

**RESEARCH INTERESTS**

- Application of stable isotopes of organic matter, specific compounds and biominerals to questions regarding paleoclimate, Earth's redox evolution, paleoecology and biogeochemical cycling.
- Geologic, climatic and biogeochemical conditions relating to mass extinctions, oceanic anoxic events, the rise of atmospheric oxygen and modern coastal hypoxia.
- Development of novel analytical tools for the analysis of the carbon and nitrogen stable isotope composition of organic materials.

**EDUCATION**

- 2010**      **Ph.D. Geosciences, Penn State University**  
*Thesis: Nitrogen biogeochemistry and ancient oceanic anoxia*
- 2004**      **M.S. Geosciences, Penn State University**  
*Thesis: Organic matter diagenesis and nitrogen isotopes in Cretaceous black shales.*
- 2000**      **B.S. Geology, with honors, Dickinson College, Carlisle, PA**  
*Thesis: The hydrothermal alteration of the Balls Bluff Siltstone, Culpepper Basin, Virginia.*

**ACADEMIC, RESEARCH AND SOCIETY APPOINTMENTS**

- 2022-**      **Director of Graduate Studies**, Syracuse University Dept. of EES
- 2022-24**   **Chair**, Organic Geochemistry Division of the Geochemical Society
- 2019-**      **Associate Professor**, Syracuse University Dept. of EES
- 2019**      **Visiting Researcher**, University of St Andrews, Scotland (Summer)
- 2012-19**   **Assistant Professor**, Syracuse University, Dept. of EES
- 2012**      **Sedimentologist**, Integrated Ocean Drilling Program, Expedition 342, Newfoundland Sediment Drifts
- 2010-12**   **Agouron Institute Geobiology Fellow**, Northwestern University, Department of Earth and Planetary Sciences
- 2003**      **Sedimentologist**, Ocean Drilling Program, Leg 207, Demerara Rise
- 2000**      **Instructor**, Department of Geology, Dickinson College, Carlisle, PA

**FUNDED RESEARCH PROJECTS** (total of funded projects as PI at Syracuse: \$1,201,000; total of funded projects as a participant at Syracuse = \$5,055,000)

- 2026**      American Chemical Society Petroleum Research Fund New Directions (\$125,000 to SU; 2026-2029)  
*Investigating hydrologic controls on the generation of black shales using hydrogen isotopes*
- 2022**      Syracuse University: CUSE (\$22,000 to SU; 2022-2024)  
*Historical perspectives to solve modern problems in coastal conservation using the nitrogen isotope records of oysters*  
Role: Principal Investigator

- 2021** The United States Geological Survey (\$14,500 to SU; 2021-2022)  
*Exploring the Sources, Fate, and Processing of Microplastics in Seasonally Stratified Lakes*  
 Role Co-Principal Investigator
- 2020** The National Science Foundation (\$302,110 to SU; 2020-2023)  
*MRI: A gas chromatograph isotope ratio mass spectrometer for compound-specific isotope analysis*  
 Role Principal Investigator
- 2019** The National Science Foundation (\$59,212 to SU; 2019-2023)  
*Collaborative Research: Tiny fossils, big questions: Using organic carbon isotopes of single fossils to illuminate Proterozoic eukaryotic ecosystems*  
 Role: Principal Investigator
- The National Science Foundation (\$403,325 to SU; 2019-2020)  
*Acquisition of a Multi-Sensor Core Logger for Syracuse University*  
 Role: Co-Investigator
- Syracuse University: CUSE (\$20,000 to SU; 2019-2022)  
*The carbon isotopic composition of single algal cells: a new technique for determination of carbon dioxide levels in the geologic past*  
 Role: Principal Investigator
- 2016** The National Science Foundation (\$312,182; 2016-2018)  
*Seasonality, Summer Cooling, and Calibrating the Approach of the Icehouse in Late Eocene Antarctica*  
 Role: Co-Principal Investigator
- 2015** The National Science Foundation (\$524,435; 2015-2023)  
*CAREER: Nitrogen Biogeochemistry During Oceanic Anoxic Events*  
 Role: Principal Investigator
- The National Science Foundation (\$2,965,339; 2015-2022)  
*NRT: Education Model Program on Water-Energy Research (EMPOWER) at Syracuse University*  
 Role: Senior Personnel
- 2014** The National Science Foundation of China (\$160,000; 2014-2019)  
*Nitrogen Cycle Dynamics During the Mesoproterozoic: Testing the Bio-inorganic Bridge*  
 Role: Co-Principal Investigator with Genming Luo
- 2013** American Chemical Society, Petroleum Research Fund, Doctoral New Investigator Award (\$100,000; 2013-2017)  
*"Nitrogen isotopic composition of porphyrins from source rocks"*  
 Role: Principal Investigator
- 2012** Consortium for Ocean Leadership (\$49,456, 2012-2015)

