Melissa M. Omand

1/2/2012

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Postdoctoral Investigator
Woods Hole Oceanographic Institution
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EDUCATION

Ph.D. Scripps Institution of Oceanography, Physical Oceanography, 2004-2011
IGERT associate, Center for Marine Biodiversity and Conservation, Scripps Institution of Oceanography, 2005-2011
BSc. Honors in Physics, University of Guelph, 1999-2003

POSITIONS HELD

2011 (June-present) *Postdoctoral Investigator*; Woods Hole Oceanographic Institution, Woods Hole, MA. *Advisor*: Dr. Amala Mahadevan, Physical Oceanography Department.

2011 (Mar-May) *Postdoctoral Associate*; Boston University, Boston, MA.
Advisor: Dr. Amala Mahadevan, Department of Earth Sciences.

2004-2011 *Graduate Research Assistant*; Scripps Institution of Oceanography, UCSD, La Jolla CA. Integrative Oceanography Division.
Co-advisor: Dr. Falk Feddersen, Integrative Oceanography Division.
Co-advisor: Dr. Peter J.S. Franks, Integrative Oceanography Division.

2003-2004 *Laboratory Technician and programmer*; University of Guelph, Guelph Ont. Canada. Physics Dept. *Advisor*: Dr. Iain L. Campbell, Physics Department.

PEER-REVIEWED PUBLICATIONS

Omand, M.M, Feddersen, F., Guza, R.T. and Franks, P.J.S. *Episodic vertical nutrient fluxes and nearshore phytoplankton blooms in Southern California*. Limnology and Oceanography (accepted).

Omand, M.M, Leichter, J.L., Franks, P.J.S., Guza, R.T., Lucas, A.J., and Feddersen, F. (2010). *Physical and Biological processes underlying the sudden appearance of a red-tide patch in the nearshore*. Limnology and Oceanography, 56(3) p. 787-801.

Omand, M.M, Feddersen, F., Clark, D.B., Franks, P.J.S., Leichter, J.L., and Guza, R.T. (2009) *The influence of bubbles and sand on Chlorophyll-a fluorescence measurements in the*

surfzone. Limnology and Oceanography: Methods, 7 p. 354-362.

Clark, D.B., Feddersen, F., **Omand, M.M** and Guza, R.T. (2009). *Measuring fluorescent dye in the bubbly and sediment laden surfzone*. Water, Soil and Air Pollution, 204(1-4) p. 103-115.

Omand, M.M, Campbell, J.L. and Maxwell, J.A. (2005) *Simulation of the relationship between element concentrations and X-ray yields in the Mars Exploration Rover's X-ray spectrometer*. Nucl. InstrumMeth. In Phys. Research B229 123-136.

HONORS AND AWARDS

Edna Bailey Sussman Internship (2009)

California Sea Grant Traineeship (2008-present)

California Sea Grant Traineeship (2006-2008)

California Sea Grant Isaacs Scholar Fund for undergraduate assistance (2007)

Edna Bailey Sussman Internship (2006)

Outstanding Student Paper Award: American Geophysical Union (2006)

University of Guelph Entrance Scholarship (1999-2001)

CONFERENCE PRESENTATIONS AND INVITED TALKS

Physical controls on episodic nearshore phytoplankton blooms in Southern California. University of Rhode Island seminar series hosted by the Physical Oceanography Dept. Kingston, RI 2011. (invited talk)

Physical controls on episodic nearshore phytoplankton blooms in Southern California. Woods Hole Oceanographic Institution seminar series hosted by the Physical Oceanography Dept. Woods Hole, MA 2011. (invited talk)

Physical and biological processes underlying the sudden appearance of a red tide surface patch in the nearshore. California and the World Oceans conference. San Francisco, CA: 2010. (oral presentation)

Evidence of in situ dinoflagellate swimming behavior? Preliminary observations from Imperial Beach CA. American Society of Limnology and Oceanography, Portland, Oregon: 2010. (poster presentation)

Internal Wave-Driven Patches of Red Tide in the Nearshore and Surfzone. Gordon Research Conference: Coastal Ocean Processes, New London, NH: 2009 (poster presentation)

Field observations of nonphotochemical quenching. International Meeting of Students in Physical Oceanography, University of California, San Diego: 2008. (oral presentation)

An integrated perspective on biophysical dynamics: From the nearshore to the surfzone. American Society of Limnology and Oceanography, Orlando, Florida: 2008. (oral presentation)

Science with a jetski: New observations of phytoplankton in shallow water. Centro de Investigación Científica y de Educación Superior de Ensenada, Ensenada, Mexico: 2008. (invited talk)

Chlorophyll Fluorescence near the shoreline: Connections with waves and wave-driven currents. American Geophysical Union, San Francisco, CA: 2006. (oral presentation)

Teaching and Mentoring Experience

Fluid Dynamics (MAE 110A), Teaching Assistant (UCSD)

Physics for the Biological Sciences (PHYS 1070), Teaching Assistant (University of Guelph)

Supervisor of undergraduate interns (summer 2007, 2008, 2009) and experiment volunteers (fall, 2009)

Advisor to two UCSD undergraduates for a 199 independent study course (Fall 2009 and Winter 2010) and for the 4th year project for a UCSD Environmental Systems major (Fall 2009, Winter and Spring 2010)

Computing and Laboratory Skills

Matlab, Phytoplankton fixation and microscope identification, Fluid Imaging FlowCam

Funding Acquisition

Patch Dynamics of Nutrients, Fecal Indicator Bacteria and Chlorophyll near the Tijuana River (PIs: F. Feddersen, P.J.S. Franks and R.T. Guza) California Sea Grant (2008-2012).

Obtained John D. Isaacs research assistant grants in 2007 and 2009 for two undergraduate students from UCSD.

Field and Sea Experience

New River Experiment (NC12), New River Inlet, NC (upcoming in Spring 2012)
Imperial Beach Experiment (IB09), Imperial Beach, CA (2 months, Summer 2009)
Bi-weekly phytoplankton collection, Imperial Beach, CA (4 months, Summer 2008)
Huntington Beach Experiment (HB06), Huntington Beach, CA (2 months, Summer 2006)
Scientific Diving Certification (100' depth rating), American Academy of Underwater Sciences (2006-2011)
R/V Roger Revelle: Honolulu, HI (5/2006, 7 days)
R/V Roger Revelle: San Diego, CA (10/2005, 1 day)
R/V Robert G. Sproul: San Diego, CA (8/2005, 1 day)

Courses Attended

2011 (July) Ocean Optics summer course at the University of Maine.
2010 (October) Advanced school on complexity, adaptation and Emergence in Marine Ecosystems at the Abdus Salam International Center for Theoretical Physics, Trieste, Italy.

Service and Affiliations

Physical Oceanography student curricular representative, Scripps Institution of Oceanography, 2006 & 2007

Association Memberships

American Geophysical Union
American Society of Limnology and Oceanography