

\*\*\*\*\*CURRICULUM VITAE (updated on August 22, 2015)\*\*\*\*\*

**PERSONAL**

NAME: Mercado Irizarry, Aurelio  
 ADDRESS: Department of Marine Sciences, University of Puerto Rico, Recinto  
 Universitario de Mayaguez, Mayaguez, P.R. 00681-9013  
 DATE OF BIRTH: February 1, 1948  
 CITIZEN: U.S.A.  
 E-MAIL ADDRESS: [aurelio.mercado@upr.edu](mailto:aurelio.mercado@upr.edu);  
 aurelio.mercado@gmail.com  
 TELEPHONE: 787-265-5461, 787-832-4040 x 3201  
 FAX: 787-265-5461, 787-265-5408

**EDUCATION**

BS Physics, 1970, University of Puerto Rico  
 MS Physics, 1973, University of Puerto Rico  
 Physical Oceanography, 1973-1979, Woods Hole Oceanographic Institution,  
 Massachusetts Institute of Technology, University of Miami (no dissertation)

**ACADEMIC HONORS**

Dean's Honor List: 1966-1970  
 Best R.O.T.C. Student in Military History: 1968  
 Graduating Athlete with Best Academic Record: 1970  
 Ford Foundation Fellow: 1977-1979

**RECOGNITIONS AND AWARDS**

- Member of the International Tsunami Commission of the International Union of Geophysics and Geodesy (IUGG). 1999 - 2013.
- Recognition by the House of Representatives of the Puerto Rico Legislature for my environmental work for Puerto Rico. 2007.
- Named member of the Governor of Puerto Rico's Advisory Council on Climate Change. 2007.
- Named member of Advisory Counsel of "Comisión Especial sobre el Calentamiento Global y Seguridad" of the House of Representatives, Puerto Rico Legislature. 2007.
- Named Honorary Member of the Editorial Board of the Scientific Bulletin of the "Centro de Investigaciones Oceanográficas e Hidrográficas". Isla Manzanillo, Cartagena de Indias, D. T. y C.Colombia.
- Conservation Award in recognition of relentless efforts to educate the public on the marine hazards facing Puerto Rico's Coastal Zone. International Institute of Tropical Forestry, U.S. Forest Service, Department of Agriculture. March 2010.
- Special recognition and award by the Federal Emergency Management Agency and the Puerto Rico State Emergency Management Agency for my pro-bono assistance to them. 2012.
- Review of my professional life on a two-page article on the Puerto Rico Daily Sun of April 1, 2012, Facing the Sun. Pages 4-5.
- Recognition by the International Tsunami Society for "Outstanding and Original Contributions to Tsunami Research", presented at the 6<sup>th</sup> International Tsunami Symposium, Costa Rica. 2-5 September 2014.

**PROFESSIONAL SOCIETIES**

American Geophysical Union

The Oceanography Society  
 The Tsunami Society  
 American Shore and Beach Preservation Association  
 Sigma Xi Scientific Research Society

### **PREVIOUS & PRESENT ACADEMIC POSITIONS**

1969-1973	Auxiliary Instructor in Physics, U.P.R./RUM
1973-1975	Research Assistant, Department of Meteorology, Massachusetts Institute of Technology
1975-1977	Graduate Assistant, Dept. of Physical Oceanography, Rosenstiel School of Marine and Atmospheric Sciences, Univ. of Miami.
1979-1984	Instructor, Department of Marine Sciences, University of Puerto Rico.
1984-1991	Assistant Professor, Dept. of Marine Sciences, Univ. of Puerto Rico.
1991-1998	Associate Professor, Dept. of Marine Sciences, University of Puerto Rico,
1998-present	Professor, Department of Marine Sciences, University of Puerto Rico
2000-2012	Coastal Hazards Specialist, University of Puerto Rico Sea Grant College Program
2002-2007	Academic Senator
2005-2009	Team Leader: Caribbean Tsunami Forecasting Team, NOAA
2005-2012	Director, Coastal Hazards Center of the University of Puerto Rico @ Mayaguez

### **COMMITTEES**

#### **UNIVERSITY OF PUERTO RICO/RECINTO UNIVERSITARIO DE MAYAGUEZ**

President Library Committee, Department of Marine Sciences  
 Planning Committee, Department of Marine Sciences  
 President of "Comite de Informatica" of the Faculty of Arts & Sciences (1992-93)  
 Faculty of Arts and Sciences Library Committee (and past President)  
 Department of Marine Sciences Curriculum Committee  
 Member of the "Comite de Transito" of UPRM  
 Faculty of Arts and Sciences Curriculum Committee  
 Faculty of Arts and Sciences Advisory Committee for Seed Money proposals  
 Graduate Committee, Department of Marine Sciences  
 Computer Committee, Faculty of Arts and Sciences (and past President),  
 Admissions Committee, Department of Marine Sciences  
 Representative of Faculty of Arts and Sciences in RUM Total Quality Management Committee, RUM/UPR  
 Dialogo Committee, Faculty of Arts and Sciences  
 Faculty of Arts & Sciences Seed Money Proposal Evaluation Committee  
 Faculty representative in the RUM/UPR Transit and Parking Committee  
 Fac. Arts & Sciences Representative in RUM Institutional Library Resources Committee  
 Alternate Faculty Representative to University of Puerto Rico's "Junta Universitaria" (2002-2003)

#### **OTHER COMMITTEES/POSITIONS**

1987-1992	Appointed member of United Nations Environment Programme Task Team on the "Implications of Climatic Changes in the Ocean (Wider Caribbean Region)".
1992	Appointed to the Scientific Committee of the Advisory Council of the Jobos Bay National Reserve Estuary, Department of Environmental and Natural Resources of Puerto Rico.
1995	Appointed to the Interagency Hazard Mitigation Team set up by FEMA and the

- State Civil Defense to assess the damage by Hurricane Marilyn on Culebras Island, Puerto Rico.
- 1995 Appointed member of the Model Evaluation Group for the San Juan Bay Estuary Program Hydrodynamic and Water Quality Mathematical Model. U.S.A. Environmental Protection Agency, San Juan, P.R.
- 1996 Appointed to Tsunami Scientific Steering Committee. Intergovernmental Oceanographic Commission - Caribbean and Adjacent Regions (IOCARIBE - UNESCO).
- 1996 Appointed to the Interagency Hazard Mitigation Team set up by FEMA and the State Civil Defense to assess the damage by Hurricane Hortense on Puerto Rico.
- 1998 Appointed to the Interagency Hazard Mitigation Team set up by FEMA to assess the damage by Hurricane Georges on Puerto Rico.
- 1999 Appointed to Sea Grant Assessment Team that visited Honduras after Hurricane Mitch.
- 1999- Elected to the International Tsunami Commission of the International Union of Geophysics and Geodesy (IUGG)
- 2001 Appointed to the Interagency Hazard Mitigation Team set up by FEMA related with the May 6-7, 2001, rains on Puerto Rico.
- 2003-2007 Principal Member, Physical Oceanography Committee, USA National Section, Pan American Institute of Geography and History.
- 2004-2007 Puerto Rico Tsunami Technical Review Committee
- 2006- Member of the USA National Tsunami Hazard Mitigation Program Mapping and Modeling Sub-committee.
- 2006-2012 Chair and Inter-Session Chair, Working Group 1: Tsunami and Coastal Inundation Hazard Risk Assessment and Research, First Session of the IOC Intergovernmental Co-ordination Group for the Tsunami and other Coastal Hazards Warning System for the Caribbean Sea and Adjacent Regions, United Nations House, Bridgetown, Barbados, 10-12 January. Member of the USA Delegation.
- 2006-2008 Comité Asesor Externo, Oficina de Plan de Uso de Terrenos, Junta de Planificación de Puerto Rico.
- 2006- Caribbean Regional Association Technical Steering Committee
- 2007-2008 Named to the Puerto Rico Environmental Council by the Puerto Rico Legislature.
- 2007-2008 Named to the El Nuevo Día Scientific Council (May)
- 2007-2008 Named member of the Governor of Puerto Rico's Advisory Council on Climate Change
- 2007-2009 Elected President of the Physical Oceanography Committee, Geophysics Commission, Pan American Institute of Geography and History, Mexico City, Mexico.
- 2007- Named liaison between the IUGG Tsunami Commission and the Intergovernmental Coordination Group for the Caribbean Early Warning System for Tsunamis and Other Coastal Hazards
- 2007-2008 Member of Advisory Counsel of "Comisión Especial sobre el Calentamiento Global y Seguridad" of the House of Representatives, Puerto Rico Legislature
- 2007-2009 Named Chair, Working Group 2: Hazard Assessment, IOC Intergovernmental Co-ordination Group for the Tsunami and other Coastal Hazards Warning System for the Caribbean Sea and Adjacent Regions, Preparatory Meeting, Cartagena, Colombia, Dec 5-7. (for 2 years)
- 2008 Named to ad hoc National Research Council panel as external reviewer of the National Academy of Engineering/National Research Council review of the Interagency Performance Evaluation Task Force (IPET) report VIII, titled "The Engineering and

- Operational Risk and Reliability Analysis". This is one of 8 reports produced by IPET related with the Hurricane Katrina/New Orleans disaster, ordered by the US Congress to the National Academy of Sciences. January 3.
- 2008 Named Honorary Member of the Editorial Board of the Scientific Bulletin of the "Centro de Investigaciones Oceanográficas e Hidrográficas". Isla Manzanillo, Cartagena de Indias, D. T. y C. Colombia.
- 2010-2012 Selected by the United Nations Development Programme to be quality control expert on tsunami and coastal hazards for the Regional Risk Reduction Initiative (R3I) project (funded by the European Commission) involving the English and Dutch countries and territories in the Caribbean
- 2010-2011 UNESCO's World Meteorological Organization advisory committee for Coastal Inundation Forecasting Demonstration Project in the Dominican Republic.
- 2010- External advisor to the Puerto Rico Climate Change Council. Puerto Rico Coastal Zone Management Program. Department of Environmental and Natural Resources.
- 2012 Named to NSF's George E. Brown, Jr., Network for Earthquake Engineering Simulation (NEES) Research (NEESR) proposal review panel.
- 2013 Named to NSF's NSF virtual panel to evaluate proposals submitted to Coastal SEES (Science, Engineering and Education for Sustainability). March 26.
- 2013 Named to the Puerto Rico Coastal Outreach and Education Program's Coastal Outreach Advisory Team (COAT) set up by FEMA and URS. April 4.
- 2013 Proposal reviewer for NSF's Sedimentary Geology and Paleobiology Program. April.

### **FUNDED ACADEMIC RESEARCH EXPERIENCE**

(Quantity in parenthesis at the end states amount of external funds, not including the University of Puerto Rico's share or contribution)

- 1977- Participant in Coastal Upwelling and Ecosystem Analysis Experiment, JOINT-11,  
1978 Peru.
- 1983- Principal Investigator in Phase I of Storm Surge Modeling for Puerto Rico and the U.S. Virgin  
1984 Islands. Done for Federal Emergency Management Agency and the Dept. of Natural Resources of Puerto Rico. (\$17,500)
- 1984- Principal Investigator, Flood Insurance Study for Puerto Rico and the U.S. Virgin Islands.  
1990 Done for the Federal Emergency Management Agency, Washington, D.C. (\$100,000)
- 1985 Principal Investigator, Puerto Rico Electric Power Authority North Coast Wave Power Study. Done for Center for Energy and Environmental Research, University of Puerto Rico. (\$15,000)
- 1988 Principal Investigator for Hazard Analysis, San Juan Metropolitan Area Hurricane Evacuation Study. Done for U.S. Army Corps of Engineers, Jacksonville, FL. (\$8,000)
- 1988 Principal Investigator for Hazard Analysis, Hurricane Evacuation Study for Playa de Ponce, Ponce, and Humacao, P.R. Done for NOAA's Coastal Zone Management Program through the Department of Natural Resources of Puerto Rico. (\$7,504)
- 1988- Principal Investigator, "Wave Elevation Determination and V-Zone Mapping Between Punta  
1989 Jaguey, Cabo Rojo, and Santa Isabel, P.R.", Department of Natural Resources and Federal Emergency Management Agency, Washington, D.C. (\$2,600)
- 1988 Summer Research, Coastal Engineering Research Center, U.S. Army Corps of Engineers, Vicksburg, Miss. (*Expenses covered by research project*)
- 1988- Principal Investigator, "A Regression Model for Storm Surge Prediction for Puerto Rico", Seed  
1989 Money Project, Faculty of Arts and Sciences, UPR/RUM (\$950.00)
- 1988- Principal Investigator, "Extreme Wave Height Climatology Around Puerto Rico and the U.S.

