

Eric D. Thosteson, Ph.D., P.E.

Office

Ocean Research & Conservation Association
1420 Seaway Drive, 2nd Floor
Fort Pierce, FL 34949

Licensed Professional Engineer (#56996, Florida), discipline: Electronics Engineering, U.S. citizen.

Education

- Ph.D. Coastal Engineering, University of Florida, December, 1997.
 - Dissertation: Development and field application of a littoral processes monitoring system for examination of the relevant time scales of sediment suspension processes.
- M.S. Coastal Engineering, University of Florida, May, 1995.
 - Thesis: Nearbed Sediment Suspension in the Offshore Zone of a Large Scale Wave Tank.
- B.S. Engineering Physics, West Virginia Wesleyan College, May, 1990.

Employment

- *Principal Engineer*, Ocean Research and Conservation Association, Fort Pierce, FL, Fort Pierce, FL (1/07 – present).
Project Manager for the Kilroy Sensor Network development, principal developer of the Kilroy Bathypotometer.
- *Adjunct Professor in Ocean Engineering and Oceanography*, Department of Marine and Environmental Systems, Florida Institute of Technology, Melbourne, FL (1/07 – present).
- *Assistant Professor in Ocean Engineering and Oceanography (joint appointment)*, Department of Marine and Environmental Systems, Florida Institute of Technology, Melbourne, FL (1/99 - present). Courses offered included the following:
OCE 5570, OCN 5403, OCE 3521 Hydromechanics/Water Wave Theory; OCE 5525, OCE 4523 Coastal Processes & Engineering; OCE 5586 Ocean Engineering Data Analysis; OCE 4531 Instrumentation Design and Measurement Analysis; OCE 4545 Hydroacoustics; OCE 4541 Ocean Engineering Design; OCE 4911, OCN 4911 Marine Field Projects; OCE 3522 Water Wave Laboratory; OCE 1001 Introduction to Ocean Engineering
Served or presently serving on 40 Master committees, 7 Ph.D. committees, ad-hoc committee to review graduate research misconduct, COE alumni hall of fame committee, and steering committee for the ocean research institute.
- *Postdoctoral Associate*, University of Florida, Gainesville, FL (1/98 - 12/98, *ONR funded*).
 - Concentrated on improvements of the analysis of acoustic backscatter measurements for sediment size and concentration evaluation (author of acoustic backscatter analysis software, ABSolution), and for small-scale bedform size estimates.
- *Research Assistant*, University of Florida, Gainesville, FL (8/90-12/97, *ONR funded*).
 - Responsible for design, programming, and successful operation of instrumentation systems using 3-frequency acoustic backscatter (ABS), MTA bedform profilers, and off-the-shelf oceanographic instrumentation for several laboratory and field studies of coastal sediment transport, including the following:
SandyDuck field experiment at USACE Field Research Facility (FRF), Duck, NC, 1997.
UF sediment transport studies at USACE FRF, Duck, NC, 1996, 1995.
DUCK94 field experiment at USACE FRF, Duck, NC, 1994.
Sediment transport study at Vilano Beach, FL, 1992.
Supertank data collection project, Oregon State University, 1991.

Funded Research & Activities

- *Harbor Branch Oceanographic Institution*, Additions to Analysis, Sensor Suite, and Autonomous Bathyphotometer Design, 1/1/06 – 5/1/06.
- *Harbor Branch Oceanographic Institution*, Analysis of Bioluminescence Excitation Response as Measured by HIDEX 3, 11/1/04 – 12/31/05.
- *Hydrosail, Inc.*, Compensating for Mast Rotation in Navigation Instrument Data Stream, 8/28/03 – 8/28/04.
- *Northrop Grumman, Inc.*, Shallow water research: wave tank experiments, design & implementation of active wave generation/absorption system in support of LIDAR system testing, 6/02 – 6/03.
- *Florida Solar Energy Center (FSEC)*, Optimizing solar energy utilization through smart systems: automated water tank and marine structure maintenance, 7/01 – 7/02.
- *Applied Technology & Management, Inc.*, software for automation of directional wave analysis, 3/01 – 2/02.
- *Hydrosail, Inc.*, Electronic Altitude Control System (EACS) for sailing hydrofoils, 2/01 – 2/03.
- *Florida Institute of Technology*, high-frequency acoustic array development, start-up funding, 1/99

Consulting

- *Hydrosail, Inc.*, flight control system design & development for hydrofoil sailboats, 2/00 – 12/00.
- *Hanes & Associates*, Dan Hanes - wave data analysis, 4/96.
- *Humiston & Moore Engineering*, Darwin Stubbs - computer systems upgrade, 9/96.
- *Hanes & Associates*, Dan Hanes - embedded system data acquisition software development, 12/91.