*“Integrated Ocean Drilling Program: Cretaceous and Paleogene Nitrogen and Sulfur Cycle Dynamics: The Record from the Newfoundland Drifts”* Role: Principal Investigator

- 2009** Agouron Institute Geobiology Postdoctoral Fellowship  
“*The co-evolution of the nitrogen and sulfur cycles in the Neoproterozoic*”  
(\$108,000)
- 2008** ExxonMobil Student Research Grant (\$5,000)  
“*The Neoproterozoic N-cycle and black shales*”
- 2003** Consortium for Ocean Leadership (\$22,000)  
“*Organic matter diagenesis and nitrogen isotopes in black shales*”
- 2002** GSA Graduate Student Research Grants (\$1700)  
“*Paleotemperatures of high latitudes during Early Cretaceous cool periods*”

## PUBLICATIONS

\*mentee/former mentee, \*visiting researcher

41. \*Uveges, B.T., Izon, G., **Junium, C.K.**, Ono, S. and Summons, R.E., 2025. Aerobic nitrogen cycle 100 My before permanent atmospheric oxygenation. *Proceedings of the National Academy of Sciences*, 122(20), p.e2423481122.
40. \*Agić, H., Porter, S.M., Cohen, P.A., Thomas, J.B. and **Junium, C.K.**, 2025. Individual Microfossil  $\delta^{13}\text{C}$  Shows That  $\delta^{13}\text{C}_{\text{org}}$  Excursions in the Neoproterozoic Chuar Group Do Not Reflect the Exogenic Carbon Cycle. *Geobiology*, 23(3), p.e70022.
39. Gilleaudeau, G.J., Kah, L.C., **Junium, C.K.** and Anbar, A.D., 2025. Aerobic nitrogen cycling in a molybdenum-limited, redox-stratified Mesoproterozoic epeiric sea. *Earth and Planetary Science Letters*, 661, p.119369.
38. \*Killam, D., \*Das, S., Martindale, R.C., Gray, K.E., Paytan, A. and **Junium, C.K.**, 2023. Photosymbiosis and nutrient utilization in giant clams revealed by nitrogen isotope sclerochronology. *Geochimica et Cosmochimica Acta*, 359, p.165-175.
37. Dahl, T.W., Harding, M.A., Brugger, J., Feulner, G., Norrman, K., Lomax, B.H. and **Junium, C.K.** (2022). Low atmospheric CO<sub>2</sub> levels before the rise of forested ecosystems. *Nature Communications*, 13 (1), p.7616.
36. **Junium, C.K.**, Zerkle, A.L., Witts, J.W., Ivany, L.C., Yancey, T., Liu, C., Claire, M.W. (2022) Massive perturbations to atmospheric sulfur in the aftermath of the Chicxulub impact. *Proceedings of the National Academy of Science*, 119(14), p.e2119194119.
35. Cohen, P. A., **Junium, C. K.**, \*King Phillips, E., \*Uveges, B. T. (2022). Carbon cycle dynamics and ecology revealed by the carbon isotopic composition of single organic microfossils during the Late Devonian Biotic Crisis. *Geobiology*.  
[dx.doi.org/10.1111/gbi.12482](https://doi.org/10.1111/gbi.12482)
34. \*Das, S., Judd, E.J., Ivany, L.C., \*Uveges, B.T., **C.K. Junium** (2021) Variation in  $\delta^{15}\text{N}$  from shell-associated organic matter in bivalves: Implications for studies of

