BIOGRAPHICAL SKETCH – JULIO M. MORELL

Julio M. Morell

1. Education and training

Institution	Location	Major	Degree & Year
U. of Puerto Rico	Rio Piedras, P.R.	Natural Sciences	BS 1978
U. of Puerto Rico	Mayaguez, P.R.	Marine Sciences	MSc 2001

2. Employment history

11/2007 – present, Director, IOOS-Caribbean Coastal Ocean Observing System
7/2004 – present, Research Professor, Dept. of Marine Sciences UPRM
7 /1999 – 6/2003, Associate Research Professor, Dept. of Marine Sciences, UPRM
7/1993 – 6/1999, Assistant Research Professor, Dept. of Marine Sciences, UPRM
7/1983 – 6/1993, Research Technician, Dept. Marine Sciences, UPRM

3. 10 Latest peer-reviewed publications.

1. Anderson Clarissa R., Berdalet Elisa, Kudela Raphael M., Cusack Caroline K., Silke Joe, O'Rourke Eleanor, Dugan Darcy, McCammon Molly, Newton Jan A., Moore Stephanie K., Paige Kelli, Ruberg Steve, Morrison John R., Kirkpatrick Barbara, Hubbard Katherine, Morell Julio. 2019. Scaling Up From Regional Case Studies to a Global Harmful Algal Bloom Observing System. Frontiers in Marine Science vol. pp250 DOI=10.3389/fmars.2019.00250, ISSN=2296-7745
2. The U.S. Integrated Ocean Observing System: Governance Milestones and Lessons From Two Decades of Growth. 2019. Snowden Jessica, Hernandez Debra, Quintrell Josie, Harper Alexandra, Morrison Ru, Morell Julio, Leonard Lynn. Frontiers in Marine Science vol6, pages 242 DOI=10.3389/fmars.2019.00242 ISSN=2296-7745
3. OceanGliders: A Component of the Integrated GOOS. 2019. Testor Pierre, de Young Brad, Rudnick Daniel L., Glenn Scott, Hayes Daniel, Lee Craig M., Pattiaratchi Charitha, Hill Katherine, Heslop Emma, Turpin Victor, Alenius Pekka, Barrera Carlos, Barth John A., Beaird Nicholas, Bécu Guislain, Bosse Anthony, Bourrin François, Brearley J. Alexander, Chao Yi, Chen Sue, Chiggiato Jacopo, Coppola Laurent, Crout Richard, Cummings James, Curry Beth, Curry Ruth, Davis Richard, Desai Kruti, DiMarco Steve, Edwards Catherine, Fielding Sophie, Fer Ilker, Frajka-Williams Eleanor, Gildor Hezi, Goni Gustavo, Gutierrez Dimitri, Haugan Peter, Hebert David, Heiderich Joleen, Henson Stephanie, Heywood Karen, Hogan Patrick, Houpert Loïc, Huh Sik, E. Inall Mark, Ishii Masso, Ito Shin-ichi, Itoh Sachihiko, Jan Sen, Kaiser Jan, Karstensen Johannes, Kirkpatrick Barbara, Klymak Jody, Kohut Josh, Krahmann Gerd, Krug Marjolaine, McClatchie Sam, Marin Frédéric, Mauri Elena, Mehra Avichal, P. Meredith Michael, Meunier Thomas, Miles Travis, Morell Julio M., Mortier Laurent, Nicholson Sarah, O'Callaghan Joanne, O'Conchubhair Diarmuid, Oke Peter, Pallàs-Sanz Enric, Palmer Matthew, Park JongJin, Perivoliotis Leonidas, Poulain Pierre-Marie, Perry Ruth, Queste Bastien, Rainville Luc, Rehm Eric, Roughan Moninya, Rome Nicholas, Ross Tetjana, Ruiz Simon, Saba Grace, Schaeffer Amandine, Schönau Martha, Schroeder Katrin, Shimizu Yugo, Sloyan Bernadette M., Smeed David, Snowden Derrick, Song Yumi, Swart Sebastian, Tenreiro Miguel, Thompson Andrew, Tintore Joaquin, Todd Robert E., Toro Cesar, Venables Hugh, Wagawa Taku, Waterman Stephanie, Watlington Roy A., Wilson Doug. Frontiers in Marine Science Vol 6. Pp 422 DOI=10.3389/fmars.2019.00422. ISSN=2296-7745
4. Goni, G.J., R.E. Todd, S.R. Jayne, G. Halliwell, S. Glenn, J. Dong, R. Curry, R. Domingues, F. Bringas, L. Centurioni, S.F. DiMarco, T. Miles, J. Morell, L. Pomales, H.-S. Kim, P.E. Robbins, G.G. Gawarkiewicz, J. Wilkin, J. Heiderich, B. Baltes, J.J. Cione, G.