Professional and Community Involvement

Reviewer for Marine Geology, Marine Geodesy, S. Carolina Sea Grant, Marine Environmental Engineering, Journal of Offshore Mechanics and Arctic Engineering, NSF Ocean Sciences

Restarted Student Chapter of The Marine Technology Society/Society of Naval Architects and Marine Engineers (MTS/SNAME), served as Faculty Advisor '01 – '06

Florida Space Alliance: Taught module on Balloon Sensor, Acquisition, and Telemetry System Design for “Discover Science and Engineering” program, 8/04.

Marine Technology Society, member, '01-present

IEEE & Oceanographic Engineering Society, member, '07-present

American Geophysical Union, member '91-'03

Florida Shore and Beach Preservation Association, member since '00.

Brevard County Beach Erosion Prevention Committee, County Commission Appointee '99, '00.

Organized and arranged speakers for departmental seminar series, '00-'01.

NSF 1999 Summer Internship Program, served as mentor for REU project, 6 - 7/01.

Regional Science Fair judge (junior high school level), '00, '01.

Mentor of local elementary school students in various science fairs, '99 – '02

Licensed Amateur Radio Operator, Technician's License, KI4GGW.

Publications, Presentations, and Technical Reports

Thosteson, E.D. and D.M. Hanes, “A simplified method for determining sediment size and concentration from multiple frequency acoustic backscatter measurements”, *J. Acoust. Soc. Am.*, v. 104, No 2, p 820, 1998.

Hanes, D.M. & E.D. Thosteson, “Field Observations of Nearshore Bedforms and Suspended Sediment” (in Russian), The Shores of Seas, Natural, and Man-Made Lakes, A. Khabidov, A. Zhindarev, D.M. Hanes, et al., Co-editors, Siberian Branch of the Russian Academy of Sciences Publishers, Novosibirsk, p 271. (in Russian) , 1999, pp. 172-182.

Thosteson, E.D., E.A. Widder, C.A. Cimaglia, J.W. Taylor, B.C. Burns, K.J. Paglen, "New Technology for Ecosystem-Based Management: Marine Monitoring with the ORCA Kilroy Network", *Oceans'09 IEEE Bremen*, Bremen, Germany, May 11-14, 2009.

McQuillen, H. and E.D. Thosteson, “The Effects of Converting Surface Water to Groundwater on the Stability of the Beach Profile”, *FSBPA National Conference on Beach Preservation Technology*, Sarasota, FL, February 1-3, 2006.

Davis, J.W., E.D. Thosteson, E.A. Widder, & C.L. Frey, “Examination of Bioluminescent Excitation Response using Empirical Orthogonal Function Analysis”, *MTS/IEEE Oceans 2005*, Washington, D.C. September 18-23, 2005 – *poster presentation received 3rd place in MTS student poster competition.*

Guardino, D. & E.D. Thosteson, “Design of Wireless Data Acquisition for Field Testing of Hull Models”, *MTS Dynamic Positioning Conference*, Houston, Texas, September, 2004 – *poster presentation received 3rd place in MTS student poster competition.*

Thompson, M. & E.D. Thosteson, “Design and Construction of an Affordable Wave Gauge”, *Meeting of the Florida Academy of Sciences*, Fall, 2003.

Cimaglia, C.A. & E.D. Thosteson, “Design and Testing of an Economical Wave Generation Facility”, *Oceans 2002 MTS/IEEE*, Biloxi, Mississippi, 29-31 October, 2002.

