Joint Presidents’ Message
A Rare Opportunity to Shape Research Directions

by Jean Steiner, Roch Gaussoin, and Carolyn Olson

Editor’s note: This month, following agency visits in Washington, DC, Jean Steiner (ASA president), Roch Gaussoin (CSSA president), and Carolyn Olson (SSSA president) are joining forces to emphasize the potential importance of a new program within the National Science Foundation (NSF) that could help focus our science and impact the ability to obtain NSF research funding in the next few years. Representatives of NSF have asked for our input at the beginning of a new five-year funding program that couples food, energy, and water. This is a rare and unique opportunity for the agricultural community to shape research directions.

Background

In 2010, NSF established the Science, Engineering, and Education for Sustainability (SEES) area to begin a foundation for advancing systems-based approaches to understanding, predicting, and reacting to stress in the natural, social, and built environments. Funding in SEES was awarded across NSF directorates, many of these within the Water Sustainability and Climate (WSC) program. As part the fiscal year 2016 budget request, NSF established a new program to “accelerate fundamental understanding and stimulate basic research on systems” beyond the SEES WSC program. The program couples energy and food systems to water with its five-year, $75 million new Innovations at the Nexus of Food, Energy, and Water Systems program (INFEWS). The National Science Foundation has indicated that a similar request is planned for the 2017 budget.

In conjunction with INFEWS, NSF released a dear colleague letter in February 2015 seeking workshop proposals to “facilitate and enable interdisciplinary partnerships among natural science, physical science, social science, computing, and engineering researchers and develop innovative, interdisciplinary research approaches to understanding the FEW system.” At least 16 invitation-only workshops have been approved, and we expect that few participants will come from the agricultural, crop, and soil sciences.

The Challenge for Our Societies

In our discussions with NSF during the Executive Agency Meetings, the NSF INFEWS Working Group representatives invited our membership into the conversations to shape topics for research proposals. As members of our three Societies, this is a great opportunity at the grassroots level for all of us to develop research questions for funding solicitations at NSF. This may be the first time that our scientists have had this opportunity to stimulate thinking for the direction of a new NSF program. We are asking you to submit your research questions in the form of white papers, three to five pages long, that could be used to develop proposals for the INFEWS program. The proposals should be written to the framework of FEW, i.e., include a systems piece, data collection and connection, new solutions (how to develop solutions that might be adopted including decision-making and sociology), and education and workforce training. Research opportunities, knowledge, and technology gaps should be identified. The proposals should NOT be for applied research but rather use-inspired fundamental research questions in keeping with the NSF mandate for fundamental research. The National Science Foundation emphasized that these research questions should be directly related to a combination of all three areas: food, energy, and water.

The Science Policy Office (SPO) of our Societies has volunteered to organize the white papers from our membership and provide them to NSF.

White papers can be submitted and viewed through our online system (www.soils.org/science-policy/get-involved/infews-white-papers) through 27 Nov. 2015. The Societies will continue to provide reminders to you through many of our other communications outlets.

As background for your white papers, a 2014 report issued by the NSF Mathematics and Physical Sciences Advisory Committee (MPSAC) Subcommittee on Food Security might be of value (see http://1.usa.gov/1DL9J49). The report highlights key areas of foundational knowledge upon which technological advances could be based.

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