



12th International Symposium on Biogeochemistry of Wetlands

Protecting the **Future** of Water

April 23-26, 2018 | Coral Springs, Florida, USA

www.conference.ifas.ufl.edu/biogeo2018

Monday, April 23, 2018	
4:00pm-6:00pm	<p>Poster Presenters and Sponsors Set Up Displays [Conference Center - Orchid Ballroom]</p>
4:00pm-7:00pm	<p>Symposium Registration Open [Conference Center - Palm Foyer]</p>
6:00pm-8:00pm	<p>Welcome Reception on Breeze's Terrace <i>(Please plan to arrive in time to join us!)</i></p>
Tuesday, April 24, 2018	
7:30am-5:00pm	<p>Symposium Registration Open [Conference Center - Palm Foyer]</p>
7:30am-8:30am	<p>Morning Refreshments in Poster & Sponsor Display Area</p>
8:30am	<p>Opening General Session [Royal Poinciana]</p> <p>Introductory Remarks Dr. Todd Osborne, Assistant Professor, University of Florida/IFAS Soil and Water Sciences Department, Whitney Laboratory for Marine Biosciences, St. Augustine, Florida -and- Dr. John White, Professor, Louisiana State University Department of Oceanography and Coastal Sciences, Baton Rouge, Louisiana</p>
8:45am	<p>Welcome Address Dr. Jack Payne, Senior Vice President for Agriculture and Natural Resources, University of Florida/IFAS, Gainesville, FL</p>
9:00am	<p>Plenary Presentation Coastal Environmental Settings as a Model to Explain Global Controls of Carbon Storage in Mangroves Dr. Robert Twilley, Executive Director, Louisiana Sea Grant College Program; Professor, Oceanography and Coastal Sciences, Baton Rouge, LA</p>
10:00am-10:30am	<p>AM Refreshment Break in Poster & Sponsor Display Area [Conference Center - Orchid Ballroom]</p>

Tuesday, April 24, 2018			
Concurrent Sessions [10:30am - 12noon]			
	Session 1	Session 2	Session 3
	Royal Poinciana	Ibis	Egret
	Methane and Nitrous Oxide Cycling in Wetlands and Upland Forests (Part 1)	New and Emerging Tools and Techniques for the Study of Biogeochemistry in Wetlands	Shifts in Foundation Species
10:30am	Pat McGonigal	David Krabbenhoft	Ilka Feller
	Introduction & Overview	Introduction & Overview	Introduction & Overview
10:35am	Sunitha Pangala Large Methane Emissions from Amazon Floodplain Trees	Brian Bergamaschi Tidal Wetland Biogeochemistry in High Definition: Using High-Frequency Measurements to Estimate Biogeochemical Rates	Samantha Chapman Warming Facilitates Mangrove Encroachment and Alters Belowground Processes
10:50am	Kristofer Covey Methane in Upland Forest Trees	Collin Eagles-Smith Flow Cytometry as a Novel, Rapid, Screening and Research Tool For Methylmercury Production Activity in Aquatic Ecosystems	Catherine Lovelock Fluctuating Sea Level and Habitat Change in Western Australia
11:05am	Mari Pihlatie Plant-Mediated Methane and Canopy Exchange in a Boreal Upland Forest	Sarah Janssen From Cellular to Global: Using Mercury Stable Isotopes to Understand Mercury Cycling and Sources	Loraé Simpson Effects of Nutrient Enrichment on the Carbon Dynamics in the Salt Marsh - Mangrove Ecotone
11:20am	Kazuhiko Terazawa Vertical Patterns of CH ₄ Emission along Tree Stems of <i>Alnus japonica</i> and <i>Fraxinus mandshurica</i>	Brett Poulin Molecular- and Atomic-Level Approaches to Characterize Dissolved Organic Matter: Insights for Mercury Bioavailability in the Florida Everglades	Anne Ola The Roots of Blue Carbon in Mangrove Forests: The Effects of Soil Properties on Stilt Root Development in <i>Rhizophora stylosa</i>
11:35am	Joost van Haren Large Methane Emissions from Palm Stems in Amazonian Peat and Flood Lands	William Orem Methods of Sulfur Analysis in Wetlands and Applications to Studies of Mercury Biogeochemistry	Emily Dangremond Extreme Events and Historical Regime Shifts in the Mangrove-Salt Marsh Ecotone
11:50am	Q&A	Q&A	Q&A
12noon-1:30pm	Group Luncheon Buffet		

