

JOAN OLTMAN-SHAY

FORMAL EDUCATION

- Scripps Institution of Oceanography (S.I.O.), La Jolla, CA
 - ◊ 1985 Ph.D. in Oceanography
 - ◊ 1980 M.S. in Applied Ocean Sciences
- University of California, San Diego, CA
 - ◊ 1978 B.A., Major in Applied Physics & Electrical Engineering with Minors in Applied Mathematics and Cultural Anthropology

GRADUATE DEGREE ADVISORS

- M.S. - William Hodgekiss, S.I.O., Marine Physical Laboratory
- Ph.D. - Robert T. Guza, S.I.O., Center for Coastal Studies

EMPLOYMENT HISTORY

- 2002-present: President and Senior Research Scientist, NorthWest Research Associates, Redmond, WA
- 2001-2002: Vice President and Senior Research Scientist, NorthWest Research Associates
- 1993-2001: Senior Research Scientist, NorthWest Research Associates
- 1991-1993: Lecturer, University of Washington, School of Oceanography
- 1991-1993: Senior Research Scientist, Applied Physics Division, QUEST Integrated, Inc. (formerly Flow Research, Inc.), Kent, WA
- 1990-1991: Research Scientist, Flow Research, Inc., Kent, WA
- 1986-1990: Assistant Professor of Research, College of Oceanography, Dept. of Geology, Oregon State University, Corvallis, OR

PROFESSIONAL AFFILIATIONS

- 1991-2012: Affiliate Assoc. Professor, College of Oceanography, University of Washington, Seattle, WA
- 1990 - 1995: Affiliate Assistant Professor, College of Oceanography, Dept. of Geology, Oregon State University, Corvallis, OR
- Since 2003: Member, Geological Society of America
- Since 1990: Member, American Meteorological Society
- Since 1989: Member, The Oceanography Society
- Since 1984: Member, American Geophysical Union
- Since 1977: Member, Phi Beta Kappa

PROFESSIONAL SERVICE

2007-2016: Member, NSF Science Technology Centers, Center for Coastal Margin Observations and Prediction, External Advisory Board

2008-2016: Member, Lower Columbia River Solutions Group, Science Advisory Team

2008-2016: Member, Partner's Group, SW Washington Littoral Drift Restoration Project

2009-2016: Northwest Association of Networked Ocean Observing Systems (NANOOS), Governing Council

1996-2010: Editorial Advisory Board, Elsevier Science Publications

2006-2009: Member, Committee on the Review of the Louisiana Coastal Protection and Restoration (LACPR) Program, National Research Council, Water Science and Technology Board, The National Academies

2001-2008: Member, Coastal Engineering Research Board (CERB), United States Army Corps of Engineers (USACE)

2004-2006: Member, Ocean Studies Board (OSB), National Research Council, The National Academies

1993-2006: Editor (U.S.), Nearshore and Coastal Oceanography, Pergamon Press, United Kingdom

2002-2003: Member, Enabling Ocean Research in the 21st Century – Implementation of a Network of Ocean Observatories, Committee on the Implementation of a Seafloor Observatory Network for Oceanographic Research, National Research Council, Ocean Studies Board, The National Academies

2002: Participant in the Ocean.US (NOPP) Workshop on “An U.S. Integrated Ocean Observing System”

1998-99: Chairperson, Committee to Review USGS Coastal and Marine Geology Program, National Research Council, Ocean Studies Board, The National Academies

1997: Member, Steering Committee for the Symposium on Oceanography for Naval Special Warfare, Ocean Studies Board, National Research Council, The National Academies

1992-1997: Associate Editor, Journal of Geophysical Research - Oceans, United States

1995: Member, Naval Meteorological and Oceanography Command panel on present coastal and littoral ocean prediction capabilities

1994: Member, Committee on High Priority Science to Meet National Coastal Needs, National Research Council, Ocean Studies Board, National Academies

1989: Chair, American Geophysical Union Special Session: Nearshore Processes

ACADEMIC COMMITTEES

- 3 - Doctoral, Oregon State University, College of Oceanography
- 3 - Doctoral, University of Washington, College of Oceanography
- 1 - Masters, Oregon State University, College of Oceanography
- 2 - Masters, University of Washington, College of Oceanography
- Computer Facilities, Oregon State University, College of Oceanography
- Academic Faculty Senate, Oregon State University, College of Oceanography

ACADEMIC COURSE INSTRUCTION

- Intro. Phys. Oceanogr.: Fluid Dynamics and Waves - undergraduate/senior level, University of Washington
- Waves and Beaches - general/undergraduate level, Oregon State University
- Time Series Data Analysis for Physical Oceanographers - graduate level, Oregon State University