- 1992 Virgin Islands", Sea Grant Program, University of Puerto Rico. (\$63,600.00)
- 1988 Principal Investigator, Flood Insurance Study, La Guancha Hilton Hotel, Ponce Playa, Ponce, P.R. Done for the Department of Natural Resources of Puerto Rico. (*pro-bono*)
- 1988 Co-PI, "Bringing NSFNet to Puerto Rico", (proposal for making accessible to UPR researchers NSF's supercomputers). National Science Foundation (in collaboration with Dr. W. McCann, Geology, Dr. D. Bollman -Mathematics, and a group from UPR/Rio Piedras). (\$300,000)
- 1989- Co-PI "Methodology for a Vulnerability Analysis of Structures to Extreme Winds", Minority  
1992 Research Center of Excellence Program (MRCE), National Science Foundation, Natural Hazards Center, Department of Civil Engineering (in collaboration with Dr. Jose F. Lluch and Dr. Rafael Jimenez, from the Department of Civil Engineering). (\$262,910)
- 1989 Principal Investigator for Hazard Analysis, Hurricane Evacuation Study for Juana Diaz and Santa Isabel, P.R. Done for the NOAA's Coastal Zone Management Program through the Department of Natural Resources of Puerto Rico. (\$7,500)
- 1992- Co-Principal Investigator, "An Analysis of Coastal Erosion in Puerto Rico", Sea Grant College  
1996 Program, University of Puerto Rico (in collaboration with Dr. Jack Morelock, Department of Marine Sciences, RUM/UPR). (\$48,575)
- 1992- Co-Principal Investigator, "Evaluation of U.S. Geological Survey Coastal Erosion Study",  
1996 Department of Natural Resources of Puerto Rico/Coastal Zone Management Program. (In collaboration with Dr. J. Morelock, Department of Marine Sciences, UPR/RUM) (\$44,000)
- 1993- Co-Investigator, "Wind Speed Assessment Considering Local Topographic Effects", Minority  
1995 Research Center of Excellence/National Science Foundation, Natural Hazards Center. (In collaboration with Dr. Raul Zapata and Dr. Ricardo Lopez, from the Department of Civil Engineering, RUM/UPR) (\$172,972)
- 1993- Co-Principal Investigator, "Geophysical Fluid Dynamics Scientific Visualization Laboratory", Office of Naval Research.
- 1994 PI, "Digitization of National Ocean Survey Hydrographic Survey "Smooth Sheets" for Puerto Rico and the US Virgin Islands". Seed money, Sea Grant Program, UPR.
- 1994 PI. Department of Defense- EPSCoR, Office of Naval Research, U.S. Navy (in collaboration with Dr. J. Capella, Department Of Marine Sciences, RUM/UPR). (\$69,929)
- 1994- Principal Investigator, "Non-linear Internal Wave Forcing of Large Amplitude Coastal Seiches  
1996 Along the Caribbean Coast of Puerto Rico", Office of Naval Research, U.S. Navy (in collaboration with Dr. J. Capella, Department of Marine Sciences, RUM/UPR, and Dr. G. Giese, Woods Hole Oceanographic Institution). (\$136,567)
- 1996- Principal Investigator, "Ocean Thermal Energy Conversion Power Plant Feasibility Study for  
1997 Punta Tuna - Punta Yeguas, P.R., and Punta Vaca, Vieques Island, P.R.". Sponsored by Ocean Energy Resources, Inc., San Juan, P.R. and Ocean Energy Affairs Administration of Puerto Rico (in collaboration with Dr. J. Capella, Dr. J. Corredor, and Mr. J. Morell, Department of Marine Sciences, RUM/UPR). (\$150,250)
- 1994- Principal Investigator, "Shoreline Defense Structures of Puerto Rico and Adjacent Islands", Seed  
1997 Money Project, Sea Grant College Program, University of Puerto Rico (\$2,650.50)
- 1996- Co-Principal Investigator, "Caribbean-Atlantic Exchange Through Mona Passage", Department  
1999 of Defense - EPSCoR. (in collaboration with Dr. J. Capella, Department of Marine Sciences) (\$330,866)
- 1998- Co-PI, "An interactive PC-based Tsunami Travel Time Program for the Caribbean Region". With

- 1999 V. Gusiakov and A. Lyskovsky, Russia. (\$5,500)
- 1999 PI, "Digitization of Unpublished Smooth Sheets from the island of Hispaniola", Sea Grant Program, UPR/RUM Seed money (\$1,500,00)
- 1994- Co-Investigator, "Atmosphere-Ocean Interactions", NASA-EPSCoR Center for Tropical  
1999 Atmospheric Sciences, University of Puerto Rico (in collaboration with Dr. Jorge Capella, RUM/UPR). (\$200,400 for first 3 years + \$126,800 for 2 year extension)
- 1997- Principal Investigator, "Determination of the tsunami hazard for western Puerto Rico from local  
2001 sources". Sponsored by Sea Grant College Program, University of Puerto Rico. With W. McCann. (\$58,349)
- 2000- PI, "Update of Coastal Topography and Bathymetry for Puerto Rico and Adjacent Islands 2001  
2001 (Vieques, Culebra, and Mona)". Sponsored by FEMA through the Governor's Authorized Representative and by the Government of Puerto Rico, through the Puerto Rico Planning Board. (\$833,211) *This is the first LIDAR topographic and bathymetric survey in Puerto Rico.*
- 1998- PI, "Investigation of the Potential Tsunami Hazard on the North Coast of Puerto Rico due to  
2002 Submarine Slides Along the Puerto Rico Trench". CoPI: Dr. Philip L.-F. Liu, Cornell University, Patrick Lynett, Ph.D. candidate (Cornell) and Dr. Nancy Grindlay, University of North Carolina. Sponsored by the Puerto Rico State Civil Defense (through FEMA) and Sea Grant Program, University of Puerto Rico. (\$ 77,839.84)
- 2000- PI, "Puerto Rico Tsunami Mitigation and Warning Program". Sponsored by FEMA (through the  
2003 Governor's Authorized Representative) and by the University of Puerto Rico. (\$483,899)
- 2003 Co-PI: "Creation of NASA Topographic LIDAR Data Products for Management of the Puerto Rico Coastal Zone". Submitted with J. Brock, US Geological Survey, St. Petersburg, FL, to Puerto Rico Coastal Zone Management Program, Department of Natural and Environmental Resources of Puerto Rico. (\$59,000)
- 1998- Principal Investigator, "Estimate of the tsunami hazard in the Greater Antilles from local,  
2003 earthquake-related tsunami sources". Co-PI: Dr. William McCann. Sponsored by Sea Grant College Program, University of Puerto Rico, Mayaguez. (\$58,349)
- 2000- PI, "GIS-based Coastal Flooding Mapping for Puerto Rico and the U.S. Virgin Islands Using PC  
2003 ARC/INFO". Sponsored by Sea Grant Program, UPR/RUM (\$12,773 for 2 years)
- 2002- PI: "An Evaluation of the Main Ports and Bays in Puerto Rico and the U.S. Virgin Islands as to  
2004 their Exposure to Hurricane Wave Attack". Sea Grant Program. (\$61,142)
- 2004- CoPI: "Continuidad al programa de alerta y mitigación de maremotos de Puerto Rico". Submitted  
2004 to the Puerto Rico State Emergency Management Agency. With Prof. C. von Hillebrandt (\$30,000)
- 2004- Co-PI: "Population Composition, Geographic Distribution, and Natural Hazards: Vulnerability in  
2006 Coastal Regions of Puerto Rico". Sea Grant Program. With Dr. Havidan Rodrigues and Dr. Walter Diaz. (\$121,351)
- 2006- Co-PI, Puerto Rico Tsunami Hazard and Mitigation Program (continuation). Puerto Rico State  
2007 Emergency Management Agency (\$130,000)
- 2005- Co-PI Puerto Rico Tsunami Ready Tide Gauge Stations, FEMA 1552 DR-PR, Project PR-0008  
2007 (\$763,864)
- 2006- Co-Inv, PR-National Tsunami Hazard Mitigation Program. USA National Tsunami Hazard  
2007 Mitigation Program (\$100,000)
- 2005-2006 Team Leader, Caribbean Tsunami Forecasting Team, NOAA (\$343,440)
- 2006-2007 Team Leader, Caribbean Tsunami Forecasting Team, NOAA (\$289,325)
- 2007-2008 Team Leader, Caribbean Tsunami Forecasting Team, NOAA (\$253,742)
- 2008-2009 Team Leader, Caribbean Tsunami Forecasting Team, NOAA (\$54,898.71)

- 2007- Co-Inv, PR-National Tsunami Hazard Mitigation Program. USA National Tsunami Hazard  
2008 Mitigation Program (\$300,000)
- 2008- Co-Inv, PR-National Tsunami Hazard Mitigation Program. USA National Tsunami Hazard  
2009 Mitigation Program (\$300,000)
- 2006 - Co-PI: "NEESR-SG: TSUNAMOS: A Validated, Multi-Scale Tsunami Model for Hybrid  
2009 Numerical-Experimental Simulation", with P. Lynett (Texas A&M U), P. Liu (Cornell), M. Teng  
(U of Hawaii), C. von Hillebrandt (UPRM), National Science Foundation (*\$1,100,000 of which  
\$219,804 were assigned to UPRM*)
- 2008- Co-PI: "Modeling studies in support of the establishment of an official baseline reference for the  
2010 delineation of the maritime-terrestrial zone of Puerto Rico". Department of Natural and  
Environmental Resources of Puerto Rico (*\$125,000*)
- 2008- Co-PI. Implementation of the Caribbean Region Integrated Ocean Observing System  
2012 (CariCOOS). NOAA (*\$2,117,979*)
- 2011- Co-PI. Advancing the Caribbean Region Integrated Ocean Observing System  
2012 (CariCOOS). NOAA (*\$1,412,000*)
- 2012- 2013 Co-PI. Advancing the Caribbean Coastal Ocean Observing System (NOAA; Award  
NA11NOS0120035) (*\$1,409,730*)
- 2013-2014 PI. Storm Surge Modeling in Puerto Rico in Support of Emergency Response, Risk  
Assessment, Coastal Planning and Climate Change Analysis; approved by the Puerto Rico  
Coastal Zone Management Program. (\$44,000 for 1 year) Department of Natural and  
Environmental Resources of Puerto Rico/Puerto Rico Coastal Zone Management  
Program/NOAA.

### **ON-GOING FUNDED ACADEMIC RESEARCH**

(Quantity in parenthesis at the end states amount of external funds, **not** including the University of Puerto Rico's share or contribution.)

- 2009- 2013 Co-PI. Puerto Rico Component of the USA National Tsunami Hazard Mitigation Program  
(NOAA; 535018) (\$1,000,000 per year)
- 2013 – 2017 Co-PI. . A Community Coastal and Ocean Modeling Testbed to Improve Understanding and  
Operational Forecasts (Southeastern Universities Research Association)
- 2014 – 2017 Co-PI Support of Deployment of Storm Surge Data Loggers (HOBO's) in Puerto Rico and  
in Collaboration with the United States Geological Survey (USGS) and National Weather  
Service. Sea Grant Program/University of Puerto Rico.

### **CONFERENCES ORGANIZED**

- 1997 "Caribbean Tsunami Workshop". Sponsored by University of Puerto Rico Sea Grant  
College Program, with the following co-sponsors: UPR/RUM Center for Research and  
Development, Puerto Rico State Civil Defense, Puerto Rico Department of Natural and  
Environmental Resources, U.S. Army Corps of Engineers. Held at the Best Western Hotel,  
Mayaguez, P.R., June 11-13, 1997. (*Budget: \$35,439*). This was the first ever tsunami workshop  
dedicated exclusively to tsunamis.
- 2000 Intra-Americas Sea Tsunami Meeting for the Caribbean Tsunami Warning Center. Held at the  
University of Puerto Rico, Mayaguez Campus (UPRM), December 19-21. Sponsored by the  
Intergovernmental Oceanographic Commission (UNESCO), NOAA, Sea Grant College Program  
of UPRM, and the Center for Research and Development of UPRM.
- 2003 "Hacia una definición precisa de la Zona Marítimo Terrestre". Sponsored by the Sea Grant  
Program, University of Puerto Rico. Embassy Suites Hotel and Casino, San Juan, P.R., November  
6.
- 2004 "National Science Foundation Caribbean Tsunami Workshop". Co-sponsors: Puerto Rico State

- Emergency Management Agency, Department of Marine Sciences and Sea Grant Program, University of Puerto Rico. Held at San Juan Beach Hotel, San Juan, P.R. (*Budget: \$33,500*)
- 2007 “Facing the Consequences of Climate Change in Puerto Rico”. Roundtable discussion. Sponsored by: University of Puerto Rico at Mayaguez, Sea Grant Program, Coastal Hazards Center or UPRM, CoHEMIS, Department of Natural and Environmental Resources, National Wildlife Federation. May 8-10. Embassy Suites Hotel, Isla Verde, Carolina.
- 2007 Co-convener: Neotectonics, Tsunami Hazard, and Monitoring in the Caribbean. American Geophysical Union Joint Assembly. May 22-25, Acapulco, Mexico.

### CONFERENCES CHAIRED

- 1998 "Tsunami Prediction Session", International Symposium on Marine Positioning 1998 (INSMAP98). December, Melbourne, FL.
- 1999 "Tsunamis", at USGS Workshop Regarding Seismic, Tsunami and Landslide Hazards in Puerto Rico and the Virgin Islands, March 23-24, College of Surveyors and Engineers, San Juan, P.R.
- 2001 International Tsunami Symposium - Atlantic Tsunami Session, Univ. of Washington, Seattle, WA, August 7-9.
- 2003 Tsunami Session: “Seismological Tools for the Advancement of Tsunamis Modeling and Warning”. 2003 Seismological Society of America Annual Meeting. Hotel Caribe Hilton, San Juan, Puerto Rico. April 29-May 4.

### PUBLICATIONS: PEER REVIEWED

- Mercado, A., and J. Gonzalo, 1973. Ferroelectric Behavior of Triglycine Fluoberillate Near Tc. *Phys. Rev.*, B7: 3074-3079. Mercado, A., and J. Gonzalo, 1973. Brillouin Scattering in Triglycine Fluoberillate. *Ferroelectrics*, 5: 229-234.
- Mercado, A., and J. C. Van Leer, 1976. Near Bottom Velocity and Temperature Profiles Observed by Cyclesonde. *Geophysical Research Letters*, 3(10): 633-636.
- Lizano, O., A. Mercado, and M. Hernandez, 1993. El impacto de las olas generadas por un huracán sobre arrecifes coralinos: inferencias basadas en modelos numericos. *Revista Geofisica, Institute Panamericano de Geografia e Historia*, No. 38:91-110.
- Mercado, A. 1997. Numerical simulations of marine natural hazards in the Caribbean island of Puerto Rico.. Proc. Coastal Zone '97.
- Mercado, A., 1994. On the use of NOAA's storm surge model, SLOSH, in managing coastal hazards – the experience in Puerto Rico. *Journal of Natural Hazards*, Vol. 10:235-246.
- Mercado, A. and W. McCann, 1998. Numerical simulation of the 1918 Puerto Rico tsunami. *Journal of Natural Hazards*, Vol. 18:57-76.
- Morell, J. M., J. Capella, A. Mercado, J. Bauza, and J. Corredor, 2001. Nitrous oxide fluxes in the Caribbean and Tropical Atlantic waters: evidence for near surface production. *Marine Chemistry*, 74:131-143.
- Lugo, A.E., A. Ramos-Alvarez, A. Mercado, D.L.L. Feliciano, G. Cintron, L. Marquez D'Acunti, R. Chaparro, J. Fernandez Porto, S.J. Peisch, and J. Rivera Santana. 2004. Cartilla de la Zona Marítimo-Terrestre, Acta Científica 18:(1-3),1-148.
- Mercado, A., von Hillebrandt, C., and V. Huerfano, 2005. The Puerto Rico Tsunami Warning And Mitigation Program. *J. Coastal Res.*, SI 39 (Proceedings 8<sup>th</sup> Int. Coastal Symposium, Santa Catarina, Brazil)
- Ortiz, J.C, and A. Mercado, 2008. An intercomparison of SWAN and Wavewatch III models with data from NDBC-NOAA buoys at oceanic scales. *Coastal Engineering J.*, Vol. 50 No. 1
- Anselmi-Molina, C. M., M. Canals, J. Morell, J. Gonzalez, J. Capella, and A. Mercado. 2012. Development of an operational nearshore forecast system for Puerto Rico and the US Virgin Islands. *J. Coastal Res.*, Doi: 10.2112/JCOASTRES-D-11-001321.1.



Lopez-Venegas, A., J. Horrillo, A. Pampel-Manis, V. Huerfano, and A. Mercado, 2014. Advanced Tsunami Numerical Simulations and Energy considerations on 3D-2D coupled models: The case of the October 11, 1918 Mona Passage Tsunami. *Pure and Applied Geophysics*, Vol. 171, No. 11.

