Peter A. Traykovski

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Applied Ocean Physics and Engineering Department
Woods Hole Oceanographic Institution
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Education:

BSe (Mechanical Engineering) Duke University, Durham, NC, 1988
MIT/WHOI, (Applied Ocean Sciences and Engineering), Woods Hole, MA,
MS & Ocean Engineer, Horizontal Directional Spectrum Estimation of the Heard Island Transmissions,
Advisor: Arthur Baggeroer, 1994
Ph.D, Observations and Modeling of Sand Transport in a Wave Dominated Environment
Advisors: James F. Lynch and James D. Irish, June 1998.

Employment:

Product Development Engineer, Ventline mfg., Port Elizabeth, South Africa, 1989-1991
Graduate Research Assistant, MIT/WHOI Joint Program, 1992 to June 1998
Post Doctoral Investigator, Applied Ocean Physics and Engineering Department, Woods Hole Oceanographic Institution, June 1998 to May 2000
Assistant Scientist, Applied Ocean Physics and Engineering Department, Woods Hole Oceanographic Institution, May 2000 to April 2004
Associate Scientist, Applied Ocean Physics and Engineering Department, Woods Hole Oceanographic Institution, May 2004 to present
Scientific Consulting, Sequoia Scientific, Mercer Island, WA. Jan. 1999 to April 2000
Expert Witness, Palmer Biezup & Henderson, May 2006 to Dec. 2006

Professional Societies:

Member, Acoustical Society of America
Member, American Geophysical Union

Research Interests:

Sediment Transport, Coastal Processes, Acoustical Oceanography.

Students Advised

Colleen Maloney WHOI Joint Program, AOP&E, MS, 2006, (Primary Advisor)
Michael Squibb, WHOI Summer Student Fellow, 2006 , (Primary Advisor)
Linda Kalnejais, WHOI Joint Program MC&G, PhD 2005, (Committee Member)
Brendan Gotowka, WHOI Joint Program . AOP&E, MS, 2005, (Primary Advisor)
Malcolm Scully, 2001 VIMS MS (Masters Committee)

Awards:

Office of Naval Research Graduate Fellow, 1992-1994
Office of Naval Research, Young Investigator Award, 2001-2004
Presidential Early Career Award for Scientists and Engineers (PECASE) 2001
Estuarine Research Foundation Pritchard Award for the Geyer, W.R., J.D Woodruff, P. Traykovski, Sediment Transport and Trapping in the Hudson River Paper, 2003

Refereed Journal Articles:

Traykovski, P. (1996), Travel-time perturbations due to internal waves: Equivalence of modal and ray solutions, *Journal of the Acoustical Society of America*, *99*, 822-830.

Lynch, J. F., J. D. Irish, T. F. Gross, P. L. Wiberg, A. E. Newhall, P. A. Traykovski, and J. D. Warren (1997), Acoustic measurements of the spatial and temporal structure of the near-bottom boundary layer in the 1990-1991 STRESS experiment, *Continental Shelf Research*, *17*, 1271-1295.

Cacchione, D. A., P. L. Wiberg, J. Lynch, J. Irish, and P. Traykovski (1999), Estimates of suspended-sediment flux and bedform activity on the inner portion of the Eel continental shelf, *Marine Geology*, *154*, 83-97.

Irish, J. D., J. F. Lynch, P. A. Traykovski, A. E. Newhall, K. Prada, and A. E. Hay (1999), A self-contained sector-scanning sonar for bottom roughness observations as part of sediment transport studies, *Journal of Atmospheric and Oceanic Technology*, *16*, 1830-1841.

Traykovski, P., R. J. Latter, and J. D. Irish (1999), A laboratory evaluation of the laser in situ scattering and transmissometery instrument using natural sediments, *Marine Geology*, *159*, 355-367.

Geyer, W. R., P. Hill, T. Milligan, and P. Traykovski (2000), The structure of the Eel River plume during floods, *Continental Shelf Research*, *20*, 2067-2093.