PUBLICATIONS

- Splinter, Kristen D., M.V.G. Gonzalez, J.Oltman-Shay, J.Rutten, R.A. Holman, 2018, "Observations and modelling of shoreline and multiple sandbar behavior on a high-energy meso-tidal beach," *Continental Shelf Research*, 159, 33-45.
- Gonzalez, Maria V.G., Cox, R., Oltman-Shay, J., Splinter, K.D., 2016, "Observations and Modelling of Sandbar Response on a High-Energy Beach," Ninth International Conference on Coastal and Port Engineering in Developing Countries, IX PIANC-COPEDEC, Rio de Janeiro, Brasil.
- Splinter, Kristen D., I.L. Turner, M.A. Davidson, P. Barnard, B.Castelle, and J. Oltman-Shay, 2014, "A generalized equilibrium model for predicting daily to interannual shoreline response," *Journ of Geophysical Research: Earth Surface*, vol. 119, issue 9, pgs. 1936-1958.
- Oltman-Shay et al., 2004-2014 "Argus Beach Monitoring at the Mouth of the Columbia River – Towards Building a Conceptual Model of the Sediment Processes on Benson Beach," USACE Portland District, Technical Reports 1-16.
- Detrick, Robert S., A.B. Baggeroer, E.F. Delong, F.K. Duennebieer, A.E. Gargett, G.R. Heath, J.J. Hyon, T.C.Johnson, D.L.Michel, J. Oltman-Shay, S. Pouliquen, O.M.E. Schofield, R.A. Weller, 2003, "Enabling Ocean Research in the 21st Century: Implementation of a Network of Ocean Observatories," National Research Council, National Academy Press.
- Ogston, A., J. Oltman-Shay, R. Sternberg, 2003, "Nearshore Sediment Suspension and Flux in Response to Low-Infragravity Frequency and Episodic Processes," Coastal Sediments Conference.
- Putrevu, U., J.R. Booker, J. Oltman-Shay, M. Pruis, 2003, "Inverting edge-wave measurements to determine nearshore bathymetry and longshore currents," *Journ. of Atmos. and Oceanic Technology*.
- Oltman-Shay, Joan, K. Hathaway, W. Curtis, and R.A. Holman, 2002, "Autogeom: An analysis tool to help automate rectification of oblique video images," USACE Tech. Report CHL-02-.
- Oltman-Shay et al., 2001, "A Beach Probing System: Vol. 1-6," NWRA-CR00-R222.
- Boss, Ed, and J. Oltman-Shay, December 2000, "An Autonomous Phase-Array for Wave and Current Measurements in the Nearshore of an Open-Coast Beach," *Sea Technology*.
- Haller, M.C., U. Putrevu, J. Oltman-Shay, R.A. Dalrymple, 1999, "Wave Group Forcing of Low Frequency Surf Zone Motion," *Coastal Engineering Journal*, vol. 41, no.2.
- Oltman-Shay, J., J. Coleman, A. Green, S. Humphris, C. Mason, N. Opdyke, N. Rabalais, N. Tyler, D. Walker, 1999, "Science for Decisionmaking: Coastal and Marine Geology at the U.S. Geological Survey," National Research Council, National Academy Press.
- Oltman-Shay, Joan, October 1999, "Call for a Strong Coastal and Marine Geology Program," *Soapbox*, Sea Technology.
- Haller, M.C., U. Putrevu, J. Oltman-Shay, R.A. Dalrymple, 1998, "Low Frequency Surf Zone Response to Wave Groups," ICCE, Denmark.
- Hathaway, K., J. Oltman-Shay, P. Howd, R.A. Holman, 1998, "Infragravity Waves in the Nearshore Zone," USACE Tech. Report CHL-98-30.
- Oltman-Shay, J., F. Smith, J. Secan, P. Ruggiero, M. Pruis, U. Putrevu, G. Kaminsky, M. Horgon, D. Echert, A. Cookson, J. Cote, E. Boss, R. Bussey, 1998, "Infragravity-Frequency-Band Waves and Currents on a Washington Coast Beach," Abstract OS12F-09, *Trans. Amer. Geophys. Union*, p. F446.
- Putrevu, U., J. Oltman-Shay, M. Pruis, and J. Booker, 1998, Deducing Beach Topography From Edge Wave Measurements, Abstract OS12F-07, *Trans. Amer. Geophys. Union*, p. F445.
- Putrevu, U., J.T. Kirby, J. Oltman-Shay, H.T. Ozkan-Haller, 1998, "On the Viscous Destabilization of Longshore Currents," ICCE, Denmark.

