

Government-University-Industry Research Roundtable April 2023 Webinar

The New Era of Digital Precision Agriculture

Abstract:

The Government-University-Industry Research Roundtable will convene a webinar to discuss the latest technological advances, and related challenges, in agriculture to meet the increasing demands of global food supply. The automation and [digitization of production agriculture](#) continues to create opportunities for large-scale societal and commercial benefits.

During this webinar, Dr. John Reid, Research Professor of Computer Science/Ag and Bio Engineering at University of Illinois Urbana-Champaign; and Mark Moran, Head of the John Deere Technology Innovation Center and Lead of the Advanced Sensing team for John Deere's Intelligent Solutions Group, will speak about the future of autonomous farming along with the use of artificial intelligence for agriculture productivity and crop management. They will also share perspectives on the skills and capabilities needed for the future agricultural workforce.

Speaker Biographies:



Mark Moran is the Head of the John Deere Technology Innovation Center located in the University of Illinois Research Park in Champaign, Illinois. In Mark's 20-plus years at John Deere, he has had a wide range of roles in IT Operations, Enterprise Architecture, Advanced Marketing, Advanced Manufacturing and Advanced Engineering. In all of those roles, he has been focused on how Information & Communication Technology can both transform and disrupt enterprises like John Deere. Before joining Deere, Mark was a civil engineer focused on airport construction.

Mark sits on the External Advisory Council for the University of Illinois Ag & Bio Engineering Department. He also sits on the Industry Advisory Boards for three NSF ERCs: IoT4Ag, AIFarms, and SoilTech. He is also an industry member of the Government-University-Industry Research Roundtable.

Mark holds a BS in General Engineering from the University of Illinois, an MBA from the University of Iowa, and an SM in System Design & Management from MIT. He is currently a PhD candidate at the University of Illinois.

Mark, his wife Lori, and their three dogs live in Urbana, Illinois. They have two adult daughters, a son-in-law, and two grand dogs.



Dr. John Reid is a Research Professor in Computer Science and Ag & Bio Engineering, and he is an affiliate in the Center for Digital Agriculture. Reid has more than 35 years of highly accomplished technology leadership experience in industry and academia. From 1986-2000, he served on the faculty at the University of Illinois where his research focused on sensing, automation, and control of food and agricultural systems. He then spent 19 years with Deere and Company where he initiated the development of enterprise field robotics capabilities. He has experience in innovation management having served as Director, Enterprise Product Innovation and Technology for 14 years. In

2017 he was recognized as John Deere Technical Fellow for his contributions in Technology Innovation. From 2020-2022, he was Vice President of Enterprise Technologies for Brunswick Corporation.

Reid received his B.S. and M.S. degrees in Agricultural Engineering from Virginia Tech. Reid received his PhD in Agricultural Engineering from Texas A&M University where his dissertation topic was automatic tractor guidance via computer vision. His research interests have broadly focused advancing agricultural and biological systems through advance sensing, automation, and control. He and his collaborators have produced more than 30 patents in these research areas.

Dr. Reid's external leadership includes Chairmanship of the Innovation Research Interchange from 2018-2019, serving on Board of Directors of Fraunhofer USA from 2013-2022, and Dr. Reid is a full member of the Club of Bologna, a global taskforce for the development of strategies for agricultural mechanization. Awards include University of Illinois University Scholar (1995), ASABE Fellow (2004), and John Deere Fellow (2017) and Virginia Tech Academy of Engineering Excellence (2020). Dr. Reid was elected to the National Academy of Engineering in 2019 for contributions to automation in agriculture.