Carlos E. Ramos Scharrón, Ph.D.

Assistant Professor

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I. Research Interests

Hydro-geomorphology; terrestrial sediment and carbon budgets; sediment routing; road erosion; infiltration and runoff routing modeling; land use and climate change effects on hydrologic/geomorphic processes and their consequences on water quality, sustainable development, stream habitat, and marine ecosystems; development of GIS-based sediment budget/hydrologic applications; mass wasting processes; spatial scale issues; natural hazards.

II. Education

2006-2008 Post-Doctoral Researcher, Dept. of Biology, Univ. of Puerto Rico-Río Piedras Mass wasting and the transfer of carbon from hillslopes into the fluvial network in a tropical montane system. Duties: Remote sensing evaluation, GIS model development and application, preparation of proposals for additional funding, and dissemination of study results. Advisor: Prof. Carla Restrepo

1997 – 2004 Ph.D., Watershed Sciences, Department of Geosciences, Colorado State Univ. Dissertation title: Measuring and predicting erosion and sediment yield on St. John, U.S. Virgin Islands. Advisor: Prof. Lee H. MacDonald

1993 – 1995 Doctoral candidate, Department of Geology and Geophysics, UC-Berkeley. Advisor: Prof. William E. Dietrich

1988 – 1993 Bachelor of Science, Department of Geology, Univ. Puerto Rico-Mayaguez

III. Work Experience

Spring 2012 *Lecturer*, Department of Geography & the Environment, Univ. of Texas-Austin. Fluvial Geomorphology and Environmental Change, upper division and graduate course.

2009-2012 *Co-Principal Investigator & Co-Project Manager* for Virgin Islands Resource Conservation & Development Council for the USVI Coastal Habitat Restoration Through Watershed Restoration Project, NOAA Coastal and

	Marine Habitat Restoration Program- American Recovery and Reinvestment Act. *Duties:* Proposal preparation; design, implementation, data analyses, and result dissemination of terrestrial erosion monitoring project; co-manager for implementation phase of erosion control strategy.
2003-present	*Principal Investigator*, NOAA-Coral Reef Ecosystems Program, UPR-Caribbean Coral Reef Institute, UPR-Sea Grant Program: Measuring and modeling erosion and sediment yields in Puerto Rico. *Duties:* Development of study design, installation and monitoring of field equipment, laboratory and statistical analysis, software development, grant application, and dissemination of results.
2000-present	*Coordinator Watershed Sciences Program*, Island Resources Foundation: *Duties:* Evaluate, develop, and implement environmental impact assessment strategies to mitigate the effects of anthropogenic disturbance on water resources of the Caribbean.
1997-2004	*Graduate Research Assistant*, Dept. of Earth Resources-Colorado State Univ.: Sediment budgeting study on St. John, U.S. Virgin Islands. *Duties:* Development of study design, installation and monitoring of field equipment, hydrologic model calibration, laboratory, statistical, and GIS data analysis, and dissemination of results to the VI government.
1997	*Graduate Student Instructor*, Dept. of Earth Resources-Colorado State Univ. Courses: Watershed Measurements, Introduction to Hydrology
1995 – 1998	*Environmental Consultant*, Stillwater Sciences, California Dept. of Forestry, Timber-Fish & Wildlife, Northwest Indian Fisheries Commission, and the Washington Forest Practices Board. *Duties:* Implemented and developed assessment strategies to evaluate erosion problems in forested areas of the Pacific Northwest.
1992	*Research Assistant*, Scripps Institute of Oceanography, UC San Diego Summer Internship Program. Project: Coarse sediment transport on coastal environments of Southern California. Supervised by: Dr. Tom Drake
1992	*Teaching Assistant*, Dept. of Geology, Univ. of Puerto Rico at Mayaguez Course: Geology for Engineers.
1990	*Research Assistant*, Dept. of Geology and Geophysics, UC Berkeley. Project: Rainfall thresholds for triggering shallow landslides in the Coos Bay area of Oregon. Supervised by: Professor William E. Dietrich

IV. Peer-Reviewed Journal Articles

Ramos-Scharrón CE, Castellanos E, Restrepo C. 2012. The transfer of organic Carbon by landslide activity in a tropical montane ecosystem in Guatemala. *Journal of Geophysical Research-Biogeosciences, 117, G03016,doi: 10.1029/2011JG001838.*

Ramos-Scharrón CE, 2012. Effectiveness of an erosion control method in reducing sediment production rates from an unpaved road. *Journal of Soil and Water Conservation* 67(2): 87-100.

Ramos-Scharrón CE, 2010. Sediment production from unpaved roads in a dry sub-tropical setting-Southwestern Puerto Rico. *Catena* 82(3): 146-158.

