



UNIVERSITY OF MINNESOTA

Driven to DiscoverSM

MnDRIVE

Minnesota's Discovery, Research, and InnoVation Economy

Report on MnDRIVE initiative to Minnesota State Legislature

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Background

MnDRIVE — Minnesota's Discovery, Research, and InnoVation Economy — is a landmark partnership between the University of Minnesota and the State of Minnesota that aligns areas of University research strength with the state's key and emerging industries to address Minnesota's challenges and build on its strengths.

Beginning in FY2014, the state began investing approximately \$18 million annually in four research areas identified by University faculty and deans and corporate partners as the most promising areas for partnership: Robotics, Sensors, and Advanced Manufacturing; Global Food Ventures; Advancing Industry, Conserving our Environment; and Discoveries and Treatments for Brain Conditions. The University of Minnesota Informatics Institute (UMII), which fosters and accelerates data-intensive research, receives partial funding from MnDRIVE and provides key support to these projects.

In its 2017 session, the Minnesota Legislature passed additional funding (\$4 million annually) for a MnDRIVE cancer initiative, Cancer Clinical Trials. This new initiative did not begin until FY2018, however, so its progress is not contained in this report.

MnDRIVE represents a unique, collaborative research model involving interdisciplinary research projects across the University that address grand challenges and include industry partnerships as a key component. University of Minnesota's Office of the Vice President for Research (OVPR) provides accountability measures for the initiative and regularly highlights the program's impact and accomplishments. Each of the original four research areas have committees and advisory boards to oversee project implementation and outreach.

In addition to funding research and collaborative activities for each of the four areas, OVPR initiated a Transdisciplinary Research Program intended to inspire creativity and encourage transdisciplinary research with real world impact. The twelve projects ranged from creating wearable electronics to reducing sulfate in Minnesota watersheds, and each principal investigator reported to OVPR every six months as well. These projects were funded in 2014 with two-year grants.

Metrics & Results

During the second biennium of MnDRIVE funding (July 1, 2015 through June 30, 2017 covering fiscal years 2016-2017), OVPR worked with principal investigators of each of the four MnDRIVE areas and the 12 Transdisciplinary projects to gather data every six months. OVPR requested information on:

1. Number of people hired
2. MnDRIVE project titles
3. Invention disclosures to UMN Technology Commercialization
4. Funding acquired from external grants (e.g., NSF, NIH, USDA, corporate funding)
5. Number of students graduated
6. Success stories resulting from MnDRIVE research and participation

During Fiscal Years 2016-2017

- MnDRIVE funded over 190 projects, involving over 900 researchers in 121 departments, 22 colleges, and three campuses (Twin Cities, Duluth, and Morris).
- To conduct this research, MnDRIVE researchers hired 356 people, including 11 new faculty and 14 staff and technicians necessary to carry out the work.
- MnDRIVE researchers competed for and received more than \$194 million in external funding, and submitted 188 disclosures for inventions to UMN Technology Commercialization.
- 49 MnDRIVE-supported students graduated, with 100 percent employment after graduation. (Learn more about MnDRIVE at mndrive.umn.edu.)

Success Stories

The Udall Center for Excellence in Parkinson's Research was awarded to the University by the National Institutes of Health in 2016, one of nine such centers across the country. The center is bringing together a world-class team of researchers across neuroscience, imaging, and medical device technologies to discover and refine deep brain stimulation treatments for this debilitating movement disorder. MnDRIVE support for brain conditions research set the stage for attracting this important center.

New MnDRIVE faculty initiated an industry collaboration with NovaCentrix, the industry leader in photonic curing tools for next generation flexible printed circuits in electronic devices.

Beginning in 2016, deep-winter greenhouse prototypes were designed and built in five communities across greater Minnesota: Finland, Bemidji, Pillager, Madelia, and Lake City. The MnDRIVE-supported initiative aims to provide access to fresh, local greens for more Minnesotans year-round.

MnDRIVE funds supported developments of a nanoparticle-infused sponge that can clean mercury out of polluted water. The sponge holds great promise for cleaning up polluted lakes, and University of Minnesota researchers are creating similar technologies for other contaminants.

Report Preparation Costs

Per the requirements set forth in Minnesota Statue 3.197, the cost to prepare this report was \$1,235.