Seroka, K. Knee, and E.R. Sanabia. 2017. Autonomous and Lagrangian ocean observations for Atlantic tropical cyclone studies and forecasts. Oceanography 30(2):92–103, https://doi.org/10.5670/oceanog.2017.227.
5. Dong, J., R. Domingues, G. Goni, G. Halliwell, H.-S. Kim, S.-K. Lee, M. Mehari, F. Bringas, J. Morell, and L. Pomales, 2017: Impact of assimilating underwater glider data on Hurricane Gonzalo (2014) forecast. Weather and Forecasting, 32(3):1143-1159, (doi:10.1175/WAF-D-16-0182.1).
6. Domingues, R ., G. Goni, F. Bringas, S.-K. Lee, H-S Kim, G. Halliwell, J. Dong, J. Morell, and L. Pomales, 2015: Upper ocean response to Hurricane Gonzalo (2014): Salinity effects revealed by sustained and targeted observations from underwater gliders. Geophys. Res. Lett., 42(17):7131-7138, (doi:10.1002/2015GL065378).
7. Sutton, A. J., Sabine, C. L., Feely, R. A., Cai, W.-J., Cronin, M. F., McPhaden, M. J., Morell, J. M., Newton, J. A., Noh, J.-H., Ólafsdóttir, S. R., Salisbury, J. E., Send, U., Vandemark, D. C., and Weller, R. A. 2016. Using present-day observations to detect when anthropogenic change forces surface ocean carbonate chemistry outside preindustrial bounds, Biogeosciences, 13, 5065-5083, https://doi.org/10.5194/bg-13-5065-2016,
8. Ramón López, J. M. López, J. Morell, J. Corredor, C. del. Castillo. 2013. Influence of the Orinoco River on the primary production of eastern Caribbean surface waters. Journal of Geophysical Research (Oceans) 118(9):4617-4632JE.
9. Corredor, Jorge, Julio Morell, José López, Roy Armstrong, Angel. Dieppa, Carla Cabanillas, Alvaro Cabrera and Val Hensley. 2003. Remote continental forcing of phytoplankton biogeochemistry: Observations across the “Caribbean-Atlantic front”. Geophys. Res. Lett. 30, no. 20, 2057
10. Morell J.M. , JE Corredor. 2001 Photomineralization of fluorescent dissolved organic matter in the Orinoco River plume: estimation of ammonium release Journal of Geophysical Research 108, 16.

4. 10 other peer-reviewed publications demonstrating capabilities in the broad field

1. Carlos M. Anselmi-Molina, Miguel Canals, Julio Morell, Juan Gonzalez, Jorge Capella, and Aurelio Mercado. 2012. Development of an Operational Nearshore Wave Forecast System for Puerto Rico and the U.S. Virgin Islands. Journal of Coastal Research: Volume 28, Issue 5: pp. 1049 – 1056
2. Corredor, Jorge E., Julio M. Morell, Jose M. Lopez, Jorge E. Capella and Roy A. Armstrong.2004. Cyclonic Eddy Entrains Orinoco River Plume. EOS Trans. Amer. Geophys. U. 85 (20) 197;201-202.
3. Bauzá, J.F., J.M. Morell and J.E. Corredor. 2002. Biogeochemistry of nitrous oxide production in the red mangrove (Rhizophora mangle) forest sediments. Est. Coast. Shelf Sci. 55: 697-704.
4. The state of coral reef ecosystems of Puerto Rico. 2008.Jorge García-Sais, Richard Appeldoorn, Tim Battista, Laurie Bauer, Andy Bruckner, Chris Caldow, Lisamarie Carrubba, Jorge Corredor, Ernesto Diaz, Craig Lilyestrom, Graciela García-Moliner, Edwin Hernández-Delgado, Charles Menza, Julio Morell, Anthony Pait, J Sabater, Ernesto Weil, Ernest Williams, Stephanie Williams. In: The state of coral reef ecosystems of the United States and Pacific Freely Associated States, US Department of Commerce, National Oceanic and Atmospheric Administration, National Ocean Service, National Centers for Coastal Ocean Science.
5. J.M. Morell, W.J. Merryfield and J.E. Corredor. 2006. Thermohaline staircases in a Caribbean eddy and mechanisms for staircase formation. 2006. Deep-Sea Res. 53: 128-139. doi:10.1016/j.dsr2.2005.09.013
6. Morell J.M. and Corredor J. 1993. .Sediment Nitrogen Trapping in a Mangrove Lagoon Estuarine Coastal and Shelf Science 37(2):203–212