Traykovski, P., W. R. Geyer, J. D. Irish, and J. F. Lynch (2000), The role of wave-induced density-driven fluid mud flows for cross-shelf transport on the Eel River continental shelf, *Continental Shelf Research*, *20*, 2113-2140.

Agrawal, Y. C., and P. Traykovski (2001), Particles in the bottom boundary layer: Concentration and size dynamics through events, *Journal of Geophysical Research-Oceans*, *106*, 9533-9542.

Geyer, W. R., J. D. Woodruff, and P. Traykovski (2001), Sediment transport and trapping in the Hudson River estuary, *Estuaries*, *24*, 670-679.

Irish, J. D., A. E. Hay, P. Traykovski, A. Newhall, R. Craig, and W. M. Paul (2002), On attaching acoustic imaging instrumentation to the LEO-15 observatory for sediment transport and bottom boundary layer studies, *Ieee Journal of Oceanic Engineering*, *27*, 254-266.

Sisson, J. D., J. Shimeta, C. A. Zimmer, and P. Traykovski (2002), Mapping epibenthic assemblages and their relations to sedimentary features in shallow-water, high-energy environments, *Continental Shelf Research*, *22*, 565-583.

Harris, C. K., B. Butman, and P. Traykovski (2003), Winter-time circulation and sediment transport in the Hudson Shelf Valley, *Continental Shelf Research*, *23*, 801-820.

Fan, S. J., D. J. P. Swift, P. Traykovski, S. Bentley, J. C. Borgeld, C. W. Reed, and A. W. Niedoroda (2004), River flooding, storm resuspension, and event stratigraphy on the northern California shelf: observations compared with simulations, *Marine Geology*, *210*, 17-41.

Sherwood, C.R., Book, J.W., Carniel, S., Cavalieri, L., Chiggiato, J., Das, H., Doyle, J.D., Harris, C.K., Neidoroda, A.R., Perkins, H., Poulain, P.M., Pullen, J., Reed, C.W., Russo, A., Sclavo, M., Signell, R.P., Traykovski, P., and Warner, J.C. (2004), Sediment dynamics in the Adriatic Sea investigated with coupled models, Oceanography, Euro STRATAform, v. 17, no. 4, p. 58-69.

Traykovski, P., R. Geyer, and C. Sommerfield (2004), Rapid sediment deposition and fine-scale strata formation in the Hudson estuary, *Journal of Geophysical Research-Earth Surface*, *109*.

Goff, J. A., L. A. Mayer, P. Traykovski, I. Buynevich, R. Wilkens, R. Raymond, G. Glang, R. L. Evans, H. Olson, and C. Jenkins (2005), Detailed investigation of sorted bedforms, or rippled scour depressions, within the Martha's Vineyard Coastal Observatory, Massachusetts, *Continental Shelf Research*, *25*, 461-484.

Harris, C. K., P. A. Traykovski, and W. R. Geyer (2005), Flood dispersal and deposition by near-bed gravitational sediment flows and oceanographic transport: A numerical modeling study of the Eel River shelf, northern California, *Journal of Geophysical Research-Oceans*, *110*.

Hsu, T. J., P. Traykovski, and G. C. Kineke (2007), On modeling boundary layer and gravity-driven fluid mud transport, *Journal of Geophysical Research-Oceans*, *112*.

Traykovski, P., P. L. Wiberg, and W. R. Geyer (2007), Observations and modeling of wave-supported sediment gravity flows on the Po prodelta and comparison to prior observations from the Eel shelf, *Continental Shelf Research*, *27*, 375-399.

Traykovski, P. (2007), Observations of wave orbital scale ripples and a nonequilibrium time-dependent model, *J. Geophys. Res.*, 112.

