JEFFREY T. HUTCHINSON

Associate Professor

University of Texas at San Antonio, College of Science, Department of Integrative Biology, One UTSA Circle, San Antonio, TX 78249, USA

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Education:

Ph.D., 2010	University of Florida, Agronomy Department, Center for Aquatic and Invasive Plants (Weed Science) *Dissertation title*: Physiological characteristics of herbicides and management of Old World climbing fern (*Lygodium microphyllum*).
M.S., 1998	University of Kentucky, Forestry Department (Wildlife Ecology) *Thesis title*: Summer roost site selection of red bats in mixed mesophytic forests.
B.S., 1994	University of Florida, Forest Resources and Conservation (Wildlife Ecology; Minor - Forestry).
A.S., 1992	Central Florida Community College (Biology)

Experience:

2022-present	University of Texas at San Antonio, ***Associate Professor***, Department of Integrative Biology, San Antonio, TX.
2016-2022	University of Texas at San Antonio, ***Assistant Professor***, Department of Environmental Science and Ecology, San Antonio, TX.
2012-2016	United States Fish and Wildlife Service, ***Aquatic Botanist*** (GS-12), San Marcos Aquatic Resources Center, San Marcos, TX.
2010-2012	University of Florida, ***Post-Doctoral Research Associate***, Center for Aquatic Invasive Plants, Gainesville, FL.
2004-2010	University of Florida, ***Ph.D. Graduate Research Assistant***, Center for Aquatic and Invasive Plants, Gainesville, FL.
2002-2004	Archbold Biological Station, Lake Placid, FL., ***Land Manager***
1999-2002	Florida Park Service, Hobe Sound, FL. **District Biologist**
1998	Applied Science Corporation, Lexington, KY. ***Consultant***
1996-1998	University of Kentucky, Department of Forestry, ***M.S. Graduate Research Assistant***, Lexington, KY.
1992-1996	Florida Fish and Wildlife Conservation Commission, ***OPS Technician*** (seasonal), Ocala, FL.
1991	Florida Fish and Wildlife Conservation Commission, ***Student Intern***, Ocala, FL.
1984-1990	United States Marine Corps, ***Electrical Technician***, Kaneohe Bay, HI.

Publications:

Hutchinson, J.T., Saenz, A., Kapoor, V., Dessouky, S. *In press*. Vegetation composition and carbon sequestration along right-of-ways on Interstate Highway 35 in Bexar County, Texas. Journal of Environmental Sciences. Https://doi.org/10.1016/j.jes.2024.07.002.

Jafarzadeh, A., Matta, A., Moghadam, S.V., Vadde, K.K., Dessouky, S., Hutchinson, J.T., Kapoor, V. 2024. Assessing the removal of heavy metals and polycyclic aromatic hydrocarbons and occurrence of metal resistance genes and antibiotic resistance genes in a stormwater bioretention system. Chemosphere 364(143043). Https://doi.org/10.1016/j.chemosphere.2024.143043).

Toder, A., Hutchinson, J.T. 2024. A comparison of benthic invertebrates between ephemeral and permanent pools along upper Leon Creek in San Antonio, Texas. Wetlands Ecology and Management. Https:/doi.org/10.1007/s11273-024-00006-3.

Maroti, A., Hutchinson, J.T. 2024. Evaluating the suppression of *Hydrilla verticillata* by manual removal and planting an endangered and common native aquatic plant for small-scale restoration efforts in a spring-fed river. Knowledge and Management of Aquatic Ecosystems 425:4. Https://doi.org/10.1051/kmae/2024001.

Hutchinson, J.T. 2023. Comparison of vegetation in an ephemeral stream and pools in subtropical subhumid Central Texas. River Research and Applications Https://doi.org/10.1002/rra.4226 .

Moghadam, S.V., Jafarzadeh, A., Matta, A., Dessouky, S., Hutchinson, J., Kapoor, V. 2023. Water quality performance assessment reveals stormwater detention basins as potential sources of nitrate in the Edwards Aquifer. Chemosphere 339: 139772. Https://doi.org/10.1016/j.chemosphere.2023.139772.

Moghadam, S.V., Jafarzadeh, A., Vadde, K.K., Matta, A., Dessouky, S., Hutchinson, J., Kapoor, V. 2023. Composition of soil bacterial communities associated with urban stormwater detention basins and their predicted functional roles in N cycle. Journal of Applied Microbiology 134:1-13. Https:/Doi.org/10.1093/jambio/lxad163.

Moghadam, S. V., Jafarzadeh, A., Matta, A., Dessouky, S., Hutchinson, J., Kapoor, V. 2023. Evaluation of nitrogen removal, functional gene abundance and microbial community structure in a stormwater detention basin. Journal of Environmental Management 325: 116669. Https://doi.org/10.1016/j.jenvman.2022.116669

Poole, J., Hutchinson, J.T., Hathcock, C.R., Han, D. 2022. A thirty-year assessment of the endangered aquatic macrophyte, *Zizania texana*, endemic to the upper reach of a single river in Central Texas, USA. Aquatic Botany: 103482.

Hutchinson, J.T. 2021. Interactions between *Hygrophila polysperma* and *Ludwigia repens* grown in saturated soils and shallow water under *ex situ* conditions. Fundamental and Applied Limnology 195: 187-198.

Bohn , K., Brundu, G., Chapman, D., Dancza, I., Frohlich, D., Hutchinson, J., Miller, S., Van Valkenburg, J., Tanner, R.. 2019. *Lygodium japonicum* (Thunb.) Sw. Bulletin OEPP/EPPO 49:261-266.

Guillaume, F., Bohn, K. Brundu, G., Dancza, I., Chapman, D., Hutchinson, J., Miller, S.,

Van Valkenburg, J., Tanner, R. 2019. *Humulus scandens* (Lour.) Merr. Bulletin OEPP/EPPO 49:267-272.

Hutchinson, J.T. 2019. *Ex situ* phenology of *Zizania texana*, an endangered aquatic macrophyte, under different water velocities. Aquatic Botany 153:88-94.

Gorton, S., Hutchinson, J. 2019. Summer acoustic monitoring of bat activity in Cibolo Preserve. Texas Journal of Science 71: https://doi.org/10.32011/txjsci_71_1_Note1.