#### **PUBLICATIONS: NON-PEER REVIEWED**

- Mercado, A., 1988. "Storm Surge Modeling in Puerto Rico and the U.S. Virgin Islands". Proc. Hazard Mapping Meeting of Experts, p. 89-101, Kingston, Jamaica, Nov. 30- Dec. 4, 1987. Pan Caribbean Disaster Preparedness and Prevention Project, Organization of American States, United Nations Disaster Relief Organization.
- Mercado, A. 1990. "On the use of NOAA's Storm Surge Model, SLOSH, in Managing Coastal Hazards: the Experience in Puerto Rico", Proc. of the Coastal Society International Conference: "Our Coastal Experience: Assessing the Past; Confronting the Future", San Antonio, Texas, Oct. 21-24. pp. 661-666.
- Mercado, A., 1991. "On the Use of NOAA's Storm Surge Model, SLOSH, in Managing Coastal Hazards - The Experience in Puerto Rico". Proc. International Workshop for Hong Kong's Infrastructure Development, J-C Chen and J.L. Beck, editors, Commercial Press, Hong Kong.
- Mercado, A., 1995. Nonlinear Internal Wave Forcing of the Coastal Waters of Puerto Rico. Presented at the American Geophysical Union Chapman Conference on Circulation of the Intra-America Sea. January 22-26, La Parguera, P.R.. Intergovernmental Oceanographic Commission Workshop Report No. 111, UNESCO.
- Mercado, A., 1997. Overlooked threat of tsunamis to the Caribbean discussed. EOS, Transactions American Geophysical Union, Vol. 78, No. 50, December 16.
- Mercado, A., 1998. "Numerical simulation of the 1918 Puerto Rico tsunami". Proc. Inter. Conf. Tsunamis, Paris, France, pp. 365-382. European Commission Directorate General for Science, Research and Development and UNESCO.
- Mercado, A., 1998. "An overview of the Caribbean tsunami threat". Proc. Int. Symp. Marine Positioning JNSMAP 98, P. J. Fell, M. Kumar, G. Maul, and G. Seeber (ed), Florida Institute of Technology, Melbourne, FL. 30 Nov - 4 Dec. Organized by Marine Geodesy Committee, Marine Technology Society, pp. 370-379.
- Mercado, A., 1998. "Numerical simulation of the 1918 Puerto Rico tsunami". Proc. Int. Symp. Marine Positioning JNSMAP 98, P. J. Fell, M. Kumar, G. Maul, and G. Seeber (ed), Florida Institute of Technology, Melbourne, FL. 30 Nov - 4 Dec. Organized by Marine Geodesy Committee, Marine Technology Society, pp. 380-390.
- Gusiakov, V. K., D. V. Ivaikin, A. V. Lyskovsky, and A. Mercado. 1998. "An Integrated PC-Based Tsunami Travel Time Program for the Caribbean Region". Proc. Int. Symp. Marine Positioning JNSMAP 98, P. J. Fell, M. Kumar, G. Maul, and G. Seeber (ed), Florida Institute of Technology, Melbourne, FL. 30 Nov - 4 Dec. Organized by Marine Geodesy Committee, Marine Technology Society, pp. 360-369.
- Geist, E., and A. Mercado, 1999. Tsunamis Working Group Report, in Seismic and tsunami hazard in Puerto Rico and the Virgin Islands. U.S. Geological Survey Open-File Report 99-353.
- Mercado, A. and W. McCann, 2000. Evaluation of the tsunami hazard for western Puerto Rico. Proc. Tsunami Risk Assessment Beyond 2000: Theory, Practice and Plans. Joint IOC-IUGG International Workshop, Moscow, Russia, p. 3-14.
- Mercado, A., 2000. Natural coastal hazards in the Caribbean. Sea Grant in the Caribbean, UPR Sea Grant College Program, July-Sept 2000:4-8.
- Mercado, A., 2000. Nueva información Topográfica para Puerto Rico. Boletín Marino, UPR Sea Grant, Vol. XXI, Num. 10-12, octubre-diciembre.

- Mercado, A., 2001. Los tsunamis, el Caribe y el Programa Sea Grant. Partes I, II, III and IV. Boletín Marino, Sea Grant College Program, University of Puerto Rico. Vol. XXI, No. 7-9:13-16; Vol. XXII, No. 4-6: 9-11; Vol. XXII, No. 7-9:10-13.
- Moya, J. C. and A. Mercado, 2006. Geomorphologic and stratigraphic investigations on historic and pre-historic tsunami in northwestern Puerto Rico: Implications for long term coastal evolution. Caribbean Tsunami Hazard, NSF Caribbean Tsunami Workshop, March 30-31.
- Mercado, A., C. von Hillebrandt and V. Huerfano, 2006. The Puerto Rico Tsunami Warning and Mitigation Program. Caribbean Tsunami Hazard, NSF Caribbean Tsunami Workshop, March 30-31.
- Ortiz, J. C., and A. Mercado, 2006. Estudio preliminar del impacto del oleaje de huracanes en la línea costera del Departamento del Atlántico. Centro de Investigación de la Armada Colombiana.
- Mercado, A., 2007. “Cambios Climáticos y los Riesgos Costeros”. ¿Una Isla sin Costas?, Ambiente, Publicación de la Cumbre Social, Vol. 1, junio, p. 12-13.
- Lugo, A., Ramos, A., Mercado, A., Feliciano, D., Cintrón, G., Márquez, L., Chaparro, R., Fernández, J., Peisch, S., Rivera, J., 2008. Cartilla de la Zona Marítimo-Terrestre. Published by U.S. Forest Service, Sea Grant Program.
- Mercado, A., 2009. “Nuestras playas: una verdad inconveniente”. El Nuevo Día. January 25.
- Mercado, A., 2009. “En ascenso nuestro mar”. Ciencia. El Nuevo Día. December 21.
- Mercado, A. 2010. Sobre el concepto de marea “sensible” versus “no sensible” en la definición de la zona marítimo-terrestre de Puerto Rico: una verdad inconveniente. Sea Grant Program.
- Mercado, A., 2010. “Sin respuesta ante un huracán mayor”. Ciencia. El Nuevo Día.
- Mercado, A., 2010. “El verdadero valor de nuestras costas”. Ciencia. El Nuevo Día.
- Mercado, A. 2012. “Perdemos las playas: Aumento record en el nivel del mar”. El Nuevo Día. October 23.
- Mercado, A., “The coastal erosion problem in Anegada”. Disaster Digest, British Virgin Islands. 3rd quarter of 2013.

### **ABSTRACTS**

- Mercado, A., 1997. Numerical simulation of marine natural hazards in the Caribbean island of Puerto Rico. Presented and published at Coastal Zone 97, Boston, MA, July 19-25. M. Miller and J. Cogan, editors,
- Mercado, A., 2000. Comparison of piston velocity models for determination of air-sea fluxes of gases. Air-Sea Gas Exchange Workshop. Tropical Atmospheric Science Center, La Parguera, P.R. 31 July-3 August.
- Lopez, A., J. Horrillo, A. Mercado, and V. Huerfano. 2012. Modeling Tsunamis from Potential Submarine landslides in the Puerto Rico region. AGU 2012 Fall Meeting, San Francisco, CA.
- Mercado, A. 2012. Coastal Hazards Mitigation in Puerto Rico through Computer Modeling; Caribbean Waves 2, 22-25 January 2012. Guadeloupe, FWI.

### **REFEREED JOURNALS**

Journal of Waterway, Port, Coastal, and Ocean Engineering; Amer. Soc. Civil Eng.  
 Journal of Coastal Research  
 Journal of Atmospheric and Oceanic Technology  
 Pure and Applied Geophysics  
 Natural Hazards

### **BOOKS EDITED**

- 2006 Tsunami Hazard in the Caribbean: Proceedings of the NSF Caribbean Tsunami Workshop, World Scientific Publishing Co., Singapore

## UNIVERSITY OF PUERTO RICO TECHNICAL REPORTS

- Hernandez Avila, M.L., A. Mercado, and A. Lugo, 1982. Tracking of Radiosonde Drogues at the Puerto Rico Pharmaceutical Dumpsite. Final Report, NOAA-NOS Contract No. NA79AA-00078.
- Mercado, A., 1984. Final Report on Phase I of Storm Surge Modeling for Puerto Rico and the U.S. Virgin Islands using SLOSH, prepared for the Department of Natural Resources of Puerto Rico and Federal Emergency Management Agency, Washington, D.C.
- Mercado, A. and O. Lizano, 1985. Wave Climate Around Puerto Rico. Research Report, Center for Energy and Environmental Research, University of Puerto Rico. Submitted to Puerto Rico Electric Power Authority, 73 pp.
- Mercado, A., M.L. Hernandez-Avila, and O. Lizano, 1986. An Assessment of Wave Energy Flux Along the North Coast of Puerto Rico. First Progress Report, submitted to Center on Energy and Environment Research, University of Puerto Rico, 38 pp.
- Mercado, A., 1988. San Juan Metropolitan Area Hurricane Evacuation Study: Hazard Analysis Technical Data Report. Prepared for the Department of the Army, Jacksonville District, Corps of Engineers, and the Federal Emergency Management Agency, Washington, D.C.
- Mercado, A., 1988. A Regression Model for Storm Surge Prediction for Puerto Rico. Seed Money Report. Dean of Arts and Sciences, University of Puerto Rico, 102 pp.
- Mercado, A., 1988. Flood Insurance Study: La Guancha Hotel, Ponce Playa, Ponce, P.R. Prepared for the Department of Natural Resources of Puerto Rico.
- Mercado, A., 1989. Hazard Analysis - Hurricane Evacuation Study, Humacao, P.R.. Prepared for the Department of Natural Resources of Puerto Rico. May, 1989.
- Mercado, A., 1989. Hazard Analysis - Hurricane Evacuation Study, Ponce, P.R. Prepared for the Department of Natural Resources of Puerto Rico, May, 1989.
- Mercado, A., 1989. Hazard Analysis - Hurricane Evacuation Study, Juana Diaz and Santa Isabel, P.R.. Prepared for the Department of Natural Resources of Puerto Rico, May.
- Mercado, A., 1990. Flood Insurance Study for the Commonwealth of Puerto Rico and the U.S. Virgin Islands. Vols. 1 to 5. Submitted to the Federal Emergency Management Agency, Washington, D.C.
- Mercado, A., 1994. Digitization of National Ocean Survey Hydrographic "Smooth" Sheets for Puerto Rico and the U.S. Virgin Islands. Submitted to Sea Grant College Program, University of Puerto Rico. 116pp.
- Mercado, A., 1995. Contributed to Federal Emergency Management Agency report titled "Puerto Rico - Mitigation Strategy Report", Hurricane Marilyn, FEMA-1068-DR-PR.
- Mercado, A., 1996. Wave transformation Study for Selected Puerto Rico Sites in Support of a Coastal Erosion Study. Submitted to Sea Grant College Program, University of Puerto Rico, and Department of Natural and Environmental Resources of Puerto Rico.
- Mercado, A., 1996. Contributed to Federal Emergency Management Agency report titled "Puerto Rico - Mitigation Strategy Report", Hurricane Hortense, FEMA-1136-DR-PR.
- Mercado, A., J. Capella, 1996. "Oceanographic Conditions at Vieques Island OTEC Site off Punta Vaca for 1996". Submitted to Ocean Energy Resources, Inc., Santurce, P.R., Gibbs & Cox, Arlington, VA, and General Ocean Thermal Energy Corp., St. Croix, USVI.
- Mercado, A., 1996. "Report for Punta Tuna - Punta Yeguas, and Punta Vaca; Topics: Meteorology at Punta Tuna - Punta Yeguas, P.R., Meteorology at Punta Vaca, Vieques Island, P.R., Design Water depths near Punta Tuna - Punta Yeguas, P.R., and Punta Vaca, Vieques, P.R.; Measured Wave Data Availability; Tsunami Potential at Punta Tuna, Punta Yeguas, and Punta Vaca". Submitted to Ocean Energy Resources, Inc., Santurce,

- P.R., Gibbs & Cox, Arlington, VA, and General Ocean Thermal Energy Corp., St. Croix, USVI.
- Mercado, A., J. Capella, and K. Grove, 1996. "Isla de Vieques, P.R., Preliminary Bathymetric Survey for Area Bounded by Latitudes 18° 02' 42" N to 18° 05' 45" N, Longitudes 65° 29' 30" W to 65° 30' 30" W". Submitted to Ocean Energy Resources, Inc., Santurce, P.R., Gibbs & Cox, Arlington, VA, and General Ocean Thermal Energy Corp., St. Croix, USVI.
- Capella, J. and A. Mercado, 1996. "OER-GenOtec OTEC Feasibility Study: A Review of the CEER - OTEC Oceanographic Studies". Submitted to GenOtec, Inc., St. Croix, USVI.
- Mercado, A., 1997. "Computation of Air-Sea Fluxes of Nitrous Oxide (N<sub>2</sub>O) at NASA/TASC Stations C1-C3 and A1-A3". Submitted to Chemical Oceanography Group, Dept. Of Marine Sciences, Univ. of Puerto Rico, Mayaguez, P.R., 62 pp. Revised in September, 1998.
- Mercado, A., 1998. "User's Manual for the Pre- (Preparation of Grids) and Post-Processing of Data Given as Input to the Tsunami Propagation and Runup Model (Tsunami Modeling for Dummies)". Submitted to Sea Grant College Program, University of Puerto Rico.
- Mercado, A., 1999. Contributed to Federal Emergency Management Agency report titled "Puerto Rico - Mitigation Strategy Report", Hurricane George
- Mercado, A., 1999. "Why Puerto Rico's coastal topographic and bathymetric maps should be updated and upgraded". Submitted to different state and federal agencies. 63 pp.
- Mercado, A. and H. Justiniano, 2000, "Digitization of Nautical Charts and Smooth Sheets for Dominican Republic, Island of Hispaniola, Caribbean Sea". Submitted to Sea Grant College Program, University of Puerto Rico. Revised in 2001.
- Mercado, A., 2001, "The Determination of the Tsunami Hazard for Western Puerto Rico From Local Sources". Submitted to Sea Grant Program, University of Puerto Rico.
- Mercado, A., 2002. "Investigation of the tsunami hazard on the north coast of Puerto Rico due to submarine slides along the Puerto Rico Trench". Submitted to the Puerto Rico State Emergency Management Agency and Sea Grant Program, University of Puerto Rico.
- Mercado, A. and H. Justiniano, 2003. "Tsunami Coastal Flood Mapping for Puerto Rico and Adjacent Islands", with 12 appendices. Submitted to the Federal Emergency Management Agency and the University of Puerto Rico.
- Mercado, A., 2005. "An Evaluation of the Main Ports and Bays in Puerto Rico and the U.S. Virgin Islands as to their Exposure to Hurricane Wave Attack". Sea Grant Program. (*\$61,142*)
- Mercado, A., 2005. GIS-Based Coastal Flooding Mapping for Puerto Rico. Submitted to Sea Grant Program, University of Puerto Rico.
- Mercado, A. and W. Schmidt, 2006. A Standby Inundation Model of Mayaguez and San Juan, Puerto Rico, for Short-Term Inundation Forecasting for Tsunamis (SIFT), NOAA Technical Memorandum. Submitted to the NOAA/Pacific Marine Environmental Laboratory, Seattle, WA.
- Mercado, A., 2008. Development of the Stand-by Inundation Model for Garibaldi, OR. Submitted to NOAA.
- Mercado, A., 2008. Development of the Stand-by Inundation Model for Nantucket Island, MA. Submitted to NOAA.
- Mercado, A., 2008. Development of the Stand-by Inundation Model for Cape Hatteras, NC. Submitted to NOAA.
- Mercado, A., 2008. Development of the Stand-by Inundation Model for Daytona Beach, FL. Submitted to NOAA.
- Mercado, A., 2008. Development of the Stand-by Inundation Model for Panama City, FL. Submitted to NOAA.

