CHRISTOPHER K. JUNIUM CURRICULUM VITAE

ASSOCIATE PROFESSOR • SYRACUSE UNIVERSITY • SYRACUSE, NEW YORK
DEPARTMENT OF EARTH & ENVIRONMENTAL SCIENCES
PALEOCLIMATE.SYR.EDU

RESEARCH INTERESTS

- Application of stable isotopes of organic matter, specific compounds and biominerals to questions regarding paleoclimate, redox state, ecology 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 for modern and ancient environments.

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

2022-2025 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

2020-2023 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

2019-2023 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

2016-2019 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

2015-2023 The National Science Foundation ($524,435; 2015-2023)
CAREER: Nitrogen Biogeochemistry During Oceanic Anoxic Events
Role: Principal Investigator

2015-2022 The National Science Foundation ($2,965,339; 2015-2022)
NRT: Education Model Program on Water-Energy Research (EMPOWER) at Syracuse University
Role: Senior Personnel

2014-2017 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

2013-2017 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

2012-2013 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

2010-2012 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 δ13C Shows That δ13Corg 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 CO2 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
34. *Das, S., Judd, E.J., Ivany, L.C., *Uveges, B.T., **C.K. Junium** (2021) Variation in $\delta^{15}N$ 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 Neoarchean 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. *Paleogeography, Paleoclimatology, Paleoecology,* 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.[+], **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.[+], 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 $\delta^{15}N$ and chlorin preservation in surface sediments of the Peru Margin with implications for ancient bulk $\delta^{15}N$ 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}C and ^{15}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}N depleted biomass during cyanobacterial 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., Suganuma, 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. Macalaester 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, 2019-2021co-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, with Melissa Chipman. *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 or 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