

Dr. Jude Benavides

The University of Texas Rio Grande Valley
 School of Earth, Environmental, and Marine Sciences
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Education

PhD, Rice University, 2005
 Major: Environmental Science and Engineering

MS, Rice University, 2001
 Major: Environmental Science and Engineering

BS, University of Notre Dame, 1992
 Major: Civil Engineering

Employment

Academic - Post-Secondary

Academic - Post-Secondary, Associate Professor, School of Earth, Environmental, and Marine Sciences, The University of Texas at Rio Grande Valley, (2015)

Academic - Post-Secondary, Associate Professor, Dept. of Chemistry and Environmental Sciences, The University of Texas at Brownsville and Texas Southmost College, (2011 - 2015)

Academic - Post-Secondary, Assistant Professor, Dept. of Chemistry and Environmental Sciences, The University of Texas at Brownsville and Texas Southmost College, (2004 - 2011)

Military

Military, Lieutenant Commander (O-4), USNR, United States Naval Reserves, (1998 - 2008)

Military, LT (O-3), United States Navy (Active Duty), (1992 - 1998)

Professional

Professional, Part-Time Senior Environmental Consultant, Ambiotec Engineering Group, Inc., Brownsville, Texas, (2007)

Professional, Consulting Engineer, Consulting Engineer, P. B. Bedient and Associates, Inc., Houston, Texas, (1999 - 2004)

Publications

Book Chapters

Jude Benavides. Floodplain Management Issues in Hydrology. Upper Saddle River, New Jersey: *Prentice-Hall*.: 682-713.

Jude Benavides. Severe Storm Impacts and Flood Management. Upper Saddle River, New Jersey: *Prentice-Hall*.

Jude Benavides. Gulf Coast Rivers of the Southwestern United States - Chapter 5. Amsterdam, The Netherlands: *Elsevier Science Publishing Inc.*. (January (1st Quarter/Winter)): 1,204.
<https://www.elsevier.com/books/rivers-of-north-america/delong/978-0-12-818847-7>

Journal Article, Academic Journal

Rosario Sanchez and Jose Brena-Naranjo and Alfonso Rivera and Jude Benavides and Randall Hanson. Perspectives on Building Water Security and Resilient Capacity for Transboundary Groundwater Systems in the Borderlands of Mexico and the United States. London, England: *Water International*. 50th Anniversary Special Edition,

Samantha Moore and Elizabeth Heise and Marty Grove and Anthony Reisinger and Jude Benavides. Evaluating the Impacts of Dam Construction and Longshore Transport upon Modern Sedimentation within the Rio Grande Delta (Texas, USA).: *Journal of Coastal Research*. (January (1st Quarter/Winter)) 37, : 26-40.

Leah McInstosh and Alejandro Fierro-Cabo and Jude Benavides. Macroinvertebrate assemblages from two sampling methods similarly discriminated freshwater wetlands with different ecosystem status in south Texas.: *Aquatic Ecosystem Health & Management*. (May)

Jeff Wilson and Jude Benavides and Karen Engle and Denise Gilman and Anthony Reisinger and Jessica Spangler and Joe Lemen. Due Diligence and Demographic Disparities: Effects of the Planning of US-Mexico Border Fence on Marginalized Populations.: *Southwestern Geographer*. 14, : 42-56.

Linda RODRIGUEZ and Elizabeth Heise and Jude Benavides and Mara CONTRERAS and Diana DEL ANGEL and Jose AGUILAR, Jr and Andres Cardenas and Pavel VAKHLAMOV. UNDERGRADUATE STUDENT CLASS AND

INDEPENDENT RESEARCH PROJECTS THAT BECOME LARGER SCALE RESEARCH PROJECTS.: *2010 GSA Denver Annual Meeting.*

Linda RODRIGUEZ and Robert WALSDORF and Pavel VAKHLAMOV and Elizabeth Heise and Jude Benavides and Mara CONTRERAS and Andres Cardenas and Diana DEL ANGEL. HURRICANE IKE-ONE YEAR LATER: DAMAGE TO THE COASTAL SYSTEM ON SOUTH PADRE ISLAND, TEXAS.: *2009 Portland GSA Annual Meeting.*

Elizabeth Heise and Jude Benavides and Mara Contreras and Andres Cardenas and Joseph Lemen. Hurricanes Dolly and Ike damaged the Town of South Padre Island from the Gulf side and bay side in 2008.: *Shore & beach.* 77, : 30.