7. Corredor, J. E. Robert W. Howarth, Robert R. Twilley and Julio M. Morell. 1999. Nitrogen cycling and anthropogenic impact in the tropical Interamerican Seas. Biogeochemistry. 46: 163-178.
8. Corredor, J. Amador, A., Canals, M., Rivera, S., Capella, J., Morell, J., Glenn, S., Roarty, H., Handel, E., Lemus, E. 2011. " Optimizing and Validating High-Frequency Radar Surface Current Measurements in the Mona Passage", Marine Technology Society Journal, Vol. 45, No. 3, pp. 49-58, 2011
9. Morell, J.M., J. Capella, A. Mercado, J. Bauzá and J.E. Corredor. 2001. Nitrous oxide fluxes in Caribbean and Tropical Atlantic waters: Evidence for near-surface production. Mar. Chem. 74: 131-143
10. Corredor, JM Morell. 2001 Seasonal variation of physical and biogeochemical features in eastern Caribbean Surface Water. Journal of Geophysical Research: Oceans 106 (C3), 4517-4525

5. 10 non-peer-reviewed publications

1. Morell, J. M., Canals, M. F., Capella, J. E., Aponte, L. D., Corredor, J. E., Watlington, R., & Garcia, C. (2015, May). IOOS-CariCOOS: past, present and future of a tropical coastal ocean observing system. In OCEANS 2015- MTS/IEEE Genova (pp. 1-4).
2. Morell, J. and J. Corredor. 2003. Interannual variability of subsurface high salinity water in the northern tropical Atlantic and Caribbean: A climate-biogeochemistry connection. Geophys. Res. Abs. 5: 07566.
3. M. Canals and J. Morell, "A nearshore breaker prediction system for Puerto Rico and the United States Virgin Islands in support of beach safety and drowning prevention," OCEANS 2015 - MTS/IEEE Washington, Washington, DC, 2015, pp. 1-10..
4. Luis D. Aponte, M. F. Canals, J. M. Morell, J. E. Corredor 2012. An Overview of the Caribbean Coastal Ocean Observing System and data Measurements during Hurricane Irene.In Advances in Hurricane Engineering: Learning from Our Past Edited by Christopher P. Jones , P.E. and Lawrence G. Griffis , P.E...(ASCE). Proceedings TC & SEI Conference on Advances in Hurricane Engineering 2012, Miami, Florida, United States October 24-26, 2012
5. M Canals, J.M. Morell, J.E. Corredor and S. Leonardi. 2012. Expanding the Caribbean Coastal Ocean Observing System into the Nearshore Region. Proceedings of the 2012 MTS IEEE Oceans Meeting, Norfolk, Virginia.
6. L. D. Aponte-Bermúdez, H. J. Rodríguez-Romero, J. M. Morell and E. Rodríguez, "CariCOOS: Improving high-resolution numerical weather prediction for the northeast Caribbean region," OCEANS 2015 - MTS/IEEE Washington, Washington, DC, 2015, pp. 1-10.
7. J. Gonzalez-Lopez, J. J. Westerink, M. Canals and J. M. Morell, "Coupled global wind and tide driven coastal water levels and currents in Puerto Rico and the U.S. Virgin Islands," OCEANS 2015 - MTS/IEEE Washington, Washington, DC, 2015, pp. 1-6
8. S. Rodríguez-Abudo et al., "Assessing HF radar capabilities to resolve mesoscale eddy interactions with littoral waters," OCEANS 2015 - MTS/IEEE Washington, Washington, DC, 2015, pp. 1-5.
9. Physical forcing of Caribbean biogeochemistry by mesoscale processes. Julio M. Morell and Jorge E. Corredor. February 2004, IOCARIBE-GOOS workshop on Caribbean and Gulf of Mexico Modeling, University of the Virgin Islands, St. Thomas.
10. Inter-annual variability of subsurface high salinity water in the northern tropical Atlantic and Caribbean: a climate-biogeochemistry teleconnection. Julio M. Morell and Jorge E. Corredor. Abril 2003, EGS - AGU - EUG Joint Assembly, Nice, France