- modern and fossil ecosystems. *Palaeogeography, Palaeoclimatology, Palaeoecology*, 562, 110076
33. Woltz, C.R., Porter, S.M., Agić, H., Dehler, C.M., **Junium, C.K.**, Riedman, L.A., Hodgskiss, M.S.W., Wörndle, S. and Halverson, G.P., (2021). Total organic carbon and the preservation of organic-walled microfossils in Precambrian shale. *Geology*, 49, p. 556-560.
  32. \*Uveges, B.T., **Junium, C.K.**, Scholz, C.A. and Fulton, J.M., 2020. Chemocline collapse in Lake Kivu as an analogue for nitrogen cycling during Oceanic Anoxic Events. *Earth and Planetary Science Letters*, 548, p.116459.
  31. He, R., Lu, W., **Junium, C.K.**, Ver Straeten, C.A. and Lu, Z., 2020. Paleo-redox context of the Mid-Devonian Appalachian Basin and its relevance to biocrises. *Geochimica et Cosmochimica Acta*, 287, 328-340.
  30. Lloyd, M.K., McClelland, H.L.O., Antler, G., Bradley, A.S., Halevy, I., **Junium, C.K.**, Wankel, S.D. and Zerkle, A.L., 2020. The isotopic imprint of life on an evolving planet. *Space Science Reviews*, 216, 7, 1-54.
  29. \*Mettam C., Zerkle, A. Claire, M., Prave, A., Poulton, S., **Junium, C.K.**, (2019) Anaerobic nitrogen cycling on a Neoproterozoic ocean margin, *Earth and Planetary Sciences*, 527, 115800.
  28. \*Yang, J., **Junium, C.K.**, Grassineau, N.V., Nisbet, E.G., Izon, G., Mettam, C., Martin, T., and Zerkle A.L., (2019) A ferruginous ammonium-rich ocean at ~2.7 Ga, *Nature Geoscience*, 12, 553.
  27. Judd, E.J., Ivany, L.C., DeConto, R.M., Halberstadt, A.R.W., Miklus, N.M., **Junium, C.K.** and Uveges, B.T., (2019) Seasonally resolved proxy data from the Antarctic Peninsula support a heterogeneous middle Eocene Southern Ocean. *Paleoceanography and Paleoclimatology*, 34(5), pp.787-799.
  26. Demott, L.M., Scholz, C.A., Teece, M. and **Junium, C.K.**, (2019) Microbially-influenced lacustrine carbonates: a comparison of Late Quaternary Lahontan tufa and modern thrombolite from Fayetteville Green Lake, NY, *Geobiology*, in press.
  25. Demott, L.M., Scholz, C.A. and **Junium, C.K.**, (2019) 8200-year growth history of a Lahontan-age lacustrine tufa deposit. *Sedimentology*.
  24. Uveges, B.T.\* , Teece, M., Fulton, J.M., **Junium, C.K.**, (2018) Environmental controls on pigment distributions in the freshwater microbialites of Fayetteville Green Lake, *Organic Geochemistry*, 125, pp. 65-76
  23. **Junium, C.K.**, Dickson, A.J., Uveges, B.T.\* , (2018). Perturbation to the nitrogen cycle during rapid Early Eocene global warming. *Nature Communications*, 9, pp. 3186.
  22. Uveges, B.T.\* , **Junium, C.K.**, Boyer, D., Cohen, P., Day, J., Biogeochemical controls on black shale deposition during the Devonian, Frasnian-Famennian Biotic Crisis in the Illinois and Appalachian Basins, USA, inferred from stable isotopes of Nitrogen and Carbon. *Palaeogeography, Paleoclimatology, Paleoeecology*, 10.1016/j.palaeo.2018.05.031.
  21. Pehr, K. Love, G.D., Kuznetsov, A., Podkovyrov, V., **Junium, C.K.**, Shumlyanskyy, L., Sokur, T., and Bekker, A., 2018. Ediacaran fauna flourished in oligotrophic and bacterially dominated marine environments across Baltica. *Nature Communications*, 9, pp. 1807.