Fu B, Newham LTH, Ramos-Scharrón CE. 2010. A review of surface erosion and sediment delivery models for unsealed roads. *Environmental Modelling and Software* 25: 1-14.

Restrepo C, Walker LR, Shiels AB, Bussman R, Claessens L, Fisch S, Lozano P, Negi G, Paolini L, Poveda G, Ramos-Scharrón C, Richter M, Velázquez E. 2009. Landsliding and its multiscale influence on mountainscapes. *Bioscience* 59(8): 685-698.

Ramos-Scharrón CE, MacDonald LH, 2007. Measurement and prediction of erosion rates from natural and anthropogenic sources of sediment in St. John, U.S. Virgin Islands. *Catena Special Issue-Soil water erosion on rural areas,* 71: 250-266.

Ramos-Scharrón CE, MacDonald LH. 2007. Development and application of a GIS-based sediment budget model, *Journal of Environmental Management*, 84: 157-172.

Ramos-Scharrón CE, MacDonald LH. 2007. Runoff and suspended sediment yields from an unpaved road segment, St. John, U.S. Virgin Islands, *Hydrological Processes,* 21(1): 35-50.

Ramos-Scharrón CE, 2007. Maho Bay road erosion reduction project, St. John, US Virgin Islands. *Environmental Connection* 1(1): 18-20.

Ramos-Scharrón CE, MacDonald LH. 2005. Measurement and prediction of sediment production from unpaved roads, St. John, U.S. Virgin Islands. *Earth Surface Processes and Landforms*, 30(10): 1283-1304.

V. Book Chapters

Hernández-Delgado E, Ramos-Scharrón CE, Guerrero-Pérez C, Lucking MA, Laureano R, Méndez-Lázaro PA, Meléndez-Díaz JO. 2012. Development in tropical coastal habitats in a changing climate: lessons learned from Puerto Rico (Chapter 18). In: M Kasimoglu (Ed.), "Visions for Global Tourism Industry-Creating and Sustaining Competitive Strategies", InTech Publications, Croatia, pp. 357-398.

Ramos-Scharrón CE, Amador-Gutierrez J, Hernández-Delgado E, 2012. An interdisciplinary erosion mitigation approach for coral reef protection- A case study from the Eastern Caribbean (Chapter 6). In: A Cruzado (Ed.), Marine Ecosystems- InTech Publications, pp. 127-160.

Benavides-Solorio J de D, Ramos-Scharrón CE. 2007. Impacts of forest fires and roads on hydrologic and surface erosion processes of forested watersheds. In: Manejo Integrado de Cuencas Hidrológicas (In Spanish). *In:* Avances de investigación en agricultura sostenible IV: Bases metodológicas para el manejo integral de cuencas hidrológicas, Sánchez-Brito et al. (eds.). INIFAP, Centro de Investigación Regional Pacífico Centro. Michoacán, México, pp. 333-386.

VI. Forthcoming Articles

Ramos-Scharrón CE, Reale-Munroe K, Atkinson S, in review. Quantification and modeling of foot trail surface erosion in a dry sub-tropical setting. *Earth Surface Processes and Landforms* (May-2013).

Thomaz E, Vestena LR, Ramos-Scharrón CE, in review. The effects of unpaved roads on suspended sediment concentration of third- to fifth-order streams – A case study from southern Brazil. *Water and Environment Journal* (May-2013).

Ramos-Scharrón CE, Hernández-Delgado E, Torres-Pulliza, D. in prep. Historical land use patterns in the Río Fajardo Watershed, Eastern Puerto Rico. To be submitted to *Professional Geographer* (Jul-2013).

Ramos-Scharrón CE, Reale-Munroe K, Atkinson S, in prep. Catchment-scale assessment of trail erosion rates. To be submitted to *Environmental Management* (Sep-2013).

VII. Abstracts, Conference Proceedings, & Other Articles

Gray et al. 2013. The impact of watershed development and restoration on marine sedimentation on coral reefs in St. John, US Virgin Islands, Geological Society of America, Southern Regional Meeting Abstracts, Vol. 45(2), Abstract 5-1.

Ramos-Scharrón et al. 2013. Interdisciplinary approaches to assess the hydro-geomorphological effects of land use change on marine ecosystems of Puerto Rico and the U.S. Virgin Islands, Geological Society of America, Southern Regional Meeting Abstracts, Vol. 45(2), Abstract 4-8.

Ramos-Scharrón CE, Rodríguez-Benítez J. 2008. Plot-scale sediment and organic matter yields from natural and disturbed surfaces in a dry subtropical forest of southwestern Puerto Rico. GSA Joint Annual Meeting Abstract No. 299-10.

