

Biographical Sketch

David L. Martin
Applied Physics Laboratory
University of Washington
1013 NE 40th Street
Seattle, Washington 98195
Date of Birth: 18 January 1951
Citizenship: U.S.

Professional Preparation

University of Washington, Zoology, BA, 1976
University of Washington, Oceanography, BS, 1976
Naval Postgraduate School, Meteorology and Oceanography, M.S., 1983
University of Washington, Oceanography, Ph.D., 1992

Appointments

2002 - Associate Director, Applied Physics Laboratory, University of Washington
2000 - 2002 Director, Ocean.US, the federal interagency program office for the IOOS
1998 - 2000 Assistant for Environmental Sciences for the Deputy Undersecretary of Defense
for Science and Technology
1997 - 1998 Director, National Ice Center, Washington, D.C.
1995 - 1997 Oceanographer for the Director, Expeditionary Warfare, Staff of the Chief
of Naval Operations
1992 - 1995 Director, Operational Oceanography Center, Naval Oceanographic Office
1989 - 1992 Doctoral Student, University of Washington
1987 - 1989 Oceanographer, Staff of the Oceanographer of the Navy
1985 - 1987 Oceanographer, USS Missouri (BB-63)
1983 - 1985 Director, Naval and Civil Weather Office, Agana, Guam

Five Significant Publications Most Closely to this Project:

Martin, D.L., 2003, "The National Oceanographic Partnership Program, Ocean.US, and Real Movement Towards an Integrated and Sustained Ocean Observing System". *Oceanography*, **16**, 13-19.

Ocean.US, 2002a. "An Integrated and Sustained Ocean Observing System (IOOS) for the United States: Design and Implementation". Martin, D.L., Atkinson, L., Malone, T., Nowlin, W.: Executive Committee. Ocean.US, Arlington, VA. 21pp.

Ocean.US, 2002b. "Building Consensus: Toward An Integrated and Sustained Ocean Observing System (IOOS)". Martin, D.L., Atkinson, L., Malone, T., Nowlin, W.: Executive Committee. Ocean.US, Arlington, VA. 175pp

Martin, D.L., 2001. "Ocean.US: The National Office for Sustained and Integrated Ocean Observations". *Proceedings, Oceanology International Americas*, Miami, FL

Martin, D.L. and S. Piotrowicz, 2001, "A U.S. Commitment to Building Ocean Partnerships and an Integrated Ocean Observing System", *Proceedings of AMS 81st Annual Conference*, Albuquerque, NM.

Other Significant Publications:

Martin, D.L. and Perry, M. J., 1994, "Minimizing systematic errors from atmospheric multiple scattering and satellite viewing geometry in CZCS Level IIA imagery", *Journal of Geophysical Research*, **99**, 7309-7322.

English, D.C., Banse, K., Martin, D. L. and M. J. Perry, 1996, "Electronic overshoot and other bias in the CZCS Global Data Set: comparison with ground truth from the subarctic Pacific", *Int. J. Remote Sens.*, **17**, 3157-3168.

Dumont, R. J., Nelson, C. A., Caviness, D. G., Thornmeyer, C. D., Martin, D. L. and J. J. Pereira, 1996, "Cooperation and Collaboration among the Nation's Meteorology, Oceanography, and Satellite Operational Processing Centers: An Evolving Era in U.S. Civilian - Military Partnerships", *Bull. Amer. Meteorol. Soc.*, **77**, 2067-2076.

Representative Synergistic Activities

As Director, Ocean.US: Led the national effort involving strong connections with industry, academia, NGOs, industry and other ocean stakeholders in the newly established office charged with establishing and maintaining an integrated and sustained ocean observing system that will serve research, education and operational needs of the country.

As Director, National Ice Center: Acquired funds from NOAA, Navy and NASA to fund a Visiting Scientist program with funded Post Doctoral Fellows at the National Ice Center that focused on the transition of cryospheric research into operations at the nation's only operational Arctic and Antarctic sea ice analysis and forecasting center.

Collaborators within the past 48 months:

Jack Barth, Oregon State University
Murray Levine, Oregon State University
Mike Kosro, Oregon State University
Antonio Baptista, Oregon Health Science University
Jan Newton, University of Washington

Graduate and Postdoctoral Advisor

None

Thesis Advisor and Postgraduate Scholar Sponsor

None

Jan A. Newton

Professional Preparation

Western Washington University, Biology (minor Chemistry)	B.S.	1981
University of Washington, Oceanography (biology emphasis)	M.S.	1984
University of Washington, Oceanography (biology emphasis)	Ph.D.	1989

Appointments

10/04 - present	Principal Oceanographer, Applied Physics Laboratory, University of Washington
6/98 - present	Affiliate Assistant Professor, School of Oceanography, University of Washington
9/99 - 6/04	Senior Oceanographer, Washington State Department of Ecology
1/94 - 8/99	Marine Waters Monitoring Supervisor, Washington State Department of Ecology
9/91 - 12/93	Research Associate, School of Oceanography, University of Washington

Five Most Closely Related Publications

- Newton, Bassin, Devol, Kawase, Ruef, Warner, Hannafious, and Rose. 2007. Hypoxia in Hood Canal: An overview of status and contributing factors. *In* Proceedings of the 2007 Georgia Basin Puget Sound Research Conference
<http://www.engr.washington.edu/epp/psgb/2007psgb/2007proceedings/index.html>
- Rynearson, T.A., J.A. Newton, and E.V. Armbrust. 2006. Spring bloom development, genetic variation, and population succession in the planktonic diatom *Ditylum brightwellii*. *Limnology and Oceanography*, 51(3): 1249–1261.
- Newton, J.A., E. Siegel, and S.L. Albertson. 2003. Changes in Puget Sound and the Strait of Juan de Fuca during the 2000-01 drought. *Canadian Water Resources Journal*, 28(4): 715-728.
- Newton, J. A. and Horner, R. A. 2003. Use of phytoplankton species indicators to track the origin of phytoplankton blooms in Willapa Bay, Washington. *Estuaries*, 26: 1071-1078.
- Ruesink, J.L., G.C. Roegner, B.R. Dumbauld, J.A. Newton, and D.A. Armstrong. 2003. Contribution of coastal and watershed energy sources to secondary production in a Northeastern Pacific estuary. *Estuaries*, 26: 1044-1058.

Five Other Significant Publications

- Banas, N.S., B.M. Hickey, J.A. Newton, and J.L. Ruesink. 2007. Tidal exchange, bivalve grazing, and patterns of primary production in Willapa Bay, Washington, USA. *Marine Ecological Progress Series*, 341: 123-139.
- Simenstad, C, M Logsdon, K. Fresh, H. Shipman, M. Dethier, J. Newton. 2006. Conceptual model for assessing restoration of Puget Sound nearshore ecosystems. Puget Sound Nearshore Partnership Report No. 2006-03. Published by Washington Sea Grant Program, University of Washington, Seattle, Washington.
- Newton, J.A., S.L. Albertson, K. Van Voorhis, C. Maloy, and E. Siegel. 2002. Washington State Marine Water Quality in 1998 through 2000. Washington State Department of Ecology, Environmental Assessment Program, Publication #02-03-056, Olympia, WA. 110 pp.
- Newton, J. and Van Voorhis, K. 2002. Seasonal Patterns and Controlling Factors of Primary Production in Puget Sound's Central Basin and Possession Sound. Washington State Department of Ecology, Environmental Assessment Program, Publication No. 02-03-059. Olympia, WA. 30 pp.
- Warner M.J., M. Kawase, and J.A. Newton. 2001. Recent studies of the overturning circulation in Hood

Synergistic Activities

- Developed and implemented a Research Apprenticeship on the "Pelagic Ecosystem Function" at the Friday Harbor Laboratories during fall quarter, 2004 to present. This program is designed to mentor undergraduate apprentices in real research. The Pelagic Ecosystem Function experience cuts across traditional research lines to cover water through whales and everything in between using discovery methods of research. Advise twelve undergraduate apprentices each fall.
- Co-manage a Hood Canal Dissolved Oxygen Program Integrated Assessment and Modeling study that incorporates community volunteers and cuts across institutional boundaries for the science. The study includes scientists from academia, federal, state, tribal, local, NGO in coordinated research. It

also involves extensive outreach and a web-reported event response capability for fish kills and algal blooms. Worked with two local tribes on facilitating science into their programs and mentoring tribal members/scientists as part of the Hood Canal study. Featured at UW's Tribal Summit in 2007. As NANOOS Executive Director, ran extensive outreach workshops to assess user needs for coastal data. Give numerous talks to varied audiences on NANOOS, and what the system can deliver as well as listening to what needs and questions users have. President of the Eastern Pacific Ocean Congress 2005 to present. Facilitate annual scientific meetings to share cross-disciplinary research on the eastern Pacific. Vice Chair of the Puget Sound Partnership Science Panel 2008. Advise on and develop a strategic science plan for Puget Sound. Invited to brief Washington State Legislature several times 2005-2008 on science needs and research status.

