



UNIVERSITY OF MINNESOTA

Driven to DiscoverSM

DISCOVERY ILLUMINATES THE ROBOT REVOLUTION.

MnDRIVE: Robotics, sensors, and advanced manufacturing

GOAL

Leverage the U's integrated research and education strengths in fields related to robotics and intelligent systems to establish Minnesota as a hub for the robotics, sensors, and manufacturing industries

RATIONALE

- Existing strengths in local industry (e.g. Honeywell, Robotics Alley) coupled with the U's tradition of excellence in STEM disciplines and vibrant interdisciplinary collaborations make Minnesota well positioned for economic opportunity
- High-paying robotics jobs have grown 29% yearly—and the growth is accelerating
- The economic impact of robotics is projected to be similar to that of personal computing

STRATEGIES

- Hire faculty in three key areas:
 - » Miniature robots: intelligent/autonomous land, water, and aerial vehicles; search, rescue, and monitoring systems
 - » Industrial applications: robotic systems for the operating room; virtual design and simulation of medical devices; pneumatic and hydraulic based systems
 - » Human-robot collaboration and human performance augmentation
- Develop collaborative lab space
- Engage K-12 students
 - » Robotics is one of the most effective means for engaging K-12 students in STEM disciplines (science, technology, engineering, mathematics)
 - » Robotics is a powerful platform for training students in design and systems integration in engineering and computer science

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STATEWIDE OUTCOMES

Short-term

- Produce more master's and PhDs to drive Minnesota's robotics-related industries
- Increase the U's competitive advantage in receiving federal research funds (e.g., the president's National Robotics Initiative)

Long-term

- Produce more high paying robotics-related jobs in the state
- Grow a new high-tech industry cluster in Minnesota to complement the diminished computer industry and maturing medical devices cluster