

# José Rodolfo Valdez Barillas, PhD.

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

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## **Current position**

### **Associate Professor of Biology**

Texas A&M University, San Antonio, TX

**2017-present**

## **Previous positions**

### **Assistant Professor of Biology**

Texas A&M University, San Antonio, TX

**2011-2017**

### **Adjunct Faculty**

Texas A&M University, San Antonio, TX

**2010-2011**

San Antonio College, San Antonio, TX

Northwest Vista College, San Antonio, TX

Front Range Community college, Fort Collins, CO

**2008-2010**

### **Post-doctoral Research Associate**

Colorado State University, Fort Collins, CO

**2008-2010**

## **Education**

### **PhD Rangeland Ecology**

Colorado State University, Fort Collins, CO

**2008**

### **M.S. Rangeland Ecosystem Science**

Colorado State University, Fort Collins, CO

**2005**

### **B.S. Biology**

Universidad del Valle de Guatemala, Guatemala

**2000**

## **Teaching Experience**

### **San Antonio College, San Antonio, TX**

BIO 1408 Biology for non-majors + Lab

BIO 1308 Biology for non-majors

### **Northwest Vista College, San Antonio, TX**

BIO 1406 Biology for science majors + Lab

### **Front Range Community College, Fort Collins, CO**

BIO 105 Science of Biology

BIO 111 General College Biology

### **Colorado State University, Fort Collins, CO**

Life 103 Biology of Organisms

### **Texas A&M University, San Antonio, TX**

BIOL 1306 General Biology 1 for majors + Lab

BIOL 1307 General Biology 2 for majors + Lab

BIOL 3301 Evolutionary Theory (F2F +Online)

BIOL 3303 Animal Nutrition (Online)

BIOL 3401 Research Experience in Biology

BIOL 3403 Plant Taxonomy + Lab

BIOL 3407 Ecology +Lab

BIOL 3408 Animal Physiology + Lab

BIOL 3409 Field Biology + Lab

BIOL 4102 Seminar-Ecology

BIOL 4103 Seminar-Zology

BIOL 4304 Undergraduate Research in Biology

BIOL 4307 Conservation & Restoration Eco.

BIOL 4411 Applied Plant Physiology + Lab

BIOL 4412 Plant Growth & Devel. + Lab

BIOL 5303 Ecosystem Ecology

BIOL 5105 Graduate Seminar

## **Service**

### **Period**

#### **Graduate Thesis Advisor**

Danielle Rios	2021 - 2024	A&M-SA master's in biology
Iliana Reyes	2024 - 2026	A&M-SA master's in biology
Ashlynn Smith	2024 - 2026	A&M-SA master's in biology

#### **Graduate Thesis Committee**

Jilin Sotomayor	2020 - 2022	A&M-SA M.S. in water
Crystal Mata	2022 - 2023	A&M-SA M.S. in water
Austin McBrady	2021 - 2023	A&M-SA M.S. in water
Kimia Ahmadiyeh Yazdi	2024 - 2026	A&M-SA M.S. in water
Alfredo Paul Llamas	2021 - 2023	A&M-SA M.S. in Biology
Sierra Rodriguez	2021 - 2023	A&M-SA M.S. in Biology
Bridget Battaglia	2023 - 2025	A&M-SA M.S. in Biology
Gabino Olalde	2024 - 2026	A&M-SA M.S. in Biology
Felipe Villanueva	2020 - 2023	UTSA M.S. in env. sciences
Alex Toder	2020 - 2022	UTSA M.S. in env. sciences

#### **A&M-SA University Service**

##### **University Committees**

Texas Educator Examination	2012
Texas A&M System Collaborative	2012 - 2014
Madla Building Room Conflict ( <b>Chair</b> )	2013
Campus Landscaping ( <b>Chair</b> )	2013
Environmental Health and Safety	2014 - 2018
Dean's list	2015 - 2015
Env. & Sustainability initiative ( <b>Chair</b> )	2015 - 2017
Experiential & Service Learning	2016 - 2021
Faculty Senate (Senator)	2017 - 2019
Institutional Biosafety Committee	2018 - 2023
M. P. Historical Interpretation	2020 - 2022

##### **College of A&S Committees**

College of A&S Scholarship ( <b>Chair</b> )	2013 - 2014
Espada Property Planning	2023 - present
College Curriculum Committee ( <b>Chair</b> )	2024 - present

##### **Department & Program Committees**

Biology Adjunct Faculty Hiring	2018 - 2022
Tenure & Promotion Evaluation	2018 - 2023
Faculty Evaluations	2018 - present
Professional Track Evaluation	2021 - present
Biology M.S. Admissions	2021 - present

#### **A&M-SA Search Committees**

##### **University Search Committees**

Instructional Tech. Assistant	2014
Dir. Center of Teaching & Learning	2016

##### **College of A&S Committees**

Assistant Prof. Analytical Chemist	2016
Assistant Prof. Algebra	2016
Lecturer Geology	2016
Assistant Prof. Water	2016

Associate Prof. Water	2017
Assistant Prof. Analytical Chemistry ( <b>Chair</b> )	2019
Assistant Prof. Inorganic Chemistry	2024

