**Chelsie Nicole Bowman**

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**EDUCATION**

**Ph.D., Geology.** Florida State University 2020

 *The coupled evolution of the biosphere and global marine redox conditions in the late Silurian*Advisor: Seth A. Young

**M.S., Geology.** Florida State University 2015
*Paleodietary reconstruction of late Miocene herbivores from the Dove Spring Formation*
Advisor: Yang Wang

**B.S., Environmental Science.** Florida State University 2013

**B.A., Environmental Studies.** Florida State University 2013

**PROFESSIONAL EXPERIENCE**

**Postdoctoral Scholar** | Florida State University 2023-present

**Visiting Instructor of Geology** | Georgia Southern University 2022-2023

**Postdoctoral Scholar** | Pennsylvania State University 2021-2022

**Graduate Teaching Assistant** | Florida State University 2013-2020

**Graduate Research Assistant** | FSU & National High Magnetic Field Laboratory 2013-2020

**TEACHING ACTIVITIES**

**Teaching Experience (in order of course code)**

GEOL1121 | Introduction to the Earth Lab; one semester 2023
responsible for all lab activities & development of most lab exams & quizzes

GEOL1121 | Introduction to the Earth; one semester 2022
responsible for development and presentation of all lecture materials, assignments,
and exams

GEOL1340 | Environmental Geology Laboratory; two semesters 2022-2023
responsible for all lab activities and development of lab exams and quizzes, led two
on-campus field excursions per lab section

GEOL5142 | Stratigraphy and Sedimentology Lecture & Lab; one semester 2023
responsible for the development & presentation of all lecture materials & exams, the development & facilitation of all lab exercises, and the creation of a science communication focused term project
led two field trips: day trip to the coast to observe modern sedimentation processes & camping trip to the southern Appalachians to measure & describe stratigraphic sections

GLY2010 | Physical Geology Laboratory; one semester 2016
responsible for all lab activities and development of lab exams and quizzes, assisted
in the facilitation of a field trip to central Alabama

GLY3100 | History of Earth Systems Guest Lecturer; one semester 2020

GLY3100 | History of Earth Systems Laboratory; one semester 2020
responsible for all lab activities and writing workshops, modified lab activities to
suit online learning

GLY3200 | Mineralogy and Crystallography Laboratory; two semesters 2013-2014
responsible for all lab activities, developed part of the lab material

GLY4544 | Sedimentation and Stratigraphy Guest Lecturer; three semesters 2017-2019

GLY4544 | Sedimentation and Stratigraphy Laboratory; seven semesters 2015-2020
responsible for all lab activities, developed new lab activities and lectures, assisted
in the facilitation of a field trip to the southern Appalachians
\*Fall 2016 & 2018 Outstanding Teaching Assistant Award Nominee

**Mentorship Experience**

Graduate Students

Lindsi Allman Florida State University 2019-2023
shale geochemistry of the late Silurian Lau carbon isotope excursion and extinction,
assisted with field sampling of Silurian carbonates
\*presented at GSA and AGU

Undergraduate Students

Hana Kawashima Penn State University 2021-2022
preparation and chemical processing of Permian shale and phosphorite samples

Justin Vaughan Florida State University 2021-2022
chemical processing of Permian shale and phosphorite samples

Chandler Gladwin Florida State University 2020-2021
preparation of Silurian carbonate samples, chemical processing of Permian shale
samples

Westly Owings Florida State University 2019-2020
preparation of Ordovician and Silurian carbonate and shale samples

Jane Wadhams Florida State University 2019
chemical processing and analysis of pyrite sulfur isotopes of Paleozoic & Cenozoic
shales, assisted with field sampling of Silurian carbonates

John Khawam Florida State University 2019
preparation of Silurian carbonate and shale samples

Haley Hallyburton Florida State University 2018-2019
preparation and chemical processing of Silurian carbonate samples, assisted with
scouting and sampling of additional field sites

Lindsi Allman Florida State University 2018-2019
preparation and chemical processing of Silurian carbonate samples, assisted with
scouting and sampling of additional field sites

