

University of Minnesota Twin Cities Strategic Plan

Grand Challenges—Research: Identifying Grand Challenges

The Shape and Nature of Grand Challenges [Strategic Planning Report, p. 28]

Grand challenges are generally understood as the most important and complex problems facing local communities, states, nations, and the world. The grand challenges are not only deep and difficult problems, but also *multifaceted* challenges, requiring expertise and ideas drawn from many spheres and disciplines in order to be effectively addressed.

Selecting Grand Challenges That are to be Designated Institutional Priorities [pp. 28–30]

University of Minnesota Grand Challenges Should:

- Meet key criteria (outlined below)— factors that would make collaborations both transformative and strategic for the University.
- Reflect the University’s relative advantage in pursuing some challenges rather than others. All criteria should be considered; strength in some may compensate for weakness in others.
- 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.
- Have a local element—a reason it makes sense for our university to pursue it and for the policymakers and citizens of Minnesota to care about the outcome. At the same time, selected challenges should also clearly scale from local to global impact.

Key Criteria for Grand Challenges

- **Global impact and local relevance.** Should be a challenge of significant scale and complexity selected with an eye to long-term vision and expectation of globally significant results. Also must have local relevance, underscoring the U’s responsibility and commitment to produce knowledge benefiting the state and local communities.
- **Build on current faculty strength and leadership.** Should both fit and leverage existing scholarly strengths and emerge from what faculty are already pursuing, especially if faculty have opportunities to strengthen connections with faculty/students from other areas. *Grand-challenges leaders* should be chosen based on existing national and international reputations and clear evidence that their trajectory of contributions is rising.

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- **Disciplinary diversity.** Must have impact on and involve more than one academic discipline and expertise from multiple fields of knowledge. The U should take advantage of its exceptional breadth and look for opportunities to bring together diverse perspectives and methodologies.
- **Impact on the University and its reputation.** Should advance the University’s scholarly leadership in the challenge area, as well as its national and global status—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.** Should involve challenges that fundamentally draw on our institution’s research power and creative activity; that foster open, shared advances in fundamental disciplines; and that bring together basic and applied research with education, outreach, and public engagement.
- **Interconnection with education.** Should engage students in innovative and groundbreaking ways. Should centrally involve graduate and professional students, integrate with curriculum, and provide experiential and intercultural learning opportunities for undergraduate students.
- **Engagement of external constituencies.** Should capitalize on U’s location in a vibrant and diverse state and metropolitan area and on our extensive network of national and international partners.
- **Sustainability.** 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. Challenges should be evaluated based on our capacity to sustain effort over time (via grants, foundations, support from industry, state funding, University development efforts, or other sources).

Framework for Selecting Grand Challenges [Next Steps, p. 78]

Grand Challenges Research implementation team to seed potential grand challenge areas, shape an iterative process to define institutional priorities, and recommend short- and long-term research implementation steps.

The complete Strategic Plan is online at strategic-planning.umn.edu.