Hill, P. S., J. M. Fox, J. S. Crockett, K. J. Curran, C. T. Friedrichs, W. R. Geyer, T. G. Milligan, A. S. Ogston, P. Puig, M. E. Scully, P. A. Traykovski, and R. A. Wheatcroft (2007), Sediment delivery to the seabed on continental margins. *Continental Margin Sedimentation: Transport to Sequence*, In: Nittrouer, C.A., Austin,

J.A., Jr., Field, M.E., Kravitz, J.H., Syvitski, J.P.M., Wiberg, P.L. (Eds.), IAS Special Publication 37, Continental-margin sedimentation: From sediment transport to sequence stratigraphy, Blackwell Publishing Ltd, Oxford.

Parsons, J. D., Friedrichs, C. T., Mohrig, D., Traykovski, P., Imran, J., Syvitski, J. P. M., Parker, G., Puig, P., Buttles, J. and Garcia, M. H. (2007), The mechanics of marine sediment gravity flows. In: *Continental Margin Sedimentation: Transport to Sequence*, edited by C. A. Nittrouer et al., in IAS Special Publication 37, Continental-margin sedimentation: From sediment transport to sequence stratigraphy, Blackwell Publishing Ltd, Oxford.

Mayer, L. A., R. Raymond, G. Glang, M. D. Richardson, P. Traykovski, and A. C. Trembanis (2007), High-Resolution Mapping of Mines and Ripples at the Martha's Vineyard Coastal Observatory, *Oceanic Engineering, IEEE Journal of, 32*, 133-149.

Traykovski, P., M. D. Richardson, L. A. Mayer, and J. D. Irish (2007), Mine Burial Experiments at the Martha's Vineyard Coastal Observatory, *Oceanic Engineering, IEEE Journal of, 32*, 150-166.

Traykovski, P., P. L. Wiberg, and W. R. Geyer (2007), Observations and modeling of wave-supported sediment gravity flows on the Po prodelta and comparison to prior observations from the Eel shelf, *Continental Shelf Research, 27*, 375-399.

Trembanis, A. C., C. T. Friedrichs, M. D. Richardson, P. Traykovski, P. A. Howd, P. A. Elmore, and T. F. Wever (2007), Predicting Seabed Burial of Cylinders by Wave-Induced Scour: Application to the Sandy Inner Shelf Off Florida and Massachusetts, *Oceanic Engineering, IEEE Journal of, 32*, 167-183.

Conference Proceedings:

Traykovski, P., J. D. Irish, and J. F. Lynch (1998), Motivations for using a pulsed full spectrum Doppler to measure bedload and near-bottom suspended sediment transport, *Jour. Acoust. Soc. of Am*., Vol.103 (5), p. 2866.

Richardson, M.D. and P. Traykovski (2002), Real-time observations of mine burial at the Martha's Vineyard Coastal Observatory. 11 pps., *Proceedings of the 5th International Symposium on Technology and the Mine Problem*. Naval Postgraduate School, Monterey California, 22-25 May 2002.

Traykovski, P., and J.A. Goff (2003), Observations and Modeling of large and small scale bedforms at the Martha's Vineyard Coastal Observatory, Coastal Sediments '03, *Proceeding of the 5th International Symposium on Coastal Engineering and Science of Coastal Sediment Processes*

Traykovski P, M.D. Richardson, J.A. Goff, L.A. Mayer, R. Wilkens, B. Gotowoka (2004), Mine Burial Experiments at the Martha's Vineyard Coastal Observatory, *Proceedings of the 6th International Symposium on Technology and the Mine Problem*. Naval Postgraduate School, Monterey, California, 9-13 May 2004, 7 pps.

Invited Presentations:

P. Traykovski (1997), Using acoustics to help understand sediment transport Invited talk at BBN (Now a division of GTE) Applied Physics & Tactical Sonar Group Meeting

P. Traykovski and Y.C. Agrawal (1999), On the Relationship Between Aggregated Particle Size and Mean Stress Levels, *EOS Transactions*, AGU Vol. 80, No. 49, OS61.

P. Traykovski (2000), Acoustical techniques for observing the processes that control the formation of ocean bottom geology (Mini-tutorial 1-hr long), *Jour. Acoust. Soc. of Am*., Vol. 107 (5), 2775.

