

## ***Curriculum Vitae Jennifer B. Glass***

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### **Education**

- Ph.D. Candidate, Geological Sciences, with emphasis in Biogeochemistry (expected graduation May 2012) Arizona State University, Tempe, AZ  
*Thesis:* Molybdenum requirements for the nitrogen cycle (Ariel Anbar, chair)
- B.S. 2006, Oceanography, *summa cum laude* with Distinction University of Washington, Seattle, WA  
*Thesis:* Development of an intrusive core complex and early landsliding on Juana Ridge, Fernandina northwest submarine rift zone, Galápagos Archipelago
- B.S. 2006, Earth and Space Sciences, *cum laude* with Distinction University of Washington, Seattle, WA  
*Thesis:* Timescales of seawater-oceanic crust interaction at ODP Hole 1256, Leg 206, from uranium-series disequilibria

### **Research Interests**

Geomicrobiology, environmental bioinorganic chemistry, transition metal geochemistry, nitrogen biogeochemistry

### **Peer-Reviewed Publications**

- Glass JB, A Chappaz, B Eustis, AD Anbar. Molybdenum exchange between sediments and porewaters of Castle Lake, California. In prep. for *Geochimica Cosmochimica Acta*
- Glass JB, AD Anbar. Molybdenum limitation of nitrate assimilation in Castle Lake, California depends on ambient ammonium. In prep. for *Biogeochemistry*
- Glass JB, F Wolfe-Simon, JJ Elser, AD Anbar. 2010. Molybdenum-nitrogen colimitation in freshwater and coastal heterocystous cyanobacteria. *Limnology & Oceanography* 55(2): 667-676
- Glass JB, F Wolfe-Simon, AD Anbar. 2009. Coevolution of metal availability and nitrogen assimilation in cyanobacteria and algae. *Geobiology* 7(2): 100-123
- Glass JB, DJ Fornari, HF Hall, AA Cougan, HA Berkenbosch, ML Holmes, SM White, G de la Torre. 2007. Submarine volcanic morphology of the western Galápagos based on EM300 bathymetry and MR1 side-scan sonar, *Geochemistry Geophysics Geosystems* 8, Q03010, doi:10.1029/2006GC001464

### **Conference Presentations (\* indicates a published abstract; \*\* indicates an invited talk)**

2010. Glass JB, F Wolfe-Simon, AT Poret-Peterson, ED Hughes, AD Anbar. Signatures of

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- low-Mo ancient oceans may be preserved in cyanobacterial genomes. 11<sup>th</sup> Annual Graduates in Earth, Life and Social Sciences Conference, Arizona State University (Oral presentation)
2009. Glass JB, W Gilhooly, C Reinhard, T Lyons, AD Anbar. Molybdenum inhibition of sulfate reduction: Mo-addition incubation experiments at Lake Mahoney, British Columbia. 6th Annual Southern California Geobiology Symposium, University of California Riverside (Poster)
- \*\*2009. Glass JB, F Wolfe-Simon, JJ Elser, AD Anbar. Molybdenum storage: connections to the nitrogen, carbon and sulfur cycles. 6th Annual Southern California Geobiology Symposium, University of California Riverside (Oral presentation)
- \*2008. Glass JB, F Wolfe-Simon, AD Anbar. Molybdenum storage in cyanobacteria: "Mopping" up excess Mo. *Eos Trans. AGU*, 89(52), Fall Meet. Suppl., Abstract B21B-0343 (Poster)
2008. Glass JB, F Wolfe-Simon, AD Anbar. Molybdenum-nitrogen colimitation and distribution of putative Mo storage and regulatory proteins in diazotrophic cyanobacteria. Environmental Bioinorganic Chemistry Gordon Conference (Poster)
- \*2008. Glass JB, F Wolfe-Simon, AD Anbar. The co-evolution of nitrogen and molybdenum biogeochemical cycles: Mo requirements for nitrogen assimilation in diazotrophic heterocystous cyanobacteria. *Astrobiology* 8: 357 (Oral presentation)
2008. Glass JB, F Wolfe-Simon, AD Anbar. Coping with low molybdenum: cyanobacterial strategies to scavenge and store a precious metal. 5th Annual Southern California Geobiology Symposium, University of Southern California (Poster)
2008. Glass JB, F Wolfe-Simon, AD Anbar. Molybdenum requirements for nitrogen assimilation in heterocystous cyanobacteria and implications for Proterozoic ocean chemistry. 9<sup>th</sup> Annual Graduates in Earth, Life and Social Sciences Conference, Arizona State University (Oral presentation)
- \*2007. Glass JB, F Wolfe-Simon, AD Anbar. Molybdenum metallomics in heterocystous cyanobacteria. 1<sup>st</sup> Annual International Symposium on Metallomics Meeting, Nagoya Japan (Poster)
2007. Glass JB, F Wolfe-Simon, AD Anbar. Molybdenum requirements for nitrogen fixation in cyanobacteria: Response to changing Mo concentration in growth media. Center for Environmental Bioinorganic Chemistry Meeting, Princeton (Poster)
2007. Glass JB, F Wolfe-Simon, AD Anbar. Molybdenum-nitrogen colimitation in cyanobacteria: the evolutionary imprint of changing metal availability in ancient oceans. 4<sup>th</sup> Annual Southern California Geobiology Symposium, California Institute of Technology (Oral presentation)
- \*2007. Glass JB, ML Krieg, F Wolfe-Simon, AD Anbar. Trace metal controls on the efficiency of nitrogen fixation: assessing microbial metal requirements in ancient oceans. ASLO 2007 Aquatic Sciences Meeting, Abstract 1037 (Poster)
- \*2006. Glass JB, DF Fornari, MA Tivey, HF Hall, AA Cougan, HA Berkenbosch, ML Holmes, SM White, G de la Torre. New insights on submarine volcanism in the western Galapagos archipelago from high resolution sonar and magnetic surveys. *Eos Trans. AGU*, 87(52), Fall Meet. Suppl., Abstract V23A-0590 (Poster)
- \*2005. Glass JB, KM Cooper, JC Alt, T Elliott, DAH Teagle. Recent alteration of 15-Ma