Collaborators & Other Affiliations

Collaborators and co-editors (last 4 years)

Martin, Wayne	UW
Moore, Stephanie	UW
Mantua, Nate	UW
Ruesink, Jen	UW
Kawase, Mitsuhiro	UW
Warner, Mark	UW
Banas, Neil	UW
Hickey, Barbara	UW
Rynearson, Tatiana	U Rhode Island
Armbrust, Ginger	UW
Horner, Rita	UW
Siegel, Eric	WA Ecology
Albertson, Skip	WA Ecology
Richey, Jeff	UW
Logsdon, Miles	UW
Martin, David	UW
Kosro, Mike	OSU
Barth, Jack	OSU
Baptista, Antonio	OHSU
Ludlow, Nelson	Mobilisa
Perry, Mary Jane	U Maine
Lorenzen, Carl	UW
Frost, Bruce	UW
Barber, Dick	Duke U
Murray, Jim	UW

Graduate Advisors

Mary Jane Perry, University of Maine (graduate advisor); Carl Lorenzen, UW (deceased, graduate advisor); Richard Barber, Duke University (postdoctoral sponsor); Bruce Frost, UW, (postdoctoral sponsor); Jim Murray, UW, (postdoctoral sponsor)

Thesis Advisor (Committee member of 4 master student committees and 2 PhD student committees)

Masters graduates past five years and current place of employment:

Tatiana Rynearson, 2004, now faculty at U Rhode Island
 Wayne Martin, 2006, now PhD student at UW
 Andy Chiodi, 2005, now PhD student at UW
 Leon Delwiche, 2006, now at SAIC (consultant)

Ph D graduates past five years and current place of employment:

Amanda Babson, 2007, Environmental Protection Agency Fellow, DC
 Neil Banas, 2006, Post Doc, UW

OREGON STATE UNIVERSITY
College of Oceanic & Atmospheric Sciences

P. MICHAEL KOSRO
Professor

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Oceanography Admin. Bldg. 104, Corvallis, OR 97331-5503
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<http://www.coas.oregonstate.edu/index.cfm?fuseaction=faculty.detail&id=546>

EDUCATION

B.A.	Physics	University of Calif., Santa Cruz	1973
M.S.	Petr. Engr.	Stanford University	1977
Ph.D.	Oceanography	University of Calif., San Diego	1985

POSITIONS

Professor, OSU	2007-present
Associate Professor, OSU	2001-2007
Associate Professor (Senior Research), OSU	1992-2001
Assistant Professor (Senior Research), OSU	1986-1992
Research Associate (Postdoctoral), Oregon State University	1985-1986

NANOOS (IOOS) Organizing Committee Governing Council/Executive Committee 2003-present
Minerals Management Service Outer Continental Shelf Scientific Committee 2003-present

Research Interests

Coastal oceanography; shelf/deep-sea exchange processes; mesoscale currents and fronts; response to winds and topography; interannual variability; eastern boundary currents; California Undercurrent; physical-biological interactions; ocean observing systems.

Major Seagoing Expeditions

At-sea participant in more than 60 research cruises, many as chief scientist, since 1979 (FRONTS) to present, including CODE, CTZ, WOCE, TOGA/COARE, EBC, Coastal Mixing and Optics, NOPP, COAST and GLOBEC, in N. Pacific, S. Pacific, N. Atlantic and Indian Oceans. Mapping of hydrography and currents, with fixed station (CTD) and underway mapping (ADCP, SeaSoar) tools, and time-series measurements from fixed moorings. In last 10 years, have added remote-sensing of time-series maps of ocean surface currents from shore, using HF radiowaves (CODAR/SeaSonde).

SELECTED RECENT PUBLICATIONS

- Yamada, Sylvia Behrens, and P. Michael Kosro, 2009. Can ocean conditions predict recruitment strength of the invasive European green crab, *Carcinus maenas*? In press (available on-line at journal web site) *Biological Invasions*, doi:10.1007/s10530-009-9589-y.
- Liu, Yonggang, P. MacCready, B.M. Hickey, E.P. Dever, P.M. Kosro and N.S. Banas, 2009. Evaluation of a coastal ocean circulation model for the Columbia River plume in summer 2004. *Journal of Geophysical Research*, **114** (C00B04). doi:10.1029/2008JC004929.
- Saraceno, M., P. T. Strub, and P. M. Kosro. "Estimates of Sea Surface Height and Near Surface Alongshore Coastal Currents From Combinations of Altimeters and Tide Gauges", submitted to *Journal of Geophysical Research*.
- Huyer, A., P. A. Wheeler, P. T. Strub, R. L. Smith, R. Letelier, and P. M. Kosro (2007), The Newport Line off Oregon – Studies in the North East Pacific, *Prog. Oceanogr.*, 75, 126-160, doi:10.1016/j.pocean.2007.08.003
- Kosro, P.M., W.T. Peterson, B.M. Hickey, R.K. Shearman and S.D. Pierce, 2006. "The physical vs. the biological spring transition: 2005", *Geophys. Res. Letters*, 33(22), L22S03, doi: 10.1029/2006GL027072
- Huyer, A., J.H. Fleischbein, J. Keister, P.M. Kosro, N. Perlin, R.L. Smith, and P.A. Wheeler, 2005. "Two coastal upwelling domains in the northern California Current System", *Journal of Marine Research*, 63, 901-929.
- Kosro, P.M. "On the spatial structure of coastal circulation off Newport, Oregon, during spring and summer 2001, in a region of varying shelf width", *J. Geophys. Res.*, 110, C10S06, doi:10.1029/2004JC002769.
- Kurapov, A. L., J. S. Allen, G. D. Egbert, R. N. Miller, P.M. Kosro, M. D. Levine, T. Boyd, and J. A. Barth (2005), Assimilation of moored velocity data in a model of coastal wind-driven circulation off Oregon: Multivariate capabilities, *J. Geophys. Res.*, 110, C10S08, doi:10.1029/2004JC002493
- Kurapov, A.L., J.S. Allen, G.D. Egbert, R.N. Miller, P.M. Kosro, M. Levine, T. Boyd, 2005. "Distant effect of assimilation of moored currents into a model of coastal wind-driven circulation off Oregon". *J. Geophys. Res.*, 110, C02022, doi:10.1029/2003JC002195.
- Swartzman, G., B. Hickey, P.M. Kosro, and C. Wilson, 2005. "Core undercurrent and equatorward surface currents in the Pacific Eastern boundary current in summer 1995 and 1988 and their relationship to the distribution of euphausiids". *Deep-Sea Research II*, 52(1-2): 73-88, doi:10.1016/j.dsr2.2004.09.028.
- Paduan, J.D., P.M. Kosro and S.M. Glenn, 2004. "A national coastal ocean high frequency radar system for the United States". *Marine Technology Society Journal* 38(2): 76-82.
- Kosro, P.M., 2003. "Enhanced southward flow over the Oregon shelf in 2002: a conduit for subarctic water", *Geophysical Research Letters*, 30(15), 10.1029/2003GL017436.