Tuesday, April 24, 2018

Concurrent Sessions [1:30pm - 3:00pm]

				Session 4	Session 5	Session 6				
				Royal Poinciana	Ibis	Egret				
				Methane and Nitrous Oxide Cycling in Wetlands and Upland Forests (Part 2)	Wetland Enzymes in a Changing Environment (Part 1)	The Novel Biogeochemistry of Ubiquitous Understudied Urban Wetlands				
				Sunitha Pangala	Patrick Inglett	Ashley Smyth				
1:30pm				Introduction & Overview	Introduction & Overview	Introduction & Overview				
1:35pm				Pat Magonigal Methane Emissions from both Wetland and Upland Trees across a Flooding Gradient	Colin Jackson What Controls Microbial Enzyme Activity in Wetlands?	Alexander Reisinger Challenges of Connectivity Within Urban Landscapes: Examples From The Baltimore Ecosystem Study				
1:50pm				Zhiping Wang Methane Emissions from the Stems of Living Trees in Upland Forests	Patrick Inglett Warming Rate Drives Microbial Nutrient Limitation and Enzyme Expression	Lauren Kinsman-Costello Urban Stormwater Wetlands As Novel Biogeochemical Systems: Elevated Salt and Sulfate				
2:05pm				Rodrigo Vargas Automated Measurements of CO ₂ , CH ₄ , and N ₂ O Fluxes from Tree Stems and Adjacent Soils	Hojeong Kang PH Controls Phenol Oxidase and DOC Leaching From Global Peatland	Eban Bean A Little Retro: Valuing an Undersized Urban Stormwater Wetland Retrofit				
2:20pm				Paul Brewer High-Frequency Tree CH ₄ Flux Measurements Reveal Relationships with Tree Physiology and Environmental Properties	Chris Freeman Sequestering Carbon in Wetlands Through Enzyme Suppression	Ariane Peralta How Do We Manage Microbiomes to Promote Urban Wetland Functions?				
2:35pm				Christopher Schadt Methanogenic Archaea Dominate Mature <i>Populus deltoides</i> Heartwood Habitats	Q&A	Monica Palta Accidental Urban Wetlands: Biogeochemical Processes in Unexpected Places				
2:50pm				Q&A		Q&A				
3:00pm-3:30pm				PM Refreshment Break in Poster & Sponsor Display Area [Conference Center - Orchid Ballroom]						

Tuesday, April 24, 2018			
Concurrent Sessions [3:30pm - 5:00pm]			
	Session 7	Session 8	Session 9
	Royal Poinciana	Ibis	Egret
	Methane and Nitrous Oxide Cycling in Wetlands and Upland Forests (Part 3)	Wetland Enzymes in a Changing Environment (Part 2)	Agents and Causes of Peat Stability and GHG Ratios Across Moisture, Temperature & Latitude Gradients
3:30pm	Dongqi Wang	Kanika Inglett	Curtis Richardson and Jeff Chanton
	Introduction & Overview	Introduction & Overview	Introduction & Overview
3:35pm	Ashley Smyth Time Series Soil Oxygen Data Help Identify Hot Spots and Hot Moments of Greenhouse Gas Emissions From Wetlands	Stephanie T. Castle Linking Microbial Extracellular Enzyme Activities with Rates of Plant Litter Decay	Jeff Chanton A Global Latitudinal Gradient in Peatland Organic Matter Chemistry
3:50pm	Dongqi Wang Effects of Temperature Increasing On the Nitrous Oxide Emission from Intertidal Area along the East China Coast	Nic Vermeulen Use of Bacterial Transformation in Processing Non-Biodegradable Plastics	Curtis Richardson Chemical Controls on Carbon Sequestration and GHG Flux Along A Boreal To Tropical Gradient
4:05pm	Jeroen De Klein Greenhouse Gas Emissions from Wetlands with Different Vegetation Type	Zuhair AlQulaiti Hydrological Variation and Enzymic Decomposition in Wetlands	Maite Martinez-Eixarch Greenhouse Gas Emissions and Carbon Sequestration in Mediterranean Rice Fields and Wetlands: The Ebro Delta Case
4:20pm	Iikka Haikarainen Methane Fluxes of Trees and Forest Floor under Two Different Water Level Condition in Forestry Drained Peatland in Southern Finland	Kathleen Pietro Microbial Enzyme Activity in a Stormwater Treatment Ares in Response to Inflow Flow Conditions	Hongjun Wang Does An 'Iron-Gate' Regulate Drought Effects On Peat Decomposition?
4:35pm	Q&A	Kanika Inglett Stoichiometric Controls of Microbial Enzyme Activities on Nutrient Cycling In Wetlands	Neal Flanagan Thermal Alteration of Peat By Low-Severity Fire Reduces Net Carbon Loss To Microbial Respiration
4:50pm		Q&A	Q&A
5:00pm-7:00pm	Poster Session Reception I <i>(Poster presenters at odd numbered boards to be available for questions and discussion from 6pm - 7pm.)</i>		

