

GENO PAWLAK

July 2012

Professional Experience

Associate Professor, 2012 – Present

Mechanical and Aerospace Engineering Dept. University of California, San Diego

Associate Professor, 2007 – 2012

Director, Kilo Nalu Observatory, 2004 – 2012

Graduate Program Chair, 2010 - 2012

Dept. of Ocean and Resources Engineering, School of Ocean and Earth Science and Technology, University of Hawaii

Visiting Researcher, 2009

Fluid Mechanics Group, Dept. of Mechanical and Mining Engineering, University of Jaen, Jaen, Spain

Cooperating Graduate Faculty, 2002 – 2012

Dept. of Oceanography, School of Ocean and Earth Science and Technology, University of Hawaii

Assistant Professor, 2001 – 2007

Dept. of Ocean and Resources Engineering, School of Ocean and Earth Science and Technology, University of Hawaii

Visiting Researcher, 2003

Fluid Mechanics Group, Dept. of Thermal and Fluids Engineering, Carlos III University, Madrid, Spain

Research Associate, 1998 - 2001

School of Oceanography, University of Washington

Postdoctoral Researcher, 1997-1998

Physical Oceanography Dept., Scripps Institution of Oceanography, University of California, San Diego

Graduate Researcher, 1992-1997

Physical Oceanography Dept., Scripps Institution of Oceanography / Applied Mechanics and Engineering Sciences, University of California, San Diego

Education

Ph.D., Engineering Sciences (Mechanical Engineering)/Applied Ocean Science, Sept. 1997;
University of California at San Diego

Thesis: Hydraulics, Mixing and Stability in Two-layer Arrested Wedge Flows

M. S. E., Mechanical Engineering, June 1994; *University of California at San Diego*

B. S. E., Aerospace Engineering and Mechanics, March 1991;

with high distinction; minor in Mathematics, *University of Minnesota*

Honors and Awards

Charles Lee Powell Foundation Fellowship, UCSD, 1992 – 1993

Office of Naval Research, Young Investigator Award, 2003 – 2006

Teaching Activities

Ocean and Resources Engineering Laboratory (ORE 601), Instructor

Dept. of Ocean and Resources Engineering, University of Hawaii

Fall Semester, 2005, 2007, 2009, 2010, 2011

Oceanography for Ocean Engineers (ORE 603), Instructor
Dept. of Ocean and Resources Engineering, University of Hawaii
Fall Semester, 2001-2004, 2006

Environmental Fluid Dynamics (ORE 641), Instructor
Dept. of Ocean and Resources Engineering, University of Hawaii
Spring Semester, 2002, 2005, 2007, 2011

Nearshore Processes and Sediment Transport (ORE 664), Instructor
Dept. of Ocean and Resources Engineering, University of Hawaii
Spring Semester, 2003, 2004, 2006, 2008, 2010, 2012

Seminar in Ocean Engineering (ORE 792), Coordinator
Dept. of Ocean and Resources Engineering, University of Hawaii
Spring Semester, 2003 - 2010

Laboratory Projects in Fluid Dynamics (OCEAN 569), Instructor
School of Oceanography, University of Washington
Winter quarter, 2000 (as co-instructor), 2001

Aerodynamics (AMES 104), Teaching Assistant
Department of Applied Mechanics and Engineering Sciences, UC, San Diego
Fall quarter, 1994

Student Advising

- MS:* Lauren Tuthill, MS, UH ORE, completed 2012
Abdulla Mohamed, MS, UH ORE, completed 2008
Melinda Swanson, MS, UH Oceanography, completed 2008
Vasco Nunes MS, UH ORE, completed 2005
- PhD:* Michael Cynn, PhD, UH ORE, 2010-present
Krishnakumar Ragagopalan PhD, UH ORE, completed 2010
Marion Bandet, PhD, UH ORE, completed 2008
Miguel Canals, PhD, UH ORE, completed 2008
- BS:* Yoshimu Kusumoto, BS, UH Global Environmental Science, completed 2008
Everett Ohta, BS, UH Global Environmental Science, completed 2006
David Matagiese, BS, UH Global Environmental Science, completed 2004
- Other:* Wilfred Coenen, Visiting PhD student, Univ. Carlos III de Madrid, 2010
Juan David Osorio, Visiting PhD student, National University of Colombia, 2010
Antoine Patalano, Visiting undergraduate, University of Montpellier, 2008
Gregory Dulac, Visiting undergraduate, Ecole Nationale d'Ingenieures de Tarbes. 2005
Aurelien Gonzalez, Visiting undergraduate, Institut des Sciences de l'Ingenieur de Toulon et du Var, 2005
Pedro Garcia Hrды, Visiting undergraduate, Univ. Carlos III de Madrid, 2004

Postdoctoral Advising

- Sergio Jaramillo, 2008-2011
Jon Fram, 2008-2010
Judith Wells, 2007-2011
Jeremy Bricker, 2006-2007
Andrew Hebert (co-advisor), 2004-2007

Professional Associations

Marine Technology Society, 2002 - Present
American Geophysical Union, 1998 - Present
American Academy of Underwater Sciences, 2004 - Present

Referee Activities

Referee for Journal of Fluid Mechanics, Journal of Environmental Fluid Mechanics, ASME Journal of Fluid Engineering, Journal of Atmospheric and Oceanic Technology, ASLO Limnology and Oceanography, Deep Sea Research, Journal of Physical Oceanography, Journal of Geophysical Research-Oceans, Journal of Geophysical Research-Earth Surfaces, Ocean Engineering, Journal of Coastal Research, Marine Technology Society Journal, Journal of Waterway, Port, Coastal and Ocean Engineering, Coral Reefs Journal, Journal of Hydro-environment Research.