Jeff Wilson and Jude Benavides and Anthony Reisinger and Joseph Lemen and Zachary Hurwitz and Jessica Spangler and Karen Engle. An analysis of demographic disparities associated with the proposed US-Mexico border fence in Cameron County, Texas.: *The Working Group on Human Rights and the Border Wall, University of Texas, Austin, TX, <http://www.utexas.edu/law/centers/humanrights/borderwall/analysis/briefing-an-analysis-of-Demographic-Disparities.pdf>.*

Zheng Fang and Bedient Phil and Jude Benavides. Enhanced Radar-Based Flood Alert System and Floodplain Map Library.: *Journal of Hydrologic Engineering.* (October (4th Quarter/Autumn)) 13, : 926-938.

Jude Benavides. Advanced methods for improving the lead-time and accuracy of a flood alert system in an urban watershed.: *Rice University.*

Phil Bedient and Anthony Holder and Jude Benavides and Baxter Vieux. Radar-Based Flood Warning System Applied to Tropical Storm Allison.: *Journal of Hydrologic Engineering.* (November) 8, : 308-318.

Conference Proceedings

Anthony Reisinger and Jude Benavides. Hydrographic Changes within South Texas, a Historical Perspective Using GIS.

Jude Benavides and Brian Pietruszewski and Brian Kirsch and Philip Bedient. Analyzing flood control alternatives for the Clear Creek watershed in a geographic information systems framework.: 1-10.

Media Contributions

Magazine

Texas Highways - Resacas: Remnants of the Rio Grande (June 2021)

The Texas Tribune and Rolling Stone Magazine (July 2, 2020)

Newspaper

McAllen Monitor (July 31, 2017)

Contracts, Grants and Sponsored Research

Tian Yang Dong and Jude Benavides and Jongsun Kim. Grant Evaluating Water, Sediment, and Nutrient Transport and Accumulation Patterns in Alluvial Ridge Basins between the Abandoned River Channels (Resacas) of the Rio Grande Delta. U.S. Dept of Energy (DOE) Federal , 750000\$ (August 2023 - August 2026)

Rafael Almeida and Jude Benavides and Chu-Lin Cheng. Grant Co-locating Irrigation and Solar Power Infrastructure to Bolster Freshwater Sustainability in a Semi-arid Agricultural Region US Department of Agriculture NIFA AFRI Federal , 299296\$ (May 2023 - August 2025)

Ali Nejat and Uddameri and Jude A. Benavides and Ashley Ross. Grant Resilience Roadmap for the Lower Rio Grande Valley (Award #: 2126701) National Science Foundation (NSF) Federal , 150000\$ (May 2020 - May 2024)

Jude A Benavides and David W Hicks. Grant Bahia Grande Channel Widening: Flow and Water Quality Data Collection Effort and Monitoring US. General Land Office Federal , 335331\$ (July 2018 - August 2023)

Jude A. Benavides and . Grant Assessment of Texas Coastal Watershed Delineations Using High-Resolution Data Sources and other Methods to Improve Hydrology Data Sets for Flood Risk Analyses Texas Water Development Board (TWDB) State , 125000\$ (August 2020 - August 2023)

Jude A. Benavides and . Grant On-Site Sewage Facilities (OSSF) Tracking and GIS-Database Development (OSSF Tracking) Texas Commission on Environmental Quality (TCEQ) State , 70000\$ (August 2019 - August 2021)

Chu-Lin Cheng and Juan Luis Gonzalez and James JiHoon Kang and Carlos E Cintra and Jude Benavides and Elizabeth Heise. Grant GEOPATHS: Stimulating Hispanic Participation in the Geosciences (SHIP-GEO) National Science Foundation (NSF) Federal , 464958\$ (August 2016 - August 2020)

Jude A Benavides. Grant Tracking Implementation of the Arroyo Colorado Watershed Protection Plan Update Texas Commission on Environmental Quality / EPA State , 104167\$ (October 2018 - August 2019)

Jude A. Benavides. Grant Brownsville Area Resaca Watershed Characterization Texas Water Resources Institute / EPA Federal , 98488\$ (December 2013 - December 2017)

Jude A. Benavides. Grant Arroyo Colorado Bacterial Source Tracking Texas State Soil and Water Conservation Board / EPA Federal , 55704\$ (December 2012 - December 2016)

Jude A. Benavides and Alejandro Fierro. Grant Resaca Rangers: Establishing a School-based Network to Monitor Ecosystem Health of the Lower Rio Grande Valley Resacas and Estuaries NOAA Federal , 99402.00\$ (June 2014 - June

2016)

Jude A. Benavides. Grant Resaca Rangers: Establishing a School-Based Network to Monitor Ecosystem Health of the Lower Rio Grande Valley Resacas and Estuaries NOAA - Bay-Watershed Education and Training (B-WET) Program Federal , 99402\$ (May 2014 - June 2016)

