

Institute of Food and Agricultural Sciences  
Soil and Water Science Department

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## Soil and Water Science Distinguished Seminar

**SPEAKER:**      **Dr. Don Sparks**  
S. Hallock du Pont Chair of  
Soil Chemistry and  
Department Chairman  
<http://ag.udel.edu/plsc/faculty/sparks.htm>



**TITLE:**      **Shining Light on Biogeochemical  
Processes in the Earth's Critical Zone!**

**DATE:**      **September 12, 2008**

**PLACE:**      **Reitz Union Auditorium, UF**

**TIME:**      **9:00 am – 10:00 am**

Dr. Sparks is internationally recognized for his research contributions in the areas of: kinetics of soils chemical processes, surface chemistry of soils and soil components using in-situ spectroscopic and microscopic techniques. Dr. Sparks Environmental Soil Chemistry Laboratory focuses on how toxic metals such as arsenic (As), nickel (Ni), and zinc (Zn) and plant nutrients such as phosphorus (P) and sulfur (S) are bound (sorbed) on soils. His laboratory conducts these studies under different environmental and experimental conditions (pH, time, temperature, hydration state, presence of microbes) to best represent the natural environment. His research uses bright light sources generated at synchrotron facilities (associated with National Laboratories) to determine the forms (species) of the metals and nutrients in the soil at the molecular scale. This information is necessary to make accurate predictions about how easily the contaminant will leach into the water supplies, and determine its toxicity and bioavailability to plants, animals, and humans. His research also conducts speciation research on metal contaminated soils and on plants that accumulate large quantities of metals (hyper-accumulators). The results of these studies are useful in developing effective strategies for soil remediation. Additional details of his research and teaching programs can be found at: <http://ag.udel.edu/plsc/faculty/sparks.htm>

For additional information on Dr. Don Sparks, contact K. Ramesh Reddy at: [krr@ufl.edu](mailto:krr@ufl.edu)