António M. Baptista, Ph.D.
Oregon Health & Science University
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Professional Preparation

- 1987 Ph.D., Civil Engineering, Massachusetts Institute of Technology, Cambridge MA
1986 Especialista em Hidráulica Marítima (Specialist in Maritime Hydraulics), Laboratório Nacional de Engenharia Civil (LNEC), Lisboa, Portugal
1984 M.S., Civil Engineering, Massachusetts Institute of Technology, Cambridge, MA
1978 Engenheiro Civil, Academia Militar, Lisboa, Portugal

Appointments

- 2008 - present *Professor*, Division of Environmental & Biomolecular Systems, Oregon Health & Science University (OHSU), Beaverton OR
2006 - present *Director*, NSF Science and Technology Center for Coastal Margin Observation and Prediction
2000-2006 *Head*, Department of Environmental & Biomolecular Systems, OGI/OHSU, Beaverton OR
1999-2008 *Professor* (joint appointment), Department of Computer Science and Electrical Engineering (formerly Computer Science and Engineering), OGI/OHSU, Beaverton OR
1998-2008 *Professor*, Department of Environmental and Biomolecular Systems, OGI/OHSU
1991-2006 *Director*, Center for Coastal and Land-Margin Research (CCALMR), OGI/OHSU
1993-1998 *Associate Professor*, Department of Environmental Science and Engineering, Oregon Graduate Institute (OGI), Beaverton OR
1987-1993 *Assistant Professor*, Department of Environmental Science and Engineering, Oregon Graduate Institute (OGI), Beaverton OR
1979-1987 *Researcher*, Estuaries Division, Hydraulics Department, Laboratório Nacional de Engenharia Civil (LNEC), Lisboa, Portugal
1979-1980 *Visiting Engineer*, Laboratoire National d'Hydraulique, Chatou, France

Publications

Five Publications Most Closely Related to the Proposed Project:

- Burla, M., A. Baptista, et al. (2009). Seasonal and inter-annual variability of the Columbia River plume: a perspective enabled by multi-year simulation databases. *Journal of Geophysical Research - Oceans*. Accepted for publication.
Frolov, S., A. Baptista, et al. (2009). Estimation of Ecologically Significant Circulation Features of the Columbia River Estuary and Plume Using a Reduced-Dimension Kalman Filter. *Continental Shelf Research* 29(2): 456-466.
Ghindilis, A.L., M.W. Smith, K.R. Schwarzkopf, C. Zhan, D.R. Evans, A.M. Baptista, H.M. Simon (2009). Sensor Array: Impedimetric Label-Free Sensing of DNA Hybridization in Real Time for Rapid, PCR-Based Detection of Microorganisms. *Electroanalysis* 21(13): 1459-1468.
Baptista, A.M., B. Howe, et al. (2008). Scientific Exploration in the Era of Ocean Observatories. *Computing in Science and Engineering* 10(3): 53-58.
Zhang, Y. and A. Baptista (2008). SELFIE: A semi-implicit Eulerian-Lagrangian Finite-element model for cross-scale ocean circulation. *Ocean Modelling* 21(3-4): 71-96.

Five Other Significant Publications:

- Frolov, S., A.M. Baptista, et al. (2009). Fast data assimilation using a nonlinear Kalman filter and a model surrogate: an application to the Columbia River estuary. *Dynamics of Atmospheres and Oceans* 48(1-3): 16-45.
Bruland, K. W., M. C. Lohan, et al. (2008). Factors influencing the chemistry of the Columbia River Plume: Nitrate, silicic acid, dissolved Fe and dissolved Mn. *Journal of Geophysical Research - Oceans* 113, C00B02 (23 pp.).

- Chawla, A., D. Jay, et al. (2008). Seasonal variability and estuary-shelf interactions in circulation dynamics of a river- dominated estuary. *Estuaries and Coasts* 31(2): 269-288.
- Baptista, A.M., Y.L. Zhang, A. Chawla, M. Zulauf, C. Seaton, E.P. Myers, III, J. Kindle, M. Wilkin, M. Burla, and P.J. Turner (2005). A cross-scale model for 3D baroclinic circulation in estuary-plume-shelf systems: II. Application to the Columbia River. *Continental Shelf Research* 25: 935-972.
- Zhang, Y.L., A.M. Baptista, and E.P. Myers (2005). A cross-scale model for 3D baroclinic circulation in estuary-plume-shelf systems: I. Formulation and skill assessment. *Continental Shelf Research* 24: 2187-2214.

Synergistic Activities

- CORIE: Dr. Baptista is the scientific director of CORIE, a pioneering multi-purpose coastal-margin observation and prediction system for the Columbia River estuary and adjacent coast. Established in 1996, CORIE is becoming critical infrastructure for scientific research and for sustainable development issues in the region. Recent and on-going applications include investigating plume and estuary habitat conditions for salmon, analyzing ecological impacts of navigation improvements and hydropower management, and delivery of near real-time information to scientific vessels.
- Ocean Observing Systems Leadership. Member, Steering Committee, Northwest Association of Networked Ocean Observing Systems (NANOOS), since 2003 (President Elect since 2006). Member, Science and Technical Advisory Committee, Ocean Observatories Initiative (OOI), since 2005.
- Community Software: Lead the development of ELCIRC and SELFE, unstructured-grid computer models for 3D simulation of circulation and transport in natural water bodies; maintain a Web site for free public distribution of ELCIRC and SELFE and supporting software tools (e.g., grid optimization and visualization); co-convene annual ELCIRC and SELFE user's group meetings - since 2004
- Tsunami Hazards: Collaborative research with state and federal agencies, over the last decade, has led to the publication by the Oregon Department of Geology and Mineral Industries of a comprehensive, pioneering set of tsunami inundation maps for coastal Oregon to be used by coastal planners for emergency response purposes. A similar set will be published for the state of Washington.
- Education:
 - Led curriculum development initiative for Environmental Information Technology (EIT) track
 - Active role in curriculum development for Environmental Science and Engineering (ESE) degrees
 - Teaching Awards, 1989, 1990, 1991, finalist for Teacher of the Year in 2002.

Collaborators

Recent Collaborators and Co-editors

A. Barnard, P. Barrett, J. Barth, C. Blain, D. Bottom, K. Bruland, N. Bulusu, E. Casillas, T. Cowles, J. Creswell, B. Crump, E. D'Asaro, C. Davis, E. Davis-Butts, A. Devol, R. Emmett, W. Feng, W. Feng, J. Fisher, M. Foreman, J. Freire, G. Gelfenbaum, B. Grantham, B. Hales, M. Haller, B. Hickey, B. Howe, D. Jay, A. Jessup, G. Kaminsky, J. Kindle, P. Kosro, R. Kudela, T. Leen, E. Lessard, R. Letelier, M. Levine, R. Light, Z. Lu, P. MacCready, D. Maier, D. Martin, B. Menge, C. Moore, J. Moum, M. Nakano, J. Nash, J. Newton, R. Odom, Jr., T. Ozkan-Haller, W. Pearcy, W. Peterson, W. Plant, F. Prah, G. Priest, C. Pu, D. Reed, S. Rumrill, M. Sachs, R. Samelson, T. Sanford, C. Silva, C. Simenstad, H. Simon, Y. Spitz, D. Steere, P. Tratnyek, P. Turner, R. van der Merwe, J. Walpole, M. Wilkin, R. Witter, Y. Zhang, P. Zuber.

Post-Doctoral Fellows Supervised

Former: S. Das, A. Farrenkopf, Y. Guo, E. Myers, Z. Yang, A. Chawla, M. Zulauf, Y. Zhang, S. Frolov, B. Howe. Current: K. Cho.