Jude A. Benavides. Grant Watershed Protection Plan Updated for the Arroyo Colorado Texas Water Resources Institute / EPA Federal , 81175\$ (December 2011 - December 2015)

Elizabeth Heise and Jude A. Benavides. Grant This research coordination network (RCN) – Climate, Energy, Environment and Engagement in Semiarid Regions (CE3SAR) NSF Federal (June 2011 - December 2013)

Jude A. Benavides and Gene J. Paull. Grant Cultural Landscape Inventory of the Fort Texas Siege Site The American Battlefield Protection Program / National Park Service Federal , 26000\$ (December 2009 - December 2011)

David W Hicks and Elizabeth Heise and Jude Benavides. Grant Infrastructure and Equipment Improvements for the South Padre Island Field Station NSF – FSML Federal , 135185\$ (December 2007 - December 2011)

Elizabeth Heise and Mary J. Shands and Jude A. Benavides. Grant JASON Project Bahia Grande Restoration Robert J. and Helen C. Kleberg Foundation Foundation , 193896\$ (December 2006 - December 2009)

Jude A. Benavides. Grant Status and Trends Analysis of Estuarine / Riparian Wetlands in the Southernmost Rio Grande Basin Texas State University and the USDA Federal , 34500\$ (December 2006 - December 2009)

Jude A. Benavides and Reynaldo Ramirez. Grant Exploring Energy and the Environment - Teacher Quality Grant Teacher Quality Grant Program - Texas Higher Education Coordinating Board State , 108306\$ (December 2007 - December 2008)

Elizabeth Heise and David Hicks and Jude A. Benavides. Grant System-level Monitoring of Restoration Efforts at Bahia Grande, Lower Laguna Madre, Texas EPA Gulf of Mexico Program Federal , 489774\$ (December 2006 - December 2008)

Elizabeth Heise and Carlos Cintra-Buenrostro and Jude A. Benavides. Grant Think Before You Throw Campus Recycling Program at UTB/TSC WalMart Foundation Foundation , 1000\$ (December 2006 - December 2007)

Elizabeth Heise and Jude A. Benavides. Grant Status and Trends Analysis of Estuarine/Riparian Wetlands in the Southern most Rio Grande Basin USDA Sustainable Agriculture Water Conservation in the Rio Grande Basin (SAWC) Federal , 57360\$ (December 2005 - December 2007)

Jude A. Benavides. Sponsored Research Collecting Bathymetric Data in Brownsville Resacas for Flood Damage Reduction Studies Utilizing Field-Based GIS UTB/TSC Center for Civic Engagement The University of Texas Rio Grande Valley , 2400\$ (December 2005 - December 2007)

Jude A. Benavides. Grant Collaborative Research on Concentrate Disposal from the Soutmost Regional Water Authority (SWRA) Desalination Plant Sub-contract NSF sponsored CREST-RESSACA (Center for Research Excellence in Science and Technology / Research on Environmental Sustainability of Semi-Arid Coastal Areas at Texas A&M Univ - Kingsville Federal , 15000\$ (April 2005 - August 2007)

Jude A. Benavides. Sponsored Research Mapping Native Plants on the UTB/TSC Campus Utilizing GPS and GIS UTB/TSC Center for Civic Engagement The University of Texas Rio Grande Valley , 1200\$ (July 2005 - August 2006)

Awards and Honors

Leadership

Principal for a Day, Morningside Elementary, Brownsville Ind School Dist. Brownsville Independent School District (February 2016)

Scholarship/Research

Selected Member to Basin Bay Expert Science Team for the Rio Grande and Lower Laguna Madre. State of Texas (June 2013)

Frances Rusteberg Faculty Fellowship . University of Texas at Brownsville (September 2012)

Frances Rusteberg Faculty Fellowship. Frances Rusteberg Fellowship (June 2012)

Faculty Exceptional Merit Award. UT Brownsville (September 2009)

Faculty Exceptional Merit Award. UT Brownsville (September 2007)

Appointment to Associate Editorial Board for the Journal of Hydrologic Engineering. American Society of Civil Engineering (July 2006)

Service, Community

Vice-Chair, Brownsville Community Improvement Corporation (BCIC). Brownsville Community Improvement Corporation (BCIC) (September 2014)

Board of Directors, Saint Joseph Academy. Saint Joseph Academy Catholic School (September 2013)

Texas Environmental Excellence Award. Texas Commission on Environmental Quality (TCEQ) Lead State Environmental Govt Agency - (April 2012)

Texas Environmental Excellence Award . Texas Commission on Environmental Quality (TCEQ) - State's Highest Environmental Agency (June 2008)