20. Luo, G.<sup>+</sup>, **Junium, C.K.**, Izon, G., Ono, S., Beukes, N.J., Algeo, T.J., Cui, Y., Xie, S. and Summons, R.E., 2018. Nitrogen fixation sustained productivity in the wake of the Palaeoproterozoic Great Oxygenation Event. *Nature Communications*, 9, pp. 978-987.
19. **Junium, C.K.**, Meyers, S.R. and Arthur, M.A., 2018. Nitrogen cycle dynamics in the Late Cretaceous Greenhouse. *Earth and Planetary Science Letters*, 481, pp.404-411.
18. Mettam, C.<sup>+</sup>, Zerkle, A.L., Claire, M.W., Izon, G., **Junium, C.K.** and Twitchett, R.J., 2017. High-frequency fluctuations in redox conditions during the latest Permian mass extinction. *Palaeogeography, Palaeoclimatology, Palaeoecology*, 485, pp. 210-223.
17. Zerkle, A.L., Poulton, S.W., Newton, R.J., Mettam, C., Claire, M.W., Bekker, A. **Junium, C.K.**, 2017. Onset of the aerobic nitrogen cycle during the Great Oxidation Event. *Nature*, 542, pp. 465-467.
16. Zhou, X., Jenkyns, H.C., Owens, J.D., **Junium, C.K.**, Zheng, X.Y., Sageman, B.B., Hardisty, D.S., Lyons, T.W., Ridgwell, A. and Lu, Z. (2015) Upper ocean oxygenation dynamics from I/Ca ratios during the Cenomanian-Turonian OAE 2, *Paleoceanography*, 30, pp. 510-526.
15. **Junium, C. K.**, Freeman, K. H., & Arthur, M. A. (2015) Compound-specific  $\delta^{15}\text{N}$  and chlorin preservation in surface sediments of the Peru Margin with implications for ancient bulk  $\delta^{15}\text{N}$  records. *Geochimica et Cosmochimica Acta*, 160, pp. 306-318.
14. **Junium, C. K.**, Freeman, K. H., & Arthur, M. A. (2014). Controls on the stratigraphic distribution and nitrogen isotopic composition of zinc, vanadyl and free base porphyrins through Oceanic Anoxic Event 2 at Demerara Rise. *Organic Geochemistry*, 80, 60-71.
13. Luo, G., **Junium, C. K.**, Kump, L. R., Huang, J., Li, C., Feng, Q., and Xie, S. (2014). Shallow stratification prevailed for ~ 1700 to ~ 1300 Ma ocean: Evidence from organic carbon isotopes in the North China Craton. *Earth and Planetary Science Letters*, 400, 219-232.
12. Riedman, L. A., Porter, S. M., Halverson, G. P., Hurtgen, M. T., & **Junium, C. K.** (2014). Organic-walled microfossil assemblages from glacial and interglacial Neoproterozoic units of Australia and Svalbard. *Geology*, 42, 1011-1014.
11. Norris, R.D., Wilson, P.A., Blum, P., and the **Shipboard Scientific Party**, (2012) Paleogene Newfoundland Sediment Drifts, Integrated Ocean Drilling Program Expedition 342 Preliminary Report, 1 June -30 July 2012, Expedition 342 Scientists.
10. Kump, L., **Junium, C.K.**, Arthur, M., Fallick, A., Melezhik, V., Lepland, A., Črne, A., Luo, G., and the FARDEEP Drilling Team, Isotopic Evidence for Massive Oxidation of Organic Matter Following the Great Oxidation Event, (2011) *Science*, 334, 1694-1695.
9. Cui, Y., Kump, L.R., Ridgwell A., **Junium, C.K.**, Diefendorf, A.F., Freeman K.H, Urban, N., Charles, A., Harding, I.C., and the WUN pACE Group, (2011) Reconstruction of the rates and total quantity of carbon addition during the Paleocene-Eocene Thermal Maximum, *Nature Geoscience*, 4, 481-485.

