



**15th Annual
Soil and Water Science Research Forum
Program**

**September 18, 2014
Grand Ballroom - J. Wayne Reitz Union**

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| 8:30 am – 9:20 am | Registration |
| 9:20 am – 9:30 am | Opening Remarks
Dr. K. Ramesh Reddy, SWSD Chair |
| 9:30 am – 10:30 am | The Bio-Geo-Socio-Chemistry of Nitrogen
in Urban Watersheds
Dr. Peter Groffman
Senior Scientist & Microbial Ecologist
Cary Institute of Ecosystem Studies |
| 10:30 am – 10:50 am | BREAK |

**SESSION I – Oral Presentations
Grand Ballroom - J. Wayne Reitz Union**

10:50 am – 11:50 am Invited Faculty Session

Session Chair: Dr. James Jawitz

10:50 am – 11:10 am **Soil and Water Management of a Bacterial Disease
Imperiling U.S. Citrus Production.**
Dr. Jim Graham, Professor
Citrus Research and Education Center – Lake Alfred, FL.
Soil and Water Science Department
University of Florida

11:10 am – 11:30 am **Biogeochemistry of Florida Springs.**
Dr. Patrick Inglett, Associate Professor
Soil and Water Science Department
University of Florida

11:30 am – 11:50 am **Biogeochemistry of Contaminants: From Molecular
Biology to Bioavailability to Plants and Humans.**
Dr. Lena Ma, Professor
Soil and Water Science Department
University of Florida

11:50 pm – 1:00 pm **LUNCH**

SESSION II – Graduate Student Oral Presentations Grand Ballroom - J. Wayne Reitz Union

1:00 pm – 2:15 pm – Graduate Student Oral Presentations

Session Chairs: Anna Normand and Debjani Sihi

Student Presentation (1:00 pm – 1:15 pm):

Biochar Application Effects on Soil Phosphorus Sorption and Release.

Authors: *Biswanath Dari, Vimala Nair, Rao Mylavarapu, and Willie Harris*

Student Presentation (1:15 pm – 1:30 pm):

Residential Exposure to Arsenic & Hexavalent Chromium from CCA Wood.

Authors: *Ky Gress and Lena Ma*

Student Presentation (1:30 pm – 1:45 pm):

Molecular-level Characterization of Dissolved Organic Nitrogen in Urban Waters.

Authors: *Mary Lusk, Gurpal Toor, and Patrick Inglett*

Student Presentation (1:45 pm – 2:00 pm)

Temperature Sensitivity of Anaerobic Carbon Processing under Two Contrasting Rates of Warming.

Authors: *Debjani Sihi, Patrick Inglett, Stefan Gerber, and Kanika Sharma Inglett*

Student Presentation (2:00 pm – 2:15 pm)

Back-diffusion from Thin Low-Permeability Layers.

Authors: *Minjune Yang, Michael D. Annable, and James W. Jawitz*

SESSION III – Graduate Student Oral Presentations Grand Ballroom - J. Wayne Reitz Union

Graduate Student Lightning Talk Competition (2:15 pm – 2:45 pm)

Session Chairs: Anna Normand and Debjani Sihi

The Influence of Eutrophication Status on the Kinetics of Methane Oxidation in Soils from a Subtropical Freshwater Wetland.

Author: *Francisca Hinz*

Greenhouse Gas Fluxes from Peatlands Influenced by Flooding and Draining Cycles.

Author: *Jing Hu*

Molecular Ecology of Microbial Phosphorus (P) Cycling in Oligotrophic Peatlands.

Author: *Elise Morrison*

Carbon Chemistry of Peatland SOM across Climate Zones.

Author: *Anna Normand*

Field Study of the Use of Aluminum Water Treatment Residuals in a Permeable Reactive Barrier System to Reduce Soluble Phosphorus Movement in Groundwater.

Author: *Bill Schmahl*

Understanding Spatial and Temporal Changes in Central Florida Waterbodies and Their Causes.