Ramos-Scharrón CE, 2007. Sediment production from natural and disturbed surfaces in dry tropical areas of the Eastern Caribbean. Proceedings of the 7th Caribbean Island Water Resources Congress, Sangchul Hwang (Ed.), Univ. of the Virgin Islands Water Resources Research Institute, St Croix, USVI, pp. 26-30.

Ramos-Scharrón CE. 2006. Plot- and hillslope-scale sediment production from natural and disturbed surfaces in dry tropical areas of the Eastern Caribbean, EOS Transactions AGU, 87(52), Fall Meeting, Supplement, Abstract B23B-1085.

Restrepo C, Ramos-Scharrón CE, Joseph-Haines M, Miller M. 2006. The role of shallow landslides in the downslope transfer of organic matter and its implications on the residence time of carbon in a tropical mountain system. EOS Transactions AGU, 87(52), Fall Meeting Supplement, Abstract B51B-0307.

Ramos-Scharrón CE. 2002. Researchers measure erosion rates on St. John dirt roads. V.I. Non-point Source Newsletter, Issue 17, vol. 5(1), p. 1, 3.

Ramos-Scharrón CE, MacDonald LH. 2003. Measuring and modeling the effects of development on sediment production and delivery, St. John, U.S. Virgin Islands. *EOS, Transactions AGU,84(46), Fall Meeting Supplement,* Abstract H51F-07, p. F755-F756.

Ramos-Scharrón CE, MacDonald LH. 2001. Measuring and modeling sediment production from unpaved roads, St. John, U.S. Virgin Islands. *Eos, Transactions AGU, 82(47), Fall Meeting Supplement*, Abstract H52B-0412, p. F-510.

MacDonald LH, R Sampson, DM Anderson, CE Ramos. 1998. Road runoff and erosion on St. John, U.S. Virgin Islands. *EOS, Transactions AGU, 79(45), Fall Meeting Supplement,* Abstract H11F-04.

VIII. Miscellaneous Reports

Island Resources Foundation. 2012. Virgin Gorda-Environmental Profile. Island Resources Foundation, Tortola, BVI.

Ramos-Scharrón CE, Reale-Munroe K, Swanson B, Atkinson S, Devine B. 2012. USVI Coastal Habitat Restoration through Watershed Stabilization Project, NOAA-ARRA, 2009-2012, Terrestrial Monitoring Component. Unpublished Report to NOAA-Coral Reef Protection Program. 242 p.

Reale-Munroe K, Castillo B II, Ramos-Scharrón CE. 2011. Measurement of particulate organic material and erosion rates in small subtropical watersheds on the East End of St. Croix, U.S. Virgin Islands. Report to the Water Resources Research Institute, University of the Virgin Islands, Project No. 2010VI-170B, 34 p.

Ramos-Scharrón CE, Amador J, Colón-López J. 2012. Guidelines for the development of an erosion control program to reduce sediment loading rates from the unpaved road network in the island of Culebra-Puerto Rico. Coastal Zone Management Program, PR-Department of Natural and Environmental Resources.

Ramos-Scharrón CE. 2009. The effects of land development on sediment loading rates into the coastal waters of the islands of Culebra and Vieques. Submitted to the Coastal Zone Management Program, PR Dept. of Natural and Environmental Resources. 94 p.

Ramos-Scharrón CE. 2009. Qualitative assessment of sediment sources and guidelines for the design of a runoff and sediment yield monitoring strategy for the Body Ponds watershed, Antigua. Submitted to Environment-Tourism Consulting, St. John's, Antigua. 38 p.

Ramos-Scharrón CE, Lindsay K, Bacle JP. 2009. Erosion control strategy for the Fish Bay watershed. Final report submitted to the US Fish and Wildlife, Caribbean Region. 32 p.

Ramos-Scharrón CE, Lindsay K, Bacle JP. 2007. Fish Bay Watershed assessment- Recommendations for an erosion control program. Submitted to the Gulf of Mexico Foundation and the National Fish & Wildlife Foundation.

Ramos-Scharrón CE. 2006. Effectiveness of an erosion control method in reducing sediment production rates from an unpaved road- Maho Bay Watershed Erosion Reduction Project, St. John,

USVI. Final Report to the U.S. Virgin Islands Department of Planning and Natural Resources, 15 June 2006, 48 p.

Nemeth RS, LH MacDonald, CE Ramos-Scharrón. 2001. Delivery, deposition, and effects of land-based sediments on corals in St. John, U.S. Virgin Islands. Report to the Water Resources Research Institute, Univ. of the Virgin Islands, Project No. VI99-02, 24 p.

MacDonald LH, CE Ramos-Scharrón. 2000. St. John Erosion Study - Final Report to the Water Resources Research Institute- University of the Virgin Islands. 1 March 1998 to 31 August 1999, p. 27.

Ramos CE. 1998. Shallow Mass-Wasting: A literature review and general recommendations for the development of a sediment monitoring strategy. Northwest Indian Fisheries Commission, Olympia, Washington, 41 p.

