

SETH ALLEN YOUNG, PH.D

DEPARTMENT OF EARTH, OCEAN & ATMOSPHERIC SCIENCE, FLORIDA STATE UNIVERSITY
SAYOUNG2@FSU.EDU
850.644.2703 (OFFICE)

EDUCATION

Ph.D. The Ohio State University, Geological Sciences. 2008.

“A Chemostratigraphic Investigation Of The Late Ordovician Greenhouse To Icehouse Transition: Oceanographic, Climatic, And Tectonic Implications”
Advisor: Matthew R. Saltzman

M.Sc. The Ohio State University, Geological Sciences. 2003.

“A Late Middle Ordovician Carbon Isotope Excursion In Central And Eastern North America: Sequence Stratigraphic, Biostratigraphic, And K-Bentonite Event Stratigraphic Relations”
Co-Advisors: Stig M. Bergström and Matthew R. Saltzman

B.Sc. University of Arkansas at Little Rock, Geology. 2000.

Senior Project Advisor: Stephen A. Leslie

APPOINTMENTS

2014-present	Assistant Professor at Florida State University
2011-2014	Research Associate at Indiana University.
2008-2010	Postdoctoral Research Fellow at Indiana University.
2007-2008	Presidential Fellow at The Ohio State University.
2001-2007	Graduate Teaching Associate at The Ohio State University.
2001	Assistant Land Steward/ Fire Management Technician at the Nature Conservancy, Arkansas Field Office
1997-2000	Undergraduate Teaching Assistant at the University of Arkansas at Little Rock
1998-2000	Undergraduate Research Assistant at the University of Arkansas at Little Rock

TEACHING EXPERIENCE

FLORIDA STATE UNIVERSITY

*Primary Instructor

*GLY 5595/4905: Biogeochemical Evolution of Earth's Oceans (Primary Instructor; spring–2016; 13 students)
-All classroom lectures and field trip to Appalachians. Guidance and feedback on student-led presentations portion of course

*GLY 4544: Sedimentation and Stratigraphy (Primary Instructor; spring–2015, 22 students; fall–2015, 16 students)

-All Classroom Lectures and Laboratory exercises. Managed graduate student instructor for the Laboratory portion of the course

*GLY 5931: Geology Graduate Seminar (Primary Instructor; spring–2015, 6 students)

INDIANA UNIVERSITY

*Primary Instructor

*G105: Earth, Our Habitable Planet (Primary Instructor; 2013)

-All Classroom Lectures and Laboratory exercises. Managed graduate student instructors for the Laboratory portion of the course

Years Taught as Guest Instructor: 2011–2012

*G334: Principles of Sedimentology and Stratigraphy (Primary-Instructor; 2012).

-All Classroom Lectures and Laboratory exercises. I have also been a Field Instructor for a 4-day fieldtrip associated with this course to Florida to study modern day coastal sedimentary environments, and outcrop geology in central Tennessee, and outcrop geology in West Virginia.

Years Taught as Guest Instructor: 2008–2011

*G583: Isotope Geochemistry (Co-Instructor)

-Responsible for 3 weeks of lectures on carbon and sulfur isotopes, and secular changes in stable isotopes of seawater.

Years Taught: 2013

G308: Paleontology & Geology of Indiana (Guest Instructor)

-Lectures on Ordovician stable isotopes, paleoclimate, and isotope stratigraphy

Years Taught: 2011, 2013

THE OHIO STATE UNIVERSITY

Responsibilities: Teaching Laboratory Courses, Lead Recitations, & Guest Lecture Instructor

GS 100: Earth Systems I: The Geologic Environment

Years Taught: 2001–2005

*2005: The Ohio State University, Department of Geological Sciences Distinguished Teaching Award.

GS 110: History of Life on Earth: Global Change in the Biosphere

Years Taught: 2003, 2007

GS 122: Historical Geology

Years Taught: 2004–2007

GS 122H: Honors Historical Geology

Years Taught: 2005

GS 205: Environmental Geology

Years Taught: 2003, 2005

GS 210: Energy, Mineral Resources, and Society

Years Taught: 2002, 2003, 2007

GS 201/501: Introduction to Paleontology

Years Taught: 2003, 2005

GS 502: Stratigraphy & Sedimentation

Years Taught: 2005

UNIVERSITY OF ARKANSAS AT LITTLE ROCK

Responsibilities: Grading Laboratory Reports and Assisting Students in the Laboratory

ERSC 1102: Physical Geology Laboratory

Years Taught: 1997–2000

ERSC 1303: Historical Geology Laboratory

Years Taught: 1999–2000

STUDENT MENTORSHIP AND LAB / FIELD SUPERVISION

UNDERGRADUATE

Emily Benayoun, FSU BS-geology, DIS–student spring 2016. . Carbon and sulfur isotope chemostratigraphy of the middle Silurian Wayne Formation, central Tennessee: Field and Lab assistant to MS-student Andrew Kleinberg.

Steven (Lance) Newman, FSU BS-geology, DIS–student spring 2016. Carbon and sulfur isotope chemostratigraphy of the Middle–Late Ordovician Chickamauga Group, eastern Tennessee: Field and Lab assistant to MS-student Nevin Kozik

Hilary Davis, FSU BS-geology, DIS–student spring 2016. Carbon and sulfur isotope chemostratigraphy of the upper Silurian Brownsport Formation, central Tennessee: Field and Lab assistant to PhD-student Chelsie Bowman

Adam Silver, FSU BS-geology student 2015-2016. Carbon and sulfur isotope stratigraphy of Late Ordovician black shales from the GSSP section in Oklahoma Katian Global Stage for the Ordovician.

