



17th Annual Soil and Water Sciences Research Forum Program

September 15, 2016

Rion Ballroom - J. Wayne Reitz Union

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| 8:15 am – 9:00 am | Registration |
| 9:00 am – 9:05 am | <u>Opening Remarks</u>
K. Ramesh Reddy, SWSD Chair |
| 9:05 am – 9:15 am | <u>Jack Payne</u>
IFAS – Senior Vice President for Agriculture and Natural Resources |
| 9:15 am – 9:30 am | <u>Introducing the Institute for Sustainable Food Systems</u>
James L. Anderson
Director, Institute for Sustainable Food Systems
Professor, Food and Resource Economics Department
University of Florida |
| 9:30 am – 10:30 am | <u>Africa's Progress in Fighting Hunger: Science and Policy</u>
Pedro A. Sanchez
Research Professor, Soil and Water Sciences Department
University of Florida |
| 10:30 am – 10:50 am | BREAK |

SESSION I – New Faculty Oral Presentations

Rion Ballroom - J. Wayne Reitz Union

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

Session Chair: James Jawitz

- 10:50 am – 11:10 am **Pedogenic Processes in No Person's Land**
Allan Bacon, Assistant Professor
Soil and Water Sciences Department
University of Florida
- 11:10 am – 11:30 am **Managing Water Resources to Maintain Human and Ecological Needs: A Watershed-scale Perspective**
Matthew Deitch, Assistant Professor
West Florida Research and Education Center – Milton, FL.
Soil and Water Sciences Department
University of Florida
- 11:30 am – 11:50 am **Taking Steps to Understand and Manage Soil Microbial Communities for Agriculture**
Sarah Strauss, Assistant Professor
Southwest Florida Research and Education Center –
Immokalee, FL.
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 – Graduate Student Oral Presentations

Session Chairs: Katie McCurley, Joshua Papacek, and Andres Rodriguez

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

The Opportunist: How the Human Pathogen *Salmonella* has adapted to The Tomato Host

Authors: *Andree George and Max Teplitski*

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

Characterization of Microbial Communities within Tropical and Sub-Tropical Peatlands

Authors: *Elise Morrison, P. Thomas, B. Turner, S. Newman, T. Kahveci, and A. Ogram*

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

Drivers of Peatland Soil Carbon Composition and Potential Greenhouse Gas Production: A Global Perspective

Authors: *Anna E. Normand, Benjamin L. Turner, Jamie Lamit, Adam N. Smith, Ben Baisier, Mark W. Clark, Erik Lilleskov, Sam P. P. Grover, Alex W. Cheesman, and K. Ramesh Reddy*

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

Impact of Floating Aquatic Vegetation Suppression on Canal Sediment Properties in the Everglades Agricultural Area

Authors: *Anne E. Sexton, Samira H. Daroub, Jehangir H. Bhadha, and Timothy A. Lang*

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

Soil Salinity under Seepage Irrigation and Irrigation Drainage Tile in Northeast Florida

Authors: *Eunice Yarney and Mark Clark*

SESSION III - Student Poster Viewing and Reception

Rion Ballroom, J. Wayne Reitz Union

2:30 – 3:30 pm **Poster Session I**

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

3:30 – 4:30 pm **Poster Session II**

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

Judged Poster Titles & Authors:

1. Potential Remediation of Contaminated Surface Waters using *Acorus gramenius* (Japanese Sweetflag) and *Canna hybrida* 'Orange Punch'
Noha Abdel-Mottaleb and *P. Chris Wilson*
2. A Methane Emissions Model for Broad Application
Carla Alonso-Contes, *Stefan Gerber, Isaac Duerr, and Nikolay Bliznyuk*
3. Phosphorus Forms in Freshwater and Estuarine Waters of an Urban Watershed
Sinan Asal and *Gurpal S. Toor*
4. Looking Inside the Black Box: Effects of Flow and Vegetation Type on Enzyme Activities in Constructed Wetlands of the Florida Everglades
Sara Baker, Kaylee A. Rice, Kanika S. Inglett, X. Liao and Patrick W. Inglett