Ramos CE. 1997. Surface erosion from roads: A literature review and general recommendations for the development of a sediment monitoring strategy. Northwest Indian Fisheries Commission, Olympia, Washington, 66 p.

Ramos CE. 1996. Quantification of stream channel morphological features: recommended procedures for use in watershed analysis and TFW ambient monitoring. TFW-AM 9-96-006, 89 p.

IX. Proposals

2013-2014	National Fish and Wildlife Foundation Grant – Watershed restoration impacts on reef sedimentation, USVI" (Collaborator, proposal submitted by The University of San Diego, $21K, in review)
2013- 2016	NASA- Interdisciplinary Research in Earth Science (NNH12ZDA001N-IDS)- Human impacts to coastal ecosystems in Puerto Rico (HICE-PR): A 70-year remote sensing, hydrologic, ecologic, and socio-economic assessment with management implications (Proposal number: 12-IDS12-0062) (Consultant, in collaboration with UPR-Río Piedras, $86.7K sub-project award).
2013-2014	NOAA-Coral Reef Conservation Program- Watershed Marine Linkages and the Impact of Watershed Restoration on Land-Based Sedimentation to USVI Coral Reefs (Co-PI, $164K, partially awarded [$55K], remaining funds pending federal budget decision)
2013-1014	NOAA-Coral Reef Conservation Program- Reduction and prevention of Land-based Sources of Pollution from Highly Erodible Bare Soils and Unpaved Roads on Culebra, PR (Collaborator, $214K, in review)
2012-2014	Univ. of the Virgin Islands-Water Resources Research Institute- Terrestrial Sediment Delivery and Nearshore Water Turbidity- A Case Study from the East End of St. Croix, USVI (Co-PI, $21K, awarded).
2012-2013	NOAA Coral Reef Conservation Program- Comprehensive Watershed Management Plan for Culebra, Puerto Rico (Collaborator, $83K, awarded).

2011-2012	Univ. of the Virgin Islands- Water Resources Research Institute: "Quantifying sediment and organic material production rates from surface erosion processes and the effect on marine water quality in small subtropical watersheds on the East End of St. Croix, USVI" (Co-PI, in collaboration with UVI: $12K, awarded, concluded)
2011-2012	NOAA Coral Reef Conservation Program- Watershed Restoration on the Island of Culebra, Puerto Rico- Phase I (Co-Project Manager: $56K, awarded, concluded).
2010-2011	Univ. of the Virgin Islands-Water Resources Research Institute: "Measurement of Particulate Organic Material and Erosion Rates in Small Sub-tropical Watersheds on the East End of St. Croix, USVI" (Co-PI, in collaboration with UVI: $20K, awarded, concluded)
2010-2011	NSF-Ecosystems Studies Program: "Landsliding, land-use change, and carbon dynamics in a Central American mountainscape." (Post-doc & collaborator, awarded to UPR-Río Piedras)
2011-2014	Univ. of Puerto Rico Sea Grant College Research Program: "Application of the Soil and Water Assessment Tool (SWAT) to Estimate Discharge and Sediment Yields from the Río Grande de Añasco Watershed, Puerto Rico." (PI, in collaboration with UPR-Mayaguez: $166K, awarded).
2011-2013	PR Department of Natural and Environmental Resources- Coral Reef Conservation and Management Program: "Assessment of sediment inputs and marine habitat conditions from Laguna Joyuda to Punta Guaniquilla, Cabo Rojo." (PI, in collaboration with UPR-Río Piedras: $25K, awarded).
2009-2012	NOAA Coastal and Marine Habitat Restoration Project Grants, American Recovery and Reinvestment Act: "Coastal and marine habitat restoration through watershed stabilization- USVI." (Co-Project Manager, Co-PI, in collaboration with VI-RC&D, UVI, Univ. of San Diego: $2.7M; $250K research funds, concluded)
2010-2011	PR Department of Natural and Environmental Resources-Coastal Zone Management Program: "Development and application of an erosion control program to reduce sediment loading rates from land-based sources to the coral reefs of Culebra-Puerto Rico." (Program manager, $45K, awarded, concluded).
2009-2011	Univ. of Puerto Rico-Caribbean Coral Reef Institute: "Long-term land use dynamics and erosion processes on the Río Fajardo watershed and its effects on coral reef communities". (Co-PI, in collaboration with UPR-Rio Piedras: $125K, awarded, concluded)
2007-2009	PR Department of Natural and Environmental Resources: "The effects of land development on sediment loading rates into the coastal waters of the islands of Culebra and Vieques, Puerto Rico". (PI, $40K, awarded, concluded)