- Nowell, Arthur, R. Holman, B.G. Mitchell, J. Oltman-Shay, M.G. Briscoe, E.C. Whitman, D. Walker, S.A. Nelson, J.Swerda, 1997, "Oceanography and Naval Special Warfare: Opportunities and Challenges," National Research Council, National Academy Press.
- Putrevu, U., and J. Oltman-Shay, 1997. "Influence Functions for Edge Wave Propagation Over a Nonplanar Bottom Bathymetry," *Phys. of Fluids*, v. 10 (1), pp. 330-332.
- Oltman-Shay, Putrevu, Kirby and Wei: AGU 1995, "Radiation Stresses in the Boussinesq Approximation. Part 2: Highly Nonlinear Waves," *Trans. Amer. Geophys. Union*.
- Putrevu, Oltman-Shay, Kirby and Wei: AGU 1995, "Radiation Stresses in the Boussinesq Approximation. Part 1: Intermediate Depth," *Trans. Amer. Geophys. Union*.
- Putrevu, U., J. Oltman-Shay, and I.A. Svendsen, 1995, "Effect of alongshore nonuniformities on longshore current predictions," *Journ. Geophys. Res.*, v. 100, pp. 16119-16130.
- Putrevu, Oltman-Shay and Svendsen: AGU 1994, "Predictions of Alongshore Nonuniform Longshore Currents," *Trans. Amer. Geophys. Union Abstract O12F-08*.
- Boesch, D.F., M.G. Altalo, D. L. Correll, M.J. Dagg, J.M. Dean, J.W. Farrington, E.D. Goldberg, R.W. Howarth, M.N. Josselyn, W.M. Kemp, J. Oltman-Shay, T.C. Royer, E.R. Urban Jr., L. Mallory, C.Taylor, 1994, "Priorities for Coastal Ecosystem Science," National Research Council, National Academy Press.
- Hamilton, Dalrymple, Oltman-Shay, and Putrevu: AGU 94, "Wave group forcing of shear instabilities," *Trans. Amer. Geophys. Union*.
- Agrawal, Y., J.H. Trowbridge, H.C. Pottsmith and J. Oltman-Shay, 1993, "Velocity, Concentration and Flux of Sediments in a Coastal Bottom Boundary Layer with a Laser Doppler Velocimeter," *Oceans '93 Conference*, v. 3, pp. 137-142.
- Agrawal, Yogesh, Paul Hwang, and Joan Oltman-Shay, 1993, "Appendix K: Laser Doppler Velocimeter (LDV) and Concentration Data," from "SUPERTANK Data Collection Project," USACE Tech. Report CERC-93.
- Long, Charles E., and J.M. Oltman-Shay, 1993, "Preliminary Estimates of Frequency-Direction Spectra Derived from the SAMSON Pressure Gage Array November 1990 to May 1991," USACE Tech. Report CERC-93-3.
- Oltman-Shay, J.M. and P.A. Howd, 1993, "Edge Waves in Nonplanar Bathymetry and Alongshore Currents: A Model and Data Comparison," *J. Geophys. Res.*, v. 98, C2, pp. 2495-2507.
- Agrawal, Y., P. Hwang, J.M. Oltman-Shay, 1992, "Towards Measuring Sediment Flux on the Seafloor with a Laser Doppler Velocimeter," *Abstract 012C-12, Trans. Amer. Geophys. Union*, 73(43), p. 257.
- Church, John, E.B. Thornton, J. Oltman-Shay, 1992, "Mixing by Shear Instabilities of the Longshore Current," 22nd ICCE Conference.
- Dodd, N., J.M. Oltman-Shay and E.B. Thornton, 1992, "Shear Instabilities in the Longshore Current: A Comparison of Observation and Theory," *J. Phys. Oceanogr.*, v. 22, no. 1, pp.62-82.
- Elgar, Steve, T.H.C. Herbers, M. Okihiro, J. Oltman-Shay, and R.T. Guza, 1992, "Observations of Infragravity Waves," *J. Geophys. Res.*, v. 92, no. C10, pp. 15,573-15,578.
- Howd, P.A., R.A. Holman, J.M. Oltman-Shay, 1992, "Amplitude Estimates of Low Mode Edge Waves," *Abstract 011B-4, Trans. Amer. Geophys. Union*, 73(43), p. 246.
- Oltman-Shay, Joan, P.A. Howd, R.A. Holman, R.T. Guza, E.B. Thornton, 1992, "Infragravity Waves Across the Nearshore," *Abstract 011B-3, Trans. Amer. Geophys. Union*, 73(43), p. 246.
- Guza, Bob, T. Herbers, D. Jacobs, J. Nabelek, T. Nye, J. Oltman-Shay, J. Orcutt, F. Vernon, S. Webb, June 1991, "Sources of Ambient Micro-Seismic Ocean Noise," La Jolla Workshop.
- Howd, P.A., A.J. Bowen, R.A. Holman and J.M. Oltman-Shay, 1991, "Infragravity Waves, Longshore Currents, and Linear Sand Bar Formation," *Coastal Sediments 91*.