- Mercado, A., 2008. Development of the Stand-by Inundation Model for Virginia Beach, VA. Submitted to NOAA.
- Mercado, A., 2014. "Report on the Puerto Rico Tsunami Flood Maps for Local Events". Submitted to the Puerto Rico Component of the United States National Tsunami Hazard Mitigation Program and the Puerto Rico Seismic Network.
- Mercado, A. and G. Seijo, 2014. "Progress Report January to June 2014: New Regional Sources". Submitted to Puerto Rico component of the USA National Tsunami Hazard Mitigation Program and the Puerto Rico Seismic Network.
- Mercado, A., 2014. "Report on Puerto Rico Tsunami Flood Maps for Far-Field Events". Submitted to the Puerto Rico component of the United States National Tsunami Hazard Mitigation Program and the Puerto Rico Seismic Network.
- Benítez, J. and A. Mercado, 2014. A Storm Surge Atlas for the United States Virgin Islands". Report prepared for the Caribbean Coastal Ocean Observing System (CariCOOS), University of Puerto Rico.
- Mercado, A., and G. Seijo, 2015. "Revision to Report on Puerto Rico Tsunami Flood Maps For Regional Events (of February 2014)". Submitted To Puerto Rico Component of the USA National Tsunami Hazard Mitigation Program and the Puerto Rico Seismic Network.
- Seijo, G. and A. Mercado, 2015." Report on the Minimum Water Depth, and Distance from the Shoreline, Required for Moving Ships and Boats Outside of the Danger Zone due to Tsunami Currents". Submitted to the Puerto Rico Seismic Network as part of the Puerto Rico Component of the National Tsunami Hazard Mitigation Program.
- Benítez, J. and A. Mercado, 2015. "Storm Surge Modeling in Puerto Rico in Support of Emergency Response, Risk Assessment, Coastal Planning and Climate Change Analysis'. Report prepared for the Caribbean Coastal Ocean Observing System (CariCOOS)/NOAA, University of Puerto Rico/Mayaguez, P.R. and the Puerto Rico Coastal Zone Management Program, Department of Natural and Environmental Resources, Puerto Rico.

### CHAPTERS IN BOOKS

- Mercado, A., J. Dana Thompson, J. C. Evans, 1992. "Requirements for Modeling of Future Storm Surge and Ocean Circulation". Chapter 2.3, in "Climate Change in the IntraAmerican Sea-Implications of Past, Present and Future Climate in the Marine and Coastal Regions of the Gulf of Mexico, Caribbean Sea, Bahamas, and Northeastern South America", G. Maul (editor). United Nations Environment Programme, Intergovernmental Oceanographic Commission. Edward Arnold Publishers, Ltd., London.
- Mercado, A., El Impacto Humano en las Costas, 2010. Capitulo 2.3. Islas en Extinción. El Impacto Ambiental en las Islas de Puerto Rico. Ediciones SM, Cataño, P.R.

### CONFERENCES, WORKSHOPS, PROCEEDINGS, PRESENTATIONS, AND INVITED PAPERS (NOTE: Invited speaker means invited with all expenses paid by sponsors; Speaker means my grants, or the Sea Grant program, paid for the expenses; Participant means participated, gave no talk, and expenses paid by the sponsor or my grants)

- 1983 Invited speaker. "Storm Surges". Workshop in Advances in Tropical Meteorology, San Juan, P.R., World Meteorological Organization.
- 1984 Participant. Conference on the Present and Potential Roles of Microcomputer & Micro-electronic Systems in Ocean Sciences and Technologies, University of New Hampshire.
- 1986 Invited speaker. "The SLOSH Storm Surge Model", Puerto Rico Hurricane Conference,

- Department of Natural Resources, San Juan, P.R.
- 1987 Invited speaker and panelist. Hazard Mapping Meeting of Experts, "Storm Surge Modeling in Puerto Rico", Pan-Caribbean Disaster Preparedness and Prevention Project, Organization of American States. Kingston, Jamaica, Nov-Dec.
- 1987 Invited speaker. Presentation given to the Special Commission on Security and Civil Protection, Puerto Rico Senate, on the topic of Coastal Flooding due to Hurricanes. Sept. 30, 1987.
- 1987 Presentation given to the Special Commission on Security and Civil Protection, Puerto Rico Senate, on the topic of Tsunamis and Its Implications for Puerto Rico, Nov. 18, 1987.
- 1988 Invited speaker. Puerto Rico Hurricane Conference, Department of Natural Resources, San Juan, P.R.
- 1989 Invited speaker and panelist. "Update of Storm Surge and Wave Modeling in Puerto Rico and the U.S. Virgin Islands", Caribbean Hurricane Conference, Miami, FL. Pan Caribbean Disaster Preparedness Project, Organization of American States.
- 1989 Invited speaker. "What if Gilbert Had Struck Puerto Rico". Puerto Rico Hurricane Conference, Department of Natural Resources, San Juan, P.R.
- 1989 Invited speaker. "Sea Level Rise and Its Impact on the Coastline", Conference on Greenhouse Effect and Sea Level Rise. Sponsored by the Puerto Rico Water Resources Association, June 30, San Juan, P.R.
- 1989 Invited speaker and Rapporteur, "Hurricane Hazard and Vulnerability Analysis in the Caribbean Sea Region", Second International Congress on Disasters, Cuban Academy of Sciences, Ministry of the Interior and Cuban Red Cross, Havana, Cuba.
- 1989 Invited speaker. "Factors to Consider When Constructing in the Coastal Zone", given at the Symposium on Environmental Considerations in the Development of Coastal Municipal Projects. Sponsored by the University of Puerto Rico's Sea Grant Program, Sept. 22. University of Puerto Rico, Mayaguez, P.R.
- 1990 Invited speaker. "Symposium: Perspectives in Marine Resources and Coastal Use". Sponsored by the University of Puerto Rico's Sea Grant Program and Colegio Universitario Tecnológico de Ponce, Colegio Universitario Tecnológico de Ponce. October.
- 1990 Invited speaker. "Modelaje de marejada ciclónica en Puerto Rico". Twelfth Session of the Regional Association IV Hurricane Committee, World Meteorological Organization, Havana, Cuba, March.
- 1990 Invited speaker. "Forum: Natural Risks in the Process of Planning for the Protection of Lives and Properties". Sponsored by the Puerto Rico Society of Planners, U.P.R., Rio Piedras, February.
- 1990 Invited speaker. "Conference: Six Months After Hugo - Preliminary Findings". Sponsored by the National Science Foundation and the School of Engineering, U.P.R., Mayaguez, March.
- 1990 Invited speaker. "Hurricanes, their Impact on the Coastal Zone, and Modeling", Organization of American States Seminar on Erosion, Pollution and Recovery of the Coastal Zone and Its Resources in Latin America and the Caribbean. Buenos Aires, Argentina, March-April.
- 1990 Invited speaker. "La Simulación de los Vientos y Marejadas Ciclónicas Asociados con el Huracán Hugo por Medio del Modelo SLOSH", Puerto Rico Hurricane Conference, Department of Natural Resources, San Juan, P.R., June.
- 1990 Participant, International Workshop on Long Wave Runup, University of Southern California, Aug. 15-17
- 1990 Invited panelist. "Flood Insurance Awareness Forum", sponsored by the Flood Insurance Producers National Committee, San Juan, P.R., Nov. 9.
- 1990 Invited speaker. "Consultation on University Disaster Research and Training in the Caribbean",

- Pan Caribbean Disaster Preparedness and Prevention Project, Organization of American States, Barbados, Dec. 14-15.
- 1991 Zapata, R., R. Lopez, and A. Mercado, 1991. Hurricane wind velocity estimates. Presented at 3rd. EPSCoR and American Association for the Advancement of Science (AAAS) Annual Research Conference, San Juan, P.R., Oct. 24..
- 1993 Invited speaker. Workshop on a Regional Approach to Land-Sea Interface Studies Using Remote Sensing. Stennis Space Center, Miss.
- 1994 Invited speaker. "Applications of Computer Models to Coastal Engineering Problems in Puerto Rico". Conference on Coastal Studies. Sponsored by the U.S. Geological Service, San Juan, P.R.
- 1995 Morelock, J., R. Barreto, R. Miller, and A. Mercado. "Shoreline Changes in Western Puerto Rico". Presented at the Third Thematic Conference on Remote Sensing for Marine and Coastal Environments. Seattle, WA.
- 1996 Invited speaker. "Leciones del Huracan Marilyn - Marejada Ciclonica"; sponsored by the Dept. of Civil Engineering, University of Puerto Rico, Recinto Universitario de Mayaguez. Feb. 29.
- 1996 Invited speaker. "Predicting and Modeling of Tsunami Effects". Intergovernmental Oceanographic Comission - Caribbean Region (10CARIBE; UNESCO) Consultation of Experts on Tsunami Hazards Meeting. University of the Virgin Islands, Eastern Caribbean Center, V.I. Environmental Resource Station, St. John, USVI, May 23-24.
- 1997 Invited speaker. "The Numerical Simulation of the 1918 Puerto Rico Tsunami". Caribbean Tsunami Workshop, Sea Grant Program. June 11-13, Mayaguez, P.R.
- 1997 Invited speaker. "Tsunamis and their Coastal Impact". Puerto Rico Coastal Hazards Conference. Sponsored by the Puerto Rico Department of Natural and Environmental Resources. Tropimar Beach Club Hotel, San Juan, P.R., Sept. 4.
- 1997 Invited speaker. "10CARIBE and Tsunami Research in the Caribbean". 16<sup>th</sup> Session of the International Co-ordination Group for the Tsunami Warning System in the Pacific (ITSU-XIV). Sponsored by the Intergovernmental Oceanographic Commission, UNESCO, and the Navy Hydrographic and Navigation Directorate, Republic of Peru; Lima, Peru. September 23-25.
- 1997 Invited speaker. "The Tsunami Hazard in the Caribbean and Steps for Its Mitigation". Emergency Planning and Management Workshop for Industrial Disasters. Sponsored by the National Emergency Management Agency, Government of Trinidad & Tobago, Pan American Health Organization/World Health Organization, United Nations Development Program, and the University of the West Indies. Hilton International Hotel. Port of Spain, Trinidad & Tobago. Oct. 8-11.
- 1997 Invited speaker. "Numerical Simulation of the 1918 Puerto Rico Tsunami". Puerto Rico Annual Earthquake Conference: Tsunamis - the Forgotten Hazard. Sponsored by the Puerto Rico Civil Defense. Best Western Hotel, Mayaguez, P.R. Oct. 15.
- 1997 Invited speaker. "Tsunamis in the Caribbean". Conference on Tsunamis. Sponsored by the Centro de Investigacion Social Aplicada (CISA), Dept. of Social Sciences, RUM/UPR. November 18. RUM.
- 1998 Participant. International Workshop on Bathymetry and Coastal Topography Data Management. University of Washington, Seattle, WA. March 20-21.
- 1998 Invited speaker. "Los Maremotos y Puerto Rico: La Situación Actual En Cuanto a Su Mitigación". Presented to the Commission on Natural Resources, Environmental Affairs, and Energy, Puerto Rico Senate. March 26.
- 1998 Speaker. "Numerical Simulation of the 1918 Puerto Rico Tsunami". Presented at the International

- Tsunami Conference, UNESCO, Paris, France, May 26-28.
- 1998 Invited speaker. "Caribbean Tsunamis", Presented at the Puerto Rico Hurricane Evacuation Meeting. Sponsored by the Federal Emergency Management Agency, U.S. Army Corps of Engineers, National Weather Service, and P.R. Civil Defense. June 25, San Juan, P.R.
- 1998 Participant. "An Invitational Symposium: Reducing America's Vulnerability to Coastal Hazards". Sponsored by NOAA, NASULGC, USGS, UCAR, Subcommittee on Natural Disaster Reduction. Washington, DC, American Geophysical Union, Oct. 15.
- 1998 Invited speaker. "The numerical simulation of the 1918 Puerto Rico tsunami". International Symposium on Marine Positioning 1998. Melbourne, FL. December 1-4.
- 1998 Invited speaker. "An overview of the Caribbean tsunami threat". International Symposium on Marine Positioning, December 1-4, Melbourne, FL.
- 1998 Invited speaker. "An interactive PC-based Tsunami Travel Time Program for the Caribbean Region". (presented for V. Gusiakov and A. Lyskovsky). International Symposium on Marine Positioning. Melbourne, FL. December 1-4.
- 1999 Invited speaker. "Tsunami Modeling in Puerto Rico", USGS Workshop Regarding Seismic, Tsunami and Landslide Hazards in Puerto Rico and the Virgin Islands, Puerto Rico College of Engineers and Surveyors. San Juan, P.R. March 23-24.
- 1999 Participant. Tsunami Observations, Modeling and Hazard Reduction (IASPEI, IAPSO, IAVCEI, IUGG Tsunami Commission), International Union of Geophysics and Geodesy Symposium, Birmingham, England. July 29-30.
- 1999 Invited speaker. "Tsunami Hazard Mitigation in the Caribbean: Past and Ongoing Research at the University of Puerto Rico". 3<sup>rd</sup> Caribbean Conference on Natural Hazards, Barbados, West Indies. October 13-15.
- 1999 Invited speaker. "Caribbean Tsunamis", Conference on Geologic Hazards, Geological Society of Puerto Rico, University of Puerto Rico, October 27.
- 1999 Invited speaker. "Natural Hazard Modeling". Presented at the University of Puerto Rico/NOAA Memorandum of Understanding Meeting. Silver Springs, MD. November 12.
- 1999 Invited speaker. Inter-Agency Islands Task Force Meeting (Hurricane and Tsunamis in the Caribbean). Sponsored by FEMA and US Army Corps of Engineers. St. Thomas, USVI, December 1-3.
- 1999 Invited speaker. "Tsunami Hazard Mitigation in the Caribbean: Past and Ongoing Research at the University of Puerto Rico". Presented at the 3<sup>rd</sup> Caribbean Conference on Natural Hazards, Barbados, Oct. 12-15.
- 2000 Participant. Sea Grant Haznet Collegium, University of North Carolina at Wilmington, June 5.
- 2000 Speaker: "Evaluation of the Tsunami Hazard for Western Puerto Rico", presented at the "Tsunami Risk Assessment Beyond 2000: Theory, Practice and Plans". Moscow, Russia, June 14- 16.
- 2000 Invited speaker. "The Puerto Rico Tsunami Warning and Mitigation Program", presented at the I Meeting of the Special Committee on Natural Hazards of the Association of Caribbean States. Held at El Salvador, October 19-20.
- 2000 Invited speaker. "The Puerto Rico Tsunami Warning and Mitigation Program", Intra-Americas Sea Tsunami Meeting for the Caribbean Tsunami Warning Center. Held at the University of Puerto Rico, Mayaguez Campus (UPRM). Sponsored by the Intergovernmental Oceanographic Commission (UNESCO), NOAA, Sea Grant College Program of UPRM, and the Center for Research and Development of UPRM. December 19-21.
- 2001 Invited speaker. "Coastal Hazards", presented at the Sea Grant Marine Advisor's Training Workshop for the Centroamerican and Zamorano University. Held at Mayaguez, P.R., January 15.



