



10/10/2016

Data Science in Agriculture Summit

Changing the Face, Place, and Space
of Agriculture



**Big 10 Conference Center
Rosemont, Illinois**



Data Summit: Changing the Face, Place, and Space of Agriculture

Agenda

7:30 **Registration check-in, refreshments**

8:00 **Welcome and Opening Remarks**

Sonny Ramaswamy

Director, National Institute of Food and Agriculture

8:30 **Keynote**

Data Unleashed: Visualizing the Future of Agriculture, Health, and Future Generations

Krijn Poppe, Research Manager, Wageningen Economic Research, The Netherlands

9:00 **Exploring Anticipated Data Benefits and Opportunities**

Moderator: Norm Scott, Cornell University

Models for Big Data and Genomics

Pat Schnable, Distinguished Professor and Endowed Chair in Genetics, Iowa State University

Smart and Connected Communities: Innovating Cities of the Future

Daniel Hoffman, Chief Innovation Officer, Montgomery County, Maryland

Benefits toward Modeling Climate and Environment Effects on Food Security

Kenneth Boote, Professor Emeritus, University of Florida

Discussion

10:00 Break

10:15 **Human Elements of Agricultural Data: Connecting People with Data**

Moderator: Dave Weatherspoon, Michigan State University

Insight from Data and Analytics

Holly J. Falk-Krzesinski, VP for Strategic Alliances in Global Academic Relations, Elsevier

Creating Opportunities for the Future Workforce

Richard Freeman, Herbert Ascherman Professor of Economics, Harvard University

Discussion

11:00 **Exploring Potential Challenges in Data Application and Management**

Moderator: Molly Jahn, University of Wisconsin

Understanding Interconnected Systems

Rabi Mohtar, TEES Endowed Professor, Texas A&M University



Identifying Research Strategies Using Bibliometric Databases
Dick Klavans, Founder and Chairman, SciTech Strategies

Data Challenges as Seen Through the Public Lens
Keith Coble, Department Head & W.L. Giles Distinguished Professor of Agricultural Economics Mississippi State University

Discussion

12:00 **Organize for Afternoon Charge**

12:15 Lunch

1:00 **Breakouts: Identifying Opportunities for Agricultural Science to Advance Data-Driven Public Goods**

1:00 **Ag Need Opportunity Questions**

Group 1 – What are the most promising opportunities for data-driven advances in agriculture and the food-production system?

Group Leader: Ashim Datta, Cornell University

Group 2 – What are the most promising opportunities for enhancing cross-sector advances in data applications?

Group Leader: Reginald Fletcher, U.S. Department of Agriculture, Agricultural Research Service

Group 3 – What are the most promising opportunities for data-driven advances to address societal well-being and consumer demands?

Group Leader: Elizabeth Kiss, Kansas State University

2:15 **Breakout Group Reports**

2:45 Break

3:00 **Data Science Enabling Questions**

Group 4 – What are the most promising opportunities to address challenges of various facets of data management and application?

Group Leader: John McNamara, Washington State University

Group 5 – What are the most promising opportunities to ensure future generations of data expertise?

Group Leader: Mary Emery, South Dakota State University

Group 6 – What are the most promising opportunities for big data in communication, property rights, and communities?

Group Leader: Pankaj Jaiswal, Oregon State University

4:15 **Breakout Group Reports**

4:45 **Summary**

5:15 **Closing Remarks**

5:30 **Adjourn**



Biographies

Speakers



Dr. Sonny Ramaswamy

Director, National Institute of Food and Agriculture, USDA

Dr. Sonny Ramaswamy was appointed by President Barack Obama as director of the National Institute of Food and Agriculture (NIFA), which provides funding to catalyze transformative discoveries, education, and engagement to solve societal challenges. Previously, Sonny held a number of academic positions, including: dean of Oregon State's College of Agricultural Sciences; director of Purdue's Agricultural Research Programs; university distinguished professor and head of Kansas State's Entomology Department; and professor of entomology at Mississippi State. Sonny has been a successful scientist, educator, and administrator and has published more than 150 journal articles, book chapters, and a book; his research has been supported by a number of federal agencies. Sonny has received a number of awards and honors, including being named *Fellow of the American Association for the Advancement of Science* and *Fellow of the Entomological Society of America*.

