



19th Annual Soil and Water Sciences Research Forum Program

October 15, 2018

Rion Ballroom - J. Wayne Reitz Union

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| 8:15 am – 9:00 am | Registration |
| 9:10 am – 9:20 am | Opening Remarks
Thomas Obreza, Senior Associate Dean for Extension and
Interim Chair, Soil and Water Sciences Department
University of Florida |
| 9:20 am – 9:30 am | Opening Remarks
Jack Payne
Senior Vice President of Agriculture and Natural Resources
University of Florida |
| 9:30 am – 10:30 am | <u>Soil Organic Matter Formation: Concepts and
Controversies</u>
<u>Dr. Johannes Lehmann</u>
Liberty Hyde Bailey Professor, Soil and Crop Sciences
School of Integrative Plant Sciences
College of Agriculture and Life Sciences
Cornell University
Google Scholar Profile |
| 10:30 am – 10:50 am | BREAK |

SESSION I – Featured Faculty Oral Presentations
Rion Ballroom - J. Wayne Reitz Union

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| 10:50 am – 11:50 am | Featured Faculty Oral Presentations |
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Session Chair: Patrick Inglett

- 10:50 am – 11:10 am **Functional Diversity of Soil Microbiomes and Their Consequences**
[Hui-Ling \(Sunny\) Liao, Assistant Professor](#)
Soil Microbial Ecology
North Florida Research and Education Center
Soil and Water Sciences Department
University of Florida
- 11:10 am – 11:30 am **Urban Ecosystem Ecology from a Watershed Perspective**
[A.J. Reisinger, Assistant Professor](#)
Urban Soil and Water Quality
Soil and Water Sciences Department
University of Florida
- 11:30 am – 11:50 am **The Potential Benefits of Agroecological Practices on Soil Fertility and Soil Health in Florida Agroecosystems**
[Gabriel Maltais-Landry, Assistant Professor](#)
Sustainable Nutrient Management Systems
Soil and Water Sciences Department
University of Florida
- 11:50 pm – 1:00 pm **LUNCH ON OWN**

SESSION II – Ph.D. Graduate Student Oral Presentations
Rion Ballroom - J. Wayne Reitz Union

1:00 pm – 2:15 pm – Ph.D. Graduate Student Oral Presentations

Session Chairs: Caleb Gravesen, Dipti Rai, and Rachelle Berger

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

Soil and/or Foliar Applied Nutrients on Water Uptake, Vegetative Growth, and Nutrient Accumulation on HLB Affected 'Valencia' Citrus Trees

Authors: *Alisheikh Adem Atta, Kelly Morgan, and Davie Kadyampakeni*

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

Biochar from Varying Feedstocks as Phosphorus Fertilizer Sources

Authors: *Andressa Freitas, Vimala D. Nair, Lynn E. Sollenberger, Willie G. Harris and P.K.R. Nair*

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

Constructed Wetland Maintenance in South India

Authors: *Claire Friedrichsen, Samira H. Daroub, Martha C. Monroe, John R. Stepp, and Suhas P. Wani*

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

Background and Bioaccessible Concentrations of PAHs in Florida Urban Soils

Authors: *Peng Gao, Evandro B. da Silva, Timothy Townsend, and Lena Ma*

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

What Controls Ecosystem CO₂ Fluxes in North American Wetlands

Authors: *Yan Liao and Stefan Gerber*

SESSION III - Student Poster Viewing and Reception

Rion Ballroom, J. Wayne Reitz Union

3:00 – 4:00 pm **Poster Session I**

a. Judging of Even Numbered Posters – Will Occur During This Period

4:00 – 5:00 pm **Poster Session II**

a. Judging of Odd Numbered Posters – Will Occur During This Period

Judged Poster Titles & Authors:

1. A Novel Method for the Inclusion of Categorical Covariates in Latent Variable Models for Factorial Modeling of Soil Carbon in Florida
Setyono H. Adi, Sabine Grunwald, and Denis Ribeiro do Valle
2. Sensitivity Analysis Reveals Critical Factors that Affect Wetland Methane Emissions using Soil Biogeochemistry Model
Carla Alonso-Contes, Stefan Gerber, Isaac Duerr, and Nikolay Bliznyuk

