FIVE YEARS FORWARD

VISION & CORNERSTONES

Enhance research excellence

Advance transdisciplinary partnerships

Bringing people together in new ways, fostering discoveries and making our world a better place.

Accelerate transfer of knowledge for the public good

Promote culture of serendipity
Increase prominence of international research to advance transdisciplinary partnerships by encouraging collaborations between researchers and among disciplines to derive new concepts and approaches and enable new ways of understanding.
152 COUNTRIES

The number of countries University of Minnesota researchers collaborate in.
International Research Committee (Faculty and Staff)

Karen Brown, Interdisciplinary Center for the Study of Global Change
David Boulware, Department of Medicine
Steve Colman, UMD Large Lake Observatory
John Deen, Department of Veterinary Population Medicine
Efi Foufoula-Georgiou (co-chair), Department of Civil, Environmental, and Geo-Engineering
Michael Houston, Marketing Department
Chandy John, Department of Pediatrics
Harry Lando, School of Public Health, Epidemiology
Allen Levine, Department of Food Science and Nutrition
Meredith McQuaid, GPS Global Programs and Strategy
James D. Neaton (co-chair), School of Public Health, Biostatistics
Terry Roe, Department of Applied Economics
Peggy Sundermeyer, Office of the Vice President for Research
Charge and Action Plan

Charge (February 14, 2014)

- Review the breadth of international research at the University
- Identify short- and long-term objectives and priorities for how the university can enhance its reputation as a leader of global research
- Design a structure or model that promotes ongoing collaboration and leadership
- Recommend ways in which the vice president’s office can more effectively nurture and support international research by our faculty
- Define measurable milestones and goals

Action Plan delivered by the International Research Committee, June 24, 2014
Recommendations of the International Research Committee

Investing in infrastructure and people to facilitate international collaborations

Developing and nurturing international partnerships, including regional hubs

Identifying international opportunities and communicating rationale for focus of current and planned activities to the University research community

Advancing and expanding international partnerships through strategic investments, including seed grants for research projects
31%

The percentage of publications of University of Minnesota researchers with international researchers.*

*Scopus Database 2013
Bibliometric Study*

A comprehensive data base is expensive to build and difficult to maintain

Proxy measure to identify regions for strategic investments

Bibliometric data

Highest impact in countries where multiple colleges and campuses have research and where research has significant growth potential

*Claudia Neuhauser, Research Computing (OVPR)
The Data Bases for this Study

*Scopus* (Elsevier) and *Web of Science* (Thomson Reuters) similar results of extent of international collaborations filter to identify regions with high potential
Limitations of Data Bases

Primary focus on science, technology, engineering, and mathematics (STEM)

Limited coverage of the social sciences, the arts, and the humanities

Proprietary and therefore limited to the journals that are within the portfolio of each of the companies
  Acquisitions of journals increase the publication counts

However, the data are sufficiently robust to identify opportunities
Distribution of UMN Publications with International Collaborators by Subject Area

- Biomedical Sciences: 43%
- Physical Sciences and Engineering: 36%
- Social Sciences: 8%
- Agriculture and Biological Sciences: 3%
- Environmental Sciences: 1%
- Arts and Humanities: 9%
Method

Bibliometric data
  Number of publications of UMN authors with international collaborators by country
Subject area distribution
  Proxy for UMN college/campus participation
GDP
  Proxy for growth potential
Correlation between number of publications and GDP
  Identifying opportunities

Clustering the data yielded four country groups
Four Country Groups

Group I: long-standing collaborations
across large number of UMN colleges/campuses
multiple universities and organizations

Group II: recent collaborations
growing number of UMN colleges/campuses
emerging economies
unpredictable economic growth

Group III: recent collaborations
growing number of UMN colleges/campuses
emerging economies
more predictable economic growth

Group IV: emerging collaborations
very few academic units
CERN collaboration dominates
Distribution of Author Attribution by College

Scopus 2010-14
Distribution of Authors across Colleges and System Campuses

Kenya, Tanzania, Uganda: Authors

South Africa: Authors

Scopus 2010-14
### Opportunities

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<th>Country</th>
<th>2001-10</th>
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<th>2021-30</th>
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#### Publication-GDP Relationship: 2000-2014

- **Uganda**
- **Tanzania**
- **Kenya**
- **Peru**
- **Chile**
- **Singapore**
- **Hong Kong**
- **South Africa**
- **Argentina**

- **0.00** GDP
- **600.00** GDP
- **0.00** Number of Publications
- **70.00** Number of Publications

The graph shows the relationship between GDP and number of publications for different countries over the years 2000 to 2014.
STRATEGY

Invest in regions with high growth potential and diverse set of existing research collaborations

- Build on existing collaborations and strategic alliances
- Expand research capacity
- Nurture partnerships
- Build 3-way partnerships: UMN-MN Industry-Foreign Country Industry/University
IMPLEMENTATION PROPOSAL

Bringing together University of Minnesota researchers who collaborate in a geographic region with those who are interested in expanding their opportunities to that region and providing seed funding for enhancing collaborations

Building capacity through providing access to core research infrastructure to collaborators in foreign countries

Facilitating conferences/workshops that bring in leaders from target regions, Minnesota industry, and funding agencies/philanthropy to develop relationships for University of Minnesota researchers to build on
LEVERAGING EXISTING RESOURCES

OVPR Offices
  SPA, OTC, UED, Centers and Institutes
Provost Office
  GPS Alliance Services: Global Operations
  Expanding academic partnerships, student exchanges, recruiting of international students
  Graduate School: Fulbright fellowships
  Collaboration with ISSS
VP for Health Sciences
  Global Health and Social Responsibility
OIT
  Facilitating virtual environments
QUESTIONS

− What can OVPR do to help you build your international research?
− Apart from funding and/or infrastructure needs, what are biggest hurdles to conducting international research?
− How interested are you in building international collaborations with Minnesota industry? What does such support look like?
− How can we help you find collaborators in other countries?