8. **Junium, C.K.**, B.J., Keely, K.H., Arthur, M.A., Freeman, (2011) Chlorins in mid-Cretaceous black shales of the Demerara Rise: the oldest known occurrence, *Organic Geochemistry*, 42, 856-859.
7. Polissar, P.J., Fulton, J.F., **Junium, C.K.**, Turich, C.T., Freeman, K.H., (2009) Measurement of  $^{13}\text{C}$  and  $^{15}\text{N}$  isotopic composition on nanomolar quantities of C and N, *Analytic Chemistry*, 81, 755-763.
6. **Junium, C.K.**, Mawson, D.H., Arthur, M.A., Freeman, K.H., Keely, B.J., (2008) Unexpected occurrence and significance of zinc alkyl porphyrins in Cenomanian-Turonian black shales of the Demerara Rise, *Organic Geochemistry*, 39, 1081-1087.
5. Zerkle, A.L., **Junium, C.K.**, Canfield, D.E., House, C.H., (2008) Production of  $^{15}\text{N}$  depleted biomass during cyanobacterial  $\text{N}_2$ -fixation at high Fe concentrations, *Journal of Geophysical Research-Biogeosciences*, 113, G03014.
4. Bohacs, K.M., **Junium, C.K.**, (2007) Microbial mat sedimentary structures and their relation to organic-carbon burial in the middle Neoproterozoic Chuar Group, Grand Canyon, Arizona, USA. In: *Atlas of microbial mat features preserved within the clastic rock record*, Schieber, J., Bose, P.K., Ericksson, P.G., Banerjee, S., Sarkar, S., Altermann, W., and Catuneau, O., (Eds.) Elsevier, p. 208-213.
3. **Junium, C.K.**, Arthur, M.A., (2007) Nitrogen cycling during the Cretaceous, Cenomanian-Turonian Oceanic Anoxic Event II, *Geochemistry, Geophysics, Geosystems*, 8, 3-19.
2. Erbacher, J., D. Mosher, M. Malone, and the **ODP Leg 207 Scientific Party**, (2004) Drilling probes past carbon cycle perturbations on the Demerara Rise, *Eos*, 85, 57-63.
1. Erbacher, J., Mosher, D.C., Malone, M.J., Berti, D., Bice, K.L., Bostock, H., Brumsack, H.-J., Danelian, T., Forster, A., Glatz, C., Heidersdorf, F., Henderiks, J., Janecek, T.R., **Junium, C.**, Le Callonnec, L., MacLeod, K., Meyers, P.A., Mutterlose, H.J., Nishi, H., Norris, R.D., Ogg, J.G., O'Regan, M.A., Rea, B., Sexton, P., Sturt, H., Sukanuma, Y., Thurow, J.W., Wilson, P.A., Wise, S.W., Jr., (2004). Proceedings of the Ocean Drilling Program; Demerara Rise; Equatorial Cretaceous and Paleogene Paleoceanographic Transect, Western Atlantic; Covering Leg 207 of the cruises of the drilling vessel JOIDES Resolution; Bridgetown, Barbados, to Rio de Janeiro, Brazil; Sites 1257-1261; 11 January-6 March 2003, Ocean Drilling Program, College Station, TX.

## COURSES TAUGHT

- CAS 100, Religion Science and Politics (Fall 2024; 2025 for CAS Leadership Scholars, 60 students)
- EAR 204 Introduction to Field Geology (Spring 2023; 2024, 10 students)
- EAR/REL/PSC 200, Religion, Science and Society (Spring 2023; 2024; Fall 2025 120 students)
- EAR 105, Earth Science (Fall 2012, 2013, 2014, 2016, 2017, 2018, 2019, Spring 2022)  
Large lecture course for non-majors on general geologic principles (~350 students)
- EAR 345/545, Global Change: The Geologic Record (Spring 2012, 2013, 2014, 2015, 2017, 2018, 2019, 2021, Fall 2022, 2024)  
Upper-level undergraduate/graduate, paleoclimatology course (10-20 students)

EAR 400/600, Earth's Organic Processes (Fall 2014, 2017)

Upper-level undergraduate/graduate seminar on organic geochemistry

EAR 405/605 Stable Isotope Geochemistry (Fall 2013, 2016, Spring 2020, Fall 2021, 2023, 2025,)

Upper-level undergraduate/graduate, combined lecture and seminar course on principles of stable isotope geochemistry (7-15 students)

EAR 600 The EMPOWER Program Field Course (Summer 2017, 2018, 2019)

Graduate student field course focused on Fayetteville Green Lake (2017; 2019) and Lake Kivu, Rwanda (2018)

## ADVISEES

**Nathan Roser, B.S.**, Bachelor Honors Thesis SUNY ESF 2014, Aragonite precipitation in Howe Cave Mine, Schoharie County, NY

**Kara Dennis, M.S.**, February 2015 *Using the sulfur cycle to constrain rapid changes in seawater chemistry: refining our understanding of the Paleogene sulfur cycle.* (B.S. Macalester College)-currently a hydrologist with the Minnesota Department of Health

**Anthony Carrancejie, B.S.** Bachelors Thesis, 2015, Carbonate associated organic matter in rugose corals.

**Alaina Hickey, B.S.** Bachelor Thesis, 2016, Nitrogen isotope composition of carbonate associated organic matter in rugose corals of the Devonian Hamilton Group, Central New York.