- Hanes, D.M., E.D. Thosteson, Y.S.Chang, C. Conner, and C.E. Vincent, "Field Observations of Small Scale Sedimentation Processes", *Proc. 26th International Conf. On Coastal Engineering*, ASCE, Copenhagen, Denmark, June 1998.
- Hanes, D.M., C.D. Jette, E.D. Thosteson, and C.E. Vincent, "Field observations of nearshore, wave-seabed interactions", *Coastal Dynamics '97*, Plymouth, United Kingdom, 23-27 June, 1997.
- Hanes, D.M., T. Lee, E.D. Thosteson, and R. Thieke, "Small scale sediment dynamics in a large scale wave tank", *Proc. 23rd International Conf. On Coastal Engineering*, ASCE, Venice, Italy, 4-9 October, 1992.
- Thosteson, E.D. and D.M. Hanes, "The time lag between fluid forcing and wave generated sediment suspension", *Transactions, American Geophysical Union*, v 79, No 45, p. F453, 1998.
- Hanes, D.M., V. Alymov, E.D. Thosteson, Y. Chang, C.E. Vincent, "Local Seabed Morphology and Small Scale Sedimentation Processes During SANDYDUCK97", *Transactions, American Geophysical Union*, v. 77, No 46, p F444, 1998.
- Thosteson, E.D. and Hanes, D.M., "Characterization of Relevant Sediment Suspension Time Scales From Acoustic Concentration Profiles", *Transactions, American Geophysical Union*, v 77, No 46, p F420, 1996.
- Hanes, D.M., K.V. Marusin, and E.D. Thosteson, "Concentration and size distribution of suspended sand at DUCK94", *Transactions, American Geophysical Union*, v 76, No 46, p 285, 1995.
- Thosteson, E.D. and Hanes, D.M., "Use of an Acoustic Concentration Profiler for Evaluating Sediment Concentration Models", *Transactions, American Geophysical Union*, v 73, No 43, p 283, 1992.
- Hanes, D.M., T.H. Lee, and E.D. Thosteson, "Intermittent near-bed sediment suspension in the offshore at Supertank", Chap. 10 in Supertank laboratory data collection project, ed: N.C. Kraus and J.M. Smith, US Army Corps of Engineers Technical Report CERC-94-3, p 274, 1994.

Graduate committee participation

M.S. – graduates, committee chair

- Cimaglia, Charles A., Physical Oceanography, "Characterization of a Beach by its Impulse Response," May 2002.
- Mayoral-Medellin, Gabriela, Ocean Engineering, "A System for the Simultaneous Generation and Absorption of Random Waves Given Spectral Characteristics", July 2004.
- Torres-Freyermuth, Alec, Ocean Engineering, "Estimation of Nearshore Bathymetry Using Video Photogrammetry of Waves", July 2004.
- Guardino, Douglas, Ocean Engineering, "Design of Wireless Data Acquisition for Field Testing of Hull Models", December 2004.
- Davis, Jesse, Ocean Engineering, "Numerical Analysis of Bioluminescent Excitation Responses", December 2005.
- Kozak, Aubrey, Ocean Engineering, "Underwater Metal Detection using Video Image Processing Techniques to Determine Location", December 2005.
- McQuillen, Heather, Ocean Engineering, "The Effects of Converting Surface Water into Groundwater on the Stability of the Beach", December 2005.
- Cencer, Mark, Ocean Engineering, "Determining the Sea Keeping Properties of the Littoral Operation Multipurpose Auxiliary Craft – LOMAC", December 2005.
- Dembicki, Mikhail, Ocean Engineering, "Design of an Integrated Ocean Instrument System for Nearshore Coastal Observations", May 2006.
- Sepri, Maila, Ocean Engineering, "Application of wave generator theory to the development of a Wave Energy Converter", December 2008.
- Eickmeier, Justin, Ocean Engineering, "Towards a Multiple Station High Frequency Shallow Water Acoustic Tomography System," May 2009

Ph.D. - graduates

- Kovach, B.S., Ocean Engineering, "Hydrodynamic Performance of Silicone Fouling Release Surfaces", 2002.
- Abualnaja, Yasser, Physical Oceanography, "A New Technique for Estimating the Total Heat Flux over the Persian (Arabian) Gulf and the Gulf of Oman by Using a Statistical Model," May 2004.
- Quinn, Ronan, Ocean Engineering, "Mechanical Properties of Silicone Coatings that Affect Foul Release Properties", 2004.
- Howell, Brian, Ocean Engineering, "Evaluation of Neural Networks for Data Classification, Pattern Recognition, and Navigation in Marine Environments," May 2004.
- Hall, Carlton, Environmental Science, "Parameterization of an Existing Radiative Transfer Model for Remote Sensing Plant Canopies," 2007. May 2007.