Claudia Richbourg Florida State University 2017-2018
preparation, chemical processing, and analysis of Silurian carbonate and shale
samples for paired carbon and sulfur isotopes
\*presented at GSA and SBS, coauthor on published paper

Hilary Davis Florida State University 2016
collection and description of field samples, preparation and chemical processing of
Silurian carbonate samples for carbon isotope analysis

Janine Giambalvo Florida State University 2014
preparation, processing, and analysis of Miocene fossil enamel samples for carbon
and oxygen isotopic analysis

National Science Foundation Research Experience for Teachers Participants

Shayla Lightfoot-Brown & Gary Boulier 2019
preparation, chemical processing, and analysis of Silurian carbonate samples for
carbon isotopes and iodine-to-calcium ratios

Mark Dignan & Jorge Natal 2015
preparation, chemical processing, and analysis of Pleistocene fossil enamel samples
for carbon and oxygen isotopic analysis

Jorge Natal & Hilary Denis 2014
preparation, chemical processing, and analysis of Miocene fossil enamel samples for
carbon and oxygen isotopic analysis

**PEER-REVIEWED PUBLICATIONS**

mentees are underlined

**CN Bowman,** TR Them II, MD Knight, D Kaljo, O Hints, T Martma, JD Owens, and SA Young, 2021*,* A multi-proxy approach to constrain reducing conditions in the Baltic Basin during the late Silurian Lau carbon isotope excursion: *Palaeogeography, Palaeoclimatology, Palaeoecology*, v. 581, doi: 10.1016/j.palaeo.2021.110624

**CN Bowman,** A Lindskog, NP Kozik, JD Owens, CG Richbourg, and SA Young, 2020, Integrated sedimentary, biotic, and paleoredox dynamics from multiple localities in southern Laurentia during the late Silurian (Ludfordian) extinction: *Palaeogeography, Palaeoclimatology, Palaeoecology*, v. 553, doi: 10.1016/j.palaeo.2020.109799*.*

H Fan, SG Nielsen, JD Owens, M Auro, Y Shu, DS Hardisty, TJ Horner, **CN Bowman**, SA Young, and H Wen, 2020*,* Constraining oceanic oxygenation during the Shuram excursion in South China using thallium isotopes: Geobiology, doi: 10.1111/gbi.12379.

**CN Bowman,** SA Young, D Kaljo, ME Eriksson, TR Them II, O Hints, T Martma, and JD Owens, 2019, Linking the progressive expansion of reducing conditions to a stepwise mass extinction event in the late Silurian oceans: *Geology*, v. 47, no. 10, p. 968-972, doi: 10.1130/G46571.1.

NP Kozik, SA Young, **CN Bowman**, MR Saltzman, and TR Them II, 2019, Middle-Upper Ordovician (Darwilian-Sandbian) paired carbon and sulfur isotope stratigraphy from the Appalachian Basin, USA: Implications for dynamic redox conditions spanning the peak of the Great Ordovician Biodiversification Event: *Palaeogeography, Palaeoclimatology, Palaeoecology*, v. 520, p. 188-202, doi: 10.1016/j.palaeo.2019.01.032.

**CN Bowman,** YWang, X Wang, GT Takeuchi, M Faull, DP Whistler, and S Kish, 2017, Pieces of the puzzle: Lack of significant C4 in the late Miocene of southern California: *Palaeogeography, Palaeoclimatology, Palaeoecology*, v. 475, p. 70-79, doi: 10.1016/j.palaeo.2017.03.008.

**MANUSCRIPTS IN PREPARATION/SUBMITTED**

mentees are underlined

A Lindskog, SA Young, **CN Bowman**, NP Kozik, SM Newby, ME Eriksson, J Petterson, E Molin, JD Owens, *in review*, Progressive shelf oxygenation linked to Ordovician biodiversification: *Nature Geoscience*.

