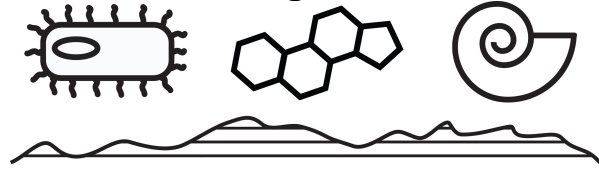


**Northeast Geobiology Meeting 2019: Schedule of Events**  
**Amherst College, Amherst, MA**



**Friday, March 29, 2019**

6 - 7:30 PM: Reception in Beneski Museum with passed food and bar with wine/beer

**Saturday, March 30, 2019**

8:00 - 8:45 AM: Coffee, breakfast, name tags, mugs etc. (Science Center Living Room)

8:45 - 9:00: Welcome, logistics (Science Center E110, Lipton Lecture Hall)

9:00 - 10:20 - Talks (Science Center E110, Lipton Lecture Hall)

*Calcium isotope fractionation during bacterially mediated carbonate precipitation*

Hal Bradbury, Katie Halloran, Chin Yik Lin, Sasha Turchyn

*Early marine diagenesis and mineralogical controls on the lithium isotopic composition ( $\delta^7\text{Li}$ ) of shallow marine carbonates*

Jack Geary Murphy, John A. Higgins, Anne-Sofie C. Ahm, Peter K. Swart

*Bulk and clumped isotope signature of aerobic methane reveals production pathway*

Lina Taenzer, D. Rumble, E.D. Young, J. Labidi, P. Carini, B. Bourgeois, S. Lincoln, X. Feng, J. Gaube, W.D. Leavitt

*Nitrogen isotopes in chlorophyll track taxonomic shifts in a natural phytoplankton community*

Jenan J. Kharbush, Derek Smith, Henry A. Vanderploeg, David Fanslow, Rebecca S. Robinson, Gregory J. Dick, Ann Pearson

10:20 - 10:50 Coffee Break (Science Center Living Room)

10:50 - 11:50 Talks (Science Center E110, Lipton Lecture Hall)

*Using membrane lipids produced by marine diatoms and Thaumarchaeota to reconstruct sea surface temperatures from 3.5-1.5 Ma near the outlet of the Indonesian Throughflow*

Rebecca A. Smith, Isla S. Castañeda, Jeroen Groeneveld, David De Vleeschouwer, Jorijntje Henderiks, Beth A. Christensen, Willem Renema, Kara Bogus, Stephen J. Gallagher, and Craig S. Fulthorpe

*Biological pump driven by diatom-diazotroph symbiosis during past ocean anoxia*

Felix J. Elling, Jordon D. Hemingway, Ann Pearson

*A theory of organic carbon preservation*

Jordon D. Hemingway, Daniel H. Rothman, Katherine E. Grant, Sarah Z. Rosengard, Timothy I. Eglinton, Louis A. Derry, Valier V. Galy

12:00 - 12:45 Lunch (Science Center Living Room)

12:45 - 1:30 Breakout sessions (E108, E208, E210, E212)

*Graduate school panel:* Undergrads! Come learn about applying for grad school and what the experience is like from current graduate students Lyle Nelson (Johns Hopkins University), Adriane Lam (UMass Amherst) and Danielle Santiago Ramos (Princeton University).

*Early career discussion:* Senior grad students, post docs, and early career faculty - join us for a discussion of how to balance teaching, mentoring, and research all while working towards increasing equity in our disciplines and our labs.

1:30 - 2:50 Talks (Science Center E110, Lipton Lecture Hall)

*Three-dimensional reconstructions and morphological analysis of Namapoikia, a putative Ediacaran sponge fossil, using GIRI*

Akshay Mehra and Adam Maloof

*A fishy perspective on the Eocene-Oligocene Transition*

Elizabeth Sibert, Michelle Zill, Ella Frigyik, Richard Norris

*Correlates and Paleoecological Significance of Porosity of Planktonic Foraminifera*

Janet E. Burke, Willem Renema, Michael J. Henehan, Leanne E. Elder, Catherine V. Davis, Amy E. Maas, Gavin L. Foster, Ralf Shiebel, Pincelli M. Hull

*Radiolarians got bigger across the PETM at Mead Stream, New Zealand*

Sophie Westacott, Christopher J. Hollis, Kristina M. Pascher & Pincelli M. Hull

2:50 - 3:20 Coffee and snack break (Science Center Living Room)

3:20 - 4:20 Talks (Science Center E110, Lipton Lecture Hall)

*A paradigm shift in banded iron formations?*

Robbins, L.J., Planavsky, N.J., Alessi, D.S., and Konhauser, K.O.