**Benjamin Uveges, Ph.D.**, September 2018, *Nitrogen cycle perspectives on stratified marine systems in the geologic record.* (B.S. McGill University ), recipient of a Syracuse University Graduate Fellowship. Postdoctoral research fellowships at Massachusetts Institute of Technology (2019-2024) and Cornell University (2024-present)

**Heda Agic, Postdoctoral Research Associate**, 2019-2021 co-advised with Susannah Porter (UCSB) and Phoebe Cohen (Williams). Carbon isotope composition of single organic walled microfossils from the Proterozoic. Currently in a Leverhulme Faculty Fellowship, University of Durham, UK.

**Shibajyoti Das, Ph.D.**, 2022, *Stable carbon and nitrogen isotopes of shell bound organic matter, implications for modern and ancient food web dynamics* (M.S. University of Kolkata) – currently program staff in the NOAA Climate and Carbon Cycle Programming Office.

**Cidney McMahon, B.S.**, Bachelor Honors Thesis 2024, Nitrogen and carbon isotopes of shell associated organic matter in subfossil bivalves from the Gulf Coast, USA.

**Heather Gunn, Ph.D.**, 2026 expected. *Historical perspectives to solve modern problems in coastal conservation using the nitrogen isotope records of bivalves* (B.S. University of Texas, Austin), recipient of a Syracuse University Graduate Fellowship.

**Tyler Logie, Ph.D.**, 2026 expected. *Carbon dioxide, forests and oceanic anoxic events in the Paleozoic and Mesozoic* (B.S. University of Texas, Austin)

**Zonglin Yang, Ph.D.** 2027 expected. *Biogeochemical controls on black shale deposition in the Cretaceous North Atlantic* (B.S. and M.S. China University of Geosciences, Wuhan, China)

**Shayna Garla, Ph.D.** 2028 expected. *Historical recurrence of Fire in Arctic of Alaska* (B.S. in Environmental Science, Northwestern University) recipient of a Syracuse University Graduate Fellowship.

## **HONORS AND AWARDS**

**2019** University of St Andrews Global Fellowship, St Andrews, Scotland  
**2015** NSF CAREER Award  
**2008** Department of Geosciences, PSU, Talk Award, Grad Colloquium  
**2006** Department of Geosciences, PSU, Talk Award, Grad. Colloquium  
**2005** Department of Geosciences, PSU, Talk Award, Grad. Colloquium  
**2004** Department of Geosciences, PSU, Best Talk by a Masters Student  
**2002** Geological Society of America Student Research Grant  
**2002** P.D. Krynine Award, Pennsylvania State University  
**2000** Vernon Prize for Excellence in Geology, Dickinson College  
**1999** Hanson Prize for Research, Dickinson College

## **PROFESSIONAL SERVICE**

### **Society Service**

Board member of the Geochemical Society 2022-24  
Chair of the Organic Geochemistry Division of the Geochemical Society 2022-24

### **Sessions Chaired at Professional Meetings**

Goldschmidt Meeting, 2024. - "Organic geochemistry from ancient molecules to exoplanets", with Hilairy Hartnett.

American Geophysical Union, Fall Meeting, 2016. - "Nutrient cycling in past oceans", with Tony Wang, Abby Ren and Masha Prokopenko.

Geological Society of America, Fall Meeting 2016. – "*Sedimentary, Paleobiologic, and Geochemical Studies of Deep Time Ocean-Climate Perturbations: Honoring the Scientific Contributions of Michael A. Arthur*", with Bradley Sageman, Matthew Hurtgen and Mark Pagani.

American Geophysical Union, Fall Meeting, 2014. – "*Carbon isotopes and stratigraphy: extracting the signal from the noise*", with Joao Trabucho-Alexandre and Peter Swart.

