

## **Zunli Lu**

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Research page: <http://coolgeochem.syr.edu/>

Google Scholar: <https://scholar.google.com/>

## **EDUCATION AND EMPLOYMENT**

- 2017- Department of Earth Sciences, Syracuse University  
Associate Professor
- 2011-2017 Department of Earth Sciences, Syracuse University  
Assistant Professor
- 2008-2011 Department of Earth Sciences, University of Oxford  
Post-doctoral Research Associate  
“Ikaite as a paleo-environmental proxy” Advisor: Ros  
Rickaby
- 2005-2008 Department of Earth and Environmental Sciences, University of  
Rochester
- Ph.D. “Halogen and I-129 Systematics in Gas Hydrate Fields:  
Implications for the Transport of Iodine and Methane in Active  
Margins” Advisor: Udo Fehn
- 2003-2005 Department of Earth and Environmental Sciences, University of  
Rochester
- M.S. Geological Sciences
- 1998-2002 Department of Earth Sciences, Nanjing University
- B.S. Geochemistry

## **FUNDING**

- “Seasonality, Summer Cooling, and Calibrating the Approach of the Icehouse in Late Eocene Antarctica” 2016-2018, NSF PLR \$312,182 (Lead-PI Linda Ivany Syracuse University, co-PI Scott Samson, Zunli Lu, Christopher Junium)
- “Collaborative Research: Iodine-Calcium Ratios in Modern Carbonate Sediments: Developing a Novel Proxy for Evolving Surface Oxygenation in Precambrian Oceans” 2014-2016, NSF EAR \$319,989 (Lu \$139,989; Tim Lyons UC-Riverside \$180,000)
- “Collaborative Research: Consequences of sub-lethal hypoxia exposure for teleosts tracked with biogeochemical markers: a trans-basin comparison” 2014-2017, NSF OCE \$588,748 (Lu \$47,224; Ben Walther TAMU \$257,960; Karin Limburg SUNY ESF \$283,564)
- “Collaborative Research: Iodine in foraminifera as a proxy for ocean deoxygenation during the Paleocene- Eocene Thermal Maximum” 2012-2016, NSF OCE \$399,479 (Lu \$270,454; Ellen Thomas Yale University \$150,929)

“Early Career: Acquisition of an Isotopic Liquid-Water Analyzer for Hydrology and Earth Science Research and Education at Syracuse University” 2012-2013, NSF EAR \$88,098 (Lead-PI Laura Lautz Syracuse University, co-PI Zunli Lu, Gregory Hoke)

“RAPID: Developing sensitive tests for detecting water chemistry changes associated with shale bed methane production in the Appalachian Basin” 2013-2015, NSF EAR \$95,574 (Lead-PI Laura Lautz, Syracuse University, co-PI Zunli Lu, Donald Siegel, Scott Samson, Gregory Hoke)