*Local conditions initiating Paleoproterozoic iron formation and evolution of unique microbial communities*

Athena Eyster and Kristin Bergmann

*Coupled carbon and silica cycle perturbations during the Marinoan Snowball Earth deglaciation*

4:30 - 6:30 Poster session, reception with appetizers/hors d'oeuvres, and drinks including wine/beer (Lewis-Sebring Commons)

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## CODE OF CONDUCT

The Northeast Geobiology Meeting strives to be a place where all members of our community can feel safe and included. All meeting participants are to:

- Be treated with respect and consideration.
- Be considerate, collegial, and collaborative.
- Communicate openly, with civil attitudes, critiquing ideas rather than individuals.
- Avoid personal attacks
- Alert meeting organizers if you notice someone in distress, or perceive a potentially dangerous situation, or witness a dangerous situation.

Unacceptable Behavior includes but is not limited to

- Harassment, intimidation, or discrimination.
- Physical or verbal abuse
- Audio and video recording, or taking images of an individual's oral presentation without the presenters' permission, is expressly forbidden.
- Images of posters may be taken with the explicit consent of the presenter

Consequences of Unacceptable Behavior

- If you are the subject of unacceptable behavior or have witnessed any such behavior, please immediately notify a meeting organizer, (Phoebe Cohen, David Jones, or Sara Pruss) in-person, or by e-mail ([pac3@williams.edu](mailto:pac3@williams.edu), [spruss@smith.edu](mailto:spruss@smith.edu), [djones@amherst.edu](mailto:djones@amherst.edu))
- Anyone requested to stop unacceptable behavior is expected to immediately cease and desist. Meeting organizers may institute actions including immediate removal from the meeting.

## POSTERS

### *Paleobiology*

Encrusters on corals from Pleistocene reefs on San Salvador and Great Inagua Islands, Bahamas (Poster 1)

*Abigail Beckham, Agnese Mannucci, Bosiljka Glumac, H. Allen Curran, & David Griffing*

Biotic and environmental records of the Frasnian-Famnenian (Late Devonian) extinction event in shallow marine paleoenvironments of New York and Pennsylvania (Poster 2)

*Andrew M. Bush, Sarah K. Brisson, J. Andrew Beard, Jaleigh Q. Pier, Patrick R. Getty, James P. Kerr, Anjali M. Fernandes, & Michael T. Hren*

Carbon isotopic analyses of single organic-walled microfossils: A case study from the Late Devonian and Hopes for the Proterozoic (Poster 3)

*Phoebe A. Cohen, Ezekiel King Phillips, Christopher Junium, Susannah Porter, Quinlan Byrne, & Annalee Tai*

Convergent Evolution Between the Mouthparts of Eurypterids and Modern Malacostracans (Poster 4)

*Julia Fearon, Philipp Wagner, & Stan Rachootin*

A regurgitalite from the Upper Triassic Chinle Formation of Arizona, containing soft tissue from *Revueltosaurus* (Poster 5)

*Caleb M. Gordon, Brian Roach, & Derek E. G. Briggs*

Colonial organisms from the lower Cambrian Harkless Formation, Esmeralda County, Nevada: the first putative bryozoans? (Poster 6)

*Alexia Leaser, Audrey Trossen, Olivia Leadbetter, Rhiannon Nolan, Emily F. Smith, & Sara Pruss*

Ophiuroid fragments in insoluble residues of limestones from the upper Lower Triassic Virgin Limestone Member, southern Nevada (Poster 7)

*Vivienne Maxwell & Sara B. Pruss*

Non-reef benthic communities during the rise and fall of archaeocyathan reefs, western United States (Poster 8)

*Rhiannon Nolan & Sara B. Pruss*

(Poster 9 withdrawn)

Geobiology in the Makerspace (Poster 10)

