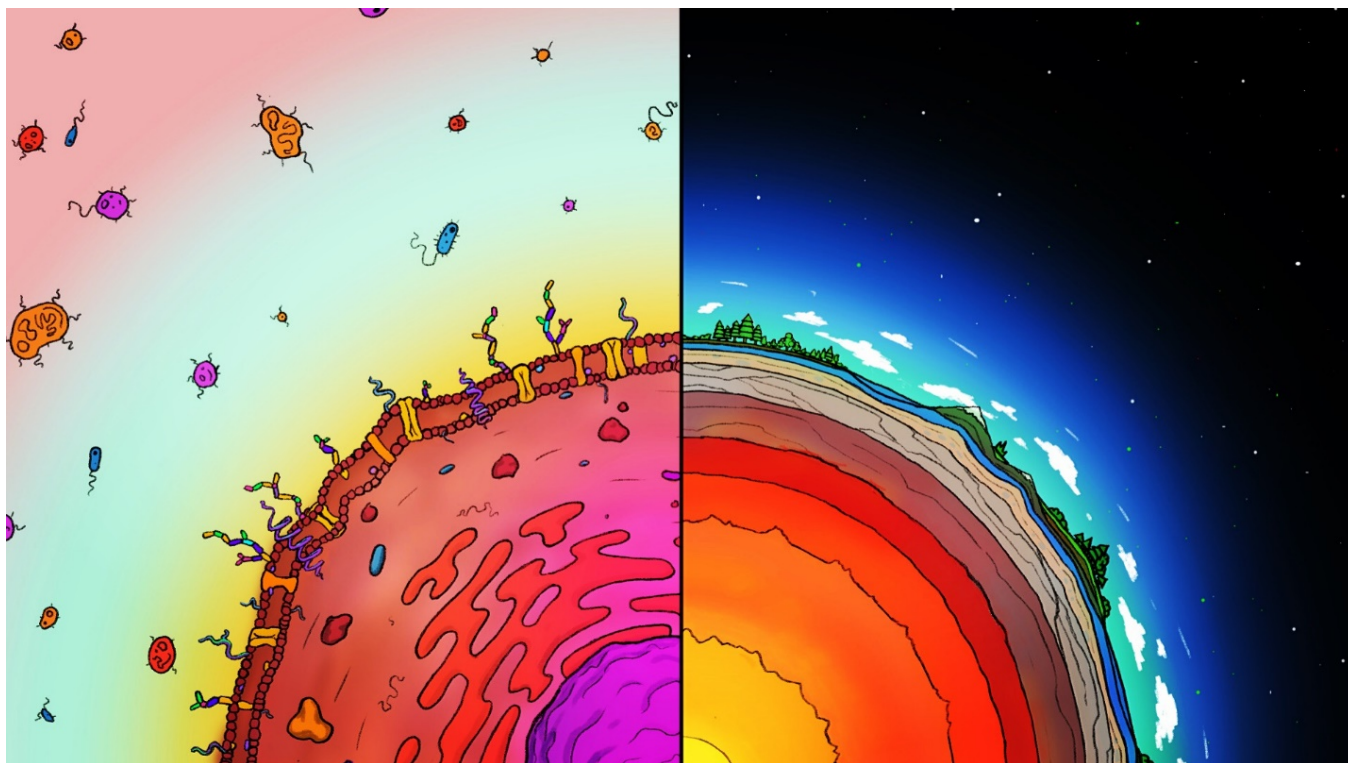


SBS-2018



Southeastern Biogeochemistry Symposium

Florida State University
Tallahassee, FL | April 6 - 8, 2018

Cover image (Earth/Cell) by Sam Walton. <https://www.slamtron.com/>

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Dauphin Island Sea Lab, East Carolina University, Florida State University, Florida A&M University, Georgia Institute of Technology, National High Magnetic Field Laboratory, University of Alabama, University of Georgia, University of Florida, University of North Carolina Chapel Hill, University of South Alabama, University of South Florida, University of South Carolina, University of Tennessee Knoxville, Virginia Tech

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FSU Graduate School
FSU College of Arts and Sciences
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Locations