Author: *Antonio Yaquian*

SESSION IV Student Presentations - Poster Viewing and Reception

Grand Ballroom - J. Wayne Reitz Union

3:00 – 4:00 pm **Poster Session I**

a. Judging of Even Numbered Posters Will Occur During This Time

4:00 – 5:00 pm **Poster Session II**

a. Judging of Odd Numbered Posters Will Occur During This Time

Judged Poster Titles & Authors

1. Characterization of Coal Combustion Residuals in Florida.
Evandro Barbosa da Silva, Xiaoling Dong, Julia Gress, and Lena Ma
2. Use of Biochars Produced from Local Residue Feedstocks to Grow Sugarcane on Sandy Soils in South Florida.
Odiney Alvarez, Samira Daroub, Jehangir Bhadha, Bin Gao, Barry Glaz, and Timothy Lang
3. Fitness of Tetracycline-Resistant *Escherichia coli* O:157 H7 Exposed to Sub-Lethal Doses of Tetracycline in Soil.
Alexandra DeBose-Scarlett, Massimiliano Marvasi, and Max Teplitski
4. Cadmium (Cd) Contamination of Cacao (*Theobroma cacao*, L.) Beans in Southern Ecuador: Its Nexus with Soil-Cd.
Eduardo Chavez, Zhenli He, Virupax Baligar, B. Moyano, and Peter Stoffella
5. Genes Involved with Nitric Oxide Biofilm Dispersal.
Ian Durie, Massimiliano Marvasi, Keith Jenkins, and Max Teplitski
6. Nitrogen Transport from Drip-Dispersal Septic System Drainfield to Shallow Groundwater.
Mriganka De and Gurpal Toor
7. Are We Getting Closer to or Further from Water? An Analysis of Human Distance to Water in the USA, 1790-2010.
Yu Fang and James Jawitz
8. Nutrient Recovery from Small Wastewater Treatment Plants.
John Hallas, Cheryl Mackowiak, and Ann Wilkie
9. The Influence of Eutrophication Status on the Kinetics of Methane Oxidation in Soils from a Subtropical Freshwater Wetland.
Francisca Hinz, Lucy Ngatia, Patrick Inglett, K. Ramesh Reddy, and Kanika Sharma Inglett
10. Developing Sustainable Soil Management Practices for Shallow Organic Soils of the Everglades Agricultural Area.
Stephen Jennewein, Samira Daroub, Jehangir Bhadha, Maninder Singh, Mabry McCray, and Timothy Lang

11. Greenhouse Gas Fluxes from Peatlands Influenced by Flooding and Draining Cycles.
Jing Hu, *Christine VanZomeren, Kanika Sharma Inglett, Alan Wright, Mark Clark, and K. Ramesh Reddy*
12. Nitrogen Speciation and Concentration Dynamics from Agricultural Fields to Indian River Lagoon.
Liguang Li, *Zhigang Li, Suli Li, Zhenli He, Yongshan Wan, Xiaoe Yang, and Peter Stoffella*
13. Rhizobacterial Community Structure in Two Chilean Volcanic Soils Revealed by Pyrosequencing.
Lorena Lagos Pailla, *Oscar Navarrete, Fumito Maruyama, David Crowley, Maria de la Luz Mora, and Milko Jorquera*
14. Mass Balance of Phosphorus in the Drip-Dispersion Septic Drainfield.
Sara Mechtensimer and *Gurpal Toor*
15. Florida Wildfires during the Holocene Climatic Optimum (9,000-5,000 BP).
Kalindhi Larios, *Stefan Gerber, and Mark Brenner*
16. Soil Water and Nutrient Use in Low-input Rhizoma Peanut-Bahiagrass Mixes.
Jennifer Shirley, *Cheryl Mackowiak, Ann Blount, Diane Rowland, and Craig Stanley*
17. Using Chitosan and Graphene Oxide to Produce Controlled Release Fertilizers.
Tiantian Li, *Bin Gao, and Yuncong Li*
18. Effects of Flood Level and Midseason Drawdown On Water Quality and Rice Yield.
Mohsen Tootoonchi, *Timothy Lang, Jehangir Bhadha, Ronald Cherry, Dennis Odero, and Samira Daroub*
19. Single Point Simulation Setup for Everglades using Community Land Model.
Yan Liao and *Stefan Gerber*
20. The Interaction between *Phytophthora* spp. and *Candidatus Liberibacter* spp. Damage to Citrus Fibrous Roots.
Jian Wu, *Evan Johnson, Diane Bright, Kayla Gerberich, and Jim Graham*
21. Effects of Different Land Uses on Base-Flow Nitrogen Concentrations on the Main Campus of University of Florida.
Jiexuan Luo, *Mark Clark, and George Hochmuth*
22. Shifts in Microbial Phosphorus Requirements within a Sub Tropical Peatland.
Elise Morrison, *Andrew Ogram, Susan Newman, and K. Ramesh Reddy*