Proposal Reviews: National Science Foundation, American Chemical Society, NOAA, Agencia Nacional de Evaluacion y Prospectiva (ANEP; National Evaluation and Foresight Agency, Spain), Organisatie voor Wetenschappelijk Onderzoek (NOW; Netherlands Organization for Scientific Research)

Book Reviewer, BrooksCole/Thomson Learning

Professional Activities

Session Chair, American Geophysical Union Fall Meeting, Dec. 2010

Organizer, ONR Workshop: Circulation around and within atolls/reefs/lagoons, UCSD/SIO, Sept. 2010

Session Organizer, American Geophysical Union Ocean Sciences Meeting, Feb. 2010

Session Organizer, Chair, ASME Offshore Mechanics and Arctic Engineering Conference 2007

Panelist, Alliance for Coastal Technology, Seabed Sensor Technology Workshop, Feb. 2006

Special Session Convener, American Geophysical Union Ocean Sciences Meeting, Feb. 2006

Session Organizer, ASME Offshore Mechanics and Arctic Engineering Conference 2005

Panelist, National Science Foundation, Physical Oceanography Panel, 2003

Session Organizer, ASME Offshore Mechanics and Arctic Engineering Conference 2002

Session Chair, American Geophysical Union Ocean Sciences Meeting, Feb. 2002

Session Chair, Oceans 2001 Meeting, Nov. 2001

Panelist, US-Japan Researchers in Ocean Technology, Oceans 2001 Meeting, Nov. 2001

Session Chair, American Physical Society, Division of Fluid Dynamics Meeting, Nov. 2001

Session Chair, American Geophysical Union Ocean Sciences Meeting, Jan. 2000

University Service Activities

ORE Computing Services Manager (2003 – 2006)

ORE Admissions Committee Chair (2010-2012)

ORE ABET Alumni and Employer Survey Coordinator

SOEST Research Council (2006-2012)

SOEST Education and Outreach Council (2011-2012)

SOEST Young Investigator Committee (2002, 2005, 2006, 2007, 2008, 2011)

SOEST Open House Organizing Committee (2001-2009)
SOEST Curriculum Committee, ORE MS Exam Coordinator (2001- 2012)
SOEST Curriculum Committee, ORE Representative (2003, 2005 - 2012)
SOEST Engineering Support Facility Advisory Board (2005 - 2009)
SOEST Computer Committee, ORE Representative (2004 - 2006)
SOEST Small Boat Users Committee Chair (2009-2012)
SOEST Ocean Observing Workshop co-Organizer (2005, 2006)
SOEST Ocean Observing Technology Working Group, Chair (2006)
SOEST Ocean Observing Education Working Group (2006)
SOEST Ocean Observing Ocean State Estimation and Prediction Working Group (2006)
SOEST Ocean Observing Steering Committee (2006 - 2012)
UH Diving Control Board Member (2003 - 2012)

Current Projects

Turbulent fluxes and boundary layer structure due to nearshore internal tides, National Science Foundation, PI (collaborative with Stanford U., OSU), \$405K, 2009-2012
Hydrodynamics and roughness of irregular boundaries, Office of Naval Research, PI, \$355K, 2010 -2012
Hydrodynamic controls on acoustical and optical water properties in tropical reefs, Office of Naval Research, PI, \$155K, 2012 -2013

Previous Projects

Observations of Tidal Headland Eddies in Deep Water, National Science Foundation, co-PI, \$65K (out of \$244K), 2001-2004
Field Observations of Wave Flow over a Rough Boundary, University Research Council Seed Money Grant, PI, \$12K, 2002-2003
Environmental Fluid Dynamics Education Laboratory, University of Hawaii Education Improvement Fund, PI, \$5K, 2002
Environment for Design of Advanced Marine Vehicles and Operations Research (ENDEAVOR), Office of Naval Research, Contributing Researcher, 2002-2006
Two-dimensional Acoustic Profiling of Wave Boundary Layers, University of Hawaii Sea Grant College Program, Program Development, PI, \$10K, 2003
High Resolution Surveys of Coral Reef Roughness, University of Hawaii Sea Grant College Program, Program Development, PI, \$10K, 2003
Wave Boundary Layer Processes over an Irregular Bottom, Office of Naval Research, Young Investigator Award, PI, \$300K, 2003-2006
Acquisition of a REMUS Autonomous Underwater Vehicle and a small ROV for the University of Hawaii, ONR DURIP Program, co-PI, \$373K, 2004
Real-time Observations of Oahu's Coastal Environment, University of Hawaii Sea Grant College Program, Program Development, co-PI, \$10K, 2004
Coastal Form Drag and Eddies, National Science Foundation, PI, \$183K, 2004-2008
Wave-Driven Porewater-Seawater Exchange in Sandy Coastal Sediments, National Science Foundation, co-PI, \$461K, 2004-2008

