
Jeremy D. Owens

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Education

- 2009 – 2013: University of California, Riverside
Ph.D., Earth Sciences Advisor – Timothy W. Lyons
Exploring the Geochemical Fingerprints of an Oceanic Anoxic Event During the Late Cretaceous: the Global and Biological Implications
- 2007 – 2010: University of California, Riverside
M.Sc., Earth Sciences Advisor – Timothy W. Lyons
An Iron Isotope Record of Ocean-Scale Iron Shuttling During OAE 2
- 2002 – 2006: University of California, Riverside
B.S., Environmental Sciences

Professional Experience

- 2013 – present: Woods Hole Oceanographic Institution
Agouron Postdoctoral Researcher. Advisor – Sune Nielsen
- 2006 – 2007: Research Specialist, University of California, Riverside. Advisor – Silke Severmann
- 2005 – 2006: Undergraduate Research Assistant, University of California, Riverside.
Advisors – Silke Severmann and Timothy W. Lyons

Awards, Grants and Fellowships

- 9/2013 Agouron Postdoctoral Fellow (WHOI)
- 1/2013 IODP Cretaceous Drilling Workshop (funded)
- 10/2012 NAI NASA Research Travel Grant
- 5/2012 Fellowship funded by NSF – Urbino Summer School of Paleoclimatology
- 5/2012 Student Research Grant – Society for Sedimentary Geology (SEPM):
Assessing Dust Delivery of Bioavailable Iron to the Ocean as a Driver and Consequence of Cenozoic Climate Change
- 5/2012 Student Research Grant – Geological Society of America (GSA): *Assessing Dust Delivery of Bioavailable Iron to the Ocean as a Driver and Consequence of Cenozoic Climate Change*
- 4/2012 Travel Grant – EGU Keith Runcorn
- 4/2012 Best Student Presentation – 9th Annual Geobiology Conference
- 3/2012 Invited participant, Agouron Archean biomarker workshop
- 6/2011 Teaching Assistant of the Year – Earth Science
- 5/2010 Invited participant, NASA Ocean deoxygenation workshop
- 2009, 2010, 2013 Roland Blanchard Fellowship, University of California-Riverside

Journal Publications

Scott R.W., Formolo M., Rush N., **Owens J.D.** and Obboh-Ikuenobe F., (in press), Upper Albian OAE 1d Event in the Chihuahuan Trough, New Mexico, U.S.A, *Cretaceous Research*.

Owens J.D., Gill B.C., Jenkyns H.C., Bates S.M., Severnman S., Kuypers M.M.M., Woodfine R.G., and Lyons T.W. (2013), Sulfur isotopes track the global extent and dynamics of euxinia during Cretaceous Oceanic Anoxic Event 2, *Proceeding of the National Academy of Sciences*.

Planavsky N.J., Bekker A., Hofmann A., **Owens J.D.** and Lyons T.W. (2012) The causes and consequences of enhanced primary primary production following the rise of atmospheric oxygen, *Proceedings of the National Academy of Sciences*, doi: 10.1073/pnas.1120387109.

Owens J.D., Lyons T.W., Li X., Kuypers M.M., Kuhnt W., Gordon G., Anbar A. and Severmann S. (2012) Iron isotope and trace metal records of iron cycling in the proto-North Atlantic during the Cenomanian-Turonian oceanic anoxic event (OAE-2), *Paleoceanography*, 27(3), PA3223, doi: 10.1029/2012pa002328.

Mitchell, K., Mason P.R.D., Van Cappellen P., Johnson T.M., Gill B.C., **Owens J.D.**, Diaz J., Ingall E.D., Reichart G.-J., and Lyons T.W. (2012), Selenium as paleo-oceanographic proxy: A first assessment, *Geochimica et Cosmochimica Acta*, 89(0), 302-317, doi: 10.1016/j.gca.2012.03.038.

Boyer, D. L., **Owens J.D.**, Lyons T.W., and Droser M.L. (2011), Joining forces: Combined biological and geochemical proxies reveal a complex but refined high-resolution palaeo-oxygen history in Devonian epeiric seas, *Palaeogeography, Palaeoclimatology, Palaeoecology*, 306(3-4), 134-146, doi: 10.1016/j.palaeo.2011.04.012.