Graduate Students Supervised

Former: J. Darland (MS), A. Fortunato (PhD), E. Myers III (MS and PhD), A. Oliveira (MS and PhD), A. Racicot (MS), J. Remedio (MS), C. Seaton (MS), W. Sommerfield (MS), M. Vantrease (MS), Y. Wang (PhD), T. Wood (PhD), S. Frolov (PhD), N. Hyde (MS), R. Kilgren (MS). Current: M. Burla (PhD), N. Bandolin (PhD).

PhD and MS Thesis Advisors E. Eric Adams and K.D. Stolzenbach.

Stephen Uczekaj has a bachelors-of-science degree in Electrical Engineering from the University of Seattle, 1982. He has worked for Boeing over 20 years as a senior programming, designer, and developer of embedded and network system software programs. For the last 5 years he has been managing a talented multi-program research team of over 15 people focused on advanced information technology for networked systems.



Stephen is currently the manager of the Boeing Research & Technology (BR&T) Network Systems Technology Information Management program. This program develops and transitions advanced Information Management technology solutions to internal and external customers solving new challenges in processing and sharing rich data in disperse mobile and fixed environments.

Stephen is also the current Data Mgmt and Communications chairperson for the Northwest Association of Networked Ocean Observing Systems (NANOOS) since December 2007.

Notable past accomplishments include an invention patent award on software for object oriented state machines and development of an information architecture and software service which was transitioned into a Boeing licensed product and used on several programs.

Stephen also recently completed a significant research and development

contract with Air Force Rome Labs titled Dynamic Information Management for Air/Gnd Mobile Platforms (DIMAG) which has been replicated for use on several Boeing programs and contracts.

Some of Stephen's accomplishments include:

- > Awarded US Patent No. 5,920,718 Method and Apparatus for Creating Executable Code for Object-Oriented Objects Having Finite State Machine - July 6, 1999
- > Co-Creator and Developer of the Boeing eXtensible Infosphere Information Management Architecture - 2001
- > Boeing Associate Technical Fellow Member - 1996
- > Author of many Contract Research and Development white paper proposals and year-end reports on research and development status and progress.
- > Experienced Software Designer and Developer of Microcode, Assembly, C, C++, Ada, Java network information architectures.

Stephen has two children Cora and Joshua. He enjoys family activities, skiing and is an avid ballroom dancer with his wife of 25 years Cora Lyn. They own and operate an independent ballroom dance studio in Bellevue, WA called Impulse Ballroom.

Resume: Jonathan Charles Allan, Coastal Geomorphologist.

ADDRESS:

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EDUCATION:

Ph.D./Geography: University of Canterbury, Christchurch, New Zealand (1998)

M.Sc. (Honours)/ Geography: University of Canterbury, Christchurch, New Zealand (1992)

B.Sc./Geography: University of Canterbury, Christchurch, New Zealand (1990)

EMPLOYMENT:

Coastal Geomorphologist with the Oregon Department of Geology and Mineral Industries (2001-present); Courtesy Faculty Staff Member with the College of Oceanic & Atmospheric Sciences, Oregon State University (2001-present); Post-Doctoral Research Associate working with Professor Paul Komar in the College of Oceanic & Atmospheric Sciences, Oregon State University (1999-2001); Research Fellow in the Department of Geography, University of Canterbury, Christchurch, New Zealand (1998-1999); Coastal consultant for Land and Water Studies (International) Ltd. (1998-1999).

RESEARCH INTERESTS:

Major research interest in understanding the role of:

- beach process dynamics in lacustrine and oceanic environments,
- coastal engineering structure effects,
- equilibrium beach forms,
- sediment dynamics,
- nearshore processes,
- El Niño/La Niña Southern Oscillation,
- shoreline management
- climate change.

PUBLICATIONS:

P.D. Komar and Allan J.C., *in review*. Increasing wave heights along the U.S. Atlantic Coast linked to hurricane generation. submitted to *Eos, Transactions, American Geophysical Union*.

Allan, J.C. and Hart, R., 2007. Profile dynamics and particle tracer mobility of a cobble berm constructed on the Oregon Coast, *Coastal Sediments' 07, Coastal Engineering and Science in Cascading Spatial and Temporal Scales, New Orleans, Louisiana*.

Allan J.C., Hart R, Tranquilli V. 2006. The use of Passive Integrated Transponder tags (PIT-tags) to trace cobble transport in a mixed sand-and-gravel beach on the high-energy Oregon coast, USA. *Marine Geology* 232 (1-2): 63-86.

Allan J.C. and P.D. Komar, 2006. Climate controls on U.S. West Coast erosion processes. *Journal of Coastal Research* 22(3): 511-529.

Baptista A., Zhang Y., Turner P., Zulauf M., Kaminsky G., Grantham B., Allan J., Newton J., Devol A., MacCready P., Rumrill S., Haller M., Ozkan-Haller T., Gelfenbaum G., Ruggiero

- P., 2006. NANOOS-Pilot technologies: a national role?, *Eos Trans. AGU, Ocean Sci. Meet. Suppl. Abstract OS14F-03*, vol. 87, Honolulu, Hawaii.
- Allan, J.C. and P.D. Komar, 2004. Environmentally compatible cobble berm and artificial dune for shore protection. *Shore & Beach* 72(1): 9-18.
- Allan, J.C., P.D. Komar, and G.R. Priest, 2003: Shoreline variability on the high-energy Oregon coast and its usefulness in erosion-hazard assessments. *Journal of Coastal Research, Special Issue 38*.
- Komar, P.D., J.C. Allan, and R. Winz, 2003: Cobble beaches - The "design with nature" approach for shore protection. *Proc. 5th International Symposium on Coastal Engineering and Science of Coastal Sediment Processes, Clearwater Beach, Florida*.
- Allan, J.C., and P.D. Komar, 2002: A dynamic revetment and artificial dune for shore protection at Cape Lookout State Park, Oregon. *Proc. 28th International Conference on Coastal Engineering, Cardiff, Wales*.
- Komar, P.D. and J.C. Allan, 2002: Assessments of nearshore-process climates related to their potential for producing beach and property erosion. *Shore and Beach*, Vol. 70(3): 31-40.
- Allan, J.C., P.D. Komar, 2002: Extreme Storms on the Pacific Northwest Coast during the 1997-98 El Niño and 1998-99 La Niña. *Journal of Coastal Research*, Vol. 18(1), 175-193.
- Allan, J.C., W.J. Stephenson, R.M. Kirk, A. Taylor, 2002: Lacustrine shore platforms, Lake Waikaremoana, New Zealand. *Earth Surfaces Processes and Landforms*, Vol. 27(2): 207-220.
- Komar, P.D., J.J. Marra, and J.C. Allan, 2002: Coastal-erosion processes and assessments of setback distances. *Proc. of Solutions to Coastal Disasters'02, San Diego, California, Amer. Soc. Civil Engrs*, 808-822.
- Allan, J.C., and P.D. Komar, 2001: Wave climate change and coastal erosion in the US Pacific Northwest. *Proc. 4th International Symposium on Ocean Wave Measurement and Analysis, WAVES 2001, San Francisco, California, Amer. Soc. Civ. Engrs.*, 680-690.
- Allan, J.C., and P.D. Komar, 2000: Are ocean wave heights increasing in the eastern North Pacific? *Eos, Transactions, American Geophysical Union*, 47: 561-567.
- Marra, J.J., P.D. Komar, G. Diaz-Mendez, J.C. Allan, and P. Ruggiero, 2000: El Nino versus La Nina along the Oregon coast. *Proc. 17th International Conference of the Coastal Society, Portland, Oregon*, 776-787.
- Komar, P.D., J.C. Allan, G. Diaz-Mendez, J.J. Marra, P. Ruggiero, 2000: El Nino and La Nina – Erosion processes and impacts. *Proc. 27th International Conference on Coastal Engineering, Sydney, Australia*, 2414-2427.