P. Traykovski (2000), Particle size in turbulent flows Virginia Institute of Marine Sciences, Sediment Transport Lecture Series.

P. Traykovski (2005), Inner Shelf Sediment Transport Processes and Morphology, Gordon Research Conference on Coastal Physical Oceanography, Colby Sawyer College, NH.

Traykovski, P. (2005) Observations of Wave-induced gravity flows of fluid mud on Po prodelta, Italy and Eel River shelf, Northern California, John Hopkins University Center for Applied Fluid Mechanics.

Traykovski, P. (2006), A Time Dependent Model for Seafloor Ripples, *Eos Transactions*. AGU, 87(52), Fall Meet. Suppl., Abstract OS22B-05.

Traykovski, P. (2006), Observations of seafloor ripples and a time-dependent ripple geometry model, *J. Acoust.*

Soc. Am. 120, 3097.

Traykovski, P. (2007), Sediment flux and turbulence measurements using a pulse coherent Doppler profiler over ripples measured with a 2-axis rotary pencil beam system, Underwater Acoustic Measurements and Technologies and Results, 2nd International Conference, Heraklion Greece

Traykovski, P. (2007), A Different Kind of Turbidity Flow: Wave Supported Turbidity Flows on Relatively Flat Shelves, Geophysical Fluid Dynamics Series Mini -Symposium on Ocean Bottom and Surface Boundary Layers, Woods Hole Oceanographic Institution, MA.

Presentations:

P. Traykovski (1992), A tutorial on adaptive beamforming and applications to horizontal direction spectrum estimation of the Heard Island transmissions, M.I.T OE Dept. Seminar.

P. Traykovski, J.F. Lynch, J.D. Irish, and A. Newhall (1994), Acoustical monitoring of sediment transport in the bottom boundary layer at the inner continental shelf LEO-15 site, *Jour. Acoust. Soc. of Am*., Vol. 96(5), 322.

P. Traykovski, J.D. Irish and J.F. Lynch (1995), Acoustic and Optic monitoring of sediment transport at the LEO15 site in 1994 and 1995, Mid-Atlantic Bight Physical Oceanography and Meteorology Conference at Rutgers Univ.

J. F. Lynch, G. Jin, P. Traykovski, C.-S. Chiu, and J. H. Miller (1995), Scattering of acoustic tomographic signals in shallow water by internal waves, 129th Meeting of the Acoustical Society of America, Washington DC.

P. Traykovski, J.D. Irish and J.F. Lynch (1996), Observations of Suspended Sediment Transport and Bottom Roughness using Moored Acoustical and Optical Instruments at the Inner Continental Shelf LEO-15 site, Mid-Atlantic Bight Physical Oceanography and Meteorology Conference at State Univ. of New York.

P. Traykovski, J.D. Irish, J.F. Lynch and A.E. Hay (1997), Geometry, migration and evolution of meter scale wavelength wave orbital ripples at LEO-15 during the active Hurricane season of 1995 (Poster) Gordon Research Conference on Coastal Physical Oceanography, Colby Sawyer College, NH.

P. Traykovski, J.D. Irish, J.F. Lynch and Scott Glenn (1998), Wave Dominated Sediment Transport Events at the LEO-15 Site, *EOS Transactions*, AGU Vol. 79, No. 1, OS35.

P. Traykovski, J. D. Irish, and J. F. Lynch (1998), Motivations for using a pulsed full spectrum Doppler to measure bedload and near-bottom suspended sediment transport, *Jour. Acoust. Soc. of Am*., Vol.103 (5), 2866.

P. Traykovski, J.D. Irish, J.F. Lynch and A.E. Hay (1998), Observations of the Geometry, Migration, and Evolution of Wave Orbital Ripples at the Sandy Inner Continental Shelf LEO-15 Site, *EOS Transactions*, AGU Vol. 79, No. 17, S121.

