

EDUCATION

- Ph.D. Hydro-informatics**, Drexel University, Philadelphia, PA. Dec. 2004
Dissertation title: “*Ontomet: Ontology Metadata Framework*”
Advisor: Dr. Michael Piasecki
- M.S. Civil Engineering**, Drexel University, Philadelphia, PA. Dec. 2001
- B.S. Industrial Engineering**, Los Andes University, Bogotá, Colombia. Sep. 1995

RESEARCH INTERESTS

- Knowledge representation and information modeling for geosciences
- Geospatial metadata and geoscience’s data integration
- Interoperability of global earth observing systems

AWARD

- Graduate Student Research Award**, Drexel University, Philadelphia, PA. Feb. 2004

PROFESSIONAL EXPERIENCE

- Software Developer, Research and Development** Jan 2005 - Present
Technical Leader Marine Metadata Interoperability Initiative
Monterey Bay Aquarium Research Institute, Moss Landing, CA
- Graduate Research Assistant** May 2000 - Dec 2004
Drexel University, Philadelphia, PA
- Invited Scientist** May 2002 - Aug. 2002
Smile Consult, GmbH, Hanover, Germany
(Evaluated simplification approaches for digital terrain visualization)
- Freelancer Software Engineer** Nov 1999 - May 2000
- Sales and Customer Manager** Jan 1997 - Nov. 1999
Derecho Vigente S.A., Bogota, Colombia
(Developed innovative products for environmental legislation)
- Associate Consultant** Jan 1996 - Jan 1997
Taller de Estrategia, Bogota, Colombia
(Provided strategic consultancy for small-medium companies)
- Lecturer - Business Strategy** Jan 1996 - Aug 1996
Los Andes University, Bogota, Colombia

TEACHING

At Drexel University:

- Introduction to Geographic Information Systems, Teaching Assistant, Summer 2004
- Municipal Water Facilities, Teaching Assistant, Summer 2003
- Hydrology, Teaching Assistant, Spring 2002
- Urban Water Systems Design, Teaching Assistant, Winter 2001
- Infrastructure Water Quality, Teaching Assistant, Summer 2001 and Fall 2002

At Los Andes University:

- Business Strategy, Professor, Jan - Aug 1996
- Statistics II, Teaching Assistant, Aug - Dec 1995

SERVICE TO THE PROFESSION AND COMMUNITY

2007

- Reviewer, Computers & Geosciences
- Initiator, Open Geospatial Consortium Ocean's Interoperability Experiment
- Steering Committee, Water Temperature metadata Pilot Project (Meta-T)
- Program Committee and Presenter, Coastal Atlas Interoperability Workshop, Portland, Oregon

2006

- Co-Convener, "Sensor Interoperability Metadata Workshop", Portland, Maine,
- Participant, Open Geospatial Consortium Web Services Phase 4
- Convener, virtual workshop for "Creating a Marine Platform Ontology"
- Steering Committee, Water Temperature Metadata Pilot Project (Meta-T)
- Program Committee, metadata track, QARTOD (Quality Assurance of Real Time Oceanographic Data) IV workshop
- Reviewer, IOOS DMAC (Data Management and Communications) plan

2005

- Co-convener, "MMI Workshop Advancing Domain Vocabularies", UCAR, Boulder, Colorado, August 9-11
- Participant, Hydrologic Ontology Workshop, San Diego Supercomputer Center, San Diego, CA, January 27-28

2001-2004

- President of the Civil Architectural and Environmental Graduate Association of Drexel

JOURNAL ARTICLES AND TECHNICAL REPORTS

Bermudez, L.E. , and Piasecki, M., "Metadata Community Profiles for the Semantic Web" *Geoinformatica*, 2006, 10(2), pp. 159-76.

Wright, D., Watson, S., Graybeal, J., and **Bermudez, L.E.** , "Making Scientific Data Sets Easier to Find, Access, and Use." *Transactions of the American Geophysical Union*, 2005, 86(50), pp. 522-25.

Graybeal, J., **Bermudez, L.E.** , and Brinks, K., "Improving Ocean Research (Meta) Data Management." *ORION Newsletter*, 2005, 2(1), pp. 1,3.

PAPERS PRESENTED AT NATIONAL / INTERNATIONAL MEETINGS

Bermudez, L.E. , "Vocabulary Integration Environment: VINE", in *Proceedings of the II Congreso Colombiano de Computacion*, Bogota. Colombia, April 18 - 20, 2007.

Lowry, R., **Bermudez, L.E.** , and Graybeal, J., "Semantic Interoperability: A Goal for Marine Data Management", in *Proceedings of the International Council for the Exploration of the Sea (ICES) Annual Science Conference 2006*, Maastricht, The Netherlands, September 19-23, 2006.

