures and perspectives and to the intersections between local and global issues—critical in the development of 21st-century literacies and competencies.

The University has a variety of initiatives that support community-engaged student learning in both local and global contexts. Notable examples include the Community Service-Learning Center (which partners with over 200 nonprofits in and around the Twin Cities); the GPS Alliance; and service learning activities, internships, and other experiential learning programs in colleges and departments. The Community Engagement Scholars Program (within the Community Service-Learning Center) provides structured community learning experiences that earn academic credit and recognition on students’ transcripts. All of these could be foundations for more focused grand-challenges learning and career pathways.

Action Step

- Ideally, these experiential learning pathways should be developed in tandem with the grand-challenges curricular (and co-curricular) innovations likely to be key components of the University’s grand-challenges strategy. The Provost’s Office should assist in planning to coordinate these efforts.

“Quick Win” 1

Make the benefits of engagement clear and tangible to potential community partners

The University of Minnesota needs to make evident to stakeholders—internal and external—the benefits of University-community collaborations. This has been one focus of the corporate engagement partnership of the UMF, OVPR, the Office of University Economic Development, and colleges and programs across the campus. Core strategies include developing an internal economic development network; forming working relationships with key public and private economic development agencies to identify common objectives and prioritize projects; and connecting MnDRIVE priorities to corresponding regional initiatives. Other strategies emphasize marketing, online connectivity tools, and systematic data gathering and analysis. We recommend that the University build on these efforts, adapting them appropriately to enhance our engagement with our many other categories of partners.

The University of Minnesota is a powerful regional asset for economic development and social vitality. It brings together leading scholars, researchers, and teachers in nearly every field and draws wonderful students to work with them. It produces research and creative work of high value and impact and prepares the agile thinkers and problem-solvers needed to meet the high-level workforce needs of the knowledge economy. University of Minnesota alumni play major roles in shaping an economically strong, culturally vibrant, and civic-minded state.

We don't do any of this alone. The Minneapolis-St. Paul region and the state are a tremendous asset base for the University. Our collaborations with government, businesses, and partners from our various communities invigorate our research and fuel discoveries that lead to new products, solutions, patents, and jobs. Our collaborations help inform smart policymaking and catalyze and sustain work to build thriving and creative communities.

Grand-challenges collaborations that harness a wide range of University and regional strengths have tremendous potential. For the University, working with businesses, local organizations, and communities will strengthen the relevance of research and teaching and may lead to sponsored research and technology commercialization. Such partnerships can help meet serious funding challenges and can provide developmental pathways for our students' lives and careers. For communities, organizations, and businesses, collaboration with University faculty and students will shape strategies and solutions of demonstrable benefit—whether it's improving food safety and security in Minnesota communities, operating dental clinics in rural areas, or devising transportation solutions for underserved neighborhoods.

The benefits of more narrowly focused approaches should also be made plain. Knowledge that can advance particular business innovations or improve health, specific technical assistance, increased understanding of a community or organizational issue—all are of enormous importance, and here the University's efforts through Extension and the ROCs are particularly salient models for other sectors of the University.

“Quick Win” 2

Make engagement opportunities more visible; create “front doors” for stakeholders seeking to connect with University

Potential partners sometime report frustration when trying to connect with the University of Minnesota. There is no clear and obvious point of entry. From the other side, University personnel who would like to link teaching, research, and other professional activity with external partners are sometimes unsure about how to do it. Many partnerships are established simply through individual networks, but this is not a path that works for everyone.

On- and off-campus constituencies need to learn about both opportunities for engagement and ongoing engagement work. More welcoming pathways and improved communications will not only enhance opportunities for engagement; they will also enhance our coordination and impact. Community partners are sometimes engaged with multiple University departments or units, but the University partners are often unaware of the other partnerships, and this can hinder our work.

The easier it is to connect with the University and the more transparent we are about our efforts, the more likely community partners of all types will engage with the University. This will also increase general awareness of the University’s broad reach and will help to engender additional support, goodwill, and opportunity for our institution—around the state and around the world.

Action Step

- Develop convenient and accessible entry points that fit the needs of potential partners and stakeholders. The increased focus on corporate stakeholders by the OVPR has led to development of a University Economic Development website as a “front door” of the University for business and industry looking to connect with the University for the first time. The Office for Public Engagement (OPE) should collaborate with OVPR, Extension, Office for Equity and Diversity, UMF, University development and external relations offices, and collegiate units to determine how best to develop a similar “port of entry” for additional community stakeholders, recognizing the diversity of these stakeholders and partners.

OPE is perhaps best positioned to convene a conversation among relevant university units about how better to coordinate information about engagement activities across the campus—as well as how to make it easier for faculty, students, and staff to learn about and participate in public engagement opportunities. Follow-up or parallel conversations should focus on how to advance engagement in particular areas—such as how to leverage our world-class assets of performing arts facilities, museums, galleries and libraries and increase opportunities for our faculty, students and staff to engage with communities in creative and scholarly partnerships.

Advancing Our Vision: Next Steps

To implement our vision and goals, we will:

- Continue robust conversations with the campus community, the Board of Regents, and external stakeholders about how to realize our shared vision for excellence and impact
- Establish a Strategic Planning Continuity Team (to include representatives of the Grand Challenges Research and Curriculum groups) to advise the president and provost on implementation priorities and steps
- Charge a Budget Resource Group with identifying optimal funding strategies
- Incorporate the plan into ongoing academic planning by the provost to:
 - Develop meaningful indicators for excellence in goal areas
 - Integrate into compact planning starting fall 2014
 - Connect the Twin Cities campus plan with plans of academic and administrative units
 - Advance action plans to achieve goals derived from the compact planning
 - Share successes and report outcomes