Krijn J. Poppe

Wageningen Economic Research of Wageningen University and Research

Krijn is involved in the management of several large, multidisciplinary research projects for the EU. From 2009 – 2011 he worked part-time as Chief Science Officer for Agro-Chains and Fisheries at the Dutch Ministry of Economic Affairs, Agriculture and Innovation. This was an advisory role on the use of science in policy making and on identifying future research needs of the Ministry. Krijn J. Poppe is Honorary Secretary-Treasurer of the EAAEP Foundation that publishes the *European Review of Agricultural Economics*. He was Secretary-General of the European Association of Agricultural Economists for 12 years (1999-2011). He chairs the Steering Group of the journal *EuroChoices* and chairs the foundation eRNAC on research concerning cooperatives. Krijn J. Poppe is a member of the Province of South-Holland's Advisory Committee on the Quality of the Living Environment. He has been a non-executive director of the Dutch cooperative Nautilus (active in organic vegetables), is a member of the board of the Foundation SKAL (that certifies organic businesses) and co-owns a small arable family farm in Flevoland, Netherlands.



Pat Schnable

Distinguished Professor, Iowa State University

Patrick S. Schnable holds an endowed chair in genetics and is an endowed scholar in agricultural entrepreneurship. Schnable directs ISU's Plant Sciences Institute and serves as the founding director of ISU's Center for Plant Genomics. He is also a Chang Jiang Scholar Professor at China Agriculture University in Beijing. Schnable received his BS from Cornell University and was awarded a PhD in Plant Breeding and Genetics from Iowa State University. Prior to his faculty appointment, Schnable conducted post-doctoral research at the Max Planck Institute for Plant Breeding in Köln, Germany.



Daniel Hoffman
Montgomery County's Chief Innovation Officer



Daniel is responsible for creating and maintaining strategies and programs that generate innovative ideas in Montgomery County. The programs he oversees seek to improve service delivery effectiveness and efficiency and facilitate economic development in the county. Prior to joining Montgomery County, Dan served as a senior project manager in the Business Process Improvement and Application Development division at the US Nuclear Regulatory Commission. While there he worked on a broad range of projects including process and technology projects related to new reactor construction and information management. Prior to his time with the Nuclear Regulatory Commission he was a consultant with PricewaterhouseCoopers where he played key roles on technology and business process projects with clients, such as Inter-American Development Bank and the US Treasury Department. Dan is a graduate of the 2013 class of Leadership Montgomery and serves on the Board. He is also a past member of the Board of Committee for Montgomery and currently serves as the Co-Chair of the Montgomery County Food Council. Dan Hoffman holds a Bachelor of Science degree from The George Washington University and a Master’s degree in Strategic Human Resources and Organization Development from Johns Hopkins University.



Kenneth Boote
Professor of Agronomy, University of Florida

Dr. Boote specializes in measuring and modeling crop response to climatic factors. He earned his Ph.D. in Crop Physiology from Purdue University. At the University of Florida, he has conducted studies evaluating responses of rice, soybean, peanut, sorghum, maize, dry bean, and forages to temperature and carbon dioxide levels. With Agricultural Engineers, he has developed process-based crop simulation models for soybean, peanut, and dry bean, as part of the well-known DSSAT family of crop models. He is active in crop modeling projects particularly AgMIP, Agricultural Model Improvement and Intercomparison Project, for which he is Co-Coordinator - Crop Modeling, where he advises scientists on multi-model intercomparison, crop model testing and improving of models for response to climate change. He is active on grants funded by NSF, ICRISAT, IFPRI, and CIMMYT aimed at using crop models for genetic improvement and for linkage to genetics. He is Fellow in AAAS, ASA, and CSSA.

Holly J. Falk-Krzesinski
Vice President of Global Academic & Research Relations, Elsevier



Holly previously served as Director of Research Team Support & Development at Northwestern University. Her interests focus on translating empirical research findings about team science into evidence-based effective practices. As chair of the Annual International Science of Team Science Conference, she has been instrumental in developing a strong, interdisciplinary community of practice. Falk-Krzesinski earned a B.S. in biological sciences with a chemistry minor from the University of Illinois at Chicago. She holds a Ph.D. in microbiology and immunology from Loyola University of Chicago and a certificate in nonprofit management from the Kellogg School of Management at Northwestern.



