



**FERNANDO GILBES-SANTAELLA**  
**DEPARTMENT OF GEOLOGY**  
**UNIVERSITY OF PUERTO RICO AT MAYAGÜEZ**  
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## **EDUCATION**

- 1996      Ph.D. in Oceanography, University of South Florida  
1992      M.S. in Marine Sciences, University of Puerto Rico at Mayagüez  
1988      B.S. in Biology, University of Puerto Rico at Mayagüez

## **WORK EXPERIENCE**

- Apr 2020-Present      Dean, College of Arts and Sciences, UPRM  
Jul 2012-Present      Professor, Department of Geology, UPRM  
Aug 2003-Present      Director, Center for Hemispherical Cooperation in Research and Education in Engineering and Applied Science (CoHemis), UPRM  
Aug 2016-Mar 2020      Interim Dean, College of Arts and Sciences, UPRM  
Feb 2015-Aug 2016      Associate Dean of Research, College of Arts and Sciences, UPRM  
Jul 2005-Jun 2012      Associate Professor, Department of Geology, UPRM  
Aug 2009-Jan 2012      Director, Department of Geology, UPRM  
Jan 2002-Jun 2005      Assistant Professor, Department of Geology, UPRM  
Aug 2002-Jul 2003      Co-Director, Center for Hemispherical Cooperation in Research and Education in Engineering and Applied Science (CoHemis), UPRM  
Oct 2000-Dec 2001      Post-Doctoral Investigator, UPRM  
Center for Subsurface Sensing and Imaging Systems (CenSSIS)  
Jan 1998-Dec 2001      Post-Doctoral Investigator, UPRM  
Tropical Center for Earth and Space Studies (TCESS)  
Jan 1997-Dec 2000      Post-Doctoral Investigator, UPRM-Department of Marine Sciences  
Aug 1992-Dec 1996      Research Assistant in Remote Sensing  
Department of Marine Science, University of South Florida  
Apr 1990-Jul 1992      Biological Assistant & Clerk, Cabo Rojo National Wildlife Refuge  
U.S. Fish and Wildlife Service, Caribbean Field Office, Boquerón, P. R.  
Aug 1990-May 1991      Research Advisor (International Scientific Fair)  
Science Research Academy for Gifted Students  
Inter-American University-San Germán Campus, San Germán, P. R.

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|-------------------|--------------------------------------------------------------------------------------------------------------------------|
| January 1991      | Consultant to U.S. Geological Survey, USGS - Caribbean Office                                                            |
| May-Dec 1988      | Research Assistant in Phytoplankton Dynamics<br>Center for Energy and Environment Research, Marine Ecology Division      |
| Jul-Aug 1987      | Biological Technician (Wildlife), U.S. Fish and Wildlife Service<br>Caribbean Field Office - Boquerón, P. R.             |
| Aug 1986-May 1988 | Volunteer of the Scientific Research Auxiliaries Corps<br>Department of Natural Resources, Chapter of Ponce, Puerto Rico |
| Summer 1986       | Field Work Assistant (Wildlife), U.S. Fish and Wildlife Service<br>Cabo Rojo National Wildlife Refuge                    |
| Aug 1985-Jun 1986 | Biology Workshop Assistant, UPRM-Department of Biology                                                                   |
| Summer 1985       | Research Assistant (Water and Soil Quality), UPRM-Dep. of Biology                                                        |

