José Rodolfo Valdez Barillas, Ph.D.

Texas A&M University-San Antonio
One University Way, San Antonio, TX, 78224

Current position

Associate Professor of Biology 2017-present
Texas A&M University, San Antonio, Texas

Previous position

Assistant Professor of Biology
Texas A&M University, San Antonio, Texas 2011- 2017

Adjunct Faculty 2010-2011
Texas A&M University, San Antonio, Texas
San Antonio College, San Antonio, Texas
North West Vista College, San Antonio, Texas
Front Range Community College, Fort Collins, CO 2008-2010

Post-doctoral Research Associate 2008-2010
Colorado State University, Fort Collins, CO 80523

Education

Ph.D. Rangeland Ecology 2008
Colorado State University, Fort Collins, CO 80523

M.S. Rangeland Ecosystem Science 2005
Colorado State University, Fort Collins, CO 80523

B.S. Biology 2000
Universidad del Valle de Guatemala, Guatemala City, Guatemala

Teaching Experience

Texas A&M University-SA (2010-present)
BIO 1306 General Biology 1 for majors(+Lab)
BIO 1307 General Biology 2 for majors (+Lab)
BIO 3401 Research Experience in Biology
BIO 4304 Undergraduate Research in Biology
BIO 4412 Plant Growth & Development (+Lab)
BIO 4411 Plant Physiology (+Lab)
BIO 3403 Plant Taxonomy
BIO 4356 Cons. & Restoration Ecology
BIO 3301 Evolutionary theory (Online)
BIO 4102 Seminar
BIO 3407 Ecology (+ Lab)
BIO 3408 Animal Physiology (+Lab)
BIO 3409 Field Biology (+Lab)
BIO 3301 Evolutionary theory

San Antonio College, TX (2010-2011)
BIO 1408 Biology for non-majors
BIO 1308 Biology for non-majors

Northwest Vista College, TX (2010)
BIO 1406 Biology for science majors

Front Range Community College, CO, USA (2008-2010)
BIO 105 Science of Biology
BIO 111 General College Biology

Colorado State University, CO, USA (2008)
Life 103 Biology of Organisms

Universidad del Valle de Guatemala, GUA (1997-2001)
General Ecology
Ecological Evaluation
Applied Ecology

Areas of research skills and interests

- Plant Restoration Ecology
- Urban Ecology (Wildlife)
- Aquatic Ecology
- Plant interactions and water relations
- Phytoremediation
- Plant Ecological Interactions
  - Plant-microbial Ecology
  - Plant-herbivore Ecology
  - Plant-Plant competition

Research experience

Texas A&M University-SA

Principal Investigator of Field Ecology Lab	Plant Ecological interactions, Ecological description,	2014-
Undergraduate Advisor	Wildlife monitoring and Aquatic insect ecology	2011

Colorado State University

Postdoctoral Researcher	Plant-Ecological interactions project	2008-2010
Guest researcher	Advance Light Source Lab Berkley CA	2009
Graduate research assistant	Ecology of Plant-Microbial toxicity	2002-2008

Agricultural University of Inner Mongolia, PRC

Guest researcher	Poisonous Plant Ecology	2005

Universidad del Valle de Guatemala

Undergraduate research	Aquatic Insect Ecology	2001
Field Assistant	Aquatic Ecology (lake& river projects)	1999-2000
Laboratory Assistant	Biology department	1996-1999

University Committees

- Texas Educator Examination Reviewer **(2012)**
- Texas A&M SA Collaborative **(2012-2014)**
- Madla Building Room 352 Conflict Resolution-**Chair** **(2013)**
- Landscaping Committee-**Chair-** **(2013)**
- A&S Scholarship Committee-**Chair** **(2013-2014)**
- Environmental health and Safety **(2014-present)**
- Dean's List Committee **(2014-2015)**
- Environmental and Sustainability initiatives-**Chair** **(2015-2017)**
- Experiential learning & Service Learning **(2016-present)**
- Faculty Senate **(2017-2020)**
- Institutional Biosafety Committee **(2018-present)**