2007-2008	U.S. Fish & Wildlife Service, Coastal Program, Caribbean Office: "Development and application of an erosion control strategy for the Fish Bay watershed, St. John, USVI". (Project Manager: $10K, awarded, concluded)
2006-2008	Univ. of Puerto Rico Sea Grant College, Seed-Money Program: "The effects of land development on sediment loading rates into coastal waters of Culebra, Puerto Rico". (PI, $3.5K awarded, concluded)
2006-2008	National Fish & Wildlife Foundation, Coral Reef Conservation Fund: "Fish Bay erosion control project". (Project Manager, $41K awarded, concluded)
2006-2008	Gulf of Mexico Foundation: "Development and application of an erosion control strategy for the Fish Bay Watershed". (Project Manager; $26K awarded, concluded).
2006-2008	Caribbean Coral Reef Institute: "Development of software applications for assessing the effects of land development on sediment production and sediment yields". (PI; $77K awarded, concluded)
2003-2005	NOAA- Coral Reef Environmental Studies Program: "Terrestrial sediment budget- La Parguera, Puerto Rico". (Co-PI, in collaboration with UPR-Mayaguez; $143K awarded, concluded)
2002-2005	Virgin Island Department of Planning and Natural Resources, EPA 319(h) Non-Point Sources of Pollution Grants: "Maho Bay Road Rehabilitation Project, St. John, USVI" & John Head Road Rehabilitation Project, St. John, USVI". (PI, $104K awarded, concluded)
2001-2003	Virgin Island Department of Planning and Natural Resources, EPA 319(h) Non-Point Sources of Pollution Grants: "Development of decision tools for Non-Point Source Management in St. John-USVI". (Principal Investigator; $43K awarded, concluded)
1999-2001	Water Resources Research Institute-University of the Virgin Islands & U.S. Geological Survey: "Delivery, deposition, and effects of land development on corals in St. John, U.S. Virgin Islands". (Collaborator; $30K awarded, concluded)
1996-1998	Northwest Indian Fisheries Commission: "Development of ambient monitoring strategies". (Project Manager; $48K awarded, concluded)

X. Presentations and Workshops

"Road sediment production and delivery: Processes, rates, and possible improvements", Poster presented by L. MacDonald, EGU General Assembly 2013, 11-Apr-2013, Vienna, Austria.

"Interdisciplinary approaches to assess the hydro-geomorphological effects of land use change on marine ecosystems of Puerto Rico and the U.S. Virgin Islands, Geological Society of America Meeting of the Southern Section, 20-21 March 2013.

"The impact of watershed development and restoration on marine sedimentation on coral reefs in St. John, U.S. Virgin Islands", Presented by S. Gray, Geological Society of America Meeting of the Southern Section, 20-21 March 2013.

"An interdisciplinary erosion mitigation approach for coral reef protection- A case study from the Eastern Caribbean", Presented by J. Amador, 8th International Multi-Purpose Reef & Surfing Science Symposium, 19-21 February 2013. Rincón, Puerto Rico.

"The effects of unpaved roads on suspended sediment concentration of third- to fifth-order streams – A case study from southern Brazil", AGU Fall Meeting, 3 December 2012, EP13D-0080 (poster).

"Ridge to reef assessment of metal concentration and mineralogy in rocks and sediments on St. John, U.S. Virgin Islands", AGU Fall Meeting, 3 December 2012, EP13D-0884 (poster).

"Land Use and Hydro-Geomorphology", A one-day Geography graduate student course given at Universidade Estadual do Centro-Oeste, Guarapuava, Paraná, Brasil, 5 July 2012.

"An interdisciplinary erosion mitigation approach for coral reef protection- A case study from Culebra, Puerto Rico", Quantifying Sustainability in Puerto Rico-EPA Sponsored Conference, San Juan, Puerto Rico, 5-7 June 2012.

"The transfer of modern organic Carbon by landslide activity in tropical montane ecosystems", European Geological Union Meeting, Vienna, Austria, 25 April 2012.

"Land-based sources of sediment: Research tools to assess and mitigate their effects on the coral reefs of Puerto Rico", Invited, Recomendaciones para la Conservación y Protección de los Arrecifes de Coral de Puerto Rico, Segundo Conversatorio, San Juan, Puerto Rico, 23 September 2011.

"Effects of land use changes on watershed sediment yields and marine habitat degradation in the Northeastern Caribbean", Association of American Geographers, Seattle, WA, 12 April 2011.

"Long-term land use dynamics and erosion processes on the Río Fajardo watershed and their effects on coral reef communities", Presented by D. Torres, American Society of Limnology and Oceanography, Aquatic Sciences Meeting, San Juan, Puerto Rico, 17 February 2011.

