Biographical Sketch
António M. Baptista, Ph.D.

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Professional Preparation

1987	Doctor of Philosophy, Civil Engineering, Massachusetts Institute of Technology, Cambridge, MA
1986	Especialista em Hidráulica Maritima (Specialist in Maritime Hydraulics), Laboratório Nacional de Engenharia Civil (LNEC), Lisboa, Portugal
1984	Master of Science, Civil Engineering, Massachusetts Institute of Technology, Cambridge, MA
1978	Engenheiro Civil, Academia Militar, Lisboa, Portugal

Appointments

s. 2006	Director, Science and Technology Center for Coastal Margin Observation and Prediction, OGI-OHSU
2000-2006	Head, Department of Environmental and Biomolecular Systems (formerly Environmental Science and Engineering), OGI-OHSU
s. 1999	Professor (joint appointment), Department of Computer Science and Electrical Engineering (formerly Computer Science and Engineering), OGI-OHSU
s. 1998	Professor, Department of Environmental and Biomolecular Systems (formerly Environmental Science and Engineering), 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, OGI
1987-1993	Assistant Professor, Department of Environmental Science and Engineering, OGI
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:

Zhang Y.J., and A. M. Baptista, "A semi-implicit Eulerian-Lagrangian finite-element model for cross-scale ocean circulation, with hybrid vertical coordinates," Ocean Modeling (in press), 2008.

Baptista, A.M., "CORIE: the first decade of a coastal-margin collaborative observatory," Oceans'06, MTS/IEEE, Boston, MA, 2006.

Baptista, A.M., Y.L. Zhang, A. Chawla, M.A. Zulauf, C. Seaton, E.P. Myers, 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, 2004. A cross-scale model for 3D baroclinic circulation in estuary-plume-shelf systems: I. Formulation and skill assessment. *Continental Shelf Research*, 24, 2187-2214.

T. M. Wood, A. M. Baptista, J. Kuwabara, and R. Flegal, "Diagnostic modeling of trace metal partitioning in south San Francisco Bay," *Limnology and Oceanography*, vol. 40, pp. 345-358, 1995.

Five Other Significant Publications:

Chawla, A., A. M. Baptista, D. Jay, M. Wilkin, and C. Seaton, "Seasonal variability and estuary-shelf interactions in circulation dynamics of a river- dominated estuary," Estuaries and Coasts (in press), 2008.

Foreman, M. G. G., D. Stucchi, Y. L. Zhang and A. M. Baptista, 2006. " Circulation models for the Broughton Archipelago." *Atmosphere-Ocean*, vol. 44(1), pp. 47-63.

van der Merwe, R., T. K. Leen, Z. Lu, S. Frolov, and A. M. Baptista, "Fast Neural Network Surrogates for Very High Dimensional Physics-based Models in Computational Oceanography," Neural Computation, 2006.

Howe, B., D. Maier and A.M. Baptista, 2004. A Language for Environmental Data Manipulation. *Journal of Environmental Informatics* 2(2).
Archer, C., A.M. Baptista, and T.K. Leen, 2003. Fault detection for salinity sensors in the Columbia estuary. *Water Resour. Res.*, Vol. 39 No. 3.

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 Research Interactive Observatory Networks (ORION), since 2005.

Community Software: Dr. Baptista's group has led the development of ELCIRC and SELFE, unstructured-grid computer models for 3D simulation of circulation and transport in natural water bodies. Originally designed to meet specific modeling challenges of the Columbia River, users are beginning to develop ELCIRC and SELFE applications for estuaries and coasts around the world. OHSU maintains a Web site for free public distribution of ELCIRC and SELFE and supporting software tools (e.g., grid optimization and visualization). In addition to supporting a Web-based user's forum, Dr. Baptista has co-convened annual ELCIRC and SELFE user's group meetings since 2004.

Tsunami Hazards: Dr. Baptista's 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: Dr. Baptista was an early adopter of the World Wide Web as a teaching tool, designing courses that rely on Internet connectivity to foster training in estuarine and coastal science and modeling. In 1999, Dr. Baptista created Introduction to Environmental Observation and Forecasting Systems, a pilot course that prompted the development of a novel Environmental Information Technology (EIT) curriculum at OGI. An EIT PhD track was launched in Fall 2001. Dr. Baptista received Distinguished or Outstanding Teaching Awards in 1989, 1990 and 1991, and was a finalist for Teacher of the Year in 2002.

Collaborators

Recent Collaborators: J. Allan, C. Archer, J. Barth, C.A. Blain, N. Bulusu, E. Casillas, C. Davis, A. Devol, R. Emmett, A. Fain, Wu-chang Feng, Wu-chi Feng, J. Fisher, A. Fortunato, J. Freire, G. Gelfenbaum, B. Grantham, M. Haller, B. Hickey, B. Howe, D. Jay, G. Kaminsky, R. Kieburtz, M. Kosro, T. Leen, E. Lessard, P. MacCready, D. Maier, D. Martin, B. Menge, J. Newton, A. Oliveira, W. Peterson, F. Prahl, G. Priest, S. Rumrill, C. Silva, C. Simenstad, P. Tratnyek, P. Zuber.

Post-Doctoral Fellows Supervised: Former: S. Das, A. Farrenkopf, Y. Guo, E. Myers, Z. Yang, A. Chawla, M. Zulauf, Y. Zhang. Current: S. Frolov, W. Howe.

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), C. Seaton (PhD), Nirzwan Bandolin (PhD)

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