

Seth G. John
CURRICULUM VITAE

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EDUCATION:

- Ph.D. Marine Chemistry and Geochemistry, Massachusetts Institute of Technology/Woods Hole Oceanographic Institution Joint Program, 2007.
Thesis advisor Ed Boyle.
- B.A. Chemistry, Carleton College, 1999.

AWARDS AND GRANTS:

- NSF Chemical Oceanography (\$21 K), US GEOTRACES North Atlantic Section: Sample collection for iron stable isotopes, August 2009.
- NSF Chemical Oceanography (\$370 K), Fe isotope composition of seawater as a tracer for marine Fe sources and biogeochemical cycles, February 2009.
- Division Postdoctoral Fellowship for Geochemistry, Caltech, 2007-2009.
- Chesonis Foundation Ignition Grant (\$50 K), MIT Earth Systems Initiative, 2006.
- Ocean Ventures Fund Grant (\$12 K), Woods Hole Oceanographic Institution, 2005.
- Martin Family Society Fellowship for Sustainability, MIT, 2004-2005.
- Fulbright Scholarship, India; Institute of International Education, 2000-2001.
- Glenn T. Seaborg Research Fellowship, Los Alamos National Laboratory, 2000.

RESEARCH EXPERIENCE:

- Aug 2007-present* Postdoctoral Fellow, California Institute of Technology.
- June 2001- Aug 2007* MIT/WHOI Joint Program in Chemical Oceanography.
- Zn isotope analysis in various complex sample types.
 - Primary user/maintenance for an IsoProbe multi-collector ICPMS.
 - Trace-metal clean techniques, including sample processing at sea.
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- Sept 2000-June 2001* Fulbright Scholar, M.S. Swaminathan Research Foundation, India.
- Groundwater defluoridation using natural products.
 - Communication with villagers about scientific issues.
- November 1999-September 2000* Research Assistant, Los Alamos National Laboratory.
- Bacterial radionuclide transport, radiation-safety techniques.
- April 1999-September 1999* Research Assistant, Carleton College.

TEACHING EXPERIENCE:

MIT 12.550: Geosystems Global Carbon Cycle. Teaching Assistant, Fall 2002 and 2003.
MIT 12.119: Analytical Techniques for Studying Environmental and Geologic Samples.
Teaching Assistant, Spring 2004.

MENTORING EXPERIENCE:

I have mentored both undergraduate and graduate students. In most cases I recruited, interviewed, and mentored these students myself, and I am proud that almost all will be published co-authors based on research done under my supervision.

Amandine Radic, LEGOS, Fall 2009. *Probable future co-author.*

Perrin Considine, Caltech, Summer 2009. *Probable future co-author.*

Carolina Mendez, UCLA; Summer 2007; *Co-author on ms in prep.*

Robert Geis, MIT; Winter 2005 - Summer 2006. *Co-author on John et al., L&O, 2007.*

Alison Engwall, MIT; Summer - Fall 2005. *Co-author on John et al., EPSL, 2008.*

Roberto Velazquez, MIT; Summer 2005.

Zhitong Zhang, MIT; Winter 2005. *Co-author on John et al., Chem. Geol., 2007.*

Genevieve Park, MIT; Summer 2004. *Co-author on John et al., Chem. Geol., 2007.*

RESEARCH CRUISES:

Dec-Jan 2008/9 R/V Thomson. Deep-sea coral collection and sampling for Fe isotopes.

June 2008 R/V Knorr. GEOTRACES intercalibration cruise developing sampling protocols for upcoming GEOTRACES sections.

Aug 2007 R/V Kilo Moana *Honolulu, Hawaii*. CMORE cruise investigating ecology and chemistry in upwelling regions. Sep-Oct 2002. R/V Kilo Moana *Honolulu, Hawaii*. Investigating the role of Fe-fertilization in stimulating global nitrogen fixation.