CAROL J. FALKENHAYN MALOY

Environmental Assessment Program, Washington State Department of Ecology
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EDUCATION

University of Washington. Oceanography graduate program, 1990 – 1995.
College of William & Mary, Virginia Institute of Marine Science. M.S., Marine Science, 1990.
West Virginia University. B.A., Biology, 1984.

CURRENT POSITION

Unit Supervisor

Environmental Assessment Program, WA Department of Ecology 2006 - date
As supervisor of the Marine Monitoring Unit, manage a staff of 14 professional scientists.
Oversee the Puget Sound Assessment and Monitoring Program's Marine Sediment and Marine Waters Programs and the Beach Environmental Assessment, Communication and Health Program.

RESOURCE MANAGEMENT & RESEARCH EXPERIENCE

Environmental Specialist

Environmental Assessment Program, WA Department of Ecology 2001 - 2002
Reviewed and assessed the quality of historical marine monitoring data; transferred all historical marine water quality data into the Agency's Environmental Information Management database; analyzed data and contributed to Ecology's Annual Report.

Oceanographer

Washington Sea Grant, University of Washington 1997 - 1999
While on location at the Washington Department of Ecology, managed a project to characterize the biological and physical controls on primary productivity in Willapa Bay, WA. Developed and implemented sampling and experimental design; coordinated research with university faculty, and other state and federal agencies; managed the collection and analysis of data; wrote quarterly reports to the Environmental Protection Agency; presented project results at local and national science conferences.

Biological Oceanographer/Graduate Research Assistant

School of Oceanography, University of Washington 1990 – 1995

Marine Scientist/Graduate Research Assistant

Virginia Institute of Marine Science, College of William & Mary 1988 - 1990

Environmental Analyst

Sobotka & Company, Inc., Washington, D.C. 1986 – 1988

Environmental Analyst Office of Policy Analysis

U.S. Environmental Protection Agency, Washington, D.C. 1985 – 1986

TEACHING EXPERIENCE

Instructor Pacific Lutheran University 1996 – 1997

Courses: Conservation of Natural Resources and General Oceanography

Recipient of Innovative Teaching Grant.

Instructor Tacoma Community College 1996 – 1997

Courses: Environmental Science and Survey of Oceanography

Instructor Pierce College 1995 – 1997

Courses: Environmental Science, Introduction to Oceanography, Biological Oceanography, and Marine Science Field Study

PROFESSIONAL PRESENTATIONS

Maloy, C., S. Albertson, J. Bos, G. Pelletier, M. Roberts, R. McEliece, A. Stutes, and S. Hoffer. 2007. *South Puget Sound Dissolved Oxygen Study – An Overview*. Estuarine Research Federation Conference, Providence, RI, November 4-8.

http://www.erf.org/cgi-bin/conference07_abstract.pl?conference=erf2007&hilit=Maloy&id=711

Falkenhayn, C., J. Newton, C. Clishe, and K. Nakata. 1999. *Nutrient Dynamics in Willapa Bay*. Pacific Estuarine Research Society Conference, Newport, OR, April 15-16.

Falkenhayn, C. and J. Newton. 1999. *Physical and Biological Processes in a Shallow Estuary: Characterizing Willapa Bay, WA by High-resolution Sampling*. Ocean Sciences Conference, Santa Fe, NM, February 1-5.

Falkenhayn, C., C. Clishe, C. Moore, and J. Newton. 1998. *Biological and Physical Oceanographic Processes in Willapa Bay, Washington: Early Results*. Pacific Estuarine Research Society and the Northwest Algal Symposium Joint Meeting, Whidbey Island, WA, May 29-31.

Newton, J. and C. Falkenhayn. 1998. *Monitoring Water Conditions in Willapa Bay*. Willapa Alliance Science Conference, Ilwaco, WA, April 24.

Falkenhayn, C. and L. Haas. 1990. *The Dynamics of a Summer Cyanobacterial Bloom in the Chesapeake Bay*. Ocean Sciences Conference, New Orleans, LA, February 12-16.

Haas, L., C. Falkenhayn, and M. Sieracki. 1989. *Growth and Grazing Dynamics of Coccoid Cyanobacteria in the Lower Chesapeake Bay*. International Estuarine Research Conference, Baltimore, MD, October 8-12.

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Education

Ph.D., 2008, Marine Science, University of Sydney, Sydney, NSW, Australia
M.S., 2000, Oceanography, University of Washington, Seattle, Washington, USA
B.S., 1989, Ocean Engineering, Florida Institute of Technology, Melbourne, Florida, USA

Licensing

Registered Professional Engineer (Civil), State of Washington

Professional Experience

2007-present WA Department of Ecology, Coastal Engineer (Environmental Engineer 5)
1997-2007 WA Department of Ecology, Coastal Engineer (Environmental Engineer 4)
1995-1997 WA Department of Ecology, Coastal Engineer (Environmental Engineer 3)
1991-1995 WA Department of Ecology, Shoreline Engineer (Environmental Engineer 2)
1989-1991 US Army Corps of Engineers, General Engineer

Selected Publications

- Kaminsky, G.M.**, Ruggiero, P., Buijsman, M., McCandless, D., and Gelfenbaum, G., in press. Historical evolution of the Columbia River littoral cell, *Marine Geology*.
- Ruggiero, P., Buijsman, M.C., **Kaminsky, G.M.**, and Gelfenbaum, G., in press. Modeling the effect of wave climate and sediment supply variability on large-scale shoreline change, *Marine Geology*.
- Kaminsky, G.M.**, Ferland, M.A., Moritz, H.R., Ruggiero, P. 2007. Long-term shoreface response to sediment deficit, *The International Conference on Coastal Sediments '07*, pp. 633-646.
- Ruggiero, P., **Kaminsky, G.M.**, Gelfenbaum, G., and Voigt, B., 2005. Seasonal to interannual morphodynamic variability along a high-energy dissipative littoral cell, *Journal of Coastal Research*, (21) 3 pp. 553-578.
- Moore, L.J., Jol, H.M., Kruse, S., Vanderburgh, S., and **Kaminsky, G.M.** 2004. Annual layers revealed by GPR in the subsurface of a prograding coastal barrier, southwest Washington, U.S.A., *Journal of Sedimentary Research*, (74) 5, pp. 690-696.
- Ruggiero, P., **Kaminsky, G.M.**, and Gelfenbaum, G. 2003. Linking proxy-based and datum-based shorelines on a high-energy coastline: implications for shoreline change analyses, *Journal of Coastal Research*, SI 38, pp. 57-82.
- Moore, L.J., Jol, H.M., **Kaminsky, G.M.**, and Kruse, S. 2003. Severe winter storm effects revealed in coastal barrier stratigraphy, southwest Washington, USA, *Proceedings of Coastal Sediments '03*, East Meets West productions, CD-ROM, 12 p.
- Kaminsky, G.M.** and Ferland, M.A. 2003. Assessing the connections between the inner shelf and the evolution of Pacific northwest barriers through vibracoring, *Proceedings of Coastal Sediments '03*, East Meets West productions, CD-ROM, 12 p.