LJ Allman, **CN Bowman**, J Fryda, NP Kozik, JD Owens, and SA Young, *in review*, Constraining reducing conditions in the Prague Basin during the late Silurian Lau/Kozlowskii extinction event: *Journal of the Geological Society of London.*

**CN Bowman**, A Lindskog, E Jarochowska, NP Kozik, JD Owens, and SA Young, *in prep*, Coupling widespread marine reducing conditions to anachronistic carbonate facies during the late Silurian Lau/Kozlowskii extinction: *Facies.*

**CN Bowman**, LJ Allman, JD Owens, SA Young, *in prep*, Extent of euxinic seafloor in the late Silurian: *EPSL.*

**INVITED TALKS**

Georgia Southern Geology & Geography Department Seminar 2023

Penn State Geosciences – Geochemistry Forum 2022

North Carolina State Department Colloquium 2022

**CONFERENCE PRESENTATIONS**

mentees are underlined

**CN Bowman**, MS Marshall, JM Garber, JD Owens, SA Young, G Soares, KV Lau (2022) Insights into phosphogenesis from a multi-proxy paleo-redox reconstruction of the Permian Phosphoria Basin, Idaho, USA, *Geological Society of America*

**CN Bowman**, MS Marshall, JD Owens, SA Young, and KV Lau (2021) Paleo-redox conditions of the eastern margin of the Permian Phosphoria Basin, Idaho, USA, *American Geophysical Union*

LJ Allman, JD Owens, **CN Bowman**, J Fryda, NP Kozik, S Newby, and SA Young (2021) A multi-proxy investigation of marine redox conditions in the late Silurian oceans during the Lau extinction event: A peri-Gondwanan perspective, *American Geophysical Union*

C Edwards, SA Young, NP Kozik, **CN Bowman**, and JD Owens (2021) Identifying the causes of early Paleozoic mass extinction using new carbonate geochemical proxies: Local evidence of marine anoxia using I/Ca ratios, *Geological Society of America*

**CN Bowman**, A Lindskog, NP Kozik, JD Owens, SA Young (2019) A basinal expression of the late Silurian (Ludfordian) extinction event: Integrated sedimentary, biotic, and paleoredox dynamics in a carbonate platform from southern Laurentia, *Geological Society of America*

**CN Bowman**, SA Young, NP Kozik, and JD Owens (2019) Geochemical evidence of redox changes associated with the late Silurian Lau/Kozlowskii extinction from carbonate facies of Laurentia and Baltica, *Geological Society of America Southeastern Section*

**CN Bowman**, SA Young, CG Richbourg, NP Kozik, and JD Owens (2018) Evidence of oceanic euxinia associated with the late Silurian Lau/Kozlowskii extinction from the Laurentian carbonates of Tennessee and Nevada, *Geological Society of America*

**CN Bowman**, SA Young, D Kaljo, ME Eriksson, TR Them II, O Hints, T Martma, and JD Owens (2018) Thallium isotopic evidence for widespread ocean anoxia associated with the late Silurian Lau extinction event, *Goldschmidt*

**CN Bowman**, CG Richbourg, JD Owens, and SA Young (2018) Geochemical evidence for widespread anoxia-euxinia during the late Silurian Lau extinction event, *Southeastern Biogeochemistry Symposium*

CG Richbourg, **CN Bowman**, and SA Young (2018) New late Silurian (Ludfordian) δ13C and δ34S analyses from western Tennessee: an outer ramp perspective on the Lau CIE and extinction event, *Southeastern Biogeochemistry Symposium*

**CN Bowman**, SA Young, JD Owens, D Kaljo, O Hints, and T Martma (2017) Oceanographic redox changes associated with the late Silurian Lau extinction event: new geochemical evidence from the Priekule-20 drill core, Latvia, *Geological Society of America*

CG Richbourg, **CN Bowman**, and SA Young (2017) New late Silurian (Ludfordian) δ13C and δ34S analyses from western Tennessee: an outer ramp perspective on the Lau CIE and extinction event, *Geological Society of America*