5. Impacts of the Abundance of *Candidatus Liberibacter* on the Citrus Phyto-Microbiome and Insights to Bacterial Interactions That Could Control the Pathogen
Ryan Blaustein, Kelly Morgan, Graciela Lorca, and Max Teplitski
6. Application of Submerged Aquatic Vegetation as Bio-filter for Phosphorous Reduction
Jay Capasso, Jehangir Bhadha, Timothy Lang, and Samira Daroub
7. The Effect of Short Term Inundation on Potential Nitrogen Flux in Coastal Ecosystems
R. Collins, R. Mylavarapu, T. Osborne, and M. Clark
8. Phytoremediation of As-contaminated soils by As-hyperaccumulator *Pteris vittata*: Long-term Efficiency and Biomass Disposal
Evandro B. da Silva, Jason T. Lessl, Ann C. Wilkie, and Lena Q. Ma
9. Temperature Sensitivity of Denitrification in Sandy Pasture Soils
D. Katelyn Foster, Xiaolin Liao, and Patrick W. Inglett
10. Solid State and Solution Chemistry to Evaluate Phosphorus Release from Biochars
Andressa Freitas, Vimala D. Nair, Willie G. Harris, and Cheryl Mackowiak
11. A Discussion of Methods of Stakeholders' Mental Models of Soil Management Relating to Food Security in India
Claire Friedrichsen, Samira H. Daroub, Martha C. Monroe, John. R. Stepp, and Suhas Wani
12. Background Concentrations of Polycyclic Aromatic Hydrocarbons and Heavy Metals in Florida Urban Soils
Peng Gao, Jing Su, Evandro Barbosa da Silva, Leo Jackson da Silva Moreira, Timothy G. Townsend and Lena Q. Ma
13. Pedogenic and Spatial Characteristics of a Massive and Understudied Soil Carbon Pool
Yaslin Gonzalez, Allan R. Bacon, and Willie G. Harris
14. Oak Hammock Restoration on a Disturbed Site Adjacent to Payne's Prairie (Gainesville, FL)
Robbie Guggeneheim
15. Distributed Wastewater Treatment Plants – A Sustainable and Economical Phosphorus Source through Struvite Recovery
John Hallas, Cheryl Mackowiak, and Ann C. Wilkie

16. Evolution of Legume-Rhizobia Mutualism after 18 Years of Elevated CO₂ and N Availability
Chelsea M. Hazlett, Kimberly J. La Pierre, and Ellen L. Simms
17. Analysis of Microbial Communities and N Cycling Associated with Groundwater Discharge in the Yucatan Peninsula
Laibin Huang, Caitlin Young, Andrea Pain, Jonathan B. Martin, and Andrew Ogram
18. Land Application of Lignocellulosic Residual Wastes: Effects on Soil Biogeochemical Properties
S. Jamis, K.S. Inglett, J.E. Erickson, L. Vardanyan, G.A. O'Connor, and K.R. Reddy
19. Effects of Varying Rates of P and K Fertilizer on Sandy Soil and Peanut Production
Land, A., R. Mylavarapu, G. Means, R. Gautam, and F. Bortolozzo
20. Anatomical Responses of *V. Americana* & *S. kurziana* to Water Column Nitrate Concentrations and Sediment Type
Leah LaPlaca and Todd Osborne
21. Dissolved Organic Nitrogen in Runoff/Surface Water from Agricultural Fields
Liguang Li, Zhenli He, Patrick Inglett, Malak M. Tfaily and Peter J. Stoffella
22. Simulating Everglades Carbon Fluxes and GHG Emission Under Varying Hydrology Parameterization in the Community Land Model
Yan Liao and Stefan Gerber
23. Hyphenated Hydrology: Multidisciplinary Evolution of Water Resource Science
K.L. McCurley and J. W. Jawitz
24. Vegetation Response and Elevation Change in a Perturbed Hydrologic Regime: The Subsidy-Stress Gradient in a Peat-Based Floodplain Marsh
Sara A. Miller, Angelique M. Keppler-Bochnak, and Kimberli J. Ponzio
25. Prototype Development of a New Soil Index Using Econometrics Method: Data Envelopment Analysis
Katsutoshi Mizuta, Sabine Grunwald, Wendell P. Cropper, Wonsuk Lee, Gustavo M. Vasques, and Michelle A. Phillips
26. Nitrogen Forms in Gradient from Freshwater to Estuarine Ecosystem: Longitudinal Distribution, Bioavailability, and Source Characterization Studies
Jariani Jani and Gurpal S. Toor
27. Revisiting Traditional Sedimentation Techniques and Redefining Soil Texture with Laser Diffraction Technology
Pachon, J.C. and A.R. Bacon