### TEACHING EXPERIENCE

|                   |                                                                                                                                                        |
|-------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------|
| Aug 2019-Present  | BIOL 5038 - Biological Applications of Remote Sensing and GIS                                                                                          |
| Aug 2016-Present  | GEOL 5996 - Special Topics in Geographic Information Systems                                                                                           |
| Aug 2003-Present  | GEOL 6993 - Special Topics in Remote Sensing                                                                                                           |
| Aug 2002-Present  | GEOL 6225 – Advanced Geological Remote Sensing<br>GEOL 4048 - Geological Applications of Remote Sensing                                                |
| Jan 2002-Present  | GEOL 3105 - Images of the Earth<br>GEOL 4049 & 4055 - Undergraduate Research                                                                           |
| Jan-Dec 2013      | GEOL 4011 & 4012 – Seminar in Geology                                                                                                                  |
| Jan-May 2013      | GEOL 4001 - Special Topics in Geographic Information Systems                                                                                           |
| Summer 2004       | NOAA-NCAS Advanced Course of Remote Sensing                                                                                                            |
| Aug 1998-Dec 2001 | CMOF 6445 - Oceanographic Remote Sensing I<br>CMOF 8446 - Oceanographic Remote Sensing II                                                              |
| December 2002     | Bio-Optical Oceanography and Satellite Remote Sensing<br>Facultad de Ciencias, Universidad de la República, Uruguay                                    |
| November 2000     | Bio-Optical Oceanography and Satellite Remote Sensing<br>Facultad de Ciencias Exactas y Naturales<br>Universidad Nacional del Mar Del Plata, Argentina |
| July 1997         | Remote Sensing in Coastal Environments<br>Instituto Geográfico Agustín Codazzi<br>Santa Fe De Bogotá, Colombia                                         |

### PUBLICATIONS

Rodríguez-Guzmán, V. and **F. Gilbes** (2009) Using MODIS 250 m Imagery to Estimate Total Suspended Sediment in a Tropical Open Bay. International Journal of Systems Applications, Engineering and Development, 3(1):36-44.

- Rodríguez-Guzmán, V. and **F. Gilbes** (2009) Estimating Total Suspended Sediments in Tropical Open Bay Conditions using MODIS. In: Proceedings of the 8th WSEAS International Conference on Instrumentation, Measurement, Circuits and Systems, Hangzhou, China, May 2009, pp 83-86.
- Guild, L., B. Lobitz, R. Armstrong, and **F. Gilbes**, J. Goodman, Y. Detres, R. Berthold, and J. Kerr (2008) NASA Airborne AVIRIS and DCS Remote Sensing of Coral Reefs. In: Proceedings of the 11th International Coral Reef Symposium, Ft. Lauderdale, Florida, 7-11 July 2008, Session number 17, pp 1-5.
- Armstrong, R.A., H. Singh, S. Rivero, and **F. Gilbes** (2008) Monitoring Coral Reefs in Optically-Deep Waters. In: Proceedings of the 11th International Coral Reef Symposium, Ft. Lauderdale, Florida, 7-11 July 2008, Session number 17, pp 1-5.
- Armstrong R., L. Guild, **F. Gilbes**, B. Lobitz, and Y. Detrés (2007) Water Column Corrections of AVIRIS Data for Hyperspectral Characterization of Benthic Marine Communities in Puerto Rico. In: Proceedings 5th EARSeL Workshop on Imaging Spectroscopy, Bruges, Belgium, April 23-25, 2007, pp. 1-6.
- Torres J.L., R.A. Armstrong, J.E. Corredor, and **F. Gilbes** (2007) Physiological Responses of *Acropora cervicornis* to Increased Solar Irradiance, J. of Photochemistry and Photobiology, 83:839-850.
- Guild, L., B. Lobitz, R. Armstrong, and **F. Gilbes**, A. Gleason, J. Goodman, E. Hochberg, M. Monaco, and R. Berthold (2007) NASA Airborne AVIRIS and DCS Remote Sensing of Coral Reefs. In: Proceedings of 32<sup>nd</sup> International Symposium on Remote Sensing of Environment, San Jose, Costa Rica, June 25-29, 2007, pp. 1-4.
- Gilbes F.**, R.A. Armstrong, J. Goodman, M. Velez, and S. Hunt (2006) CenSSIS SeaBED: Diverse Approaches For Imaging Shallow And Deep Coral Reefs. In: Proceedings of Ocean Optics XVIII, Montreal, Canada, October 9-13, 2006, pp. 1-8.
- Schellekens, J.H., **F. Gilbes**, G.D. Rivera, Y.C. Ysa, S. Chardon, and Y. Fong (2005) Reflectance spectra of tropical vegetation as a response to metal enrichment in the substrate of West-central Puerto Rico, Caribbean Journal of Earth Sciences, 39:9-12.
- Ramirez-Beltran, N.D., **F. Gilbes**, and J.M. Castro. (2004) A stochastic-Dynamic Model to Predict Fecal Coliforms at the Mouth of the Añasco River, Coastal Environment V, Incorporating Oil Spill Studies. C.A. Brebbia J.M. Saval Perez, and L. Garcia Audion (Editors), WIT Press.
- Singh, H., R. Armstrong, **F. Gilbes**, R. Eustice, C. Roman, O. Pizarro, and J. Torres (2004) Imaging Coral I: Imaging Coral Habitats With The SeaBED AUV, Subsurface Sensing Technology and Applications, 5(1):25-42.
- Gilbes, F.** and R. A. Armstrong (2004) Phytoplankton Dynamics In The Eastern Caribbean Sea As Detected With Space Remote Sensing. International J. of Remote Sensing, 25(7-8): 1449-1452.
- Armstrong, R.A., **F. Gilbes**, R. Guerrero, C. Lasta, and H. Miazán. (2004) Validation Of SeaWiFS-Derived Chlorophyll For The Rio De La Plata Estuary And Adjacent Waters. International Journal of Remote Sensing, 25(7-8):1501-1505.
- Gilbes, F.**, R. Armstrong, R.L. Miller, C.E. Del Castillo, M. Rosado, and N. Ramirez (2002) Bio-Optical Evidence Of Land-Sea Interactions In The Western Coast Of Puerto Rico. In: Proceedings of Ocean Optics XVI, Santa Fe, Nuevo Mexico, pp. 1-12.
- Lee-Borges, J., **F. Gilbes** and R.A. Armstrong (2002) Seawifs Validation At The Caribbean Time Series Station. In: Proceedings of Ocean Optics XVI, Santa Fe, Nuevo Mexico, pp. 1-7.