"Río Fajardo Watershed: Assessing the historical impacts of land cover dynamics on sediment yields and nearshore coral reef systems from the 1930's to the present", Presented by D. Torres, Caribbean Coral Reef Institute, 2010 Meeting, La Parguera, Puerto Rico, 12 November 2010.

"Land use effects on runoff and sediment yields in small coastal watersheds of the Northeastern Caribbean- Synopsis of a decade-long research program", Annual Symposium IGCP-582 Tropical Rivers: hydrophysical processes, impacts, hazards and management. Held at the 45th Brazilian Congress of Geology, Belem, Brasil, 29 September 2010.

"Land development and soil erosion in the Eastern Caribbean- Key findings of a decade-long field and modeling program in the US Virgin Islands and Puerto Rico", 10th US Virgin Islands Non-Point Sources of Pollution Meeting, St. Thomas, USVI, 6-7 May 2010.

The effects of unpaved roads on sediment loading rates into the coastal waters of the islands of Culebra and Vieques, Puerto Rico", 10th US Virgin Islands Non-Point Sources of Pollution Meeting, St. Thomas, USVI, 6-7 May 2010.

"Erosion rates in a small subtropical watershed on the East End of St. Croix, USVI- Preliminary assessment" 10th US Virgin Islands Non-Point Sources of Pollution Meeting, St. Thomas, USVI, 6-7 May 2010.

"Aplicación de la investigación científica en el desarrollo de planes de manejo en cuencas hidrográficas para la protección de los arrecifes de coral en Puerto Rico y las Islas Vírgenes". Caribbean Coral Reef Research Institute Special Meeting, Puerto Rico-DNER, San Juan, Puerto Rico, 24 March 2010.

"The transfer of modern organic Carbon by shallow landslide activity in a tropical montane system in Central America". NSF-PASI Conference on Cloud Forests and Climate Change, Dominican Republic, 6-14 February 2010.

"Terrestrial and marine monitoring activities related to the USVI Coastal Habitat Restoration through Watershed Stabilization Project". Presented by Dr. Tyler Smith. US-EPA CARE Leadership Seminar: Understanding Land Use Impacts to Coastal Environments. Univ. of VI, St. Thomas, 16 November 2009.

"Science in Translation: Application of hydrological research in the development of soil erosion control strategies in the US Virgin Islands and Puerto Rico". Department of Geography and the Environment, UT-Austin Seminar Series, 6 November 2009.

"Science in translation- Application of hydrologic research in the development of erosion control strategies for the Northeastern Caribbean." Special Seminar, Inter-agency Government Committee. St. Johns, Antigua, 8 January 2009.

"The effects of land development on runoff, sediment, and organic matter yields in a dry subtropical forest of southwestern Puerto Rico". Invited. 2008 End of the International Year of the Reef Symposium, Caribbean Coral Reef Institute, Rio Piedras-PR, 3 December 2008.

"Plot-scale sediment and organic matter yields from natural and disturbed surfaces in a dry subtropical forest of southwestern Puerto Rico". GSA Joint Annual Meeting, Houston-TX, 8 October 2008.

"Science in translation- Application of hydrologic research in the development of erosion control strategies for the US Virgin Islands and Puerto Rico." Semi-annual meeting of the Puerto Rico Federal and State Non-Point Sources of Pollution Inter-agency Committee. San Juan, PR, 11 June 2008.

"Sediment production from natural and disturbed surfaces in dry tropical areas of La Parguera, Puerto Rico, 2003-2005." 7th Caribbean Islands Water Resources Conference, St. Croix, USVI, 25 October 2007.

"Development and application of a GIS system to study the role of landslides in the carbon cycle of the Sierra de las Minas mountain range in Guatemala." Dept. of Biology, UPR-Río Piedras, PR, 19 April 2007.

"Hillslope erosion on dry tropical areas of Puerto Rico and the US Virgin Islands." 1st Symposium on the Coral Reefs of Puerto Rico, Dept. of Environmental and Natural Resources, San Juan, PR, 11 April 2007.

"Landslides and their role as vectors for the downslope transport of carbon in Sierra de las Minas, Guatemala" Invited speaker, Departamento de Ciencias Ambientales, Universidad del Valle, Ciudad Guatemala, Guatemala, 15 January 2007.

"Plot- and hillslope-scale sediment production from natural and disturbed surfaces in dry tropical areas of the Eastern Caribbean." AGU Fall Meeting, 11-16 December 2006.

"The role of shallow landslides in the downslope transfer of organic matter and its implications on the residence time of carbon in a tropical mountain system." AGU Fall Meeting, 11-16 December 2006.

"The Fish Bay watershed road erosion control project- Use of a Geographical Information System tool in the development of a sediment reduction program in St. John, U.S. Virgin Islands". U.S. Coral Reef Task Force 16th Meeting, St. Thomas, USVI, 24-28 October 2006.