## PUBLICATIONS

### Published and in press (\*Student authors):

38. \*Zhou, X., Jenkyns, H. C., \*Lu, W., Hardisty, D. S., Owens, J. D., Lyons, T. W., and Lu, Z., 2017, “Organically bound iodine as a bottom-water redox proxy: preliminary validation and application”. *Chemical Geology*.
37. Hardisty, D.S., **Lu, Z.**, Bekker, A., Diamond, C.W., Gill, B.C., Jiang, G., Kah, L.C., Knoll, A.H., Loyd, S.J., Osburn, M.R., Planavsky, N.J., Wang, C., \*Zhou, X., Lyons, T.W., 2017 Perspectives on Proterozoic surface ocean redox from iodine contents in ancient and recent carbonate. *Earth and Planetary Science Letters* 463, 159-170.
36. Owens, J.D., Lyons, T.W., Hardisty, D.S., Lowery, C., **Lu, Z.**, Lee, B., and Jenkyns H.C., 2017. “Patterns of local and global redox variability during the Cenomanian–Turonian Boundary Event (OAE 2) recorded in carbonates and shales from central Italy”. *Sedimentology*. doi:10.1111/sed.12352.
35. \*Zhou, X., Thomas, E., Winguth, A., Ridgwell, A., Scher, H., Rickaby, REM, and **Lu, Z.**, 2016. “Expanded oxygen minimum zones during the late Paleocene - early Eocene: hints from multi-proxy comparison and ocean modeling”. *Paleoceanography*, 31, doi:10.1002/2016PA003020.
34. \*Gutchess, K.M., Jin, L., Lautz, L.K., Shaw, S.B., \*Zhou, X., **Lu, Z.**, 2016, “Chloride sources in urban and rural headwater catchments, central New York”. *Science of the Total Environment*, 565, 462–472.
33. **Lu, Z.**, Hoogakker, B.A.A., Hillenbrand C.D., \*Zhou, X., Thomas, E., \*Gutchess, K., \*Lu, W., Jones, L., Rickaby, R.E.M., 2016, “Oxygen depletion recorded in upper waters of the glacial Southern Ocean”. *Nature Communications*, 7:11146 doi: 10.1038/ncomms11146.
32. Christian, K.M., Lautz, L.K., Hoke, G.D., Siegel, D.I., **Lu, Z.**, Kessler, J., 2015 “Methane occurrence is associated with sodium-rich valley waters in domestic wells overlying the Marcellus Shale in New York State”. *Water Resources Research*, 52, 206–226, doi:10.1002/2015WR017805.
31. Jin, L., Edmunds, M.W., **Lu, Z.**, Ma, J., 2015 “Geochemistry of sediment moisture in the Badain Jaran desert: Insights into palaeo-environmental changes and water rock interaction”. *Applied Geochemistry*, 63, 235-247.
30. \*Zhou, X., Jenkyns, H.C., Owens, J.D., Junium, C.K., Zheng, X., Sageman, B.B., Hardisty, D.S., Lyons, T.W., Ridgwell, A., and **Lu, Z.**, 2015, “The I/Ca proxy and upper ocean oxygenation dynamics across the Cenomanian–Turonian OAE 2”.

- Paleoceanography*, 30, 510–526. doi:10.1002/2014PA002741. Cover story for that issue.
29. \*Zhou, X., **Lu, Z.**, Rickaby, R.E.M., Domack, E., and Wellner, J., 2015, “Ikaite abundance controlled by porewater phosphorus level: implications for extensive glendonite deposits”. *Journal of Geology*, Vol. 123, No. 3, pp. 269-281
  28. **Lu, Z.**, \*Hummel, S.T., Lautz, L.K., Hoke, G.D., \*Zhou, X., Leone, J., and Siegel, D.I., 2015, “Iodine as a sensitive tracer for detecting influence of organic-rich shale in shallow groundwater”. *Applied Geochemistry*, Vol. 60, pp. 29–36.
  27. \*Zhou, X., Thomas, E., Rickaby, R.E.M., Winguth, A.M.E., and **Lu, Z.**, 2014, “I/Ca evidence for upper ocean deoxygenation during the Paleocene - Eocene Thermal Maximum (PETM)”. *Paleoceanography*, DOI: 10.1002/2014PA002702.
  26. Lautz, L.K., Hoke, G.D., **Lu, Z.**, Siegel, D.I., Christian, K., Kessler, J.D., and Teale, N.G., 2014, “Using Discriminant Analysis to Determine Sources of Salinity in Shallow Groundwater Prior to Hydraulic Fracturing”. *Environmental Science & Technology*, 48 (16), 9061-9069.
  25. Hardisty, D.S., **Lu, Z.**, Planavsky, N.J., Bekker, A., Philippot, P., \*Zhou, X. and Lyons T.W., 2014, “An iodine record of Paleoproterozoic surface ocean oxygenation”. *Geology*, G35439. 1.
  24. Limburg, K.E., Walther, B.D., **Lu, Z.**, Jackman, G., Mohan, J., Weber, P.K., Schmitt, A.K., 2015, “In search of the dead zone: use of otoliths for tracking fish exposure to hypoxia”. *Journal of Marine Systems*, 141, 167-178.
  23. **Lu, Z.**, 2013, Comment on “Iodine-129 and Iodine-127 Speciation in Groundwater at the Hanford Site, U.S.: Iodate Incorporation into Calcite”. *Environmental Science & Technology*, 47 (22), pp.13203–13204. DOI: 10.1021/es404049s
  22. Jin, L., Whitehead, P.G., Futter, M.N. and **Lu, Z.**, 2012, Modeling the impacts of climate change on flow and nitrate of the River Thames: Assessing potential adaptation strategies. *Hydrology Research*, vol. 43, pp.902-916. doi: 10.2166/nh.2011.080
  21. Jin, L., Siegel, D.I., Lautz, L.K., and **Lu, Z.**, 2012, Identifying streamflow sources during spring snowmelt using water chemistry and isotopic composition in semi-arid mountain streams. *Journal of Hydrology*, vol. 470–471, pp. 289–301
  20. **Lu, Z.**, Rickaby, R.E.M., Kennedy H., Kennedy, P., Shaw S., Lennie, A., Pancost, R.D., Wellner, J., and Anderson, J.B., 2011, An ikaite record of late Holocene climate at the Antarctic Peninsula. *Earth and Planetary Science Letters*, vol.325-326, pp. 108-115, doi:10.1016/j.epsl.2012.01.036
  19. Küpper, F. C., Feiters, M. C., Olofsson, B., Kaiho, T., Yanagida, S., Zimmermann, M. B., Carpenter, L. J., Luther, G. W., **Lu, Z.**, Jonsson, M. and Kloo, L., 2011, Commemorating Two Centuries of Iodine Research: An Interdisciplinary Overview of Current Research. *Angewandte Chemie International Edition*, 50: 11598–11620. doi: 10.1002/anie.201100028
  18. **Lu, Z.**, Tomaru, H., and Fehn, U., 2011, Comparison of iodine dates from mud volcanoes and gas hydrate occurrences: relevance for the movement of fluids and methane in active