University Search Committees

- Biology Department Laboratory Manager **(2012)**
- Assistant Professor -Animal Physiology **(2013)**
- Assistant Professor - Microbiology-**Chair** **(2013)**
- Instructional Technology Assistant **(2014)**
- Assistant Professor - Population Geneticist **(2016)**
- Assistant Professor -Immunology/Cell Biology **(2016)**
- Assistant Professor - Analytical chemist **(2016)**
- Assistant Professor -Algebra and Differential Equations **(2016)**
- Lecturer –Geology **(2016)**
- Director of Center for Teaching and Learning **(2016)**
- Assistant Professor –Water Center **(2016)**
- Associate Professor-Water Center **(2017)**
- Assistant Professor-Phylogenetics-**Chair** **(2017)**
- Promotion and tenure committee for College of Arts & Science **(2017)**
- Promotion and tenure committee for College of Arts & Science **(2018)**
- Assistant Professor-**Analytical Chemist-Chair** **(2019)**
- Assistant Professor-Wildlife Biology **(2020)**
- Associate Professor-Molecular Microbiology-**Chair** **(2021)**
- Associate Professor-Animal Physiology **(2021)**

Service based on professional expertise

- Mitchel Lake Audubon Center-Stewardship Board member **(2012-2018)**
- Mitchel Lake Audubon Center Conservation-**Chair** **(2014-2018)**
- Texas A&M University-San Antonio Plant Club advisor **(2015-present)**
- Mitchel Lake Audubon Center- Stewardship Board **Vice Chair** **(2016-2018)**
- Society for Ecological Restoration (South Texas Liaison) **(2018-2020)**
- Thesis Advisor for Master Student from Environmental Studies Dept. UTSA **(2019-present)**

Grants and Fellowships

- Texas A&M University San Antonio Teaching Excellence award 2013 ($3000)
- Texas A&M University- San Antonio President's Circle Grant 2014 ($10,000)
- USDA Kika de la Garza Science Fellow 2015 ($10,000)
- Texas A&M University San Antonio College of Art and Science Summer Fellowship 2018 ($3000)
- Native Plant Society of Texas-San Antonio Chapter Award 2018 ($500)
- HEB Foundation Grant 2018 ($5,000)
- Texas A&M University San Antonio Research Council Fellowship 2019 ($5,000)
- Texas A&M University San Antonio College of Art and Science Summer Fellowship 2019 ($3000)
- Native Plant Society of Texas-San Antonio Chapter Award 2019 ($500)
- Co-PI Standard Grant (NSF 20-526 NSF Scholarships in Science, Technology, Engineering, and Mathematics 2021-2026 **($649,996)**

Academic and professional affiliations

- Audubon Society, Ecological Society of America, Society for Range Management, International Phytotechnology Society, Society for Ecological Restoration, Native Plant Society of Texas.

Reviewer

- Microbial Ecology
- Physiologia Plantarum
- American Journal of Botany
- Oxford Press textbook in Ecology
- Toxins
- Agronomy
- Wetland Ecology and Management

Meeting posters, oral presentations, and seminars

Valdez Barillas, J.R., M. Ralphs, D. Child. 2005. Effect of fungicide on swainsonine production in white locoweed (*Oxytropis sericea*). 7th International symposium of poisonous plants. Logan, Utah.

Valdez Barillas, J.R., D. Child. 2005. White locoweed (Oxytropis Sericea) and swainsonine production. Grassland science departmental seminar. Inner Mongolia Agricultural University (IMAU), Hohhot, China.

Valdez-Barillas, JR, R.D. Child. 2007 White locoweed toxicity is facilitated by a tripartite mutualism involving a fungal endophyte and N_2 fixing bacteria. Forest Rangeland and Watershed Stewardship spring (FRWS) departmental seminar.

Valdez-Barillas ,J.R., R. D. Child, M. Zhao, P. Lu, R. Creamer, D. Beacon, D. Gardner, M.H. Ralphs, M. Paschke.**2007**. Mutualistic associations facilitate swainsonine production in species of Oxytropis from North America and China. 56th ESA/SRE join meeting, San Jose, California.