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- Long, Charles E., and J.M. Oltman-Shay, 1991, "Directional Characteristics of Waves in Shallow Water," USACE Tech. Report CERC-91-1.
- Oltman-Shay, J.M., 1991, "A Climatological Study of Infragravity Waves in 8 meters Depth," Abstract 031E-3, *Trans. Amer. Geophys. Union*, 72(44), p. 253.
- Dodd, N., J.M. Oltman-Shay and E.B. Thornton, 1990, "Instabilities in the Longshore Current," 22nd ICCE Conference.
- Holman, R.A., P.A. Howd, Joan Oltman-Shay and Paul Komar, 1990, "Observations of the Swash Expression of Far Infragravity Wave Motions," *Proc 22nd ICCE Conference*, pp. 1242-1253.
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- Dodd, N., and J.M. Oltman-Shay, 1989, "Shear Waves in the Nearshore: A Comparison of Theory and Observation," Abstract 012A-3, *Trans. Amer. Geophys. Union*, 70(43) p. 1132.
- Elgar, S., J.M. Oltman-Shay, and P.A. Howd, 1989, "Observations of Infragravity-Frequency Long Waves; I. Coupling to Wind Waves," Abstract 012A-7, *Trans. Amer. Geophys. Union*, 70(43), p. 1133.
- Holman, R.A., P.A. Howd, J.M. Oltman-Shay, 1989, "Comparison of Run-up and Velocity-based Estimates of the Nearshore Edge Wave Field," Abstract 012A-10, *Trans. Amer. Geophys. Union*, 70(43), p. 1133.
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- Long, C.E., and J.M. Oltman-Shay, 1989, "Nearshore Wind Wave Directional Characteristics at an East Coast Site," Abstract 012A-14, *Trans. Amer. Geophys. Union*, 70(43), p. 1133.
- Oltman-Shay, J.M., and K.K. Hathaway, 1989, "Infragravity Energy and Its Implications in Nearshore Sediment Transport and Sand Bar Dynamics," *Tech. Report CERC-89-8*.
- Oltman-Shay, J.M., P.A. Howd and W.A. Birkemeier, 1989, "Shear Instabilities of the Mean Longshore Current: Field Observations," *J. Geophys. Res.*, v. 94, (C12), pp. 18,031-18,042.
- Oltman-Shay, J.M., S. Elgar, and P.A. Howd, 1989, "Observations of Infragravity-Frequency Long Waves; II. Comparisons with a 2-D Wave-Group Generation Model," Abstract 012A-8, *Trans. Amer. Geophys. Union*, 70(43), p.1133.
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- Oltman-Shay, J.M., P.A. Howd and W.A. Birkemeier, 1987, "Investigation of Alongshore Spatial Variability in the Infragravity Wave Field During SUPERDUCK," Abstract 021A-11, *Trans. Amer. Geophys. Union*, p. 1308.
- Oltman-Shay, Joan, and R.T. Guza, 1987, "Infragravity Edge Wave Observations on Two California Beaches," *J. Phys. Oceanogr.*, v. 17(5), pp. 644-663.
- Holman, R.A., and J.M. Oltman-Shay, 1986, "Longshore Structure of Incident Wave Groups," Abstract 022B-10, *Trans. Amer. Geophys. Union*, p. 1026.

- Oltman-Shay, J.M., and R.T. Guza, 1985, "Infragravity Edge Wave Generation," Abstract 022B-11, Trans. Amer. Geophys. Union, p. 1026.
- Oltman-Shay, J.M., and R.T. Guza, 1984, "Infragravity Edge Wave Observations on Two California Beaches," Abstract 031B, Trans. Amer. Geophys. Union, p. 954.
- Oltman-Shay, Joan, and R.T. Guza, 1984, "A Data Adaptive Ocean Wave Directional-Spectrum Estimator for Pitch and Roll Type Measurements," J. Phys. Oceanogr., v. 14 (11), pp. 1800-1810.
- Oltman-Shay, J.M. and R.T. Guza, 1983, "Infragravity Edge Wave Energy on Two Beaches," Abstract, Trans. Amer. Geophys. Union.