margins. *American Journal of Science*. Vol. 311, (632–650), DOI 10.2475/07.2011.03

-----**Before moving to Syracuse**-----

17. **Lu, Z.**, Jenkyns, H.C., and Rickaby, R.E.M., 2010, Iodine to calcium ratios in marine carbonate as a paleo-redox proxy during oceanic anoxic events. *Geology*, 38(12), 1107–1110.
16. **Lu, Z.**, Rickaby, R.E.M., Wellner, J., Georg, B., Charnley, N., Anderson, J.B. and Hensen C., 2010. Pore fluid modeling approach to identify recent meltwater signals on the west Antarctic Peninsula. *Geochem. Geophys. Geosyst.*, 11, Q06017, Doi 10.1029/2009gc002949.
15. Scholz, F., Hensen, C., **Lu, Z.**, and Fehn, U., 2010. Controls on the I-129/I ratio of deep-seated marine interstitial fluids: 'Old' organic versus fissiogenic 129-iodine. *Earth and Planetary Science Letters*, 294(1-2), 27-36.
14. **Lu, Z.**, Fehn U., Zhao X., Kieser W.E. and Tomaru H., 2010, Comparison of three chemical extraction methods for I-129 determinations: *Nuclear Instruments and Methods in Physics Research B*, 268, 952–955.
13. Tomaru, H., Fehn, U., **Lu, Z.**, Takeuchi, R., Inagaki, F., Imachi, H., Kotani, R., Matsumoto R., and Aoike, R., 2009, Dating of Dissolved Iodine in Pore Waters from the Gas Hydrate Occurrence Offshore Shimokita Peninsula, Japan: 129I Results from the D/V Chikyū Shakedown Cruise. *Resource Geology*, 59(4), 359-373.
12. Tomaru, H., **Lu, Z.**, Fehn, U., and Muramatsu Y., 2009, Origin of hydrocarbons in the Green Tuff region of Japan: <sup>129</sup>I results from oil field brines and hot springs in the Akita and Niigata Basins : *Chemical Geology*, v. 264, p. 221-231.
11. **Lu, Z.**, Hensen, C., Fehn, U., and Wallmann, K., 2008, Halogen and <sup>129</sup>I systematics in gas hydrate fields at the northern Cascadia margin (IODP Expedition 311): Insights from numerical modeling: *Geochem. Geophys. Geosyst.*, 9, Q10006, doi:10.1029/2008GC002156.
10. **Lu, Z.**, Tomaru, H., and Fehn, U., 2008, Iodine ages of pore waters at Hydrate Ridge (ODP Leg 204), Cascadia Margin: implications for sources of methane in gas hydrates: *Earth and Planetary Science Letters*, v. 267, p. 654-665.