Hutchinson, J.T. 2017. Propagation protocol for the endangered aquatic plant – Texas wildrice (*Zizania texana* Hitchc.). Native Plant Journal 18:77-85.

Hutchinson, J.T., Ostrand, K.G. 2017. Evaluation of copper on Texas wild rice, creeping primrose-willow and water star-grass. Journal of Aquatic Plant Management 55:113-115.

Hutchinson, J.T. 2017. Germination of fresh and stored Texas wild rice seeds, an endangered aquatic macrophyte. Journal of Aquatic Plant Management 55:108-112.

Wilson, W., Hutchinson, J.T., Ostrand, K.G. 2017. Genetic diversity assessment of wild and refugia Texas wild rice (*Zizania texana*) populations, an endangered plant. Aquatic Botany 136:212-219.

Hutchinson, J.T., Ostrand, K.G. 2015. Texas wildrice (*Zizania texana* Hitchc.) propagule production and survival in outdoor ponds as influenced by water depth and velocity. Native Plants Journal 16:234-241.

Hutchinson, J.T., Huston, D.C., Gibson, J.R. 2015. Defoliation of cultured creeping primrose willow (*Ludwigia repens*) and other aquatic plants by *Paraponyx obsculralis* (Lepidoptera: Crambidae). Southwestern Entomologist 40:227-232.

Hutchinson, J.T., Langeland, K.A. 2015. Response of Old World climbing fern and native vegetation to repeated ground herbicide treatments. Journal of Aquatic Plant Management 53:14-21.

Huston, D.C., Araujo, D., Gibson, J.R., Hutchinson, J.T.. 2014. *Epicauta polingi* (Coleoptera: Meloidae) feeding on mountain laurel (*Sophora secundiflora*) and guajillo (*Acacia berlandieri*) in West Texas. Southwestern Entomologist 39:887-890.

Hutchinson, J.T., Langeland, K.A. 2014. Tolerance of *Lygodium microphyllum* and *L. japonicum* spores and gametophytes to freezing temperatures. Invasive Plant Science and Management 7:328-335.

Hutchinson, J.T., Shaw, R.B. 2013. Range expansion of *Panicum repens* (Poaceae) into central Texas may threaten endangered species. Journal of the Botanical Research Institute of Texas 7:901-904.

Hutchinson, J.T., Langeland, K.A. 2013. Susceptibility of Old World climbing fern (*Lygodium microphyllum*) gametophytes to metsulfuron. Invasive Plant Science and Management 6:304-309.

Hutchinson, J.T., Langeland, K.A. 2012. Repeated herbicide application for control of Old World climbing fern and the effects on non-target vegetation on Everglade tree islands. Invasive Plant Science and Management 5:477-486.

Hutchinson, J.T., Puri, A., Royuela, M., Langeland, K.A. 2012. Biochemical assay on acetolactate synthase activity in *Lygodium microphyllum* exposed to metsulfuron. Florida Scientist 75:105-112.

Hutchinson, J.T., Langeland, K.A. 2011. Tolerance of Old World climbing fern (*Lygodium microphyllum*) spores to herbicides. Invasive Plant Science and Management 4:411-418.

Hutchinson, J.T., Gandy, E.A., Langeland, K.A. 2011. Herbicide management of umbrella dracaena [*Dianella ensifolia* (L.) DC.] in a Florida State Park. Invasive Plant Science and Management 4:349-355.

Hutchinson, J.T., Langeland, K.A., Meisenburg, M. 2011. Field trials for herbicide control of *Ardisia crenata* in natural areas of north-central Florida. Invasive Plant Science and Management 4:234-238.

Hutchinson, J.T., Langeland, K.A. 2010. Monitoring of applied management techniques to control Old World climbing fern (*Lygodium microphyllum*) in disturbed habitat. Florida Scientist 73:262-273.

Hutchinson, J.T., Langeland, K.A. 2010. Review of two non-native, invasive climbing ferns (*Lygodium japonicum* and *L. microphyllum*), sympatric records and additional distribution records from Florida. American Fern Journal 100:57-66.

Hutchinson, J.T., Langeland, K.A. 2010. Evaluation of aerial herbicide application for reduction of woody vegetation in a floodplain marsh. Journal of Aquatic Plant Management 48:40-46.

Hutchinson, J.T., Langeland, K.A., MacDonald, G.E., Querns, R. 2010. Absorption and translocation of glyphosate, metsulfuron methyl, and triclopyr in Old World climbing fern (*Lygodium microphyllum*). Weed Science 58:118-125.

Hutchinson, J.T., Roberts, R.E. 2009. Plow line disturbance from wildfire suppression in two Florida state parks. Fire Management Today 69:32-37.

Hutchinson, J.T., Langeland, K.A. 2008. Response of selected nontarget native Florida wetland plant species to metsulfuron methyl. Journal of Aquatic Plant Management 46:72-76.

Hutchinson, J.T., MacDonald, G.E., Langeland, K.A. 2007. The potential for herbicide resistance in non-native plants in Florida's natural areas. Natural Areas Journal 27:258-263.

Hutchinson, J.T., Langeland, K.A. 2006. Survey of control measures on Old World climbing fern (*Lygodium microphyllum*) in southern Florida. Florida Scientist 69: 217-223.

Hutchinson, J.T. 2006. Bats of Archbold Biological Station and notes on some roost sites. Florida Field Naturalist 34:48-51.

Hutchinson, J.T., Menges. E.S. 2006. Evaluation of the invasiveness of non-native plants at Archbold Biological Station, Florida. Florida Scientist 69:62-69.

Hutchinson, J., Ferriter, A., Serbesoff-King, K., Langeland, K. (eds.). 2005. Old World Climbing Fern (*Lygodium microphyllum*) Management Plan for Florida, 2nd Edition. Florida Exotic Pest Plant Council, Lygodium Task Force. 176 pp.

Hutchinson, J.T. 2004. Bats of the sub-tropical climate of Martin and St. Lucie Counties, southeast Florida. Florida Scientist 67:205-215.