*Mark McMenamin*

Pyrite replacement of extant benthic foraminiferal tests of Carbla Beach, Shark Bay, western Australia (Poster 11)

*Daniel Wood & Sara Pruss*

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### ***Sedimentology and Geochemistry***

Assessing diagenesis of the basal Cambrian carbon isotope excursion in the southwest United States (Poster 12)

*M.C. Lonsdale, A-S. Ahm, J.A. Higgins, & E.F. Smith*

The carbon-isotopic composition of carbonate platform sediments (Poster 13)

*Anne-Sofie C. Ahm & John A. Higgins*

Early Paleozoic Reef-Margin Sedimentation and Biostratigraphy of the Ogilvie Platform at Nadaleen Mountain, Yukon, Canada (Poster 14)

*James F. Busch, Maxwell H. Saylor, Tyler J. Allen, Karol Faehnrich, John F. Taylor, & Justin V. Strauss*

The Kaltag-Porcupine fault system of Yukon and Alaska – evaluating large-scale terrane displacement in the Arctic (Poster 15)

*Karol Faehnrich, Justin V. Strauss, William C. McClelland, & Maurice Colpron*

Tonian Geobiology of Svalbard (Poster 16)

*Timothy M. Gibson, Justin V. Strauss, Ross P. Anderson, Alexie E.G. Millikin, Alan D. Rooney, Eva Legge, Tyler J. Mackey, Kristin D. Bergmann, & Roger E. Summons*

How do shallow-water carbonates record sea level and seawater chemistry? (Poster 17)

*Emily C. Geyman & Adam C. Maloof*

Abiologic formation process of nodular and digitate siliceous structures in the Mars-analog hot spring environment of El Tatio, Chile (Poster 18)

*Jian Gong, Carolina Munoz, John Roma Skok, & Mark van Zuilen*

Three-dimensional reconstructions of recent and ancient oolites (Poster 19)

*Bolton Howes, Akshay Mehra, & Adam Maloof*

Abundant 4-methyl diasterenes with enriched carbon isotopic compositions in the Maoming carbonaceous shale, SE China (Poster 20)

*Yujiao Zhang, Hong Lu, Guoying Sheng, & Ping'an Peng*

Using sulfate  $^{17}\text{O}$  isotope records to understand the global sulfur cycle (Poster 21)

*Anna Waldeck & David Johnston*

A positive test for the Greater Tarim Block at the heart of Rodinia: Mega-dextral suturing of supercontinent assembly (Poster 22)

*Bin Wen, David A.D. Evans, Chao Wang, Yong-Xiang Li, & Xianqing Jing*

Ediacaran-early Cambrian Geomagnetic Field: A Unique Geophysical Circumstance Surrounding the Explosion of Multicellularity (Poster 23)

*Zheng Gong & David A.D. Evans*

A Pangea-like Rodinia in the Tonian Inertial Interchange True Polar Wander frame (Poster 24)

*Xianqing Jing, Zhenyu Yang, Yabo Tong, David Evans, & Yingchao Xu*

Volcanic controls on seawater sulfate over the past 120 million years (Poster 25)

*Tom Laakso, Anna Waldeck, Francis Macdonald, & David Johnston*

Methane in the Precambrian Atmosphere (Poster 26)

*Tom Laakso & Dan Schrag*

The triple oxygen isotope composition of Precambrian chert (Poster 27)

*Frasier L. Liljestrand, Andrew H. Knoll, Nicholas J. Tosca, Phoebe A. Cohen, Francis A. Macdonald, Yongbo Peng, & David T. Johnston*

Early Paleozoic Bioturbation and its Influence on the Global Marine Phosphorus Cycle (Poster 28)

*Lidya G. Tarhan, Mingyu Zhao, & Noah J. Planavsky*

How should we interpret  $^{17}\text{O}$  signals of geologically preserved sulfate? Insights from modern Himalayan rivers (Poster 29)

*Jordon D. Hemingway, Haley Olson, Alexandra V. Turchy, Edward T. Tipper, David T. Johnston*

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### ***The Microbial World***

Iron-Oxidizing Bacteria in an Iron-Oxidizing World: Consequences for Physiology and the Environment (Poster 30)