- 2001 Invited speaker. "Tsunamis", presented at the Civil Defense Training Workshop, held at Hotel El Pedregal, Aguadilla, P.R., January 16.
- 2001 Invited speaker. "The Puerto Rico Tsunami Warning and Mitigation Program". Presented at Managing Beaches in the Caribbean: Investing in Our Future. Sponsored by the Sea Grant College Program, UPRM, Department of Environmental and Natural Resources, Compania de Parques Nacionales, UNESCO, Puerto Rico Tourism Co., Caribbean Alliance for Sustainable Tourism, and the Government of Puerto Rico. Held at San Juan, P.R.
- 2001 Invited speaker. "Ambiguity in the definition of the coastal maritime zone". Presented at Managing Beaches in the Caribbean: Investing in Our Future. Sponsored by the Sea Grant College Program, UPRM, Department of Environmental and Natural Resources, Compania de Parques Nacionales, UNESCO, Puerto Rico Tourism Co., Caribbean Alliance for Sustainable Tourism, and the Government of Puerto Rico. Held at San Juan, P.R. June.
- 2001 Invited speaker. Inter-Agency Islands Task Force Meeting, Ohau, Hawaii. Sponsored by the U.S. Army Corps of Engineers and the Federal Emergency Management Agency. June.
- 2002 Invited speaker. "The Puerto Rico Tsunami Warning and Mitigation Program", presented at "Simposio sobre Planificacion Sustentable ante Peligros Naturales" (Symposium on Sustainable Planification in the Face of Natural Disasters"), held at the Metropolitan University of Puerto Rico, School of Environmental Issues, February 22, 2002.
- 2002 Invited speaker. "The Puerto Rico Tsunami Warning and Mitigation Program", presented at 20<sup>th</sup> Annual Caribbean Geology Symposium: Geology and Tectonics of Puerto Rico, held at the University of Puerto Rico, Mayaguez Campus, February 27-30.
- 2003 Invited Panelist. First Caribbean Development Bank Vulnerability Assessment Forum: Vulnerability Assessment Techniques (VAT) III Workshop. Sponsored by the Caribbean Development Bank, Barbados, and NOAA. Barbados, December 4-5.
- 2003 Invited speaker. "Tsunami Investigations in Northwestern Puerto Rico". Presented with J. C. Moya at Coastal Sediments '03, May, 2003, Clearwater, FL.
- 2003 Poster. A. Mercado & V. Huerfano. The Puerto Rico Tsunami Warning and Mitigation Program. EPSCoR Annual Meeting, San Juan, P.R.
- 2004 Speaker. "The Puerto Rico Tsunami Warning and Mitigation Program", presented at the International Coastal Society 2004 Symposium, Itajai, Brazil. March 14-20.
- 2004 Speaker. "The Puerto Rico Tsunami Warning and Mitigation Program", presented at the NSF Caribbean Tsunami Workshop. San Juan Beach Hotel, San Juan, Puerto Rico. March 30-31.
- 2004 Invited speaker. "Tsunamis". Acércate a la Universidad, University of Puerto Rico Open House, Plaza Las Americas Shopping Mall, April 1.
- 2004 Participant. Second Workshop for an Integrated Tsunami Scenario Simulation. October 28-29, National Science Foundation, San Francisco, CA.
- 2004 Invited speaker. "Tsunamis". Tsunami Workshop for Southwestern Region of Puerto Rico. UPRM.
- 2004 Invited speaker. "Tsunamis". Puerto Rico State Emergency Management Agency 14<sup>th</sup> Annual Meeting, June 6, Wyndham Condado Plaza, San Juan.
- 2004 Invited speaker. "Tsunamis". Acércate a la Universidad, University of Puerto Rico, Mayaguez Campus Open House, Mayaguez Mall, September 25, Mayaguez, PR.
- 2004 Participant. Workshop on Integrated Tsunami Scenario Simulation, October 29-30, San Francisco, CA.
- 2004 Invited speaker. "The USA National Tsunami Hazard Mitigation Program". Puerto Rico Tsunami Technical Review Committee. PR State Emergency Management Agency. San Juan, PR.
- 2004 Invited speaker. "Tsunamis and tsunami flood mapping". PRTWMP Workshop for Zone I of PRSEMA. Dorado, P.R.
- 2004 Invited speaker. "Tsunamis and tsunami flood mapping". PRTWMP Workshop for Zone I of PRSEMA. Carolina, P.R.
- 2004 Invited speaker. "Tsunamis and tsunami flood mapping". PRTWMP Workshop for Zones II and

- III of PRSEMA. Aguadilla, P.R.
- 2004 Invited speaker. "The Puerto Rico Tsunami Warning and Mitigation Program". USA National Tsunami Hazard Mitigation Program. Oakland, CA.
- 2005 Invited speaker. "Tsunamis", Conference on Tsunamis and Planning in Puerto Rico, Department of Social Sciences, University of Puerto Rico, Arecibo Campus, February 16<sup>th</sup>.
- 2005 Invited speaker. "Tsunamis", Conference on Earthquakes, Tsunamis, and Coastal Construction; Program on Continuing Education, Puerto Rico College of Engineers and Surveyors, San Juan, PR, February 17<sup>th</sup>.
- 2005 Invited Participant. Tsunami Regional Consultation Meeting; Caribbean Disaster Emergency Relief Agency (CDERA), Barbados, February 21<sup>st</sup>.
- 2005 Keynote speaker. "Tsunamis: the underrated hazard, the forgotten hazard", XVII Engineering and Surveying Congress, Puerto Rico College of Surveyors and Engineers, March 15. San Juan, PR.
- 2005 Invited speaker. "The Puerto Rico Tsunami Warning and Mitigation Program", presented to Public Security Commission of the Senate of Puerto Rico. March 16, San Juan, PR.
- 2005 Invited speaker. "The Puerto Rico Tsunami Warning and Mitigation Program", presented at the International Workshop "Regional Program on the Central America Tsunami Warning System", 25-27 April, Managua, Nicaragua. Sponsored by the Centro de Prevención de Desastres Naturales de América Central (CEPRENAC) and Instituto Nicaragüense de Estudios Territoriales (INETER).
- 2005 Invited speaker. "Technology and coastal zone flood mapping", XV Annual Conference, Puerto Rico State Emergency Management Agency; Wyndham Condado Plaza Hotel, San Juan, PR. May 25-28.
- 2005 Invited speaker. "Tsunamis: un peligro olvidado". May 12, Ciudadano Aguadeños Pro Conservación del Ambiente. Centro de Bellas Artes, Aguada, PR.
- 2005 Invited Participant. "DART Network Optimization Workshop", Pacific Marine Environmental Laboratory, Seattle, WA. July 6-7.
- 2005 Invited speaker. "Tsunamis en Puerto Rico: Una Mirada a las Investigaciones", Sociedad de Administradores de Investigadores de Puerto Rico (SAI), Inc. September 1, San Juan, PR.
- 2005 Invited speaker. "An Evaluation of the Main Ports and Bays in Puerto Rico and the U.S. Virgin Islands as to their Exposure to Hurricane Wave Attack", First Annual Coastal Symposium and Marine Applied Research, Sea Grant Program, Mayaguez, P.R.
- 2005 Speaker. "GIS-based Coastal Flood Mapping for Puerto Rico Using ArcView", First Annual Coastal Symposium and Marine Applied Research, Sea Grant Program, Mayaguez, P.R.
- 2005 Invited speaker. "Marejadas Ciclónicas y Tsunamis", Semana de la Planificación, Sociedad Puertorriqueña de Planificación, November 9, Tropimar Convention Center, San Juan, PR.
- 2005 Invited speaker. "Incurciones del Mar en la Zona Marítimo-Terrestre y sus Implicaciones de Uso y Conservación", Diálogo: La Playa; ¿De Quién y Cómo?. Sea Grant Program UPR, Enríque Martí-Coll Foundation, and International Institute of Tropical Forestry & USDA Forest Service. November 19, Embassy Suites Hotel, Isla Verde, PR.
- 2005 Invited speaker. "Coastal Zone Management", Power of Nature, Alianza para la Nueva Humanidad, El Foro Humano de Puerto Rico, December 8. Westin Rio Mar Hotel, Rio Grande, PR.
- 2006 Invited Participant. First Session of the International Oceanographic Commission Intergovernmental Co-ordination Group for the Tsunami and other Coastal Hazards Warning System for the Caribbean Sea and Adjacent Regions, United Nations House, Bridgetown, Barbados, 10-12 January. Member of the USA delegation.
- 2006 Keynote Speaker, "Caribbean real-Time Tsunami Forecasting Using DART Buoys". First International Field Symposium, Bonaire, Coastal Commission of the International Geographical Union and Sea Grant.. March.
- 2006 Speaker: "Construcción en la Zona Costera: Vulnerabilidad en las zonas costeras vis a vis los cambios climáticos". Segunda Conferencia de Derecho de Construcción. Escuela de Derecho,

- Universidad InterAmericana de Puerto Rico, March.
- 2006 Speaker: “Tsunami flood maps”, Workshop on Tsunamis, Mayaguez Zone, College of Surveyors and Engineers, Mayagüez Chapter, March.
- 2006 Invited speaker. “Caribbean Tsunami Forecast Model Development by the University of Puerto Rico. Department of Geology Graduate Seminar. UPRM. August 30, 2006.
- 2006 Invited speaker. “NOAA/UPR Tsunami Forecasting”. Presentation to the Governor of the USVI. Virgin Islands Territories Emergency Management Agency. September 28.
- 2006 Invited speaker. “Tsunami related work at UPRM”. Plenary presentation. Sigma Xi Student Poster Day, April. Chemistry Bldg., UPRM
- 2006 Invited speaker. “Efectos de los Huracanes en las Costas”, Conferencia de Huracanes, University of Puerto Rico, Carolina Campus, June 1.
- 2006 Speaker: “Construcción en la Zona Costera: a) Propiedad Privada vs Bienes de Dominio Público – Propuesta sobre Ley de Costas de Puerto Rico; b) Proyectos Propuestos y la Permisología Basada en Mapas de Inundación Costera Obsoletos, la Receta para un Desastre”, II Congreso-Taller Internacional de Ética Ecológica, UPR/Cayey, Fundación Puertorriqueña de las Humanidades, 19 de octubre.
- 2006 Invited Participant. National Earthquake Engineering Simulation/NSF Training and Tsunami Modeling Workshop. Oregon State University. Corvallis, OR. July 27-28.
- 2006 Invited Participant. Interactions between tsunamis and underwater geological processes. USGS. Woods Hole Oceanographic Institution, MA. October 31-31.
- 2006 Participant. Segundo Charrette sobre el Plan de Uso de Terrenos de Puerto Rico. Junta de Planificación de Puerto Rico. San Juan, PR. October 12.
- 2006 Invited speaker. “Hurricanes and Tsunamis: what are the issues in Puerto Rico?”. Ocean Studies Board Meeting of the USA National Research Council, The National Academies. Sheraton Hotel at Old San Juan. November 3.
- 2006 Invited speaker. “Tsunami Flood Mapping”. Tsunami Workshop, municipality of Añasco, PR. Hotel El Coche, Rincon, PR. November 14.
- 2006 Invited Participant. Preparatory Meeting for the Second Session of the IOC Intergovernmental Coordination Group for the Tsunami and other Coastal Hazards Warning System for the Caribbean and Adjacent Regions ( ICG/CARIBE – EWS). San Juan, Puerto Rico. November 29-30.
- 2006 Participant. Workshop on “Coastal Circulation & Wave Modeling with SMS”. USA Corps of Engineers Waterways Experiment Station, Vicksburg, Mississippi December 5-8.
- 2006 Participant. Storm Surge and Inundation Workshop. Sponsors: GCOOS, SECOORA, NOAA/CSC. New Orleans.
- 2007 Forum Panelist. “El Cambio Climático: Sus Efectos en Puerto Rico”. Univision. Puerto Rico Convention Center, San Juan, PR.
- 2007 Invited speaker. “Aspectos científico-técnicos sobre las costas”. Segunda Jornada Ambiental 2007, Acceso a la justicia: a toda COSTA. Escuela de Derecho Eugenio María de Hostos Sponsor: Escuela de Derecho Universidad de Puerto Rico, Asociación Nacional de Derecho Ambiental, Clínica de Asistencia Legal UPR, Juristas Hostosianos Pro-Ambiente. March 3.
- 2007 Invited speaker. “Aspectos científico-técnicos sobre las costas”. Forum: La Seguridad en el litoral costero y la costa como espacio para desarrollo económico. Location: National College of Arecibo. Sponsor: Cumbre Social and Oficina de Promoción y Desarrollo Humano de Arecibo. March 28.
- 2007 Invited speaker. “Short-term Inundation Forecasting for Tsunamis in the Caribbean Sea Region”. 2007 National Hurricane Conference. New Orleans. April 3.
- 2007 Co-speaker (with my ex-student Dr. J. C. Ortiz). “Estudio preliminar del impacto del oleaje de huracanes en la línea costera del Departamento del Atlántico, Colombia”. XII Congreso Latinoamericano de Ciencias del Mar, Florianópolis, Brasil. Sponsored: Asociación Latinoamericana de Investigadores en Ciencias del Mar – ALICMAR y la Asociación Brasileña