Hutchinson, J.T., Meisenburg, M. 2004. Two winter roost sites of Lasiurines in north-central Florida. Bat Research News 45:90-91.

Hutchinson, J.T., Pazara, P. 2004. Field observations on the endangered fragrant prickly-apple cactus (*Harrisia fragrans*). Haseltonia 10:12-15.

Hutchinson, J.T. 2003. Cursory assessment of bat activity in state parks of coastal southeast Florida. Bat Research News 44:50-53.

Hutchinson, J.T., Roberts, R.E.. 2001. Notes on the eastern pipistrelle in southeast Florida. Florida Field Naturalist 29:54-55.

Hutchinson, J.T., Lacki, M.J. 2001. Possible microclimate benefits of roost site selection in the red bat, *Lasiurus borealis*, in mixed mesophytic forests of Kentucky. Canadian Field-Naturalist 115:9-13.

Hutchinson, J.T. 2001. Observations on the use of coastal scrub habitat use by evening bats (*Nycticeius humeralis*) in Martin County, Florida. Bat Research News 42: 44-46.

Hutchinson, J.T., Hutchinson, T. 2000. Observation of a melanistic bobcat in the Ocala National Forest. Florida Field Naturalist 28:25-26.

Hutchinson, J.T., Lacki, M.J. 2000. Selection of day roosts by red bats in mixed mesophytic forests in eastern Kentucky. Journal of Wildlife Management 64:87-94.

Hutchinson, J.T., Lacki, M.J. 2000. Roosting behavior and foraging activity of a female red bat with nonvolant young. Bat Research News 41:36-38.

Hutchinson, J.T., Lacki, M.J. 1999. Foraging behavior and habitat use of red bats in mixed mesophytic forest of the Cumberland Plateau, Kentucky. Pages 171-177 i*n* J.W. Stringer and D. L. Loftis, editors. 12th Central Hardwood Forest Conference, U. S. Forest Service, Southern Experiment Station, Asheville, N.C.

Lacki, M.J., Hutchinson, J.T. 1999. Communities of bats (Chiroptera) in the Grayson Lake region, northeastern Kentucky. Journal of the Kentucky Academy of Science 60:9-14.

Hutchinson, J.T., Lacki, M.J. 1998. Possible gleaning behavior in *Lasiurus borealis*. Bat Research News 39:144.

Ash-Steen, S.J., Barnes, T.G., Hutchinson, J.T., Larkin, J.L., Washburn, B.E., Weese, J.L., Yacek Jr, H.F. 1997. Characteristics of gray squirrel release sites selected by Kentucky nuisance control operators. Proceedings of the 8th Eastern Wildlife Damage Control Conference 8:120-125.

Manuscript in Review:

Jafarzadeh, A., Matta, A., Moghadam, S.V., Vadde, K.K., Dessouky, S., Hutchinson, J., Kapoor, V. *In review*. Removal of heavy metals and polycyclic aromatic hydrocarbons and co-occurrence of metal resistance genes and antibiotic resistance genes in a stormwater bioretention system. Journal of Hazardous Material.

Jafarzadeh, A., Matta, A., Moghadam, S.V., Dessouky, S., Hutchinson, J., & Kapoor, V. *In review*. Evaluation of stormwater runoff pollutant distributions combined with land-use information in a regional karst aquifer in Texas, USA. Environmental Monitoring and Assessment.

Felton, A., Farner, S., Fernandez, S.E., Hutchinson, J. *In review*. Spatial-temporal characterization of microplastics in the surface water of an urban intermittent river and ephemeral stream (IRES) watershed. Environmental Pollution.

Jafarzadeh, A., Clearwater, T., Moghadam, S.V., Matta, A., Hutchinson, J.T., Kapoor, V., Dessouky, S. *In review*. Distribution of metals in spontaneous plants and soils from swales and detention basins along roadways in the Edwards Aquifer recharge zone of Central Texas. Environmental Science and Pollution Research.

Manuscripts in Preparation:

Kent, J., Hutchinson, J.T., Kapoor, V., Matta, A., Dessouky, S. Oil and grease concentrations from roadway runoff in sediment from swales and detention basins within the Edwards Aquifer recharge zone

Polanco-Ramos, A.B., Hutchinson J.T. Analysis of heavy metals in influent and effluent in three wastewater treatment plants in San Antonio from 2010-2021.

Hutchinson, J., Gardner, S., Saenz A. Establishment of native vegetation on bare soil following dredging of torpedograss (*Panicum repens*) above a run-of-river dam in a Central Texas spring run.

Kampman, K., Velasquez, A., Hutchinson, J.T. Forest structure and composition of diurnal roost sites used by porcupines in the upper section of Leon Creek Greenway.

Hutchinson, J.T., Counts, T., Kent, J., Kapoor, V., Dessouky, S. Vegetation dynamics in highway detention ponds and swales in Central Texas.

Non-Peer-Reviewed Publications:

Hutchinson, J.T., Kapoor, V., Dessouky, S. 2023. Evaluation of the vegetation along roadways in the Edwards Aquifer recharge and contributing zones for stormwater management and water quality improvement. Final Report: submitted to the City of San Antonio.

Hutchinson, J., Turner, R., Myers, R., Nisbet, M., Linam, G., Donovan, S. 2022. Assessing the Fishery and Economic Value of a Restored Guadalupe Bass Population. TPWD Final Report: Texas State Wildlife Grant Program TX T-232-R1, F21AF01407-00.

Hutchinson, J.T., Maroti, A. 2021. Evaluating the suppression of *Hydrilla verticillata* by manual removal and planting native aquatic plants. TPWD Final Report: Contract #529515. Available at: https://tpwd.texas.gov/landwater/water/aquatic-invasives/media/Hutchinson-Hydrilla-Control-Methods-FinalReport-Jan%202022.pdf

Kapoor, V., Hutchinson, J., Dessouky, S. 2019. Evaluation and enhancement of carbon sequestration potential of existing vegetation along roadsides. Tran-SET Final Report No. 18HSTSA01. Available at: https://digital commons.lsu.edu/ transet_pubs/41.

Rangel, L., Kapoor, V., Hutchinson, J.T., Dessouky, S. 2019. Carbon sequestration of soil and plants along IH-35 in Bexar County, Texas. Proceedings 2019 Transportation Consortium of South-Central States Conference. San Antonio, Texas.