Brandon Fish, FSU BS-geology student fall 2015. DIS-student project: Carbon and sulfur isotope stratigraphy of Lower Silurian black shales from the Baltic Basin (Röstånga drill core, Sweden)

Margaret Wilson, FSU, BS-geology student spring 2015. DIS-student who helped set up laboratory equipment for sulfur extractions and test/develop laboratory protocols.

Seth Roberts, IU BS student. 2012-2013.

Senior Thesis: “Sulfur isotope geochemistry of Cretaceous lacustrine carbonates, Montana.”

Nick Umholtz, IU BS student. 2011-2012.

Currently a MS-Student at Ohio State University, School of Earth Sciences

Senior Thesis: “Sulfur isotope geochemistry of Ordovician carbonates, Oklahoma”

Rebecca Rice, IU Biology & Geology BS student. 2010.

Currently finishing BS degree in Biology/ minor Geology

“Sulfur isotope geochemistry of Middle Ordovician carbonates from Maryland”

Benjamin Underwood, IU Geological Sciences BS student. 2009-2010.

Currently stable isotope lab technician/manager at IU in the Department of Geological Sciences.

“Sulfur isotope geochemistry of alkaline lake sediments.”

Julian Lawitschka, IU BS student. 2009-2010.

Graduated with BS degree in Biology/ minor in Geology, working as lab technician IU-Biology Dept.

“Sulfur isotope geochemistry of experimental sulfidic oceans.”

Kellie Donoghue, IU BS student. 2009-2010.

Currently a PhD student in the IU in the Department of Geological Sciences

“Minor sulfur isotope geochemistry of ore deposit lithologies from Midcontinent North America.”

GRADUATE

*FACULTY ADVISOR/ **FACULTY COMMITTEE MEMBER

*Chelsie Bowman, FSU PhD student. 2015-present.

Investigation of oceanographic changes associated with the late Silurian Lau Event using isotope and geochemical proxies

*Nevin Kozik, FSU MS student. 2015-present.

Investigating the Linkage in Increasing Oxygen and the Great Ordovician Biodiversification Event using Geochemical Fingerprints

*Andrew Kleinberg, FSU MS student. 2015-present.

Investigation of environmental changes associated with the early Silurian Ireviken extinction event

*Sonay Bozkurt, FSU MS student 2014-2015.

Lithostratigraphy, depositional environment and diagenetic history of the lower and upper Cretaceous section of TEC DIW-1 deep well, Polk County, Florida (Co-Advisor with Bill Parker)

*Ekin Ozakar, FSU MS student 2014-2015.

Lithostratigraphy, depositional environment and diagenetic history of the upper Cretaceous–Paleocene strata of TEC DIW-1 deep well, Polk County, Florida (Co-Advisor with Bill Parker)

**Kelci Mynhier, FSU MS student 2014-2015.

Gravity modeling constraints on the Gatun-Chagres Basin and Tectonic evolution of north-central Panama

Sarah Cadieux, IU PhD student. 20011-2014.

PhD, summer 2015. Currently Visiting Professor at University Illinois-Chicago

“Sulfur and methane biogeochemistry of thermokarst lakes in Southwestern, Greenland.”

Water Gray, IU MS student. 2009-2012.

Currently the Education Outreach Coordinator for the Indiana Geological Survey

“Sulfur isotope geochemistry of Mississippian carbonates of Indiana.”

Humberto Carvajal-Oritz, IU Ph.D student. 2009-2013.

Currently finishing the Ph.D. in Geology

“Methane/sulfide clathrate experiments & isotope geochemistry.”

Dalton Hardisty, IU MS student. 2009-2011.

Currently a PhD student in Geological Sciences Dept. at University of California–Riverside.

“Sulfur and iron wet chemistry & mass spectrometry on coal mine reclamation sediments.”

Manas Singha, IU MS student, 2009-2010.

Currently working in the mineral exploration industry in Alaska

“Fluorine & sulfur chemistry geochemistry of ore bearing minerals.”

Xin Ding, IU Ph.D student. 2009-2010.

“Fluorine & sulfur isotope chemistry geochemistry of ore bearing minerals.”

Jeremy Gouldey, OSU MS student. 2007-2008.

Currently a PhD student at Northwestern University

“Carbon and Strontium Isotope Geochemistry of Silurian carbonates from Estonia.”

Alyssa Bancroft, OSU MS student 2007-2008

Currently a PhD student at OSU School of Earth Sciences

“Carbon isotope geochemistry of Silurian carbonates from North America.”

PUBLICATIONS

Young, SA, Gill, BC, Edwards, CT, Saltzman, MR, Leslie, SA. (2015, *in press-corrected proof*)

Middle–Late Ordovician (Darriwilian–Sandbian) decoupling of global sulfur and carbon cycles: isotopic evidence from eastern and southern Laurentia. *Palaeogeography, Palaeoclimatology, Palaeoecology*. doi:10.1016/j.palaeo.2015.09.040

–All writing and modeling work done at FSU, geochemical analyses done at IU

Edwards, CT, Saltzman, MR, Leslie, SA, Bergström, SM, Sedlacek, ARC, Howard, A, Bauer, JA, Sweet, WC, **Young, SA**, 2015.

Strontium isotope ($^{87}\text{Sr}/^{86}\text{Sr}$) stratigraphy of Ordovician bulk carbonate: Implications for preservation of primary seawater values. *Geological Society of America Bulletin* 127 (9/10), 1275-1289 doi:10.1130/B31149.1

–SA Young writing component done at FSU, geochemical analyses done at OSU

Bergström, SM, Saltzman, MR, Leslie, SA, Ferretti, A, **Young, SA**, 2015.