-----**Before moving to Oxford**-----

9. **Lu, Z.**, Hensen, C., Fehn, U., and Wallmann, K., 2007, Old iodine in fluids venting along the Central American convergent margin: *Geophysical Research Letters* 34, L22604, doi: 22610.21029/22007GL031864.
8. **Lu, Z.**, Fehn, U., Tomaru, H., Elmore, D., and Ma, X., 2007, Reliability of <sup>129</sup>I/I ratios produced from small sample masses: *Nuclear Instruments and Methods in Physics Research B*, v. 259, p. 359-364.
7. Tomaru, H., **Lu, Z.**, Fehn, U., Muramatsu, Y., and Matsumoto, R., 2007 Age variation of pore water iodine in the eastern Nankai Trough, Japan: evidence for different methane sources in a large gas hydrate field: *Geology*, v.35, p.1015-1018.
6. Tomaru, H., **Lu, Z.**, Snyder, G.T., Fehn, U., Hiruta, A., and Matsumoto, R., 2007, Origin and age of pore waters in an actively venting gas hydrate field near Sado Island, Japan

- Sea: interpretation of halogen and  $^{129}\text{I}$  distributions: *Chemical Geology*, v. 236, p. 350-366.
5. Tomaru, H., Fehn, U., **Lu, Z.L.**, and Matsumoto, R., 2007, Halogen systematics in the Mallik 5L-38 gas hydrate production research well, Northwest Territories, Canada: Implications for the origin of gas hydrates under terrestrial permafrost conditions: *Applied Geochemistry*, v. 22, p. 656-675.
  4. Tomaru, H., Ohsawa, S., Amita, K., **Lu, Z.L.**, and Fehn, U., 2007, Influence of subduction zone settings on the origin of forearc fluids: Halogen concentrations and I- $^{129}\text{I}$  ratios in waters from Kyushu, Japan: *Applied Geochemistry*, v. 22, p. 676-691.
  3. Fehn, U., **Lu, Z.**, and Tomaru, H., 2006, Data Report:  $^{129}\text{I}$ /I ratios and halogen concentrations in pore water of Hydrate Ridge and their relevance for the origin of gas hydrates: A progress report: *Proceedings of the Ocean Drilling Program, Scientific Results*, v. 204.
  2. **Lu, Z.**, Ling, H.F., Zhou, F., Jiang, S., Chen, X., and Zhou, H., 2005, Variation of the Fe/Mn ratio of ferromanganese crusts from the Central North Pacific: implication for paleoclimate changes: *Progress in Natural Science*, v. 15, p. 530-537.
  1. Ling, H.F., Jiang, S.Y., Frank, M., Zhou, H.Y., Zhou, F., **Lu, Z.L.**, Chen, X.M., Jiang, Y.H., and Ge, C.D., 2005, Differing controls over the Cenozoic Pb and Nd isotope evolution of deepwater in the central North Pacific Ocean: *Earth and Planetary Science Letters*, v. 232, p. 345-361.

## CONFERENCE ABSTRACTS

37. Gutchess, K.M., Jin, L., Lautz, L.K., Zhou, X., Lu, Z. Detection of Appalachian basin brines in the Tioughnioga river, central New York, Northeast GSA, 2016
36. Zhou, X., Thomas, E., Winguth, A., Ridgwell, A., Scher, H., Rickaby, REM, and Lu, Z. Benthic foraminiferal I/Ca recording bottom water oxygenation conditions in the late Paleocene-Early Eocene oceans. GSA annual meeting, Baltimore, Maryland, 2015
35. Gutchess, K.M., Jin, L., Lautz, L.K., Zhou, X., Lu, Z. Using halogens and discriminant analysis to distinguish among sources of salinity in the Tioughnioga river, central New York. GSA annual meeting, Baltimore, Maryland, 2015
34. Lu, Z., Zhou, X., Algeo, T., Saltzman, M., Thomas, E., Jenkyns H.J., Rickaby, REM., Whalen, M., Gutchess, K., Hardisty, D., Gill, B., and Lyons, T. A Phanerozoic I/Ca compilation: potential links to ocean oxygenation, carbon cycle and bio-diversification. AGU Fall Meeting, San Francisco, CA, 2015.
33. Lautz, L.K., Christian, K.M., Siegel, D.I., Hoke, G.D., Lu, Z., Kessler, J. Natural methane occurrence in domestic wells is common in sodium-rich shallow groundwater in valley settings overlying the Marcellus Shale. AGU Fall Meeting, San Francisco, CA, 2015.
32. Hardisty, D., Lu Z., Swart P., Planavsky, N., Gill, B., Loyd, S., Lyons, T.