Wednesday, April 25, 2018	
7:30am-5:00pm	Symposium Registration Open [Conference Center - Palm Foyer]
7:30am-8:30am	Morning Refreshments in Poster & Sponsor Display Area [Conference Center - Orchid Ballroom]
8:30am	General Session [Royal Poinciana] Introductory Remarks <i>Dr. K. Ramesh Reddy</i> , Graduate Research Professor and Chair, Soil and Water Sciences Department, University of Florida/IFAS, Gainesville, Florida
8:40am	<u>Impacts of Hurricane Irma on the Everglades and South Florida Ecosystem</u> <i>Dr. Nick Aumen</i> , Regional Science Advisor - South Florida, Center for Collaborative Research, US Geological Survey, Davie, Florida
9:00am	<u>Plenary Presentation</u> Carbon Remineralization and Burial in the Coastal Margin: Linkages in the Anthropocene <i>Dr. Thomas S. Bianchi</i> , Jon and Beverly Thompson Endowed Chair of Geological Sciences, Department of Geological Sciences, University of Florida, Gainesville, Florida
10:00am-10:30am	AM Refreshment Break in Poster & Sponsor Display Area

Wednesday, April 25, 2018				
Concurrent Sessions [10:30am - 12noon]				
	Session 10	Session 11	Session 12	Session 13
	Royal Poinciana	Ibis	Egret	Sandpiper
	Blue Carbon: Improving Data Applied to IPCC Emission Factors and Carbon Markets (Part 1)	Biogeochemical Responses to Saltwater Transgression Events in the Marine Environment	Wetland Management Effects on Carbon Sequestration and Greenhouse Gasses	Coastal Processes (Part 1)
	Gail Chmura	Todd Osborne	Kimberli Ponzio	Loraé Simpson
10:30am	Introduction & Overview	Introduction & Overview	Introduction & Overview	Introduction & Overview
10:35am	Junsung Noh Capacity Change in Organic Carbon Storage in Intertidal Flat During Drainage After Reclamation: Case Study in Saemangeum, Korea	Jayantha Obeysekera An Overview of Global and Regional Sea Level Rise Projections: Means and Extremes	Janet Ho Characterizing Biogeochemical Shifts in Two Shrub Encroached Marshes under Different Historical Disturbance Regimes in the St. Johns River, FL	John Nyman How Nutrients Interact With Stresses, such as Flooding and Salinity, to Affect Wetland Plant Growth and Leaf Tissue Stoichiometry
10:50am	Gail Chmura Blue Carbon Losses with Salt Marsh Drainage	Benjamin Wilson Drivers and Mechanisms of Peat Collapse in Coastal Wetlands	Dave Sumner Role of Hydroperiod and Fire on Carbon Dynamics of a Subtropical Peat Marsh	Shelby Servais Effects of Increased Salinity on Microbial Processing of Carbon and Nutrients in Brackish and Freshwater Wetland Soils
11:05am	Andre Rovai Global Controls of Carbon Storage in Mangrove Soils	Lisa Chambers Short-Term Response of Freshwater Wetland Soils to Saltwater Intrusion	Brian Bencotter Shifting Fire Regimes and the Future of Peatland Carbon Storage	Katie Bowes Sediment Phosphorus Speciation and Distribution in Coastal LA Sediments: Implications for Hypoxia and Food Web Dynamics
11:20am	Guangcheng Chen Considerations in Blue Carbon Accounting with Mangrove Restoration - Case Studies from South Fujian, China	Scott Neubauer Persistent Saltwater Intrusion Alters Ecosystem Carbon Cycling In Tidal Freshwater Marshes: Comparison of Results from In Situ Manipulations in Virginia and South Carolina	Angelique Bochnak Subsidy Stress Gradient in a Peat-based Floodplain Marsh	Joshua Papacek Have We Reached a New Normal?: Nutrient Cycling and Bloom Dynamics in the Northern Indian River Lagoon
11:35am	Havalend Steinmuller Fate of Soil Carbon Following Sea Level Rise-Induced Coastal Wetland Submergence: a Microcosm Experiment	Todd Osborne Translating the Effects of Sea-Level Rise in Urban Systems to the Coastal Ecosystem Interface	Barclay Shoemaker Carbon Cycling and Potential Soil Accumulation within Coastal Forested Wetlands	Shaofeng Pei Nutrient Dynamics and Their Interaction with Phytoplankton Growth in the Aquatic Areas of Coastal Wetland in Liaohe Delta, China
11:50am	Q&A	Q&A	Q&A	Q&A
12noon-1:30pm	Group Luncheon Buffet			

