

Steven Robert Beaupré

Curriculum Vitae, April 2009

Postdoctoral Scholar, 2212 Croul Hall, Department of Earth System Science, University of California, Irvine, CA 92697-3100
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EDUCATION:

Ph.D. Earth System Science, *August 2007*

“Dissolved Organic Carbon Concentrations and Isotope Ratios in the Northeast Pacific Ocean”, advisor: Dr. Ellen R. M. Druffel, University of California, Irvine (UCI)

M.S. Earth System Science, *December 2003*

University of California, Irvine

B.S. Chemistry; Natural Products and Biochemistry option, *summa cum laude, December 1999*

State University of New York, College of Environmental Science and Forestry (SUNY ESF), Syracuse, NY

HONORS & AWARDS:

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|-------------|---|
| 2008 | Best graduate student research paper, Dept. Earth System Science, UCI |
| 2006 | Dissertations Symposium on Chemical Oceanography (DISCO) XX, Honolulu, HI Outstanding Student Paper Award, 2006 AGU Ocean Sciences Meeting, Honolulu, HI |
| 2005 – 2006 | Chancellor’s Club Fund for Excellence Dissertation Fellowship, UCI La Verne Noyes Fellowship, UCI |
| 2002 | Outstanding Contributions to the Department of Earth System Science, UCI |
| 2001 – 2004 | National Science Foundation Graduate Research Fellowship, UCI |
| 2001 | UCI Alumni Association Tamura Fellowship, UCI |
| 2000 | California Space Grant (NASA), UCI State University of New York Chancellor's Award, SUNY ESF |
| 1999 | Ernest Sondheimer Memorial Award, SUNY ESF Alumni Association Memorial Scholarship, SUNY ESF Maple Leaf Award, SUNY ESF Robin Hood Oak Award, SUNY ESF Merck Award for Environmental Biochemistry, SUNY ESF |
| 1998 | Antarctica Service Medal, United States of America John Meyer Junior Chemistry Award, SUNY ESF |
| 1996 | CRC Press Freshman Chemistry Award, SUNY ESF |
| 1995 – 1996 | Syracuse Pulp & Paper Foundation (SPPF) Scholarship, SUNY ESF |

RESEARCH EXPERIENCE:

- Oct 2007 – Present Postdoctoral Scholar: Marine DOC isotope geochemistry, accelerator mass spectrometry
Dr. Ellen R.M. Druffel, Earth System Science Department, UCI, Irvine, CA
- Aug 2000 – Aug 2007 Graduate Student: Marine DOC $\Delta^{14}\text{C}$ geochemistry, photochemistry, kinetics, & method development
Dr. Ellen R.M. Druffel, Earth System Science Department, UCI, Irvine, CA
- Jun 2002 – Jul 2002 Assistant: Micrometeorology tower field construction, soil/root respiration measurements
Dr. Sue Trumbore/Dr. Michael Goulden, Earth System Science Department, UCI, Irvine, CA
- May 2000 – Aug 2000 Intern: $^{13}\text{C}/^1\text{H}$ NMR & mass spectrometry database construction
Douglas G. Weaver, Chemical Development Department, Bristol-Meyers Squibb Co., Syracuse, NY
- Sep 1998 – May 2000 Undergraduate research assistant: Marine DOM optical and photochemical analyses
Dr. David J. Kieber, Chemistry Department, SUNY ESF, Syracuse, NY
- Jun 1998 – Aug 1998 NSF REU participant: Zero-valent metal waste remediation study using differential pulse polarography
Dr. Barry Levine, Chemistry Department, Clarkson University, Potsdam, NY
- 1996, 1997 Undergraduate summer research assistant: Particle detector/identifier construction
Dr. Ray Mountain, Physics Department, Syracuse University, Syracuse, NY

RESEARCH CRUISE PARTICIPATION:

- Oct 24 – Nov 1, 2004 *R/V New Horizon*, PULSE-45, RT San Diego, CA to Sta. M (34°50'N, 123°00'W)
- Jun 7 – Jun 14, 2002 *R/V New Horizon*, PULSE-40, RT San Diego, CA to Sta. M (34°50'N, 123°00'W)
- Jul 8 – Jul 28, 1999 *R/V Endeavor*, EN-326, RT Narragansett, RI to Gulf of Maine
- Oct 13 – Nov 20, 1998 *ARSV Lawrence M. Gould*, LMG98-9, RT Punta Arenas, Chile to Palmer Sta., Antarctica

ACTIVITIES:

- Teaching Instructor, UCI: Physical Environment, an introduction to Earth System Science (summer session 2008)
Assistant, UCI: Oceanography (2002), Physical Environment (2001); SUNY ESF: Computing Methods (1998)
Tutor, SUNY ESF: Organic & General Chemistry, General Physics, Calculus (1997 – 2000)
- Outreach Faculty Outreach Collaborations Uniting Scientists, Students, & Schools (FOCUS) speaker. Irvine, CA (2008)
California Alliance for Minority Participation (CAMP) speaker. Irvine, CA (2008)
Ask-a-Scientist events. K-12 Orange County school district, CA (2006 – 2007)
K-12 science & math guest speaker. Fulton, NY (2000 – 2007)
Regional Science Olympiad: Event organizer, judge, and proctor. Syracuse, NY (1997 – 2000)
- Leadership Founding officer, trip leader, and advisor. Hiking Club at UCI (2002 – 2007)
Grad student Journal Club organizer. Earth System Science, UCI (2001 – 2003)
Incoming student Orientation Leader. SUNY ESF (1998 – 1999)
 $\Lambda\Xi\Sigma$ Honor Society officer. SUNY ESF (1997 – 1999)
- Ancillary Scientific glassblowing (2004 – present)
Wilderness First Aid: WMA certified (2004 – 2006), NOLS WMI certified (2006 – 2008)

PRESENTATIONS

1. Griffin, S., **Beaupré, S.R.**, Druffel, E.R.M., 2009. An alternative method of diluting dissolved organic carbon (DOC) high concentrate samples for ^{14}C analysis. *Abstract accepted for 20th International Radiocarbon Conference, May 31 - June 5, 2009 Kailua-Kona, HI, USA.*
2. **Beaupré, S.R.**, Druffel, E.R.M., 2008. UV-induced serial-oxidations of marine dissolved organic carbon (DOC) and biogeochemical implications. *EOS Transactions of the American Geophysical Union 89 (53), Fall Meeting Suppl., Abstract OS11B-1130.*
3. **Beaupré, S.R.**, Druffel, E.R.M., 2008. Marine dissolved organic carbon (DOC) serial-oxidations, radiocarbon, and biogeochemical implications, *oral presentation*. IMBER IMBIZO, Miami, FL.
4. **Beaupré, S.R.**, Druffel, E.R.M., 2008. Marine dissolved organic carbon (DOC) serial-oxidations, radiocarbon, and biogeochemical implications, *poster*. IMBER IMBIZO, Miami, FL.
5. **Beaupré, S. R.**, Druffel, E.R.M., 2008. Oceanic time-series of dissolved organic carbon (DOC) concentrations and $\Delta^{14}\text{C}$ values. *Ocean Sciences Meeting, Orlando, FL.* <http://www.aslo.org/meetings/orlando2008/files/2008osm-abstracts.pdf>.
6. Walker, B.D., **Beaupré, S.R.**, Roland, L.A., Guilderson, T.P., Druffel, E.R.M. and McCarthy, M.D., 2007. Carbon isotopic composition and reactivity across the dissolved organic matter continuum. *ASLO Aquatic Sciences Meeting, Santa Fe, NM.*
7. **Beaupré, S.R.**, 2006. Marine dissolved organic carbon isotope photochemistry. *Dissertations Symposium on Chemical Oceanography (DISCO) XX, Honolulu, HI.*
8. **Beaupré, S.R.**, 2006. Marine dissolved organic carbon. *Radiocarbon Short Course, UC Irvine, invited.*
9. **Beaupré, S.R.**, Druffel, E.R.M. and Griffin, S., 2006. Marine DOC concentration and radiocarbon measurements in the NE Pacific. *EOS Transactions of the American Geophysical Union, 87(36): Ocean Sci. Meet. Suppl., Abstract OS12K-04.*
10. **Beaupré, S.R.**, Druffel, E.R.M. and Griffin, S., 2005. A modified technique for the measurement of marine DOC concentrations and isotope ratios. *Ocean Carbon and Climate Change Workshop, Woods Hole Oceanographic Institution.*
11. **Beaupré, S.R.**, 2005. Marine dissolved organic carbon. *Radiocarbon Short Course, UC Irvine, invited.*
12. Santos, G.M., Southon, J.R., Griffin, S., **Beaupré, S.R.** and Druffel, E.R.M., 2005. Ultra small-mass ^{14}C -AMS sample preparation and analysis at the KCCAMS facility. *Nuclear Instruments & Methods in Physics Research, Section B - Beam Interactions With Materials and Atoms.*
13. **Beaupré, S.R.**, Hwang, J. and Druffel, E.R.M., 2004. Marine DOC radiocarbon methods and DOC/POC exchange. *EOS Transactions of the American Geophysical Union, 85(47): Fall Meet. Suppl., Abstract OS51C-1324.*
14. Druffel, E.R.M., Griffin, S., Hwang, J., Komada, T. and **Beaupré, S.R.**, 2003. Turnover of dissolved and particulate organic carbon in the open ocean. *EOS Transactions of the American Geophysical Union, 84(52): Ocean Sci. Meet. Suppl., Abstract OS41C-02.*
15. **Beaupré, S.R.**, Druffel, E.R.M., Griffin, S. and Kieber, D.J., 2003. Using carbon isotope ratios to assess DOC photochemistry. *EOS Transactions of the American Geophysical Union, 84(52): Ocean Sci. Meet. Suppl., Abstract OS41E-01.*
16. **Beaupré, S.R.**, Kieber, D.J. and Mopper, K., 1999. Ultraviolet absorbance and photobleaching in the Gulf of Maine and Northwest Atlantic Ocean. *EOS Transactions of the American Geophysical Union, 80(49): Ocean Sciences Meet. Suppl., Abstract OS128.*
17. Jankowski, J.J., **Beaupré, S.R.**, Kieber, D.J., Mopper, K. and Hofsetz, B.D., 1999. Concentration and photochemical production of nitrite in Antarctic seawater. *EOS Transactions of the American Geophysical Union, 80(49): Ocean Sciences Meet. Suppl., Abstract OS271.*