Brucker, R. P., McManus J., Severmann S., **Owens J.D.**, and Lyons T.W. (2011), Trace metal enrichments in Lake Tanganyika sediments: Controls on trace metal burial in lacustrine systems, *Geochimica et Cosmochimica Acta*, 75(2), 483-499, doi: 10.1016/j.gca.2010.09.041.

Raiswell, R., Reinhard C.T., Derkowski A., **Owens J.D.**, Bottrell S.H., Anbar A.D., and Lyons T.W. (2011), Formation of syngenetic and early diagenetic iron minerals in the late Archean Mt. McRae Shale, Hamersley Basin, Australia: New insights on the patterns, controls and paleoenvironmental implications of authigenic mineral formation, *Geochimica et Cosmochimica Acta*, 75(4), 1072-1087, doi: 10.1016/j.gca.2010.11.013.

Yao, J., Li J., **Owens J.D.**, and Zhong W. (2011), Combining DNAzyme with single-walled carbon nanotubes for detection of Pb(II) in water, *Analyst*, 136(4), 764-768, doi: 10.1039/C0AN00709A.

Manuscripts in review or submitted:

Sur S., **Owens J.D.**, Soreghan G.S., Raiswell R., Soreghan M.J. and Lyons T.W. (in review), Did extreme, glacial-stage eolian delivery of highly reactive iron fuel biogeochemical cycling in the late Paleozoic seas?, *Nature Geoscience*

Wehrmann L.M., Formolo M.J., **Owens J.D.**, Raiswell R., Ferdelman T.G., Riedinger N. and Lyons T.W. (in review), Iron speciation and cycling in glacially influenced high-latitude fjord sediments (West Spitsbergen, Svalbard) – Evidence for a benthic recycling-transport mechanism, *Geochimica et Cosmochimica Acta*.

Owens J.D., Reinhard C.T., Rohressen M., Love G.L. and Lyons T.W. (submitted), Marine trace-metal drawdown during the Cenomanian-Turonian Oceanic Anoxic Event and implications for global redox and biological perturbation, *Nature Geoscience*.

Presentations

Invited Presentations

Owens J.D., Lyons T.W., Gill B.C., Reinhard C.T. and Jenkyns H.C., 2013 Quantifying the extent of euxinia during a late Cretaceous oceanic anoxic event (OAE 2), University of Leeds, Leeds, UK.

Owens J.D., Lyons T.W., Gill B.C., Reinhard C.T. and Jenkyns H.C., 2012 Quantifying the extent of euxinia during a late Cretaceous oceanic anoxic event (OAE-2), Woods Hole Oceanographic Institute, Woods Hole, Massachusetts, USA.

Abstracts and Conference Presentations (*presenter)

Gill B.C.*, **Owens J.D.**, Them T., Jenkyns H.C. and Lyons T.W., 2013 A refined investigation into the sulfur and iron cycles during the Toarcian OAE, AGU Fall Meeting, San Francisco – California, USA.

Reinhard C.T.*, Planavsky N.J., Wang X., **Owens J.D.**, Johnson T.M., Fischer W.W. and Lyons T.W., 2013 Chromium isotopes in siliciclastic sediments and sedimentary rocks as a developing proxy for Earth surface change, AGU Fall Meeting, San Francisco – California, USA.

Sahoo S.K.*, Ganqing J., Planavsky, N.J., Kendall B., **Owens J.D.**, Anbar A. and Lyons T.W., 2013 Turbulent times for early animals?, Geological Society of America (GSA), Denver, Colorado, USA.

Owens J.D.*, Reinhard C.T. and Lyons T.W., 2013 Trace metal drawdown during a Cretaceous oceanic anoxic event: implications for global redox conditions, Goldschmidt Conference, Florence, Italy (**oral**).

Wehrmann L.M.*, Formolo M.J., **Owens J.D.**, Ferdelman T.G., Raiswell R. and Lyons T.W., 2013 The cycling and transport of glacially derived iron in Arctic fjord sediments, Goldschmidt Conference, Florence, Italy (**oral**).

Scott R.W.*, Rush N.K., Formolo M.J., Obohikuenobe F.E. and **Owens J.D.**, 2012 Late Albian Oceanic anoxia in the Chihuahua trough, South-Central New Mexico, Geological Society of America (GSA), Charlotte, North Carolina, USA (poster).

Owens J.D.*, Wehrmann L.M., Raiswell R. and Lyons T.W., 2012 Enhanced delivery of bioavailable Fe through glacial processes in Kongsfjorden, Svalbard, Goldschmidt Conference, Montréal, Canada (**oral**).