- Moore, L.J., **Kaminsky, G.M.**, and Jol, H.M. 2003. Exploring linkages between coastal progradation rates and the El Niño Southern Oscillation, Southwest Washington, USA, *Geophysical Research Letters* 13 (9), 1448.
- Buijsman, M.C., **Kaminsky, G.M.**, and Gelfenbaum, G. 2003. Shoreline change associated with jetty construction, deterioration, and rehabilitation at Grays Harbor, Washington, *Shore & Beach*, Vol. 71, No. 1, pp. 15-22.
- Ruggiero, P., Gelfenbaum, G., Thompson, D. and **Kaminsky, G.M.** 2001. Exploring the relationship between nearshore morphology and shoreline change, *Proceedings of the 4th Conference on Coastal Dynamics*, pp. 627-636.
- Kaminsky, G.M.**, Buijsman, M.C., and Ruggiero, P. 2001. Predicting shoreline change at decadal scale in the Pacific Northwest, USA, *Proceedings of the 27th International Conference on Coastal Engineering*, pp. 2400-2413.
- Buijsman, M.C., Ruggiero, P. and **Kaminsky, G.M.** 2001. Sensitivity of shoreline change predictions to wave climate variability along the southwest Washington coast, USA, *Proceedings of the 4th Conference on Coastal Dynamics*, pp. 617-626.
- Voigt, B., Ruggiero, P., and **Kaminsky, G.** 2000. Towards the development of a decision support system for the Columbia River littoral cell, *Proceedings of the 17th International Conference of The Coastal Society 17th Conference*, pp. 525-532.
- Ruggiero, P., Voigt, B., and **Kaminsky, G.** 2000. Beach monitoring for enhanced decision making, *Proceedings of the 17th International Conference of The Coastal Society 17th Conference*, pp. 516-524.
- Kaminsky, G.M.** and Gelfenbaum, G. 2000. The Southwest Washington Coastal Erosion Study: A scientific research project to address management-scale objectives, *Proceedings of the 17th International Conference of The Coastal Society 17th Conference*, pp. 505-515.
- Kaminsky, G.M.** and Gelfenbaum, G. 1999. The Southwest Washington Coastal Erosion Study: Research in support of coastal management, *Proceedings of Coastal Zone '99*, San Diego, California, pp. 737-739.
- Kaminsky, G.M.**, Daniels, R.C., McCandless, D., Huxford, R., and Ruggiero, P. 1999. Mapping erosion hazard areas in Pacific County, Washington, *Journal of Coastal Research*, SI 28, pp. 158-170.
- Kaminsky, G.M.**, Buijsman, M., Gelfenbaum, G.R., Ruggiero, P., Jol, H.M., Gibbs, A., and Peterson, C.D. 1999. Synthesizing geological observations and process-response data for modeling coastal change at a management scale, *Proceedings of Coastal Sediments '99*, pp. 1708-1723.
- Ruggiero, P., Côté, J., **Kaminsky, G.M.**, and Gelfenbaum, G.R. 1999. Scales of variability along the Columbia River littoral cell, *Proceedings of Coastal Sediments '99*, pp. 1692-1707.
- Ruggiero, P., **Kaminsky, G.M.**, Komar, P.D., and Plant, N. 1998. Coastal morphologic variability of high energy dissipative beaches, *Proceedings of the 26th International Conference on Coastal Engineering*, pp. 3258 -3251.
- Kaminsky, G.M.**, Ruggiero, P., and Gelfenbaum, G.R. 1998. Monitoring coastal change in southwest Washington and northwest Oregon during the 1997/98 El Niño, *Shore & Beach*, Vol. 66, 3, pp. 42-51.
- Ruggiero, P., **Kaminsky, G.M.**, Komar, P.D., and McDougal, W.G. 1997. Extreme waves and coastal erosion in the Pacific Northwest, *Proceedings of Waves '97*, pp. 947-961.
- Kaminsky, G.M.**, Ruggiero, P., Gelfenbaum, G., and Peterson, C. 1997. Long-term coastal evolution and regional dynamics of US Pacific Northwest littoral cell, *Proceedings of Coastal Dynamics '97*, Plymouth, England, pp. 614-623.

Steven S. Rumrill

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and

Associate Professor, Oregon Institute of Marine Biology / University of Oregon
Adjunct Faculty, Marine Resource Management Program / Oregon State University

EDUCATION

Ph.D., Zoology, University of Alberta, Edmonton (1987)

Thesis: *Differential predation upon embryos and larvae of temperate Pacific echinoderms*

M.Sc., Marine Sciences, University of California at Santa Cruz (1983)

Thesis: *Contrasting reproductive patterns among ophiuroids (Echinodermata) from southern Monterey Bay, USA*

B.A., Biology, University of California at Santa Cruz (1981)

RESEARCH INTERESTS

- Reproductive biology, life histories, and larval ecology of marine and estuarine invertebrates
- Detection, assessment, and improvement of water quality and habitat conditions in estuaries
- Design and implementation of observational systems for marine and estuarine ecosystems
- Oceanic forcing of nutrient dynamics, larval supplies, and water quality conditions in Pacific northwest estuaries
- Restoration and recovery of native oyster populations
- Development of best management practices to minimize adverse environmental impacts of commercial oyster mariculture
- Global and regional declines in the status and condition of seagrass beds
- Natural history, restoration ecology, and management policy for saltmarshes, seagrass beds, and shellfish

COMMITTEES

- Chairman, Integrated Ecosystem Assessment Work Group; West Coast Governors' Agreement on Ocean Health (2008-2010)
- Chairman, Program Guidance Committee; National Estuarine Research Reserve System-Wide Monitoring Program (2009-2011)
- North Coast Science Advisory Team / California Marine Life Protection Act (2009-2012) Governing Council (2008-2010)
- President-elect, Pacific Estuarine Research Society (2010-2012)
- North Pacific Marine Science Organization – PICES Marine Environmental Quality Committee (2007-2010)
- California Sea Grant - Science Advisory Committee (2005-09)
- NANOOS / Northwest Association of Networked Ocean Observing Systems – Governing Council (2007-2010)
- Pacific Regional Marine Research Plan for the California Current Large Marine Ecosystem – Plan Development Committee (2006-09)
- Oregon International Port of Coos Bay – Technical Advisory Committee (Chairman, 1996-2009)

PENDING, CURRENT AND RECENT GRANT AWARDS AND SUPPORT

- Predicting Climate Change Threats to key Estuarine Habitats and Ecosystem Services in the Pacific Northwest (Co-PI; USGS, NCCWSC; \$957,440)
- Enhancement of Native Olympia Oyster Populations in Coos Bay, Oregon (PI; US Army Corps of Engineers; \$630,000; pending)
- Ecological Effects of Bed Shape and Edges for Experimental Populations of Olympia Oysters in the South Slough Estuary, Oregon (PI; NOAA/NMFS; \$64,000 - pending)
- Ecological Factors that Limit Recovery of Native Olympia Oysters (*Ostrea conchaphila*) in the South Slough Estuary, Oregon (PI; Murdock Trust; \$15,000 / 2008-09)
- Experimental Replanting of Eelgrass (*Zostera marina*) within the Siuslaw River Estuary (PI; ODOT; \$42,400 / 2007-2012)
- Developing a Research and Information Plan for the California Current Large Marine Ecosystem of Coastal Washington, Oregon, and California (Co-PI; NOAA/National Sea Grant Program; \$500,000 / 2006-09)
- Establishment of Near Real-time Hydrodynamic Monitoring Stations in Coos Bay (PI; NOAA/NANOOS; \$90,000 / 2008-2010)
- Physical and Biotic Links between the Coos Bay Estuary and the Nearshore Pacific Ocean (Chief scientists; NOAA/Marine and Aviation Operations; 18 DAS aboard RV McARTHUR 2007, '08, '09)
- Restoration of Native Olympia Oysters (*Ostrea conchaphila*) within the South Slough Estuary, OR (PI; NOAA/CHRP; \$74,922 / 2007-09)
- Assessment of Non-point Source Bacterial Contamination in Oregon South Coast Beaches (PI; USEPA/ODEQ; \$54,336 / 2006-08)
- Short-Term Variability and Long-Term Changes in the Extent of Marine and Riverine Forcing of Estuarine Water Conditions within Five Pacific Coast Estuaries (PI; NOAA/CICEET; \$70,000 / 2006-07)
- Hydrodynamic Transport of Bacterial Contaminants within the South Slough Estuary, OR (PI; USEPA/ODEQ; \$82,650 / 2005-07)
- Establishment of Real-Time Multi-Parameter Telemetry Anchor Stations for the South Slough Estuary, OR; A Pilot Project for the Northwest Association of Networked Ocean Observing Systems (co-PI; NOAA/Coastal Services Center; \$33,000 / 2006)