BIOGRAPHICAL SKETCH – PATRICIA CHARDÓN-MALDONADO

PATRICIA CHARDÓN-MALDONADO, Ph.D., EIT
Caribbean Coastal Ocean Observing System Inc.
PO Box 3446, Lajas, PR 00667
Email: patricia.chardon@upr.edu
Webpage: https://www.caricoos.org/

A. PROFESSIONAL PREPARATION

University of Puerto Rico-Mayagüez	Mayagüez, PR	Civil Engineering	B.Sc., 2011
University of Puerto Rico-Mayagüez	Mayagüez, PR	Water Resources and Environmental Engineering	M.Sc., 2013
University of Delaware	Newark, DE, USA	Coastal Engineering	Ph.D., 2016

B. APPOINTMENTS

July 2021 – Present:	Deputy Director, Caribbean Coastal Ocean Observing System Inc.
August 2018 – Present:	Technical Director, Caribbean Coastal Ocean Observing System Inc.
March 2018 – Present:	Research Assistant Professor, Department of Marine Sciences, University of Puerto Rico at Mayagüez
November 2016 – July 2018:	Technical Coordinator and System Engineer, Caribbean Coastal Ocean Observing System Inc.
November 2016 – June 2017:	Post-doctoral Researcher, Department of Engineering Science and Materials, University of Puerto Rico at Mayagüez

C. PRODUCTS

(i) Recent journal publications

Miles, T., Zhang, D., Foltz, G., Zhang, J., Meinig, C., Bringas, F., Triñanes, J., Le Hénaff, M., Aristizabal Vargas, M., Coakley, S., Edwards, C., Gong, D., Todd, R., Oliver, M., Wilson, D., Whilden, K., Kirkpatrick, B., **Chardon-Maldonado, P.,** Morell, J., Hernandez, D., Kuska, G., Stienbarger, C., Bailey, K., Zhang, C., Glenn, S., Goni, G., 2021. Uncrewed Ocean Gliders and Saildrones Support Hurricane Forecasting and Research. Oceanog 78–81. https://doi.org/10.5670/oceanog.2021.supplement.02-28

Domingues, R., Hénaff, M. L., Halliwell, G., Zhang, J. A., Bringas, F., **Chardón, P.**, Kim, H.-S., Morell, J., Goni, G., 2021. Ocean Conditions and the Intensification of Three Major Atlantic Hurricanes in 2017. Monthly Weather Review, 149(5), 1265–1286. https://doi.org/10.1175/MWR-D-20-0100.1

Domingues, R., Kuwano-Yoshida, A., **Chardón-Maldonado, P.**, Todd, R.E., Halliwell, G., Kim, H.-S., Lin, I.-I., Sato, K., Narazaki, T., Shay, L.K., Miles, T., Glenn, S., Zhang, J.A., Jayne, S.R., Centurioni, L., Le Hénaff, M., Foltz, G.R., Bringas, F., Ali, M.M., DiMarco, S.F., Hosoda, S., Fukuoka, T., LaCour, B., Mehra, A., Sanabia, E.R., Gyakum, J.R., Dong, J., Knaff, J.A., Goni, G., 2019. Ocean Observations in Support of Studies and Forecasts of Tropical and Extratropical Cyclones. Front. Mar. Sci. 6. https://doi.org/10.3389/fmars.2019.00446

Figlus, J., Song, Y.-K., **Chardón-Maldonado, P.**, Puleo, J.A., 2018. Numerical Simulation of Post-Storm Recovery and Time-Averaged Swash Velocity on an Engineered Beach with Ridge-Runnel System. International Journal of Offshore and Polar Engineering 28, 143–153. https://doi.org/10.17736/ijope.2018.ak25

Chardón-Maldonado, P., Fleming, R., Wallinga, J., 2018. Riders on the Storm - CARICOOS Moored Oceanographic Data Buoys during the 2017 Hurricane Season, in: OCEANS 2018 MTS/IEEE Charleston. Presented at the OCEANS 2018 MTS/IEEE Charleston, pp. 1–7. https://doi.org/10.1109/OCEANS.2018.8604824