Hampton Inn & Suites Tallahassee Capitol-University

824 Railroad Avenue, Tallahassee, Florida, 32310

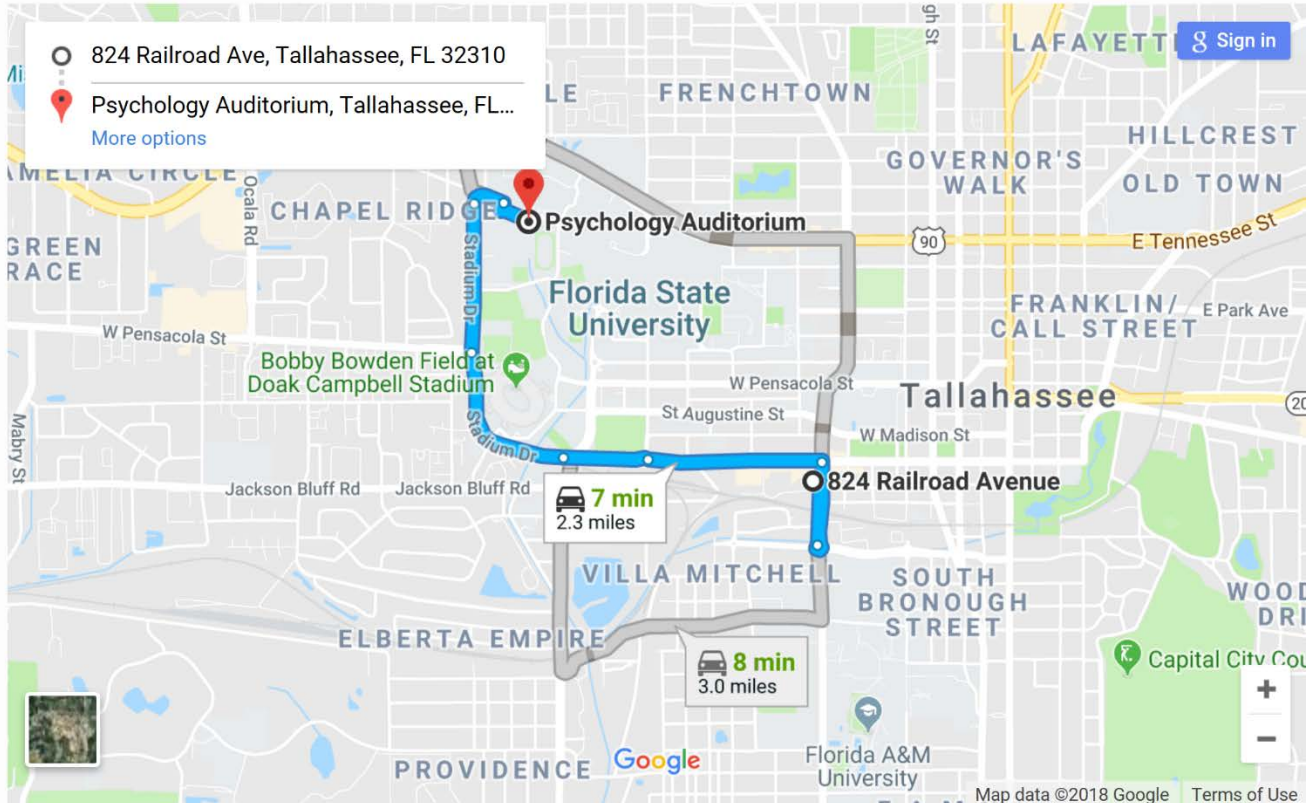
850-692-7150

Map showing driving directions from The Hampton Inn to the Psychology Auditorium.

It is a 30 minute walk from the hotel to the Psychology Auditorium, and there will not be a shuttle service. Free parking is available in the large Faculty/Staff surface parking lot behind the Psychology buildings. Turn right (east) on West Call Street off of Stadium Drive, go 0.2 miles and turn right (south) immediately after you pass the Auditorium. There is also a parking garage available nearby: turn right (east) on Spirit Way (before you get to West Call Street) off of Stadium Drive. Parking permits are not required on weekends.

The Friday evening mixer (7:00-10:00pm) is at Grasslands Brewery on the corner of Railroad Ave. and Gaines Street. Pizza, beer, and other drinks provided.

The Saturday evening mixer (no host bar) will be at Proof Brewery in Railroad Square, a few blocks south of the hotel.