- de Oceanografía. April.
- 2007 Invited speaker. “Cambio Climático y su Impacto en las Costas de Puerto Rico”. Presented at: Cambio Climático. Location: Student Center of InterAmerican University at San Germán Sponsored by: Programa de Reciclaje, Municipio de San Germán. 28 de marzo.
- 2007 Invited speaker. “Riesgos costeros en la isla e implicaciones con los propuestos cambios climáticos”. Congreso Internacional GAIA y Cambio Climático. UPR/Río Piedras. Sponsored by UPR. Date: April 20.
- 2007 Invited speaker (with C. von Hillebrandt and V. Huerfano). “Implementación de un sistema de alerta de tsunamis en el Caribe”. Congreso Internacional GAIA y Cambio Climático. UPR/Río Piedras. Sponsored by UPR. Date: April 20.
- 2007 Invited speaker. “Modeling and Observational Needs in Coastal Hazards”. CaRA Steering Committee Meeting. Hotel Condado Plaza, San Juan, PR. Sponsored by: Caribbean Regional Association (CaRA). April 27.
- 2007 Invited speaker. “Cambio Climático y Sus Posibles Efectos en Nuestras Costas”. Foro Calentamiento Global y Sus Terribles Efectos Sobre Puerto Rico. Centro de Bellas Artes de Aguada. Sponsored by: Ciudadanos Aguadeños Pro Conservación del Ambiente. May 2.
- 2007 Speaker. “Short-term Inundation Forecasting for Tsunamis in the Caribbean Sea Region”, American Geophysical Union 2007 Joint Assembly. Acapulco, Mexico. May 25.
- 2007 Invited speaker. “Mapas de Inundación Costera: Preparación, Uso, y Precauciones”, Conferencia Sociedad Puertorriqueña de Planificadores, Escuela de Leyes Universidad InterAmericana, Hato Rey. June 6.
- 2007 Speaker. “Cambio Climático”. Presented at: Convento Hermanas de Fátima, Yauco, PR. July 5.
- 2007 Invited speaker. “Short-term inundation forecasting in the Caribbean”. Workshop on Tsunami Hazard Mitigation in the Caribbean. Organized by the Norwegian Geotechnical Institute and the University of the West Indies. 19-20 July.
- 2007 Invited speaker. “Puerto Rico *vis a vis* Climate Change and a frequently asked question: What is the government doing?”. Chronic Risk of Global Climate Change to Urban Coasts and Economies. Stevens Institute of Technology and New Jersey Marine Sciences Consortium, Nov. 15-16.
- 2007 Speaker. “Riesgos Costeros en la Isla e Implicaciones con los Propuestos Cambios Climáticos”. Presented at: Centro Interpretativo de las Salinas de Cabo Rojo, Cabo Rojo. Sponsor: Comité Caborrojeños Pro Salud y Ambiente. July 28.
- 2007 Invited speaker. “Riesgos Costeros en la Isla e Implicaciones con los Propuestos Cambios Climáticos”. Presented at: Centro de Convenciones. Location: Aguada. Sponsor: Cooperativa de Ahorro y Crédito de Aguada. August 17.
- 2007 Invited speaker. “Riesgos Costeros en la Isla e Implicaciones con los Propuestos Cambios Climáticos”. Presented at: Escuela de Arquitectura de la Universidad de Puerto Rico. Location: Río Piedras. Sponsor: Sierra Club. August 22.
- 2007 Speaker. “Revocación de la Sección 85.07 del Reglamento Número 4 de la Junta de Planificación”. Presented at: Foro Ciudadanos y la Agenda Ciudadana para Puerto Rico. Apoyo a Programas Educativos y Comunitarios y El Nuevo Día. Location: Inter-American University, San Germán. August 25.
- 2007 Invited speaker. “Inundaciones Costeras”. Presented at: Taller sobre Eventos Atmosféricos y Sísmicos: monitoreo, impacto y alcance social”. Location: Universidad Autónoma Santo Domingo, República Dominicana, Sponsor: Universidad Autónoma Santo Domingo and University of Puerto Rico, Mayagüez. August 29-30. (this was an event in which the chancellors of UPRM and of UNAM invited selected researchers for potential collaboration).
- 2007 Invited speaker. “Tsunami: Ola de Puerto”. Presented at: Taller Regional sobre los Tsunamis y los Puertos”. Location: Agencia Estatal para el Manejo de Emergencias, San Juan. Sponsor: NSF. September 11.

- 2007 Invited speaker. “Riesgos Costeros en la Isla e Implicaciones con los Propuestos Cambios Climáticos”. Presented at: Programa de Ciencias Ambientales, Location: UPR/Río Piedras Sponsor: Programa de Ciencias Ambientales, UPR/RP. September 11.
- 2007 Participated as invited panelist in the conference “Climate, Climate Change, and Education”, sponsored by the Puerto Rico Louis Stokes Alliance for Minority Participation, UPR/Río Piedras. Held at Embassy Suites, Dorado. September 28.
- 2007 Invited speaker. “Riesgos Costeros en la Isla e Implicaciones con los Propuestos Cambios Climáticos”. Presented at: Centro de Convenciones Santiago Palmer. Location: San Germán. Sponsor: Municipio de San Germán. October 2.
- 2007 Invited speaker. “Riesgos Costeros en la Isla e Implicaciones con los Propuestos Cambios Climáticos”. Presented at: UPR/Aguadilla. Location: Aguadilla. Sponsor: Noroeste Unido Pro Ambiente. October 4.
- 2007 Invited speaker. “Los cambios climáticos y océanos”. Presented at: Primera Convocatoria Estudiantil sobre Periodismo Ambiental, edición 2007. Location: Telemundo de Puerto Rico Sponsor: Programa de Periodismo Escolar (PPE). October 26.
- 2007 Participant. Caribbean Regional Association (NOAA) meeting of researchers. University of the US Virgin Islands, St. Thomas. August 7.
- 2007 Invited speaker and Participant. USA National Tsunami Hazard and Mitigation Program meeting. Hawaii. Sponsored by NTHMP/NOAA. November 2.
- 2007 Invited speaker. “Tsunami forecasting in the Caribbean/Atlantic and the ComMit software package”. Presented at the ICG-CARIBE-EWS Officers & Working Groups Meeting, Cartagena, Colombia, December 5 – 7.
- 2008 Invited speaker. “Desinterés y desidia para con las playas de Puerto Rico; ¿Es esto progreso?”. 12da Conferencia Caribeña sobre Forestación Urbana y de Comunidades: Cambio Climático, Salud y Economía. Centro de Bellas Artes, Caguas, PR. Feb. 5-6, 2008. Sponsored by US Forest Service, Dept. of Environmental and Natural Resources, International Institute of Tropical Forestry.
- 2008 Invited speaker. “Situación actual de nuestras costas”. Seminar at Surveyor’s Institute, Puerto Rico College of Engineers and Surveyors. Sponsored by Attitude-Communications Consultants. February 15, 2008.
- 2008 Invited speaker. “WG2 Report”, III ICG Caribbean Early Warning System Meeting, Panamá City, Panamá. Sponsored by UNESCO’s Intergovernmental Oceanographic Commission. March 12-15.
- 2008 Speaker: “Tsunamis for reporters”. Workshop on Tsunami Basics for the Press. April 5, 2008. Darlington Building, Mayaguez, PR
- 2008 Invited speaker. “Sea Grant’s Contribution to Tsunami Hazard Mitigation in the Caribbean”. Solutions to Coastal Disasters 2008. Sponsored by the Amer. Soc. Civil Eng., April 12-16 2008, Hawaii.
- 2008 Invited speaker. “Tsunamis”. Carolina Emergency Management Agency. Sponsored by the Puerto Rico Component of NTHMP. April 13.
- 2008 Invited speaker. “Situación Actual de Nuestras Costas vis a vis el Calentamiento Global: (situación no sostenible) “, II Magna Conferencia Sobre La Situación Ambiental de Puerto Rico, Teatro Taboas, Manatí. Sponsored by the Environmental Protection Agency and Junta de Calidad Ambiental de PR. April 22-23.
- 2008 Invited speaker. “Aumento en el Nivel del Mar vs la Situación Actual de Nuestras Costas (situación no sostenible)”. Jardín Botánico de Caguas. Semana de la Tierra Puertorriqueña. Sponsored by the Puerto Rico Department of Agriculture. May 1, 2008.
- 2008 Invited speaker : “CambioClimático vs el Desarrollo en las Costas de Puerto Rico: situación no sostenible”. IV Congreso de la Cumbre Social: Puerto Rico: Desarrollo Socioeconómico y Calentamiento Global. Centro de Convenciones de Puerto Rico, San Juan. May 6-7.

- 2008 Invited speaker. “Estructuras alledañas a las costas: desarrollo no sostenible”. Decimoséptima Conferencia Anual Agencia Estatal para el Manejo de Emergencias y Administración de Desastres. Embassy Suites Hotel, Dorado, PR. May 20-23.
- 2008 Invited speaker. “Arrecifes de coral: rompeolas naturales”. Primer Conversatorio de Arrecifes de Coral. Departamento de Recursos Naturales y Ambientales. Hotel Embassy Suites, Isla Verde, Carolina. August 28.
- 2008 Invited speaker. “Tsunamis”. Sponsors: Vecinos y Amigos de Islote, Arecibo, PR.
- 2008 Invited speaker. “Cambio Climático vs el Desarrollo en las Costas de Puerto Rico: situación no sostenible”. Quincuagésima Asamblea Anual de la Asociación de Profesionales de Salud Ambiental de Puerto Rico. Hotel El Faro, Aguadilla, PR. August 29.
- 2008 Invited speaker and Participant. Meeting of the Mapping and Modeling Sub-Committee of the USA National Tsunami Hazard Mitigation Program. Sponsor: USA NTHMP. Boulder, CO. September 9-11.
- 2008 Participant. Workshop on Ocean Observing in Support of Coastal Management. Carolina, Embassy Suites Hotel, Sponsors: Caribbean Regional Association (NOAA), National Federation of Regional Associations for Coastal and Ocean Observing, Sea Grant. September 30.
- 
- 2008 Invited speaker. “Tsunami modeling in the Caribbean”, Scientific Regional Symposium on Tsunamis, Puerto La Cruz, Venezuela. Sponsor: UNESCO’s Intergovernmental Oceanographic Commission and the Venezuelan Foundation on Seismic Research (FUNVISIS). October 20-21.
- 2008 Invited speaker. “Coastal Hazards Mitigation via Computer Modeling”. ACADEMIA 2008 Integrando Nuevas Estrategias en las Ciencias y Matemáticas: Hacia un Aprendizaje Distribuido Descripción de la actividad Taller de Capacitación Maestros de Escuela. Carolina, PR. Sponsor: Inter-American University, Ponce Campus. October 11.
- 2008 Invited speaker. “The Development of SIM’s at the University of Puerto Rico”, Annual meeting of the National Tsunami Hazard Mitigation Program. Silver Springs, MD. NOAA/NTHMP. November 17-20.
- 2008 Invited speaker. “Desarrollo Costero en Puerto Rico: Situación no Sostenible”. Rotary Club of San Germán. November 12.
- 2008 Invited speaker. “Tsunami modeling at the University of Puerto Rico”, Workshop on Tsunamis, Norwegian Geotechnical Institute and the University of the West Indies. Barbados. December 3-5.
- 2008 Invited Participant. Preparatory meeting for the 2008 UNESCO/IOC/Intergovernmental Coordinating Group of the Caribbean Tsunami Early Warning System and Other Coastal Hazards. Guadeloupe, French West Indies. December 6-9.
- 2009 Invited speaker. “Climate Change and the Oceans”, Program on Environmental Journalism. Telemundo TV, San Juan. February 27.
- 2009 Invited speaker. “Tsunami Modeling in Puerto Rico in Support of the NTHMP”, NTHMP Mapping and Modeling Subcommittee Meeting. Boulder, CO. March.
- 2009 Invited Participant. Global Meeting of the Intergovernmental Coordination Groups for Tsunami Warning Systems (GLOBAL TWS). Paris, France. Sponsor: UNESCO’s Intergovernmental Oceanographic Commission. Travel expenses paid by UNESCO.
- 2009 Invited speaker. “Tsunami risk for the Luis Muñoz Marín International Airport”, San Juan Airport Aviation Safety Meeting, Sponsor: San Juan Airport Aviation Safety Group. March.
- 2009 Invited speaker. “Tsunami Modeling in Puerto Rico in Support of the NTHMP”. NTHMP Mapping and Modeling Subcommittee Meeting. Sponsor: USA National Tsunami Hazard Mitigation Program/NOAA. Boulder, CO. March 27-29.
- 2009 Invited speaker. “Tsunami: Harbor Wave”, Caribbean Regional Response Team Meeting,

- Sponsors: FEMA, Homeland Security, Virgin Islands Territory Emergency Management Agency, US Army, Navy, Coast Guard, NOAA, USFWS, EPA. St. Thomas, US Virgin Islands. May 7.
- 2009 Invited speaker. "Work on the new storm surge atlas for Puerto Rico", Annual Puerto Rico State Emergency Management Agency. San Juan. June 8.
- 2009 Invited speaker. "Coastal flooding due to hurricanes: a recreation of the 1928 San Felipe cat 5 hurricane". 5to. Congreso en Desastres: Problemas Multidimensionales, Soluciones Multidisciplinarias, Convención Anual de la Coalición de Enfermería para Comunidades en Desastre (CONCID). Location: Museo de los Próceres "Don Luis A. Ferré Aguayo", Cabo Rojo Sponsors: CONCID. September 4.
- 2009 Invited speaker. "La confusión sobre la zona marítimo-terrestre: aspecto técnico". Programa de Educación Continua, Convención Anual del Colegio de Abogados de Puerto Rico, Colegio de Abogados de Puerto Rico. Fajardo. September 11.
- 2009 Invited speaker. "User requirement in the Caribbean region on storm surge monitoring and forecasting", User Consultation Meeting on European Space Agency Storm Surge Agency, European Space Agency, Venezia, Italy. September 16-18. Travel expenses paid by UNESCO's IOC.
- 2009 Invited speaker. "Sobre el concepto de marea "sensible" versus "no sensible" en la definición de la zona marítimo-terrestre de Puerto Rico: una verdad inconveniente", II Jornada de Derecho Civil Eduardo Vázquez Bote, Facultad de Derecho Eugenio María de Hostos. Mayaguez. October 2. NOTE: This presentation was quoted, and given as reference, in the Puerto Rico Supreme Court case 2009 DTS 166 BUONO CORREA V. VELEZ AROCHO 2009TSPR166 (<http://www.lexjuris.com/LexJuris/tspr2009/lexj2009166a.htm>).
- 2010 Invited speaker. "La Cartilla de la Zona Marítimo Terrestre", Primera Feria del Libro Internacional Eugenio Maria de Hostos, University of Puerto Rico. Sea Grant. March 5. I am a co-author.
- 2010 Invited speaker. "Revision of the tsunami flood maps for Puerto Rico", Primera Feria del Libro Internacional Eugenio Maria de Hostos, University of Puerto Rico. Mayaguez Municipality and the Puerto Rico Seismic Network. March 4.
- 2010 Invited to form part of a panel on Earthquakes and Tsunamis. Primera Feria del Libro Internacional Eugenio Maria de Hostos, University of Puerto Rico. Mayaguez Municipality and the Puerto Rico Seismic Network. March 4.
- 2010 Invited speaker. "Working Group 2 Report: Hazard Assessment and Modeling". Intergovernmental Oceanographic Commission (of UNESCO) Fifth Session of the Intergovernmental Coordination Group for the Tsunami and other Coastal Hazards Warning System for the Caribbean and Adjacent Regions. Sponsored by UNESCO/IOC. Managua, Nicaragua. March 15-17.
- 2010 Invited speaker and Participant. "Sea Level Rise around Puerto Rico", 2<sup>nd</sup> Summit on Confronting Climate Change. UPR/Carolina, Sea Grant, National Weather Service, Puerto Rico Space Grant Consortium. April 29.
- 2010 Invited speaker. "The Puerto Rico Tsunami Inundation Maps", Tsunami Ready Summit. Sponsor: NOAA, PR Seismic Network. Mayaguez Resort and Casino. May.
- 2010 Invited speaker and Hurricane Panelist, "Intense hurricane: are we prepared", Puerto Rico State Emergency Management Agency Annual Convention. Puerto Rico Convention Center, San Juan. May 27.
- 2010 Invited speaker and Earthquake/Tsunamis Panelist, "El tsunami de Haití y la nueva generación de