Oct-Nov 2005. R/V Knorr *Arica, Chile to Manzanillo, Mexico*. Investigating the biological fractionation of Zn isotopes in the Peru Upwelling Region.

Aug 2005. R/V Endeavor *Narragansett, Rhode Island to Bridgetown, Barbados*. Sampling for Pb isotopes in North Atlantic Deep Water.

Jun-Aug 2003. R/V Kilo Moana *Seattle, Washington to Dutch Harbor, Alaska*. Cruise across the HNLC North Pacific and Bering Sea. Samples were collected to study Zn isotopes in natural samples and colloidal-Fe bioavailability.

REVIEWER FOR:

NSF Chemical Oceanography, *Economic Geology, Geochemistry Geophysics and Geosystems, Geochimica et Cosmochimica Acta, Limnology and Oceanography, Marine Chemistry, Physical Chemistry.*

HOBBIES AND INTERESTS:

My hobbies include converting and running a 1984 Mercedes on biodiesel, heading the Caltech Biodiesel Club which makes biodiesel with used cooking oil from the dining hall, advocating for open-access in scientific publications, and hiking.

PUBLICATIONS

In prep:

John, Seth G., and J. F. Adkins. A vertical model of marine Zn and Cd stable isotope cycling.

John, Seth G., Mendez, J., Moffett, J. W., and J. F. Adkins. The dissolved Fe isotope composition of seawater in the North Atlantic and San Pedro Basin.

Submitted:

John, Seth G., Mendez, C. B., Sullivan, M. B., Kern, S., Chisholm, S. W., and Edward A. Boyle. Simple and efficient concentration of ocean viruses by chemical flocculation. Submitted to *Nature Methods*.

In press:

John, Seth G. and Jess F. Adkins. Analysis of dissolved iron isotopes in seawater. *Marine Chemistry*, in press.

Published:

John, Seth G., Olivier J. Rouxel, Paul R. Craddock, Alison M. Engwall, and Edward A. Boyle. Zinc stable isotopes in seafloor hydrothermal vent fluids and chimneys. *Earth and Planetary Science Letters*, 269 (1-2): 17-28.

Kavner, A., Sass, S., **John, S. G.**, and E. A. Boyle. Redox-driven stable isotope fractionation in transition metals: Application to Zn electroplating. *Geochimica et Cosmochimica Acta*, 72(7): 1731-1741.

Dhungana, S., Michalczyk, R., Boukhalifa, H., Lack, J.G., Koppisch, A.T., Fairlee, J.M., Johnson, M.T., Ruggiero, C.E., **John, S.G.**, Cox, M.M., Browder, C.C., Forsythe, J.H., Vanderberg, L.A., Neu, M.P. and Hersman, L.E., 2007. Purification and characterization of rhodobactin: a mixed ligand siderophore from *Rhodococcus rhodochrous* strain OFS. *Biometals*, 20(6): 853-867.

John, Seth G., Robert W. Geis, Mak A. Saito, and Edward A. Boyle. 2007. Zinc isotope fractionation during high-affinity and low-affinity zinc transport by the marine diatom *Thalassiosira oceanica*. *Limnology and Oceanography* 52: 2710-2714.

John, Seth G., J. Genevieve Park, Zhitong T. Zhang, and Edward A. Boyle. 2007. The isotopic composition of some common forms of anthropogenic zinc. *Chemical Geology*, 245(1-2): 61-69.

Repeta, Daniel J., Nicholas T. Hartman, and **Seth G. John**. 2004. Structure elucidation and characterization of polychlorinated biphenyl carboxylic acids as major constituents of chromophoric dissolved organic matter in Seawater. *Environmental Science and Technology*, 38 (20) 5373-5378.

John, Seth G., Christy E. Ruggiero, Larry E. Hersman, C. S. Tung, and Mary P. Neu. 2001. Siderophore Mediated Plutonium Accumulation by *Microbacterium flavescens* (JG-9). *Environmental Science and Technology* 35: 2942-2948.