Gill B.C.*, Lyons T.W., **Owens J.D.**, Bates S., Brumsack H.J. and Jenkyns H., 2012 Interpreting the trace metal records of ancient epeiric seaways: Lessons from the Toarcian (Jurassic) black shales of Europe, Goldschmidt Conference, Montréal, Canada (**oral**).

Wehrmann L.M.*, **Owens J.D.**, Formolo M.J., Ferdelman T.G. and Lyons T.W., 2012 Glacially derived iron as the key driver for biogeochemical processes in Arctic fjord sediments (West Svalbard), Goldschmidt Conference, Montréal, Canada (poster).

Owens J.D.*, Gill B.C., Jenkyns H., Kuypers M.M.M., Severmann S., Bates S., and Lyons T.W., 2012 Perturbations to the Global Sulfur Cycle during a mid-Cretaceous Oceanic Anoxic Event (OAE 2: Cenomanian/Turonian), Urbino Summer School of Paleoclimatology (USSP), Urbino, Italy (poster).

Owens J.D.*, Gill B.C., Jenkyns H., Kuypers M.M.M., Severmann S., Bates S., and Lyons T.W., 2012 Perturbations to the Global Sulfur Cycle during a mid-Cretaceous Oceanic Anoxic Event (OAE 2: Cenomanian/Turonian), EGU General Assembly, Vienna, Austria (**oral**).

Owens J.D.*, Boyer D.L., Droser M.L. and Lyons T.W., 2012 Low oxygen bottom waters in the Devonian ocean through a combined biological and geochemical approach, EGU General Assembly, Vienna, Austria (poster).

Owens J.D.*, Lyons T.W., Soreghan G.S., Soreghan M., Chappaz A. and Raiswell R., 2011 Quantifying bioavailable iron delivery by dust during the icehouse of the late Paleozoic, AGU Fall Meeting, San Francisco – California, USA (poster).

Owens J.D.*, Lyons T.W., Severmann S., Gill B., Jenkyns H., Kuypers M.M.M., Gordon G., Anbar A. and Kuhnt W., 2011 Global Perturbation of the Marine Iron Cycle During OAE-2, Cretaceous Symposium, Utrecht, Netherlands (**oral**).

Sur S., Soreghan G.S.*, **Owens J.**, Lyons T.W. and Soreghan M.J., 2010 Eolian delivery of highly reactive iron to the glacial ocean of the late Paleozoic, AGU Fall Meeting, San Francisco – California, USA (poster).

Owens J.D.*, Gill B., Jenkyns H. and Lyons T.W., 2010 Perturbations to the Global Sulfur Cycle during Ocean Anoxic Events. Geological Society of America, Denver – Colorado, USA (poster).

Raiswell R*, Reinhard C., Derkowski A., **Owens J.D.**, Bottrell S., Anbar A. and Lyons T.W., 2010 Formation of syngenetic and early diagenetic iron minerals in the late Archean Mt. McRae Shales: paleoceanographic implications. Geological Society of America, Denver – Colorado, USA (oral).

Severmann S*, McManus J., Poulson-Brucker R., **Owens J.D.**, Lyons T.W., Anbar A. and Gordon G., 2010 Of modern lakes and ancient oceans: trace metals and their isotopes in an anoxic African rift lake, Goldschmidt, Knoxville – Tennessee, USA (**oral**).

Li X*, Severmann S., **Owens J.D.** and Sageman B., (2010) Hydrothermal contributions to oceanic anoxic event 2? Evidence from trace metals, Goldschmidt, Knoxville – Tennessee, USA (**oral**).

Owens J.*, Severmann S., Lyons T.W., Kuypers M.M.M, Kuhnt W., Gordon G., and Anbar A., 2010 A $\delta^{56}\text{Fe}$ record of ocean-scale iron shuttling during OAE 2, Geobiology Symposium, Pasadena – California, USA (**oral**).

Gill B.*, Lyons T.W., **Owens J.**, Brumsack H. and Jenkyns H., 2009 A multi geochemical proxy approach to deciphering the Toarcian OAE, AGU Fall Meeting, San Francisco, USA (poster).

Owens J.*, Soreghan G.S., Gearhardt A, Sur S., Lyons T.W., 2009 Iron cycling in a late Paleozoic dust bowl, AGU Fall Meeting, San Francisco, USA (poster).