- mapas de inundación por tsunami”, Puerto Rico State Emergency Management Agency Annual Convention. Puerto Rico Convention Center, San Juan. May 27.
- 2010 Invited speaker. “Bad coastal construction practices”. Universidad Metropolitana, San Juan, PR. Sponsored by UMET. September 16.
- 2010 Invited speaker. “Disaster Mitigation through Numerical Modeling at the University of Puerto Rico”. First International Workshop on Integrated Disaster Management. University of Plymouth, UK. Sponsored by University of Plymouth (who paid for all expenses).
- 2010 Invited speaker. “Programa de Tsunamis de Puerto Rico: desde la A hasta la Z (Investigación/ Mitigación/Educación”. Congreso Internacional de Gestión de Riesgos, Ambiente y Energías Alternativas. Hotel Hilton Colon, Quito, Ecuador. Sponsored by the Colegio de Ingenieros Geólogos, de Minas, Petróleos, y Ambiental. November 10-12. (all travel expenses paid by the sponsor).
- 2010 Speaker. “Evaluacion preliminary de la construccion del gasoducto a lo largo del frente maritime de Levittown, Toa Baja”. Location: Colegio de Abogados de Puerto Rico. Sponsor: Cumbre Social de Puerto Rico. October 7.
- 2011 Co-speaker (with my ex-student J. Gonzalez and others). “Optimum mesh resolution for wave and storm surge modeling over a steep and complex-featured shelf using an unstructured circulation-wave coupled model”. Limnology & Oceanography in a Changing World, Association for the Sciences of Limnology and Oceanography 2011, Aquatic Sciences Meeting, San Juan, PR. February 13-18.
- 2011 Co-speaker (with my ex-student C. Anselmi and others). “CariCOOS coastal and marine spatial planning framework”. Limnology & Oceanography in a Changing World, Association for the Sciences of Limnology and Oceanography 2011, Aquatic Sciences Meeting, San Juan, PR. February 13-18.
- 2011 Invited speaker. “Tsunami models for inundation mapping in the Caribbean”. 6th Workshop on Storm Surges and Waves Forecasting. Sponsored by UNESCO’s World Meteorological Organization. Coastal Inundation Forecasting Demonstration Project in the Dominican Republic. February 22. (all travel expenses paid)
- 2011 Invited speaker. “Tsunami Applications in Puerto Rico based on simulated events database”. 6th Workshop on Storm Surges and Waves Forecasting. Sponsored by UNESCO’s World Meteorological Organization. Coastal Inundation Forecasting Demonstration Project in the Dominican Republic February 25. (all travel expenses paid)
- 2011 Invited Co-Speaker (with my ex-student J. Gonzalez). “ADCIRC/unSWAN models coupling in Puerto Rico”. 6th Workshop on Storm Surges and Waves Forecasting. Sponsored by UNESCO’s World Meteorological Organization. Coastal Inundation Forecasting Demonstration Project in the Dominican Republic. February 25. (all travel expenses paid)
- 2011 Speaker. “Zona maritimo-terrestre”. Sponsor: General Engineering students. UPRM.
- 2011 Invited speaker. “The Tsunami Hazard vis a vis the AEE Via Verde; and Panel Sobre Riesgos”. Sponsors: Casa Pueblo de Adjuntas. Location: Colegio de Ingenieros y Agrimensores de Puerto Rico. August 3.
- 2011 Invited speaker. “Progress Report on Modeling: Puerto Rico Component of the National Tsunami Hazard Mitigation Program”. Sponsor: National Tsunami Hazard Mitigation Program (NOAA) Location: National Geophysical Data Center, Boulder, CO. August 9-11.
- 2011 Invited speaker. “The new generation of tsunami inundation maps for Puerto Rico: Characteristics and challenges”. Sponsors: 27th Annual Caribbean Geology Symposium/ Department of Geology/UPRM. UPRM. October 12.
- 2012 Invited speaker. “Tsunamis y Marejadas Ciclonicas”. Location: Universidad del Norte, Barranquilla, Colombia. Sponsor: Departamento de Física Aplicada, Universidad del Norte, Barranquilla, Colombia. March 8. (all expenses paid)



- 2012 Invited speaker. “La Zona Maritimo-Terrestre en Puerto Rico”. Location: Civil Engineering Amphitheater. Sponsor: Puerto Rico Water & Environment Association (PRW&EA). March 20.
- 2012 Co-Speaker (with my ex-student and others). “Effect of a steep and complex-featured shelf on computed wave spectra”. 12th International Workshop on Wave Hindcasting and Forecasting & 3rd Coastal Hazards Symposium. Hawaii. November 7.
- 2012 Invited speaker. “Inundaciones Costeras”. Semana de la Planificación, Sociedad Puertorriqueña de Planificación. Colegio de Arquitectos de Puerto Rico. November 11.
- 2012 Invited speaker. “What’s being done in other parts of the Caribbean”. Coastal Inundation Forecasting Demonstration Project in the Dominican Republic. National Meteorological Office. November 17. (all travel expenses paid)
- 2012 Invited speaker. “Evidence of Sea Level Rise around Puerto Rico”. 28th Geology Symposium Physics Building Amphitheater FC. UPRM. February 28.
- 2012 Invited speaker. “FEMA response and the Storm Surge Atlas”. CariCOOS Workshop on Simulation and Model Testbed of Hurricane Wave, Surge, and Rainfall Runoff Events for Puerto Rico. Location: UPRM. Sponsors: CariCOOS, NOAA, IOOS, USA Corps of Engineers, Sea Grant, U of Notre Dame and U of North Carolina, FEMA. March 30.
- 2012 Invited speaker. “Working Group 2 Report”. Intergovernmental Coordinating Group CARIBE Tsunami Early Warning System and Other Coastal Hazards. Location: Curacao, Dutch West Indies. Sponsors: UNESCO/IOC. May 15-16. April 3.
- 2012 Invited speaker. “Ongoing Risk and Coastal Hazards Mitigation Efforts in the US Caribbean”. NOAA in the Caribbean. Location: St. Thomas, USVI. Sponsors: NOAA, University of the Virgin Islands. May 15-16.
- 2012 Invited speaker. “Desarrollo del mapa de inundación por tsunami para Puerto Rico”. Taller de desalojo vertical para tsunamis. Location: Colegio de Ingenieros y Agrimensores de Puerto Rico Sponsors: Colegio de Ingenieros y Agrimensores de Puerto Rico, Red de Movimientos Fuertes de PR, Red Sismica de PR, National Tsunami Hazard Mitigation Program. June 18.
- 2012 Invited speaker. “Tsunamis en el Caribe e Intentos Actuales para su Mitigación”. XX Seminario Nacional de Hidraulica e Hidrologia de Colombia. Location: Barranquilla, Colombia. Sponsors: Sociedad de Ingenieros de Colombia, Sociedad de Ingenieros del Atlántico y Universidad del Norte. August 10. (all travel expenses paid)
- 2012 Invited Webinar. “Calentamiento global y el efecto en nuestras costas”. Webinar to the hotel and tourism industry. Sponsors: Puerto Rico Tourism Company. September 14.
- 2012 Invited speaker. “Calentamiento Global y el Efecto en Nuestras Costas”. XVII Encuentro de los Programas de Honor de Puerto Rico. Sponsor: UPR-Cayey. October 6.
- 2012 Invited speaker. “Climate Change, Coastal Hazards and the case of Anegada”. Regional Risk Reduction Initiative Addressing the Sustainability of R3I. Hilton Rose Hall Resort and Spa, Montego Bay, Jamaica. December 3.
- 2012 A. Lopez, J. Horrillo, V. Huerfano and A. Mercado, “ Modeling Tsunamis from Potential Submarine Landslides in the Puerto Rico Region”. American Geophysical Union Fall 2012 meeting, San Francisco, CA. December 5, 2012
- 2013 Joannes Westerink, André van der Westhuysen, J. Smith, J. Feyen, J. Gonzalez, A. Mercado-Irizarry, J. Morell, A. Kennedy, M. Canals, S. Boc, S. Stripling, C. Anselmi, E. Rodriguez, E. Diaz, P. Diaz, and R. Baltes. “Establishment of an islands wave, surge and hydrologic testbed based on Puerto Rico and the U.S. Virgin Islands”. 93<sup>rd</sup> American Meteorological Society Annual Meeting, Austin, TX. January 13.
- 2013 Poster. A. Mercado, V. Huerfano, and J. Lopez. “The Puerto Rico Tsunami Program after the 2004 Tsunami: Hazard and Vulnerability Assessment, Public Outreach and the Tsunami-Ready Program for Coastal Towns”. International Tsunami Symposium 2013. Gocek, Turkey. September 25-28. Chair of “Tsunami Sources” session.

- 2014 Mercado, A., V. Huerfano, and J. Lopez, 2014. "The Puerto Rico Tsunami Program after the 2004 Tsunami: Hazard and Vulnerability Assessment, Public Outreach and the Tsunami-Ready Program for Coastal Towns". Universidad de Málaga, España. April 9-11. Mathematical Modelling for Tsunami Early Warning Systems: An International Conference (TsuMaMoS 2014)
- 2014 Jorge Macías, José M. González-Vida, Aurelio Mercado, Sergio Ortega, Manuel J. Castro. "Numerical simulation of Lantex 2013 tsunami scenario with the HySEA model. Impact assessment on Puerto Rico coasts". 6<sup>th</sup> International Tsunami Symposium. Costa Rica. September 2-5, 2014.
- 2015 Mercado, A., "Storm Surge and Tsunami Hazards", Designing for Tourism, 2-Day Conference on Tourism Structures. The Institution of Structural Engineers, Caribbean Regional Group. September 24-25, 2015. Barbados.

### **CONTINUING PROFESSIONAL EDUCATION**

- 1982 Workshop on Tropical Meteorology, National Weather Service, San Juan, P.R.
- 1983 Workshop in Coastal Engineering, Office of Continuing Professional Education, Drexel University, Phil.
- 1992 Principles and Applications of Beach Nourishment. Short Course. Florida Shore & Beach Preservation Assoc. St. Petersburg, FL.
- 1995 Invited Participant, Hurricane Preparedness Course, National Hurricane Center, Miami, FL. Sponsored by the Federal Emergency Management Agency and the Puerto Rico State Civil Defense. January 9-13.
- 1995 Hurricane Workshop, National Weather Service, San Juan, P.R., July 26-27.
- 1998 International Workshop on Bathymetry and Coastal Topography data Management. University of Washington, Seattle, WA. March 20 – 21.
- 1998 National Science Foundation/National Oceanographic and Atmospheric Administration Tsunami Workshop, December 4-5, Pacific Environmental Marine Laboratory, Seattle, WA.
- 1999 10CARIBE User's and the Global Ocean Observing System (GOOS) Capacity Building Workshop, San Jose, Costa Rica, 22-24 April. Sponsored by Intergovernmental Oceanographic Commission (UNESCO).
- 2001 Tsunami Warning Workshop, sponsored by the National Tsunami Hazard Mitigation Program, Portland, OR, May 14-15.
- 2002 MIKE21 Boussinesq Wave Module Training Course, Danish Hydraulics Institute, Denmark. April 29 - May 3.
- 2004 Environmental Hydrodynamics and Sediment Transport Modeling with the Princeton Ocean Model/ECOMSED. Stevens Institute of Technology, Hoboken, NJ. June 22-24.
- 2004 "Tsunamis and Flood Maps", Puerto Rico Tsunami Hazard Mitigation Program Workshop, Puerto Rico State Emergency Management Agency Zone V. Mayaguez, P.R. May 5.
- 2004 "Tsunamis and Flood Maps", Puerto Rico Tsunami Hazard Mitigation Program Workshop, Puerto Rico State Emergency Management Agency Zone I. Dorado, P.R. Sept. 30.
- 2006 NOAA Coastal Inundation Workshop, Jacksonville, FL, February.
- 2006 NOAA ADCIRC Workshop, Silver Spring, MD, March.
- 2006 NEES/NSF Training and Tsunami Modeling Workshop July 27+28, Oregon State University.
- 2006 "Interactions between Tsunamis and Underwater Geological Processes", USGS, Woods Hole Oceanographic Institution, workshop October 30+31.
- 2006 "Coastal Circulation & Wave Modeling with SMS", EMS-I, USA Army Corps of Engineers Waterways Experimental Station, Coastal and Hydraulics Laboratory, Vicksburg, MS.
- 2007 "Storm Surge and Inundation Workshop". Sponsors: GCOOS, SECOORA, NOAA/CSC. New

- Orleans. January.  
 2008 "New Developments in Coastal Structure Design". Solutions to Coastal Disasters 2008. ASCE, Hawaii, April 2008.