*Isabel Baker & Peter Girguis*

Structural and phylogenetic argument for the uniqueness of microbial sulfur disproportionation (Poster 31)

*E. Bertran, L. Ward, B. Kaçar, & D. T. Johnston*

How do Zetaproteobacteria oxidize Fe(II)? Validating the Fe oxidation pathway via meta-omics at Fe-rich hydrothermal vents (Poster 32)

*Sean M. McAllister, Shawn W. Polson, & Clara S. Chan*

The role of geranylgeranyl reductase in *Sulfolobus islandicus* GDGT lipid cyclization (Poster 33)

*Beverly K. Chiu, Alice Zhou, Changyi Zhang, Yuki Weber, Rachel J. Whitaker, Ann Pearson, Jacob Waldbauer, & William D. Leavitt*

Quantifying the effect of environmental drivers on lipid composition shifts in *S. acidocaldarius* (Poster 34)

*Alec Cobban, Alice Zhou, Beverly Chiu, Yuki Weber, Felix Elling, Ann Pearson, & William Leavitt*

The ecology and physiology of extracellular electron uptake by deep sea hydrothermal vent microbes (Poster 35)

*Brandon C. Enalls, Jennifer Delaney, & Peter Girguis*

Comparative Genomic Analysis of Iron-Oxidizing *Thiomonas* Isolates from Acid Mine Drainage (Poster 36)

*Michelle Hallenbeck, Nanqing Zhou, Denise Akob, Kirsten Küsel, & Clara Chan*

Molecular characterization of natural dissolved organic matter from eukaryotic algae and cyanobacteria (Poster 37)

*Rui Jin & Maya Gomes*

Phylogenetic history of scytonemin biosynthesis proteins (Poster 38)

*Erik Tamre & Gregory P. Fournier*

Evolution of Photosynthesis in the Chloroflexi Phylum (Poster 39)

*Lewis M. Ward, Patrick M. Shih, James Hemp, Shawn E. McGlynn, & Woodward W. Fischer*

On the Relationship Between Atmospheric Oxygen and the Origin of Eukaryotes (Poster 40)

*Daniel P. Schrag & Christopher P. Kempes*

Developing model neutrophilic iron-oxidizing microbes for exploring Fe oxidation pathways by transcriptomics (Poster 41)

*Nanqing Zhou, Sean McAllister, & Clara Chan*

Insights into early animal evolution from interdomain transfer of collagenases (Poster 42)

*Chris Parsons & Greg Fournier*

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### *Paleoclimate & paleoceanography*

GDGT distributions in Lake El'gygytgyn (Far East Russia) sediments during and since the Pliocene (Poster 43)

*William C. Daniels, Isla S. Castañeda, Jeffrey M. Salacup, & Julie Brigham-Grette*

The “dark energy” of vital effects: intracellular controls on  $\delta^{13}\text{C}$  in planktonic foraminifera (Poster 44)

*Daniel E. Gaskell, Ross Whiteford, Gavin L. Foster, & Pincelli M. Hull*

Quaternary Paleoceanography of the Ross Sea, Antarctica based on Benthic and Planktic Foraminifera (Site U1523) (Poster 45)

*J. L. Seidenstein, R. M. Leckie, R. M. McKay, L. De Santis, D. Kulhanek, & the IODP Expedition 374 Scientists*

How changing wind stress affected continental shelf carbon cycling during the Paleocene-Eocene Thermal Maximum (Poster 46)

*Kalev Hantsoo, Lee Kump, Bernd Haupt, & Timothy Bralower*

A case study of applying branched glycerol dialkyl glycerol tetraethers (brGDGTs) to lake 578 from southern Greenland (Poster 47)

*Boyang Zhao, Isla Castañeda, Raymond Bradley, & Jeff Salacup*

Behavior of the Kuroshio Current Extension during the mid-Pliocene Warm Period (Poster 48)

*Solveig Schilling, Adriane Lam, R Mark Leckie, & Kenneth G. MacLeod*

Fundamental results from chemostat and batch experiments with *Sulfolobus acidocaldarius* help calibrate archaeal lipid proxies (Poster 49)

*Alice Zhou, Beverly K. Chiu, Alec B. Cobban, Yuki Weber, Felix J. Elling, Ann Pearson, & William D. Leavitt*



## SYMPOSIUM LOCATION

Parking for symposium attendees is available in two locations. No special permits are required after 5 pm on Friday or on Saturday.