Service, Professional

Board Member, Valley Zoological Society (Gladys Porter Zoo). Gladys Porter Zoo / Valley Zoological Society (September 2012)

American Planning Association – Texas Chapter’s 2009 Comprehensive Planning Award. American Planning Association (August 2009)

Presentations

David Lecusay and Alejandro Fierro Cabo and Carlos E Cintra and Jude Benavides."A Multimetric Index of Ecosystem Health for Fluvial Tributaries & Deltaic Wetlands".The Gulf of Mexico Conference 2022, National Oceanic and Atmospheric Administration, Baton Rouge, LA.2022)

David Lecusay Jr. and Alejandro Fierro Cabo and Carlos E Cintra-Buenrostro and Jude Benavides."A multimetric index of ecosystem health for fluvial tributaries and deltaic wetlands".Gulf of Mexico Conference 2022, Baton Rouge, Louisiana. (April 27, 2022)

Jude Benavides."Groundwater and Surface Water Interactions: The case of the Colorado River Basin vs the Rio Bravo Basin".US - Mexico Transboundary Groundwater Conference - Innovation and Strategies for Unprecedented Challenges, Texas A&M University and Instituto Mexicano de Tecnologia del Agua, Online. (October 14, 2020)

Jude A. Benavides and Herman Ramsden and . "Hydrology in the Rio Grande Delta - Little Waterways with Big Jobs".Texas Master Naturalist - South Texas Border Chapter Spring Meeting, Texas Master Naturalist - South Texas Border Chapter, Pharr, Texas. (February 17, 2020)

Alvaro Garcia and Jude A. Benavides."Septic Systems and Their Risk of Contamination to Surrounding Water Bodies".UTRGV Coastal Studies Lab Winter Seminar Series, UTRGV Coastal Studies Lab, South Padre Island, Texas. (November2019)

Andrew Corder and Christopher A Gabler and Jude A. Benavides and Engil Pereira."Viability of wetland crops for use in treatment wetlands: nitrogen removal from water and production of food".UTRGV Graduate Student Research Showcase, UTRGV Graduate College, Edinburg, TX. (November 7, 2019)

Andrew Corder and Christopher A Gabler and Jude A. Benavides and Engil Pereira."Viability of wetland crops for use in treatment wetlands: nitrogen removal from water and production of food".UTRGV Graduate Student Research Showcase, UTRGV Graduate College, Edinburg, TX. (April 29, 2019)

Chu-Lin Cheng and Juan Luis Gonzalez and James JiHoon Kang and Carlos E Cintra and Jude Benavides and Elizabeth Heise and James Roscoe Hinthorne and Engil Isadora Pujol Pereira Mikita."Increasing Workforce Diversity through "Stimulating Hispanic Participation in the Geosciences" (SHIP-GEO) Program at Rio Grande Valley/South Texas".The Geological Society of America Annual Meeting, Geological Society of America (GSA), Indianapolis, IN. (November 5, 2018)

Herman Ramsden and Jude A Benavides."The Five Major Resaca Systems in Cameron County - A Characterization Effort"".20th Annual LRGV Water Quality Management and Planning Conference, UTRGV and the LRGV Stormwater Task Force, South Padre Island, Texas. (May 18, 2018)

Juan Luis Gonzalez and Chu-Lin Cheng and James JiHoon Kang and Carlos E Cintra and Jude Benavides and Elizabeth Heise and James Roscoe Hinthorne and Frank Joseph Dirrigl."Stimulating Hispanic Participation in the Geosciences (SHIP-GEO) at Rio Grande Valley in South Texas: Findings from Year One".The Geological Society of America Annual Meeting, Geological Society of America (GSA), Seattle, WA. (October2017)

Jose Garza and Mellory Grannum and Reed Smetter and Jude Benavides."Supporting a Watershed Characterization Study in the Lower Laguna Madre / Brownsville Ship Channel Watershed through Bacteria Monitoring of Brownsville Area Resacas and Ox-bows".UTRGV High Scholars Symposium, College of Science - UTRGV, UREC - Edinburg Campus of UTRGV. (August 4, 2017)

Jude Benavides and Jaime Flores."Update to the Lower Laguna Madre / Brownsville Ship Channel Watershed Characterization Effort".Lower Rio Grande Valley Storm Water Task Force / UTRGV Water Quality Management and Planning Conference, LRGV Stormwater Task Force / UTRGV, South Padre Island, Texas. (May 25, 2017)

Juan Castaneda and Joseph Estrada and Guadalupe Garcia and Jude Benavides."Water Quality Data Collection and Bacterial Analysis in Support of a Bacterial Source Tracking Effort for the Arroyo Colorado in South Texas".UTRGV College of Science First Annual Symposium, UTRGV . (March 31, 2017)