Trans-Atlantic application of the Baltic Middle and Upper Ordovician carbon isotope zonation. *Estonian Journal of Earth Sciences* 64, 8-12. doi: 10.3176/earth.2015.02

–SA Young writing component done at FSU, geochemical analyses done at Lund University

Bergström, SM, Eriksson, ME, **Young, SA**, Ahlberg, P, Schmitz, B. 2014.

Hirnantian (latest Ordovician) $\delta^{13}\text{C}$ chemostratigraphy in southern Sweden and globally: a refined integration with the graptolite and conodont successions *GFF* 136: 355-386.

- Young, SA**, Loukola-Ruskeeniemi, K, and Pratt, LM, 2013.
Reactions of hydrothermal solutions with organic matter in Paleoproterozoic black shales at Talvivaara, Finland: Evidence from multiple sulfur isotopes. *Earth and Planetary Science Letters* 367: 1-14.
- Bergström, SM, Eriksson, ME, **Young, SA**, Widmark, EM, 2013.
Conodont biostratigraphy and $\delta^{13}\text{C}$ and $\delta^{34}\text{S}$ isotope chemostratigraphy of the uppermost Ordovician and Lower Silurian at Osmundsberget, Dalarna, Sweden. *GFF* 4:251-272.
- Murray, AM, Kenig, F, Fritsen, CM, McKay, CP, Cawley KM, Edwards, R, Kuhn, E, McKnight, DM, Ostrom, NE, Peng, V, Ponce, A, Priscu, JC, Samarkin, V, Townsend, AT, Wagh, P, **Young, SA**, Yung, PT, Doran, PT. 2012
Microbial Life at -13°C in the Brine of an Ice-Sealed Antarctic Lake. *Proceedings of the National Academy of Sciences*, 109 (50) 20626-20631. doi:10.1073/pnas.1208607109
- Bergström, SM, Schmitz, B, **Young, SA** and Bruton, DL, 2011.
Lower Katian (Upper Ordovician) $\delta^{13}\text{C}$ chemostratigraphy, global correlation, and sea-level changes in Baltoscandia. *GFF*, 133: 31-47.
- Saltzman, MR, **Young, SA**, Kump, LR, Gill, BC, Lyons, TW, and Runnegar, B, 2011.
A pulse of atmospheric oxygen during the Late Cambrian: Implications for animal biodiversification. *Proceedings of the National Academy of Sciences*, 108: 3876-3881.
- Gill, BC, Lyons, TW, **Young, SA**, Kump, LR, Knoll, AH, and Saltzman, MR, 2011.
Sulfur isotope evidence for widespread euxinia in the Later Cambrian ocean. *Nature*, 469:80-83.
- Young, SA**, Saltzman, MR, Ausich, WI, and Kaljo, D, 2010.
Did changes in atmospheric CO_2 coincide with latest Ordovician glacial–interglacial cycles? *Palaeogeography, Palaeoclimatology, Palaeoecology*, 296: 376-388.
- Bergström, SM, **Young, SA**, and Schmitz, B. 2010.
Katian (Upper Ordovician) $\delta^{13}\text{C}$ chemostratigraphy and sequence stratigraphy in the United States and Baltoscandia: a regional comparison. *Palaeogeography, Palaeoclimatology, Palaeoecology*, 296: 217-234.
- Gouldey, JC, Saltzman, MR, **Young, SA**, and Kaljo, D, 2010.
Strontium and carbon isotope stratigraphy of the Llandovery (Early Silurian): Implications for tectonics and weathering. *Palaeogeography, Palaeoclimatology, Palaeoecology*, 296: 264-275.
- Bergström, SM, Schmitz, B, **Young, SA**, and Bruton, D. L. 2010.
The $\delta^{13}\text{C}$ chemostratigraphy of the Upper Ordovician Mjøsa Formation at Furuberget near Hamar, southeastern Norway: Baltic, Trans-Atlantic, and Chinese relations. *Norwegian Journal of Geology*, 90: 65-78.
- Young, SA**, Saltzman, MR, Foland, KA, Linder, JS, and Kump, LR, 2009.
A major drop in seawater $^{87}\text{Sr}/^{86}\text{Sr}$ during the Middle Ordovician (Darriwilian): Links to volcanism and climate? *Geology*, 37: 951-954.
- Young, SA**, Saltzman, MR, Bergström, SM, Leslie, SA, Xu, C, 2008.
Paired $\delta^{13}\text{C}_{\text{carb}}$ and $\delta^{13}\text{C}_{\text{org}}$ records of Upper Ordovician (Sandbian-Katian) carbonates in North America and China: Implications for paleoceanographic change. *Palaeogeography, Palaeoclimatology, Palaeoecology* 270: 166-178.
- Goldman, D, Leslie, SA, Nölvak, J, **Young, SA**, Bergström, SM, and Huff, WD, 2008.
An Ordovician Global Reference Section Recently Selected in Oklahoma. *Oklahoma Geology Notes* 68, 15-18.
- Goldman, D, Leslie, SA, Nölvak, J, **Young, SA**, Bergström, SM, and Huff, WD, 2007.

The Global Stratotype Section and Point (GSSP) for the base of the Katian Stage of the Upper Ordovician Series at Black Knob Ridge, Southeastern Oklahoma, USA. *Episodes* 30, 258-270.