Boyer D.L.*, Droser M.L. and **Owens J.**, 2009 High Resolution Biotic and Geochemical Data from Devonian Dysaerobic Shales of New York State, NAPC, Cincinnati – Ohio, USA (**oral**).

Soreghan G.S.*, Sur S., Lyons T.W., Soreghan M.J. and **Owens J.**, 2009 Production and weathering of loess in late Paleozoic tropical Pangaea and implications for iron delivery to the glacial ocean, Goldschmidt, Davos, Switzerland (**oral**).

Owens J.*, Severmann S., Lyons T.W., Kuypers M.M.M, Kuhnt W., Gordon G., and Anbar A., 2008 Perturbations of the Global Fe Cycle during OAE II, AGU Fall Meeting, San Francisco – California, USA (**oral**).

Owens J.*, Severmann S., McManus J., Lyons T.W. and Gill B., 2008 Sulfur Isotopes in Lake Tanganyika, Geobiology Symposium, Los Angeles – California, USA (poster).

Poulson Brucker R.*, McManus J., Severmann S., **Owens J.**, and Lyons T.W., 2008 Trace Metal Associations in an Anoxic Lake: the relative Roles of Organic Carbon and Reduced Sulfur, AGU Fall Meeting, San Francisco – California, USA (poster).

Severmann S*, McManus J., Berelson W.M., Riedel T. and **Owens J.**, 2008 The benthic flux of iron from river-dominated continental shelves of the North Pacific, Ocean Sciences Meeting, Orlando – Florida, USA (**oral**).

Severmann S*, McManus J., **Owens J.**, Lyons T.W., Gordon G. and Anbar A., 2006 Combined Fe-S stable isotopes in modern anoxic environments and the effects of Fe versus S limitation, AGU Fall Meeting, San Francisco – California, USA (**oral**).

Manuscript Reviewer

Earth and Planetary Science Letters, Geology, Chemical Geology, Geochimica et Cosmochimica Acta, Precambrian Research, Climate of the Past

Extensive field experience:

- Salton Sea, California (August 2012)
- Marche, Italy (July 2012)
- Northern China (June 2012)
- Svalbard, Norway (September 2011)
- England (February 2011)
- Colorado and Nebraska (November 2010)
- Southern Utah and Nevada (April 2010)
- Japan (May 2009)
- Bremen, Germany (June 2008)
- Southern Utah and Nevada (September 2007)

Research Cruises:

- R/V Wecoma Oregon/California Margin (April 2007)

Teaching Experience

Instructor:

2011 Global Climate through Time

Guest Lectures:

2012 Oceanography

2011 Global Climate through Time (2)

2010 Global Climate through Time (2)

2009 Global Climate through Time

2009 Oceanography (2)

Teaching Assistant:

2012 Head TA for Oceanography, Discussion

2011 TA for Oceanography, Discussion

2011 Head TA for Global Climate through Time, Laboratory

2010 Head TA for Global Climate through Time, Laboratory

2009 Head TA for Global Climate through Time, Laboratory

2009 Head TA for Oceanography, Discussion

2008 Head TA for Global Climate through Time, Laboratory

2008 TA for Earth Resources and Sustainability, Discussion

2007 TA for Cosmos Factory, Discussion

Mentoring

2013 Bridgett Lee (Master's student currently at University of California, Riverside)
Aeolian reactive iron delivery to the marine realm: implications for primary
production and climate change, senior thesis and masters project

2012 Masters Student committee member – McKensy Farmer

- 2011 – 2012: Mahnoor Rahman and Nicole Perifoy – Multi-award winning high school science fair project
- 2010 – 2012: Angela Gerhardt (Master's student currently at Virginia Tech) – Effects of aeolian iron on the global carbon cycle: implications for glaciations and global climate change, Dean's Summer Fellowship (2009) and senior thesis project (2011)
- 2008-2012: Mentored 6 additional undergraduates

Professional Leadership:

- Session co-chair, Goldschmidt (2012)
- Convener of 6th Annual Southern California Geobiology Symposium (2009)
- Designed carbon cycle lab, Beaumont High School (2008-2011)

Workshop participant:

- IODP Cretaceous Drilling Workshop (2013)
- Urbino Summer School of Paleontology (USSP) (2012)
- Archean Drilling and Biomarker workshop (2012)
- IODP primer session (2010)

Professional Affiliations:

- American Geophysical Union
- Geological Society of America
- Geochemical Society
- International Association of Sedimentologist