Richard B. Freeman
Herbert Ascherman Chair in Economics, Harvard University

Richard is currently serving as Faculty co-Director of the Labor and Worklife Program at the Harvard Law School, and is Senior Research Fellow in Labour Markets at the London School of Economics' Centre for Economic Performance. He directs the National Bureau of Economic Research / Sloan Science Engineering Workforce Projects, and is Co-Director of the Harvard Center for Green Buildings and Cities.

Rabi Mohtar
TEES Endowed Professor, Texas AM University.

Rabi is a Founding Director of Qatar Environment and Energy Research Institute (QEERI), a member of Qatar Foundation, Research and Development and the Founding Director of Strategic Projects at Qatar Foundation Research and Development. He was also the inaugural Director of the Global Engineering Programs at Purdue University, West Lafayette, Indiana.

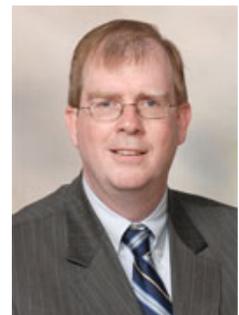


Dick Klavans
Founder and Chairman, SciTech Strategies Inc

Dick Klavans has published extensively on the art and science of science mapping (visual representations of the communication patterns among researchers). He has created these maps for research planning in industry (Abbott Labs, Astra Zeneca, Dupont, Glaxo, Kellogg, Kraft, SmithKline Beecham and Unilever), government agencies (DOE, NSF, NIH and IARPA) and over 20 universities. His most recent research initiatives are in accurately measuring research strengths and predicting hot topics. His educational background includes an engineering degree from Tufts, a masters degree from Sloan/MIT and a PhD from Wharton/U Penn.

Keith Coble
A W.L. Giles Distinguished Professor of Agricultural Economics, Mississippi State University

Keith Coble holds teaching, research, and extension appointments. His work focuses on risk management, agricultural and food policy, renewable energy, climate, insurance, and experimental economics. Coble has analyzed how farmers can use risk management tools such as futures contracts, crop insurance, and federal commodity programs. Work in renewable energy focuses on the federal policy for renewable energy and economic feasibility of renewable energy. He has testified before Congressional Committees and has co-authored over fifty reports for government agencies. His insurance analysis and studies have modified several billion dollars of U.S. crop insurance premiums per year. Coble currently serves on the Council on Food, Agricultural and Resource Economics' Blue Ribbon Panel of Experts who provide guidance about matters of significance to policy makers.





Group Leaders



Ashim Datta
Professor, Department of Biological and Environmental Engineering, Cornell University

Ashim is interested in the physics of food processes; in particular, how increased efficiency and competitiveness in food production, processing, and equipment design can be obtained from physics-based models of food quality and safety. His research group develops mechanistic understanding of process, quality and safety for complex food processes, under various heating modes (such as microwave and infrared), with a goal to improve food safety and quality.

Mary Emery
Professor and Head of Sociology and Rural Studies, South Dakota State University



Dr. Emery works on a variety of initiatives related to rural and community development including using the Community Capitals Framework in evaluation and program planning. She also teaches in Great Plains IDEA transdisciplinary multi-university online Master’s Degree in Community Development. She has worked in a variety of community and economic development projects across the US and internationally.



Reginald Fletcher
U.S. Department of Agriculture, Agricultural Research Service

Dr. Fletcher is a Research Agronomist with USDA-ARS in Stoneville, MS. He has over 17 years of experience in using remote sensing, geographic information system, machine learning, and global positioning system technologies for detecting, mapping, and monitoring disease and invasive plant infestations of agricultural areas and natural systems. Dr. Fletcher has also gained notoriety for his creativity in assembling multispectral camera systems and using the systems to address agricultural issues. His research findings have been published in refereed journals and proceedings.

Pankaj Jaiswal, Associate
Professor, Oregon State University



Dr. Jaiswal is a professor at Oregon State University. His research lab (The Jaiswal Lab) has projects on Plant Systems Biology, Bioinformatics, Molecular Biology and Biochemistry. Primary research focus is the study of flowering time and seed development in plants under abiotic stress. The Jaiswal Lab trains young scientists and students to cutting-edge technologies in genome sequencing, gene expression, plant development, and bioinformatics.