"Progress Report: Development of software applications for assessing the effects of land disturbance on sediment yields". UPR-Caribbean Coral Reef Institute Principal Investigator Meeting, La Parguera, Puerto Rico, 4 August 2006.

"Measuring sediment production from natural hillslopes and disturbed surfaces in La Parguera, Puerto Rico". NOAA Coral Reef Ecosystems-Caribbean Program, Management Team Meeting, La Parguera, Puerto Rico, 10-11 April 2006.

"Measuring sediment production from natural hillslopes and disturbed surfaces in a dry tropical setting- La Parguera, Puerto Rico." American Geophysical Union-Hydrology Days, Colorado State University, Fort Collins, CO. 20-22 March 2006.

"STJ-EROS- A GIS-based application to assess the impact of unpaved roads on watershed-scale sediment yields." Virgin Islands Non-Point Sources of Pollution Conference. St. John, USVI. 28-30 November 2005.

"Measuring and predicting erosion and sediment yields on dry tropical areas of the Eastern Caribbean". Invited speaker to the Dept. of Biology, Univ. of Puerto Rico-Mayaguez, Special Seminar. 15 September 2005.

"Terrestrial sediment budget in La Parguera-Puerto Rico". NOAA Coral Reef Ecosystems-Caribbean Program, Management Team Meeting, La Parguera, Puerto Rico, 12-13 July 2004

"Monitoring and modeling sediment production and sediment yields on St. John-USVI and La Parguera-PR". Invited speaker to the U.S. Coral Reef Task Force Caribbean-Atlantic Regional Workshop on Coral Reefs and Land-based Pollution, San Juan, Puerto Rico, 18-19 May 2004.

"Measuring and modeling the effects of development on sediment production and delivery, St. John, U.S. Virgin Islands". American Geophysical Union, Fall Meeting, San Francisco, CA, December 2003.

"Development and application of STJ-EROS: a GIS-based sediment budget model for St. John, U.S. Virgin Islands." Presentation at the Virgin Islands Non-Point Sources of Pollution Conference, St. John, U.S. Virgin Islands. 4-5 December 2003.

"Terrestrial sediment budget in La Parguera-Puerto Rico". NOAA Coral Reef Ecosystems-Caribbean Program, Management Team Meeting, La Parguera, Puerto Rico, 7-8 July 2003

"Measuring and modeling sediment production from unpaved roads, St. John, U.S. Virgin Islands". American Geophysical Union Fall Meeting, San Francisco, CA, December 2001.

"Sediment budgeting on St. John, U.S. Virgin Islands." Presentation to the Water Resources Division of the National Park Service, Fort Collins, CO. 3 May 2001.

"Measuring and predicting runoff and suspended sediment yield from an unpaved road segment, St. John, U.S. Virgin Islands." American Geophysical Union-Hydrology Days, Colorado State University, Fort Collins, CO. 2-5 April 2001.

"Erosion and sediment transport- A workshop describing the practical applications of the St. John erosion project." Invited by the Water Resources Research Institute, University of the Virgin Islands, St. Thomas, U.S. Virgin Islands. 28 April 2000.

"Overview of the St. John Erosion Study". Audubon Society-St. John, U.S. Virgin Islands. 21 March 2000.

"Construction of a sediment budget in St. John". Dept. of Earth Resources-Colorado State University, Graduate student seminar series. April 1999.

"St. John Erosion Study-A Work in Progress". Invited speaker to the Water Resources Research Institute Seminar Series, University of the Virgin Islands, St. Croix. 11 December 1998.

"Road runoff and erosion on St. John, U.S. Virgin Islands", American Geophysical Union, Fall Meeting, San Francisco, CA, December 1998.

XI. Honors and Awards

2010	Pan-American Advanced Studies Institute (PASI)-National Science Foundation, Participant & Travel Award
2001-02	Department of Earth Resources Graduate Scholarship-CSU
1998-99, 2000-01	Stanley Schumm Graduate Fellowship- Dept. of Earth Resources-CSU
1993-1995	Cota Robles Graduate Fellowship- College of Arts & Sciences- UC Berkeley
1991-93 2000-01	American Geological Institute Minority Fellowship
1993	Harry Hess Prize- Dept. of Geology, UPR Mayaguez
1993	Outstanding Student-Athlete Award- UPR Mayaguez

XII. Editorial responsibilities

Editorial Board Member, *Journal of Environmental Modelling and Software*, 2010-2013.

Editorial Board Member, *Revista Ambiência*, Brasil (ISSN: 2175-9405), 2012- present.

Reviewer for the following journals: '*Estuarine, Coastal and Shelf Science*', '*Environmental Modelling and Software*', '*Caribbean Journal of Science*', 'Biosystems Engineering', '*Hydrological Processes*', '*Geomorphology*', *The Geological Society Special Publications, 'Polish Journal of Environmental Studies', 'Global Environmental Change, 'Journal of Environmental Management', & 'Applied Geography'*.