NEESR-SG: Development of Performance-based Tsunami Engineering, PBTE, National Science Foundation, co-PI, \$110K (out of \$1.3M), 2005-2008

Real-time Observations of Oahu's Coastal Environment, University of Hawaii Sea Grant College Program, \$89K, PI, 2005-2007

Benthic Boundary Layer Geochemistry and Physics at the Kilo Nalu Observatory, National Science Foundation Coastal Ocean Processes (CoOP) program, PI, \$2.2M, 2005-2011

Effects of Offshore Forcing in the Nearshore Environment, Office of Naval Research, PI, \$530K, 2006-2008

Enhanced Spatial Mapping Capabilities for the Kilo Nalu Observatory, Office of Naval Research, PI, \$275K, 2007-2009

Coastal Inundation at Island Shorelines caused by Wave Run-up, University of Hawaii Sea Grant College Program, co-PI, \$51K, 2007-2009

Real Time Monitoring and Establishment of an "Early Warning System" for the Sand Island Ocean Outfall Effluent Plume, Sea Engineering Inc., PI, \$160K, 2009-2010

High Resolution Temporal and Spatial Topographic Imaging of Beach and Nearshore Processes, NOAA Sea Grant College Program, co-PI (PI B. Brooks), \$86K, 2008-2010

Developing the Hawaii-Pacific Ocean Observing and Information System, NOAA Coastal Services Center, co-PI (PI B. Taylor), \$250K (out of \$5M) 2007-2011

Refereed Journal Publications (indicates student or postdoc advisee)*

G. Pawlak and L. Armi, "Stability and Mixing of a Two Layer Exchange Flow", *Dynamics of Atmospheres and Oceans*, Vol. 24, Jan. 1996

G. Pawlak and L. Armi, "Hydraulics of a Two Layer Arrested Wedge Flow", *Journal of Hydraulic Research*, Vol. 35, No. 5, 1997

G. Pawlak and L. Armi, "Vortex Dynamics in a Spatially Accelerating Shear Layer", *Journal of Fluid Mechanics*, Vol. 376, Dec. 1998

G. Pawlak and L. Armi, "Mixing and Entrainment in Developing Stratified Currents", *Journal of Fluid Mechanics*, Vol. 424, Dec. 2000

P. MacCready and G. Pawlak, "Stratified Flow along a Rough Slope: Separation Drag and Wave Drag", *Journal of Physical Oceanography*, Vol. 31, October, 2001

G. Pawlak and P. MacCready, "Oscillatory Flow across an Irregular Boundary", *Journal of Geophysical Research*, Vol. 107, C5, May 2002

G. Pawlak, P. MacCready, K. Edwards, and R. McCabe, "Observations on the Evolution of Tidal Vorticity at a Stratified Deepwater Headland", *Geophysical Research Letters*, Vol. 30, no. 24, Dec. 2003

K. Edwards, P. MacCready, J. Moum, G. Pawlak, J. Klymak and A. Perlin, "Form Drag and Mixing due to Tidal Flow past a Sharp Point", *Journal of Physical Oceanography*, Vol. 34, June, 2004

R. Lowe, J. Falter, M. Bandet*, G. Pawlak, M. Atkinson, S. Monismith, J. Koseff, "Spectral wave dissipation over a barrier reef", *Journal of Geophysical Research*, Vol. 110, C4, Apr 2005

R. McCabe, R., P. MacCready, G. Pawlak, "Form Drag Due to Flow Separation at a Headland", *Journal of Physical Oceanography*, Vol. 36, No. 11, 2006.