Valdez-Barillas J.R. 2008. Swainsonine production in *Oxytropis sericea* is affected by differences in nitrogen contribution from N_2-fixation vs. soil nitrogen. Program in Molecular Plant Biology, Plant Super Group fall presentation, Colorado State University, Fort Collins, Colorado

Valdez-Barillas, JR A. Wangeline, and E.A.H. Pilon-Smits.**2009.** Applications of plant-microbial ecology in Se phytoremediation. International Phytotechnologies Conference, St. Louis, Missouri.

Brietzke, Cody, Dean W. Wiemers, and **J.R Valdez Barillas**. **2013.** Feral hog population densities and predicted 5 year growth on Texas A&M University-SA Main Campus. Texas A&M University Kingsville 1st Regional Javelina Symposium, Kingsville, Texas

Womack, Stephanie and **J. R. Valdez Barillas. 2015**. Preliminary acoustic monitoring for bat populations of Southern Bexar County, TX. Texas Society of Mammologist Annual Meeting 2015, Texas Tech University Center, Junction, Texas.

Sarah Galvan, **J.R. Valdez Barillas** and Dean Wiemers. **2015**. Vegetation Survey interpretation using the state and transition model of three provision ecological sites Description in South Bexar county Texas. Texas Society of Ecological Restoration Annual Meeting, Trinity University, San Antonio, TX.

Valdez Barillas, J.R. 2015. Ecology of the Texas Borderlands. US-Mexico Borderlands Symposium: Yesterday, Today and Tomorrow. Thirds session: Air, Land and Water: Critical Environmental Issues on the US-Mexico Border. Texas A&M University- SA Educational & Cultural Arts Center.

Stephanie M. Planas, D. Wiemers and **J.R. Valdez Barillas 2015.** Habitat preferences by wildlife in a Peri-Urban ecosystem of South Bexar County Texas. CIMA-LSAMP Program Symposium 2015, University of Texas San Antonio, San Antonio TX.

Dean W. Wiemers, Darrell J. Smith and **J.R. Valdez Barillas 2015.** Wildlife diversity and feral hog populations in southern Bexar County. **2015**. Texas Chapter of Wildlife Society Annual Meeting. San Antonio Texas.

Samantha Sauceda and **J.R. Valdez Barillas 2016.** Preliminary study to assess the growth of Sideoats Grama (*Bouteloua curtipendula*) with a native soil inoculum when grown together with Bermuda grass (*Cylodon dactylon*). CIMA-LSAMP Program Symposium 2016, St. Philips Community College, San Antonio, Tx.

J.R. Valdez Barillas and Trina Fenning **2017.** Smartphones can complement bird survey data when designing noise buffers for the preservation of bird habitat in South Bexar County, Texas. Audubon Society National Conference. Park City, UT.

John Olhousen and **J.R. Valdez Barillas 2017.** Beneficial microbe interactions facilitate the growth of a perennial native grass when growing in competition with a non-native perennial grass. CIMA-LSAMP Program Symposium 2017, St. Philips Community College, San Antonio, TX.

Samantha Sauceda, Jannelle Gonzales, Victoria Avila-Prukup **J.R. Valdez Barillas 2017.** Bacterial interactions from native soil inoculant enhances the growth of Sideoats Grama when growing in competition with Bermuda grass. Texas Society of Ecological Restoration meeting in Denton, TX

J.R. Valdez Barillas and Brenda G. Rushing **2018**. Soil microbe composition can facilitate Sideoats Grama (*Bouteloua curtipendula*) establishment when growing in competition with Bermuda grass (*Cynodon dactylon*). Texas Society of Ecological Restoration meeting in San Antonio, TX

J.R. Valdez Barillas 2019. Plant Biotic Interactions Play a Key role in the Ecology of Plant Chemical Defenses. Biology Department Seminar. Trinity University, San Antonio, TX.