Elizabeth Kiss
Associate Professor and Extension Specialist, Kansas State University

Elizabeth assists in the development and delivery of a statewide Cooperative Extension program focused on developing the financial knowledge and skills for sound financial decision-making of Kansans. Her expertise is in framing, developing, and evaluating extension educational programs in the areas of consumer economics, family resource management, and personal finance. In 2015, Kiss was appointed to a national health insurance literacy action team created in response to recommendations from Cooperative Extension’s National Framework for Health and Wellness ECOP Health Task Force, a component of APLU’s national ECOP Health Initiative.

John McNamara
Emeritus Professor-Washington State University

John is a Fellow of ADSA and of ASAS. His foundational research led to the discovery of the biochemical reasons why dairy cattle are so efficient in simultaneously producing large quantities of milk and body growth. His research helped determine the quantitative contribution of specific pathways and enzymes to the efficiency of the cow. He continues to focus on integrating genetics, nutrition, and reproduction in mathematical models of the cow. He has served on the NC 185, 1009, and 1040 research committees for 25 years and has written 3 revisions of that project. He has advised the WSU Cooperative University Dairy Students for the last 17 years. He has served on several editorial boards and 4 terms as an Editor of The Journal of Dairy Science and is presently Special Editor of the Special 100th Anniversary Issue of the journal. Dr. McNamara was the first recipient of the WSU College of Agriculture and Home Economics Excellence in Research Award; also Excellence in Advising (2005); ADSA Young Scientist Award (1992); Higher Education Teacher of the Year Award (2001) from the Washington Science Teachers Association and the Corbin Award Companion Animal Biology from ASAS (2007), and was the inaugural recipient of the Jane Parker Excellence in Advising award from WSU. In 2015 he received the Zoetis Physiology Award as one of the most prestigious recognitions for scientific achievement in Dairy Science.





Moderators

Molly Jahn
Professor, University of Wisconsin

Molly is a professor at the University of Wisconsin-Madison, holding appointments in the Department of Agronomy, the Laboratory of Genetics, and the Center for Sustainability and the Global Environment. From 2006-2011, she served as dean of the University of Wisconsin's College of Agricultural and Life Sciences and Director of the Wisconsin Agricultural Experiment Station.



Norm Scott
Emeritus, Cornell University

Dr. Scott was involved in bioengineering research and teaching for over 20 years prior to spending 14 years as a Cornell administrator (Director of Cornell University Agricultural Experiment Station & Vice President of Research and Advanced Studies). His early research was focused on thermoregulation in poultry, biomechanics of machine milking of dairy cows, and electronic applications in agriculture, with particular attention to automatic identification and estrus detection of livestock, as well as the effects of transient current on dairy cows. Since returning to the faculty in 1998, he has focused on research in sustainable development. This research is directed to development of sustainable communities with emphasis on biologically derived fuels, renewable energy, recycling, managed ecosystems and industrial ecology. Grant support has been obtained from New York State Energy Research & Development Authority and USDA.

David Weatherspoon
Professor, Michigan State University

Professor Dave Weatherspoon joined the Agricultural, Food, and Resource Economics Department at MSU in 1998. He is appointed in the tenure system. Dave focuses on conducting research and teaching Food Industry Management. Prior to MSU, he was an Assistant and then Associate Professor of Agribusiness Management at Florida A&M University (1993 to 1998). Dave teaches marketing and industrial organization. He has worked on projects in over 30 countries on food supply chain and international trade and marketing issues. He has been the driving force behind creating the "The FOOD SCENE Dialogues: Supply Chain Enhancements for the New Economy" was to create a forum to discuss issues that have the potential to revolutionize or disrupt the food supply chain around the world, particularly those issues needing thoughtful debate prior to their implementation. The research that ensues from these dialogues will be responsive to consumer and industry changes that appear to be long-lasting and impactful. Dr. Weatherspoon has inspired a team of young scientists to explore the inner workings of the food supply chain and to offer solutions to industry, government, and academia.