- E. Nakaza, S.M.B. Rahaman, Y. Kitamura, G. Pawlak and S. Tsukayama, "Cross-Shore Internal Waves in Zanja Coastal Region of Okinawa Island", *ASCE Journal of Waterway, Port, Coastal and Ocean Engineering*, Vol. 132, No. 1, 2006
- J. M. Becker, Y. L. Firing, J. Aucan, R. Holman, M. Merrifield, and G. Pawlak, "Video-based Observations of Nearshore Sand Ripples and Ripple Migration", *Journal of Geophysical Research*, 112, C01007, doi:10.1029/2005JC003451, 2007.
- A. Hebert*, F. Sansone and G. Pawlak, "Dispersal in sandy sediment porewater under enhanced physical forcing", *Continental Shelf Research*, 27, no. 17, p. 2278-2287, doi:10.1016/j.csr.2007.05.016, 2007.
- G. Pawlak, C. Marugan Cruz, C. Martinez Bazan, P. Garcia Hrdy*, "Experimental characterization of transient jet dynamics", *Fluid Dynamics Research*, Vol. 39/11-12, pp 711-730, Nov./Dec. 2007
- J. D. Bricker*, S. Munger, J. R. Wells*, C. Pequignet, G. Pawlak, and K.F. Cheung, "ADCP observations of edge waves off Oahu in the wake of the November 2006 Kuril Islands tsunami", *Geophysical Research Letters*, 34, L23617, doi:10.1029/2007GL032015, Dec. 2007
- M. Canals*, G. Pawlak, "Instability, transition and vortex topology in oscillating flows", *Physics of Fluids*, Gallery of Fluid Motion, 20, no. 9, p 091102, doi: 10.1063/1.2973206, 2008
- J. Park, M. Garcés, D. Fee, G. Pawlak "Collective bubble oscillations as a component of surf infrasound", *Journal of the Acoustical Society of America*, 123, 5, doi: 10.1121/1.2885743, pp 2506–2512, May 2008
- N. L Jones, R.J. Lowe, G. Pawlak, D.A. Fong, S.G. Monismith, "Plume dispersion on a fringing coral reef system", *Limnology and Oceanography*, 53, no.5 pt. 2, pp 2273-2286, 2008
- V. Nunes* and G. Pawlak, "Observations of physical roughness over a coral reef", *Journal of Coastal Research*, 24, 2B, 2008
- F.J. Sansone, G. Pawlak, T.P. Stanton, M.A. McManus, B.T. Glazer, E.H. DeCarlo, M. Bandet*, J. Sevadjian, K. Stierhoff, C. Colgrove, A.B. Hebert*, and I.C. Chen, "Kilo Nalu: Physical/Biogeochemical Dynamics Above and Within Permeable Sediments", *Oceanography*, 21, no. 4, Dec. 2008
- M. Canals*, G. Pawlak and P. MacCready, "Tilted Baroclinic Tidal Vortices", *J. Physical Oceanography*, 39, 333–350, doi: 10.1175/2008JPO3954.1, 2009.
- J. Sevadjian, M.A. McManus, G. Pawlak, "Effects of physical structure and processes on thin zooplankton layers in Mamala Bay, Hawai'i.", *Marine Ecology Progress Series*, 409: 95-106, 2010.
- M. Canals* and G. Pawlak, "Three-dimensional vortex dynamics in oscillatory flow separation", *Journal of Fluid Mechanics*, doi:10.1017/S0022112011000012, 2011
- M. S. Tomlinson, E. H. De Carlo, M. A. McManus, G. Pawlak, G. F. Steward, F. J. Sansone, O. D. Nigro, C. E. Ostrander, R.E. Timmerman, J. Patterson, S. Jaramillo*, "Monitoring the Effects of Storms on Coastal Water Quality with the Hawai'i Ocean Observing System (HiOOS)", *Oceanography*, June 2011.
- S. Jaramillo* and G. Pawlak, "AUV-based bed-roughness mapping over a tropical reef", *Coral Reefs*, doi:10.1007/s00338-011-0731-9, 2011
- E. Sanmiguel-Rojas, J. I. Jimenez-Gonzalez, P. Bohorquez, G. Pawlak, and C. Martinez-Bazan, "Stability effects of base cavities on the wake of slender blunt-based axisymmetric bodies", *Physics of Fluids*, doi: 10.1063/1.3658774, 23:11, Nov. 2011.

A. Aryal, B. A. Brooks, M. E. Reid, G. W. Bawden and G. Pawlak, "Displacement Fields from Point Cloud Data: Application of Particle Imaging Velocimetry to Landslide Geodesy" Vol 117, F01029, doi: 10.1029/2011JF002161, *Journal of Geophysical Research Surface Processes*, 2012

Y. Yamazaki, K.F. Cheung, G. Pawlak, T. Lay, "Surges along the Honolulu Coast from the 2011 Tohoku Tsunami", *Geophysical Research Letters*, in press, 2012.

J.R. Wells*, J. P. Fram* and G. Pawlak, "Solar warming of near bottom water over a fringing reef", accepted, *J. Marine Research*, 2012

Articles in prep:

K. Rajagopalan*, G. Pawlak, M. Kobayashi and K. F. Cheung, "Numerical study of the wave resistance of a two dimensional hydrofoil" in prep for submission to *J. Fluids Engineering*.

M. D. Bandet*, G. Pawlak, T. P. Stanton, "A Technique for Spatial Characterization of Wave-induced Flow over Inhomogeneous Boundaries", in preparation for submission to *J. Atmos. Ocean. Technology*.

L.F. Chen, K.F. Cheung, G. Pawlak, and X. Kang, "Drag and inertia forces in turbulent oscillatory flow over bed-form roughness", in preparation for submission to *Coastal Engineering*.

J.P. Fram*, F.J. Sansone, and G. Pawlak, "Tracer advection in sandy sediment porewater under enhanced physical forcing", in preparation for submission to *Continental Shelf Research*

Conference Papers

G. Pawlak and L. Armi, "Stability and Mixing of a Two Layer Exchange Flow", Fourth International Symposium on Stratified Flows, Grenoble, France, June 1994

G. Pawlak and P. MacCready, "Tidal Flow Across a Finite Region of Roughness", Fifth International Symposium on Stratified Flows, Vancouver, Canada, July 2000

G. Pawlak and L. Armi, "Mixing and Entrainment in Developing Stratified Currents", Fifth International Symposium on Stratified Flows, Vancouver, Canada, July 2000