Schedule

Friday April 6, 2018

Time	Event	Location
7.00PM- 10.00PM	Mixer	Grasslands Brewery

Saturday April 7, 2018

Time	Event	Location
8:15 AM - 9.00 AM	Registration	Psychology Auditorium
9:00 AM – 9.15 AM	Introduction/Welcome	Psychology Auditorium
9:15 AM – 10.00 AM	Keynote Talk	Psychology Auditorium
10:00 AM – 10.20 AM	Coffee Break	Psychology atrium
10:20 AM – 12.00 PM	Oral Session I	Psychology Auditorium
12:00 PM – 1.00 PM	Lunch	Seminole café
1:00 PM – 2.30 PM	Oral Session II	Psychology Auditorium
2:30 PM – 2.50 PM	Coffee Break	Psychology atrium
2:50 PM – 4.20 PM	Oral Session III	Psychology Auditorium
4:20 PM – 6.20 PM	Poster Session	Psychology atrium
6:20 PM – 7.20 PM	Dinner	Seminole Café
7:20 PM – 10.00 PM	Evening free	Proof Brewery: Not hosted; cash bar

Sunday April 8, 2018

Time	Event	Location
9:00 AM – 10.30 AM	Oral Session IV	Psychology Auditorium
10:30 AM – 10.50 AM	Coffee Break	Psychology atrium
10:50 AM – 11.30 AM	Awards	Psychology Auditorium

2018 SBS Keynote Speaker

Dr. Susan Lang

University of South Carolina
School of Earth, Ocean, and
Environment



Serpentinization, Carbon, and Life

Susan Lang is an Assistant Professor in the School of the Earth, Ocean, and Environment at the University of South Carolina, where her research focuses on the interactions among water, rocks, and microorganisms. She received an undergraduate degree in Chemistry from MIT and a Ph.D. in Chemical Oceanography from the University of Washington, supported in part by a National Defense Science and Engineering Graduate Student Fellowship. She conducted post-graduate research at Scripps Institution of Oceanography and ETH-Zürich in Switzerland. In 2016 she was selected as a Kavli Frontiers of Science Fellow by the National Academy of Sciences.

Lang investigates the biogeochemistry of the rocky subsurface of the oceans and continents. These environments are removed from photosynthetically derived inputs and are instead inhabited by microorganisms that obtain energy from water-rock reactions. Regions where water reacts with ultramafic rocks to form serpentinites may be particularly important, high-activity, 'population centers' in the oceanic subsurface since they are associated with high concentrations of hydrogen and abiotically produced organic molecules such as methane and formate. The outcomes of this research can provide insights into the early evolution of life on Earth and for detecting life on other planetary bodies.

Oral Session I, Saturday April 7, 2018, 10:20 AM – 12:00 PM

10:20 AM

1. A Bottom-Up Method to Estimate Species Specific Primary Production Rates on Coral Reefs
Daniel Owen*, William K. Fitt, Matthew H. Long, Brian M. Hopkinson, *University of Georgia*

10:35 AM

2. Fine scale benthic invertebrate megafaunal assemblage structure on the north pacific seamount Mokumanamana
Nicole Morgan*, Savannah Goode, E. Brendan Roark, Amy R. Baco, *Florida State University*

10:50 AM

3. Spatial data shift algorithm for 3-oxygen-probe aquatic eddy covariance system
Alireza Merikhi*, Peter Berg, Markus Huettel, *Florida State University*

11:05 AM

4. What sets the vertical structure of the ocean deoxygenation in warming climate?
Daoxun Sun*, Taka Ito, *Georgia Institute of Technology*

11:20 AM

5. Origins of Life Chemistry: Prebiotic Metabolite Production in Simulated Hydrothermal Vent Environments
Arthur Omran*, Oliver Steinbock, *Florida State University*

Oral Session II, Saturday April 7, 2018, 1:00 PM – 2:30 PM

1:00 PM

6. Microbial Community Assembly in Marine Phytoplankton-Bacteria Model Systems
He Fu*, Mary Ann Moran, *University of Georgia*

1:15 PM

7. ABC Transporters Mediated Multidrug Resistance in Prostate Cancer Cells
Toluleke O. Famuyiwa*, Joubin Jebelli, Elizabeth Ramirez, Allen Reilly, Christopher Pecille Dr. Kumi-Diaka, *Florida Atlantic University*

1:30 PM

8. Expanding the Structural and Phylogenetic Diversity of Conductive Geopili
Marcus S. Bray*, Bianca F. Costa, Jieying Wu, Cory C. Padilla, Frank J. Stewart, David A. Fowle, Cynthia Henny, Sean A. Crowe, Jennifer B. Glass, *Georgia Institute of Technology*