Reviewer and participant of Local Action Strategy plans for reducing the impact of land-based sources of pollution to coral reef systems throughout the US Caribbean (US Coral Reef Task Force & NOAA).

Reviewer for the National Institute for Water Resources Competitive Grants Program.

XIII. Programming and computer skills

Experienced with the SAS statistical package, ArcGIS version 10.0, ArcInfo Workstation, Arc Macro Language and ArcGIS Model Builder programming.

XIV. Organizations

American Geophysical Union, Geological Society of America, Association of American Geographers, International Association of Hydrological Sciences, International Erosion Control Association, Caribbean Conservation Association, Geological Society of Puerto Rico.

XV. Graduate Mentorship

PHD STUDENTS

-Jeiger Medina, PhD candidate, Department of Environmental Sciences, University of Puerto Rico-Río Piedras; serving as outside committee member; Prof. Jorge Ortiz-Main Adviser.

-Robert Bean, PhD candidate, Department of Geography & the Environment, University of Texas-Austin; serving as committee member; Prof. Edgardo Latrubesse-Main Adviser.

MASTER'S STUDENTS

-Katherine Lininger, MS student, Department of Geography & the Environment, University of Texas-Austin; serving as committee member; Prof. Edgardo Latrubesse-Main Adviser.

-Richard Knox, MS student, Department of Geography & the Environment, University of Texas-Austin; serving as committee member; Prof. Edgardo Latrubesse-Main Adviser.

-Whitney Sears, MS student, Department of Marine Sciences and Environmental Studies, University of San Diego; serving as outside committee member; Prof. Sarah Gray-Main Adviser.

XVI. Service

- External reviewer for the National Science Foundation's Geomorphology and Land Use Dynamics program.
- Principal convener for "*EP13D- Human Influences on Hydro-eco-geomorphic Processes across Spatial Scales in Forested Landscapes*", oral and poster sessions for the Earth and Planetary Sciences section of the American Geophysical Union Fall 2012 meeting.
- Post-doctoral adviser for Mario Cardozo, Department of Geography & the Environment, University of Texas-Austin.
- Organizing committee member for 2011 Lozano Long Conference "From Natural Events to Social Disasters in the Circum-Caribbean", Univ. of Texas-Austin, February 2011.
- Participant in Coastal Ecosystem Decision Support Workshop: Guánica-Puerto Rico. Sponsored by the US Environmental Protection Agency's Ecosystem Services Research Program and UPR.
- Independent reviewer for environmental assessment projects submitted by the California Water Board, and hydrology consultant for NOAA and the US Fish and Wildlife on environmental assessment reports submitted for private development projects throughout the US Caribbean.
- Honors thesis research adviser for Josué Rodríguez- Environmental Sciences Program, UPR-Río Piedras. Project: The effects of land development on the production of runoff, sediment, and organic material from hillslopes in La Parguera, Puerto Rico.
- Mentored Ms. Vilmaliz Rodríguez, M.S. student, Department of Geology, UPR-Mayaguez- Thesis topic: Spatial and temporal variations of suspended sediments in the Mayaguez Bay associated with land-based sources of sediment (Spring 2009).
- Assisting Ms. Chantale Bégin, M.S. student, Simon Fraser University- Thesis topic: Sedimentation stresses to coral reefs of the Eastern Caribbean.

XVII. Languages

Fully bilingual in English and Spanish. Some proficiency in written and spoken Portuguese.

XVIII. References

Prof. Richard Appeldoorn, Director-Caribbean Coral Reef Institute, Department of Marine Sciences, Magueyes Laboratories, PO Box 908, Lajas, Puerto Rico 00667, (ph) 787/899-2048 x. 251, rappeldo@uprm.edu

Dr. Matthew Larsen, Chief Scientist for Hydrology, U.S. Geological Survey, 12201 Sunrise Valley Dr., MS 436, Reston, VA 20192, (ph) 703-648-5044, mclarsen@usgs.gov

Prof. Lee H. MacDonald (Dissertation Chair), Dept. of Forestry, Rangeland, and Watershed Stewardship-Colorado State University, Fort Collins, CO 80523, (ph) 970/491-6109, leemac@cnr.colostate.edu

Prof. Carla Restrepo (Post-doctoral adviser), Department of Biology-University of Puerto Rico-Río Piedras, PO Box 23360, San Juan, Puerto Rico, 00931, (ph) 787/721-5168, crestre@cnnet.upr.edu

Prof. Ellen Wohl, Department of Geosciences-Colorado State University, Fort Collins, CO 80523, (ph) 970/491-5298, ellenw@cnr.colostate.edu