Wednesday, April 25, 2018				
Concurrent Sessions [1:30pm - 3:00pm]				
	Session 14	Session 15	Session 16	Session 17
	Royal Poinciana	Ibis	Egret	Sandpiper
	Blue Carbon: Improving Data Applied to IPCC Emission Factors and Carbon Markets (Part 2)	Nitrogen and Phosphorus Dynamics in Aquatic Systems	Hydrological Restoration: Reconnection of Wetland Ecosystems	Coastal Processes (Part 2)
	Gail Chmura	Kevin Grace	John White	Lisa Chambers
1:30pm	Introduction & Overview	Introduction & Overview	Introduction & Overview	Introduction & Overview
1:35pm	Derrick Vaughn Blue Carbon Sequestration Within a Northeastern Florida Intertidal Wetland - Response to Climate Change and Holocene Climate Variability	Hilary Flower Shifting Ground: Landscape-Scale Modeling Of Soil Biogeochemistry under Climate Change in the Florida Everglades	Greg Noe Nutrient and Sediment Inputs Change Soil Structure and Biogeochemistry in Floodplain Ecosystems: A Cross-Study Synthesis	Tianna Picquet Novel Interactions May Affect Range Expansions: Is Heavy Ungulate Browsing Restraining Mangrove Advance On The South Texas Coast?
1:50pm	Elise Morrison The Role of Priming Effects on the Conversion of Blue Carbon to CO ₂ in the Coastal Zone	Paul Julian One Of These Things Is Not Like The Other. Evaluation of Wetland Nutrient Stoichiometry and Homeostasis in a Subtropical Treatment Wetland	Sara McMillan Effects of Floodplain Restoration on Nitrogen and Phosphorus Dynamics in Agricultural Watersheds	Derek Detweiler Phytosterols as Tracers of Terrestrial and Wetland Carbon to Ten Thousand Islands, Florida, USA: Implications for Trophic Resource Usage in the Eastern Oyster, <i>Crassostrea Virginica</i>
2:05pm	Cailene Gunn Measuring Continuous Greenhouse Gas Fluxes from Pacific Northwest Tidal Wetland Sediments Following Salt-Water Intrusion	Sara Phelps Reevaluating the Consequences of Land Use: Accelerated Dissolution of Geologic Phosphate Deposition in Humic Lakes	Natalie Peyronnin Rebuilding Mississippi River Delta: Operating a Sediment Diversion to Balance Ecosystem and Social Needs	Hayley Craig Factors Controlling Diversity and Composition of Soil Microbial Communities in Mangroves
2:20pm	Thomas Mozdzer Nutrient Enrichment Alters Blue Carbon Pools and Processes	Alina Spera Effect of Hydrologic Restoration on Coastal Wetland Soil Properties	Nia Hurst Reducing Nitrogen Removal Uncertainty for Operation of Mississippi River Sediment Diversions: Nitrate Reduction Rates In Turbulent Flow Conditions	Michael Wessel Developing a Nutrient Management Strategy for Southwest Florida Tidal Creeks by Linking Source Water Concentrations, Instream Processes, and Estuarine Dynamics
2:35pm	Siyuan Ye Carbon Sequestration and Its Controlling Factors in the Temperate Wetland Communities Along the Bohai Sea, China	William Mitsch Sustainably Solving Legacy Phosphorus and Nitrogen in Landscapes with Wetlands and Wetlacreulture	John White Evaluating Nitrate Reduction in a Hydrologically Restored Bottomland Hardwood Forest: Is Reconnection Improving Water Quality Function?	Jessica Vaccare The Impacts of Corexit EC9500A on Wetland Microbial Activity and Community Structure in Barataria Bay, LA., USA
2:50pm	Q&A	Q&A	Q&A	Q&A
3:00pm - 3:30pm	PM Refreshment Break in Poster & Sponsor Display Area			