Gorton, S., Hutchinson, J.T. 2018. Summer acoustic monitoring of bats at the Cibolo Preserve. UTSA Journal of Undergraduate and Scholarly Works. http://research .utsa.edu/UG_Journal/files/vol3/JURSW.Gorton2.pdf.

Bohn, K., Brundu, G., Chapman, D., Dancza, I., Frohlich, D. Hutchinson, J., Miller, S., Van Valkenburg, J., Tanner, R. 2018. Pest risk analysis for *Lygodium japonicum* (Thunb.) Sw. European and Mediterranean Plant Protection Organization, Paris, FR. Available at: http://www.iap-risk.eu/media/files /pra_exp_LYFJA.pdf.

Guillaume, F., Bohn, K., Brundu, G., Dancza, I., Chapman, D., Hutchinson, J., Miller, S., Van Valkenburg, J., Tanner, R. 2018. Pest risk analysis for *Humulus scandens* (Lour.) Merr. European and Mediterranean Plant Protection Organization. Paris, FR. Available at: https://pra.eppo.int/organism/

Hutchinson, J.T, Foote, J. 2017. Seasonal distributional patterns of aquatic macrophytes in the San Marcos and Comal Rivers over a sixteen year period. Final Report: Edwards Aquifer Authority Proposal No. 156-16-HCP. Available at: https://www.edwardsaquifer. org/wp-content/uploads/2019/11/Attachment-2_Distributional-Patterns-of-Aquatic-Macrophytes-in-the-San-Marcos-and-Comal-Rivers-from-2000-to-2015.pdf.

Zerrenner, A., Hutchinson, J., Brandt, T. 2016. Texas wild rice firmly rooted on path to recovery. Endangered Species Bulletin Spring 2016. Available at: https://www.fws.gov/endangered/news/episodes/bu-spring2016/story5/index.html

Langeland, K.A., Enloe, S.F., Hutchinson, J. 2016. Natural Area Weeds: Old World Climbing Fern (*Lygodium microphyllum*). IFAS Extension Publication SS-AGR-21 (revised). University of Florida, Gainesville.

Hutchinson J.T., Williams, C. 2013. *Hygrophila corymbosa,* a "rare" invasive plant from San Felipe Springs, Del Rio, Texas. Aquatics (Summer 2013):14-18.

Rawlins, K.A., Langeland, K., Hutchinson, J. 2012. Lygodium Species Comparison Flyer. The University of Georgia, Center for Invasive Species and Ecosystem Health. Available online: http://plants.ifas.ufl.edu/misc/pdfs/Lygodium-comparison.pdf.

Jacono, C.C., Langeland, K.A., Hutchinson, J.T. 2011. Wright's nutrush: an invader of seasonal wetlands in Florida. IFAS Extension Publication SS-AGR-342. University of Florida, Gainesville.

Hutchinson, J.T. 2009. The 12th European Weed Research Society International Symposium on Aquatic Weeds - an American perspective. Aquaphyte 29:14.

Gandy, E.A., Hutchinson, J.T., Langeland, K.A. 2009. Cerulean flaxlily - an

invasive plant in Highlands Hammock State Park. Wildland Weeds 12:10-15.
Hutchinson, J.T. 2008. 5th International Weed Science Congress – Vancouver, BC, Canada: its relevance to natural areas. Wildland Weeds 11:9.
Hutchinson, J.T. 2007. Book review - Bats of Florida, by Cynthia Marks and George Marks. The Quarterly Review of Biology 82:161-162.
Hutchinson, J.T. 2006. Additional report of *Lygodium microphyllum* mats as a potential problem for wildlife. Wildland Weeds 10: 7.
Hutchinson, J.T., Langeland, K.A. 2006. Potential spread of *Lygodium microphyllum* spores by herbicide applicators. Wildland Weeds 9:13-15.
Hutchinson, J.T. 2005. Flame vine (*Pyrostegia venusta*): An invasive plant of mature scrub habitat and potentially other habitats in Florida. Wildland Weeds 8:7-11.
Langeland, K.A., Hutchinson, J.T. 2005. Natural Area Weeds: Old World Climbing Fern (*Lygodium microphyllum*). IFAS Extension Publication SS-AGR-21. University of Florida, Gainesville.
Hutchinson, J., Langeland, K., Ferriter, A. 2004. Notes from the *Lygodium* Research Review Meeting. Wildland Weeds 7(4):6-9.
Hutchinson, J.T. 2004. Invasive plant education at Archbold Biological Station. Wildland Weeds 7(2):18-19.
Hutchinson, J.T., Menges, E.S., Pickert, R.L., Swain, H.M. 2003. Fire management at Archbold Biological Station: burning to promote heterogeneity, conservation, research, and education. Proceedings from the Second International Wildland Fire Ecology and Fire Management Congress. Orlando, FL.
Hutchinson, J.T. 2003. Invasive Plants of Archbold Biological Station and Highlands County. Land Management Program, Archbold Biological Station.
Hutchinson, J.T., Roberts, R.E. 2001. Effects of Hurricane Irene on mature sand pine scrub in Southeast Florida. Pages 44-45 in D. P. Zattau, editor. Proceedings of the Florida Scrub Symposium 2001. U.S. Fish and Wildlife Service, Jacksonville, FL. July 2001.
Hutchinson, J.T. 2001. Natural resource management using ArcView 3.2 by the Florida Division of Recreation and Parks in southeast Florida. ArcNews 23:28-29.
Hutchinson, J.T. 2001. Scrub restoration and fuel reduction at Seabranch Preserve State Park, Martin County, Florida. Saving Our Scrub 2:3-5.
Hutchinson, J.T. 2001. Savannas Preserve State Park timber salvage project. Savannas Echoes Summer: 2001.