Jude Benavides."Hydrology and Environmental Engineering".Vertical Environmental Education Project at Quinta Mazatlan, City of McAllen - Quinta Mazatlan, Quinta Mazatlan, McAllen, Texas. (March 4, 2017)

Jude Benavides."Resacas in Cameron County and the Hydrography of the Rio Grande Valley".Texas Master Naturalist - Rio Grande Valley Chapter, Texas Master Naturalist, San Benito, Texas. (March 1, 2017)

Jude Benavides."Delineating Stream Flowlines and Watershed Boundaries in the LRGV using LIDAR-derived Digital Elevation Models".Rio Grande Valley Real-Time Flood Forecasting Workshop, Department of Civil Engineering -

UTRGV / LRGV Stormwater Task Force, Edinburg, Texas. (January 13, 2017)

Jude Benavides."Water Resources in the Lower Rio Grande Valley".Quinta Mazatlan Nature Speaker Series, City of McAllen - Quinta Mazatlan, McAllen, Texas. (January 5, 2017)

Elizabeth Heise and Chu-Lin Cheng and Juan Luis Gonzalez and James JiHoon Kang and E. and Jude Benavides and James Roscoe Hinthorne and Frank Joseph Dirrigl."Stimulating Hispanic participation in the Geosciences (SHIP-GEO) at Rio Grande Valley in South Texas".2016 Annual Meeting, Geological Society of America, Geological Society of America, Denver, CO. (September 25, 2016)

Jesus Lopez and Beatrice Berlanga and David Lecusay and Jude Benavides."Evaluating and Comparing Two Common Water Quality Bacteria Tests in Brownsville Area Resacas and Ox-bows".UTRGV High Scholars Symposium, College of Science - UTRGV, UREC - Edinburg Campus of UTRGV. (August 9, 2016)

Buford Lessley and Alejandro Fierro-Cabo and Jude Benavides."Assessing ecosystem health in restoring and unrestored resacas of the lower Rio Grande".20th Annual Meeting Society for Ecological Restoration Texas Chapter, Society for Ecological Restoration Texas Chapter, San Antonio, TX. (November 14, 2015)

Buford Lessley and Alejandro Fierro-Cabo and Jude Benavides."Resaca Rangers: a school-based network to monitor resaca ecosystem health".118th Annual Meeting Texas Academy of Science , Texas Academy of Science , San Antonio, TX. (March 6, 2015)

Linda A Rodriguez and Elizabeth Heise and Jude A. Benavides and Mara Contreras and Diana Del Angel and Jose M Aguilar and Andres Cardenas and Pavel Vakhlamov."Undergraduate Student Class And Independent Research Projects That Become Larger Scale Research Projects".Annual Meeting of the Geological Society of America, Geological Society of America, Denver.2010)

Jeff Wilson and Jude A. Benavides and Elizabeth Heise and Peyman Zavar-Reza."Regional dust transport associated with wetland depletion at Bahia Grande: impact on air quality".AAG 2009 Annual Meeting, Las Vegas, NV.2009)

Cantu-Graves R Jennifer and Kevin Earl and Tamara Young and Jude A. Benavides and Elizabeth Heise."Sediment Accumulation in Brownsville Resacas (Oxbow Lakes)".Geological Society of America Joint South-Central and North-Central Sections, Geological Society of America, Lawrence.2007)

Elizabeth Heise and Jude A. Benavides."Bahia Grande: A Community Driven Restoration Project".3rd National Conference on Estuarine and Habitat Restoration, Restore Americas Estuaries, New Orleans.2006)

Elizabeth Heise and Jude A. Benavides."Building an Environmental Sciences Program with a Strong Geosciences Component Along the US/Mexico Border".Annual Meeting of the Geological Society of America, Geological Society of America, Philadelphia.2006)

Elizabeth Heise and Jude A. Benavides and Carlos Cintra-Buenrostro."Teaching Environmental Science along the US/Mexico Border at the University of Texas at Brownsville".CREST-RESSACA, Monterrey, Mexico.2006)

Elizabeth Heise and William M. Berg and Jude A. Benavides."A Baseline Data Assessment for the Bahia Grande Wetland Restoration Project".CREST-RESSACA Modeling and Decision Support for Environmental Systems Meeting, CREST-RESSACA, San Antonio.2005)

Elizabeth Heise and Mary J. Shands and William M. Berg and Jude A. Benavides."A network of greenhouses for a mangrove reforestation project".CREST-RESSACA Modeling and Decision Support for Environmental Systems Meeting, CREST-RESSACA, San Antonio.2005)

