Chloe Stanton

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Penn State University
Department of Geosciences & Astrobiology Research Center

Broad research interests

-Development and sustenance of habitability on Earth and other planets
-Evolution of marine and atmospheric redox chemistry throughout Earth's history
-Biogeochemical cycling of nitrogen and inorganic carbon species
-Greenhouse gases and minerals as byproducts of microbial metabolism

Education

Pennsylvania State University, State College, PA
Fall 2017 – Fall 2019
Master of Science in Geosciences
Thesis: Documentation of novel diatom-associated calcification in a lacustrine whiting event at Fayetteville Green Lake, New York, USA

Universidad Internacional Menéndez Pelayo (UIMP), Santander, Spain
Summer 2017
NASA Astrobiology Institute International Summer School in Astrobiology
Theme: Exoplanet Habitability

Georgia Institute of Technology, Atlanta, GA
Fall 2013 – Spring 2017
Bachelor of Science in Earth and Atmospheric Sciences, Highest Honors

Indiana University Geologic Field Station, Cardwell, MT
Summer 2016
Field Geology in the Rocky Mountains
Concentration: Stratigraphy and Subsurface Exploration Techniques

Experience

Penn State University, State College, PA
Graduate Research Assistant (Fall 2017-present)
Advisors: Dr. Lee Kump & Dr. Julie Cosmidis
Graduate Teaching Assistant
The Sea Around Us (Fall 2019)

Natural Disasters	(Sum 2019)
Intro to Environmental Geology	(Fall 2018)
Environment Earth	(Spr 2018)
National Park Geology	(Fall 2017)

Georgia Institute of Technology, Atlanta, GA

Undergraduate Research Assistant	(Fall 2013-Sum 2017)
Advisors: Dr. Jennifer Glass & Dr. Chris Reinhard	
Laboratory Manager	(Spr 2017-Sum 2017)
Principle Investigator: Dr. Jennifer Glass	
Undergraduate Teaching Assistant	
Introduction to Environmental Science	(Sum 2017)
Earth Processes	(Fall 2015-Fall 2016)
Tutor, GT Athletic Association (Chemistry, Earth Science)	(Spr 2017)

Publications

Stanton CL, J Cosmidis, LR Kump. Documentation of Diatom and Cyanobacteria Associated Calcification in a Lacustrine Whiting Event at Fayetteville Green Lake, New York, USA, in prep

Stanton CL, CT Reinhard, JF Kasting, NE Ostrom, JA Haslun, TW Lyons, JB Glass. (2018). Nitrous oxide from chemodenitrification: a possible missing link in the Proterozoic greenhouse and the evolution of aerobic respiration. *Geobiology* **16**, 597-609.

Honors and awards

NASA PA Space Grant Consortium Grad Research Fellow	(PSU, 2019-2020)
Paul D. Krynine Scholarship	(PSU, Fall 2018)
EESL Green Proposal Awards, 3rd Place	(PSU, 2018)
Donald B. & Mary E. Tait Scholarship, Microbial Biogeochemistry	(PSU, 2018)
College of Earth & Mineral Sciences NSF GRFP Initiative Award	(PSU, 2017)
College of Sciences Outstanding Undergraduate Research	(GT, 2017)
EAS Quarter Century Award	(GT, 2017)
2017 SBS 2nd Place Oral Presentation	(GT, 2017)
AbGradCon 2017 Undergraduate Poster Competition Winner	(GT, 2017)
Dean's List: F 2016, Sp 2016, F 2015, F 2014, Sp 2014	(GT, 2013-2017)
Faculty Honors: Sp 2015, F 2013	(GT, 2013-2017)
Anadarko Petroleum Scholarship	(IU, 2016)
EAS Undergraduate Student of the Month	(GT, March 2016)
S. Rutt Bridges Undergraduate Research Initiative Award	(GT, 2015)
HOPE Scholarship	(GT, 2013-2017)

Presentations

2019. **Stanton CL**, Cosmidis J, Kump LR. Documentation of diatom and cyanobacteria associated calcification in a lacustrine whiting event at Fayetteville Green Lake, New York, USA. American Geophysical Union Fall Meeting 2019 (Talk)

2019. Del Vecchio J, **Stanton CL**, Ferland TM, Rossetto-Harris G, Carr JC, Silverhart PH, Karp AT, Barnes BD, Stiles E, Eberle BAM, Sclafani JA, Hajek L. Student-led organizations as a mechanism for improving department culture. American Geophysical Union Fall Meeting 2019 (Poster)

2019. **Stanton CL**. Revisiting Julia Child's recipe for primordial soup. Astronomy on Tap State College #31 (Talk, invited)

2019. **Stanton CL**, Cosmidis J, Kump LR. Field investigations of bio-induced calcium-carbonate precipitation mechanisms at the origin of whiting events. PSU Geosciences Graduate Student Colloquium 2019 (Poster)

2018. **Stanton CL**, Cosmidis J, Kump LR. Field and laboratory investigations of bio-induced calcium-carbonate precipitation mechanisms at the origin of whiting events. American Geophysical Union Fall Meeting 2018 (Poster)

2018. **Stanton CL**, CT Reinhard, JF Kasting, TW Lyons, JB Glass. No Laughing Matter: Nitrous Oxide Production in Ferruginous Proterozoic Oceans. Astrobiology Graduate Conference 2018 (Talk)