M.S. - graduates

- Goshow, Christopher Kent, M.S. Ocean Engineering, "Inlet morphodynamics determined by empirical orthogonal function analysis," December, 1999.

- Friebel, Harry Charles, M.S. Ocean Engineering, "Re-evaluation of wave transmission coefficients for submerged breakwater physical models," December 1999.
- Touzot, Tristan, M.S. Ocean Engineering, "The Development of an Experimental System and Procedure for Testing Ship Models and Ocean Instrumentation in F.I.T. Wave Channel," April 2001.
- Hoeke, Ronald, M.S. Physical Oceanography, "Decadal Time-Scale Inlet Morphodynamics Determined from Remotely Sensed Shoreline Positions," August 2001.
- Mathurin, Wilbur, M.S. Civil Engineering, "Eight Week Strength-Deformation Characteristics of Reclaimed Asphalt Pavements Used as Highway Materials," December 2001.
- Bonet, Javier, M.S. Ocean Engineering, "The Application of the Florida Tech Wave Channel for Testing Ship Models," February 2002.
- Hosein, Sasan Mohamad, M.S. Ocean Engineering, "Investigations for the Remediation of Corrosion in the FIT Wave Tank," August 2002.
- Frey, Lee, M.S. Ocean Engineering, Development of an Autonomous Underwater Vehicle for Sub-Ice Environmental Monitoring in Prudhoe Bay, Alaska," December 2002.
- Cresitello, Donald, Ocean Engineering, "Short-term Shoreline and Volume Changes for the Beaches South of Sebastian Inlet, FL from August 21, 2000 to November 23, 2002," May 2003.
- King, Jerome, Physical Oceanography, "Improvements to the UTC-M Mesoscale Atmospheric Model – FORTRAN 90 Based Parallelization and Parameterization of Land Use Temperatures," August 2003.
- Damon, Marc, "Ocean Wave Spectral Analysis from Pressure Sensor Array and ADCP," December 2003.
- Maglio, Caraggio, Ocean Engineering. "Shore Protection Design Utilizing Wave Rotation," May 2004.
- Basetti, Luce, Oceanography, "Synthetic Image Generation of Shallow Water Using an Iterative, Layered Radiative Transfer Model and a Monte-Carlo Model with Realistic Water Surface Waves.," May 2004.
- Parker, James, Ocean Engineering, "The concept of an integrated ship design environment for the naval architect on the Linux operating system", 2004.
- Pochelon, Patricia, Marine Biology, "Entrainment of Circatidal Activity Rhythms in Oviparous Blue Crabs, *Callinectes Sapidus*"
- Sloan, Nancy J.B., Biological Oceanography, "Burial Tolerances of Reef-Building Sabellariid Worms from the East Coast of Florida", August, 2005
- Morrow, J.P., Ocean Engineering, "Optimizing Wave Attenuation for Marinas", September, 2005.
- Gonzales, Eduardo, Ocean Engineering, "Development of Experimental Techniques and Sea-keeping Tests of Experimental Catamaran Model in Open Water", May 2005.
- Duho, Jean-Claude, Mechanical Engineering, "Application of Remote Sensing Techniques in Underwater Optical Imaging Using Short Pulse Lasers", December 2004.
- Hearin, John, Ocean Engineering, "Preliminary Design of an Artificial Surfing Reef for Cocoa Beach, Florida". December 2005.
- Keane, D. Brendan, Ocean Engineering. "Design of a Hull Resistance Sensor for Field Testing of the Littoral Operating Multipurpose Auxiliary Craft Model". December 2006.

M.S. – graduates, non-thesis option

- Emerle, Azure Dee, M.S. Ocean Engineering, 2000.
- Roberts, Stacey, M.S. Ocean Engineering, 2000.
- Vaughn, Kathy, M.S. Ocean Engineering, 2000.
- Gonsalves, Michael, M.S. Mathematics, 2000.
- Woods, Maureen, Ocean Engineering, 2002.
- Nakamura, Hiromi, Ocean Engineering, 2002.
- Nathan A. Howells, Mechanical Engineering, 2005.
- Saran, Nakul, Ocean Engineering, 2006.

Ph.D. - active

- Rosario, Joanne, Ocean Engineering
- Hearin, John, Ocean Engineering