- Assessing potential diagenetic alteration of primary iodine-to-calcium ratios in carbonate rocks. AGU Fall Meeting, San Francisco, CA, 2015.
31. Li D, Lu Z, Zhou X & Ling H. Iodine Records of Local Surface Seawater Redox Conditions from Ediacaran to Early Cambrian in South Yangtze Basin, South China. Goldschmidt, Prague, 2015.
  30. Zhou X, Jenkyns H & Lu Z. Records of Organically Bound Iodine during the Cenomanian–Turonian OAE 2 Goldschmidt, Prague, 2015.
  29. Hardisty D, Lu Z, Osburn M, Planavsky N, Jiang G, Zhou X, Ling H-F, Li D & Lyons T. An Oceanic Oxidation Event Coincident with the Shuram Carbonate-Carbon Isotope Excursion. Goldschmidt, Sacramento, 2014.
  28. Wörndle S, Lu Z, Halverson G & Kunzmann M. Application of the I/[Ca+Mg] Proxy to Interpreting Early Neoproterozoic  $\delta^{13}\text{C}$  Anomalies. Goldschmidt, Sacramento, 2014.
  27. Lautz, L.K., Hoke, G.D., Lu, Z., Siegel, D.I., Christian, K.M., Kessler, J. Fingerprinting sources of salinity to aquifers overlying shale plays using publically-available background water quality data and multivariate statistical methods GSA Annual Meeting in Vancouver, British Columbia, 2014
  26. Christian, K.M., Lautz, L.K., Hoke, G.D., Lu, Z., Siegel, D.I., Kessler, J. Spatial parameters controlling salinity and dissolved methane concentrations in private wells prior to hydraulic fracturing. GSA Annual Meeting in Vancouver, British Columbia, 2014
  25. Zhou, X., Thomas, E., Rickaby, R.E.M., Winguth, A.M.E., and Lu, Z. Expanded ocean minimum zones in the oceans during the Paleocene/Eocene Thermal Maximum indicated by I/Ca in planktic foraminifera. GSA Annual Meeting in Vancouver, British Columbia, 2014
  24. Wang, V., Junium, C., Lu, Z., and Preat. A., Isotope excursions and shifting oxidation states recorded in the Paleoproterozoic Franceville Basin. AGU Fall Meeting, San Francisco, CA, 2014.
  23. Levy, Z.F., Lu, Z., Mills, C.T., Goldhaber, M.B., Rosenberry, D.O., Mushet, D., Siegel, D.I., Using halogens (Cl, Br, F, I) and stable isotopes of water ( $\delta^{18}\text{O}$ ,  $\delta^2\text{H}$ ) to trace hydrological and biogeochemical processes in prairie wetlands. AGU Fall Meeting, San Francisco, CA, 2014.
  22. Lu, Z., Thomas, E., and Rickaby, R., I/Ca in foraminiferal shells as a paleoceanographic proxy, AGU Fall Meeting, San Francisco, CA, 2013.
  21. Hardisty, D., Lu, Z., Planavsky N., Bekker, A., Zhou, X. and Lyons, T., Record of Paleoproterozoic Surface Ocean Redox from Iodine-To-Calcium Ratios. Goldschmidt, Florence, 2013.
  20. Lu, Z., Thomas, E., Zhou, X., Rickaby, R. and Winguth, A., I/Ca Evidence for Upper Ocean Deoxygenation during the Paleocene-Eocene Thermal Maximum. Goldschmidt, Florence, 2013.
  19. Lautz, L.K., Hoke, G.D., Lu, Z., Siegel, D.I. Determining sources of salinity in

