Dr. Britt Raubenheimer
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Education:

B.A. Middlebury College, Physics, 1987
Ph.D. Scripps Institution of Oceanography, 1996

Professional Experience:

Postdoctoral Researcher, Scripps Institution of Oceanography, 1996-1999
Assistant Scientist, Woods Hole Oceanographic Institution, 1999-2003
Associate Scientist, Woods Hole Oceanographic Institution, 2003-present

Honors and Awards:

ONR NDSEG Fellowship 1990-1993
ONR AASERT Fellowship 1993-1996
Mellon Postdoctoral Fellowship 1996-1999
ONR Young Investigator Award 2000-2003
NSF Career Award 2003-2007

Refereed Publications

1. Holland, K.T., B. Raubenheimer, R.T. Guza, and R.A. Holman, Run-up kinematics on a natural beach, **J. Geophys. Res., 100**, 4985-4993, 1995.
2. Raubenheimer, B., R.T. Guza, S. Elgar, and N. Kobayashi, Swash on a gently sloping beach, **J. Geophys. Res., 100**, 8751-8760, 1995.
3. Raubenheimer, B., and R.T. Guza, Observations and predictions of run-up, **J. Geophys. Res., 101**, 25,575-25,588, 1996.
4. Raubenheimer, B., R.T. Guza, and S. Elgar, Wave transformation across the inner surf zone, **J. Geophys. Res., 101**, 25,589-25,598, 1996.
5. Elgar, S., R.T. Guza, B. Raubenheimer, T.H.C. Herbers, and E. Gallagher, Spectral evolution of shoaling and breaking waves on a barred beach, **J. Geophys. Res., 102**, 15,797-15,805, 1997.
6. Raubenheimer, B., S. Elgar, and R.T. Guza, Estimating wave heights from pressure measured in a sand bed, **J. Water. Port Coastal Ocean Eng., 124**, 151-154, 1998.
7. Raubenheimer, B., R.T. Guza, and S. Elgar, Tidal watertable fluctuations in a sandy ocean beach, **Water Res. Res., 35**, 2313-2320, 1999.
8. Lentz, S., and B. Raubenheimer, Field observations of wave setup dynamics, **J. Geophys. Res., 104**, 25,867-25,875, 1999.
9. Elgar, S., R.T. Guza, W.C. O'Reilly, B. Raubenheimer, T.H.C. Herbers, Wave energy and direction observed near a pier, **J. Water. Port Coastal Ocean Eng., 127**, 2-6, 2001.
10. Raubenheimer, B., R.T. Guza, and S. Elgar, Field observations of wave-driven setdown and setup, **J. Geophys. Res., 106**, 4629-4638, 2001.
11. Elgar, S., B. Raubenheimer, and R.T. Guza, Current meter performance in the surf zone, **J. Atmos. Ocean Tech., 18**, 1735-1746, 2001.

12. Raubenheimer, B., Observations and predictions of fluid velocities in the surf and swash zones, **J. Geophys. Res., 107**, 3190, doi:10.1029/2001JC001264, 2002.
13. Elgar, S., B. Raubenheimer, and T.H.C. Herbers, Bragg reflection of ocean waves from sandbars, **Geophys. Res. Lett., 30(1),** doi:10.1029/2002GL016351, 2003.
14. Schmidt, W.E., B.T. Woodward, K.S. Millikan, R.T. Guza, B. Raubenheimer, and S. Elgar, A GPS-tracked surfzone drifter, **J. Atmos. Ocean Tech., 20(7),** 1069-1075, 2003.
15. Cowen, E.A., I.M. Sou, P.L.-F. Liu, and B. Raubenheimer, PIV measurements within a laboratory generated swash zone, **J. Eng. Mech., 120(10),** 1119-1129, 2003.
16. Raubenheimer, B., Steve Elgar, and R.T. Guza, Observations of swashzone velocities: a note on friction coefficients, **J. Geophys. Res., 109,** C01027, doi:10.1029/2003JC001877, 2004.
17. Elgar, S., B. Raubenheimer, and R.T. Guza, Quality control of acoustic Doppler velocimeter data in the surfzone, **J. Meas. Sci. Tech., 16**, doi:10.1088/0957-0233/16/10/002, 1889-1893, 2005.
18. Farquharson, G., S. Frasier, B. Raubenheimer, and S. Elgar, Microwave radar cross sections and Doppler velocities measured from the surf zone, **J. Geophys. Res., 110,** C12024, doi:10.1029/2005JC003022, 2005.
19. Thomson, J., S. Elgar, B. Raubenheimer, T. H. C. Herbers, and R. T. Guza, Tidal modulation of infragravity waves via nonlinear energy losses in the surfzone, **Geophys. Res. Lett., 33,** L05601, doi:10.1029/2005GL025514, 2006.
20. Hsu, T.-J., and B. Raubenheimer, A numerical and field study on inner-surf and swash sediment transport, **Cont. Shelf. Res.,** in press, 2005.
21. Apotsos, A., B. Raubenheimer, S. Elgar, R.T. Guza, The effects of wave rollers and bottom stress on wave setup, **J. Geophys. Res.,** submitted, 2006.