G. Pawlak, "A Multi-faceted Approach to Coastal Dynamics", MTS-IEEE Oceans 2001, Honolulu, Hawaii, Nov. 2001

P. MacCready and G. Pawlak, "Tidal Eddy Generation at Three Tree Point: Theory and Numerical Modeling", Proceedings of the Puget Sound Research Conference 2001

G. Pawlak, P. MacCready, K. Edwards and R. McCabe, "Evolution of Tidal Vorticity in Stratified Coastal Flow", Proceedings of OMAE'02 21st International Conference on Offshore Mechanics and Arctic Engineering, Oslo, Norway, 2002 (Refereed)

G. Pawlak, P. MacCready and R. McCabe, "Evolution of vortical flow structure in ocean boundary processes", 'Aha Huliko'a Winter Workshop: Near Boundary Processes and Their Parameterization, Honolulu, Hawaii, Jan. 2003

P. MacCready, G. Pawlak, R. McCabe and K. Edwards, "Observations and Modeling of Form Drag on Rough Coastal Topography", 'Aha Huliko'a Winter Workshop: Near Boundary Processes and Their Parameterization, Honolulu, Hawaii, Jan. 2003

C. Marugan-Cruz, M. Vera, C. Martinez-Bazan, G. Pawlak, A. L. Sanchez-Perez, "Influence of trailing jet instability on the dynamics of starting jets", 14th European Conference on Mathematics for Industry (ECMI 2006), Madrid, Spain, July 2006.

M. Canals*, G. Pawlak, and P. MacCready, "Three-dimensional structure of a strongly tilted tidal vortex", Sixth International Symposium on Stratified Flows, Perth, Australia, December 2006.

H.R. Riggs, I.N. Robertson, K.F. Cheung, G. Pawlak, Y.L. Young and S.C.S. Yim
"Experimental Simulation of Tsunami Hazards to Buildings and Bridges", NSF CMMI Conference 2007

G. Pawlak, E. De Carlo, J. Fram*, A. Hebert*, C. Jones, B. McLaughlin, M. McManus, K. Millikan, F. Sansone, T. Stanton & J. Wells*, "Development, Deployment, and Operation of Kilo Nalu Nearshore Cabled Observatory", IEEE OCEANS 2009 Conference, Bremen

S. Jaramillo* and G. Pawlak, "AUV-based observations of rough bed hydrodynamics", Proceedings IEEE AUV2010 Conference, Monterey, September 2010

L. Tuthill*, J.R. Wells*, G. Pawlak, S. Monismith, "Dynamics of cross-shore thermal exchange on a tropical fore-reef", Seventh International Symposium on Stratified Flows, Rome, Italy, August, 2011.

G. Pawlak, M. McManus, L. Tuthill*, J. Sevadjan, M. Ericksen, A. Rocheleau, "Real-time ocean water quality monitoring for the south shore of Oahu", MTS/IEEE OCEANS '11, Kona, Hawaii, Sept. 2011.

Conference Abstracts

G. Pawlak and L. Armi, "Stability and Mixing of a Two Layer Box Flow", American Physical Society, 48th Annual Meeting, Division of Fluid Dynamics, Irvine, California, Nov. 1995

G. Pawlak and L. Armi, "Vortex Dynamics in a Spatially Accelerating, Stratified Shear Flow", NATO Advanced Study Institute: "Mixing: Chaos and Turbulence", Cargese, Corsica, France, July 1996

G. Pawlak and L. Armi, "Vortex Dynamics in a Spatially Accelerating Shear Layer", American Physical Society, 50th Annual Meeting, Division of Fluid Dynamics, San Francisco, California, Nov. 1997

G. Pawlak and L. Armi, "Vortex Dynamics in a Spatially Accelerating, Stratified Shear Layer", American Geophysical Union, Ocean Sciences Meeting, San Diego, CA, Jan. 1998

G. Pawlak and L. Armi, "Turbulent Mixing, Entrainment and Development of Downslope Flows", IUGG99, 22nd General Assembly of the International Union of Geodesy and Geophysics, Birmingham, England, July 1999

G. Pawlak and P. MacCready, "Separation Phenomena in Stratified Flow Along a Sloping Boundary", IUGG99, 22nd General Assembly of the International Union of Geodesy and Geophysics, Birmingham, England, July 1999

G. Pawlak and P. MacCready, "Tidal Flow Across a Finite Region of Roughness", American Geophysical Union, Ocean Sciences Meeting, San Antonio, Texas, Jan. 2000

P. MacCready and G. Pawlak, "Boundary Stress on Stratified Flow Along a Corrugated Slope", American Geophysical Union, Ocean Sciences Meeting, San Antonio, Texas, Jan. 2000

G. Pawlak and P. MacCready, "Stratified Flow along a Rough Slope: Separation Drag and Wave Drag", American Geophysical Union, Fall Meeting, San Francisco, California, Dec. 2000

P. MacCready, K. Edwards, G. Pawlak, and J. Moum, "Observation and Modeling of Tidal Headland Eddies", Eastern Pacific Oceans Conference, Lake Tahoe, California, Sept. 2001

