

Mini Symposium

THE FOOD VALUE CHAIN IN THE DIGITAL AGE

10:00 am – 12:00 pm, Wednesday December 19, 2018

ARE Library Conference Room, 4101 Social Science and Humanities Building

What will farms and the food system look like 10, 20 and 50 years from now as farmers and the food industry increasingly adopt new digital technologies? How will this impact increasingly expensive labor, growing inequality, market organization and demand for food and fiber? What will be the implications for farm labor, rural communities, primary production, distribution, retail, and the consumer? What are the opportunities for productive scholarship in this domain? How can we at the University of California, Davis contribute to understanding these transformative changes, their economic and social implications, and the potential roles for public policy. This workshop is meant to convene researchers and students at UCD from a variety of disciplines and fields of science and engineering who share an interest in studying and understanding the technical, economic, and social implications of the digital revolution as it relates to farms and the food value chain. We understand that diverse strands of work are underway in several departments and centers on our campus. We see potential for benefits from a conversation to explore possibilities for new collaborative ventures and pursuing substantial external funding to help establish UC Davis as the world leader in studies of digital platforms, artificial intelligence, big data and other aspects of the digital revolution as they relate to agriculture and the food value chain. The workshop seeks to make connections, initiate a conversation and provide the foundation for next steps.

PROGRAM

10:00 *Introduction and Welcome*

Julian Alston

10:10 *Economic and Social Implications of the Digital Revolution*

Martin Kenney

10:45 *Smart Farm: Creating the Farm and Farm Workers of the Future*

David Slaughter

11:30 *Case Study: Using Big Data to Improve Dairy Farm Management*

Fernanda Carolina Ferreira

11:45 *General Discussion: The Way Ahead*

12:00 *Adjourn*

PARTICIPANTS

Julian Alston (julian@primal.ucdavis.edu) is a distinguished professor in the Department of Agricultural and Resource Economics at UC Davis, known for his work on the economics of agricultural and food policy. His recent projects have emphasized science & technology policy and the economics of agricultural innovation; food & nutrition policy, and the global challenges of poverty, malnutrition, and obesity. He has published hundreds of research articles, chapters, and books on these subjects—most recently, *The Effects of Farm and Food Policy on Obesity in the United States* (2017) with Abigail Okrent.

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Martin Kenney (mfkenney@ucdavis.edu) is a distinguished professor of Community and Regional Development at UC Davis; a Co-Director at the Berkeley Roundtable on the International Economy; an Affiliated Professor at the Instituto di Management at the Scuola Superiore Sant'Anna, and a Senior Fellow at the Research Institute for the Finnish Economy. Kenney's scholarly interests are in the dynamics of digital platforms, high-technology clusters, university-industry technology transfer, and the development of the venture capital industry. He co-authored or edited seven books and 150 scholarly articles on digital platforms, high-technology clusters, entrepreneurship, venture capital, innovation, and university-industry relations. His most recent edited books *Public Universities and Regional Growth*, *Understanding Silicon Valley*, and *Locating Global Advantage* were published by Stanford University Press where he edits a book series on innovation. In 2015, he received the University of California Office of the President's Award for Outstanding Faculty Leadership for Presidential Initiatives in Entrepreneurship and Innovation. He is a receiving editor at the world's premier innovation studies journal, *Research Policy*. <https://kenney.faculty.ucdavis.edu/>



David Slaughter (dcslaughter@ucdavis.edu) is a Professor of Biological and Agricultural Engineering and leader of the *Smart Farm* initiative at UC Davis. Slaughter is a considered a worldwide leading expert in the development of nondestructive and noninvasive sensing systems for determining the quality and identity of agricultural commodities, and he has made tremendous contributions toward the development of automation technologies for precision, on-farm, individualized plant care. Moreover, he has spent much of his career improving the long-term sustainability of U.S. specialty crop production by developing smart agricultural machines that can simultaneously reduce the drudgery of menial labor associated with fruit and vegetable production and the need for and negative environmental impact of pesticides. He was a pioneer in the development of one of the first robotic fruit-harvesting systems. He developed and patented one of the first machine-vision-based automatic guidance systems for precision inter-row weed control and for automated spray bandwidth control in row crops. He has developed several novel technologies for automated, pesticide-free, intra-row weed control in specialty crops, and has developed and demonstrated a robust on-farm system for plant species determination in tomato and lettuce.

<https://faculty.engineering.ucdavis.edu/slaughter/>



Fernanda Carolina Ferreira (fcarreira@ucdavis.edu) is a Herd Health and Management Economics Specialist in the Department of Population Health and Reproduction at the UC Davis Veterinary Medicine Teaching and Research Center, in Tulare CA. Ferreira's work is focused on the use of big data, analytics, and quantitative methods to address current and future problems related to food animal production. She focuses on the economic opportunities and impacts of herd health and management strategies, animal welfare, environmental stewardship, and precision technologies. She has worked with Dairy Herd Improvement Association (DHIA) datasets in order to develop tools for on-farm decision making such as economic feasibility of heat abatement systems and embryo transfer techniques throughout the US.

<https://www.vetmed.ucdavis.edu/faculty-directory?fid=24927>