Invited Presentations and Publications (unrefereed)

1. Review of swashzone processes, presented at St. Petersburg Meeting, St. Petersburg, FL, 1998.
2. Swashzone field observations and models, presented at Workshop Addressing the Effects of Surf Zone Sediment Properties on Shock Wave and Explosive Bubble Behavior, NRL-Stennis, MS, 1999.
3. Wave runup velocities, presented at ARO Nearshore Workshop, Duck, NC, 1999.
4. Where the surf meets the turf, Oceanus, 42, 24-27, 2000.
5. Swashzone fluid velocities, presented at AGU Special Session in Honor of Thomas Kinder, Dec 2001.
6. Swashzone fluid velocities, presented at Cornell Univ, Civil Eng. Dept. Seminar, Nov 2002.
7. Alongshore variability of erosion, Oceanus, in press, 2004.
8. Surfzone morphology, presented at the WHOI Coastal Forum entitled "The Moving Shoreline: Coastal Change in Response to Rising Sea Level", Apr 2004.
9. Modeling and measurement of swashzone fluid velocities, presented at International Conference on Coastal Engineering, Swashzone Workshop, Sep 2004.

10. Shoreline change: Days to years, presented at the WHOI Shoreline Change Forum, Sep 2004.
11. Nearshore research, Biology Club, Chaminade University, Honolulu, 2006.

Other Conference Presentations and Proceedings

1. Raubenheimer, B., and R.T. Guza, Run-up on a sloping beach, EOS Trans., AGU, 72, 254, 1991.
2. Raubenheimer, B., and R.T. Guza, Run-up on beaches, EOS Trans., AGU, 74, 333, 1993.
3. Burnet, T., E. Gallagher, M. Okihiro, B. Raubenheimer, B. Vanhoff, S. Elgar, and B.T. Werner, Field tests of theories for beach cusp formation, EOS Trans., AGU, 75, 321, 1994.
4. Raubenheimer, B. and R.T. Guza, Run-up on a concave-shaped beach, EOS Trans., AGU, 75, 321, 1994.
5. Elgar, S., R.T. Guza, B. Raubenheimer, T.H.C. Herbers, and E. Gallagher, Observations of wave evolution during Duck94, EOS Trans., AGU, 76, 282, 1995.
6. Raubenheimer, B., R.T. Guza, and S. Elgar, Wave transformatio in the surf zone, EOS Trans., AGU, 76, 282, 1995.
7. Raubenheimer, B., S. Elgar, and R.T. Guza, Wave attenuation in a sand bed, EOS Trans., AGU, 77, 403, 1996.
8. Raubenheimer, B., and S. Elgar, Acoustic measurements of swash velocities, SandyDuck Science Meeting, 1997.
9. Raubenheimer, B., R.T. Guza, and S. Elgar, Watertable fluctuations in a sandy ocean beach, International Conference on Coastal Engineering, Copenhagen, Denmark, 3588-3600, 1998.
10. Holland, K.T., A.H. Sallenger, B. Raubenheimer, and S. Elgar, Swash zone morphodynamics and sediment transport processes, International Conference on Coastal Engineering, Copenhagen, Denmark, 2799-2809, 1998.
11. Elgar, S., W.C. O'Reilly, B. Raubenheimer, R.T. Guza, and T.H.C. Herbers, Pier Effects on wind waves, EOS Trans., AGU, 79, 401, 1998.
12. Raubenheimer, B., S. Elgar, and R.T. Guza, Swashzone turbulence, International Workshop on Wave Turbulence, Ithaca, NY, 1999.
13. Raubenheimer, B., R.T. Guza, and S. Elgar, Wave setup in the surf and swash zones, EOS Trans., AGU, 80, 512, 1999.
14. Elgar, S., E. Gallagher, R.T. Guza, and Raubenheimer, B., Onshore sandbar migration, EOS Trans., AGU, 80, 538, 1999.
15. Schmidt, W., B. Woodward, K. Millikan, R.T. Guza, B. Raubenheimer, and S. Elgar, A GPS-tracked surfzone drifter, EOS Trans., AGU, 81, 610, 2000.
16. Puleo, J.A., and K.T. Holland, G. Farquharson, S. Frasier, and B. Raubenheimer, A comparison of remote sensing and in situ measurements of nearshore flows, EOS Trans., 82, 599, 2001.
17. Raubenheimer, B., S. Elgar, R.T. Guza, P.L.-F. Liu, and E.A. Cowen, Observations of swashzone fluid velocities, International Conference on Coastal Engineering, Cardiff, Wales, 2002.