- Bergström, SM, **Young, SA**, Schmitz, B, and Saltzman, MR, 2007.
Upper Ordovician $\delta^{13}\text{C}$ chemostratigraphy: A trans-Atlantic comparison. *Acta Palaeontologica Sinica* 46: 37-39.
- Young, SA**, Saltzman, MR, and Bergström, SM, 2005.
Upper Ordovician (Mohawkian) carbon isotope ($\delta^{13}\text{C}$) stratigraphy in eastern and central North America: Regional expression a perturbation of the global carbon cycle. *Palaeogeography, Palaeoclimatology, Palaeoecology* 222: 53-76.
- Saltzman, MR and **Young, SA**, 2005.
Long-lived glaciation in the Late Ordovician? Isotopic and sequence-stratigraphic evidence from western Laurentia. *Geology* 33 (2): 109-112.
- Young, SA**, 2004.
Carbon isotope stratigraphy; a gateway to the past, present, and future. *Sedimentary Record* 2 (2): 11.
- Young, SA** and Leslie, SA, 1999.
The search for K-bentonite beds in Arkansas and their potential for regional correlation. *Proceeding Journal of the Arkansas Undergraduate Research Conference and Space Grant Symposium*: 231-234.

MANUSCRIPTS IN PREPARATION/SUBMITTED

- Proemse, BC, Murray AE, Schallenberg C, McKiernan B, Glazer BT, **Young, SA**, Ostrom N, Bowie AR, Wieser ME, Kenig F, Doran PT, Edwards R. (*in review*) Coupled Iron Redox in the Cryo-ecosystem of Antarctic Lake Vida. *Nature-Communications*.
-SA Young writing component done at FSU, sulfur and oxygen isotope analyses done at IU
- Bergström, SM, Eriksson, ME, Schmitz, B, **Young, SA**, Ahlberg, P (*in review*) Upper Ordovician $\delta^{13}\text{C}$ chemostratigraphy, K-bentonite stratigraphy, and biostratigraphy in southern Scandinavia: A reappraisal. *Palaeogeography, Palaeoclimatology, Palaeoecology*
-SA Young writing component done at FSU, carbon isotope analyses done at Lund University
- Young, SA**, Cadieux, SB, Peng, Y, Pratt, LM. (in prep)
Stable isotopic and geochemical evidence for dynamic sulfur and carbon cycling within a small Arctic lake in Western Greenland. *Chemical Geology*.
-All writing and modeling done at FSU, sulfur isotope analyses done at IU
- Young, SA**, Eriksson, ME, Owens, JD (in prep)
Expansion of oceanic anoxia/euxinia during the late Silurian Lau extinction event. *Earth & Planetary Science Letters*.
-All writing and modeling done at FSU, with sulfur isotope analyses done at IU

GRANTS

Pending review*

- *2016 ACS-PRF Doctoral New Investigator Grant (DNI): Stable isotopic and paleoredox characterization of lower Silurian (Llandovery) strata across the Baltic Basin \$110,000.
- *2016 FSU-Planning Grant (PG): Characterizing redox conditions of deeper marine environments in the Baltic Basin (Latvia) during the late Silurian extinction event \$13,000.
- 2016 NSF-Earth Sciences Instrumentation and Facilities (EAR/IF): Acquisition of a Gas Source Stable Isotope Ratio Mass Spectrometer (IRMS) for Earth and Ocean Sciences research at Florida State University: I am lead-PI on this proposal being awarded for \$174,343 (co-PI's Owens, J, Chanton, J, & Salters, V)

- 2015 FSU– First Year Assistant Professor Awards (FYAP): Discerning Mechanisms of Environmental and Climatic Changes Associated with the Late Silurian Extinction Event for \$20,000.
- 2013 NASA–Astrobiology Science & Technology for Exploring Planets (ASTEP): Methane Dynamics Under Ice Cover in Small Lakes on the Margin of the Glacial Cap in Western Greenland: I am Co-I on this supplemental funding award for \$87,340.
- 2011 NASA–Astrobiology Science & Technology for Exploring Planets (ASTEP): Shallow-Borehole Array for Measuring Greenland Emission of Trace Gases as an Analogue for Methane on Mars (GETGAMM): I am Co-I on this 3-yr award of \$2,400,000.
- 2007 Geological Society of America Research Grant: A chemostratigraphic investigation of the latest Ordovician icehouse in Estonia: Examining the global significance of parallel trends in $\delta^{13}\text{C}_{\text{carb}}$ and $\delta^{13}\text{C}_{\text{org}}$, and their usefulness as a proxy for pCO_2 . \$3200.
- 2006 Alumni Grants for Graduate Research and Scholarship: Investigation of the Late Ordovician paradox; fluctuating CO_2 , sea-level, and glaciation. \$2000.
- 2005 International Geoscience Correlation Programme (IGCP) 503 Travel Grant to present a paper at the Second International Symposium on Ordovician Palaeogeography and Palaeoclimate in Milwaukee, WI. \$343.
- 2005 Office of International Affairs Graduate Student International Dissertation/MA Thesis Research Travel Grant: to conduct research on the island of Gotland, Sweden. \$1700.
- 2004 North-Central Section of the Geological Society of America Travel Grant to present a paper at the national GSA meeting in Denver, CO. \$65.
- 2003 Friends of Orton Hall Fund for travel to present a paper at the annual meeting of the Geological Society of America, Seattle, WA. \$375.
- 2003 Geological Society of America Research Grant: A Late Middle Ordovician Carbon Isotope Excursion in Central and Eastern North America: Stratigraphic and Geographic Distribution and Relations to K-bentonites and Conodont Biostratigraphy. \$1300.
- 2003 North-Central Section of the Geological Society of America Travel Grant to present a paper at the GSA sectional meeting in Kansas City, MO. \$200.
- 2001-2002 Friends of Orton Hall Fund: A Late Middle Ordovician Carbon Isotope Excursion in Central and Eastern North America: Stratigraphic and Geographic Distribution and Relations to K-bentonites and Conodont Biostratigraphy. \$1275.
- 2000 South-Central Section of the Geological Society of America Travel Grant to present a paper at the GSA sectional meeting in Fayetteville, AR. \$50.
- 1998-1999 SILO Advisory Council Undergraduate Research Fellowship: Analysis of Possible K-bentonite beds in Arkansas and their potential for Regional Correlation. \$2,567.50.