J.R. Valdez Barillas and Brenda G. Rushing **2019.** Taking a closer look at the role of soil microbe communities in native vs invasive plant species interactions on a Peri-urban abandoned cropland. Texas Society of Ecological Restoration meeting in Galveston, TX

J.R. Valdez Barillas 2020. Can locally adapted pollinator friendly species become established in an areas dominated by a non-native invasive grass species when treated with native soil inoculum. Guest Speaker, Native Plant Society of Texas, San Antonio, TX

Publications

Book chapter

Pilon-Smits EAH, **Valdez Barillas JR**, Van Hoewyk D, Lin ZQ. **2010.** Phytoremediation of Selenium. In: (Plaza G. ed.) "Trends in bioremediation and phytoremediation", Research Signpost, Kerala, India, pp 355-372.

Peer reviewed articles

Valdez Barillas, J.R., M. Paschke, M. Ralphs, D. Child. **2007.** White locoweed toxicity is facilitated by a fungal endophyte and nitrogen fixing bacteria. *Ecology* 88(7):1850-1856.

Ralphs, M.H., T.A. Monaco, **J.R. Valdez**, and D. Graham. **2007.** Seeding cool-season grasses to suppress White locoweed (Oxytropis sericea) Reestablishment and Increase forage production. *Weed technology* 21: 661-669.

Valdez Barillas, J.R, C.F. Quinn, and E.A.H. Pilon-Smits. **2011.** Selenium accumulation in plants - phytotechnological applications and ecological implications. *International Journal of Phytoremediation* 13(S1):1–13.

Wangeline, A. L., **J. R. Valdez**, S.D. Lindblom,K. L. Bowling, F.B. Reeves, and E.A. H. Pilon-Smits. **2011.** Characterization of rhizosphere fungi from selenium hyperaccumulator and nonhyperaccumulator plants along the Eastern Rocky Mountain Front Range. *American Journal of Botany* 98(7): 1139–1147.

Quinn, C. F., K. Wyant, A. L. Wangeline, J. Shulman, M. L. Galeas, **Valdez Barillas, J.R**., M. W. Paschke, and Elizabeth A. H. Pilon-Smits. **2011.** Enhanced litter decomposition of a selenium hyperaccumulator in a seleniferous habitat – evidence of specialist decomposers. *Plant Soil* 341:51– 61.

Valdez Barillas, J.R., C. F. Quinn, J. L. Freeman, S. D. Lindblom, M. A. Marcus, S. Fakra, T. M. Gilligan, É. R. Alford, A. L. Wangeline, and E. A.H. Pilon-Smits. **2012**. Selenium distribution and speciation in hyperaccumulator *Astragalus bisulcatus* and associated ecological, *Plant Physiology*159:1834-1844.

Lindblom S.D., **J.R.Valdez Barillas,** S.C. Fakra, M.A. Marcus, A.L Wangeline, and E.A.H Pilon-Smits. Influence of microbial associations on selenium localization and speciation in roots of *Astragalus* and *Stanleya* hyperaccumulators. **2013** *Environmental and Experimental Botany* 88:33-42.

Lindblom S. D., A.L. Wangeline, **J.R. Valdez Barillas**, B.Devilbiss, S.C Fakra, and E. A.H Pilon-Smits. Fungal endophyte Alternaria teuissima can affect growth and selenium accumulation in its hyperaccumulator host Astragalus bisulcatus. **2018**. *Frontiers in Plant Science* 9:1213. doi: 10.3389/fpls.2018.01213

Prins, C.N.; Hantzis, L.J.; **Valdez-Barillas, J.R.**; Cappa, J.J.; Fakra, S.C.; Milano de Tomasel, C.; Wall, D.H.; Pilon-Smits, E.A.H. **2019.** *Getting to the Root of Selenium Hyperaccumulation—Localization and Speciation of Root Selenium and Its Effects on Nematodes*. Soil Syst. 2019, 3, 47. https://doi.org/10.3390/soilsystems3030047

Professional Reports

Stuver, S., **J.R. Valdez Barillas** and T. Lupke. **2011**. Ambient Nighttime Light and Wind Study. Texas A&M San Antonio and Texas Center for Applied Technology. 18pages

J.R. Valdez Barillas, B.Gates, S. Beesley, P. Inglet, D. Ribble. **2016.** Mitchell Lake Audubon Center Five Year Conservation Plan. Mitchell lake Audubon Center, San Antonio, TX. 31 pages.