

# The Water, Climate, Soil and Food Nexus

## GRAND CHALLENGES AND OPPORTUNITIES

May 5, 2016

1:00 pm

Agriculture Building  
Auditorium 132

*Reception to follow, Ag 137*

Land degradation, water quality and quantity, air quality, climate change, soil contamination, and food security are foremost issues of our time. We must be at the forefront in addressing and providing solutions to these vexing challenges that threaten humankind. It is also incumbent that we tackle the research needs in an interdisciplinary manner by forging collaborations with natural scientists, social scientists, engineers, and humanists. We must also communicate the results and solutions in a meaningful way to decision makers and the public.

This presentation will include case studies dealing with soil, air, and water contamination and carbon cycling/sequestration to show how the application of a multi-scale, interdisciplinary research approach can provide important insights into environmental degradation and restoration.

### Prof. Donald L. Sparks



S. Hallock du Pont Chair  
in Soil and Environmental  
Chemistry

Director, Delaware  
Environmental Institute

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Donald L. Sparks is the S. Hallock du Pont Chair in Soil and Environmental Chemistry, Francis Alison Professor and Director of the Delaware Environmental Institute at the University of Delaware. He is internationally recognized for research on the kinetics of soil chemical processes, sorption mechanisms of metal(loid)s and nutrients at the mineral/water interface, and speciation of contaminants in soils. He and his former group members are among the leaders in the geosciences in employing synchrotron-based tools to study natural systems. Sparks is the author of three textbooks, editor of several books, and author of numerous book chapters and 250 refereed papers. He served as President of the Soil Science Society of America and the International Union of Soil Sciences (IUSS). He has received numerous honors and awards including Fellow of five professional societies, the Liebig Medal from IUSS, Einstein Professor from the Chinese Academy of Sciences, the Soil Science Research Award, and the Geochemistry Medal from the American Chemical Society. He serves as Chair of the National Academy of Sciences Committee for Soil Science.