Teaching

Teaching Experience

EEMS 6185, Graduate Research, 1 Course(s)

EEMS 6285, Graduate Research, 2 Course(s)

EEMS 6330, Hydrologic Systems, 3 Course(s)

EEMS 6350, Novel Ecosystems, 3 Course(s)

EEMS 6385, Graduate Research, 11 Course(s)

EEMS 6685, Graduate Research, 1 Course(s)

EEMS 7100, Continuing Thesis, 7 Course(s)

EEMS 7300, Thesis I, 5 Course(s)

EEMS 7301, Thesis II, 6 Course(s)

ENVR 1101, Environmental Science I Lab Laboratory I, 1 Course(s)

ENVR 1101, Introduction to Environmental Sciences Laboratory I, 2 Course(s)

ENVR 1102, Environmental Science Lab II, 3 Course(s)

ENVR 1102, Intro to Env Sci Lab II, 2 Course(s)

ENVR 1301, Environmental Science I, 3 Course(s)

ENVR 1301, Introduction to Environmental Science I, 2 Course(s)

ENVR 1302, Environmental Science II, 3 Course(s)

ENVR 1302, Environmental Science II II, 1 Course(s)

ENVR 1302, Intro to Env Sci II, 1 Course(s)

ENVR 1302, Intro to Environmental Sci II, 2 Course(s)

ENVR 1401, Environmental Science I, 2 Course(s)

ENVR 1401, Intro to Envr Sci I, 8 Course(s)

ENVR 1402, Environmental Science II, 3 Course(s)

ENVR 1402, Intro to Envr Sci II, 12 Course(s)

ENVR 4170, Topics in Envr Sci Lab, 1 Course(s)

ENVR 4301, Envr Regulations, 2 Course(s)

ENVR 4303, Envr Sci Res Proj, 8 Course(s)

ENVR 4304, Envr Sci Internship, 1 Course(s)

ENVR 4325, Environmental Science Internship, 1 Course(s)

ENVR 4370, Topics in Environmental Sciences, 1 Course(s)

ENVR 4370, Topics in Envr Sci, 1 Course(s)

ENVR 4399, Research Problems in Environmental Sciences, 6 Course(s)

ENVR 4399, Research Problems in Evn Sci, 2 Course(s)

GEOG 4440, Geographic Information Systems, 6 Course(s)

GEOG 5440, Geographic Information Systems, 5 Course(s)

GEOL 1101, Principles of Earth Sciences Laboratory, 1 Course(s)

GEOL 1301, Principles of Earth Science, 1 Course(s)

GEOL 3402, Hydrologic Systems, 8 Course(s)

GEOL 3408, Intro to GIS, 6 Course(s)

GEOL 3436, Hydrology and Water Resources, 3 Course(s)

GEOL 4370, Top in Geol: Indep Stud in GIS, 1 Course(s)

GEOL 4401, Adv GIS, 2 Course(s)

GEOL 4411, Intro to GIS, 14 Course(s)

GEOL 4412, Adv GIS, 2 Course(s)

GEOL 5401, Geographic Information Systems, 2 Course(s)

GEOL 5411, Introduction to G.I.S., 8 Course(s)

GEOL 5412, Advanced G.I.S., 2 Course(s)

Directed Student Learning

Master's Thesis Committee Chair, Bridgett Collis. TBD, School of Earth, Environmental, and Marine Sciences. (September 1, 2022)

Graduate Supervised Research, Brenda Bazan. Coastal Watershed Delineations for the Texas Gulf Coast and the Rio Grande River Delta , School of Earth, Environmental, and Marine Sciences. (September 1, 2020)

Master's Thesis Committee Chair, Sabas Lopez. Flow Monitoring and Tidal Exchange Ratio Estimation for the Bahia Grande after Widening of the Carl Joe Gayman Pilot Channel, School of Earth, Environmental, and Marine Sciences. (September 2020)

Graduate Supervised Research, Alvaro Garcia. A GIS-Based Model to Assess On-Site Sewage Facilities Contamination Risk to Local Water Resources, School of Earth, Environmental, and Marine Sciences. (January 15, 2020)

Graduate Supervised Research, Herman Ramsden. Sedimentation in Brownsville Area Resacas, School of Earth, Environmental, and Marine Sciences. (January 15, 2020)

Undergraduate Supervised Research, Alissa Salazar. Sodium Levels in LRGV Drinking Water, (January 15, 2020)

Graduate Supervised Research, Sabas Lopez. Monitoring and Analysis of Hydrologic Changes resulting from the Bahia Grande Ship Channel Widening, School of Earth, Environmental, and Marine Sciences. (September 1, 2020 - May 1, 2023)

