



Enhancing education.



The Centers of Excellence are helping to enhance education at every level — from K-12 through postsecondary and beyond.

For Middle and High School educators we provide:

- Career camps and industry tours
- Mobile classrooms and trailers
- STEM curriculum and career-preparedness
- Educate the Educator courses, camps and online training

For Post Secondary educators:

- Grants and industry resources to enhance current curriculum, meeting industry and student career placement objectives
- Licensing and certification help
- Strategies for increasing enrollment in specific programs

For workplace and workforce training center educators, we offer career paths and options that:

- Allow current employees and job seekers to gain the skills, credentials, and degrees that can lead to higher earning power
- Can be used to onboard new employees, apprentices, interns and work-study candidates

For more information, visit minnstate.edu/coe.



MINNESOTA STATE

Transportation Center of Excellence

Inter-College Collaboration: How a \$7 million ATE grant was won

There's no doubt that autonomous technologies are going to revolutionize the way people live, work, travel, and learn. The question is who's going to train and educate a workforce that can develop, manufacture and operate those emerging autonomous technologies?

Recognizing that community and technical colleges are the major sources for technician education in the U.S., the National Science Foundation has created more than 40 Advanced Technology Education (ATE) centers over the last 25 years.

When ATE announced it was forming a National Center for Autonomous Technology (NCAT) in July, Northland Technical and Community College's Aerospace Site in Fergus Falls was a natural choice.

Jon Beck, principal Investigator for the new center has been driving innovation in autonomous technology at Northland for more than ten years. In addition to developing and teaching in Northlands DRONETECH program, he is also program manager for Northlands Aerospace Site.

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“It’s not just drones,” says Chris Hadfield, executive director of the Minnesota State Transportation Center of Excellence who worked closely with Beck to write the grant and is serving as a co-principal investigator. “In addition to unmanned aircraft programs, Minnesota State has cutting-edge technical programs for connected vehicles and unmanned heavy equipment.”

A system built for collaboration

Minnesota State is the third-largest system of two-year colleges and four-year universities in the United States, and consists of 30 colleges, 7 universities, and 54 campuses. Hadfield and his transportation team provide the connective tissue between the transportation educators who offer 68 transportation programs at 33 Minnesota State campus and industry partners willing to support and advise curriculum development and outreach initiatives for students.

“It was a collaborative effort to win the grant and it will take ongoing collaboration to fulfill its potential,” said Hadfield.

Benjamin F. Richason III, PhD., executive director of another Minnesota State-based ATE Center — the Spatial Analysis Research Center at St. Cloud State University — is also serving as a co-principal investigator for NCAT.

The only one of the five principal and co-principal investigators for NCAT who is not employed by a Minnesota State college, is Jill Zande, executive director of the Marine Advanced Technical Education, (MATE), an ATE center hosted at Monterey Community College.

National ATE Partners

In addition to the MATE program in California, the NCAT team will be partnering with and building on the work of other ATE Centers, including the National Geospatial Technology Center of Excellence at Jefferson Community and Technical College in Louisville, KY and Center for Advanced Automotive Technology (CAAT), at Macomb Community College in Michigan.

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A leader in helping educate Transportation educators

One of the specific objectives of the NSF grant is to “design, develop, coordinate, and implement specialized and collaborative autonomous technology workshops for educators and industry.”

Minnesota had an advantage in that the Midwest Teachers of Transportation & Industrial Areas (MTTIA) has been hosting an annual conference for the last eight years where high-school and college educators can earn continuing education credits while staying current with the latest technologies.

Hadfield credits Shannon Mohn, an automotive instructor at Minnesota State Community and Technical College who organizes the annual conference for MTTIA’s success in attracting industry sponsors and participants.

“Shannon connects with employers who understand that without access to the latest technologies, educators can’t help students learn the skills they’ll need to launch their careers — and the importance of continuing education for long-term success,” explained Hadfield.

An existing infrastructure for inspiring students about STEM careers

From Nitro-X camps for middle school students, to transportation career exploration trailers available to schools and career fairs, to scholarships and apprenticeships offered by industry leaders, the Minnesota State Transportation Center of Excellence has been at the forefront of promoting the development of STEM skills and transportation careers to K-12 and post-secondary students.

“In two years, 60% of all new vehicles will have autonomous technology components,” said Hadfield. The NCAT will create the infrastructure to develop skilled technicians and build the workforce to meet industry demands — now and into the future.”