P. Traykovski, J.D. Irish, J.F. Lynch and W.R. Geyer (1998), Across Shelf Sediment Transport on the Eel River Continental Shelf: From Plume to Deposition, (Poster) *EOS Transactions*, AGU Vol. 79, No. 45,p. 497.

P. Traykovski (1999), Turbidity Currents in the Wave Boundary Layer as a Cross-shelf Transport Mechanism , *EOS Transactions*, AGU Vol. 80, No. 49, 0S282.

W.R. Geyer, J.D. Woodruff, P. Traykovski, and C.K. Sommerfield (1999), Seasonal and Spring-Neap Variability of Sediment Trapping in an Estuary *EOS Transactions*, AGU Vol. 80, No. 49, 0S187.

P. Traykovski (2000), New insights into the mechanisms of cross-shelf sediment transport as revealed by observational studies: the role of wave forcing in both bedform migration and gravitational mud flows Woods Hole Oceanographic Institution Applied Ocean Physics and Engineering Dept. Seminar Series.

P. Traykovski (2000), Sand Transport over large wave-formed bedforms Woods Hole Oceanographic Institution Applied Ocean Physics and Engineering Dept. Seminar Series.

J.F. Lynch, J.D. Irish, P. Traykovski (2000), A Review of WHOI's use of acoustic backscatter to study sediment transport: HEBBLE, STRESS II and III, STRATAFORM, and LEO-15 *EOS Transactions*, AGU Vol. 81, No. 48, 0S61A-23.

P. Traykovski, J.D. Irish, and A.E. Hay (2000), Three dimensional imaging of sand transport processes over wave ripples *Jour. Acoust. Soc. of Am*., Vol. 108, p. 2616.

P. Traykovski, C.K. Harris, B. Butman, M.R. ten Brink (2001), Erosion of fine-grained sediment in the Hudson Shelf Valley, offshore of New York, *Eos Transactions,* AGU, 82(20) Sprint Meet. Suppl. Abstract OS42B-07.

P. Traykovski, C. Reed, W.R. Geyer, Observations and Modeling of Gravity Flows of Fluid Mud Trapped Within the Wave Boundary Layer (2001), AGU Chapman Conference, Ponce Puerto Rico.

P. Traykovski, , W.R. Geyer, C.K. Sommerfield (2001), Acoustic Measurements Of Rapid Sediment Accumulation In The Hudson River Estuary, GSA Annual Meeting.

C.K. Sommerfield , P. Traykovski, and W.R. Geyer (2001), Scales Of Intra-Annual Sedimentation In The Hudson River Estuary As Revealed By Short-Lived Radioisotopes GSA Annual Meeting.

W.R. Geyer, P. Traykovski, and C.K. Sommerfield (2001), Frontal Convergence Causes Sediment Trapping In The Hudson River Estuary GSA Annual Meeting.

Harris, C K, Geyer, W. R., Traykovski, P, Flood Layer Formation on the Northern California Shelf by Near-bed Gravitational Sediment Flows and Oceanographic Transport (2002), *EOS Transactions*, AGU Vol. 83, No. 8, OS22J-02,.

Styles, R, Glenn, S. M., and Traykovski, P (2002), An Evaluation of the Mass-Balance Equation for Suspended Sediments Using an Eddy Diffusivity Parameterization, *EOS Transactions*, AGU Vol. 83, No. 8, OS22K-12.

P. Traykovski, , W.R. Geyer, C.K. Sommerfield (2002), Sediment Accumulation via Deposition and Erosion of Fluid mud in the Hudson River Estuary, *EOS Transactions*, AGU Vol. 83, No. 8, OS21J-10.

Woodruff, J, Geyer, W.R., and Traykovski, P. (2002, Sediment Transport and Trapping in the Hudson River Estuary: a Tough Test for a 3-Dimensional Model, *EOS Transactions*, AGU Vol. 83, No. 8, OS21J-11.

Briggs, K. B., P. Elmore, C. T. Friedrichs, P. Traykovski , M. D. Richardson (2002), Predicting Mine Burial at the Martha's Vineyard Coastal Observatory , *Eos Transactions* AGU, 83(47), Fall Meet. Suppl., Abstract OS61A-0185.