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oceanic crust, ODP Site 1256, Leg 206. 2005. Eos Trans. AGU, 86(52), Fall Meet. Suppl., Abstract V43B-1568 (Poster)

### **Popular Science Articles**

- Glass JB. 2006. Methane mimosas on ice: Scientists explore a reservoir of frozen methane on the seafloor off the northwest coast. Northwest Science & Technology Magazine Online (Fall 2006 volume) <https://depts.washington.edu/nwst/>
- Glass JB. 2006. Microbial iron miners on Mars? Tiny tunnels in meteorite suggest the possibility of ancient life on the red planet. Northwest Science & Technology Magazine Online (Fall 2006 volume) <https://depts.washington.edu/nwst/>

### **Fellowships, Honors and Awards**

- National Science Foundation Graduate Research Fellowship (Geosciences-Geochemistry), \$91,000, 2007-2010
- Student Travel Award, AbSciCon, 2010
- University Graduate Fellowship, Arizona State University, \$12,000, 2006-2009
- Poster Award, Journal of Analytical and Bioanalytical Chemistry, Nagoya, Japan, 2007
- 2<sup>nd</sup> Place Best Talk, 4<sup>th</sup> Annual Southern California Geobiology Symposium, 2007
- Student Travel Award, ASLO Aquatic Sciences Meeting, 2007
- Graduate Student Travel Award, Arizona State University, 2007
- First Place Undergraduate Student Poster Session, Northwest Geological Society, 2006
- Douglas E. Merrill Prize for Excellence, Dept. Earth & Space Sciences, University of Washington, 2006
- Leroy Backus Scholarship, School of Oceanography, University of Washington, 2005-2006
- Undergraduate Service Award, Dept. Earth & Space Sciences, University of Washington, 2005 & 2006
- Wooley, Crooks and Wheeler Scholarship, Department of Earth and Space Sciences, University of Washington, 2004-2006
- Undergraduate Research Travel Award, University of Washington, 2005
- Kenneth Robbins Scholarship for Field Geology Study, University of Washington, 2005
- Undergraduate Library Research Award, University of Washington, 2004

### **Research Experience**

Ph.D. Thesis Research	Metallomics Laboratory, W.M Keck Environmental Biogeochemistry Laboratory, PI Ariel Anbar Growth of algal cultures in chemostat, molecular and proteomic techniques, elemental analysis by inductively-coupled plasma mass spectrometry and elemental analyzer, quantitative real-time polymerase chain reaction, gas chromatography	Arizona State University, Tempe, AZ (2006-present)
Summer Student Fellow	Deep Ocean Exploration Institute, PI Daniel Fornari Editing and analysis of multibeam bathymetry and magnetometer data	Woods Hole Oceanographic Institution, Woods

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Undergraduate Research Assistant	Isotope Geochemistry Laboratory, PI Kari Cooper & Bruce Nelson Preparation of rock and mineral samples for isotopic analysis; ion exchange column chemistry; multi-collector inductively coupled plasma mass spectrometry	Hole, MA (2006) University of Washington, Seattle, WA (2004-2006)
Undergraduate Research Assistant	Cosmogenochemistry Laboratory, PI John Baross Polymerase chain reaction; culturing experiments, processing of Lost City Hydrothermal Field samples	University of Washington, Seattle, WA (2005-2006)
Undergraduate Research Assistant	Stable Isotope Laboratory, PI Ana Christina Ravelo Preparation of foraminifera fossils from Ocean Drilling Program sediment cores for stable isotopic analysis	University of California Santa Cruz, CA (2002- 2003)