Teaching Experience:

Endangered Species Practicum (ES 4953/6973 - 3 hours) University of Texas at San Antonio - Fall 2024 [New course development in association with the U.S, Fish and Wildlife Service]
Graduate Studies in Environmental Science (ES 5011 - 1 hour), University of Texas at San Antonio - Fall 2023
Process and Ethics in Thesis Development (CE 5001 - 1 hour), University of Texas at San Antonio - Spring 2022 and 2023

Water Pollution Control (ES 4173/5493 - 3 hours), University of Texas at San Antonio - Spring 2018 (ES 5493), 2020, 2022, & 2024 (ES 4173/5493)
Aquatic Ecology (ES 4023/5513 - 3 hours), University of Texas at San Antonio - Fall 2017-2024
Natural Resource Policy and Administration (ES 4133 - 3 hours), University of Texas at San Antonio - Spring 2017-2024
Graduate Student Seminar (ES 5981 - 1 hour), University of Texas at San Antonio - Spring 2017-2021
Graduate Student Colloquium (ES 6941 - 1 hour), University of Texas at San Antonio - Fall 2016-2020, 2023
Invited Lecturer, Technical Writing (ES 5143), University of Texas at San Antonio - Fall 2016-2019
Invited Lecturer, Conservation Biology (ES 4213), University of Texas at San Antonio - Fall 2018-2019 and 2022
Invited Lecturer, Global Change (CE 6383), University of Texas at San Antonio - Spring 2020
Invited Lecturer, Aquatic Biology, Texas State University - 2015
Instructor, Aquatic Weed Management Certification, University of Florida Extension Program - 2010-2012
Invited Lecturer, Biological Invaders, University of Florida - 2010
Instructor, Natural Areas Weed Management Certification, University of Florida's Extension Program - 2005-2012
Lab Instructor and Teaching Assistant, Forest Wildlife Management, University of Kentucky - 1997

Grants:

Investigate the uptake of PFAS in aquatic and riparian plants from perennial and intermittent streams in South Central Texas (2024). CoPI with Yongli Gao and Wendell Griffith. Source: UTSA T2 Grants. Amount Received: $25,000.
Analysis of the antimicrobial properties of seven Central Texas algae (2024). CoPI with Donna Dugan and Nickolas Clanton. Source: HHMI-UTSA STEM Education & Student Success Faculty Collaboration mini-grant. Amount: $4,000.
Course Development - Endangered Species Practicum (ES 4953/6973)(2024). CoPI with Andre Felton. Source: U.S. Fish and Wildlife Service. Amount Received: $40,000.
#Eco-JEDI: Building a city-wide collaboration to facilitate career readiness in FAS through science literacy and counter storytelling (2022). CoPI with Briana Salas, Laura Perry, Vikram Kapoor, Sue Hum, Jamie Crosswhite, and Gwen Young. Source: United States Department of Agriculture. Amount Received: $998,964.
Assessing the fishery and economic value of a restored Guadalupe bass population - CoPI with Gordon Linam, Randy Myers, and Shaun Donovan (2021). Source: Texas Parks and Wildlife Department, Inland Fisheries. Amount Received: $33,236.

Evaluation and characterization of microplastics along an ephemeral stream - CoPI with Andre Felton (Ph.D. student) (2021). Source: Texas Water Resource Institute. Amount Received: $4,111.

Evaluating the suppression of *Hydrilla verticillata* by manual removal and planting native aquatic plants - CoPI with Kristy Kollaus, Melani Howard, and Chris Hathcock (2019). Source: Texas Parks and Wildlife Department, Aquatic Invasive Species Research Grants. Amount Received: $64,397

Evaluation of the vegetation along roadways in Edwards Aquifer recharge and contributing zones for storm water management and water quality improvement - CoPI with Vikram Kapoor (2019). Source: City of San Antonio's Proposition 1 Funding. Amount Received: $789,636.

Evaluation of the vegetation and soils to improve carbon sequestration and ecosystem services at the University of Texas at San Antonio main campus - CoPI with Vikram Kapoor (2019). Source: UTSA Office of Sustainability. Amount Received: $82,619.

Project ASSIST: Advancing and Strengthening Science Identity through Systematic Training - CoPI with Janis Bush, Sue Hum, Amaury Nora, Juliet Ray, Kenneth Walker, and Gwen Young (2018). Source: United States Department of Agriculture. Amount Received: $274,991.

Advancing and Strengthening Science Identity through Systematic Training (ASSIST) - CoPI with Janis Bush, Sue Hum, Amaury Nora, Juliet Ray, Kenneth Walker, and Gwen Young (2018). Source: National Science Foundation. 2018. Amount Received: $499,997.

Evaluation and enhancement of carbon sequestration potential, bioenergy production and ecosystem services of existing vegetation along roadsides - CoPI with Vikram Kapoor (2017). Source: Transportation Consortium of South Central States (Tran-SET). Amount Received: $50,000.

Summer acoustic monitoring of bats at Cibolo Preserve - Co-PI with Sarah Gorton (2016). Cibolo Preserve Student Research Grant. Amount Received: $3,800.

Statistical analysis of the San Marcos and Comal Springs Aquatic Ecosystems Biomonitoring datasets - CoPI with Julie Foote (2016). Edwards Aquifer Authority. Amount Received: $56,934

Propagation of Texas wild rice and other native aquatic plants for habitat restoration in the San Marcos River (2016). City of San Marcos, Hays County, Texas. Amount Received: $65,477

Control of Chinese tallow in a seasonal wetland (2015). Texas Invasive Plant and Pest Council Mini Grant. Amount Received: $500

Development of propagation and outplanting techniques for native milkweeds, wild flowers, and grasses in Blackland prairie habitat (2015). U.S. Fish and Wildlife Service's Monarch Initiative Funding. Amount Received: $7,000.