### **Biology Program Search Committees**

Biology Laboratory Manager	2012
Assistant Prof. Animal Physiology	2013
Assistant Prof. Microbiology ( <b>Chair</b> )	2013
Assistant Prof. Population Genetics	2016
Assistant Prof. Immun./Cell Bio	2016
Assistant Professor Phylogenetics ( <b>Chair</b> )	2017
Assistant Prof. Wildlife Biology	2020
Assistant Prof. Population Genetics	2024
Associate Prof. Mol. Microbiology ( <b>Chair</b> )	2021
Associate Prof. Animal Phys.	2021

### **Professional Service**

Mitchel Lake Audubon Center	2012 - present	Advisory board member
Mitchel Lake Audubon Center	2014 - 2017	Advisory board (conservation sub-committee)
A&M-SA Student Plant Club	2015 - present	Faculty Advisor
Society for Ecological Restoration	2018 - 2021	Texas chapter- South Texas Liaison
Arboretum San Antonio	2022 - present	Advisory Board Member
Arboretum San Antonio	2025	Activation Committee Member
Medina River Riparian Project TAG	2025	Advisory Committee

## **Scholarly work**

### **Grants and Fellowships**

A&M-SA Teaching Excellence Award	2013	\$ 3,000
A&M-SA Present's Circle Grant	2014	\$10,000
USDA Kika de La Garza Science Fellowship	2015	\$10,000
Native Plant Society of Texas-SA Chapter Award	2018	\$500
HEB Foundation	2018	\$5,000
PI-A&M-SA Research Council Grant	2019	\$5,000
PI-A&M-SA College of Art & Science Fellowship	2019	\$3,000
Native Plant Society of Texas-SA Chapter Award	2019	\$500
CO-PI Standard Grant NSF 20-526 (SSTEM)	2021-2026	\$649,996
CO-PI Pilot Project NSF 19-540 (HSI-STEM)	2021-2023	\$199,000
CO-PI A&M-SA College of Art & Science Fellowship	2024	\$10,000
PI-GS2 Standard Grant USDA-HEC (not funded)	2024	\$299,000
PI-Insect Vectored Diseases AgriLife Grant (not funded)	2024	\$299,000
CO-PI AgriLife IHA Grant	2024-2026	\$180,000

### **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, Entomological Society of America.

### **Reviewer**

Microbial Ecology, Physiologia Plantarum, Toxins, Agronomy, Wetland Ecology & Management, American Journal of Botany, Oxford Press-Ecology in Action, BMC Plant Biology.

## **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*). 7<sup>th</sup> 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<sub>2</sub> 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. 56<sup>th</sup> 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<sub>2</sub>-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 1<sup>st</sup> 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 Mammologists 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 Saucedo 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 (*Cynodon 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 Saucedo, 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

Marisa A. Narvaez, Brenda G. Rushing and **J.R. Valdez Barillas. 2019** Metabolic characterization and community composition of soil microbes associated with the rhizosphere of Sideoats grama when growing in competition with Bermuda grass. 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

**J.R. Valdez Barillas 2021.** Low impact strategy for controlling KR Bluestem at Albert & Bessie Kronkosky Natural Area using solarization. Guest Speaker, Native Plant Society of Texas, San Antonio, TX.

D. Rios, E. Borda, K. Lyons, D. Smyth, **J.R. Valdez Barillas. 2022.** Plant-Insect-Microbe Interaction of Texas Grasslands. Texas Society of Ecological Restoration Meeting in Austin, TX.

**J.R. Valdez Barillas, B. Rushing, J. Morrissey, T. Denyer, F. Loxom. 2022.** Soil conditions influence soil microbial composition following Yellow Bluestem removal using plastic solarization. Oral presentation. Texas Society of Ecological Restoration Meeting in Austin, TX.

B. Battaglia, E. Borda, **J.R. Valdez Barillas. 2023.** Aquatic macroinvertebrates in relation to climate change in the San Antonio River. Society of Integrative and Comparative Biology Meeting in Austin, TX.

**J.R. Valdez Barillas. 2023.** Native species and urban forest planning in Central Texas. Guest Speaker, High Land Lake Native Plant Society in Marble Fall, TX.

A.Flores and **J.R. Valdez Barillas. 2024.** Application of AI for analyzing wildlife images from an ecological study in South San Antonio, TX. Texas A&M-SA Student Research Symposium.

## **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., D. Child, M, Ralphs. 2007.** Effect of fungicide on swainsonine production of white locoweed (*Oxytropis sericea*). In: (Panter, KE, Wierenga, TL, Pfister, JA. Eds.) Poisonous plants:

global research and solutions. Wallingford, Oxfordshire ; Cambridge, MA: CABI International, pp 345-347.

**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 non-hyperaccumulator 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 partners, *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>

D. Rios, K. J. Ueckert, K. Ong, **J.R. Valdez Barillas** S. Costanzo. **2024** First report of ‘Candidatus *Phytoplasma sacchari*’- related strain associated with silver bluestem (*Bothriochloa laguroides* (D.C.) Herter) in Texas. *Plant Disease* 108(7): 2219.

### **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, Technical Report*. 18 pages

**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, SA Technical Report*, TX. 31 pages.

**J.R. Valdez Barillas. 2022**. Low-impact strategies for controlling KR bluestem (*B. ischaemum*) and

restoring native grassland at the ABK State Natural Area, TX. *Albert and Bessie Kronkosky Natural Area, State Park Scientific Study Report*. 25 pages.