28. A Survey of Nitrogen Fixation Potential in a Subtropical Estuary (Indian River Lagoon, FL)
Joshua R. Papacek, Edward J. Philips, Margaret A. Lasi and Patrick W. Inglett
29. Open-pond Cultivation of Microalgal Polycultures on Landfill Leachate
Marie D. Peralta and Ann C. Wilkie
30. Karst Depression Analysis and Landscape Pattern in Big Cypress National Park
Carlos Quintero and Matthew Cohen
31. Influence of Carbon Lability and Flooding Treatment in Potential Oxidation of Histosols in the Everglades Agricultural Area
Andres F. Rodriguez, Samira Daroub, and Stefan Gerber
32. Data Mining Reveals Relationships between Soil Carbon and Environmental Factors at Tier 2 Sites
C. Wade Ross, Sabine Grunwald, Jason Vogel, Allan Bacon, Eric J. Jokela, Rosvel Bracho-Garrilo, Madison Akers, Joshua Cucinella, Andy Lavinier, Daniel Markewitz, Tom Fox, and Tim Martin
33. Bioenergy Production from Sheep and Goat Manure
Claudia M. Sanchez and Ann C. Wilkie
34. Evaluation of Organic Carbon Accumulation on a Mangrove Spoil Island
Tracey B. Schafer, Rex Ellis, Caitlin Hicks-Priès, and Todd Z. Osborne
35. Risks from Biosolids-borne Ciprofloxacin and Azithromycin
Harmanpreet Sidhu and George O'Connor
36. Carbon Stocks in a Shifting Ecosystem: Climate Induced Migration of Mangroves into Salt Marsh
L.T. Simpson, T.Z. Osborne L.J. Duckett, and I.C. Feller
37. Student Compost Cooperative – Promoting Soil Health
Mary Vasilevsky and Ann C. Wilkie

Non-Judged Poster Titles & Authors:

38. Short-Term Impacts of Litter Quality on Soil Carbon Accumulation
Amanda Baldo, Bernardo M. M. N. Borges, Victor S. Ribeirinho and Maria L. Silveira
39. Optimization of Phosphorus Requirement and Yield Prediction in Bush Beans using Artificial Neural Network
Bortolozo, F., R.S. Mylavarapu, L.M. De Oliveira, and G.D. Means

40. Use of Biosolids in Reducing Phosphorus Loss from Florida Agricultural Soils
Biswanath Dari, C.L. Mackowiak, Vimala Nair, and J.P. Shirley
41. Fluoride Enhanced Arsenate and Phosphate Uptake in Fern Plant *Pteris ensiformis*
Suchismita Das and LQ Ma
42. *Pteris vittata* Reduced Arsenic Uptake by Lettuce in an As-contaminated Soil
Letuzia M. de Oliveira, Julia Gress, Bala Rathinasabapathi, and Lena Q. Ma
43. Predicting Optimum N Requirement for Irrigated Field Corn in Sandy Soils of North-central Florida
Rajendra Gautam, George Hochmuth, Rao Mylavarapu, Heather Enloe, and Anthony Drew
44. Sustainable Agriculture Research in Everglades Agricultural Area
Raju Khatiwada, Jay Capasso, Samantha Brody, and Jehangir Bhadha
45. Pesticides Sorption Kinetics, Equilibria, and Column Transport Using Fertilizer Mixtures in Soils from Florida and Nigeria
Jorge A. Leiva, Nasiru M. Danmowa, Peter Nkedi-Kizza, Kelly T. Morgan, James Jawitz, and Chris Wilson
46. Determination of Fomesafen in Soil using Hybrid Extraction Techniques and LC/MS-MS Analysis
Zhuona Li, Francisca O Hinz, and P. Christopher Wilson
47. Identifying Hot Spots and Moments of Denitrification and Nitrogen Transformation in the Silver Spring springshed, USA
Xiaolin Liao, Patrick W. Inglett, Andy Canion, and Dean Dobberfuhl
48. Bioenergy Recovery Scheme for Industrial Starch Crop and Associated Co-products
Wendy A. Mussoline and Ann C. Wilkie
49. Navigating Environmental Fellowships: What is Out There and Tips for Success
Anna Normand
50. Assessment of Flow Paths and Confluences for Saltwater Intrusion in a Deltaic River Network
Xiaojing Shao, Baoshan Cui, and Zhiming Zhang
51. Screening of Potassium Solubilizing Bacteria: A Sustainable Approach for K-Deficient Soils in Pakistan
Ali R. Siddiqui, Letuzia M. De Oliveira, Sher M. Shahzad, Muhammad Ashraf, Shabana Nazeer, Bala Rathinasabapathi and Lena Q. Ma

52. Organic Phosphorus Forms in Wetland Soils by Nuclear Magnetic Resonance (NMR) Spectroscopy

Lilit Vardanyan, Sue Newman, and K.R. Reddy

53. The Response of Sediments and Dissolved Organic Matter to Rapid Rainfall in the Santa Maria da Vitoria Watershed, Espírito Santo, BR

Nick D. Ward, Luciano Firme de Almeida, Genswesley Dias, Rebekka Gould, Amanda Tan, Thomas S. Bianchi, Alex V. Krusche, Richard G. Keil, and Jeffrey E. Richey