Propagation of Texas wild rice and other native aquatic plants for habitat restoration in the San Marcos River (2015). City of San Marcos, Hays County, Texas. Amount Received: $65,477

Propagation of Texas wild rice and other native aquatic plants for habitat restoration in the San Marcos River (2014). City of San Marcos, Hays County, Texas. Amount Received: $65,477

Propagation of Texas wild rice and other native aquatic plants for habitat restoration in the San Marcos River (2013). City of San Marcos, Hays County, Texas. Amount Received: $65,477

Field trials evaluations of the effectiveness of untested herbicides for control of *Lygodium Microphyllum* - CoPI with Kenneth Langeland (2010). Florida Fish and Wildlife Conservation Commission, Bureau of Upland Invasive Plants. Amount Received: $33,027

Invasive plant mini-grant for continuation of on-going research - Co-PI with Kenneth Langeland (2010). Florida Fish and Wildlife Conservation Commission, Bureau of Upland Invasive Plants. Amount Received: $6,000

Effects of herbicide and prescribed fire on *Lygodium microphyllum* at A.R.M. Loxahatchee NWR - CoPI with Kenneth Langeland (2008). Florida Department of Environmental Protection, Bureau of Upland Invasive Plants. Amount Received: $17,765

Effects of selected herbicides on *Lygodium microphyllum* spore germination and survival - CoPI with Kenneth Langeland (2008). Florida Department of Environmental Protection, Bureau of Upland Invasive Plants. Amount Received: $7,205

Comparison of cut and spray versus band spraying for ground treatment of *Lygodium microphyllum* - Co-PI with Kenneth Langeland (2008). Florida Department of Environmental Protection, Bureau of Upland Invasive Plants. Amount Received: $7,013

Biochemical assay on acetolactate synthase enzyme in *Lygodium microphyllum* - CoPI with Atul Puri and Kenneth Langeland (2007). Florida Department of Environmental Protection, Bureau of Upland Invasive Plants. Amount Received: $20,299

Comparison of *Lygodium microphyllum* spore germination and sporophyte development between herbicide treated and untreated sites in natural areas - CoPI with Kenneth Langeland (2007). Florida Department of Environmental Protection, Bureau of Upland Invasive Plants. Amount Received: $5,170

Evaluation of repeated herbicide application on the effects of non-target vegetation and control of *Lygodium microphyllum* - CoPI with Kenneth Langeland (2007). Florida Department of Environmental Protection, Bureau of Upland Invasive Plants. Amount Received: $8,140

Evaluation of the potential of *Lygodium microphyllum* to develop resistance to the acetolactate synthase herbicide, metsulfuron methyl (Escort XP) - CoPI with Kenneth Langeland (2006). Florida Department of Environmental Protection, Bureau of Upland Invasive Plants. Amount Received: $22,252

Evaluation of current and potential new herbicides to control *Lygodium microphyllum* - CoPI with Kenneth Langeland (2006). Florida Department of Environmental Protection, Bureau of Upland Invasive Plants. Amount Received: $13,751

Evaluation of the potential of *Lygodium microphyllum* spores to develop resistance to the acetolactate synthase herbicides (2005). Florida Exotic Pest Plant Council, Invasive Plant Research Grants. Amount Received: $2,500

Improving Herbicide Effectiveness for *Lygodium microphyllum* Control - CoPI with Kenneth Langeland and Greg Macdonald (2005). Florida Department of Environmental Protection, Bureau of Upland Invasive Plants. Amount Received: $24,352

Treatment effectiveness for Lygodium at A.R.M. Loxahatchee NWR - CoPI with Kenneth Langeland (2004). United States Fish and Wildlife Service. Amount Received: $100,000

Improving herbicide effectiveness for *Lygodium microphyllum* control - CoPI with Kenneth Langeland and Greg Macdonald (2004) Source: Florida Department of Environmental Protection, Bureau of Upland Invasive Plants. Amount Received: $24,352

Treatment and monitoring of Old World climbing fern at Archbold Biological Station and the Reserve (2003). Source: USFWS Partners for Fish and Wildlife Private Lands Project. Amount Received: $3,572

Archbold Biological Station's Red Hill Restoration Project (2002). Source: U.S.F.W.S. Partners for Fish and Wildlife Private Lands Project. Amount Received: $7,720

Exotic plant education program at Archbold Biological Station (2002). Source: Florida Exotic Pest Plant Council, Education Grants. Amount Received: $750

Treatment and control of Old World Climbing Fern at Lake Annie (Archbold Biological Station) (2002). Source: Highlands County Natural Resource Department. Amount Received: $750

Restoration of an isolated spoil site at St. Lucie Inlet Preserve State Park - CoPI with Phillip Myers (2001). Source: Indian River License Plate Fund. Amount Received: $2,670

Restoration and enhancement of ruderal lands dominated by Australian pines at Hugh Taylor Birch State Park - CoPI with Phillip Myers (2001). Source: Florida State Park Trust Fund. Amount Received: $40,000

Jonathan Dickinson State Park and Seabranch State Preserve scrub restoration project - Co-PI with Dick Roberts (2000). Source: USFWS Partners for Fish and Wildlife Private Lands Project. Amount Received: $8,500

Selected Presentations:

Aquatic macro-invertebrate biodiversity in isolated permanent and ephemeral pools along an ephemeral stream in sub-humid, subtropical Central Texas. 8th International Conference URBIO: Urban Biodiversity and Design for Local Communities. Columbia, Missouri (2024)

Algae diversity in ephemeral pools along the upper section of Leon Creek Greenway, San Antonio, Texas. Texas Academy of Science 137th Annual Meeting, Odessa, Texas (2024).

Evaluating the suppression of *Hydrilla verticillata* by manual removal and planting two native aquatic plants. 16th International Symposium on Aquatic Plants, Antwerp, Belgium (2023).

Vegetation dynamics in highway detention ponds and swales in Central Texas. International Low Impact Development Conference. Oklahoma City, OK (2023).

Metal concentrations in common plants and soils from stormwater swales and detention ponds along roadways in San Antonio, Texas. Southwestern Association of Naturalists Annual Meeting, San Antonio, TX (2023).

Analysis of oil and grease concentrations in sediment samples from roadway runoff in the Edwards Aquifer recharge zone of Central Texas. Texas Academy of Science Annual Meeting. San Angelo, TX (2023).

Vegetation composition in an ephemeral urban stream in Central Texas: value for use in green infrastructure. URBIO 2022 Conference - Leipzig, Germany (2022).

Analysis of oil and grease concentrations in sediment samples from roadway runoff in retention ponds and grassy swales in the Edwards Aquifer recharge zone of Central Texas. EWRI Operation and Maintenance of Stormwater Control Measures Conference - Wilmington, N.C. (2022).