3. Reduced Soil Nutrient Enrichment and *Typha* Presence due to Restoration Efforts: A Temporal Analysis of Taylor Slough in Everglades National Park
Kaylee A. August, Lorae T. Simpson, and Todd Z. Osborne
4. Ammonium and Nitrate Distributions, Water- and Nitrogen-use Efficiencies as Affected by Irrigation Scheduling in Open-Field Fresh-Market Tomato Production
Ibukun T. Ayankojo and Kelly T. Morgan
5. Water Management Impacts to Soil Fertility in Rice Production in the Everglades Agricultural Area
Rachelle J. Berger, Maryory Orton, Jennifer A. Cooper, Timothy A. Lang, and Samira H. Daroub
6. Sustainable Farming: Application of Solar Power for Irrigation on Small Farms
Lars Bjorndal and Ann C. Wilkie
7. Soil Texture Analysis as a Proxy for Wave Energy
Haley Cox and Mark Clark
8. Landscape-scale Nitrogen Budget Informed by in situ Measurements of Nitrate Attenuation
Amanda Desormeaux, Michael D. Annable, Dean Dobberfuhr, Patrick W. Inglett, and James W. Jawitz
9. Soil and Water Conservation Generate Profits for Vulnerable Communities in Porto Alegre, Brazil
Carlita Fiestas-Nunez and Ann C. Wilkie
10. Retention and Release Characteristics of Biosolids-borne Azithromycin and Ciprofloxacin
Caleb Gravesen, Harmanpreet Sidhu, George O'Connor, and Jonathan Judy
11. Soil Microbial Community Response to Nitrogen Management in Florida Pastures
Victor Guerra, Lukas Beule, Hui-Ling Liao, Cheryl Mackowiak, Jose Dubeux, Ann Blount, and Diane Rowland
12. Fish Habitat Enhancement: Do "Living Shorelines" Improve Richness, Diversity and Abundance?
Niamh Hays, Mark Clark, and Lindsey Kelly

13. Local Phycoprospecting for Filamentous Algae
Brett Higgins and *Ann C. Wilkie*
14. Carbon and Nitrogen Cycling in a Gainesville Soil Amended with Dairy- and Food-derived Composts
A.J. Kelley, *G. Maltais-Landry*, and *A.C. Wilkie*
15. Evaluating Physical, Agricultural, and Social Drivers to Irrigation Water Use in Western Kansas
Susan Lamb and *Samuel J. Smidt*
16. Simulating the Tug of War between Transport and Nutrient Uptake in Low Flow Treatment Wetlands Demonstrates the need to Model Biogeochemistry
Kalindhi Larios and *Stefan Gerber*
17. Water Table Variations and Carbon Dynamic in a Short Hydroperiod Sawgrass Marsh under Present and Future Conditions in a Land Surface Model
Yan Liao and *Stefan Gerber*
18. Biochar Effects on Nitrogen Leaching from a Spodosol Amended with Different N Fertilizer Sources
Yanyan Lu, *Maria Lucia Silveira*, *George O'Connor*, *Joao M.B. Vendramini*, *John Erickson*, and *Yuncong Li*
19. Comparison of Fitness and Nutrient Effects between Conventional and Sustainable Fertilizers for Subtropical Seagrass Restoration
Conor MacDonnell, *Frank Bydalek*, *Anna Thornton*, *Todd Osborne*, and *Patrick W. Inglett*
20. Aginate/Glomalin Biobeads: An Initial Determination of Structural Cohesivity, Nutrient Remediation Ability, and Reapplication Viability
Kelly Mahan-Percivall and *Jehangir H. Bhadha*
21. Land Cover and Climate as Drivers of Global Mean Annual Evapotranspiration
Katie McCurley and *Jim Jawitz*
22. The Developmental History of Soil Concepts
Katsutoshi Mizuta and *Sabine Grunwald*
23. Algae Cultivation: Growth of the Filamentous Alga *Oedogonium* Compared to Microalgae
Rebecca O'Connell and *Ann C. Wilkie*

24. Let's Get Physical- Properties of Particle Interactions at the Calhoun Critical Zone Observatory
Julio C. Pachon, Allan B. Bacon, Daniel D. Richter, and Sharon A. Billings
25. Controls on Mineral Phosphate Dissolution Kinetics in Aquatic Systems
Sara A. Phelps and Todd Z. Osborne
26. Seasonal Carbon Fluxes in a Patterned Karst Landscape: The Implications for Basin Development and Pattern Reinforcement
Carlos Quintero and Matthew Cohen
27. DNDC Simulation of Soil Carbon Dynamics in Subtropical Native Rangelands of Florida Requires Adjustments in both Growth and Decomposition Parameterization
Dipti Rai, Stefan Gerber, Maria L. Silveira, K.S. Inglett, Saroop Sandhu, and Patrick W. Inglett
28. Stakeholder Survey of Impacts Resulting from Coastal Erosion: User Perceptions Prior to Living Shoreline Intervention
Vitaliya Repina and Mark Clark
29. Student Compost Cooperative - Reducing UF's Ecological Footprint
Sierra Richardson and Ann C. Wilkie
30. Estimating Isotherm Parameters from Soil Test Data across Eastern and Central United States
Amanda Rodriguez and Vimala Nair
31. A Model of Soil Subsidence in a Subtropical Drained Peatland
Andres F. Rodriguez, Stefan Gerber, and Samira Daroub
32. Seasonal Variations in Soil Enzyme Activities and Carbon Fractions in Sub-Tropical Grazing Lands
Saroop S. Sandhu, K.S. Inglett, Patrick W. Inglett, Maria L. Silveira, and Stefan Gerber
33. Influence of Rootstock, Propagation Method, and Soil Type on Citrus Rhizosphere Composition
John M. Santiago, Ute Albrecht, and Sarah L. Strauss
34. DNA-Based Methods used to Explore the Root and Soil Microbiome in Sod-Based Rotation System
Neetika Thakur, Chih-Ming Hsu, Zane Grabau, Lesley Schumacher, David Wright, Ian Small, and Hui-Ling Liao