HONORS

- 2012 The National Science Foundation Antarctica Service Medal of the United States of America
- 2007 The Ohio State University Presidential Fellowship: The Enigmatic Late Ordovician Icehouse: CO_2 , tectonics, and glaciations.

- 2005 The Ohio State University, Department of Geological Sciences Distinguished Teaching Award.
- 2000 UALR Department of Earth Sciences Award for Research Excellence.
-

INVITED SEMINARS

- 2015 “Middle Ordovician Decoupling of Global Sulfur and Carbon Cycles” Louisiana State University, October 9th.
- 2014 “Reconstructing transitions between Greenhouse and Icehouse Conditions” Oklahoma State University, February 25th.
- 2014 “Reconstructing transitions between Greenhouse and Icehouse Conditions” University of Alabama, February 18th.
- 2013 “Mass Anomalous Fractionations of Sulfur Isotopes After the Rise of Oxygen: Perspectives from the Proterozoic of Finland” University of California-Riverside, March 11th.
- 2013 “Linkage of Ocean Ventilation, Weathering, and Biodiversity in the Ordovician: a chemostratigraphic perspective” University of Missouri, March 4th.
- 2013 “Mass Anomalous Fractionations of Sulfur Isotopes After the Rise of Oxygen: Perspectives from the Proterozoic of Finland” University of Tennessee, February 25th.
- 2013 “The Late Ordovician Greenhouse to Icehouse transition: links to CO₂, weathering, and climate.” University of Kentucky, January 21st.
- 2012 “Mass Anomalous Fractionations of Sulfur Isotopes After the Rise of Oxygen: Perspectives from the Proterozoic of Finland” Indiana University-Crossroads Conference *Keynote Speaker*, February 19th.
- 2012 “The Late Ordovician Greenhouse to Icehouse transition: links to CO₂, weathering, and climate.” University of Missouri, February 26th.
- 2012 “The Late Ordovician Greenhouse to Icehouse transition: links to CO₂, weathering, and climate.” Northern Illinois University, February 19th.
- 2012 “Paired Isotopes, Stratigraphy, and Climate, Oh My!” University of Iowa, February 14th.
- 2012 “The Late Ordovician Greenhouse to Icehouse transition: links to CO₂, weathering, and climate.” University of Arkansas at Little Rock, February 9th.
- 2011 “A Volcanic Weathering Hypothesis for the Late Ordovician Greenhouse to Icehouse Transition: Isotopic evidence from North America.” University of Cincinnati, May 27th.
- 2010 “Role of hydrogen sulfide in soft tissue taphonomy and fossilization: sulfur isotopic & geomicrobiological investigations.” Harvard University Geobiology Symposium May 1st.
- 2010 “The Late Ordovician Greenhouse to Icehouse transition: isotopic evidence for fluctuating silicate weathering, carbon cycling, and glaciations.” Indiana University, January 30th.
- 2009 “The Late Ordovician Greenhouse to Icehouse transition: isotopic evidence for fluctuating silicate weathering, carbon cycling, and glaciations.” University of Tennessee, October 1st.

2007 “The Late Ordovician Greenhouse to Icehouse transition: isotopic evidence for fluctuating silicate weathering, carbon cycling, and glaciations.” James Madison University, September 5th.

PROFESSIONAL ABSTRACTS

- 2015 **Young, SA**, Eriksson, ME, Raff, RA, Owens, JD
Paired Sulfur And Carbon Isotope Stratigraphy For The Late Ludfordian (Silurian) Of Gotland, Sweden: Implications For Environmental, Oceanographic, And Biotic Change
Geological Society of America, Abstracts with Programs, 47 (7), p. 632.
- 2015 **Young, SA**, Gill, BC, Edwards, CT, Saltzman, MR, Leslie, SA
Middle–Late Ordovician (Darriwilian–Sandbian) paired $d^{34}\text{S}$ and $d^{13}\text{C}$ records reveal dynamic cycling through the Great Ordovician Biodiversification Event
12th International Symposium on the Ordovician System: Short Papers, Abstracts, Field Guides, p. 139.
- 2014 Cadieux, SB, Schütte, UM, White, JR, **Young, SA**, Pratt, LM. Phototrophic purple sulfur bacteria in a dilute dimictic Arctic lake under ice cover.
Midwest Geobiology Symposium, September 27-28.
- 2014 White, JR, Cadieux, SB, Schütte, UM, **Young, SA**, Peng, Y., Pratt, LM. Phototrophic purple sulfur bacteria in a dilute dimictic Arctic lake under ice cover with submicromolar sulfide.
Joint Aquatic Sciences Meeting, May 18-23.
- 2013 **Young, SA**, Cadieux, SB, Peng, Y, Pratt, LM, White, JR. Sulfur cycling within a small Arctic lake in Western Greenland: Potential Insights into Early Pluvial Periods on Mars.
Geological Society of America, Abstracts with Programs, 45 (7).
- 2013 **Young, SA**, Cadieux, SB, Peng, Y, Pratt, LM, White, JR. Sulfur cycling within a small Arctic lake in Western Greenland: Potential Insights into Early Pluvial Periods on Mars.
Geological Society of America, Abstracts with Programs, 45 (7).
- 2013 Cadieux, SB, White, JR, Pratt, LM, , Peng, Y, **Young, SA**. Carbon and hydrogen isotopic systematics of dissolved methane in small seasonally ice-covered lakes near the margin of the Greenland ice sheet.
American Geophysical Union, Annual Meeting Dec 8-12th.
- 2013 Peng, Y, Pratt, LM, **Young, SA**, Cadieux, SB, Goldman, AE, White, JR. The origin of jarosite associated with Archean gneiss weathering at southwest Greenland as an analogue for Mars.
American Geophysical Union, Annual Meeting Dec 8-12th.
- 2013 Pratt, LM, Peng, Y, Cadieux, SB, **Young, SA**, and White, J. Small Lakes at the Ice-Free Margin of Western Greenland as Mars Analogs to Evaluate Methane Dynamics.
NASA-Mars Analog Workshop August 5-7th.
- 2012 Cadieux, SB, White, J,Pratt, LM, and **Young, SA**.
Marked variations in aqueous chemistry and methane cycling in small thermokarst lakes in western Greenland.
American Geophysical Union, Annual Meeting Dec 3-7th.
- 2012 **Young, SA**, Marks, JA, Gill, BC, and Saltzman, MR.
Middle–Late Ordovician (Darriwilian–Sandbian) paired sulfur and carbon isotope stratigraphy: links to pulses of ocean oxygenation, weathering, and biodiversity.
Geological Society of America, Abstracts with Programs, 44 (7).
- 2012 Trigg, C, Saltzman, MR, Carlucci, JR, Westrop, SR, Leslie, SA, **Young, SA**, Bergström, SM, and Edwards, CT.