### **COURSES TAUGHT (GRADUATE)**

CMOF 6005	Oceanographic Data Analysis
CMOF 6006	Atmospheric and Oceanic Turbulence
CMOF 6617	Physical Oceanography
CMOF 5015	Physical Oceanography for Meteorologists
CMOF 6631	Geophysical Fluid Dynamics (I)
CMOF 6632	Geophysical Fluid Dynamics (II)
CMOF 6667	Mechanics of Coastal Sediment Transport
CMOF 8619	Coastal Oceanography
CMOF 8659	Computer Modeling in Oceanography and Meteorology
CMOF 8990	Special Problems in Physical Oceanography
CMOF 6655	Ocean Surface Gravity Wave Mechanics

### **PROFESSIONAL CONSULTING TECHNICAL REPORTS**

- 1984 Consultant, Luquillo Marina, Luquillo, Puerto Rico. Done for MHR Research Assoc., Mayaguez, P.R.
- 1985 Consultant, Malecon Playa Santa Isabel, Santa Isabel, Puerto Rico; "Playa Santa Isabel, Oceanographic Survey", MHR Research Assoc., Mayaguez, P.R.
- 1985 Consultant, Puerto Rico North Coast Wave Power Study. "Wave Climate Around Puerto Rico", Center for Energy and Environmental Research Report, submitted to the Puerto Rico Electric Power Authority.
- 1986 Consultant, Palmas del Mar, Humacao, P. R.; "Assessment of Coastal Dynamics and Beach Erosion at Palmas del Mar", MHR Research Assoc., Mayaguez, P.R. Submitted to Palmas del Mar Corp., Humacao, P.R.
- 1986 Consultant, Palmas del Mar, Humacao, P. R.; "Coastal Flooding Study at the North Coast of Punta Candelerero, Humacao, P. R.", MHR Research Assoc., Mayaguez, P.R.. Submitted to Palmas del Mar Corp., Humacao, P.R., and Capacete, Martin & Assoc., San Juan, P.R.
- 1986 Consultant, Guayanilla Bay, Guayanilla, P. R., MHR Research Assoc., Mayaguez, P.R.
- 1986 Consultant, Rio Mar, Rio Grande, P. R.; "Assessment of Coastal Dynamics Processes at Rio Mar Development, Corp. Property in Rio Grande, P. R.", MHR Research Assoc., Mayaguez, P.R.. Submitted to Ecosystems & Assoc. and Custodio, Roe & Assoc., San Juan, P.R.
- 1986 Consultant, Arroyo Marina, Arroyo, P. R.; "Oceanographic Study to Assess the Problem of Sedimentation Inside the Marina of the Municipality of Arroyo, P. R.", MHR Research Assoc., Mayaguez, P.R.. Submitted to Enrique Ruiz & Assoc., San Juan, P.R.
- 1987 Consultant, Hurricane Evacuation Study, San Juan Metropolitan Area. Submitted to U.S. Army Corps of Engineers, Jacksonville District, FL.
- 1988 Consultant, Salinas de Cabo Rojo Marina, Cabo Rojo.P.R. "El Combate Marina Project, Stage 1 - Preliminary Wave Refraction Analysis". Submitted to G. Morris, Hydrology Environmental Engineering, San Juan, P.R.
- 1988 Consultant, Ritz-Carlton Palmas del Mar Hotel, Palmas del Mar, Humacao, P. R.; "Coastal Flooding Study for the Ritz-Carlton Palmas del Mar Hotel, Palmas del Mar, Humacao, P. R."

- Submitted to CMA, Architects & Engineers, San Juan, P.R.
- 1989 Consultant, Ritz-Carlton Palmas del Mar Hotel, Palmas del Mar, Humacao, P. R.; "Coastal Flooding Study for the Ritz-Carlton Palmas del Mar Hotel, Palmas del Mar, Humacao, P. R., Revision". Submitted to CMA, Architects & Engineers, San Juan, P.R.
- 1989 Consultant, Ritz-Carlton Palmas del Mar Hotel, Palmas del Mar, Humacao, P. R.; "Runup Study for the Ritz-Carlton Palmas del Mar Hotel, Palmas del Mar, Humacao, P. R.". Submitted to CMA, Architects & Engineers, San Juan, P.R.
- 1989 Consultant, Ritz-Carlton Palmas del Mar Hotel, Palmas del Mar, Humacao, P. R.; "Design Wave Height and Revetment for Ritz-Carlton Palmas del Mar Hotel, Humacao, P. R.". Submitted to CMA, Architects & Engineers, San Juan, P.R.
- 1989 Consultant, Physical Oceanography Phase, Environmental Impact Statement, Inner Brass Island, St. Thomas, U.S. Virgin Islands. "Final Report, Physical Oceanography: Marine Currents, Vol. I: Summer Study, Winter Study", "Wave Climatology and Refraction Analyses for Inner Brass Island, St. Thomas, USVI". Submitted to Virgin Islands Cay, Ltd., Houston, TX.
- 1990 Consultant, "Coastal Flooding Study, Rio Mar, Rio Grande, P. R.". Submitted to CMA, Architects & Engineers, San Juan, P.R.
- 1990 Consultant, "Coastal Dynamic Processes, Wave Climatology and Refraction Analyses for Boqueron Bay, Cabo Rojo, P.R.". MHR Research Assoc., Mayaguez, P.R.. Submitted to B.L.M. Resort Corp., San Juan, P.R.
- 1991 Consultant, "Palo Seco, Catano, P.R., Seawall Study". Submitted to CMA, Architects & Engineers, San Juan, P.R.
- 1991 Consultant, Dorado del Mar Hotel, Dorado, P.R., "Resultados de los Estudios Geologicos, Biologicos, y Dinamicos de la Playa Dorado del Mar", Environmental Impact Statement, MHR Research Assoc., Mayaguez, P.R.. Submitted to Underwood: Architects, San Juan, P.R.
- 1991 Consultant, "Estudio de "RUNUP" en Punta Bateria, Fajardo, P.R.", East Point Marina, Fajardo, P.R. Submitted to Ecosystems & Assoc., Humacao, P.R.
- 1992 Consultant, "Estudio de Procesos Dinamicos Costeros en la Playa de la Finca Quebrada Palma, Naguabo, P.R.", MHR Research Assoc., Mayaguez, P.R.. Submitted to A. Santiago Vazquez & Assoc., San Juan, P.R.
- 1992 Consultant, "Estudio de Procesos Dinamicos Costeros en el Balneario Pico de Piedra, Municipio de Aguada", Aguada, P.R., MHR Research Assoc., Mayaguez, P.R.. Submitted to A. Santiago Vazquez & Assoc., San Juan, P.R.
- 1992 Consultant, "Wind and Wave Study for La Puntilla, San Juan, P.R., Coast Guard Station". Submitted to CMA Architects & Engineers, San Juan, P.R.
- 1992 Consultant, Catano Revetment. MHR Research Assoc., Mayaguez, P.R. Submitted to A. Santiago Vazquez & Assoc., San Juan, P.R.
- 1992 Consultant, "Study of Flooding by Sea, Toys R'Us, Plaza del Mar, Hatillo, P.R.". Submitted to Agrait Betancourt, Arquitectos, Hato Rey, P.R.
- 1993 Consultant, "Ponce Sewer Outfall Study, Part A: Extreme Ocean Forces on the Pipeline", submitted to Malcom Pirnie, Inc., White Plains, N.Y.
- 1993 Consultant, "Assessment of Rip Currents Dynamics at Palmas del Mar Resort". MHR Research Assoc., Mayaguez, P.R..
- 1993 Consultant, Mayaguez Elite Valley Development Study. MHR Research Assoc., Mayaguez, P.R.
- 1993 Consultant, "Punta Candelero, Palmas del Mar, Humacao, P.R. Coastal Flooding Study. Part A: Coastal Flooding Potential of Punta Candelero. Part B: Design Considerations for Seawall/Revetment at Punta Candelero". Submitted to CMA, Architects & Engineers, San Juan,

- P.R.
- 1994 Consultant, "Mayaguez Waterfront Development Project: Part I - Wave Refraction Study of Mayaguez Bay; Part II- Coastal Flooding Potential; Part III - Estimates of the Stone Weight to be Used in the Revetment and Wave Forces on a Seawall". Submitted to Mayaguez Municipal Government, Mayaguez, P.R.
- 1995 Consultant, Cataño Waterfront Development Project. Part A: Wave Refraction/Diffraction Study; Part B: Coastal Flooding Potential; Part D: Marine Currents Observations; Part E: San Juan Bay Wave Hindcast for Cataño, P.R. Submitted to P. Panzardi & Assoc., San Juan, P.R.
- 1995 Consultant, Toa Baja Waterfront Development Project. Part A: Wave Refraction/Diffraction Study; Part B: Coastal Flooding Potential; Part D: Marine Currents Observations. Submitted to P. Panzardi & Assoc., San Juan, P.R.
- 1995 Consultant, "Bridge over Rio Bayamon and Rio Hondo Channels, Part A: Ensenada de Boca Vieja, Toa Baja, P.R., Wave Refraction/Diffraction Study; Part B: Ocean Surface Wave Loads on the Supporting Piles; Part C: Revetment Design Considerations". Submitted to H. Vafiadis & Assoc., San Juan, P.R.
- 1995 Consultant, "Stone Weight Estimates for Revetment and Wave Forces on Seawall, Plaza del Atlantico, Arecibo, P.R.". Submitted to Terra Tec., Inc., Santo Domingo, Dominican Republic
- 1995 Consultant, "Coastal Flooding Study, Vacía Talega, Loiza, P.R.". Submitted to Ecosystem & Assoc., Humacao, P.R.
- 1996 Consultant, "Cataño Waterfront Development Project: Part 1: Breakwater at "Marina de los Pescadores" - Design Parameters; Part 2: Wave Energy Dissipators in Front of the New City Hall and "Darsena" Squares - Design Parameters; Part 3: Seawall Design Parameters". Submitted to Garcia Cabot & Assoc., Hormigueros, P.R., and M. A. Corsino & Assoc., Bayamon, P.R.
- 1996 Consultant to M. A. Corsino & Assoc. (Bayamon, P.R.) and Rafael Jimenez & Assoc. (Ponce, P.R.) on construction of detached breakwater at Isla de Cabras, Catano, P.R.
- 1996 Consultant, "Computer Simulation of the 1918 Tsunami Along the Western Coast of Puerto Rico". Submitted to Earth Scientific Consultants, Broomfield, CO, and Puerto Rico Earthquake Commission, Government of Puerto Rico.
- 1997 Consultant, "Ocean currents at the proposed El Cano Resort, Barrio Encamacion, Peiuielas, P.R." Submitted to Servicios Cientificos y Tecnicos, San Juan, P.R.
- 1997 Consultant, "Revision of Wave Loads on Bridge over Rio Bayamon and Rio Hondo Channels". Submitted to H. Vafiadis & Assoc., San Juan, P.R.
- 1998 Consultant, "Extreme Wave Climatology and Design Wave Height at Bahia de Ocoa, Dominican Republic". Submitted to Terra Tec, Inc. Santo Domingo, Dominican Republic.
- 1999 Consultant, "Extreme Wave Climatology Around Punta Verraco, Guayanilla, P.R.". Submitted to Mr. Victor Gonzales, Antilles Cement, San Juan, P.R.
- 1999 Consultant, "Shallow-water Design Wave Height and Stone Weight to Be Used at Hotel Dorado Beach Fishing Village Jetties". Submitted to Ecosystems & Associates, Palmas del Mar, Humacao, P.R.
- 2000 Consultant, "Ocean surface gravity wave climatology assessment for Crash Boat, Aguadilla, P.R., design wave height and stone weight". Submitted to Louis Berger Group, Inc., Washington, DC.
- 2000 Consultant, "Design Wave Height and Breakwater Stone Weight, Princesa Del Mar, Punta Las Marias San Juan, P.R.". Submitted to Gregory L. Morris & Assoc., 265 San Francisco St., P.O. Box 9024157, Old San Juan, P.R. 00902-4157
- 2000 Consultant, "Part 1: Design Wave Height and Breakwater Stone Weight, Sunbay Marina, Fajardo, P.R.; Part 2: Expected Wave Heights Inside the Marina". Submitted to Molina, Garcia & Assoc.,

- San Juan, P.R.
- 2001 Consultant, "Littoral ocean currents at Princesa del Mar, Punta Las Maria, Carolina, P.R." G. Morris @ Assoc., San Juan, P.R.
- 2001 Consultant, "Design Wave Height and Revetment Stone Weight: Paseo La Marina, Aguadilla, P.R.". Submitted to CMA Architects & Engineers, San Juan, P.R.
- 2001 Consultant, "Conceptual design of Offshore (Detached) Breakwater at Chalets de La Playa, Vega Baja, P.R.", Submitted to G.Morris & Assoc., San Juan, P.R.
- 2002 Consultant, "Coastal Flooding Impact Report (100-Year Return Period Event): CORDECO Discovery Bay Resort and Marina, Aguada, P.R.". Submitted to Cordeco Northwest Corp., San Juan, P.R.
- 2003 Consultant, "Proposal for revision of storm surge 100-year base flood elevation at Maritime Unit Headquarters, Playa de Ponce, Ponce, P.R.". Bonnin & Orozco Architects, Ponce, P.R.
- 2004 Consultant, "Wave forces on Ponce Municipality Maritime Unit pier piles, Playa de Ponce, Ponce, P.R.", Bonin & Orozco Architects, Ponce, P.R.
- 2005 Consultant, "Wave Runup Analysis at Westin Roko Ki Beach and Golf Resort, Punta Cana, Dominican Republic". Submitted to Terratec Inc., Dominican Republic.
- 2006 Consultant, "Conceptual Design of Rock Revetment at PR-686, Km 12.2, Puerto Nuevo, Vega Baja, P.R.", submitted to CMA Architects @ Engineers and P.R. Highway Authority
- 2008 Consultant, "Stone weight estimate for jetties protecting the entrance channel to Club Náutico de Arecibo", submitted to Dr. Jorge Capella, July.
- 2008 Consultant. "Computer Recreation of the Extreme Ocean Environmental Conditions at the West Coast of Vieques Island (Punta Arenas), Puerto Rico, during the Passage of Hurricane Omar". Submitted to MasterLink, Corp., Barceloneta, PR. (this was done in conjunction with three of my graduate students).
- 2011- Consultant on coastal flood mapping and climate change. Regional Risk Reduction Initiative.
- 2012 European Commission/UNDP. (includes all English and Dutch-speaking Caribbean islands).
- 2012 Consultant, Anegada island, British Virgin Islands. Coastal erosion and coastal construction setback line determination. Submitted to Minister of Environment, BVI.
- 2013 Consultant, "Coastal hazards assessment for Punta Arenas, Vieques, Puerto Rico, based on available flood maps" (Phase I). Submitted to NAPS Engineers PSC, San Juan, PR.
- 2013 Consultant, "Coastal hazards assessment for Punta Arenas, Vieques, Puerto Rico: exposure to storm waves under hurricane conditions (Phase III)". Submitted to NAPS Engineers PSC, San Juan, PR.