Vegetation analysis in the upper reach of an ephemeral creek in San Antonio, Texas. Texas Academy of Science Annual Conference - Houston, Texas (2022).

A thirty-year assessment of the endangered aquatic macrophyte, *Zizania texana*, endemic to the upper reach of a single river in Central Texas. Texas Aquatic Plant Management Society Annual Conference - Bryan, Texas (2019).

Lygodium microphyllum spore viability collected from soil samples in hydric habitats. 21st International Conference on Aquatic Invasive Species - Montreal, Canada (2019).

Growth and interactions of *Hygrophila polysperma* and *Ludwigia repens* grown in saturated soil and shallow water in no flow conditions. Aquatic Plant Management Society - 52st Annual Meeting, San Diego, CA. (2019).

Establishment of aquatic macrophytes in different water velocities and sediment types within the Mission District of the San Antonio River. Native Plant Society of Texas Annual Symposium - San Antonio, TX (2018).

Phenology of *Zizania texana*, an endangered aquatic macrophyte in the United States, under different water velocities. 15th International Symposium on Aquatic Plants. Queenstown - New Zealand (2018).

Heterophylly and phenotypic plasticity in aquatic macrophytes found in the San Marcos River (Invited Speaker). Texas Aquatic Plant Management Society Annual Conference - San Antonio, TX (2017).

Tolerance of *Lygodium microphyllum* and L. *japonicum* spores and gametophytes to freezing temperature (Invited Speaker). European Pest Plant Organization's *Lygodium japonicum* and *Humulus scanden* Workshop - Paris, France (2017).

Life history research and refugia management of *Zizania texana*, an endangered aquatic macrophyte. University of Texas at San Antonio Natural Resource Management Seminar for Assistant Professor Position - San Antonio, TX (2016).

Phenology of the endangered aquatic grass *Zizania texana* under different water velocities. 14th International Symposium on Aquatic Plants - Edinburgh, Scotland (2015).

Effects of water flow on Texas wild rice growth rates. Texas Plant Conservation Conference. Lady Bird Johnson Wildflower Center - Austin, TX (2014).

Texas wild rice and aquatic plant propagation for restoration efforts in spring-fed rivers. Texas A&M, Department of Ecosystem Science and Management, Graduate Student Seminar - College Station, TX (2013).

Tolerance of *Lygodium microphyllum* and *L. japonicum* spores and gametophytes to freezing temperature. Southeast Exotic Pest Plant Council Annual Meeting - Auburn, AL (2012).

Response of Old World climbing fern (*Lygodium microphyllum*) and native vegetation to repeated ground applied herbicide treatments. Southern Weed Science Society Annual Meeting - San Juan, Puerto Rico (2011).

Annual herbicide application for control of Old World climbing fern on Everglades tree islands. Greater Everglades Ecosystem Restoration Conference - Naples, FL (2010).

Monitoring the effects of repeated herbicide application on *Lygodium microphyllum* and native vegetation at A.R.M. Loxahatchee National Wildlife Refuge. 12th European Weed Research Society's International Symposium on Aquatic Weeds - Jyvaskyla, Finland (2009).

Absorption and translocation of glyphosate, metsulfuron, and triclopyr in Old World climbing fern (*Lygodium microphyllum*). Florida Exotic Pest Plant Council's 23rd Annual Symposium - Jacksonville, FL. (2008).

Evaluation of aerial herbicide application for reduction of woody vegetation in a herbaceous marsh. Florida Fish and Wildlife Conservation Commission's Applied Management of Conservation Lands in Florida - Orlando, FL. (2007).

The potential for spread of *Lygodium microphyllum* spores by herbicide applicators. 14th International Conference on Aquatic Invasive Species - Key Biscayne, FL. (2006).

Directed Student Learning (e.g., theses, dissertations):

Completed

Ph.D.

2024 - Arash Jafarzadel (Environmental Science and Engineering) - Evaluation of the effectiveness of the roadside vegetation located in Edwards Aquifer in the removal of heavy metals. Committee Member.

2023 - Namrata Giri (Environmental Science and Engineering) - Exploration of seasonal dynamics of food resources for fish in Cibolo Creek and potential impacts of urbanization of fish diet and growth. Committee Member.

2022 - Sina Vedadi Moghadam (Environmental Science and Engineering) - Nitrogen cycling within stormwater basins: microbial ecology, process performance, and seasonal variations. Committee Member.

2022 - Haya Al-Duroobi (Environmental Science and Engineering) - Wastewater surveillance of SARS-COV-2 for monitoring COVID-19 in Bexar County, Texas. Committee Member.

2018 - Srikanto Paul (Environmental Science and Engineering) - Impact of Natural Disasters on Nuclear Power Plant Facilities. Committee Member.

M.S.

2024 - Felipe Villanueva (Department of Environmental Science and Ecology) - Comparison of riparian communities in urban vs. rural catchments. Committee Member.

2022 - Robert Turner (Department of Integrative Biology) - Assessing the fishery and economic value of a restored Guadalupe bass population. **Chair**.

2022 - Marina Zannino (Department of Integrative Biology) - The impacts of rainfall and temperature on the breeding productivity and foraging of great blue herons in southern Texas. Committee Member.

2021 - Angela Maroti (Department of Integrative Biology) - Evaluating the suppression of Hydrilla verticillata by manual removal and replanting native aquatic plants. **Chair**.

2021 - Dulcie Gomez (Department of Environmental Science and Ecology) - Soil organic carbon quantification by habitat type in south central Texas. **Chair**.

2021 - Jeebika Sharma (Department of Civil and Environmental Engineering) - Effects of pavement and traffic characteristics on long-term stormwater quantity and its quality. Committee Member.

2020 - Alex Todler (Department of Environmental Science and Ecology) - Comparison of benthic invertebrates between ephemeral and permanent pools in upper Leon Creek, San Antonio, Texas. **Chair**.

2020 - Madeleine Buchanan (Department of Environmental Science and Ecology) - Surveys of northern Leon Creek Greenway fish populations to enhance urban fishing. **Chair.**

2020 - Arash Jafarzadeh (Department of Civil and Environmental Engineering) - Physiological and genetic responses of *Microcyctis aeruginosa* under different environmental conditions. Committee Member.