18. I.M. Sou, E.A. Cowen, P.L.-F. Liu, and B. Raubenheimer, An experimental study of swash flows, International Conference on Coastal Engineering, Cardiff, Wales, 2002.
19. Elgar, S., B. Raubenheimer, and T.H.C. Herbers, Bragg reflection of ocean waves from sandbars, EOS Trans., 83, 2002.
20. Maddux, T.B., B. Raubenheimer, S. Elgar, Predictions of cross-shore sediment transport in the inner surf and swash zones, EOS Trans., 83, 2002.
21. Lichten, C., and B. Raubenheimer, Wave-driven setup, presented at the Sigma Xi conference, Montreal, Quebec, 2004.
22. Loncich, K., and B. Raubenheimer, Observations of nearshore sediment transport off the coast of La Jolla, CA, presented at the Sigma Xi conference, Montreal, Quebec, 2004.
23. Hsu, T., and B. Raubenheimer, Sediment transport in the inner surf and swash zones, EOS Trans., AGU, 85(47), Fall Meeting Suppl., Abstract #OS24A-04, 2004.
24. Apotsos, A., and B. Raubenheimer, Shoreline setup observations and predictions, EOS Trans., AGU, 85(47), Fall Meeting Suppl., Abstract #OS11A-0489, 2004.

WHOI Presentations

1. Observations of wave setup, COFDL Seminar, 1999.
2. Nearshore processes, Summer Seminar for Students, 2000.
3. Fluid velocities in the swash, COFDL Seminar, 2000.
4. Where the surf meets the turf, WHOI Associates, 2001.
5. Storm effects on beaches, WHOI Trustees, 2001.
6. Vertical structure of swashzone fluid velocities, COFDL Seminar, 2002.
7. Field observations of swashzone fluid velocities, AOPE Seminar, 2003.
8. Waves on the beach, Research and Engineering Briefs, 2003.
9. Nearshore Canyon Experiment: Update and preliminary observations, COFDL Seminar, 2003.
10. Shoreline change: Days to years, WHOI Trustees, 2004.
11. Surfzone Bathymetric Observations, WHOI Coastal symposium, 2004.
12. Alongshore inhomogeneous bathymetric change during the Nearshore Canyon Experiment, COFDL Seminar, 2005.
13. Nearshore sediment transport, Summer Seminar for Students, 2005.

Field Experiments

San Onofre Experiment, Oct 1993, co-chief scientist.

Designed and managed experiment to collect field observations of surfzone waves and wave run-up.

Dozer Duck Experiment, Jun/Sep 1994, participating scientist.

Responsible for deployment and analysis of 8 surfzone pressure sensors during two 1-week long experiments.

Duck94 Experiment, Jul-Nov 1994, participating scientist.

Assisted with deployment and maintenance of pressure sensors, current meters, and sonar altimeters used to study wave transformation across the surfzone.

