

**F. L. WOLFE-SIMON**  
**CURRICULUM VITAE**

Lab. for Molecular Biogeochemistry and Organic Geochemistry  
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**EDUCATION**

Ph.D. 2006 Rutgers University Oceanography  
Dissertation title: *The Role and Evolution of Superoxide Dismutases in Algae*  
B.A. 2000 Oberlin College Biology (Chemistry)  
B.M. 2000 Oberlin Conservatory Oboe Performance (Ethnomusicology)

**PROFESSIONAL EXPERIENCE**

2007- present NSF Minority Postdoctoral Research Fellow, Dept. of Earth and Planetary Sciences, Harvard University  
2006-2007 NSF Minority Postdoctoral Research Fellow, Metallomics Lab, Dept. of Chemistry and Biochemistry, Arizona State University  
2003-2006 Graduate Assistant, Dept. of Oceanography, Rutgers University  
2001-2003 Teaching Assistant, Dept. of Oceanography, Rutgers University  
2000-2001 Graduate Fellow, Dept. of Oceanography, Rutgers University

**PUBLICATIONS**

**F. Wolfe-Simon**, O. Schofield, and P. Falkowski (2007). Gene duplication and comparative molecular genetics of superoxide dismutase in oxygenic photoautotrophs. *Molecular Biology and Evolution*. submitted.

**F. Wolfe-Simon**, J.J. Elser, and A.D. Anbar (2007). Metalloproteomic evolutionary advantages of eukaryotic photoautotrophs. in prep for *Science*.

**F. Wolfe-Simon**, A.D. Anbar and P.C.W. Davies (2007). Did nature also choose Arsenic? in prep for *Nature*.

**F. Wolfe-Simon**, W. Vermaas, A.D. Anbar, and P. Fromme (2007). Eukaryotic versus prokaryotic responses to Photosystem I iron deficiency. in prep for *Journal of Biochemistry*.

**F. Wolfe-Simon**, J.J. Elser, and A.D. Anbar (2007). Evolutionary drivers: metals, oxygen, and the Cambrian radiation of eukaryotes. in prep. for *Geobiology*

**F. Wolfe-Simon**, G.L. Arnold, M. Kyle, S. Schlichting, M. Engstrom, K. Dunning, J. Murray, A.D. Anbar, and J.J Elser (2007). Chronic Fe-deficiency impacts the food quality of green alga for *Daphnia* sp. growth. in prep for *Limnology and Oceanography*

**F. Wolfe-Simon**, A. Diamond, A.D. Anbar and H. Hartnett (2007). Molecular characterization of increase DOC production by a green alga. in prep. for *Marine Ecology Progress Series*

J. Glass, **F. Wolfe-Simon**, and A. D. Anbar. (2007) Trace metal controls on the efficiency of nitrogen fixation: assessing microbial metal requirements in ancient oceans. in prep. for *Limnology and Oceanography*

**F. Wolfe-Simon**, V. Starovoytov, J.R. Reinfelder, O. Schofield, and P. G. Falkowski (2006). Localization and role of manganese superoxide dismutase in a marine diatom. *Plant Physiology*. **142**: 1701-1709.

**F. Wolfe-Simon**, D. Grzebyk, O. Schofield, and P. G. Falkowski (2005). The role and evolution of superoxide dismutase in algae. *Journal of Phycology*. **41**: 453-465.

**F. Wolfe**, K. Kroeger and I. Valiela (1999). Increased lability of estuarine dissolved organic nitrogen from urbanized watersheds. *Biological Bulletin*. **197**:290-292.

#### **HONORS AND AWARDS**

National Science Foundation Minority Postdoctoral Fellowship, 2006-2009

Honorable mention NSF Graduate Student Fellowship, 2001

Excellence Graduate Fellowship (Rutgers University), 2000

Sigma Xi, Associate Member, 2000

National Science Foundation- Research Experience for Undergraduates (REU), 1999

Hope Hibbard Scholarship in Biology (Oberlin College), 1999

Leo S. Millar Prize in Biological Scholarship (Oberlin College), 1998

#### **INVITED SEMINARS**

2008 Oxygen, Metals, and the Evolutionary Drive Towards Eukaryotic Life. Environmental Bioinorganic Chemistry Gordon Research Conference. Waterville Valley, NH.

2008 Arsenic and Phosphorus. Origin of Life Gordon Research Conference. Ventura, CA.

2007 Geo-evolutionary Significant Aspects of the Metalloproteome. International Symposium on Metallomics. Nagoya Congress Center. Nagoya, Japan.

2006 Biogeochemical Evolution of the Metalloproteome. Earth History and Paleobiology Seminar Series. Dept. of Earth and Planetary Sciences. Harvard University. Cambridge, MA.

2006 Tree or Forest? Searching for Alternative Forms of Life on Earth. Arizona State University. Environmental Signatures of Alternative Biochemistry. Tempe, AZ

- 2003 The Molecular Evolution and Selection of Superoxide Dismutase in Marine Phytoplankton. CEBIC Summer Conference. Center for Environmental Bioinorganic Chemistry. Princeton University. Princeton, NJ.
- 2003 Tutorial: Hickory Dickory Dock- Understanding the Molecular Clock. Biocomplexity Seminar. Dept. of Geological Sciences. Rutgers University. New Brunswick, NJ.