- Positive carbon isotope shift in the Middle to Late Ordovician: no link with sea level?
Geological Society of America, Abstracts with Programs, 44 (7).
- 2011 **Young, SA**, Loukola-Ruskeeniemi, K, and Pratt, LM.
Multiple Sulfur Isotopes of Paleoproterozoic Rocks In Eastern Finland: Potential Evidence For The Thermochemical Sulfate Reduction Pathway To MIF-Sulfur.
Geological Society of America, Abstracts with Programs, 43 (5).
- 2011 Pratt, LM, Onstott, TC, **Young, SA**, Cadieux, S, and Hardisty, D.
Oxide Residues Overlying Sulfide Mineralization (Gossans) in Greenland Provide Insight into Potential Niches for Life on Present-Day Mars, March 5-6, 2011.
Exploring Mars Habitability Session: European Space Agency Conference.
- 2011 Pratt, L M, **Young, SA**, and Onstott, TC.
Weathering of Mafic Dikes in Southwestern Greenland as an Analogue for Local Sources of Metabolic Energy on Mars. Analogue Sites for Mars Missions: MSL and Beyond.
42nd Lunar & Planetary Science Conference, The Woodlands, Texas.
- 2010 **Young, SA**, Pratt, LM, Raff, RA, Raff, EC, and Nelson, D.
pH and Temperature Affects on Sulfur Isotopes of H₂S in Seawater: Implications for Soft Tissue Taphonomy and Fossilization.
Goldschmidt 2010-Abstracts in *Geochimica et Cosmochimica Acta*, 74 (11): Supplement 1.
- 2009 **Young, SA**, Pratt, LM, Raff, RA, Raff, EC, and Nelson, D.
pH-dependent Sulfur Isotope Partitioning of H₂S in Seawater: Relations to Soft Tissue Taphonomy and Fossilization.
Geological Society of America, Abstracts with Programs, 41 (7): 441.
- 2009 **Young, SA**, Loukola-Ruskeeniemi, K, and Pratt, LM.
Multiple Sulfur isotopes of Paleoproterozoic C- and S-rich Metasedimentary Rocks Associated with Sulfide Ore Deposits in eastern Finland and northwestern Russia.
Geological Society of America, Abstracts with Programs, 41 (7): 272.
- 2009 Saltzman, M, **Young, SA**, Kump, LR, Foland, KA, and Leslie, SA.
The Late Ordovician Glaciation and Mass Extinction: Relation to Bauxitic Weathering and Volcanic Degassing.
Geological Society of America, Abstracts with Programs, 41 (7): 418.
- 2008 Gill, B, Lyons, T, **Young, SA**, Kump, L, and Saltzman, M.
Geochemical Evidence for Widespread Reducing Ocean during the Middle to Late Cambrian.
Geological Society of America, Abstracts with Programs, 230-2.
- 2008 Bergström, SM, **Young, SA**, and Schmitz, B.
Regional Middle and Late Katian (Late Ordovician) δ¹³C Chemostratigraphy in North America: Comparison between Iowa, The Cincinnati region in Kentucky and Ohio, and the Arbuckle Mountains, in Oklahoma.
Geological Society of America, Abstracts with Programs, 40 (5): 14.
- 2007 **Young, SA**, Saltzman, MR, Ausich, WI, and Kaljo, D.
A Global Change in δ¹³C of Organic Matter During the Late Ordovician (Hirnantian): Implications for Atmospheric CO₂ Levels and Glaciation.
Geological Society of America, Abstracts with Programs, 39 (6): 84.
- 2007 Bergström, SM, Xu, C, **Young, SA**, Schmitz, B, and Saltzman, MR.
The First Record of The Ordovician Guttenberg δ¹³C excursion (GICE) in Asia: Chemostratigraphy of the Pagoda Limestone and Yanwashan Formations in South-eastern China.

Geological Society of America, Abstracts with Programs, 39 (6): 144.