REPRESENTATIVE PUBLICATIONS AND TECHNICAL REPORTS

- Davidson, T.M., A.L. Shanks, and S.S. Rumrill. 2009. The composition and density of fauna utilizing burrow microhabitats created by a non-native burrowing crustacean (*Sphaeroma quoianum*). *Biological Invasions (in press)*.
- Dumbauld, B., J. Reusink, and S. Rumrill. 2009. The ecological role of bivalve shellfish aquaculture in the estuarine environment: a review with application to oyster and clam culture in west coast (USA) estuaries. *Aquaculture (manuscript accepted / in revision)*.
- Groth, S. and S.S. Rumrill. 2009. History of native oysters (*Ostrea lurida*) in Oregon estuaries, with a description of recovering populations in Coos Bay. *J. Shellfish Research* 28: 51-58.
- Rumrill, S.S. and D.C. Sowers. 2008. Concurrent assessment of eelgrass beds (*Zostera marina*) and saltmarsh communities along the estuarine gradient of the South Slough, Oregon. *J. Coastal Research*. 55:121-134.
- Davidson, T.M., A.L. Shanks, and S.S. Rumrill. 2008. Colonization and substratum preference of an introduced burrowing crustacean in a temperate estuary. *J. Mar. Biol. Ecol.* 345: 144-149.
- Rumrill, S.S., and B. Grupe. 2008. Partnership for monitoring and assessment of non-point source bacterial contamination of south coast beaches. Part B. Temporal and spatial patterns in the delivery and distribution of fecal indicator bacteria within Sunset Bay, Oregon. Oregon Department of Environmental Quality, Technical Report. 75 pp.

- Rumrill, S.S. 2007. Measurement of Salinity. In, Encyclopedia of Tidepools (M.W. Denny and S.D. Gaines, eds.) University of California Press. pp. 479-481.
- Rumrill, S.S. 2006. The Ecology of the South Slough Estuary: Site Profile of the South Slough National Estuarine Research Reserve. NOAA / Oregon Department of State Lands. 238 pp.
- Rumrill, S.S., and V.K. Poulton. 2004. Ecological role and potential impacts of molluscan shellfish culture in the estuarine environment of Humboldt Bay, California. Western Regional Aquaculture Center / Technical Report WRAC04:1-21
- Thom, R.M., A.B. Borde, S.S. Rumrill, D.L. Woodruff, G. Williams, J.A. Southard, and S.L. Sergeant. 2003. Factors influencing spatial and annual variability in eelgrass (*Zostera marina* L.) meadows in Willapa Bay, WA and Coos Bay, OR, estuaries. *Estuaries* 26:1117-1129.
- Borde, A.B., R.M. Thom, S.S. Rumrill and L.M. Miller. 2003. Geospatial habitat change analysis in Pacific northwest coastal estuaries. *Estuaries* 26:1104-1116.
- Wasson, K., D. Lohrer, M. Crawford, and S.S. Rumrill. 2002. Non-native species in our nation's estuaries: a framework for an invasion monitoring program. NOAA/ERD Technical Report 2002:1-57.
- Powell, S.L. and S.S. Rumrill. 2001. South Slough National Estuarine Research Reserve: monitoring short-term variability and change in the estuary's water quality. *Earth System Monitor* 11:5-11.
- Rumrill, S.S. 1998. Habitat variability and function in Pacific northwest estuaries. Pp. 12-23, in *Protecting and Restoring Pacific Northwest Estuaries* (NOAA / PNCERS Technical Report, 1998)
- Shapiro, L.P., B.A. Butler, N.B. Terwilliger, and S.S. Rumrill. 1997. The Oregon Institute of Marine Biology. *Bulletin of the Ecological Society of America* 78: 149-153.
- Rumrill, S.S. and C.E. Cornu. 1995. South Slough coastal watershed restoration: a case study in integrated ecosystem restoration. *Restoration and Management Notes* 13:53-57.
- Rumrill, S.S. 1994. Non-point source pollution research and monitoring within the National Estuarine Research Reserve System. pp. 11-17. *Proc. Coastal Non-Point Source Workshop, Building Partnerships* (Tampa, FL) / US-EPA
- Young, C.M., Tyler, P.A., Cameron, J.L., and S.S. Rumrill. 1992. Seasonal breeding aggregations in low density populations of the bathyal echinoid *Stylocidaris lineata*. *Marine Biology* 113: 603-612.
- Rumrill, S.S. 1990. Natural mortality of marine invertebrate larvae. *Ophelia* 32: 163-198.
- Rumrill, S.S. 1989. Population size-structure, juvenile growth and breeding periodicity of the sea star *Asterina miniata* in Barkley Sound, British Columbia. *Marine Ecology Progress Series* 56: 37-47.
- Rumrill, S.S., Pennington, J.T., and F.S. Chia. 1985. Differential susceptibility of marine invertebrate larvae: laboratory predation of sand dollar, *Dendraster excentricus* (Eschscholtz) embryos and larvae by zoeae of the red crab, *Cancer productus* Randall. *Journal of Experimental Marine Biology and Ecology* 90: 193-208.

William T. Peterson

NOAA/National Marine Fisheries Service

Hatfield Marine Science Center

Newport, OR 97365

Phone: 541-867-0201; fax: 541-867-0389; e-mail bill.peterson@noaa.gov**Education**

1965 B.A. Biology and Chemistry, Pacific Lutheran University

1969 M.S. Oceanography, University of Hawaii

1980 Ph.D. Oceanography, Oregon State University

Professional Experience:

Oceanographer, NOAA/NMFS, Newport	1995-present
Professor (Courtesy), Oregon State University	1996-present
Program Manager, U.S. GLOBEC/NOAA and NSF, Washington, DC	1992-1995
Adjunct Professor, University of Maryland	1992-1995
Supervisory Physical Scientist, NOAA/National Ocean Service, Monterey, CA	1990-1992
Senior Research Officer/Research Fellow, University of Cape Town	1987-1990
Assistant Professor, State Univ. of New York at Stony Brook	1980-1987
Visiting Scientist: Univ. of Concepcion, Chile, Jan/Feb 1986; Danish Institute For Marine Research, Summer 1988, 1989; Univ. of Cape Town, Sept 1994)	

Professional Activities: Editorial Board, J. Plankton Research; Review Editor, Marine Ecology Progress Series; Advisory Board, African J. of Marine Science; Chairman of the Steering Committee for the NOAA/FATE program (2005-2007); Member Board of Governors, Sir Alistair Hardy Foundation for Ocean Sciences, Plymouth England; Member, Climate Change and Carrying Capacity Program, PICES 2002-present; Organizing Committee for 3rd International Symposium on Zooplankton Production (Gijon Spain, May 2003); U.S.GLOBEC Scientific Steering Committee (1998-2001); NEP GLOBEC Executive Committee (2000-present); Co-Convenor, ICES/PICES/IOC Symposium on "Effects of climate change on the world oceans", Gijón, Spain, 2008; Convened two international Krill Ecology Workshops 2007, 2009.

Five Recent Publications:

Keister, J.E., W.T.Peterson and S.D.Pierce. 2009. Zooplankton distribution and cross-shelf transfer of carbon in an area of complex mesoscale circulation in the northern California Current. *Deep-Sea Res I* 56:212-231

Peterson, J. O. and W. T. Peterson. 2009. The influence of the Columbia River plume on cross-shelf transport of zooplankton. *Journal of Geophysical Research. J. Geophys. Res.* 114, COOB10, 11 pages, doi:10.1029/2008JC004965, 2009.

Peterson, W. 2009. Copepod species richness as an indicator of long term changes in the coastal ecosystem of the northern California Current. *CalCOFI Reports* 50. In Press.