**Reviewer for:** *Paleoceanography and Paleoclimatology; Organic Geochemistry; Palaeogeography, Palaeoclimatology, Palaeoecology; Techniques in Enzymology; Geochimica et Cosmochimica Acta; Geochemistry, Geophysics, Geosystems; Earth and Planetary Science Letters; Nature; Nature Geoscience; Geology; Geobiology; PNAS; Science Advances; Astrobiology; Chemical Geology; Precambrian Research; Frontiers; Science; Nature Communications; Communications Earth and Environment; Palaios; Sedimentology; Journal of Sedimentary Geology.*

**Proposal reviewer and panelist\* for:** National Science Foundation programs: Low-Temperature Geochemistry and Geobiology\*, Sedimentary Geology and Paleobiology\*, IF/MRI, Marine Geology and Geophysics, NASA Exobiology\*; American Chemical Society PRF; Sloan Foundation.

### **UNIVERSITY, COLLEGE AND DEPARTMENT SERVICE**

Cryosphere and Polar Sciences Faculty Search Chair (2023-2024)  
Visioning Committee, Department of Earth and Environmental Sciences (2023)  
Director of Graduate Studies and Chair of Graduate Admissions (2022-present)  
Earth and Environmental Sciences Executive Committee (2022-present)  
Hydrology and the Environment Faculty Search Chair (2022)  
Chair, JEDI Committee, Earth and Environmental Sciences (2021)  
Chair for the promotion and tenure review of member EES department (2021)  
Coordinator for the K. Douglas Nelson Lecture Series, Department of Earth and Environmental Sciences (2021-2022)  
Department Chair Search Committee, Department of Earth Sciences (2021)  
Group Lead for Academic Integrity in Remote Teaching working group for CAS preparations for online teaching in Fall 2020/COVID  
Graduate Admissions Committee (2019-present)  
Curriculum Committee, Department of Earth Sciences (2017-2018)  
Climate Science Faculty Search Committee, Department of Earth Sciences (2017)  
Department Chair Search Committee, Department of Earth Sciences (2019)  
Member of the College of Arts and Sciences Faculty Council (2015-2016)  
Lower Division Advisor for incoming students to the College of Arts and Science, Syracuse University (2012, 2013)  
Coordinator for the K. Douglas Nelson Lecture Series, Department of Earth Sciences (2012-2014)

### **WORKSHOPS**

**Invited Participant** at the Keck Institute for Space Sciences, Caltech, Pasadena, California. “Next Frontiers in the Investigation of Extraterrestrial Organics” December 2025.

**Invited Participant** at the International Space Science Institute, Bern, Switzerland. “Reading Terrestrial Planet Evolution in isotopes and elemental measurements” October 2018.

**Invited Participant** at ‘Exploring the Cretaceous Greenhouse through Scientific Ocean Drilling’ Workshop in London, April 2013, funded by NSF

**Invited Participant** in United States IODP planning meeting for 2013-2023 funding round, Denver, CO, April 2012.

**Invited Participant** at *INVEST (IODP New Ventures in Exploring Scientific Targets)* in the fall of 2009 in Bremen, Germany. This program was designed to solicit the IODP participant community to assist in the development of the new science plan for future IODP program

## **INVITED LECTURES**

Cornell University Department of Ecology and Evolutionary Biology, March 2025  
Arizona State University, School of Earth and Space Exploration, Fall 2024  
Buffalo State University, Department of Biology and Great Lakes Center, Fall 2022  
Reading Terrestrial Planet Evolution in Isotopes, ESSI, Bern, Switzerland, Fall 2018  
Geological Society of America Meeting, 2017  
International Conference on Geobiology, Wuhan, China, Summer 2017, Keynote  
China University of Geosciences, Wuhan, Summer 2017  
University of Massachusetts, Amherst, Spring 2017  
St. Lawrence University, Fall 2016  
University of St. Andrews, Spring 2016  
State University of New York, Environmental Sciences and Forestry, Spring 2016  
University of Houston, Spring 2015  
Baylor University, Spring 2015  
American Geophysical Union Fall Meeting, 2014  
Exxon-Mobil, Upstream Research Company, Spring 2014  
Colgate University, Spring 2014  
SUNY Oswego, Fall 2013  
James Madison University, Fall 2013  
McGill University, Spring 2013  
Geological Society of America Meeting, 2012  
Rensselaer Polytechnic Institute, Spring 2012  
University of Rochester, Spring 2012  
Northwestern University, Fall 2011  
University of Pittsburgh, Spring 2011  
Binghamton University, Spring 2011  
Syracuse University, Spring 2011  
Exxon Mobil, Upstream Research Company, Spring 2007  
Dickinson College, Spring 2005