2020 - Karen Mendiondo (Department of Geology) - Acoustic Doppler current profiler observations of ocean current velocities a SeaExplorer Glider. Committee Member.

2019 - Jessica Hinojosa (Department of Civil and Environmental Engineering) - Microbial source tracking using general and host-associated *Bacteroidales* 16S rRNA based quantitative PCR assays and correlation with environmental parameters at an urban and rural watershed within The Edwards Aquifer. Committee Member.

2018 - Tanvir Pasha (Department of Civil and Environmental Engineering) - Measuring human sewage contamination in surface waters using human and bacterial DNA markers. Committee Member.

2017 - Austin Davis (Department of Environmental Science and Ecology) - Characteristics and distribution of *Arbutus xalapensis* (Texas madrone) in the Edwards Plateau region of Central Texas. Co-chair with Dr. Oscar Van Auken.

B.S. (Honors College)

2017 - Sarah Gorton (Undergraduate Honors College) - Acoustic bat activity at Cibolo Preserve. **Chair**.

In-Progress

Ph.D.

Andrew Felton (Environmental Science and Engineering) - Microplastics in ephemeral pools and the effects on amphibians. **Chair.**

Jose Bruno Del Rio-Malewski (Environmental Science and Engineering) - Determining the dispersal and toxicity of microplastics in an aquatic microcosm. **Chair**.

Felicia Ellis (Environmental Science and Engineering) - Best management practice maintenance effects on water quality and particle size removal efficiency. Committee Member.

M.S.

Anna Ramos-Polanco (Department of Environmental Science and Ecology) - Analysis of metals in influent and effluent from San Antonio's wastewater treatment plants. **Chair**.

Fischer Ridge (Department of Environmental Science and Ecology) - Plant composition, carbon, and metal uptake of herbaceous plants in stormwater retention basins. **Chair**.

Kathryn McMahon-Browning (Department of Integrated Biology) - Microplastics degradation in the vadose zone. **Co-Chair with Drew Johnson**.

Charles Burns (Department of Integrated Biology) - Forest structure and composition along a riparian gradient in Leon and Salado Creek greenways. **Chair**.

Ryan Arnold (Department of Political Science and Geography) - Brazil as a case study for the value of the Convention on International Trade in Endangered Species. Committee Member.

Undergraduates Mentored:

Caroline McGuire (2024), Alyssa Drake (2024), Natalie Martinez (2024), Kate Kampman (2023), Angel Velasquez (2023), Maddison Orquiz (2023), Isabella Lejune-Bolivar (2022), Kalista Mitchell (2021), Lauren Gray (2021), Olivia Reaves (2021), Monroe Person (2021), Alexandrea Ashley (2021), Lindsey Walker (2021), Donjae Galbert (2021), Sanya Marin (2021), Jeremy Adkins (2020), Tabatha Counts (2020-2021), Marcus Powell (2019), Maria Flores (2019), David Roberts (2019), Landon Camp (2018-2019), Liam Lin (2019), Emily Pavlik (2019), Cody Segner (2019), Annie Vu (2019), Analisa Saenz (2018), Tiffany Fogel (2018), Natalia Esquivel (2018), Corbin Reyes (2018), Emily Knodell (2018), Jerry Sharpe (2018), Susanna Harrison (2017-2018), and Ryan Hirsch (2017).

Service Contributions

Committee Assignments - UTSA

Department:

Committee member, Graduate Program Committee, Integrated Biology, University of Texas at San Antonio, (2016-present)
Committee member, Department Review Committee, University of Texas at San Antonio, (2022-present)
Committee member, Scholarship and Faculty Awards Committee, University of Texas at San Antonio, (2022-present)
Committee member, Communications Outreach and Recruitment Committee, University of Texas at San Antonio, (2022-present)
Committee member, Integrated Biology Bylaws Development - Department of Integrated Biology (2021)
Fixed-Term-Track Faculty Evaluation and Promotion Committee (chair) - Department of Environmental Science and Ecology Promotion Review Committee (2021)
Environmental Science and Ecology Faculty Search Committee – Environmental Microbiologist position (2018)
Environmental Science and Ecology Faculty Search Committee – Wildlife Ecologist position (2017)
Committee member, Undergraduate Studies Committee, Environmental Science and Ecology, University of Texas at San Antonio, (2016-2019)
Environmental Science and Ecology Faculty Search Committee (chair) – Watershed Ecologist position (2016)

UTSA Pollinator Garden Committee (2016-2018)

College:

UTSA College of Sciences Working Group - Integrated Biology Merger (2023)
Doctoral Studies Committee, Environmental Science and Engineering Ph.D. Program, University of Texas at San Antonio, (2016-present)
UTSA College of Science Faculty Development Leave Committee (2018-2019)

University:

UTSA Faculty Grievance Committee (2022-2024)
UTSA Faculty Senate Member, University of Texas at San Antonio, (2017-2020)

Professional Service Activities

Journal Editor Assignments:
Associate Editor - Southwestern Naturalist (2015-present)

Journal Reviewer:
African Journal of Agricultural Research, African Journal of Plant Science, Flora, Biological Invasions, Florida Scientist, Invasive Plant Science and Management, Journal of Aquatic Plant Management, Journal of Asia-Pacific Biodiversity, Journal of Environmental Management, Journal of Fish and Wildlife Management, Management of Biological Invasions, Native Plants Journal, Southwestern Naturalist, The Quarterly Review of Biology, Transportation Journal, and Weed Research

Professional Memberships:
Texas Academy of Sciences, Southwestern Association of Naturalists, American Association for the Advancement of Science, and International Aquatic Plants Group.

Other Professional Services:
Member - National Science Foundation Grant Reviewer (2024)
Chair - Texas Academy of Sciences - Freshwater Science committee (2022-2023)
Co-chair - Texas Academy of Sciences - Freshwater Science committee (2020-2021)
Board of Directors - Texas Chapter of the Aquatic Plant Management Society. (2019-2021).
Expert Working Group Member - Pest Risk Assessments of *Lygodium japonicum* and *Humulus scandens* in the European and Mediterranean Region, European Pest Plant Organization, Paris, France. (March 27-31, 2017).