- Amherst College O'Connell Lot (Dickinson St at College St, Amherst, MA)
- Amherst College Hills Lot (151 College St, Amherst, MA).

The Friday evening reception will be held in the Beneski Museum of Natural History, and the Saturday symposium will be held in the Science Center. Please use the entrances marked with stars on the map below.

### Friday Reception

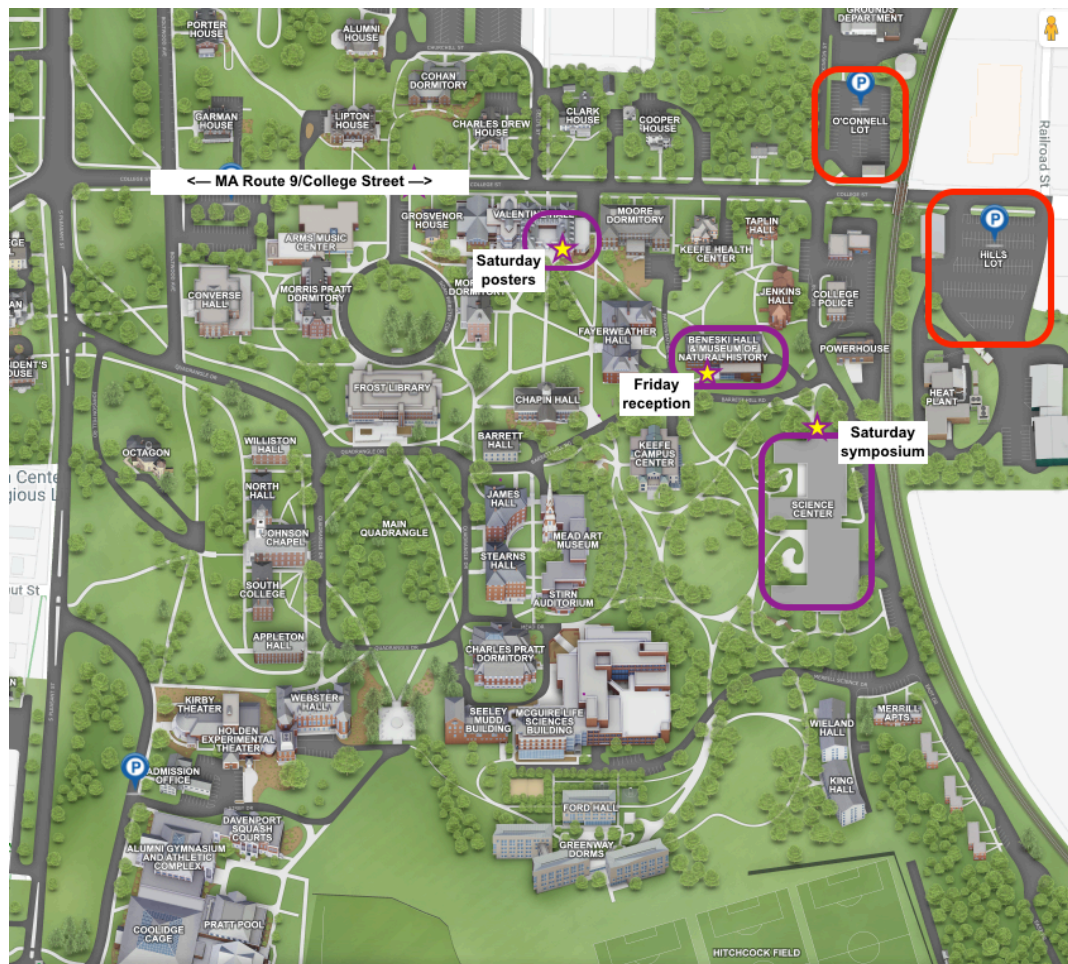
Beneski Museum of Natural History. Please use main entrance on SW corner of building

### Saturday Morning Symposium

Science Center. Please use entrance on N side of building

### Saturday Afternoon Poster Session

Lewis-Sebring Commons in Valentine Hall. Please use entrance on S side of building



**We gratefully acknowledge the generous support of the  
following sponsors:**

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