- G. Pawlak, P. MacCready and K. Edwards, "Flow Structure in an Oscillating Boundary Layer Flow over Roughness", American Physical Society, 54th Annual Meeting, Division of Fluid Dynamics, San Diego, California, Nov. 2001
- K. Edwards, P. MacCready, G. Pawlak, J. Moum, J. Klymak, A. Perlin, and R. Dewey, "Flow Features at a Sharp Coastal Point", American Geophysical Union, Ocean Sciences Meeting, Honolulu, Hawaii, Feb. 2002
- G. Pawlak, P. MacCready, K. Edwards, and R. McCabe, "Evolution of Tidal Vorticity in Stratified Coastal Flow", American Geophysical Union, Ocean Sciences Meeting, Honolulu, Hawaii, Feb. 2002
- P. MacCready, R. McCabe, G. Pawlak, and K. Edwards, "Form Drag on Flow Across a Sloping Ridge", American Geophysical Union, Fall Meeting, San Francisco, California, Dec. 2002
- R. McCabe, P. MacCready, and G. Pawlak, "Estimates of Form Drag from Drifter Tracks", American Geophysical Union, Fall Meeting, San Francisco, California, Dec. 2002
- G. Pawlak, P. MacCready, R. McCabe, "Evolution and Dissipation of Tidal Vorticity at a Stratified Deepwater Headland", American Geophysical Union, Ocean Sciences Meeting, Portland, Oregon, Jan. 2004
- P. MacCready, G. Pawlak, R. McCabe and K. Edwards, "Form Drag on Flow Over Rough Coastal Topography: Problems for Parameterization", American Geophysical Union, Ocean Sciences Meeting, Portland, Oregon, Jan. 2004
- R. J. Lowe, J. L. Falter, M. D. Bandet, G. Pawlak, S. G. Monismith, J. R. Koseff, M. J. Atkinson, "Wave transformation and circulation on a barrier reef at Kaneohe Bay, Oahu, Hawaii", American Geophysical Union, Ocean Sciences Meeting, Portland, Oregon, Jan. 2004
- G. Pawlak, M. Bandet* and V. Nunes*, "Coral Reef Roughness and Its Effects on Wave Boundary Layers", International Coral Reef Symposium, Okinawa, Japan, June 2004.
- M. Bandet*, G. Pawlak, and T. Stanton, "Characterization of Wave-Induced Boundary Layers Over a Rough Bottom", American Geophysical Union, Fall Meeting, San Francisco, California, Dec. 2004
- V. Nunes* and G. Pawlak, "Physical Measurements of Sea Bed Roughness", American Geophysical Union, Fall Meeting, San Francisco, California, Dec. 2004
- M. K. Swanson* and G. Pawlak, "Correlations Between Turbidity and Sources of Physical Forcing on the South Shore of Oahu", American Society of Limnology and Oceanography, Aquatic Sciences Meeting, Salt Lake City, Utah, Feb. 2005
- A. Hebert*, F. Sansone, and G. Pawlak, "Wave-Driven Porewater-Seawater Exchange in Sandy Coastal Sediments", American Geophysical Union, Fall Meeting, San Francisco, California, Dec. 2005
- G. Pawlak, T. Stanton, F. Sansone, R. Wilkens, E. De Carlo, A. Hebert*, M. McManus, M. Merrifield, K. Millikan, M. Bandet-Chavanne*, M. Swanson*, "Kilo Nalu: A Hawaiian Coastal Observatory", American Geophysical Union Ocean Sciences Meeting, Honolulu, Hawaii, Feb. 2006.
- R. Lowe, N. Jones, D. Fong, S. Monismith, G. Pawlak, "Dispersion of a near-bed plume in a wave-dominated coral reef system", American Geophysical Union Ocean Sciences Meeting, Honolulu, Hawaii, Feb. 2006.