- pre-hydraulic fracturing baseline water quality data using multivariate statistical methods. GSA Annual Meeting in Denver, Colorado, 2013
18. Hummel, S.T., Lautz, L.K., Hoke, G.D., Lu, Z., Zhou, X., Leone, J., and Siegel, D.I. Iodine as a sensitive tracer for detecting influence of organic-rich shale in shallow groundwater. GSA Annual Meeting in Denver, Colorado, 2013
  17. Lautz, L.K., Hoke, G.D., Lu, Z., Siegel, D.I. Characterizing water quality in southern New York State before hydraulic fracturing: project SWIFT (Shale-Water Interaction Forensic Tools). Northeast GSA, 2013
  16. Hoke, G.D., Lautz, L.K., Waggoner, E.G., Lu, Z., Siegel, D.I. Shale-Water Interaction Forensic Tools (SWIFT): capturing water quality in southern new york state before hydraulic fracturing. GSA Annual Meeting in Charlotte, 2012
  15. Lu, Z., Zhou, X., Junium, C.K., Sageman, B.B., Jenkyns, H., I/Ca records of local redox history for contrasting depositional environments during Cenomanian- Turonian OAE2. AGU Fall Meeting, San Francisco, CA, 2012.
  14. Jin, L., Edmunds, M.W., Lu, Z., Ma, J., Geochemistry of sediment moisture in the Badain Jaran desert: Insights into palaeo-environmental changes and water rock interaction. AGU Fall Meeting, San Francisco, CA, 2012.
  13. Lu, Z., Rickaby, R.E.M., Kennedy H., Kennedy, P., Shaw S., Lennie, A., Pancost, R.D., Wellner, J., and Anderson, J.B., An ikaite record of late Holocene climate at the Antarctic Peninsula. AGU Fall Meeting, San Francisco, CA, 2011.
  12. Lu, Z., Jenkyns, H.C., and Rickaby, R.E.M., I/Ca ratios in marine carbonate as a paleo-redox proxy during oceanic anoxic events. 10th International Conference on Paleoceanography, San Diego, 2010.
  11. Lu, Z., Jenkyns, H.C., and Rickaby, R.E.M., I/Ca ratios in marine carbonate as a paleo-redox proxy during oceanic anoxic events. Goldschmidt, Knoxville, 2010.
  10. Lu, Z., Pancost, R.D., Aquilina, A., and Rickaby, R.E.M., Organic matter diagenesis, methane oxidation and their relation to ikaite precipitation in Antarctic sediments, Goldschmidt, Davos, 2009.
  9. Lu, Z., Kennedy H., Rickaby, R.E.M., Georg, B., Shaw S., Lennie, A., Pancost, R.D., Anderson, J.B. and Smith-Wellner, J., Precipitation of ikaite crystals in Antarctic marine sediments: implications from pore water geochemistry, AGU Fall Meeting, San Francisco, CA, 2008.
  8. Lu, Z., Hensen, C., and Fehn, U., The iodine release during organic matter degradation at Northern Cascadia Margin: a numerical approach. AGU Fall Meeting, San Francisco, CA, 2007.
  7. Lu, Z., Fehn, U., and Tomaru, H., Preliminary results of  $^{129}\text{I}/\text{I}$  ratios in pore waters from the northern Cascadia margin (IODP 311). IODP 311 Post-cruise Meeting, Paris, Apr. 2007.
  6. Lu, Z., Fehn, U., and Tomaru, H., Fluid flow and origin of gas hydrate at active margins. Hubbert Quorum, USGS, CA, 2006.

5. Lu, Z., Fehn, U., and Tomaru, H., Iodine and bromine concentrations in pore waters from two gas hydrate fields: IODP 311 and ODP 204. AGU Fall Meeting, San Francisco, CA, 2006.
4. Lu, Z., Fehn, U., and Tomaru, H., Pore water iodine concentrations and  $^{129}\text{I}/\text{I}$  ratios of the Hydrate Ridge (ODP 204): Implication for the origin of gas hydrates. Goldschmidt 05, Idaho, US, May 2005.
3. Lu, Z., Fehn, U. and Tomaru, H., Long distance migration of fluids in the Cascadia margin: evidence from iodine isotopic composition. AGU Fall Meeting, San Francisco, CA, 2005.
2. Lu, Z., Fehn, U., and Tomaru, H., A Test of Mass Dependence of  $^{129}\text{I}$  Ratios in AMS Determination. AMS-10, Berkeley, CA, 2005.
1. Lu, Z., Ling, H.F., Jiang, S.Y., Zhou, F., Implications of Fe/Mn ratios in Fe-Mn crusts for paleoclimate changes. Goldschmidt 2003.