2018. **Stanton CL**, Cosmidis J, Emerson JB, Fantle MS, Macalady JL, Kump LR. Proposed laboratory and field investigations of bio-induced calcium-carbonate precipitation mechanisms at the origin of whiting events. NE Geobiology Symposium 2018 (Poster)

2017. **Stanton CL**, CT Reinhard, JF Kasting, TW Lyons, JB Glass. No Laughing Matter: Nitrous Oxide Production in Ferruginous Proterozoic Oceans. Geobiology Society Conference 2017 (Poster)

2017. **Stanton CL**, CT Reinhard, JF Kasting, TW Lyons, JB Glass. No Laughing Matter: Nitrous Oxide Production in Ferruginous Proterozoic Oceans. Astrobiology Graduate Conference 2017 (Poster, Undergraduate Poster Competition winner)

2017. **Stanton CL**, CT Reinhard, JF Kasting, TW Lyons, JB Glass. No Laughing Matter: Nitrous Oxide Production in Ferruginous Proterozoic Oceans. Astrobiology Science Conference 2017 (Poster)

2017. **Stanton CL**, CT Reinhard, JF Kasting, TW Lyons, JB Glass. No Laughing Matter: Nitrous Oxide Production in Ferruginous Proterozoic Oceans. 2017 Southeastern Biogeochemistry Symposium (Talk, 2nd place oral presentation winner)

2016. **Stanton CL**, CT Reinhard, JF Kasting, TW Lyons, JB Glass. The role of biotic and abiotic processes with respect to nitrous oxide production during the Proterozoic era. Astrobiology Graduate Conference 2016 (Poster)

2016. **Stanton CL**, CT Reinhard, JF Kasting, TW Lyons, JB Glass. The role of biotic and abiotic processes with respect to nitrous oxide production during the Proterozoic era. 2016 Southeastern Biogeochemistry Symposium (Poster)

Service

PSU AWG Co-President	(2019-present)
PSU AWG Treasurer	(2019)
WE ARE for Science Co-President	(2018)
PSU Geoscience Welcoming Picnic Committee Chair	(2018-present)
PSU AWG Undergraduate Mentorship Program	(2017-present)
PSU AWG Treasurer Assistant	(2018)
WPSU Eventapalooza, AWG booth organizer	(2018)
WE ARE for Science Policy Subgroup Leader	(2017-2018)
PSU WE ARE for Science March for Science, Organizer	(2018)
PSU Geoscience Grad Recruiting Welcoming Committee Chair	(2018)
PSU AWG Collage Art Outreach	(2018)
AbGradCon 2018 organizing committee & graphic design	(2018)
WPSU Eventapalooza, AWG booth volunteer	(2017)
Patton Township Children's Fair, Volunteer	(2017)
GT Earth and Atmospheric Sciences Club President	(2014-2017)
GT Committee for Undergraduate Recruitment for EAS, Consult	(2014-2017)
GT EXPLORE Science & Math! Open House, Student Volunteer	(2015-2017)
GT Earth Day Festival, EAS booth, Coordinator	(2016-2017)
Div C Regional Science Olympiad, Dynamic Planet, Supervisor	(2017)
GT "It's All About Science and Math" Recruitment, EAS Rep.	(2015-2016)
GT EAS Annual Holiday Party, Planning Committee	(2015-2016)
GT College of Science Accepted Students Reddit AMA, EAS Rep.	(2016)
Div C Regional Science Olympiad, Hydrogeology, Volunteer	(2016)
Minerals in Art presentation for Family Day at the High Museum	(2016)

Professional Development

American Geophysical Union, member	(2018-present)
PSU Scholarship and Research Integrity Training	(2017)
PSU Teaching Assistant Orientation	(2017)
Association for Women Geoscientists, member	(2017-present)
Geological Society of America, member	(2016-present)
GT Teaching Assistant Orientation	(2015)

Research and sampling trips

San Salvador Island, Bahamas	(March 2019)

- Estimated productivity and respiration fluctuation over diel cycles

Guadalupe Mountains, NM (May 2018)

- Measured stratigraphic sections to reconstruct paleoenvironments

Green Lake, NY (2017-present)

- Documented physical & chemical profiles, collected whiting samples

Skidaway Institute of Oceanography, GA (Feb, Mar 2017)

- Studied salt marsh nutrient cycling, denitrification and nitrification rates

Pennsylvania State University, PA (Oct 2015)

- Modeled atmospheric photochemistry w/Dr. Jim Kasting

Skidaway Institute of Oceanography, GA (Mar 2015)

- Collected sediment core samples to study bioturbation patterns

Sapelo Island, GA (Jul 2014)

- Collected sediment core and water samples for biogeochemical analysis

Skills

Computing: MATLAB, PHREEQC, Fortran 77/90, Linux/Unix, C, HTML, Axis 2000
Graphic design: Adobe
Atmospheric photochemistry modeling
Marine nutrient transport modeling
Chemical kinetics modeling
Gas chromatography (GC)
High-pressure liquid chromatography (HPLC)
Microsensor electrochemistry
Spectrophotometry
Scanning electron microscopy (SEM)
Transmission electron microscopy (TEM)
Energy-dispersive x-ray spectroscopy (EDS)
Scanning transmission x-ray microscopy (STXM)
X-ray adsorption near-edge structure (XANES)
Epifluorescence microscopy
Field geochemistry, geobiology, hydrology, stratigraphy