- Jiménez-Rodríguez, L. O., E. Rodríguez-Díaz, M. Velez-Reyes, **F. Gilbes**, and C. A. DiMarzio. (2002) Automatic Coral Reef Detection By The Application Of Tikhonov Regularization To Inverse Modeling In Hyperspectral Images. In: Ocean Remote Sensing and Applications, Proceedings of SPIE, Vol. 4892.
- Gilbes, F.**, F. E. Müller-Karger, and C. E. Del Castillo. (2002) New Evidence For The West Florida Shelf Plume. *Continental Shelf Research*, 22:2479-2496.
- Gilbes, F.**, R. A. Armstrong, R. M. Webb, and F. E. Müller-Karger (2001) Seawifs Helps Assess Hurricane Impact On Phytoplankton In Caribbean Sea. *EOS, Transactions, American Geophysical Union*, 82(45):529 and 533.
- Alfonso, E., J. M. López, A. Dieppa, **F. Gilbes**, J. E. Corredor, and J. M. Morell (2001) Trayectoria Anual De La Producción Primaria Diaria En El Caribe Oriental (Programa CaTS). Electronic version of the journal titled "Serie Oceanológica".
- Cruz-Pol, S., M. Velez-Reyes, S. Hunt, H. Parsiani, J. Colon-Ustariz, L.O. Jimenez, R. Vasquez, and **F. Gilbes**. (2001) The Laboratory For Applied Remote Sensing And Image Processing At The University Of Puerto Rico At Mayagüez. *IEEE Geoscience and Remote Sensing Society Newsletter*, 121:15-19.
- Gilbes, F.** and R. A. Armstrong (2000) Inherent Optical Properties At The Caribbean Time Series Station (CaTS). In: *Proceedings of Ocean Optics XV, Monaco*, pp. 1-13.
- Armstrong, R. A., J. M. López, and **F. Gilbes** (2000) Apparent Optical Properties At The Caribbean Time Series Station (CaTS). In: *Proceedings of Ocean Optics XV, Monaco*, pp. 1-5.
- Del Castillo, C. E., **F. Gilbes**, P. G. Coble and F. E. Müller-Karger (2000) On The Dispersal Of Riverine Colored Dissolved Organic Matter (CDOM) Over The West Florida Shelf. *Limnology and Oceanography*, 45(6):1425-1432.
- Del Castillo, C. E., **F. Gilbes**, P. G. Coble and F. E. Müller-Karger (1998) Optical Characteristics Of Dissolved Organic Matter During A Bloom On The West Florida Shelf. In: *Proceedings of Ocean Optics XIV, Kailua-Kona, Hawaii*, pp. 1-6.
- Gilbes, F.** and J. I. Vélez-Arocho (1998) The Caribbean Countries And The Inter-American Institute For Global Change Research. National Printers Inc., Mayagüez, P.R. 151 pp.
- Gilbes, F.**, C. Tomas, J. J. Walsh, and F. E. Müller-Karger (1996) An Episodic Chlorophyll Plume On The West Florida Shelf. *Continental Shelf Research*, 16(9):1201-1224
- Gilbes, F.**, J. M. López, and P. M. Yoshioka (1996) Spatial And Temporal Variations Of Phytoplankton Chlorophyll-A And Suspended Particulate Matter In Mayagüez Bay, Puerto Rico. *Journal of Plankton Research*, 18(1):29-43.
- Gilbes, F.** (1987) Cowbirds Control Project In Roosevelt Roads, Ceiba, Puerto Rico. U.S. Fish and Wildlife Service, Caribbean Field Office. Final Project Report, 50 pp.