23. Soil Organic Matter Response to Climate Warming in a Subarctic Peatland.
Anna Normand, *J. Hans Cornelissen, Mark Clark, and K. Ramesh Reddy*
24. Determining the Effect of Salinity on Nitrogen and Phosphorus Preference in Harmful Algal Bloom Species from the Northern Indian River Lagoon.
Joshua Papacek, *Edward Philips, Margaret Lasi, and Patrick Inglett*
25. Field Study of the Use of Aluminum Water Treatment Residuals in a Permeable Reactive Barrier System to Reduce Soluble Phosphorus Movement in Groundwater.
William Schmahl and *James Jawitz*
26. Removal of Arsenic by Magnetic Biochar Prepared from Pine Wood and Natural Hematite.
Shengsen Wang, *Bin Gao, Andrew Zimmermann, Yuncong Li, Lena Ma, Willie Harris, and Kati Migliaccio*
27. Long-term (1890-present) Actual Evapotranspiration Estimates for Silver Springs and Rainbow Springs Basins using the Budyko Framework.
Antonio Yaquian and *James Jawitz*
28. Irrigation Water Salinity Impacts in the Tri-County Agricultural Area, Northeast Florida.
Eunice Yarney and *Mark Clark*
29. Nitrogen Starvation of Algae – A Stress for Lipids.
Brett Nelson and *Ann Wilkie*

Non-Judged Poster Titles & Authors:

30. Biochar Application Effects on Soil Phosphorus Sorption and Release.
Biswanath Dari, *Vimala Nair, Rao Mylavarapu, and Willie Harris*
31. An Energetic Perspective on Sweet Potato: Food versus Fuel.
Wendy Mussoline and *Ann Wilkie*
32. Drivers of Methanogenesis Pathways in Subtropical Wetlands: Florida Everglades as a Case Study.
Lucy Ngatia, *Francisca Hinz, Anna Normand, Kanika Sharma Inglett, Patrick Inglett, Jeffrey Chanton, and K. Ramesh Reddy*
33. Chromate and Phosphate Inhibited Each Other's Uptake and Translocation in Arsenic Hyperaccumulator *Pteris vittata* L.
Letuzia M. de Oliveira, *Jason Lessl, Julia Gress, Rujira Tisarum, Luiz Guilherme, and Lena Ma*

34. Comparison of Soil Organic Nitrogen Composition and Mineralization by Vegetation Type in Subtropical Wetlands.
Christine VanZomeren, Rupesh Bhomia, Malak Tfaily, Kanika Sharma Inglett, William T. Copper, and K. Ramesh Reddy
35. Toxicity of an Imidazolium-Based Ionic Liquid on Wheat.
Jun Wang, Lena Ma, Lusheng Zhu, and Tong Liu
36. Fate of Trace Organic Compounds Drip-Dispersal Septic System Drainfield.
Yun-Ya Yang, Gurpal Toor, and Chris Wilson
37. Root Colonization of *Exophiala pisciphila* Enhances Tolerance of Maize (*Zea mays* L.) to Cadmium.
Fangdong Zhan, Youngmei He, and Gurpal Toor