#### **CONTRIBUTED PRESENTATIONS AND POSTERS**

- F. Wolfe-Simon**, P. Fromme, W.F.J. Vermaas, J.J. Elser, and A. D. Anbar (2007). Evolutionary Geobiochemistry: Fe-deficient photosynthetic eukaryotes' Cu demand suggests ecological success stalled until widespread oxic conditions. CEBIC Summer Conference. Princeton University. Princeton, NJ
- F. Wolfe-Simon**, J. Morgan, J.J. Elser, and A. D. Anbar (2007). Evolutionarily significant differences between prokaryotic and eukaryotic responses to Fe stress. ASLO Aquatic Sciences Meeting, Santa Fe, NM
- F. Wolfe-Simon**, J. Morgan, J.J. Elser, and A. D. Anbar (2006). Metallomic plasticity of cyanobacteria induced by iron availability. Gordon Research Conference: Environmental Bioinorganic Chemistry. Andover, NH.
- F. Wolfe-Simon**, V. Starovoytov, J.R. Reinfelder, O. Schofield, and P. G. Falkowski (2006). Localization and role of manganese superoxide dismutase in a marine diatom. NASA AbSciCon. Washington, D.C.
- F. Wolfe-Simon**, O. Schofield, and P. G. Falkowski (2006) The Metalloenzyme SOD and Its Role in Photoautotroph Evolution and Regulation. Symposium on The Evolution of Aquatic Photoautotrophs. New Brunswick, NJ
- F. L. Wolfe**, V. Starovoytov, O. Schofield and P. Falkowski. (2005). Diatoms express a novel MnSOD in the chloroplast that responds to light stress. ASLO Aquatic Sciences Meeting, Salt Lake City, UT
- F. L. Wolfe**, O. Schofield, and P. Falkowski. (2004). The Metalloenzyme SOD and its role in photoautotroph evolution and regulation. Gordon Research Conference: Environmental Bioinorganic Chemistry. Lewiston, ME
- F. L. Wolfe**, O. Schofield and P. Falkowski. (2004). The comparative molecular evolution of iron and manganese superoxide dismutase in oxygenic photoautotrophs. ASLO Ocean Research Conference, Honolulu, HI
- F. L. Wolfe**, I. Berman-Frank, L. Haramaty, and P. Falkowski. (2003). The metallic shield of *Trichodesmium*: Fighting oxidative damage. ASLO Aquatic Sciences Meeting, Salt Lake City, UT

**F. L. Wolfe**, I. Berman-Frank, L. Haramaty, and P. Falkowski. (2002). The metallic shield of *Trichodesmium*: Fighting oxidative damage. Gordon Research Conference: Environmental Bioinorganic Chemistry. Andover, NH

**F. Wolfe**, K. Kroeger and I. Valiela (2000). Increased lability of estuarine dissolved organic nitrogen from urbanized watersheds. ASLO/AGU Ocean Sciences Meeting, San Antonio, TX

**F. Wolfe**, K. Kroeger and I. Valiela (1999). Increased lability of estuarine dissolved organic nitrogen from urbanized watersheds. General Scientific Meeting, Marine Biological Laboratory, Woods Hole, MA

**F. L. Wolfe** and D. Coats (1997). Host specificity of the parasitic dinoflagellate *Amoebophrya ceratii*. 7<sup>th</sup> Annual East Coast Protist Meeting, Narragansett, RI

#### **PROFESSIONAL SERVICE**

Session Convener and Co-Chair. Trace metals, microbial processes, and biogeochemical cycles through space and time. ASLO Aquatic Sciences Meeting, Santa Fe, NM. February 2007

Reviewer for Aquatic Microbial Ecology, Eukaryotic Cell; Journal of Phycology; Limnology and Oceanography; Israel Science Foundation.

President. Oceanography Graduate Student Association. 2003-2004

#### **PROFESSIONAL AFFILIATIONS**

American Chemical Society  
American Geophysical Union  
American Society of Limnology and Oceanography  
American Society of Plant Biologists  
Sigma Xi, The Scientific Research Society  
Society for Molecular Biology and Evolution  
Society of Bio-inorganic Chemistry

### **TEACHING EXPERIENCE**

Fall 2006 Guest Lecturer: PHY598 Topics in Biophysics: An Overview of Modern Biology for Physicists (ASU)

Spring 2005 Lead Instructor and Coordinator: MS 303 Oceanographic Scientific Inquiry: From biogeochemistry to genomes: Explorations at aquatic interfaces. (Rutgers Univ.)

Fall 2001, 2002 Teaching Assistant: OCN 540 Chemical Oceanography. (Rutgers Univ. graduate course)

### **POSTDOCTORAL MENTORS**

Harvard University: Ann Pearson

ASU: Ariel D. Anbar, Paul C.W. Davies, Jim J. Elser, Petra Fromme, and Wim Vermaas

### **GRADUATE ADVISORS\* AND DISSERTATION COMMITTEE**

Paul G. Falkowski\*, Oscar Schofield\*, Jody Hey, John Reinfelder, Edward Stiefel, and Costantino Vetriani

### **STUDENT MENTORING**

#### *Graduate*

Jennifer Glass, ASU (Geosciences)

Kathryn Alexander, ASU (Geosciences)

Jennifer Morgan, ASU (Chemistry)

#### *Undergraduate*

Ashley Diamond, ASU, NASA Space Grant Intern

Alexandra Flournoy, ASU

Augie Trey, Rutgers University

Nashwa Choudhry, Rutgers University

Nicholas DeVito, Rutgers University