## MEETING PRESENTATIONS

- Seijo, L.R. and **F. Gilbes** (2015) Investigación-Acción Participativa (IAP) De Impacto Ambiental, Poster presentation at the “Primer Congreso Internacional de Economía Ecológica en Puerto Rico (CONECEC 2015)”, Mayaguez, Puerto Rico.
- Gilbes, F.** (2013) Improving Climate Change Education in the Caribbean, Poster presentation at the Southeastern Section, GSA 62nd Annual Meeting, San Juan, Puerto Rico.

- Gilbes, F.** (2013) Experience of a Collaborative Partnership to Improve the Education about Climate Change in Puerto Rico, Oral presentation at XII Puerto Rican Congress on Research in Education, UPR-Rio Piedras.
- Gilbes, F.** (2012) Challenges and Opportunities of Ocean Color Remote Sensing in Caribbean Coastal Waters, Plenary Lecture at Ibersensor 2012 Meeting, San Juan, Puerto Rico.
- Gilbes, F.** (2012) Detection of Suspended Sediments using Remote Sensing. Primer Simposio de GIS y Percepción Remota, Escuela Graduada de Planificación, UPR-Rio Piedras.
- Gilbes, F.** and W. Hernández (2011) Understanding Bioluminescent Bays using Web-based Tools. ASLO 2011 Aquatic Sciences Meeting. San Juan, Puerto Rico.
- Muller-Karger, F., J. Ryan, A. Feldman, and **F. Gilbes** (2011) The CACCE Climate Education Partnership for the Southeast US And Caribbean Sea. ASLO 2011 Aquatic Sciences Meeting. San Juan, Puerto Rico.
- Gilbes, F.** (2009) Comparative study of the conditions in La Parguera and Puerto Mosquito: the dangers of sedimentation and development pressure, First Symposium on Bioluminescence of Puerto Rico, Vieques, Puerto Rico.
- Gilbes, F.** and R. Armstrong (2009) Remote Sensing of Benthic Habitats in Southwestern Puerto Rico, XXVIII Symposium of Caribbean Flora and Fauna, University of Puerto Rico at Humacao, Puerto Rico.
- Gilbes, F.** and W. Hernández (2008) New Web Tool for Understanding Bioluminescent Bays, Oral Presentation, 3<sup>rd</sup> Annual Symposium for Coastal and Marine Applied Research, University of Puerto Rico Sea Grant College Program, Mayagüez, Puerto Rico.
- Gilbes F.,** V. Rodriguez, J. Martinez, and E. Gonzalez (2008) Monitoring Suspended Sediments In Mayaguez Bay Using Remote Sensing, Oral Presentation, 24<sup>th</sup> Annual Symposium of Caribbean Geology, Mayagüez, Puerto Rico.
- Gilbes, F.,** W. Hernández, N. Hernández, J. Martínez, and V. Rodriguez (2008) MODIS Validation for Water Quality Parameters in Mayagüez Bay, Oral Presentation, Annual NOAA-CREST Symposium, Mayagüez, Puerto Rico.
- Hernández, W. J. and **F. Gilbes** (2007) GERSVIEW: A New Database for Web Mapping, Oral Presentation, 5<sup>th</sup> Conference of ESRI Users in Puerto Rico, Caguas, Puerto Rico.
- Schellekens, J.H., **F. Gilbes,** A. Rodriguez, and B. Deliz (2007) Developing A Protocol To Use Remote Sensing As A Cost Effective Tool To Monitor Contamination Of Mangrove Wetlands, Oral Presentation, Annual Symposium of the Puerto Rico Department of Natural and Environmental Resources, San Juan, Puerto Rico.
- Torres, D., S. Adréfouët, **F. Gilbes,** and F. Müller-Karger (2007) Comparing Methods and Sensors for Coral Reef Habitat Mapping in South Florida, USA. Oral Presentation, 32<sup>nd</sup> International Symposium on Remote Sensing of Environment, San Jose, Costa Rica.
- Guild, L., B. Lobitz, R. Armstrong, **F. Gilbes,** A. Gleason, J. Goodman, E. Hochbergg, M. Monaco, and R. Berthold (2007) NASA Airborne AVIRIS and DCS Remote Sensing of Coral Reefs. Oral Presentation, 32<sup>nd</sup> Int. Symposium on Remote Sensing of Environment, San Jose, Costa Rica.
- Zayas, C., **F. Gilbes,** R. Armstrong, and M. López (2007) Mapping Benthic Communities in Southwestern Puerto Rico using IKONOS. Poster Presentation, ASLO 2007 Aquatic Sciences Meeting, Santa Fe, New Mexico.

