Soil and Water Sciences Department Distinguished Speaker Seminar

Speaker: Dr. Keith Shepherd  
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Title: Three Critical Failures of Soil Science and Opportunities to Overcome them: Spatial Inference, Uncertainty, Economics

Date: Wednesday, September 12th

Time: 3:00 pm – 4:00 pm

Location: McCarty Hall A, Room G186

Soil science has unmet potential to serve user needs due to three critical failures. First, geographical areas for which recommendations are to be made are rarely adequately sampled using statistical sampling schemes, preventing valid inference of results for the region of interest. Second, uncertainty is largely ignored in presenting recommendations, and they are rarely validated, which passes the risk on to the user and impedes learning on how to improve recommendations. Third, the type and form of soils information required for economic decision making is rarely provided. Solutions are provided for all three failures. 1. Use of population-based sampling approaches in soil survey and crop agronomy to make valid inference and recommendations for a region of interest, exemplified with use of soil-plant dry spectroscopy at local to continental scales in Africa. 2. A Bayesian approach to making soils-based recommendations, which explicitly represents uncertainty, exemplified for soil carbon sequestration under alternative land uses. 3. A decision analysis framework for identifying and analyzing returns and risks in stakeholder decisions and incorporating high-value soils information.

For our off-campus students, off-campus faculty, and on-campus students who cannot attend, this seminar can be viewed via live or watched at a later date via this link: Dr. Keith Shepherd. In addition, all seminars are archived for viewing on our SWSD Seminar Page.