Traykovski, P., M. D. Richardson (2002), Observations of Bedforms and Mine Burial Processes at the Martha's Vineyard Coastal Observatory, *Eos Transactions,* AGU, 83(47), Fall Meet. Suppl., Abstract OS61A-0184.

J.A. Goff, Mayer, L. Schwab, B., Traykovski, P., Wilkins, R., Jenkins, C., Kraft, B., Evans, R., Buynevich, I. (2002), Site Survey of the Martha's Vineyard Coastal Observatory: Backscatter, Grain Size and Temporal Evolution of Rippled Scour Depressions *Eos Transactions,* AGU, 83(47), Fall Meet. Suppl., Abstract OS61A-0181.

Buynevich, I. V., R. L. Evans, S.G. Schock, R. H. Wilkens, J. A. Goff, P. Traykovski, P. C. Jenkins, G. Quentin, P. Beaujean, J. Wulf (2002), Geometry and Sedimentary Characteristics of a Submerged Proglacial Spring-Sapping Valley, Offshore Martha's Vineyard, Massachusetts, *Eos Transactions,* AGU, 83(47), Fall Meet. Suppl., Abstract OS61A-0186.

Richardson, M.D, and P. Traykovski (2003), The evolution of rippled seafloor topography with acoustic implications, J. Acoust. Soc. Am. 113, 2299.

P. Traykovski, J.A. Goff (2003), Observations and Modeling of large and small scale bedforms at the Martha's Vineyard Coastal Observatory, Coastal Sediments '03, The fifth International Symposium on Coastal Engineering and Science of Coastal Sediment Processes. p. 315.

P Traykovski and R. Geyer (2003)., Wave-induced gravity flows of fluid mud on the Po prodelta and along shelf fluxes during Bora events, COMDELTA, Comparing Mediterranean and Black Sea prodeltas, Aix-en-Provence, France .

Richardson, M.D. , P. Traykovski, A. C. Trembanis, and C. T. Friedrichs (2005), Real-time observations and predictions of scour burial at the Martha's Vineyard Coastal Observatory, *J. Acoust. Soc. Am.* 117, 2471

Trembanis, A.C., and P.A. Traykovski (2005). Ripple and Morphologic Behavior of Sorted Bedforms. *Eos Transactions, AGU, 86*(18), Jt. Assem. Suppl., Abstract OS23B-01.

Sherwood, C. R., Trembanis, A, Traykovski, P, (2005), Process Model of Sorted Bedforms, *Eos Transactions, AGU.*

86(18), Jt. Assem. Suppl., Abstract OS31A-05, 2005

Traykovski, P, (2005), Observations of Sand Transport Processes Over Sorted Bedforms, *Eos Transactions, AGU, 86*(18), Jt. Assem. Suppl., Abstract OS23B-03, 2005

Sung, L., Hsu, T., Traykovski, P. (2006), A fluid mud transport model and its application to wave-supported gravity-driven mudflows, *Eos Transactions, AGU, 87*(52), Fall Meet. Suppl., Abstract OS31A-1622, 2006

Jiang, H., Traykovski, P. (2006), Direct Comparison between Numerical Simulation and Field Observation for Turbulent Flow over Large Wave Orbital Scale Ripples, *Eos Transactions, AGU, 87*(52), Fall Meet. Suppl., Abstract OS41C-0610, 2006

Workshops:

LEO-15 Workshop National Underwater Research Center Field station, Tuckerton NJ, 1996
ONR STRATAFORM project annual meeting, 1997, 1998, 1999; shelf group meeting, 2000; modeling group meeting, 2000
ONR EuroSTRATAFORM Program planning and annual meetings 2001/2002/2003/2004
ONR Mine Burial Prediction Program planning and annual meetings 2001/2002/2003/2004
ONR RipplesDRI and SAX04 workshops 2004/2005/2006
ONR Fluid Mud Interactions under waves MURI workshops 2006-2007

Cruises, Field and Laboratory Experiments:

LEO-15 Acoustic Backscatter (ABS), Benthic Acoustic Stress Sensor, and Rotary Fan-beam Sonar autonomous tripod deployment, 2 single day cruises. Member of scientific team.