- Gilbes F.**, R.A. Armstrong, J. Goodman, M. Velez, S. Hunt (2006) CenSSIS SeaBED: Diverse Approaches For Imaging Shallow And Deep Coral Reefs. Poster Presentation, Ocean Optics XVIII Conference, Montreal, Canada.
- Gilbes, F.** and Chiques, G. (2005) Spectral Characterization of Sandy Beaches in Western Puerto Rico. Oral Presentation, 17th Caribbean Geological Conference, San Juan, PR.
- Arce, J., **Gilbes, F.**, and Goodman, J. (2005) Validation of Remote Sensors for Benthic Habitats Studies in Southwestern Puerto Rico. Poster Presentation, 8th International Conference of Remote Sensing for Marine and Coastal Environments, Halifax, Nova Scotia.
- Gilbes, F.** and Arce, J. (2004) Remote Sensing of Benthic Habitats in Southwestern Puerto Rico. Oral Presentation, ASLO/TOS Ocean Research Conference, Honolulu, Hawaii.
- Gilbes, F.**, Armstrong, R., Miller, R.L., Del Castillo, C.E., Rosado, M., and Ramirez, N. (2002) Bio-Optical Evidence of Land-Sea Interactions in the Western Coast of Puerto Rico. Oral and Poster Presentation, Ocean Optics XVI Meeting, Santa Fe, Nuevo Mexico.
- Lee-Borges, J., **Gilbes, F.**, and Armstrong, R. (2002) SeaWiFS Validation at the Caribbean Time Series Station. Poster Presentation, Ocean Optics XVI Meeting, Santa Fe, Nuevo Mexico.
- Rosado, M., **Gilbes, F.**, Armstrong, R. and Lee-Borges, J. (2002) Validation of Bio-Optical Algorithms in the Western Coast of Puerto Rico. Poster Presentation, Ocean Optics XVI Meeting, Santa Fe, Nuevo Mexico.
- Schellekens, J.H., **Gilbes, F.**, Rivera-Rivera, G.D. and Ysa, Y. (2002) Remote sensing of mineral deposits in tropical terranes. Porphyry copper deposits in west-central Puerto Rico. Oral Presentation, 16<sup>th</sup> Caribbean Geological Conference, Barbados.
- Gilbes, F.** (2002) Percepción Remota: Una Forma Diferente de Observar Nuestro Planeta. Oral Presentation, BIOS '02, La biología revolucionando el nuevo siglo. UPRM-Departamento de Biología. 1-mayo-02.
- Schellekens, J.H., **Gilbes, F.**, Rivera-Rivera, G.D., Chardon. S., Fong, Y., and Ysa, Y. (2002) Remote sensing of Metal Enriched Areas in Tropical Terranes. - Differences in Vegetation Reflectance. Oral presentation, 22<sup>nd</sup> Anniversario de Casa Pueblo, Adjuntas, PR.
- Gilbes, F.** (2002) Percepción Remota: Una forma diferente se Observar la Tierra. Presentación Oral, Simposio de Ciencias y Tecnología. Programa Upward Bound Ciencias y Matemáticas. Universidad Interamerica de Puerto Rico, Recinto de Ponce. 12-abril-2002
- Gilbes, F.** (2002) Hyperspectral Remote Sensing of Coral Reefs. Oral Presentation, Research and Industrial Collaboration Conference of the Center for Subsurface Sensing and Imaging Systems. Northeastern University, Boston, MA. January 29-30, 2002
- Schellekens, J.H., **Gilbes, F.**, Rivera-Rivera, G.D., and Ysa, Y. (2001) Remote sensing of mineral deposits in tropical terranes. Porphyry copper deposits in west-central Puerto Rico Poster Presentation, PRSGC First Congress on Integrating NASA Research and Education Projects in Puerto Rico, Hyatt Regency Cerromar Beach Resort. November 14-17, 2001
- Gilbes, F.** and Armstrong, R. (2000) Space Remote Sensing Of The Eastern Caribbean Sea. Poster Presentation) Oceans From Space Meeting, Venice, Italy.
- Armstrong, R. and **Gilbes, F.** (2000) Validation of SeaWiFS Chlorophyll Algorithm For The Rio De La Plata Estuary. Poster Presentation, Oceans From Space Meeting, Venice, Italy.
- Gilbes, F.** and Armstrong, R. (2000) Inherent Optical Properties At The Caribbean Time Series Station