1:45 PM

9. High depth resolution of methanogenic estuarine sediments reveals ANME-1 as sole methanogen
Richard Kevorkian*, Sean Callahan and Karen G. Lloyd, *University of Tennessee*

2:00 PM

10. Role of Mn(IV) oxides in abiotic nitrous oxide production
Amanda Cavazos*, Martial Taillefert, Yuanzhi Tang, Jennifer Glass, *Georgia Institute of Technology*

Oral Session III, Saturday April 7, 2018, 2:50 PM – 4:20 PM

2:50 PM

11. Investigating a unique open ocean geochemical record of the end Triassic mass extinction from Panthalassa

Selva Marroquín*, Benjamin Gill, *Virginia Polytechnic Institute and State University*

3:05 PM

12. A comparative assessment of the role of anoxia during the Cambrian SPICE event

Matthew LeRoy*, Benjamin Gill, *Virginia Polytechnic Institute and State University*

3:20 PM

13. Assessing gas transfer velocity in a shallow, microtidal estuary

Bryce Van Dam*, Craig Tobias, James Edson, *University of North Carolina at Chapel Hill*

3:35 PM

14. The role of priming effects on the conversion of blue carbon to CO₂ in the coastal zone

Elise Morrison*, N. Ward, A. Arellano, Y. Liu, A. Rivas-Ubach, A. Ogram, T. Osborne, D. Vaughn, T.S. Bianchi, *University of Florida*

3:50 PM

15. Characterization and Degradation of Hydrocarbons Buried in Dry Pensacola Beach Sand

Ioana Bociu*, Markus Huettel, *Florida State University*

4:05 PM

16. Dissolved Organic Matter Throughout the Georgia Coastal Ecosystems LTER Domain: Sources, Distribution and Biodegradation

Maria Letourneau*, Sylvia C. Schaefer, Patricia M. Medeiros, *University of Georgia*

Oral Session IV, Sunday April 8, 2018, 9:00 AM – 10:30 AM

9:00 AM

17. Wastewater remediation coupled with fuel production from the cultivation of oleaginous algal micro-organisms native to Tallahassee, FL

Lowell Collins*, Ashvini Chauhan, *Florida A&M University*

9:15 AM

18. The response of microbially-mediated organic matter decomposition to elevated temperature in peatlands

Tianze Song*, Jose L. Rolando, Max Kolton, Rachel Wilson, Jason Keller, Scott Bridgham, Jeff Chanton, and Joel E. Kostka, *Georgia Institute of Technology*

9:30 AM

19. Polysaccharide Complexes in Sphagnum Moss Promote Decarboxylation and Mitigate CH₄ Production in Catotelm Peat

Alexandra Cory*, Rachel Wilson, Beth Holmes, Claire Wilson, Jeffrey Chanton, *Florida State University*

9:45 AM

20. Assembly, ecological function and evolutionary conservation of the Sphagnum core microbiome across the North America continent

Max Kolton*, Jonathan Shaw, David Weston, Joel E. Kostka, *Georgia Institute of Technology*

10:00 AM

21. Ozone deposition to forests degrades water-use efficiency across multiple ecosystems

Jason Ducker*, Christopher D. Holmes, Trevor Keenan, Silvano Fares, Allen Goldstein, Ivan Mammarella, William Munger, Jordan Schnell, *Florida State University*

10:15 AM

22. Using Functional Traits to Assess the Influence of Burrowing Bivalves on Nitrogen Removal in an Unregulated Lowland River in Central Alabama

Zachary L. Nickerson*, Behzad Mortazavi, Carla L. Atkinson, *University of Alabama*

Poster Session, Saturday April 7, 2018, 4:20 PM – 6:20 PM

1. Parametric uncertainty quantification of Mercury chemical Speciation modeling

Nur Ahmed*, Ming Ye, *Florida State University*

2. Iron and Sulfate Reducers in Response to Arctic Climate Change

Brandy Barber*, *University of Tennessee*

3. Expansion of anoxia/euxinia as driver for early Silurian extinction events: New geochemical proxy data from Sweden

Emily Benyoun*, Jeremy Owens, Olle Hints, Tonu Martma, Seth Young, *Florida State University*

4. Geochemical evidence for widespread anoxia-euxinia during the Late Silurian Lau Extinction Event

Chelsie Bowman*, Claudia Richbourg, Jeremy Owens, Seth Young, *Florida State University*

5. Depth-stratified marine microbial communities exhibit distinct enzymatic responses to high-molecular weight organic matter addition

