CURRICULUM VITAE
David B. Clark

Applied Ocean Physics & Engineering
Woods Hole Oceanographic Institution
MS #12, 266 Woods Hole Rd., Woods Hole, MA 02543
Email: dclark@whoi.edu, Phone: (508)-289-2935
Website: http://www.whoi.edu/science/AOPE/people/dclark/

Education

Ph.D., Oceanography — 2010
Scripps Institution of Oceanography, UCSD
Advisors: Falk Feddersen and Bob Guza

B.S., Physics — 2003
University of California Santa Barbara

Professional Experience

Postdoctoral Investigator — Jun. 2012 – present
Woods Hole Oceanographic Institution
Advisor: Steve Elgar

Postdoctoral Scholar — 2011 – 2012
Woods Hole Oceanographic Institution
Advisors: Steve Elgar and Britt Raubenheimer

Research Interests

Wave breaking and wave driven flows, nearshore and surfzone hydrodynamics, coastal pollution, interactions between humans and the coastal ocean, numerical modeling, ocean mixing, field methods for oceanographic research

Fellowships and Awards

WHOI / USGS Postdoctoral Scholarship	2011 – 2012
Outstanding Student Paper Award AGU Fall Meeting	2010
NSF GK-12 Graduate Fellowship	2009 – 2010
National Defense Science and Engineering Graduate Fellowship	2006 – 2009
Doherty Graduate Fellowship	2004 – 2005
Honors UCSB Physics Department	2003
National Merit Scholar	1998 – 2002

Publications

Clark, D.B., S. Elgar, and B. Raubenheimer (2012), (COVER) Vorticity generation by short-crested breaking waves, *Geophysical Research Letters,* 39, L24604, doi:10.1029/2012GL054034
[download PDF]

Clark, D.B., F. Feddersen, and R.T. Guza (2011), Modeling surfzone tracer plumes: 2. Transport and dispersion, *Journal of Geophysical Research*, 116, C11028, doi:10.1029/2011JC007211
[download PDF]

Feddersen, F., D.B. Clark, and R.T. Guza, Modeling surfzone tracer plumes: 1. Waves, mean currents, and low-frequency eddies (2011), *Journal of Geophysical Research*, 116, C11027, doi:10.1029/2011JC007210
[download PDF]

Clark, D.B., F. Feddersen, and R.T. Guza (2010), Cross-shore surfzone tracer dispersion in an alongshore current, *Journal of Geophysical Research*, 115, C10035, doi:10.1029/2009JC005683
[download PDF]

Omand, M.M., F. Feddersen, D.B. Clark, P.J.S. Franks, J.J. Leichter, and R.T. Guza (2009), The influence of bubbles and sand on chlorophyll-a fluorescence measurements in the surfzone, *Limnology and Oceanography Methods*, 7, 354-362, doi:10.4319/lom.2009.7.354
[download PDF]

Clark, D.B., F. Feddersen, M.M. Omand, and R.T. Guza (2009), Measuring fluorescent dye in the bubbly and sediment-laden surfzone, *Water Air and Soil Pollution*, 204, 103–115, 10.1007/s11270-009-0030-z
[download PDF]

Conference Presentations

Clark, D.B., S. Elgar, B. Raubenheimer, Observations of Surfzone Vorticity, Ocean Sciences Meeting, February 2012

Clark, D.B, F. Feddersen, and R.T. Guza, Boussinesq modeling of HB06 tracer releases Part 2: Tracer plumes, AGU Fall Meeting, December 2010

Clark, D.B., F. Feddersen, and R.T. Guza, Boussinesq modeling of observed surfzone tracer plumes, Ocean Sciences Meeting, February 2010

Clark, D.B., F. Feddersen, and R.T. Guza, Field measurements of surfzone dye dispersion, International Conference on Coastal Engineering, September 2008

Clark, D.B., F. Feddersen, and R.T. Guza, Pretty in pink: Surfzone dye dispersion in varying conditions during the HB06 experiment, Ocean Sciences Meeting, March 2008

Clark, D.B., B. Woodward, W.A. Boyd, F. Feddersen, and R.T. Guza, Pink water: Surfzone dye measurements at Huntington Beach, CA, AGU Fall Meeting, December 2006

Clark, D.B., F. Feddersen, B. Woodward, W.A. Boyd, and R.T. Guza, Measuring dye dispersion in the surfzone, Ocean Sciences Meeting, February 2006

External Funding for Research (as lead PI)

NSF, *Short-crested Breaking Waves and Surfzone Vorticity*, $849,955
with co-PIs Elgar and Raubenheimer, 09/2012 – 08/2015

ONR, *Short-crested Breaking Waves and Vorticity*, $125,400
with co-PIs Elgar and Raubenheimer, 03/2012 – 12/2013

Field Experience

Duck, NC, July 2012

- (chief scientist) Designed and deployed an ultra-wide angle high-resolution imaging system to measure breaking crest lengths in the surfzone over a range of incident wave conditions.

RIVET Experiment, New River Inlet, NC, May 2012

- (chief scientist) Imaged waves in a tidal inlet to measure the effect of inlet bathymetry and flows on breaking crest length.

VORTEX Experiment, Duck, NC, May 2011

- (chief scientist) Designed and deployed a surfzone vorticity meter, with colocated video measurements to identify vorticity generated by short-crested breaking

IB09 Experiment, Imperial Beach, CA, Sept-Nov 2009

- (chief scientist) Designed and implemented 8 nearshore/surfzone dye-tracer dispersion experiments, using two dye sampling jet skis, frame mounted fluorometers, and an aerial dye-tracer imaging system
- (co-chief scientist with Guza and Feddersen) Deployed/maintained/recovered a 6 frame cross-shore array of velocity, pressure, and dye fluorescence sensors, including a 3 position vertical array

SIO08 Experiment, Scripps Beach, CA, Sept-Oct 2008

- (co-chief scientist with Guza and Feddersen) Deployed/maintained/recovered a vertical array of velocity, pressure and dye-tracer sensors to test array designs and measure vertical tracer dispersion in the surfzone

HB06 Experiment, Huntington Beach, CA, Sept-Oct 2006

- (co-chief scientist with Guza and Feddersen) Deployed, maintained, and recovered a 7 frame cross-shore array of velocity, pressure, and dye tracer sensors in the surfzone and nearshore
- (chief scientist) Designed and implemented 5 surfzone dye-tracer dispersion experiments utilizing a dye sampling jet ski and fixed position fluorometers

AAUS certified diver since 2005, with more than 60 surfzone dives

Professional Societies

American Geophysical Union

Teaching Experience

Guest Lecturer, Kearny Mesa High School, 2009-2010:
Weekly lectures and labs on oceanography, physics, earth science, coastal geomorphology, and nearshore pollution

Educational Outreach

Weekly science lectures at Kearny Mesa High School, bringing scientific frontiers to the classroom, 2009 – 2010

Kearny Mesa High School Earth Sciences fieldtrip demonstrating fieldwork at Imperial Beach, 2009

Ocean Institute Teen Surf Science fieldtrips demonstrating fieldwork at Imperial Beach (2009), and ongoing projects at SIO (2010, and 2008)

Grunion lectures, Rancho Santa Fe Elementary: June 2008 and 2009

Talks on pollution and mixing in the nearshore environment, Ocean Institute, Dana Point, 2007