Wednesday, April 25, 2018				
Concurrent Sessions [3:30pm - 5:00pm]				
	Session 18	Session 19	Session 20	Session 21
	Royal Poinciana	Ibis	Egret	Sandpiper
	Blue Carbon: Improving Data Applied to IPCC Emission Factors and Carbon Markets Part 3	Influence of Large-scale Restoration on Biogeochemical Processes	Biogeochemical Studies Toward Improving Performance of the Everglades Stormwater Treatment Areas	Treatment Wetlands
3:30pm	Gail Chmura	Fred Sklar	Odi Villapando	Mark Sees
	Introduction & Overview	Introduction & Overview	Introduction & Overview	Introduction & Overview
3:35pm	<p>Joseph Smoak Coupled Soil Carbon Measurements and Remote Sensing to Quantify Above and Belowground Carbon Stocks in Mangrove Forest of the Ten Thousand Islands Region of Southwest Florida, USA</p>	<p>Sue Newman Restoration of Biogeochemical Characteristics through Active Management of the Nutrient-Enriched Everglades (CHIP)</p>	<p>Len Scinto Settling and Entrainment Properties of Particulates in the STAs</p>	<p>Carles Ibanez Dynamics of Metals, Nutrients, Sediments and Carbon in Mediterranean Constructed Wetlands Receiving Agricultural Runoff</p>
3:50pm	<p>Joshua Breithaupt Are Carbon Burial Rates in the Coastal Everglades Higher Now Than They Were a Century Ago?</p>	<p>Erik Tate-Boldt Biogeochemical Drivers of Aquatic Ecosystem Metabolism under an Altered Flow Regime in an Everglades Marsh</p>	<p>Patrick Inglett Hydrologic Flow Effects on Microbial Stoichiometry and Enzyme Activity in the Everglades Stormwater Treatment Areas</p>	<p>Li Zhang Hydrological Regime Impacts on Macrophyte Communities of Urban Stormwater Treatment Wetlands in Southwest Florida</p>
4:05pm	<p>Jeffrey Kelleway What is the Carbon Sequestration Potential of Australia's Coastal Floodplain Forests?</p>	<p>Colin Saunders Flow Impacts on P and OM Cycling across Everglades Ridge and Slough: Lessons from Landscape Budgets in the DECOMP Physical Model and Shark Slough, ENP</p>	<p>Lauren Griffiths Nutrient Retention via Vegetative Uptake and Sedimentation in Created Wetlands in Subtropical Florida</p>	<p>Taylor Nesbit Seasonal and Hurricane Irma Effects on the Hydrologic Regime of A Constructed Urban Stormwater Treatment Wetland Complex in Southwestern Florida</p>
4:20pm	<p>Bong-Oh Kwon Carbon Storage Capacity of Estuarine Tidal Flat and Salt Marsh in the West and South Coasts of Korea</p>	<p>Christa Zweig Active Management Influences on Biogeochemistry in a Nutrient-Poor Wetland</p>	<p>Mike Jerauld Phosphorus Flux in the Everglades Stormwater Treatment Areas</p>	<p>R. Thomas James Effects of Hydrology, Time and Inflow Concentration on Phosphorus Discharge from a Periphyton-Based Stormwater Treatment Area</p>
4:35pm	<p>Stephen Crooks Inclusion of Coastal Wetlands in United States Inventory of Greenhouse Gas Emissions and Sinks</p>	<p>Mark Cook Faunal Contributions to P Cycling and their Influence on Restoration of the Everglades</p>	<p>Odi Villapando Biogeochemical Response of Selected STA Flow-ways to Different Flow Scenarios</p>	<p>Ronald Corstanje Big Data Applied to the Stormwater Treatment Areas in The Everglades, Mapping Out System Resilience</p>
4:50pm	Q&A	Q&A	Q&A	Q&A
5:00pm-7:00pm	<p>Poster Session Reception II <i>(Poster presenters at even numbered boards to be available for questions and discussion from 6pm - 7pm.)</i></p>			