- M. Bandet* and G. Pawlak, "Dynamics of Wave-Induced Boundary Layers Over a Very Rough Boundary", American Geophysical Union Ocean Sciences Meeting, Honolulu, Hawaii, Feb. 2006.
- M. K. Swanson*, G. Pawlak, and E. H. De Carlo, "Temporal Correlations between Water Column Geochemistry and Physical Forcing on the South Shore of Oahu", American Geophysical Union Ocean Sciences Meeting, Honolulu, Hawaii, Feb. 2006.
- M. Canals*, G. Pawlak and P. MacCready, "Topology and Decay of Tidal Vorticity at a Stratified, Deepwater Headland", American Geophysical Union Ocean Sciences Meeting, Honolulu, Hawaii, Feb. 2006.
- A. Hebert*, F. Sansone, and G. Pawlak, "In Situ Fiber Optic Measurements of Wave-Driven Porewater-Seawater Exchange from the Kilo Nalu Observatory", American Geophysical Union Ocean Sciences Meeting, Honolulu, Hawaii, Feb. 2006.
- A. Hebert*, F. Sansone, and G. Pawlak, "In Situ Measurements of Sandy Sediment Physics and Biogeochemistry at Kilo Nalu", Gordon Research Conference on Permeable Sediments, Colby College, Waterville, Maine, June, 2006.
- C. Marugan-Cruz, G. Pawlak, C. Martinez-Bazan and M. Vera, "Experimental Characterization of Starting Jets", American Physical Society Division of Fluid Dynamics Meeting, Nov. 2006
- M. Swanson*, J. Sevadjian, F. Sansone, G. Pawlak, A. Hebert*, M. McManus, E. De Carlo, T. Stanton, J. Shacat, K. Millikan, B. McLaughlin, J. Wells*, A. Hanson, and R. H. Byrne, "The Kilo Nalu cabled observatory, Oahu, Hawaii: A flexible platform for integrated physical and biogeochemical adaptive sampling and experimentation". AGU Fall Meeting, San Francisco, California, Dec. 2006.
- M. Canals* and G. Pawlak, "Visualizations of the transition to turbulence in an oscillatory separated flow." American Physical Society Division of Fluid Dynamics Meeting, Salt Lake City, Utah, 2007.
- A. Hebert*, F. Sansone, and G. Pawlak, "Tracer dispersal in sandy sediment porewater under enhanced physical forcing at the Kilo Nalu Observatory, Oahu, Hawaii", ASLO Aquatic Sciences Meeting, Santa Fe, New Mexico, Feb. 2007.
- M. Canals* and G. Pawlak, "Instability, transition and vortex topology in oscillating flow past a cylinder", American Physical Society March Meeting, New Orleans, Louisiana, 2008.
- M. D. Bandet-Chavanne*, G. Pawlak, "Wave-induced boundary layer dynamics over inhomogeneous bathymetry", American Geophysical Union Ocean Sciences Meeting, Orlando, Florida, March 2008
- M. B. Jones, C. S. Jones, D. Barseghian, M. A. McManus, G. Pawlak, "Managing and Analyzing Cabled Seafloor Sensor Data using Kepler Scientific Workflows", American Geophysical Union Ocean Sciences Meeting, Orlando, Florida, March 2008
- J.E. Schoonmaker, J. T. Potemra E. H. DeCarlo, G. Pawlak, "Incorporation of Ocean Observing Systems Data in Undergraduate Curricula", American Geophysical Union Ocean Sciences Meeting, Orlando, Florida, March 2008
- J. C. Sevadjian, M. A. McManus, G. Pawlak, C. F. Greenlaw, "The Influence of Physical Structure and Shoaling Internal Tides on Thin Plankton Layers in Mamala Bay, Hawaii", American Geophysical Union Ocean Sciences Meeting, Orlando, Florida, March 2008

M. Canals*, G. Pawlak, P. MacCready, “Vortex Dynamics and Energy Dissipation in Oscillatory Flow Past Complex Boundaries”, American Geophysical Union Ocean Sciences Meeting, Orlando, Florida, March 2008

G. Pawlak, J. D. Bricker, M. D. Bandet-Chavanne, R. J. Lowe, N. L. Jones, D. A. Fong, S. G. Monismith, “Rough Bed Boundary Layer Processes at the Kilo Nalu Observatory”, American Geophysical Union Ocean Sciences Meeting, Orlando, Florida, March 2008

K. L. Stierhoff, F. J. Sansone, G. Pawlak, A. B. Hebert, C. Colgrove, T. Stanton, “Enhanced Porewater Dispersal in Sandy Sediments Subject to Physical Forcing at the Kilo Nalu Observatory, Oahu, Hawaii”, American Geophysical Union Ocean Sciences Meeting, Orlando, Florida, March 2008

K. E. Fogaren, P. Drupp, E. H. De Carlo, G. Pawlak, A. Hanson, E. Morin, R. Sweetman, S. Veitch, “Nutrient Response to Oceanographic Processes at the Kilo Nalu Nearshore Observatory, Oahu, Hawaii”, American Geophysical Union Ocean Sciences Meeting, Orlando, Florida, March 2008

J. R. Wells*, G. Pawlak, M. A. Merrifield, “Offshore Forcing of Nearshore Currents: Internal Wave Effects”, American Geophysical Union Ocean Sciences Meeting, Orlando, Florida, March 2008

M. Swanson*, G. Pawlak, E. H. De Carlo, “Sources and Forces: What Drives Variability in Suspended Solid Concentrations at the Kilo Nalu Observatory”, American Geophysical Union Ocean Sciences Meeting, Orlando, Florida, March 2008

F. J. Sansone, G. Pawlak, T. P. Stanton, A. B. Hebert*, M. A. McManus, E. H. DeCarlo, M. A. Merrifield, “Kilo Nalu Nearshore Reef Observatory, Oahu, Hawaii: Interdisciplinary Observations of Physical, Geochemical and Biological Interactions”, American Geophysical Union Ocean Sciences Meeting, Orlando, Florida, March 2008.

