Sean Patrick Bryan

Dept. of Marine Chemistry & Geochemistry
Woods Hole Oceanographic Institution
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Education

University of Colorado, Boulder

Ph.D., Geological Sciences, 2010
Graduate Certificate in Oceanography
Dissertation: *An Investigation of the Oceanic Redistribution of Carbon During the Last Deglaciation*
Advisors: Dr. Thomas Marchitto and Dr. Scott Lehman

M.S., Geological Sciences, 2007
Thesis: *Calibration of Multiple Trace Element Paleoceanographic Proxies in Benthic Foraminifera*
Advisor: Dr. Thomas Marchitto

Carleton College

B.A. (*magna cum laude*), Geology, 2004
Thesis: *Basin Morphology, Sedimentology and History of a Small Proglacial Lake, Matanuska Glacier, Alaska*

Appointments

Postdoctoral Scholar, Department of Marine Chemistry and Geochemistry, Woods Hole Oceanographic Institution, 2010 – present
Graduate Research Assistant, Institute of Arctic and Alpine Research, University of Colorado, 2005-2010
Instructor, Department of Geological Sciences, University of Colorado, 2006-2007

Grants and Awards

Ocean and Climate Change Institute Postdoctoral Scholarship, Woods Hole Oceanographic Institution, 2010
Harold T. Stearns Fellowship Award ($3900), Geological Society of America, 2009
ExxonMobil Geoscience Grant ($7500), 2009
Shell Graduate Student Research Grant ($2500), Dept. of Geological Sciences, University of Colorado, 2008
Best Student Poster Award, 9th International Conference on Paleoceanography, 2007
Distinction on senior thesis, Dept. of Geology, Carleton College, 2004

Publications

In preparation:

Bryan, S. P., S. J. Lehman, T. M. Marchitto, and U. S. Ninnemann, Ventilation of intermediate waters along the Chile margin during the last deglaciation and implications for the release of ^{14}C-depleted CO_2, in preparation for *Paleoceanography*.

Bryan, S. P., S. J. Lehman, and T. M. Marchitto, Constraints on deep ocean organic carbon remineralization rates during the Last Glacial Maximum, in preparation for *Global Biogeochemical Cycles*.

Published:

Bryan, S. P., T. M. Marchitto, and S. J. Lehman (2010), The release of ^{14}C-depleted carbon from the deep ocean during the last deglaciation: evidence from the Arabian Sea, *Earth and Planetary Science Letters*, 298, 244-254.

Bryan, S. P., and T. M. Marchitto (2010), Testing the utility of paleonutrient proxies Cd/Ca and Zn/Ca in benthic foraminifera from thermocline waters, *Geochemistry Geophysics Geosystems*, 11, Q01005, doi:10.1029/2009GC002780.

Bryan, S. P., and T. M. Marchitto (2008), The Mg/Ca - temperature proxy in benthic foraminifera: New calibrations from the Florida Straits and a hypothesis regarding Mg/Li, *Paleoceanography*, *23*(2), PA2220, doi:10.1029/2007PA001553.

Marchitto, T. M., **S. P. Bryan**, W. B. Curry, and D. C. McCorkle (2007), Mg/Ca temperature calibration for the benthic foraminifer *Cibicidoides pachyderma*, *Paleoceanography*, *22*(1), PA1203, doi:10.1029/2006PA001287.

Conference Contributions

Bryan, S. P., S. J. Lehman, and T. M. Marchitto (2011), The relationship between $\Delta^{14}C$ and $\delta^{13}C$ of DIC in the LGM Ocean, *Goldschmidt Conference*.

Marchitto, T. M., S. J. Lehman, C. Lindsay, **S. P. Bryan**, J. D. Ortiz and A. van Geen (2011), Low latitude surface ocean contribution to the deglacial atmospheric radiocarbon decline, *Goldschmidt Conference*.

Bryan, S. P., T. M. Marchitto, S. J. Lehman, and U. S. Ninnemann (2010), Ventilation of intermediate waters along the southern Chile margin during the last deglaciation, *10th International Conference on Paleoceanography*.

Bryan, S. P., T. M. Marchitto, and S. J. Lehman (2009), Intermediate water radiocarbon evidence for the demise of an isolated deep ocean water mass during the last deglaciation (*Invited*). AGU Fall Meeting, Abstract PP11E-05.