35. Boron (B) Uptake and Availability in Citrus on a Sandy Entisol
Qudus Uthman, Davie Kadyampakeni, and Peter Nkedi-Kizza
36. Perceptions, Beliefs, and Values of Soil and its Health
Kay Wilcox, Sabine Grunwald, Monika Ardelet, and Tracy Irani
37. Application of Bagasse for Sugarcane Production on Sandy Soils in South Florida
Nan Xu, Jehangir Bhadha, Raju Khatiwada, Stewart Swanson, and Rao Mylavaram
38. Temporal Trend in Water Salinity of the Suwannee River Estuary and the Effects of Freshwater Supply and Sea Level Rise
Jiahua Zhou, Matthew Deitch, Sabine Grunwald, and Bill Pine

Non-Judged Proposal Poster Titles & Authors:

39. Cover Crop Biomass Production for Five Summer Cover Crop Treatments Grown before Fall Bell Pepper (*Capsicum annuum*) Production in Florida
John Allar & Gabriel Maltais-Landry
40. Aquatic Weeds: One Man's Trash is Another Man's Treasure
Yuting Fu, Jehangir H. Bhadha, and Ramdas Kaniserry
41. Digging a Little Deeper: An Analysis on Environmental Education in Soil and Water Science for Rice Production
Leandra Gonzalez and Jehangir Bhadha
42. Comparison of Soil C, N and P Dynamics in Sod-Based versus Conventional Peanut-Cotton Rotations in the Southeastern US
Michael James & Gabriel Maltais-Landry
43. Investigating Biological Soil Crusts and Nutrient Availability in Citrus Agroecosystems
Clayton Nevins, Patrick Inglett, and Sarah Strauss
44. Nitrogen Fixation Capabilities and Cyanobacterial Composition of Biocrusts in an Agricultural Ecosystem
Kira Sorochkina, Patrick Inglett, Sarah Strauss

Non-Judged Poster Titles & Authors:

45. Florida Pine Flatwoods: Sustainability in the Context of Long-Term Agroecosystem Research (LTAR)
*Marta Moura Kohmann, **Carolina Brandani**, Maria Lucia A. Silveira, Kacey Aukema, Raoul Boughton, Joao M.B. Vendramini, Philippe Moriel, Brent Sellers, Elizabeth Boughton and Hilary Swain*
46. Sugarcane Response to Nitrogen Application: Comparing Brazil and Florida Sites
***Matheus Angeli**, Jehangir H. Bhadha, Chris LaBorde, Rafael Otto, and Gerson Marquesi Netto*
47. Coupling Ethanol Extraction with Anaerobic Digestion to Remove as from As-hyperaccumulator *Pteris vittata*
***Evandro B. da Silva**, Ann C. Wilkie, and Lena Q. Ma*
48. Wastewater Treatment Plant Phosphorus Mass Balance Using Stella Model
***John Hallas**, Cheryl Mackowiak, and Ann C. Wilkie*
49. Effects of Hurricane Irma on Water Quality and Dissolved Organic Carbon Concentrations across Pellicer Creek
***Tracey B. Schafer**, Nick Ward, Paul Julian, K.R. Reddy, and Todd Z. Osborne*
50. Water Balance Variation across North America - the Long-Term Agroecosystems Research Network
***Carolina Marta, Betsey Amartya, and Clarie Baffaut**
Maria Silveira's Research Group*
51. The Characteristics of Biofuel Residues and their Potential Impacts on Soil Properties
***Lilit Vardanyan**, Tanumoy Bera, Kanika Sharma Inglett, George O'Connor, Ann Wilkie, and K.R. Reddy*
52. Biochar and P Fertilizer Amendments Affect as Tolerance and Uptake by Rice
***Min Xu**, Evandro da Silva, and Lena Ma*