Pier2 Attenuation Study, Jul 1996, chief scientist.
Designed and managed deployment of 10 pressure sensors in the surfzone to observe attenuation of pressure fluctuations through a sand bed.
Torrey Pines Experiment, Sep-Nov 1996, chief scientist.
Designed and managed swashzone experiment containing 38 pressure sensors and 7 current meters to observe wave run-up, infiltration, and watertable fluctuations.
Pier3 Sensor Study, Nov 1996, chief scientist.
Deployed pressure gages in surfzone to test sensors prior to deployment at the SandyDuck Experiment in July 1997.
SandyDuck Experiment, Jul-Dec 1997, co-chief scientist.
Designed and managed deployment of 11 Paro-scientific pressure gages to investigate wave setup in the surfzone and 2 SonTek current meters to obtain preliminary measurements of swashzone fluid velocities.
Xtree Current Meter Study, Nov 1998, co-chief scientist.
Deployed 6 current meters, 2 sonar altimeters, and a pressure gage to evaluate current meter performance when sensors are intermittently submerged and to study vertical velocities in the surfzone.
SwashX Experiment, Sep-Oct 2000, chief scientist.
Deployed 12 acoustic doppler velocimeters, 8 pressure gages, and a pulse-coherent acoustic doppler profiler to investigate the horizontal and vertical structure of fluid velocities in the surf and swashzones.
Truro Sandbar Study, Jul 2000, Aug-Nov 2001, Jun 2002, co-chief scientist.
Surveyed bathymetry along 8 km of coastline and measured pressure, fluid velocity, suspended sediment concentration, and water density to investigate the processes important to the development, maintenance, and destruction of the multiple sandbars near Truro, MA.
Swashzone Laboratory Experiments, Mar 2001-2004, co-chief scientist.
Using particle image velocimetry to investigate turbulent production and dissipation in the inner surf and swash zones, including the cross-shore variation of the ratio of breaking-wave to shear production.
NCEX Experiment, Sep-Dec 2003, co-chief scientist.
Deployed 25 colocated acoustic doppler velocimeters and pressure gages along 2 km of coastline between 3.3 and 1.0-m water depths to study the two-dimensional horizontal structure of the wave-driven setup onshore of the Scripps submarine canyon
SwashX II, Oct-Nov 2003, chief scientist.
Deployed 4 internally-recording ADVs and 5 vertical stacks of 3 2-dimensional ADV in the swashzone, and 9 internally-recording pressure-current meter systems at the northern end of the NCEX array to measure alongshore swashzone currents.
HOLEx Experiment, Sep 2005, co-chief scientist
Deployed 16 ADV in and near a 1.5-m deep, 10-m diameter hole dug in the beach at low tide and map the temporal changes in sand elevations to investigate the feedback between the bathymetric evolution.

Educational Activities

Undergraduate Student Fellows

Anil Shukla, 06/00-01/01
Rick Weismiller, 06/01-01/02
Rachel Horwitz, 08/03-03/04
Catie Lichten, 06/04-12/04 Kristie Loncich, 06/04-12/04
Leslie Goemaat, 06/05-present Levi Gorrell, 06/05-present

Graduate Student advisor: Alex Apotsos, 06/02-present
Graduate Student Committee member: Fernanda Hoefel, 08/01 - 09/03
Postdoctoral Researcher advisor: Tim Maddux, 06/02-11/04

Outreach, Lay Publications, and Public Presentations

2 Oceanus articles, 2000, 2005.
5 public presentations 2001-2005
Science Fair project advisor

Ste. Adele High School student, Canada 2004.
Bonners Ferry Middle School students, Idaho, 2005.

Professional Organizations

American Geophysical Union
Association for Women in Science

Professional Society Activities

Referee, J. Geophysical Research, Continental Shelf Research, Coastal Engineering, Ocean Engineering, Marine Geology, Advances in Water Resources, Water Resources Research, J. Atmos. and Oceanic Tech., Delaware Sea Grant, Hawaii Sea Grant, National Science Foundation
Member, ONR Nearshore Field Research Steering Committee, 1999--2000
Convener, Nearshore Processes, Fall 2000 AGU meeting

WHOI Community Service

Member Mentoring Committee, 2000
Editor of Handbook For Junior Scientific Staff, May 2001
Member Coastal Institute Advisory Committee, Mar 2002 - present
Fye student paper award committee, 2005

Supervision

Lynn Yarmey, Res. Asst. I, June - Nov 2000
Anil Shukla, Lab. Asst. II, June - Nov 2000
Rick Weismiller, Res. Asst. I, June 2001 - Dec 2001
Peter Shultz, Res. Assoc. I, June 2001 - present

Collaborators

Q. Chen (U. South Alabama), E.A. Cowen (Cornell U.), S.Elgar (WHOI), E. Gallagher (Franklin & Marshall), R.T. Guza (SIO), T.H.C. Herbers (NPS), R. Holman (Oregon State U.), S. Lentz (WHOI), P.L.-F. Liu (Cornell U.), G. Masselink (U. Plymouth), W.C. O'Reilly (SIO), A. Pedrozo-Acuna (U. Plymouth), P. Russell (U. Plymouth)