Torres-Freyermuth, A., Puleo, J.A., DiCosmo, N., Allende-Arandía, M.E., **Chardón-Maldonado, P.**, López, J., Figueroa-Espinoza, B., Ruiz de Alegria-Arzaburu, A., Figlus, J., Roberts Briggs, T., de la Roza, J., Candela, J., 2017. Nearshore circulation on a sea breeze dominated beach during intense wind events. In Continental Shelf Research. https://doi-org.uprm.idm.oclc.org/10.1016/j.csr.2017.10.008

Chardón-Maldonado, P., Pintado-Patiño, J.C., Puleo, J.A., 2015. Advances in swash-zone research: Small-scale hydrodynamic and sediment transport processes. Coastal Engineering. https://doi.org/10.1016/j.coastaleng.2015.10.008

(ii) Other Significant Products Whether or Not Related to the Proposed Project

Chardón-Maldonado, P., 2018, Improvements to CARICOOS Advanced Weather Forecast Research Model, https://www.caricoos.org/winds/forecast/wrf2km/PRVI/wspd and https://www.caricoos.org/winds/forecast/wrf1km/PRVI/wspd , Operational Wind Model consisting of a high horizontal resolution simulation based on the Advanced Research Weather Research Forecast model for the US Caribbean region.

D. SYNERGISTIC ACTIVITIES

- Author for the Puerto Rico's State of the Climate - Puerto Rico Climate Change Council
- Authors for the US Caribbean chapter of the Fifth National Climate Assessment
- Member of the United Nations Decade of Ocean Science for Sustainable Development – Western Tropical Americas Safe Ocean Working Group
- Community Based Participatory Research – "Salud para Piñones" and Coastal Conversation and Ecological Restoration with Vida Marina
- Member of the Underwater Glider User Group (UG2) Steering Committee
- Member of the Puerto Rico Climate Change Council

BIOGRAPHICAL SKETCH – RODRÍGUEZ-ABUDO

SYLVIA B. RODRIGUEZ-ABUDO

Department of Engineering Sciences and Materials
University of Puerto Rico at Mayaguez
Call Box 9000, Mayaguez, PR, 00681
E-mail: rodriguez.abudo@upr.edu

(a) Professional Preparation

University of Puerto Rico, Mayaguez	Civil Eng. (Environmental Eng.)	B.S., 2007
University of New Hampshire, Durham	Ocean Engineering	M.S., 2011
University of New Hampshire, Durham	Ocean Engineering	Ph.D., 2014

(b) Appointments

2018-Present: Associate Professor, University of Puerto Rico at Mayagüez, Mayaguez, PR
2014-2018: Assistant Professor, University of Puerto Rico at Mayagüez, Mayaguez, PR
2013-2014: Visiting student (Ford Foundation Fellow), Saint Louis University, St. Louis, MO
2010-2013: NDSEG Fellow, University of New Hampshire, Durham, NH

(c) Peer Reviewed Products

Meléndez, M., Salisbury, J., Gledhill, D., Langdon, C., Morell, J. M., Manzello, D., Musielewicz, S., Rodriguez-Abudo, S., and Sutton, A. Seasonal variations of carbonate chemistry at two western Atlantic coral reefs, *Journal of Geophysical Research: Oceans,* in review.

Rodríguez-Abudo, S. and Foster, D. L., 2017, Direct Estimates of Friction Factors for Movable Rippled Sediment Beds, J. Geophys. Res. Oceans, doi:10.1002/2016JC012055.

Rodríguez-Abudo, S. and Foster, D. L., 2014, Unsteady Stress Partitioning and Momentum Transfer in the Wave Bottom Boundary Layer over Movable Rippled Beds, J. Geophys. Res. Oceans, 119, doi:10.1002/2014JC010240.

Rodríguez-Abudo, S., Foster, D. L. and Henriquez, M., 2013, Spatial Variability of the Wave Bottom Boundary Layer over Movable Rippled Beds, J. Geophys. Res. Oceans, 118(7), 3490–3506.

Penko, A. M., Calantoni, J., Rodríguez-Abudo, S., Foster, D. L. and Slinn D. N., 2013, Three-dimensional Mixture Simulations of Flow over Dynamic Rippled Beds, J. Geophys. Res. Oceans, 118(3), 1543–1555.