### **INVITED TALKS**

- 2017 Spring: Rutgers University “I/Ca as an oxygenation proxy: co-evolution of life and planet”
- 2016 Summer: Tongji University “I/Ca as an oxygenation proxy: Precambrian to Pleistocene”
- 2016 Summer: Xiamen University “I/Ca as an oxygenation proxy: co-evolution of life and planet”
- 2016 Summer: University of Science and Technology of China “I/Ca as an oxygenation proxy: co-evolution of life and planet”
- 2016 Summer: China University of Geosciences “I/Ca as an oxygenation proxy: Precambrian to Pleistocene”
- 2016 Spring: Princeton University “I/Ca as an oxygenation proxy: Precambrian to Pleistocene”
- 2015 Fall: AGU “A Phanerozoic I/Ca compilation: potential links to ocean oxygenation, carbon cycle and bio-diversification”
- 2015 Fall: Columbia University “I/Ca as an oxygenation proxy: Precambrian to Pleistocene”
- 2014 Spring: SUNY Binghamton “The tale of the  $\text{O}_2$ : the voyage with the purple eye”
- 2014 Spring: Nanjing University “The tale of the  $\text{O}_2$ : the voyage with the purple eye”
- 2013 Fall: AGU “I/Ca in foraminiferal shells as a paleoceanographic proxy”
- 2013 Spring: University of Rochester “Potential of ikaite as a paleo-environmental proxy: from Holocene ice-sheet stability to Mesozoic phosphorous cycling”
- 2012 Spring: Yale University “Potential of ikaite as a paleo-environmental proxy: from Holocene ice-sheet stability to Mesozoic phosphorous cycling”
- 2012 Spring: University at Buffalo “Potential of ikaite as a paleo-environmental proxy: from Holocene ice-sheet stability to Mesozoic phosphorous cycling”
- 2011 Spring: Northwestern University “I/Ca ratios in marine carbonate as a paleo-redox proxy during oceanic anoxic events”
- 2011 Spring: UC Riverside “I/Ca ratios in marine carbonate as a paleo-redox proxy during oceanic anoxic events”
- 2010 Fall: IFM-GEOMAR, Kiel, Germany “I/Ca ratios in marine carbonate as a paleo-redox proxy during oceanic anoxic events”



2010 Fall: Scottish Association for Marine Science, Oban, UK “Iodine as a natural tracer for the migration of subsurface fluid flow and methane”

2007 Spring: State key Laboratory of loess and Quaternary Geology, Xian, China. “I-129 investigations in active continental margins”

## **TEACHING**

EAR 111 Climate Change: 2011-2015, yearly, 250 students each year

EAR 205 Water and the Environment: 2014-2015, yearly, 60 students each year

EAR 419/619 Aqueous Geochemistry: 2011-2015, biannually, 5 students each year

EAR 400/600 Chemical Oceanography: 2015, 6 students

## **SERVICE**

**Department:** Graduate Admission Committee; Faculty Hiring Search Committee; Space Committee; Analytical Facilities Committee; Thesis committees for 9 graduate students

**University:** Slepicky Undergraduate Research Awards Reviewing Committee; SU Water Initiative Advisory Board; Earth Science Department Chair review/nomination committee

**Professional:** Session conveners for AGU Fall Meeting and Goldschmidt conferences; Reviewer for European Research Council; Panelist and reviewer for National Science Foundation (Marine Geology and Geophysics, Sedimentary Geology and Paleobiology, Geobiology and Low-Temperature Geochemistry).

**Journal reviewer:** Nature Geoscience; Geology; Earth and Planetary Science Letters; Geochimica et Cosmochimica Acta; Paleoceanography; Chemical Geology; G-cubed; Palaeogeography, Palaeoclimatology, Palaeoecology; Biogeosciences; Marine Chemistry; Scientific Reports; Marine and Petroleum Geology; Environmental Science & Technology; Water Resources Research; Science of the Total Environment; Ground Water; Quaternary International; PLOS ONE.

## **GRADUATE STUDENTS**

2016- MS Shannon Garvin

2015- PhD Wanyi Lu

2013- PhD Kristina Gutchess

2011-2016 PhD Xiaoli Zhou

2011-2013 MS Sunshyne Hummel

## **HONORS**

2017 Excellence in Graduate Education Award, Syracuse University

2017 Syracuse Center of Excellence Faculty Fellow

2008-2009 British Council, Research Exchange Fund

2007 MARGINS Student Prize for outstanding presentation, AGU

2003-2005 Sproull Fellowship, University of Rochester  
2002 Thesis with High Distinction, Nanjing University  
1998-2002 Renmin Scholarship, Nanjing University