### **Grant Activity**

NASA Astrobiology: Exobiology and Evolutionary Biology Solicitation NNH09ZDA001N-EXOB, \$195,162 (Ph.D. student on grant), pending 2010-2012

Lewis and Clark Fund for Exploration and Field Research in Astrobiology, American Philosophical Society and NASA Astrobiology Institute, \$5,000, awarded 2009

Graduate and Professional Student Association Jumpstart Grant, Arizona State University, \$500, 2009

Sigma Xi National Grants-in-Aid Research Program, \$400, awarded 2008-2009

Graduate and Professional Student Association Research Grant, Arizona State University, \$1,998, awarded 2008-2009

Geological Sciences Research Initiation Grant, Arizona State University, \$1,000, awarded 2006-2007

Mary Gates Undergraduate Research Grant, University of Washington, \$8,000, awarded 2004-2006

### **Teaching Experience**

Guest Lecturer, "Nitrogen Cycling and Evolution of the Nitrogen Budget," April 15, 2009  
GLG 481/CHM 481: Geochemistry (professor: H. Hartnett)

Laboratory Mentor, Senior Undergraduate Students: Michelle Krieg (ASU, Geological Sciences, '07); Zureyma Martinez (ASU, Biology, '10); Eric Hughes (ASU, Biology & Geological Sciences, '11); Monique Dumar (ASU, Biology, '13)

Teaching Assistant, Arizona State University, Tempe, AZ, Fall Semester 2006  
GLG 103: Introduction to Geology Laboratory (3 sections)

### **Invited Seminars**

2009 (July 15). University of Nevada Las Vegas. School of Life Sciences. Host: Brian Hedlund. "Molybdenum-Nitrogen Colimitation and Mo Storage in Cyanobacteria"

2009 (May 18). Princeton University, Department of Geosciences. Host: Bess Ward.

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Environmental Geology and Geochemistry Lecture Series. "Molybdenum Storage: Connections to the Nitrogen, Carbon and Sulfur Cycles"  
2008 (Nov. 12). University of California Riverside. Department of Geological Sciences.  
Host: Tim Lyons. "Mo in Biogeochemical Cycles: From Enzymes to Ecosystems"

### **Service**

- Departmental      Chair, School of Earth and Space Exploration Colloquium Committee, Arizona State University, 2009 (2 semesters)
- President, Earth and Space Sciences Geology Club, University of Washington, 2005-2006
- Institutional      Member, Arizona State University Hearing Board, 8 May 2009
- Team Volunteer, CareerWISE: Internet-Delivered Resilience Training to Increase the Persistence of Women Ph.D. Students in STEM Fields, Arizona State University, 2007-present
- Grant Reviewer, Graduate and Professional Student Association Research Grant Competition, Arizona State University, 2006
- Professional      Co-chair, Paleoceanography and Paleoclimatology (PP13), Evolution of the Marine Nitrogen Cycle Through Time, American Geophysical Union Fall Meeting, 18 Dec. 2008
- Resource Person, National Science Foundation Graduate Research Fellowship Program, 2008-present
- Community      Judge, Arizona State Science Fair, 23 March 2009
- Geology Course Instructor, Arizona Nature Conservancy Hassayampa River Preserve, Wickenburg, AZ, 2008
- Session Mentor and Volunteer, Girls in Engineering, Math and Science (GEMS), Seattle, WA, 2004-2006
- School Programs Volunteer, University of California Santa Cruz, Seymour Center at Long Marine Lab, 2002-2003

### **Professional Development**

- On the Cutting Edge NSF Workshop, Preparing for an Academic Career in the Geosciences, University of Nevada Las Vegas, 16-19 July 2009
- Preparing Future Faculty, Graduate College, Arizona State University, 2008-2010 (Exploratory Phase (2 semesters) and Participatory Phases (2 semesters))
- Professional Development Strategies for Success Workshops, Graduate College, Arizona State University, 2008-2009 (4 workshops attended)
- Applied Phylogenetics Workshop, Bodega Bay Marine Laboratory, CA, March 2008
- Groundwater and Lakes Intern, Snohomish County Surface Water Management, Everett, WA, 2004

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## **Sampling Trips**

Galapagos Islands (R/V Thompson). Jan. 2006 (with U Washington Oceanography)  
Lake Mahoney, British Columbia. July 2008 (with collaborators from UC Riverside)  
Castle Lake, California. July 2008; June-July 2009 (with collaborators from U Nevada  
Reno, UC Davis, UC Riverside and the Desert Research Institute)  
Lake Tahoe, Nevada. Oct. 2009 (with collaborators from U Southern California)

## **Professional Memberships**

American Geophysical Union, American Society of Limnology and Oceanography,  
Association for Women in Science

## **Language Proficiency**

German (reading); French (reading)