Graybeal, J., and **Bermudez, L.E.** , "When Hydrospheres Collide: Lessons In Practical Environmental Ontologies", in *Proceedings of the International Conference on Hydroscience And Engineering (ICHE)*, Philadelphia, PA, September 11-15, 2006.

Bermudez, L.E. , Graybeal, J., and Arko, R., "A Marine Platforms Ontology: Experiences and Lessons", in *Proceedings of the Semantic Sensor Networks Workshop at the 5th International Semantic Web Conference (ISWC) 2006*, Athens, GA, November 5-9, 2006.

Bermudez, L.E. , Bogden, P., Bridger, E., Creager, G., Forrest, D., and Graybeal, J., "Toward an Ocean Observing System of Systems", in *Proceedings of the Oceans'06 MTS/IEEE-Boston* September 18-21, 2006.

Graybeal, J., **Bermudez, L.E.** , Bogden, P., Miller, S., and Watson, S., "Marine metadata interoperability project: leading to collaboration", in *Proceedings of the Local to Global Data Interoperability - Challenges and Technologies Symposium*, Sardinia, Italy, June 19-24, 2005.

Bermudez, L.E. , Graybeal, J., Isenor, A., Lowry, R., and Wright, D., "Construction of Marine Vocabularies in the Marine Metadata Interoperability Project", in *Proceedings of the 13th Ocean Sciences Meeting*, Washington, September 19-23, 2005.

Bermudez, L.E. , and Piasecki, M., "The role of ontologies in creating hydrologic metadata",

in Proceedings of the The sixth International Conference on Hydro-science and Engineering, Brisbane, Australia, 2004.

Bermudez, L.E. , and Piasecki, M., "Achieving Semantic Interoperability with Hydrologic Ontologies for the Web", in Proceedings of the AWRA's 2004 Spring Specialty Conference Geographic Information Systems (GIS) and Water Resources III, Nashville, TN, May 17-19 2004.

Piasecki, M., **Bermudez, L.E.** , and Islam, A.K.M.S., "IM2: A Web-based Dissemination System for Now and Forecast Data Products", in Proceedings of the 8th International Conference on Estuarine and Coastal Modeling, Monterey, CA, November 3-5, 2003.

Bermudez, L.E. , and Piasecki, M., "HYDROML: Conceptual Development of a Hydrologic Markup Language", in Proceedings of the 30th IAHR Congress, Thessaloniki, Greece, August 24-29, 2003.

INVITED LECTURES

"Integrating Ocean Observing Systems", XXIV International Union of Geodesy and Geophysics (IUGG), Perugia, Italy, July 4, 2007.

"The Marine Metadata Interoperability Project", Southeast Regional Data Management Workshop SECOORA, Chapel Hill, NC, March 10, 2006.

"Ontologies in the SWE World", OGC Web Services Phase 4 Kickoff Meeting, Sensor Web Enablement Thread, Oracle, Reston, VA, June 6, 2006.

"Automatic harvesting of metadata using OGC Sensor Observation Services in OOSTethys", 3rd Interoperability Workshop on Automated Harvesting of Data and Metadata, SCRIPPS, San Diego, CA, November 14-15, 2006.

"Controlled Vocabularies and Semantic Mediation", Global Organization for Earth System Science Portal Fifth Workshop, Lawrence Livermore National Laboratory, Livermore, CA, June 20, 2006.

"Why are Ontologies Important", QARTOD (Quality Assurance of Real Time Oceanographic Data) III, San Diego, CA, November 2, 2005.

"Making SOAP Web Services Semantically Understandable", OOSTech, Baltimore, MA, October 25, 2005.

"Semantic Mediation via Ontologies for Discovering of Marine Data", NEPTUNE Data Management And Archiving System Design Workshop, University of Victoria, Victoria, Canada, July 6, 2005.

"The Marine Metadata Interoperability Initiative", OBIS International Steering Committee, San Francisco, CA, June 24, 2005.

"Hydrologic Ontologies", Workshop on Hydrologic Ontologies, San Diego Supercomputer Center, San Diego, CA, January 27-28, 2005.

"Facilitating Data Sharing in the Hydrologic Community", USGS Workshop, Reston VA, September 24, 2003.

MEMBERSHIPS

- Member of Geological Society of America (2007)
- Member of American Geophysical Union (2003 - present).
- Member of IEEE Computer Society (2006 - present).
- Member of Association for Computer Machinery (2006 - present).
- Member of American Water Resources Association (2004 - 2006).
- Member of Society of Hispanic Professional Engineers (2004 - present).
- President of the Civil Architectural and Environmental Graduate Association of Drexel University, (2001 - 2004).