- 2007 Saltzman, MR, **Young, SA**, Gill, B, Lyons, T, Kump, L, and Runnegar, B.
Increased Carbon Isotopic Fractionation during the Late Cambrian SPICE Event and a Pulse of Atmospheric Oxygen.
Geological Society of America, Abstracts with Programs, 39 (6): 24.
- 2007 Bergström, SM, **Young, SA**, Schmitz, B, Barta, N, and Saltzman, MR.
Katian and Hirnantian (Upper Ordovician) $\delta^{13}\text{C}$ chemostratigraphy in North America and Baltoscandia: A trans-Atlantic Comparison.
Working Group on Ordovician Geology of Baltoscandia (WOGOGOB) 2007. SGU Rapport och meddelanden . No. 128, 80-81.
- 2006 **Young, SA**, Saltzman, MR, Foland, KA, and Linder, JS.
A Large, Rapid $^{87}\text{Sr}/^{86}\text{Sr}$ Drop Across the Middle to Late Ordovician boundary: Implications for Paleooceanography & Weathering of the Taconic Highlands.
Geological Society of America, Abstracts with Programs, 38 (7): 478.
- 2006 Bergström, SM, **Young, SA**, Schmitz, B, and Saltzman, MR.
A Detailed $\delta^{13}\text{C}$ Curve Through the Cincinnati Series (Upper Ordovician) in its Type Area: Significance for Regional Chemostratigraphic Correlations.
Geological Society of America, Abstracts with Programs, 38 (7): 146.
- 2006 **Young, SA**, Bergström, SM, Schmitz, B, and Saltzman, MR.
Trans-atlantic Correlation of Upper Ordovician $\delta^{13}\text{C}$ Excursions.
Geological Society of America, Abstracts with Programs, 38 (4): 73.
- 2005 **Young, SA**, Saltzman, MR, and Ausich, WI.
Hirnantian-Llandovery (uppermost Ordovician-lowermost Silurian) Carbon Isotope ($\delta^{13}\text{C}$) Stratigraphy from Anticosti Island, Quebec: Implications for Oceanography, Glaciation, and Organic Carbon Burial. The Dynamic Silurian Earth: Subcommision on Silurian Stratigraphy Field Meeting 2005.
SGU Rapport och meddelanden . No. 121, 97-98.
- 2005 **Young, SA**, Saltzman, MR, and Ausich, WI.
Richmondian-Hirnantian (Upper Ordovician) carbon isotope ($\delta^{13}\text{C}$) stratigraphy from Anticosti Island, Quebec: Implications for Oceanography, Glaciation, and Organic Carbon Burial.
Abstracts for the Second International Symposium of IGCP503 on Ordovician Palaeogeography and Palaeoclimate. *Insight, A Milwaukee Public Museum Series in Natural History.* (2) 40.
- 2004 **Young, SA**, Saltzman, MR, Foland, KA, and Linder, JS.
A Large Seawater $^{87}\text{Sr}/^{86}\text{Sr}$ Drop (~ 0.0008) in the Middle to Late Ordovician (Late Whiterockian): Evidence from central Nevada.
Geological Society of America Abstracts with Programs, 160.
- 2003 **Young, SA**, Saltzman, MR, Bergström, SM, Holmden, C, and Patterson, WP.
Paleooceanographic Aspects of the Early Chatfieldian (Upper Middle Ordovician) Positive $\delta^{13}\text{C}$ Excursion (GICE).
Geological Society of America, Abstracts with Programs, 43 (7): 600.
- 2003 Saltzman, MR, **Young, SA**, Bergström, SM, Holmden, C, and Patterson, WP.
Age and Significance of the Sequence Boundary at the Base of the Eureka Quartzite in Central Nevada.
Geological Society of America, Abstracts with Programs, 43 (7): 473.
- 2003 **Young, SA**, Bergström, SM, and Saltzman, MR.
Regional Carbon Isotope ($\delta^{13}\text{C}$) Stratigraphy of Chatfieldian (Upper Middle Ordovician) Carbonates in Central and Eastern North America.

- 2000 **Young, SA.**
Upper Middle Ordovician Conodont Biostratigraphy of the upper Carters Limestone and lower Hermitage Formation in central Tennessee.
Geological Society of America, Abstracts with Programs, 32(3): A-45.
- 1999 **Young, SA** and Leslie, SA.
The Search for K-bentonite Beds in Arkansas and their Potential for Regional Correlation.
Program and Abstracts of the Arkansas Undergraduate Research Conference and Space Grant Symposium, p. 82.
-

SERVICE

FSU/EOAS

- EOAS Grants in Support of Graduate Research in Geology, Committee Member 2014-present: review/rank graduate student proposals, help determine what gets funded and by how much.
- EOAS Bachelors of Science in Environmental Science, Committee Member 2014-present: discuss/write new undergraduate curriculum and standards for BSES students.
- Letters of Recommendation for EOAS graduating geology-undergraduate students for graduate school applications or professional jobs.

NATIONAL

- GSA National Meeting Session Chair, Denver CO September 2016: Propose, Organize, Coordinate a session for the upcoming national GSA conference with three of my research colleagues. It has been recently been accepted for a topical themed session entitled "T37. Excursions, Extinctions, and Environmental Change: New Advances in Geochemical Tools Linked to Critical Intervals of Environmental and Biotic Change in Earth History"
- NASA/ NSF workshop on Mass-Independent Fractionation of Sulfur Isotopes (S-MIF), June 2011: Attended and participated in workshop sessions on rare sulfur isotopes and their applications. Give a short presentation on my research project involving multiple sulfur isotope investigation of Paleoproterozoic carbon & sulfur rich metasediments in Finland.
- NASA Mars Science Laboratory Participating Science Program (MSLPSP), November 2011: Executive Secretary to Geology-B Panel Chair Lisa Pratt, Coordinated logistics for on-site and remote panel reviewers, collected, edited, and synthesized notes, scores, and summaries during proposal discussions, interfaced with NASA-program officers and staff.
- ExxonMobil Basin Analysis Short Course, November, 2011: Participated in a short course taught by Bob Stewart of ExxonMobil designed to introduce geology graduates/undergraduate students what skill sets they need, tasks they'll be assigned, and challenges they will face if working in the oil and gas industry. After taking this course I feel confident I can offer a graduate and/or undergraduate level course on Basin Analysis or Sequence Stratigraphy that will adequately prepare students for a job in the oil and gas industry.

