

## SUSTAINING MEMBER

# UNIVERSITY OF WYOMING

The University of Wyoming has a dynamic, robust and growing research engine that serves to drive economic growth for the State of Wyoming and its citizens.

UW became a sustaining member of NAI in 2024, and currently has two NAI Fellows: Dr. Maohong Fan, Professor of Chemical and Biomedical Engineering and Energy and Petroleum Engineering, and Dr. Michael Pishko, Dean of the College of Engineering and Applied Science.

With more than \$167M in research expenditures and \$2M in internal seed grants to UW faculty last year, UW is helping drive increases in research, innovation, and new business development. UW is one of the top universities in number of patents issued per 100 faculty members (UW had 16 patents issued in FY 2024).

Last year UW became officially designated as an Innovation and Economic Prosperity (IEP) institution by the Association of Public and Land Grant Universities. UW was also selected for the 2023 cohort of the Program to Enhance Organizational Research Impact Capacity (ORIC), joining seven other distinguished universities. ORIC is led by the Center for Advancing Research Impact in Society (ARIS).

As an example of the university's efforts to drive growth through innovation, UW became just one of 18 institutions nationwide selected this past year to receive \$6 million grant from the National Science Foundation awarded to UW by the Technology and Innovation Partnerships Directorate under its Accelerating Research Translation (ART) program. This grant is being used to promote translational research, reengineer the UW technology transfer office, and foster a culture of innovation and commercialization. Four UW faculty members working on three separate projects received funding from the ART grant. Professors Po Chen, Debasish Dutta and co-PIs John Oakey and Cynthia Weinig.

Dr. Chen's project on "Full 3D-Tomography (F3DT) Software" has potential applications in nondestructive ultrasound testing, ultrasound medical imaging and seismic analysis. F3DT has superior capabilities over current techniques because it captures multiple types of physical properties coupled with better spatial resolution. Funding for this project will result in faster data capture, improved spatial resolution, and an improved graphical user interface to make the software more commercially viable. Dr. Chen is an associate professor of geology and geophysics at UW.

Dr. Dutta's project involves a method for analyzing results of human nasal test swabs using a "Lateral Flow Immunoassay device." The proposed device would potentially improve accuracy of conventional Rapid Influenza Diagnostic Tests (RIDTs) by a couple orders of magnitude. It employs a dissolvable substrate that doesn't require as much liquid for analysis due to an improved novel sensor. Dr. Dutta is a UW chemistry professor.

The funded project by Dr. Weinig, a UW botany professor, and Dr. Oakey, UW professor of chemical and biomedical engineering, explores the feasibility of using hydrogel plant growth substrates with intact microbiomes in controlled environment agriculture (CEA). The use of sterile rockwool mats is common as a plant growth substrate but lack a critical biotic component that would enhance plant growth. The proposed microbiome growth substrate employs proprietary hydrogel particles or spun fibers to enable plant-microbiome interactions in the root zone that anchor the microbiome and enhance plant growth.