(CaTS). Poster Presentation, Ocean Optics XV Meeting, Monaco.

Armstrong, R. and **Gilbes, F.** (2000) Apparent Optical Properties At The Caribbean Time Series Station (CaTS). Oral Presentation, Ocean Optics XV Meeting, Monaco.

Del Castillo, C., **Gilbes, F.** and Coble, P. (1998) Optical Characteristics Of Dissolved Organic Matter During A Bloom On The West Florida Shelf. Poster, Ocean Optics XIV, Hawaii.

**Gilbes, F.** (1996) Analysis of Episodic Phytoplankton Blooming and Associated Oceanographic Parameters on the West Florida Shelf using Remote Sensing and Field Data. Ph.D. Dissertation, University of South Florida, 138 pp.

**Gilbes, F.** and Armstrong, R. (1996) AVHRR Detection of Orinoco River Plume Waters In The Eastern Caribbean Sea. Oral Presentation, ASLO Ocean Sciences Meeting, California.

**Gilbes, F.** (1992) The Relationship Between Phytoplankton Chlorophyll-A and Suspended Particulate Matter in Mayagüez Bay, Puerto Rico. Master Thesis, UPR-Mayagüez, 53 pp.

**Gilbes, F.** (1989) Estudio Preliminar Sobre el Análisis del Patrón de Distribución de Favia fragum en el Cayo San Cristobal en La Parguera, Puerto Rico. Oral presentation, XVI Symposium of Department of Natural Resources, San Juan, PR

**Gilbes, F.** (1989) Abundancia y Distribución de los Erizos De Mar (Clase Echinoidea) en la Costa Rocosa de la Isla Caja De Muertos. Oral presentation, IX Symposium of Wildlife of Puerto Rico. University of the Sacred Heart, San Juan, PR

## SPONSORED RESEARCH

Coastal Areas Climate Change Education (CACCE) Partnership (2010-2013) NSF.

Application of the Soil and Water Assessment Tool Model (SWAT) to Estimate Discharge and Sediment Yields from the Río Grande de Añasco Watershed, Puerto Rico (2010-2013) Puerto Rico Sea Grant College Program.

High-Precision GPS Monitoring for Land Stability Evaluation in the Cerca del Cielo Urbanization, Ponce, Puerto Rico (2010-2012) Municipality of Ponce.

Bio-Optical Properties and Remote Sensing of Coastal Waters (2002-2011) NOAA Cooperative Remote Sensing Science and Technology Center (CREST).

Detection of Submerge Features Using Hyperspectral Remote Sensing (2000-2010) NSF Engineering Research Center for Subsurface Sensing and Imaging Systems (CenSSIS).

Developing A Protocol To Use Remote Sensing As A Cost Effective Tool To Monitor Contamination Of Mangrove Wetlands (2006-2009) Puerto Rico Sea Grant College Program.