Master's Thesis Committee Chair,Alvaro Garcia. A GIS-BASED MODEL TO ASSESS ON-SITE SEWAGE FACILITY (OSSF) CONTAMINATION RISK TO LOCAL WATER RESOURCES, School of Earth, Environmental, and Marine Sciences. (August 28, 2019 - December 1, 2021)

Master's Thesis Committee Member,Leslie Soto-Sanchez. Managing Water Resource and Land Use in Lower Rio Grande Valley of South Texas Border Using a Groundwater Vulnerability Model., Department of Civil Engineering. (September 2019 - November 2021)

Master's Thesis Committee Member,David Lecusay. Assessment and monitoring of deltaic wetlands: refining and validating a multimetric index of ecosystem health, School of Earth, Environmental, and Marine Sciences. (September 2019 - August 2021)

Master's Thesis Committee Member,Wes Franklin. An Assessment of Microplastic Pollution in the Resacas of the Lower Rio Grande Valley, Texas, School of Earth, Environmental, and Marine Sciences. (August 2019 - May 2021)

Undergraduate Supervised Research,Andrew Martinez. LRGV Water Rights and Resaca Preservation, (January 15, 2020 - May 5, 2020)

Undergraduate Supervised Research,Cecilia Garza Cervantes. Interactions Between Brackish Groundwater Resources and Surface Water in Brownsville Urban Waterways - A Site Selection Study, School of Earth, Environmental, and Marine Sciences. (January 15, 2020 - May 5, 2020)

Undergraduate Supervised Research,Bridgett Collis. Watershed Delineation for Stormsewer Networks for Two Brownsville, Texas Resacas, School of Earth, Environmental, and Marine Sciences. (August 25, 2019 - December 5, 2019)

Undergraduate Supervised Research,Sabas Lopez III. Measuring Flow Velocities at the Bahia Grande Inlet Channel During High and Low Tides, School of Earth, Environmental, and Marine Sciences. (August 25, 2019 - December 5, 2019)

Master's Thesis Committee Member,Andrew Corder. Viability of Wetland Crops for Use in Treatment Wetlands: Nitrogen Removal from Water and Production of Food, School of Earth, Environmental, and Marine Sciences. (September 1, 2017 - November 20, 2019)

Master's Thesis Committee Member,Sarah Nash. EFFECTS OF GLOBAL WARMING ON GONADAL FUNCTIONS, CELLULAR APOPTOSIS, AND OXIDATIVE STRESS IN THE AMERICAN OYSTER (CRASSOSTREA VIRGINICA), School of Earth, Environmental, and Marine Sciences. (September 01, 2017 - May 31, 2019)

Internship Advisor,Jose Garza (College of Sciences - High Scholars Program Summer Research Intern). Supporting a Watershed Characterization Study in the Lower Laguna Madre / Brownsville Ship Channel Watershed through GIS Analysis and Bacteria Monitoring of Brownsville Area Resacas and Oxbows, School of Earth, Environmental, and Marine Sciences. (June 05, 2017 - August 04, 2017)

Internship Advisor,Mellory Grannum. Supporting a Watershed Characterization Study in the Lower Laguna Madre / Brownsville Ship Channel Watershed through GIS Analysis and Bacteria Monitoring of Brownsville Area Resacas and Oxbows, School of Earth, Environmental, and Marine Sciences. (June 05, 2017 - August 04, 2017)

Undergraduate Supervised Research,Joseph Estrada. Water Quality Sampling of Resaca de la Guerra and Resaca del Rancho Viejo in the BRWC watershed, School of Earth, Environmental, and Marine Sciences. (January 15, 2017 - May 09, 2017)

Undergraduate Supervised Research,Juan Castaneda. Water Quality Sampling of Town Resaca in the BRWC watershed, School of Earth, Environmental, and Marine Sciences. (January 15, 2017 - May 9, 2017)

Undergraduate Supervised Research,LEslie Soto Sanchez. Delineation of Wetlands within the Brownsville / Resaca / Lower Laguna Madre Watershed, School of Earth, Environmental, and Marine Sciences. (September 01, 2016 - December 5, 2016)

Undergraduate Supervised Research,Lucas Gomez. Delineation of Flood-prone areas in the Town Resaca Subwatershed Using GIS, School of Earth, Environmental, and Marine Sciences. (September 01, 2016 - December 5, 2016)

Undergraduate Supervised Research,Mariela Zavala. Analysis of Historical Water Quality Data in the Lower Laguna Madre and Brownsville Ship Channel in SWQMIS, School of Earth, Environmental, and Marine Sciences. (September 01, 2016 - December 05, 2016)