J. P. Fram, G. Pawlak, C. Colgrove, F. Sansone, New Field and Numerical Modeling Methods for Determining Wave-Driven Porewater Transport in Sandy Sediments (Invited), American Geophysical Union Ocean Sciences Meeting, Portland, Oregon, March 2010

G. Pawlak, M. Bandet, K. Rajagopalan, Wave and Current Flow over Broad-banded Roughness, American Geophysical Union Ocean Sciences Meeting, Portland, Oregon, March 2010

S. Jaramillo, G. Pawlak, AUV-based Bed-Roughness Mapping over a Tropical Reef, American Geophysical Union Ocean Sciences Meeting, Portland, Oregon, March 2010

J. Wells, J. P. Fram, G. Pawlak, Solar Warming of the Seafloor on a Fringing Reef, American Geophysical Union Ocean Sciences Meeting, Portland, Oregon, March 2010

E. H. DeCarlo, M. Tomlinson, M.A. McManus, G. Pawlak, G. Steward, F. Sansone, O. Nigro, R. Timmerman, J. Patterson, S. Jaramillo, Short Term Impacts of Storm Events on Water Quality in Coastal Waters of Urban Honolulu, Hawaii, American Geophysical Union Ocean Sciences Meeting, Portland, Oregon, March 2010

G. Pawlak, M. Bandet, S. Jaramillo, Hydrodynamic roughness for wave and current flow over irregular beds (Invited), American Geophysical Union Fall Meeting, San Francisco, California, December 2010

Invited Lectures

“Vortex Dynamics in a Spatially Accelerating Shear Layer”,
Department of Civil and Environmental Engineering, Stanford University
 Stanford, California, Oct. 1997

- “Vortex Dynamics in a Spatially Accelerating Shear Layer”,
Department of Aerospace Engineering, University of Southern California
Los Angeles, California, Jan. 1998
- “Vortex Dynamics in a Spatially Accelerating Shear Layer”,
Departamento de Física de la Atmósfera y el Océano, Universidad de Concepción,
Concepción, Chile, July 1998
- “Turbulent Mixing, Entrainment and Development of Downslope Flows”,
Applied Mechanics and Engineering Sciences, University of California, San Diego,
La Jolla, California, May 1999
- “Mixing Processes in Stratified Flows”,
Coastal/Estuarine Geophysical Fluid Dynamics Summer Course, Friday Harbor Laboratories
Friday Harbor, Washington, Aug. 1999
- “Mixing and Entrainment in Developing Stratified Currents”,
Department of Physics and Physical Oceanography, Memorial University of Newfoundland
St. John’s, Newfoundland, Canada, Oct. 1999
- “Tidal Flow Across a Region of Finite Roughness”,
Center for Coastal Studies, Scripps Institution of Oceanography
La Jolla, California, June 2000
- “Flow Structure in Oscillating Flow across a Rough Boundary”,
Department of Ocean & Resources Engineering, University of Hawaii at Manoa
Honolulu, Hawaii, Nov. 2000
- “Flow Structure in Oscillating Flow across a Rough Boundary”,
University of Maryland, Chesapeake Bay Laboratory
Maryland, Mar. 2001
- “Vortical Structure in Oscillating Flow across a Rough Boundary”,
Department of Civil Engineering, University of Delaware
Newark, Delaware, Feb. 2003
- “Vortical Structure in Oscillating Flow across a Rough Boundary”,
Department of Physical Oceanography, Naval Postgraduate School
Monterey, California, April 2003
- “Vortical Structure in Oscillating Flow across a Rough Boundary”,
Department of Civil and Environmental Engineering, Stanford University
Stanford, California, May 2003
- “Observations of Wave and Current Boundary Layers Over a Coral Reef Using an ADCP”,
ADCP’s in Action RDI Users Conference
San Diego, California, Apr. 2005
- “The Kilo Nalu Reef Observatory, A Proto-Orion Initiative”,
Biogeochemistry Seminar, Department of Oceanography, University of Hawaii at Manoa
Honolulu, Hawaii, Oct. 2005
- “Boundary Layer Processes over Rough Beds at the Kilo Nalu Observatory”,
Climate and Environmental Dynamics Laboratory, University of New South Wales
Sydney, Australia, Dec. 2006
- “Rough Bed Boundary Layer Dynamics at the Kilo Nalu Observatory”,
College of Oceanic and Atmospheric Sciences Brown Bag Seminar, Oregon State University

Corvallis, Oregon, Oct. 2007

“Benthic Boundary Layer Observations at the Kilo Nalu Cabled Observatory”,
University of Hawaii and University of Tokyo Joint Symposium on Ocean and Coastal Sciences
Tokyo, Japan, Mar. 2008

“Three-dimensional Vortex Dynamics in Oscillating Flows”
Environmental Fluid Mechanics and Hydrology, Winter Quarter Colloquia, Stanford University
Stanford, California, Jan. 2009

“Three-dimensional Vortex Dynamics in Oscillating Flows”
Dept. of Thermal and Fluids Engineering Seminar, Carlos III University
Madrid, Spain, Feb. 2009

“The Kilo Nalu Observatory: Una Vista al Ambiente Marino de Hawaii”
Ciclo de Conferencias de la Escuela Superior Politecnica de Jaen, University of Jaen
Jaen, Spain, Mar. 2009

“The Kilo Nalu Observatory: Una Vista al Ambiente Marino de Hawaii”
Seminario del Instituto del Agua, University of Granada
Granada, Spain, June 2009

“The Kilo Nalu Observatory: a Window into Hawaii’s Coastal Ocean Environment”
Faculty Lecture Series, University of Hawaii at Manoa
Honolulu, Hawaii, Nov. 2010

“Three-dimensional Vortex Dynamics in Oscillatory Flow Separation”
Mechanical and Aerospace Engineering Seminar, University of California, San Diego,
La Jolla, California, March 2011