(d) Other Significant Products

Rodríguez-Abudo, S., 2021, CARICOOS Beach Water Quality Products, https://www.caricoos.org/map/beach-water-quality, Operational beach water quality products providing nowcasts, beach ratings and latest conditions for beaches in PR and USVI.

Monserrate, A. and S. Rodríguez-Abudo, 2019, *Vidrio reciclado: una alternativa para realimentar las playas*, Revista Ambiental Marejada, 16(2).

Rodríguez-Abudo, S., Morell, J. and M. Canals, 2018, CARICOOS *Pa' la Playa* Beach APP, https://play.google.com/store/apps/details?id=com.waveapp.caricoos&hl=en_US, Mobile application providing real-time data and forecasts of weather, waves and water quality for 100+ beaches in PR-USVI.

Rodríguez-Abudo, S., Rivera, P. and P. Vargas, 2016, CARICOOS Beach Water Quality Nowcasts for Rincon Town Beach and Playa Santa-Guánica, http://www.caricoos.org/map/beach-water-quality/all, Operational beach water quality nowcasts providing hourly estimates of Enterococci concentration for beaches in PR.

Rodriguez-Abudo, S., Canals, M., Morell, J., Matos, P., García, C., Pomales, L. and J. Capella, 2015, Assessing HF radar capabilities to resolve mesoscale eddy interactions with littoral waters, in Proceedings of the 2015 MTS/IEEE Oceans Meeting, Washington, DC, doi: 10.23919/OCEANS.2015.7404586.

(e) Synergistic Activities

- Coordinator UPRM Research Academy (2018-present), Member of UPRM Research Committee (2018-present), and Coordinator of UPRM's National Graduate Fellowships Workshop Series (2018-present).
- CARICOOS Deputy Director (2016-2020), Program Coordinator (2015-2016) and Outreach Coordinator (2014-2015) – Administrative, scientific and outreach duties for a multi-institutional project with ~$1.7M budget a year.
- Reviewer/Panelist for NSF (2019), JGR-Oceans (2017, 2018), Earth Surface Processes and Landforms (2018), AFRL Summer Faculty Fellowship Program (2017), NSF Fluid Dynamics (2016), SMART Scholarship (2015), NDSEG Fellowship (2015).
- Director and Coordinator of Fluid Mechanics Laboratory (2014-present), Coordinator of Departmental Fluid Mechanics Committee (2017-present), and Member of Departmental Academic Affairs Committee (2017-present).
- UPRM Applied Ocean Science and Engineering (AOSE) Curriculum – Co-author of the proposal to develop the AOSE minor at UPRM; coordinator and course creator of the AOSE Seminar Series (GEEN 5086); and instructor of GEEN 5185: Introduction to Coastal Engineering, a course that combines theory, laboratory and field experiences to understand basic coastal hydrodynamics and their relevance to coastal engineering projects.

BIOGRAPHICAL SKETCH – MIGUEL CANALS

MIGUEL CANALS
UPRM Center for Applied Ocean Science and Engineering
Department of Engineering Science and Materials
University of Puerto Rico at Mayagüez
PO Box 9044, Mayagüez, PR, 00681
miguelf.canals@upr.edu

E. PROFESSIONAL PREPARATION

University of Puerto Rico at Mayagüez	Biology	B.Sc., 2003
University of Puerto Rico at Mayagüez	Oceanography	M.Sc., 2005
University of Hawaii at Manoa	Ocean (Coastal) Engineering	Ph.D., 2008

F. APPOINTMENTS

June 2018 – Present: Professor (Joint Appointment), Department of Engineering Sciences and Materials and Department of Marine Sciences, University of Puerto Rico at Mayagüez

January 2015 – June 2018: Associate Professor of Physical Oceanography (Joint Appointment), Department of Marine Sciences, University of Puerto Rico at Mayagüez

July 2014 - Present: Associate Professor, Department of Engineering Science and Materials, University of Puerto Rico at Mayagüez

January 2012 – December 2017: Technical Director, Caribbean Coastal Ocean Observing System

January 2011 - Present: Director, UPRM Center for Applied Ocean Science and Engineering, University of Puerto Rico at Mayagüez

January 2009 – December 2014: Director, Fluid Mechanics Laboratory, Department of Engineering Science and Materials, University of Puerto Rico at Mayagüez

January 2009 – July 2014: Assistant Professor, Department of Engineering Science and Materials, University of Puerto Rico at Mayagüez

G. PRODUCTS

(iii) Recent five journal publications

Canals, M. and C. García. *On the spatial distribution of the wave energy resource in Puerto Rico and the United States Virgin Islands*, Journal of Renewable Energy, Volume 136, Pages 442-451, 2019

Solano, M., Canals, M. and Leonardi, S. *Development and validation of a coastal ocean forecast system for Puerto Rico and the U.S. Virgin Islands*. Journal of Ocean Engineering and Science, Volume 3, Issue 3, Pages 223-236, 2018.