Undergraduate Supervised Research,Martin Reyes. Delineation of Subwatersheds and Subbasins in the BRWC Watershed, School of Earth, Environmental, and Marine Sciences. (September 01, 2016 - December 5, 2016)

Undergraduate Supervised Research,Myrna Leal. Delineation of Subwatersheds and Subbasins in the Brownsville / Resaca / Lower Laguna Madre Watershed , School of Earth, Environmental, and Marine Sciences. (September 01, 2016 - December 5, 2016)

Master's Thesis Committee Member,Buford Lessley. Developing a Multimetric Index to Assess Resaca Ecosystem Health, Biological Sciences (UTB). (September 01, 2014 - December 01, 2016)

Internship Advisor, Beatrice Berlanga (COS - High Scholars High School Summer Research Intern). Using Coliscan Easygel to Test Bacteria in Brownsville Area Resacas, (June 15, 2016 - August 06, 2016)

Internship Advisor, Jesus Lopez (COS High Scholars Program - High School Summer Intern). Bacteria Monitoring of Brownsville Area Resacas - Colilert Testing of Bacteria Levels, Other (within UTRGV). (June 15, 2016 - August 06, 2016)

Master's Thesis Committee Member, Leah McIntosh. Resaca ecosystem development: colonization and succession of the macroinvertebrate community, Biological Sciences (UTB). (September 01, 2012 - November 2014)

Service

Department Service

Committee Member, SEEMS IDC Committee (September 01, 2018)

Committee Member, Ph.D. Planning for Marine Environmental Science (September 01, 2016)

Committee Chair, Annual Review Committee (September 1, 2022 - August 31, 2023)

Committee Chair, Annual Review Committee (September 1, 2021 - August 31, 2022)

Committee Chair, Annual Review Committee (September 1, 2020 - August 31, 2021)

Committee Member, Faculty Search Committee (3 positions) (September 1, 2020 - August 31, 2021)

Committee Member, Environmental Science Program / Curriculum Committee (September 01, 2018 - August 31, 2019)

Committee Member, Faculty Search Committee (September 2018 - August 2019)

Committee Member, Departmental Graduate Curriculum Committee (September 01, 2012 - September 01, 2015)

Committee Member, Departmental Undergraduate Curriculum Committee (September 01, 2011 - September 01, 2015)

Committee Member, Departmental Personnel Committee (September 01, 2011 - August 31, 2013)

College Service

Committee Member, College of Science Promotion and Tenure Committee (September 1, 2022 - August 31, 2023)

Committee Member, STARS Faculty hiring / personnnel committee (September 01, 2013 - August 31, 2014)

University Service

Committee Member, UTRGV Transition Committee - Research Committee (September 01, 2013 - August 31, 2014)

Committee Co-Chair, UTRGV Transition Committee - Transdisciplinary Committee (September 01, 2013 - August 31, 2014)

Faculty Senate, University Faculty / Academic Senate representative for the College of Science, Mathematics, and Technology at UTB (September 01, 2011 - August 31, 2014)

Professional Service

Reviewer, Journal Article, Journal of Irrigation and Drainage Engineering. Reston, VA (September 01, 2009)

Editor, Associate Editor, Texas Water Journal. College Station, Texas (September 1, 2019 - August 31, 2025)

Editor, Associate Editor, Journal of Hydrologic Engineering, American Socieity of Civil Engineering . Reston, VA (July 01, 2006 - August 31, 2009)

Professional Memberships

American Association for the Advancement of Science, (AAAS) (2010)

American Water Resources Association, (AWRA) (2008)

American Meteorological Society, (AMS) (2007)

American Society of Civil Engineers, (ASCE) (2006)

Public Service

Other, Lower Laguna Madre / Brownsville Ship Channel Watershed Partnership. Brownsville, Texas (September 01, 2014)

Board Member, Arroyo Colorado Conservancy (501c3) . Weslaco, Texas (September 01, 2012)

Board Member, Valley Zoological Society (Gladys Porter Zoo). Brownsville, Texas (September 01, 2012)

Chairperson, Arroyo Colorado Watershed Partnership. Weslaco, Texas (September 01, 2006)

Board Member, Brownsville Public Utilities Board. Brownsville, TEXAS (July 01, 2019 - June 30, 2023)

Other, Saint Joseph Academy Endowment Board of Trustees. Brownsville, TEXAS (June 01, 2017 - May 30, 2021)

Officer, Vice President, Brownsville Community Improvement Corporations. Brownsville, Texas (October 01, 2011 - September 30, 2014)

Board Member, Saint Joseph Academy Catholic School. Brownsville, Texas (September 01, 2008 - August 31, 2014)