LEADERSHIP

- School of Earth Sciences (OSU), Council of Graduate Students Representative: 2001-2002, 2005-2006: Attend and participate in university council meetings and disseminate information that to graduate students in my department.
- Graduate Employees and Students Organization (OSU): President: 2005-2006; Steering Committee: 2004-2007; Organizing Committee: 2003-2008: Participate in/organize meetings, events, rallies that help bring attention to and solve issues related to graduate students on the campus of The Ohio State University.
-

JOURNAL REVIEWER

Nature Geosciences

Nature Communications

Geology

Geochemistry, Geophysics, Geosystems (G³)

Earth and Planetary Science Letters

Palaeogeography, Palaeoclimatology, Palaeoecology (P³)

Journal of the Geological Society-London

Applied Geochemistry

GFF

Estonian Journal of Earth Sciences

Lethaia

Palaeontologia Electronica

GRANT REVIEWER

ACS-PRF–New Directions Program

NASA-Exobiology and Evolutionary Biology Program

NASA-Mars Fundamental Research Program

NSF-Antarctic Earth Sciences Program

NSF-Sedimentary Geology and Paleobiology Program

NASA Mars Science Laboratory Participating Science Program (MSLPSP), November 2011: Executive Secretary to Geology-B Panel Chair Lisa Pratt, Coordinated logistics for on-site and remote panel reviewers, collected, edited, and synthesized notes, scores, and summaries during proposal discussions, interfaced with NASA-program officers and staff.

COLLABORATORS

Professor Emeritus Stig M. Bergström, The Ohio State University, School of Earth Sciences

Professor Peter T. Doran, University of Illinois-Chicago, Earth and Environmental Sciences

Professor Mats Eriksson, Lund University, Department of Geology, Sweden

Assistant Professor Jeremy D. Owens, Florida State University, EOAS

Assistant Professor Benjamin C. Gill, Virginia Polytechnic University, Geosciences

Professor Emeritus Dimitri Kaljo, Tallin University of Technology, Institute of Geology, Estonia

Professor Fabien Kenig, University of Illinois-Chicago, Earth and Environmental Sciences

Professor and Department Head Lee R. Kump, Pennsylvania State University, Geosciences Professor

Professor & Dept. Head Stephen A. Leslie, James Madison University, Earth and Environmental Sciences

Professor Timothy W. Lyons, University of California-Riverside, Geosciences

Associate Professor Alison E. Murray, Desert Research Institute

Provosts Professor & Dept. Chair Lisa M. Pratt, *Postdoctoral Advisor*, Indiana University, Geological Sciences

Professor Matthew R. Saltzman, The Ohio State University, School of Earth Sciences

Professor Birger Schmitz, Lund University, Department of Geology, Sweden

Professor Jeffrey R. White, Indiana University, Geological Sciences/ School of Public & Environmental Affairs

Postdoctoral Fellow Dr. Cole T. Edwards, Washington University-St. Louis, Earth & Planetary Sciences Dept.

PROFESSIONAL MEMBERSHIPS

- Geological Society of America Member: 1998-present.

- The Paleontological Society Member: 2001-present.
- Society for Sedimentary Geology (SEPM) Member: 2003-present.
- Geochemical Society of America Member: 2007-present

PROFESSIONAL DEVELOPMENT

NSF Career Grant Workshop, February, 2016: Attended and participated in workshop sessions designed to inform and prepare faculty for future career grant submissions to the National Science Foundation.

NASA / National Science Foundation workshop on Mass-Independent Fractionation of Sulfur Isotopes (S-MIF), June 2011: Attended and participated in workshop sessions on rare sulfur isotopes and their applications. Give a short presentation on my research project involving multiple sulfur isotope investigation of Paleoproterozoic carbon & sulfur rich metasediments in Finland.

NASA Mars Science Laboratory Participating Science Program (MSLPSP), November 2011: Executive Secretary to Geology-B Panel Chair Lisa Pratt, Coordinated logistics for on-site and remote panel reviewers, collected, edited, and synthesized notes, scores, and summaries during proposal discussions, interfaced with NASA-program officers and staff.

ExxonMobil Basin Analysis Short Course, November, 2011: Participated in a short course taught by Bob Stewart of ExxonMobil designed to introduce geology graduates/undergraduate students what skill sets they need, tasks they'll be assigned, and challenges they will face if working in the oil and gas industry. After taking this course I feel confident I can offer a graduate and/or undergraduate level course on Basin Analysis or Sequence Stratigraphy that will adequately prepare students for a job in the oil and gas industry.

SYNERGISTIC ACTIVITIES

- 2016 National High Magnetic Field Lab Annual Open House, Sedimentary Geochemistry Demonstration booth. Helped design and implement activities for K-12 students interested in Earth's past climate and environments
- 2010-2012 Indiana Science Olympiad-Geology Category Volunteer Coordinator.
Set up, monitor, and assess earth science events.
- 2009 Boy Scouts of America-Geology Merit Badge Instructor.
Design and led activities that enable scouts to learn about the physical earth sciences.
- 2009 Judge for Indiana University-Women in Sciences undergraduate & graduate poster presentations. Talk with and evaluate student research and presentation skills.
- 2009 Astrobiology Teachers Workshop Instructor.
Led an educational, laboratory exercise on generation of methane clathrates for high-school teachers.
- 2003-2007 Ohio Science Olympiad-Geology Category Volunteer Coordinator.
Set up & monitor earth science events, and assess middle & high school students completion of these events.