Loeffler, C. R., A. Robertson, H. A. Flores Quintana, M. Canals, T. B. Smith, and D. Olsen. *Ciguatoxin prevalence in four commercial fish species along an oceanic exposure gradient in the U.S. Virgin Islands*. Environmental Toxicology and Chemistry, Vol 37(7):1852-1863. doi: 10.1002/etc.4137, 2018

Smith TB, Brandtneris VW, Canals MC, Brandt ME, Martens J, Brewer R, Kadison E, Kammann M, Keller J and DM Holstein (2016) Potential structuring forces on a shelf edge upper mesophotic coral ecosystem in the US Virgin Islands. *Frontiers in Marine Science*, DOI: 10.3389/fmars.2016.00115

Amador, A. and Canals. M., Design and development of an instrumented drifter for Lagrangian measurements of inertial particle dynamics in breaking waves, in *IEEE Journal of Oceanic Engineering,*, vol.PP, no.99, pp.1-1, 2015.

Anselmi, C., Canals, M., Morell, J., Gonzalez, J., Capella, J., and Mercado, A. Development of a nearshore wave forecasting system for Puerto Rico, *Journal of Coastal Research*: Volume 28, Issue 5: 1049-1056. 2012

(iv) Other relevant products

Canals, M. and Pawlak, G. Three-dimensional vortex dynamics in oscillatory flow separation. Journal of Fluid Mechanics, Vol. 674, pp. 408-432, 2011.

Canals, M., Pawlak, G. and MacCready, P. Tilted baroclinic tidal vortices. Journal of Physical Oceanography, Vol. 39, No. 2, pp. 333-350, 2009.

Canals, M. and Pawlak, G. Topology and breakdown of Görtler vortices on an oscillating cylinder. Physics of Fluids, Vol. 20, No. 9, pp 091102, 2008.

Canals, M. *The CariCOOS Nearshore Wave Model:* https://www.caricoos.org/waves/forecast/SWAN/PRVI/hsig - An operational spectral wave model for Puerto Rico and the USVI and a direct result of NOAA Grant NA08NOS4730408.

H. AWARDS / HONORS

- 2015 US Coral Reef Task Force Research Achievements Award
- 2011 Distinguished Professor (UPRM)
- Cover of Journal of Fluid Mechanics (2011) and Physics of Fluids (2008)

I. TEACHING

- INGE 4010: Fluid Mechanics with Laboratory
- INGE 5996: Special Topics: Advanced Coastal Hydrodynamics
- INGE 4015: Fluid Mechanics
- INGE 5027: Water Wave Mechanics for Engineers
- INGE 5185: Introduction to Coastal Engineering
- CMOF 6631: Geophysical Fluid Dynamics

J. ADVISOR AND POST-GRADUATE SCHOLAR SPONSOR

Graduate Advisor

Geno Pawlak, Department of Mechanical and Aerospace Engineering, UCSD

Thesis Advisor and Postgraduate-Scholar Sponsor

Graduate Students Advised over the Last Five Years (9): Francisco Velez, Civil Engineering, UPRM (now engineer at CH2MHILL); Carlos Anselmi, Marine Sciences, UPRM (now meteorologist at NWS); Andre Amador, Mechanical Engineering, UPRM (now PhD student at UCSD); Patricia Chardon, Civil Engineering, UPRM (now PhD graduate from UDEL); Christian Rojas, Civil Engineering, UPRM (now PhD student at FAU); Adail Rivera, Marine Sciences, UPRM (ongoing); Estefania Quinones, Marine Sciences, UPRM (ongoing); Gabriela Salgado, Civil Engineering, UPRM (ongoing); Carlos Garcia, Electrical Engineering, UPRM (now ocean engineer at UCSD), Colin Evans, Marine Sciences, UPRM (ongoing).