Hudson Estuary Hudflux Experiment: Deployed tripods and moorings to measure channel integrated sediment flux, participated in deployment, turn-around and recovery cruises as a member of the scientific team, March to June 1999.

LEO-I5 Quadpod deployment: The pod was cabled to LEO-I5 Node with horizontal and vertical pencil beam sonars and Alex Hay's coherent Doppler profiler. Two weeks in residence at Rutgers marine lab. Co-chief scientist Nov. to Dec. 1999.

N.Y. Bight Experiment to measure sediment flux along Hudson Shelf Valley: Participated in deployment and recovery cruises as co-chief scientist with USGS investigators, Dec 1999 to April 2000.

Hudson Estuary HudED (Erosion Deposition) Experiment: Deployed tripods to measure erosion and depositional processes at the Hudson ETM. Co-chief scientist. Oct. 2000 to June 2001

Martha's Vineyard Coastal Observatory Site (MVCO) characterization. Obtained grab samples and coordinated sidescan efforts at MVCO in preparation for Mine Burial and Bedform research, several day cruises on Asterias and RV Nobska as Chief Scientist. June 2001

MVCO Optical mine and rotary fan-beam deployment in fine sand: Also deployed a rotary fan-beam sonar in coarse sand without a mine. Several day cruises on Asterias and RV Nobska as Co-Chief Scientist. Dec 2001 to July 2002

Doppler Near-Bed Sediment Flux Sensor 17-rn flume experiments in WHOL Rinehart Coastal Research Center. June 2002

MVCO site characterization II. Obtained grab samples and coordinated sidescan efforts at MVCO in preparation for Mine Burial and Bedform research and investigated Rippled Scour Depressions. Three days on RV Henlopen and RV Nobska as WHOI coordinator and member of science party. Aug. 2002

Eurostrataform: Deployed two tripods, two trawl resistant ADCP mounts and eight moorings to measure sediment flux on the Adriatic Shelf and Fluid Flow events on the Po Pro-delta. Three one week cruises on the RV Garcia del Cid and RV Seward Johnson!! as Co-Chief Scientist and Scientific team member, November 2002 to May 2003

MVCO Doppler Near-Bed Sediment Flux Quadpod deployment in coarse sand: Deployment and recovery cruises on the RV Asterias as Chief Scientist. Dec 2002 Jan 2003

MVCO Optical Mine and rotary fan-beam deployment in coarse sand. Several day cruises on Asterias and RV Nobska as Co-Chief Scientist. Dec 2002 to May 2003,

MVCO Doppler Near-Bed Sediment Flux Quadpod deployment in coarse sand. Deployment and recovery cruises on the RV Asterias as Chief Scientist. July 2003

MVCO Mine Burial Program: Coordinated deployment of 16 instrumented and passive mines and three Univ. of South Florida quad-pods, and various other instruments. Deployed a rotary fan beam sonar in coarse sand a a 2-axis pencil beam and rotary fan-beam sonar in fine sand to image a mine burial. I also coordinated bathymetric survey efforts during this period. Several Cruises on 1 Connecticut and 1 on Asterias as Chief and Co-Chief Scientist and Program Coordinator. Sept 2003 to 2004

MVCO Doppler Near-Red Sediment Flux Quadpod deployment in fine and Coarse sand. Deployment & Recovery cruises on the RV Connecticut and RV Tioga as Chief Scientist. Dec 2003 to 2005

RipplesDRI cruises on RV Pelican on west Florida shelf in September and November 2004. Co-chief PI along with Dan Hanes, USGS

Fluid Mud Interactions under waves MURI cruises on RV Pelican on Lousiana shelf in Febuary, March, April 2007. Chief Scientist