

Contact: Rachel Boon

**REQUEST FOR NEW CENTER AT THE UNIVERSITY OF IOWA:
DRIVING SAFETY RESEARCH INSTITUTE**

Action Requested: Consider approval of the request by the University of Iowa to create the Driving Safety Research Institute in the College of Engineering.

The Council of Provosts and Board office support approval of this request.

Background: The proposed Driving Safety Research Institute (DSRI) [currently the National Advanced Driving Simulator (NADS)] has been an academic and industry leader for three decades in the field of driving safety research. The proposed transition of NADS to a broad-based research institute will better represent interdisciplinary capabilities, expand access to funding opportunities, and help make roads safer. In the past decade, over \$27 million in funding for on-road research studies has been obtained. The proposed institute has a fleet of five on-road research vehicles, all instrumented with data collection equipment to run studies; four of these vehicles have advanced automated technologies. Additional activities include outfitting of other vehicles (such as participants' tractors) with equipment. While the need for simulation remains strong, this field of research is becoming even more essential in two key emerging areas: 1) automated vehicle technology and its implementation, and 2) increasing cannabis legalization and usage. The proposed institute specializes in research efforts in these key areas with the goal of: 1) ensuring the safe implementation of automated vehicles on roadways (first in the nation to openly provide data on the performance of automated vehicles on rural roadways), and 2) understanding the effects of impaired drivers' performance and how to measure those effects.

Need for proposed center. The proposed institute is an interdisciplinary research organization that collaborates with virtually every college on campus. DSRI would formalize these varied research collaborations occurring across campus all around the theme of driving safety. A new institute will take the university to a new level of competitiveness and attract even more researchers, industry, and students to come to the institute to take driving safety to new heights.

Activities and objectives of proposed center. The umbrella theme for the institute is driving safety research, with branches including driving simulation and instrumented vehicles/naturalistic driving. Distinct programs include automated driving technology, human factors/behavior, engineering modeling, and impaired driving. The miniSim program is also its own business unit, producing and selling custom driving simulators to organizations around the world, in addition to supporting the distinct academic areas of research just mentioned. The proposed institute's mission is to make roads safer by researching the connection between humans and vehicles.

Relationship to mission and strategic plan. With support from the proposed institute's advisory board, a five-year strategic plan was developed that aligns with the College of Engineering and UI strategic plan priorities. The proposed institute's current strategic goals include:

- Conduct highly impactful research
- Grow sustainable programs and partnerships
- Advance the institute's capabilities
- Build the brand of the institute
- Align with university and collegiate strategies

Robust community outreach activities are embedded within all the institute's strategic goal areas.

Relationship to other centers/institutes at the university. NADS has collaborated with nearly every academic college at the University of Iowa on driving research, including the Colleges of Engineering, Liberal Arts and Sciences (Departments of Chemistry, Computer Science, and Psychology, among others), Law, Business, Education, Medicine, Pharmacy, Public Health, Dentistry, Nursing, and the Graduate College. Health sciences partnerships are expanding from fitness to drive research in neurology, nursing and ophthalmology. In addition, NADS is currently in the planning phases of a clinical trial on the effects of long-COVID symptoms on driving performance, while a long-standing partnership with the College of Pharmacy continues to be essential to drugged driving research. Other research partnerships across campus include: crash avoidance system development (Department of Industrial and Systems Engineering), machine learning and computer graphics (Department of Computer Science), legal aspects of automated driving (College of Law and Department of Philosophy), patient access to health care through alternative transportation (Colleges of Dentistry and Medicine), complex data analytics (Departments of Biostatistics and Business Analytics), distributed simulation (Department of Computer Science), child bike rider judgement and decision making (Department of Psychology and College of Public Health), and advanced driving assistance system education (College of Education), among many others. The proposed institute would carry-on these collaborations.

Relationship to centers/institutes at other universities in Iowa and potential for collaboration. Iowa State University's Institute for Transportation (InTrans) focuses on transportation from an infrastructure perspective, while the proposed institute's focus is on driving safety from the human behavior and vehicle safety system perspective. Respective areas of focus will continue to complement each other, as they have done in the past. Please refer to the letter of support from the InTrans Director, Shauna Hallmark.

Resources, facilities and equipment required. Currently there are 27 full-time staff, one full-time faculty member (director, Professor Dan McGehee), six temporary staff, and 12 students (undergraduate and graduate) employed with NADS. The facility that NADS currently occupies at the Oakdale campus was completed in 2000, so an expanded facility will not be required to establish an institute.

Expected funding sources. No new funds are needed to establish the proposed institute. Current annual costs and sources of funds are listed below.

	SOURCE(S) OF FUNDS	TOTAL ANNUAL COSTS
Year 1	College/Department Allocations & Operations Revenue Grants/Contracts	\$2,200,000 \$4,500,000
Year 2	College/Department Allocations & Operations Revenue Grants/Contracts	\$2,200,000 \$5,000,000
Year 3	College/Department Allocations & Operations Revenue Grants/Contracts	\$2,200,000 \$5,000,000
Year 4	College/Department Allocations & Operations Revenue Grants/Contracts	\$2,200,000 \$5,500,000
Year 5	College/Department Allocations & Operations Revenue Grants/Contracts	\$2,200,000 \$6,000,000

Evaluation plan. The center will be reviewed according to requirements of funders as well as the university standard review processes for centers and institutes.

Date of implementation. Upon approval by the Board of Regents.

IOWA STATE UNIVERSITY

Institute for Transportation

August 15, 2022

Prof. Dan McGehee, Director
National Advanced Driving Simulator
University of Iowa
Via email

2711 S. Loop Drive, Suite 4700
Ames, IA 50010-8664
515-294-8103
FAX 515-294-0467
www.InTrans.iastate.edu

Re: New Driving Safety Research Institute proposal

Dear Dan:

Thanks for the call yesterday. I was happy to hear that you are proposing a name change to a broader institute. The NADS name has always limited the broad array of research that you do at the state, national and international level. We have admired the large interdisciplinary research program in human factors and driving safety that touches virtually all disciplines at the UI. We very much support this change as it will help us collectively be more competitive.

We have a unique relationship in our state—where we collaborate to create a unique complementary research program that touches Iowans first, the nation, and then the world. Many states have competing intrastate colleges of engineering. I do not see our two institutes as overlapping, rather this will create a second and very complementary institute in Iowa. Having ISU's Institute for Transportation academic and application-based research more broadly focused on infrastructure engineering and your programs focusing on driver and vehicle safety creates the perfect team. I know that you appreciate as I do that we can work with the Iowa DOT or other funding agencies together to bring additional resources to Iowa rather than as competitors.

The creation of a Driving Safety Research Institute will formalize what you and your team have been doing for many years—providing a broad collaborative organization in the state that facilitates important driving safety research that saves lives. Together we can take our research to new heights. I fully support your efforts to transition to a research institute.

Best wishes for the new institute,



Shauna L. Hallmark
Director of the Institute for Transportation at Iowa State University
Paulsen Professor in Civil, Construction, and Environmental Engineering