Sarah Brown*, Adrienne Hoarfrost, J.P. Balmonte, Sherif Ghobrial, Carol Arnosti, *University of North Carolina at Chapel Hill*

6. Investigating feedbacks between chemistry and biology: Insights from Southern Ocean incubation experiments

Shannon Burns*, Kristen Buck, *University of South Florida*

7. Effects of Wind on Oceanic Submesoscale Processes

Xu Chen*, William Dewar, Mark Bourassa, *Florida State University*

8. Endolith diazotrophy, and its physiological effects on host crustose coralline algae

Ethan Cissell*, *Florida State University*

9. Turmeric Adulteration by Lead Paint

Mary E. DesRosiers*, Peter L. Morton, Maitreyi Mazumdar, and Kelsey Gleason, *Florida State University*

10. Carbon Flux of Heterotrophic-Autotrophic Interactions in Surface Ocean Bacteria

Frank Ferrer-Gonzalez*, Mary Ann Moran, *University of Georgia*

11. Double Trouble: Tracking (Late Wenlock) Silurian Sulfur and Carbon Perturbations associated with the Mulde Event from Tennessee and Nevada

Randall Funderburk*, Seth Young, *Florida State University*

12. Magnitude and variability of reactive silica in Mississippi River plume sediments

Aislyn M. Galford*, William C. Dobbins, Rebecca A. Pickering, Sydney Acton, Jeffrey W. Krause, *Dauphin Island Sea Lab, The University of Alabama, The University of South Alabama*

13. Characterizing the overall microbial community structure including two novel Thaumarchaeota in the annual northern Gulf of Mexico hypoxic zone

Lauren Gillies Campbell*, J. Cameron Thrash, Kiley W. Seitz, Brett J. Baker, Nancy N. Rabalais, Olivia U. Mason, *Florida State University*

14. Using thallium isotopes in the ~2.63 Ga Jeerinah Formation from Hamersley Basin, Western Australia, to constrain ancient seafloor oxygenation

Brett Holdaway*, Jeremy D Owens, Ariel D Anbar, Chadlin M Ostrander, Sune G Nielson, *Florida State University*

15. Mapping Marine Trace Metal and Macronutrient Remineralization Following a Phytoplankton Bloom

Adrienne Patricia Hollister*, Kristen Buck, *University of South Florida*

16. Carbon deposition and burial in estuarine sediments of the contiguous United States

Jack A Hutchings*, Thomas S Bianchi, Raymond Najjar, Maria Herrmann, Michael Kemp, *University of Florida*

17. The search for novel gas hydrate inhibitors

Abbie M. Johnson*, Frank J. Stewart, Piyush Ranjan, Brook L. Nunn, Jennifer B. Glass, *Georgia Institute of Technology*

18. Pharmaceuticals and Personal Care Products in the Effluent of Septic Tanks and in Groundwater beneath Septic Drainfields in Eastern North Carolina

Bailey King*, Listecky A, Mitra S, Humphrey CP Jr., Iverson, G, *East Carolina University*

19. Sequence Stratigraphic Analysis of the Evan's Ferry Roadcut, TN: A New Prospective for Late Ordovician (Sandbian) Sea Level from the Appalachian Basin

Nevin Kozik*, Seth Young, *Florida State University*

20. The impact of nutrient loading on nitrate removal in a *Juncus roemerianus* and *Spartina alterniflora* dominated saltmarsh in the northern Gulf of Mexico

Taylor C Ledford*, Alice Kleinhuizen, Corianne Tatariw, Behzad Mortazavi, *University of Alabama*

21. A thallium isotope record of ocean oxygenation during the Lomagundi Event

Zijian Li*, Christopher T. Reinhard, Noah J. Planavsky, Jeremy D. Owens, *Georgia Institute of Technology*

22. Historical Profiles of Organic and Soot Carbon in White Pond, South Carolina

Ashlyn Listecky*, Bailey King, Siddhartha Mitra, David Mallinson, Christopher Moore, Chad Lane, Kimberly Duernberger, *East Carolina University*

23. The influence of mesoscale and submesoscale circulation on sinking particles in the northern Gulf of Mexico

Guangpeng Liu*, Annalisa Bracco, Uta Passow, *Georgia Institute of Technology*

24. The role of parrotfishes in the bioerosion of crustose coralline algae with increasing ocean acidification

Joshua C Manning*, Sophie J McCoy, *Florida State University*

25. Influence of energy availability on the carbon isotopes of methane and biomarkers during hydrogenotrophic methanogenesis