Chan, F., J.A. Barth, J. Lubchenco, A. Kirincich, H. Weeks, W.T. Peterson and B.A. Menge. 2008. Novel emergence of anoxia in the California Current large marine ecosystem. *Science*. 319:920

Feinberg, L.R., C. T. Shaw and W.T. Peterson. 2007. Long-term laboratory observations of *Euphausia pacifica* fecundity: a comparison of two geographic regions. *Mar. Ecol. Prog. Ser.* 341:141-152.

Five Other Papers:

Mackas, D. L., W. T. Peterson, M. D. Ohman, and B. E. Lavaniegos. 2006. Zooplankton anomalies in the California Current system before and during the warm ocean conditions of 2005, *Geophys. Res. Lett.*, 33, L22S07, doi:10.1029/2006GL027930.

Peterson, W.T. and 23 others. 2006. The State of the California Current, 2005-2006: warm in the north, cool in the south. *Cal Coop Fish Invest* 47: 30-74.

Feinberg, L. R., C. T. Shaw and W. T. Peterson. 2007. Long-term laboratory observations of *Euphausia pacifica* fecundity: a comparison of two geographic regions. *Mar. Ecol. Prog. Ser.* 341:141-152.

Bi, Hongsheng, R. E. Ruppell, W. T. Peterson. 2007. Modeling the salmon pelagic habitat off the Pacific Northwest coast using logistic regression. *Mar. Ecol. Prog. Ser.* 336:249-265

Hooff, R. C. and W. T. Peterson. 2006. Recent increases in copepod biodiversity as an indicator of changes in ocean and climate conditions in the n. California current ecosystem. *Limnol. Oceanogr.* 51:2042-2051

Post Graduate Students. At Stony Brook I served as major professor for 12 M.Sc. Students, 3 Ph.D. students (H. Dam, D. Arcos and T. Johnson) and one Fulbright Scholar (P. Tiselius). At the Univ. of Cape Town I served as major professor for 2 B.Sc. Honors students and served on the Ph.D. committee of J. Huggett. As a Courtesy Professor at Oregon State Univ., I have served on 6 M.S. student committees, 3 Ph.D. committees (Yung Lee, Bob Emmett, Malinda Sutor), have advised a Ph.D. student Jaime Gómez-Gutiérrez, and currently advise another Ph.D. student (Julie Keister).

Undergraduate Students. Mentor for six NSF-REU students (Rachel Ruppel, 2004; Natalie Román, 2005; Kate Ruck, 2006; Marley Jarvis, 2007; Megan Pros, 2008; Jasmine Segura 2009); Whitman College Student (Cascade Sorte, 1999); NOAA/ Smith College student (Ashley Emerson, 2004), Kalamazoo College intern (Angela Sremba, 2006).

Professional collaborations within the past 4 years: Ph.D. major professor was Charlie Miller. Collaborators include J. Barth, H. Batchelder, T. Cowles, A. Huyer, M. Kosro, R. Smith, Y. Spitz, T. Strub, P. Wheeler (all OSU/COAS), J. Lubchenco, F. Chan (OSU), J.Gomez-Gutierrez (Mexico), R. Harris (Plymouth), R. Harvey (U. Maryland), R. Hooff (State of Oregon), Se-J Ju (KORDI, Korea), S. Kawaguchi (CSIRO, Tasmania), S. Landers (Troy State University), B. Lavaniegos (Mexico), J. Largier (Univ. California - Davis), D. Mackas (Canada), M. Ohman (Scripps), C. Suchman (Maryland Sea Grant, now NSF), B. Hickey and E. Lessard (UW), K. Bruland and R. Kudela (UCSC), R. Brodeur and R. Emmett (NOAA/Newport), F. Schwing (NOAA/Monterey), J. Yen and E. DiLorenzo (Georgia Tech).

Honors and Awards. Distinguished Teaching Award, Stony Brook, 1981; NOAA Bronze Medal (2004-Individual Award); NOAA/NMFS/NWFSC Employee of the Year (runner-up, 2004); Best Presentation, PICES/Vladivostok/Science Board Symposium, September 2005; NOAA Bronze Medal (2005-Group Award); NOAA Bronze Award (2008) for salmon forecasting web page. Interviewed by Robert Siegel on NPR, "All Things Considered", 12 July 2005, on warm ocean in the northern California Current in summer 2005.

Outreach. Peterson is regularly asked to speak on climate, ocean conditions and salmon, including Oregon's Ocean Policy Advisory Committee, Mid-Coast and Umpqua River Watershed Councils, Oregon State Police/Fish and Game cops, State of Oregon Legislators (climate staff), Quinalt Indian Nation "Salmon and Eagle Festival", Northwest Power Planning Council, Pacific Marine Fish Commission, Pacific States Marine Fisheries Commission, Pacific Coast Shellfish Growers Association, Hatfield Science Center SeaFest, Oregon Coast Community College, Oregon State University Alumni, Capitol Manor Retirement Community, Yaquina View Elementary School,. Featured in PBS Series, "Strange Days on Planet Earth"; "The One Degree Factor"; KIRO-TV Seattle, Documentary on "Cold facts about global warming". Oct 2007. OPB Radio, Sept 2009, 15 minute series on salmon and ocean conditions.

VERA L. TRAINER

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RESEARCH INTERESTS

Biochemistry and molecular biology of algal toxins and their receptors. Localization of algal toxin receptor sites, development of immunological, molecular, and biochemical methods for toxin and toxic organism detection. Biological oceanography of harmful algal blooms.

EXPERIENCE

2005-present	Affiliate Associate Professor College of Ocean & Fishery Sciences, University of Washington
1998- present	Supervisory Research Oceanographer, Marine Biotoxins Program, NOAA Fisheries, Northwest Fisheries Science Center, Seattle, WA
1996-1998	Research Oceanographer, NOAA, Northwest Fisheries Science Center
1991-1996	Senior Fellow, University of Washington, Department of Pharmacology

EDUCATION

Ph.D., Biochemistry and Molecular Biology, University of Miami, Miami, FL. 1990.
M.S., Biological Oceanography, University of Miami, Miami, FL. 1987.
B.S., Biology, Indiana University of Pennsylvania, Indiana, PA. 1981.

RELATED PUBLICATIONS

Trainer, V.L., Wells, M.L., Cochlan, W.P., Trick, C.G., Bill, B.D., Baugh, K.A., Beall, B.F., Herndon, J., and N. Lundholm. 2009. An ecological study of a massive toxigenic bloom of *Pseudo-nitzschia cuspidata* off the Washington State coast. **Limnol. Oceanogr.** 54(5): 1461-1474.

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OTHER RELEVANT PROFESSIONAL ACTIVITIES

National HAB Coordination Committee, a committee of 19 NOAA partners for the nationwide coordination of HAB research (July 2009-present), Co-Chair, Gordon Research Conference on Mycotoxins and Phycotoxins, Colby Sawyer College, New Hampshire (June 2011), Member, Task Team on Biotxin Monitoring, Management and Regulations, IOC Intergovernmental Panel on Harmful Algal Blooms (2009-present), Vice-chair, Gordon Research Conference on Mycotoxins and Phycotoxins, Colby Sawyer College, New Hampshire (June 2009), Department of Commerce Individual Gold medal for establishing an internationally recognized research and monitoring program for early warning of harmful algal bloom events (September 2006), Invited participant in National Plan for Algal Toxins and Harmful Algal Blooms workshop, Charleston, SC (2004) and the International SCOR sponsored Open Science Meeting on HABs in Upwelling Systems, Lisbon, Portugal (2003) and Villefranche, France (2006). Participant in the US-EU workshop on international collaborations in HAB Science, Trieste, Italy (2002). Co-chair of the HAB Section for the North Pacific Marine Science Organization (PICES) from 2004 to present. Member of the steering committee for the National Conference on Harmful Algal Blooms, Woods Hole, MA (2003), Monterey, CA (2005), Woods Hole, MA (2007), and Ocean Shores, WA (2010)

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