Bryan, S. P., T. M. Marchitto, and S. J. Lehman (2009), Millennial-scale changes in deep ocean circulation and carbon cycling during the last deglaciation: Evidence from the Arabian Sea, *AGU Chapman Conference on Abrupt Climate Change*, Columbus, OH, June 15-19, 2009.

Marchitto, T., **S. Bryan**, P. Montagna, and M. McCulloch (2008), Li/Mg in biogenic aragonite as a potential paleotemperature proxy, *AGU Fall Meeting*, Abstract PP41F-03.

Marchitto, T. M., **S. P. Bryan**, W. B. Curry, J. Lynch-Stieglitz, and D. C. Lund (2008), Precise calibration of Oxygen isotope paleotemperature equations for several taxa of benthic foraminifera, *Goldschmidt Conference*.

Bryan, S. P. and T. M. Marchitto (2007), Calibration of Paleonutrient Proxies Cd/Ca and Zn/Ca in Benthic Foraminifera from Thermocline Waters, *9th International Conference on Paleoceanography*.

Bryan, S. P. and T. M. Marchitto (2006), Constraining the Mg/Ca Temperature Proxy in Benthic Foraminifera, *AGU Fall Meeting*, Abstract PP21C-1700

Bryan, S. P., T. M. Marchitto, and W. B. Curry (2005), Calibration of Multiple Trace Metal Proxies in Benthic Foraminifera, *AGU Fall Meeting*, Abstract PP11B-1454

Bryan, S. P., N. R. Ham, S. L. Goetz, M. Savina, G. S. Baker, and K. Pyke (2004), Basin morphology, sedimentology and history of a small proglacial lake, Matanuska Glacier, Alaska, Geological Society of America *Abstracts with Programs*, Vol. 36, No. 3, p. 11.

Research Cruise Experience

G. O. Sars, Cruise 144, Reykjavik to Torshavn to Bergen, June 19 – July 9, 2006
Sediment coring in the North Atlantic Ocean. Chief Scientists were Ulysses Ninnemann and Trond Dokken of the University of Bergen, Norway.

SSV Corwith Cramer, Cruise 181, Bermuda to Lunenburg to Woods Hole,
May 12 – June 18, 2002
Participated in a variety of oceanographic research activities, including water, plankton, and sediment sampling, as a student in a program run by the Sea Education Association. Learned the fundamentals of sailing and navigating a 130 ft. tall ship.

Service

Ad hoc reviewer of proposals for the National Science Foundation
Ad hoc reviewer of journal articles for: *Geochemistry, Geophysics, Geosystems*
Graduate student representative to the Instaar Directorate, 2008 – 2009
Mentor to new University of Colorado Geological Sciences graduate students, 2007-2010
Initiated and coordinated an informal paleoclimatology reading group for Instaar faculty and graduate students, Spring 2008, Fall 2009
Coordinated the Instaar Graduate Student Seminar Series, 2006-2007
Judge for local elementary and high school science fairs

Professional Development

Marine Geoscience Leadership Symposium, Consortium for Ocean Leadership, 2011
Semester long seminar on Teaching and Learning, University of Colorado MCDB 5650, Spring 2008
Professional Society Membership
- American Geophysical Union
- Geological Society of America
- Geochemical Society

Teaching Experience

University of Colorado at Boulder

Graduate Student Instructor

GEOL 1030: Introduction to Physical Geology Laboratory, Fall 2006 and Spring 2007

Instructor of record for two sections each semester of a stand-alone laboratory and field course. Students were mostly non-science majors. Designed syllabi, homework assignments and exams; developed field trips; gave short lectures; and lead discussions.

Guest Lecturer

GEOL 5430: Paleoceanography and Paleoclimatology, Fall 2009

Delivered a lecture on past monsoon variability.

GEOL 1060: Global Change 1, Spring 2007

Delivered a lecture on the use of the geochemistry of foraminifera in paleoceanography.

Tutor, Fall 2008 – Spring 2010

GEOL 1010: Intro to Geology 1, GEOL 1020: Intro to Geology 2, GEOL 1060: Global Change, GEOL 3070: Intro to Oceanography

Grader

GEOL 3070: Introduction to Oceanography, Springs 2006, 2008 & 2009

Carleton College

Undergraduate Teaching Assistant

Introduction to Geology, Fall 2002; Paleobiology, Spring 2004

Additional Work Experience

Analyst, U.S. Geological Survey National Earthquate Information Center, July 2004 – June 2005