Science Societies

Annual Meeting reveals first group of all-women keynote and plenary presenters

June 2, 2021

This year, for the first time, the opening keynote and all three plenaries will be presented by women: Ismahane Elouafi, Heather Hampton+Knodle, Rebecca Nelson, and Mary Firestone.

Opening Keynote

Ismahane Elouafi, Chief Scientist at Food and Agriculture Organization of the United Nations (FAO), will present “Transformation of Food Systems for Better Production, Better Nutrition, Better Environment, and a Better Life.”

The process towards the upcoming UN Food Systems Summit (UN FSS21) provides a major opportunity for all actors to increase the visibility of the breadth and complexity of the challenges facing agri-food systems as well as to demonstrate the key role of science, technology, and innovation in ensuring that our agri-food systems are more inclusive, resilient, and sustainable. FAO's new Strategic Framework recognizes innovation and technology as two of the four accelerators to be applied in all programmatic interventions. Elouafi’s talk will focus on the outcomes of the UN FSS21 (including the UNFSS Science Days being organized this July by the UNFSS Scientific Group) and what that means for setting research priorities as well as for developing scientific insights for our future agri-food systems.

ASA Plenary/E.T. & Vam York Distinguished ASA Lectureship

Heather Hampton+Knodle, Vice President at Knodle, Ltd. Farms, will present “Grounded Evolution: Innovating in Realtime.”

Agronomists in almost every field are well positioned to help lead the buildout of infrastructure needed to help food production evolve sustainably.

Heather Hampton+Knodle is a farmer, rural development leader, and entrepreneurial mentor who will share encouragement and lessons learned from the fields of her family’s farm in Illinois, rural internet networks, and other places like the halls of Congress.

While agronomists continue cracking the code on genetic improvements and regenerative practices, achieving the full potential of these advances depends on a network of systems and policies ranging from telematics gateways, interoperability standards, symmetrical bandwidth, to novel funding streams and business models.

Global markets are rapidly evolving from commodities and stock exchanges to include carbon and possibly other ecosystem or agronomic credits like water, cation exchange capacity, and electrical conductivity. The ability to capitalize on these markets relies on real-time, accurate data.

Hampton+Knodle will share key concepts and a path forward from her recent role chairing the Federal Communication Commission's Accelerating Broadband Deployment Working Group for the Precision Agriculture Task Force.

CSSA Plenary/Betty Klepper Endowed Lectureship

Rebecca Nelson, Professor at Cornell University, will present "The Soil Factory Network: Towards the Circular Bionutrient Economy."

How does a plant pathologist become obsessed with latrines? Rebecca Nelson's fascination with the "circular economy" started with the realization that the problem of mycotoxin contamination of the food system is linked to climate change and soil depletion. While work on disease resistance and grain sorting revealed trade-offs, it became clear that improving soil fertility is a win-win for grain quality and quantity. Through the McKnight Foundation Collaborative Crop Research Program, Nelson was inspired by the work of a farmer organization in Niger that increased millet production by using sanitized urine as a fertilizer, rebranding it as "boss," and by a Brazilian neighborhood organization called the Bucket Revolution that was making compost from kitchen was

te. The idea of recovering resources from sanitation to agriculture struck her as having the potential to solve a snarl of urgent problems for low-resource communities in particular, but also to improve food security on a global scale. However, an array of obstacles stands between the status quo and the circular bionutrient economy. The "Soil Factory Network" project, being developed by Nelson and colleagues, aims to crowd together creative solutions to both the technical and social challenges of recovering nutrients from sanitation to agriculture.

SSSA Plenary/Nyle C. Brady Frontiers of Soil Science Lectureship

Mary Firestone, Professor at the University of California–Berkeley, will present "Water: the Master Variable for Life in Soil."

Climate change is expected to alter patterns of precipitation and temperature in most regions of the globe. Many areas are expected to experience more extreme droughts and rainfall events. The impacts that these changes will have on plants and associated soil microbial communities will massively impact the functioning of terrestrial systems. How do soil microorganisms tolerate desiccation in soil? Can soil microbes mediate plant tolerance to drought and can these potentially beneficial interactions be enhanced? How will predicted patterns of changing climate impact carbon and nitrogen cycling and the resulting nutrient availability to plants? How will changing water regimes impact stabilization of carbon in soil? This talk will introduce the functioning of this master variable for life in soil and what we now know about critical

circumstances for microbes living in the soil matrix as well as for the plants with which they associate.

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