

## KENIA WHITEHEAD

### CURRICULUM VITAE

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### EDUCATION

- Ph.D.** 2002, Oceanography. ì Biogeochemistry of the mycosporine-like amino acids (MAAs): A new perspective on UV-absorbing compounds via liquid chromatography-mass spectrometry.î University of Washington with Dr. John I. Hedges (deceased).
- M.S.** 1996, ì Distribution of mycosporine-like amino acids in particulate and dissolved organic matter pools.î with Dr. Maria Vernet (Scripps Institution of Oceanography) and Dr. Nigel Crawford (UCSD).
- B.S.** 1995, Biochemistry, University of California, San Diego.

### RESEARCH INTERESTS

- Understanding the effects of UV radiation on the physiology, ecology and biogeochemistry of aquatic systems, especially those undergoing current changes in UV flux such as Polar Regions.
- Understanding the cellular mechanisms employed by autotrophic organisms for protection from ultraviolet (UV) radiation principally via the use of sunscreen compounds, the production of antioxidants or the implementation of cellular repair mechanisms.
- Development an implementation of innovative new analytical approaches, with a focus utilizing mass spectral techniques such as proteomics and applying new genomic techniques.

### PUBLICATIONS

- Whitehead, K.** and J.I. Hedges (2003) Tandem mass spectrometric and GC-MS analysis of mycosporine-like amino acids (MAAs). *Rapid Comm. in Mass Spectroscopy* 17:2133-2138.
- Volkman, M., **K. Whitehead**, H. R. tters, J. Rullk^tter, A.A. Gorbushina (2003) Mycosporine-glutamicol-glucoside: a native UV-absorbing secondary metabolite of rock inhabiting microcolonial fungi (MCF). *Rapid Communications in Mass Spectroscopy* 17: 897-902.
- Gorbushina, A.A., **K. Whitehead**, T. Dornieden, A. Niesse, A. Schulte and J.I. Hedges (2003) Black fungal colonies as units of survival: hyphal mycosporines synthesized by rock dwelling microcolonial fungi. *Canadian Journal of Botany* 81:131-138.
- Whitehead, K.** and J.I. Hedges (2002) Analysis of mycosporine-like amino acids (MAAs) in plankton by liquid chromatography electrospray-ionization mass spectrometry. *Marine Chemistry* 80:27-39.
- Skoog, A., **K. Whitehead**, F. Sperling and K. Junge (2002) Microbial glucose uptake and growth along a horizontal nutrient gradient in the North Pacific. *Limnology and Oceanography* 47:1676-1683.
- Whitehead, K.**, D. Karentz, and J. I. Hedges (2001) Mycosporine-like amino acids (MAAs) in phytoplankton, a herbivorous pteropod (*Limacina helicina*), and its pteropod predator (*Clione antarctica*) in McMurdo Bay, Antarctica. *Marine Biology* 139:1013-1019.
- Whitehead, K.** and M. Vernet (2000) Influence of mycosporine-like amino acids (MAAs) on UV absorption by particulate and dissolved organic matter in La Jolla Bay. *Limnology and Oceanography* 45:1788-1796.
- Vernet, M. and **K. Whitehead** (1996) Release of UV-absorbing compounds by the red-tide dinoflagellate *Gonyaulax polyedra*. *Marine Biology* 127:35-44.

**WORKS IN PROGRESS**

- Sommaruga, R., D. Liebkind and **K. Whitehead** (accepted) Mycosporines from two aquatic basidiomycetous yeast species of *Rhodotorula*. *Yeast*.
- Whitehead, K.** and J.I. Hedges (manuscript) Photodegradation and transformation of mycosporine-like amino acids (MAAs) dissolved in fresh and seawater. Planned submittal to *Photochemistry and Photobiology*.
- Whitehead, K.**, M. Orellano and J.I. Hedges (manuscript) UV-absorbing compounds in cells and secretory granules of *Phaeocystis antarctica*: a potential mechanism for extracellular UV photoprotection? Planned submittal to *Journal of Phycology*
- Whitehead, K.**, E.C. Minor and T. Dittmar (manuscript) Tracing mangrove DOM into marine systems: the roles of photo- and bio-degradation in DOM transformation. Planned submittal to *Organic Geochemistry*.
- Whitehead, K.**, M. Orellana, R. Benner and P. Verdugo (in preparation) A new, simple fluorescent technique to measure the gel fraction of marine dissolved organic matter. Planned submittal to *Marine Chemistry*.

**RECENT COLLABORATORS (NON UW)**

Ronald Benner	University of South Carolina
Thorsten Dittmar	Florida State University
Yves GÈlinas	Concordia University, Montreal, Canada
Anna A. Gorbushina	Geomicrobiology, ICBM, Oldenburg, Germany
Deneb Karentz	University of California, San Francisco
Elizabeth C. Minor	Old Dominion University, Virginia
Mary Ann Moran	University of Georgia
Ruben Sommaruga	University of Innsbruck, Austria

**FIELD EXPERIENCE**

- Hawaii Organic Gel Study (HOGS) cruise**, aboard R/V Kilo Moana. March 2004. Co-chief scientist.
- McMurdo Station, Antarctica**. Field experiments and sample collection. January 2000.
- North Pacific Cruise** (Seattle, Washington to Hawaii), aboard R/V Thompson. November 1997.
- California Cooperative Fisheries Investigation Cruise**, aboard R/V New Horizon. October 1995.

**SCHOLARSHIPS, FELLOWSHIPS & AWARDS**

- DIALOG V**, selected participant, October 2003.
- Harold C. Bold Award** from Phycological Society of America for excellence and innovation in graduate research, August 2002
- Dissertations on Chemical Oceanography Conference (DISCO)**, selected participant, May 2002
- NSF Polar Programs Biology Course**, selected participant, January 2000
- Graduate Opportunity Fellowship**, State of Washington, 1996 - 1998
- NASA Space Grant Fellowship**, University of Washington, July-September 1997
- NSF REU Research Fellowship**, with Dr. Mary Ann Moran, University of Georgia, 1995
- Howard Hughes Undergraduate Research Fellowship**, 1993 - 1994
- John D. Isaacs Memorial Scholarship**, California Sea Grant College, 1992-1996