Thursday, April 26, 2018			
7:30am-12noon	Symposium Registration Open [Conference Center - Palm Foyer]		
7:30am-8:30am	Morning Refreshments in Poster & Sponsor Display Area		
Concurrent Sessions [8:30am - 10:00am]			
	Session 22	Session 23	Session 24
	Royal Poinciana	Ibis	Egret
	Biogeochemical Processes in South Florida Ecosystems	Contaminant Removal in Wetlands	Wetland Soil Biogeochemistry in Created and Restored Environments
8:30am	Mike Jerauld	Anna Sophia Knox	Jacob Berkowitz
	Introduction & Overview	Introduction & Overview	Introduction & Overview
8:35am	Kevin Grace Nutrient Exchange Dynamics Following Sediment Resuspension in South Florida Wetlands	Matt Huddleston Savannah River Site's A-01 Constructed Wetland System: A Model for Sustainable Aquatic Risk Mitigation	Christine VanZomeren Biogeochemical Response of Coastal Wetland Soil to Thin Layer Sediment Application
8:50am	Jennifer Cooper Influence of Mineral Precipitation and Aquatic Vegetation on Phosphorus Removal in Canal Water from the Everglades Agricultural Area	Anna Sophia Knox Metal Mobility and Retention in Constructed Wetland Sediment	Jacob Berkowitz Rapid Formation of Potential Acid Sulfide Soils Following Wetland Restoration – A Cautionary Tale
9:05am	Barry Rosen The Role of Cyanobacteria in Nucleating the Precipitation of Calcium Carbonate in the Everglades: Vaterite and Aragonite	Michael H. Paller Using DGT to Measure Bioavailable Metals in A Constructed Wetland Treatment System	Kim Oldenberg Impacts of Sediment Dredging on Phosphorus Dynamics of a Restored Riparian Wetland
9:20am	Hanh Nguyen Microbial Composition of Everglades Stormwater Treatment Areas is Linked to Sulfur Cycle	Xiaoyu Xu Do Constructed Wetlands Remove Metals or Increase Metal Bioavailability?	Hongjun Chen Dissolved Oxygen Sag Events in the Phase I Area of The Kissimmee River Restoration Project
9:35am	Richard Baker Biogeochemistry of Trace Elements in Card Sound, Florida, Inventory and Annual Turnover Circa 1973	Sanjana Banerjee Turning a Liability into an Asset: Can We Use the Invasive Apple Snail Pomacea Maculata In Biomonitoring Of Metal Contamination In Freshwater Marshes?	Masanori Fujimoto Spatial Variability in Microbial-Mediated Biogeochemical Processes in Everglades Stormwater Treatment Areas
9:50am	Q&A	Q&A	Q&A
10:00am-10:30am	AM Refreshment Break Poster Presenters and Sponsors Remove Displays		
10:30am-12noon	Closing General Session		
12noon	Symposium Concludes		
12noon-5:30pm	<u>Optional Post-Conference Field Trip – Loxahatchee Impoundment Landscape Assessment (LILA)</u> <i>Participants to gather in lobby next to registration to prepare for departure.</i>		