Monitoring Nutrients Content In The San Juan Bay Estuary Using Hyperspectral Remote Sensing (2005-2008) Puerto Rico Water Resources and Environmental Research Institute.

Contaminant and Erosion Control Baseline Database for the Puerto Mosquito Watershed, Vieques, PR. (2003-2007) Puerto Rico Sea Grant.

Characteristics of Mesoscales Caribbean Eddies (2003-2007) U.S. Office of Naval Research.

Monitoring the Water Quality Parameters of Mayagüez Bay. (2001-2004) EPA Grant through the Puerto Rico Water Resources and Environmental Research Institute.

Remote Sensing of the Eastern Caribbean Sea (1995-2005) Tropical Center for Earth and Space Studies (TCESS). NASA

Development and Validation of Bio-Optical Algorithms in Coastal Waters. (1999-2002) NASA  
 Analysis of the Inherent and Apparent Optical Properties in Case 1 and Case 2 Waters of the Caribbean. (1998-2001) NASA

## **ACHIEVEMENTS AND AWARDS**

- 1998      Sackett Prize for Innovative Research  
             Department of Marine Science, University of South Florida
- 1998      Cited in Who's Who in Science and Engineering. 4th Edition
- 1995      Fellowship in the Global Change Research Program  
             NASA Grant No. NGT-30316
- 1992      Fellowship in the Graduate Student Researchers Program  
             NASA Grant No. NGT-70260
- 1989      Fellowship in the Graduate Student Researchers Program  
             NASA Grant No. NGT-70099
- 1993      JPL Summer Scholarship to attend the course "Processes of Global Change"  
             NASA Earth Science Summer School
- 1992      BBSR Summer Scholarship to attend the course "Remote Sensing in Oceanography"  
             Bermuda Biological Station for Research
- 1991      Young Investigator Award to attend the course "Primary Productivity in the Sea"  
             Brookhaven National Laboratory

## **ORGANIZATIONS AND COMMITTEES**

- Member of several committees at the UPRM-Geology Department (2002-Present)
- Coordinator of Outcomes Assessment. UPRM-Geology (2002-2009; 2013)
- Member of American Geophysical Union (1996-2008)
- Member of the Society of Latin American Remote Sensing Specialists (1996-2000)
- Member of Cousteau Society (1989-1992)
- Member of The Oceanography Society (1988-1991)
- Chairman of Bios'87, Department of Biology, November 2-13, 1987
- Chairman of the Biological Student Society UPR - Mayagüez Campus, 1986-1987
- Founding Member of the Scientific Research Auxiliaries Corps, DNR, 1986-1988

## **SPECIAL SKILLS**

- Bilingual: Spanish and English
- Digital image processing: SeaDAS, ERDAS-Imagine, BEAM, DSP, IDL, ENVI, and TeraScan
- Geographic Information Systems: ArcGIS 10
- Computer systems: Windows, Mac OS, Unix, Linux
- Oceanographic, Bio-optical, and Remote Sensing Techniques
- Advanced Scuba Diving (NAUI Certified)
- Development of Web Pages using Adobe CS6 and Wordpress
- Coordination of multiple conferences and workshops



**LIST OF ACADEMIC COLLABORATORS OVER PAST TEN YEARS**

- Dr. Roy Armstrong, UPRM
- Dr. Carlos Del Castillo, JHU
- Dr. Ramón López, JHU
- Dr. Jeffrey Ryan, USF
- Dr. Luis Jiménez, UPRM
- Dr. Frank Muller-Karger, USF
- Dr. Allan Feldman, USF
- Dr. Carlos E. Ramos Scharrón
- Elisabeth Hamin Infield, UMASS
- Rebecca Fricke, UMASS

**ACADEMIC ADVISORS**

- Dr. Paul Yoshioka, University of Puerto Rico at Mayagüez (Master Degree)
- Dr. Frank Müller-Karger, University of South Florida (Doctoral Degree)

**GRADUATE ADVISEES**

- Yanira Santiago
- Gwendelyn Monge
- Lorena Vázquez
- Jennifer Toledo
- Jorge Wichy
- Natlee Hernández
- Vilmaliz Rodríguez
- Yvette Ludeña
- Jeannette Arce
- Gretchen Chiques
- Damaris Torres