JOURNAL REVIEWER:

Global Biogeochemical Cycles

PUBLICATIONS:

1. **Beaupré, S.R.**, Druffel, E.R.M. and Griffin, S., 2009. DOC serial-oxidations and biogeochemical implications. *manuscript in preparation*.
2. **Beaupré, S.R.**, Xu, X., and Druffel, E.R.M., 2009. Method for obtaining complementary IRMS $\delta^{13}\text{C}$ and AMS $\Delta^{14}\text{C}$ measurements of ultra-small samples. *manuscript in preparation*.
3. **Beaupré, S.R.**, Aluwihare, L.I., 2009. Constraining the two-component model of marine dissolved organic radiocarbon. Deep-Sea Research II, *submitted*.
4. Burd, A.B., Hansell, D.A., Steinberg, D.K., Anderson, T.R., Arístegui, J., Baltar, F., **Beaupré, S.R.**, Beusseler, K.O., DeHairs, F., Jackson, G.A., Kadko, D., Koppelman, R., Lampitt, R.S., Nagata, T., Reinthaler, T., Robinson, C., Robison, B., Tamburini, C., Tanaka, T., 2009. Assessing the apparent imbalance between geochemical and biochemical indicators of meso- and bathypelagic biological activity: What the @\$#! is wrong with present calculations of carbon budgets? Deep-Sea Research II, *submitted*.
5. **Beaupré, S.R.**, Druffel, E.R.M., 2009. Constraining the propagation of bomb-radiocarbon through the dissolved organic carbon (DOC) pool in the northeast Pacific Ocean. Deep-Sea Research I, *accepted with revisions*.
6. McCarthy, M.D., **Beaupré, S. R.**, Walker, B. D., Voparil, I., Guilderson, T. P., 2008. Druffel, E. R. M. Oceanic ridge systems a source for ^{14}C depleted, chemosynthetic dissolved organic carbon to the deep ocean. *submitted to Geophysical Research Letters*.
7. Druffel, E.R.M., Bauer, J.E., Griffin, S., **Beaupré, S.R.**, Hwang, J., 2008. Dissolved inorganic radiocarbon in the North Pacific Ocean and Sargasso Sea. Deep-Sea Research I 55 (4), 451-459.
8. **Beaupré, S.R.**, Druffel, E.R.M. and Griffin, S., 2007. A low-blank photochemical extraction system for concentration and isotopic analyses of marine dissolved organic carbon. *Limnology and Oceanography: Methods*, 5: 174-184.
9. Santos, G.M., Southon, J.R., Griffin, S., **Beaupré, S.R.** and Druffel, E.R.M., 2007. Ultra small-mass AMS ^{14}C sample preparation and analyses at KCCAMS/UCI Facility. *Nuclear Instruments & Methods in Physics Research B*, 259(1): 293-302.
10. Druffel, E.R.M., Griffin, S., **Beaupré, S.R.** and Dunbar, R.B., 2007. Oceanic climate and circulation changes during the past four centuries from radiocarbon in corals. *Geophysical Research Letters*, 34(9 L09601): L09601, doi:10.1029/2006GL028681.
11. Druffel, E.R.M., Griffin, S., Hwang, J., Komada, T., **Beaupré, S. R.**, Druffel-Rodriguez, K. C., Santos, G. M., & Southon, J. 2004. Variability of monthly radiocarbon during the 1760s in corals from the Galapagos Islands. *Radiocarbon*, 46(2): 627-631.

PROFESSIONAL AFFILIATIONS:

American Chemical Society (ACS)
American Geophysical Union (AGU)
American Society of Limnology and Oceanography (ASLO)
American Scientific Glassblower's Society (ASGS)