Tran Nguyen*, B.D. Topçuoğlu, J.F. Holden, S.Q. Lang, *University of South Carolina*

26. Impacts of microbial community structure on denitrification rates in the rhizosphere of *Juncus roemerianus* and *Spartina alterniflora* in a mixed marsh in the Northern Gulf of Mexico

Rachel Petet*, Loren Knobbe, Patrick Chanton, Behzad Mortazavi and Olivia U. Mason, *Florida State University*

27. Diatoms and dissolved trace metal/nutrients ratios in the Southern Ocean

Kaitlyn Renegar*, Peter L. Morton, William M. Landing, *Florida State University*

28. New Late Silurian (Ludfordian) ^{13}C and ^{34}S Analyses from Western Tennessee: An Outer Ramp Perspective on the LAU CIE and Extinction Event

Claudia Richbourg*, Chelsie Bowman, Seth Young, *Florida State University*

29. The Biogeochemistry of Canvasback Lake

Jennifer Rogers*, Rob Spencer, *Florida State University*

30. Evaluating the sensitivity of subsurface microbial metagenome assembled genome properties as a function of metagenomic shotgun sequencing depth

Taylor Royalty*, Andrew Steen, *University of Tennessee*

31. Regional differences in aerosol trace element composition and solubility during the CLIVAR A16N and A16S campaigns (2013-2014)

Rachel Shelley*, Peter L. Morton, William M. Landing, *Florida State University*

32. The Effect of Surface Dispersant Application on Oil Degradation

Cathrine Shepard*, Samantha Joye, *University of Georgia*

33. Investigating marine chromophoric dissolved organic matter transformations with organic geochemical proxies in a growth and degradation experiment

Michael Shields*, Thomas S. Bianchi, Christopher L. Osburn, Joanna D. Kinsey, Kai Ziervogel, and Astrid Schnetzer, *University of Florida*

34. Potential activities of extracellular glycosyl hydrolases, peptidases, alkaline phosphatase, and sulfatase in sediments of the White Oak River, NC

Zachery Stooksbury*, Lauren A. Mullen, Andrew D. Steen, *University of Tennessee*

35. Turnover and Priming of Terrigenous Dissolved Organic Carbon in Permafrost-Influenced Streams of Central Alaska

Sadie R. Textor*, Wickland, K. P., Johnston, S. E., Podgorski, D. C., R. G. M. Spencer, *Florida State University*

36. Tracking Early Jurassic marine (de)oxygenation

Theodore R. Them II*, Benjamin C. Gill, Andrew H. Caruthers, Darren R. Gröcke, Selva M. Marroquín, Jeremy D. Owens, *Florida State University*

37. Field and culture studies of factors contributing to variability in the isotope effect of nitrate assimilation

Rachel Thomas*, Sven Kranz, Yuliya Danyuk, Sarah Fawcett, Angela Knapp, *Florida State University*

38. The effects of crude oil on northern Gulf of Mexico salt marsh nitrogen cycling

Derek Tollette*, Corianne Tatariw, Behzad Mortazavi, *University of Alabama*

39. A geochemical analysis of Rare Earth Elements (REEs) associated with significant sedimentary phosphorite deposits of West-Central Florida

Kyle Turner*, Jeremy Owens, *Florida State University*

40. Blue carbon sequestration within a northeastern Florida intertidal wetland - response to climate change and Holocene climate variability

Derrick Vaughn*, Thomas S. Bianchi, Todd Osborne, Michael Shields, William Kenney, *University of Florida*

41. Peatland Organic Matter Chemistry Trends Over a Global Latitudinal Gradient

Brittany Verbeke*, Suzanne B Hodgkins, Michael A. Carson, Louis J. Lamit, Erik A. Lilleskov, Jeff Chanton, *Florida State University*

42. V isotope composition in modern marine hydrothermal sediments

Fei Wu*, Jeremy Owens, Sune Nielsen, Chris German, Rachel Mills, *Florida State University*

43. Internal Nutrient Loads in a North Carolina Reservoir Lake

Mary Zeller*, Marc Alperin, *University of North Carolina at Chapel Hill*

44. Short- and long-term response of phytoplankton to ENSO in Prydz Bay, Antarctica

Jun Zhao*, Haisheng Zhang, Thomas S. Bianchi, Zhengbing Han, Jianming Pan, *University of Florida*