**CN Bowman**, SA Young, and JD Owens (2017) Oceanographic redox changes associated with the late Silurian Lau extinction event: New geochemical evidence from central Tennessee and Latvia, *Southeastern Biogeochemistry Symposium*

**CN Bowman**, SA Young, and JD Owens (2016) Oceanographic redox changes associated with the late Silurian Lau event as evidenced from the Brownsport Formation, Tennessee, *Geological Society of America*

**CN Bowman**, Y Wang, X Wang, GT Takeuchi, and M Faull (2015) Reconstruction of the diets and habitats of late Miocene herbivores of the Dove Spring Formation, southern California, *Geological Society of America Southeastern Section*

**GRANTS, AWARDS, SCHOLARSHIPS, FELLOWSHIPS**

FSU Congress of Graduate Students Conference Travel Grant 2016-2019

Geological Society of America Southeastern Section Travel Grant 2016-2019

Ken Osmond and William Tanner Fund 2017

Ermine M. Owenby, Jr. Travel Award 2017

Winchester Scholar Research Assistantship 2017

Geological Society of America Southeastern Section Graduate Research Grant 2016

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

Bennet Frank Buie Endowed Scholarship 2015

FSU Teach Fellowship 2013

**FIELD EXPERIENCE**

Southern Idaho, *Permian Phosphoria Formation shale geochemistry* 2021

Czech Republic, *Silurian carbonate geochemistry and stratigraphy* 2019

Central Nevada, *Silurian carbonate geochemistry and sedimentology* 2016-2018

Estonia, *Silurian shale geochemistry* 2016

Eastern Tennessee, *Ordovician carbonate geochemistry and sequence stratigraphy* 2016-2017

Central Tennessee, *Silurian carbonate geochemistry and sedimentology*  2015-2019

Alabama, Tennessee, *early Paleozoic carbonate stratigraphy and paleontology* 2015-2019

Northern New Mexico, *field mapping and stratigraphy* 2014

Southern California, *Miocene paleontology and stratigraphy, modern plant collection*  2013

**PROFESSIONAL SERVICES & ACTIVITIES**

**Diversity, Equity, & Inclusion**

Georgia Southern Safe Zone Training 2023

Georgia Southern Green Zone Training 2022

Penn State Geosciences Diversity, Equity, & Inclusion committee, member 2021-2022

Penn State Rainbow Science Network, member 2021-2022

Diversity and Inclusion in Geosciences Seminar, participant 2021

Hollaback! Bystander Intervention Workshop, participant 2021

Unlearning Racism in Geoscience, participant 2021

Safer People, Safer Places – LGBTQ+ Foundations Workshop, participant 2021

Transgender & Gender Inclusion 101 Workshop, participant 2021

**Scientific Outreach**

Heard Elementary School STEAM Career Day – Geology & Extinctions 2023

Letters to a Pre-Scientist 2022-2023

Telus Spark Science Center – A Week in Their Lab Coats, guest speaker 2022

Penn State EMS/Dope Labs Science Communication Workshop Series, participant 2022

Penn State Eventapalooza – Pennsylvania minerals & fossils booth 2021

Lincoln High School Research Discussion Panel 2019

Chaires Elementary Science Night – Fossils/Geology demonstration 2018-2020

Pineview Elementary Science Day – Fossils & Extinctions demonstration 2018

National High Magnetic Field Laboratory Open House 2014-2020

**Peer Reviewer**

Chemical Geology, Earth-Science Reviews, Geochimica et Cosmochimica Acta, Estonian Journal of Earth Sciences, Geophysical Research Letters, Terra Nova, Global and Planetary Change

**Scientific Meeting Convener/Session Chair**

SE-NE GSA Sectional Meeting – technical session co-chair (canceled due to COVID-19) 2020

Southeastern Biogeochemistry Symposium – student organizer 2018

**Professional Memberships**

Geological Society of America

Sigma Gamma Epsilon

Geochemical Society

American Geophysical Union

National Association of Geoscience Teachers

Association for Women Geoscientists