

Lorena Torres-Martínez

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St Mary's college of Maryland

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PROFESSIONAL APPOINTMENTS

2021- Present	Assistant Professor , Department of Biology, St Mary's College of Maryland
2018-2021	Postdoctoral Scholar , University of California, Riverside <i>Advisor:</i> Dr. Joel L. Sachs
2016-2018	Koch-Richardson Teaching Postdoctoral Fellow , Tulane University <i>Advisors:</i> Dr. Sunshine Van Bael & Dr. Jordan Karubian
2008-2010	Researcher & Tissue Collection Curator Alexander Von Humboldt Biological Resources Research Institute (CIAT-CGIAR, Cali-Colombia)

EDUCATION

2010 -2016	Ph.D Ecology and Evolutionary , Purdue University <i>Advisors:</i> Dr. Nancy. C. Emery & Dr. Morris Levy <i>Dissertation:</i> "Evolutionary potential of a dispersal-restricted species in response to climate change"
2003-2008	B.S. Biology , Universidad del Valle <i>Graduated High Honors in Biology (Mejor graduando)</i>

RESEARCH INTERESTS

Adaptation to variable and extreme environments, population and quantitative genetics, plant-microbe interactions, mutualism, conservation genomics

FELLOWSHIPS, AWARDS & GRANTS

FELLOWSHIPS AND AWARDS

2026	Norton Dodge Award for Scholarly and Creative Achievement by Junior Faculty, St Mary's College of Maryland, Maryland
2016-2018	Koch-Richardson Postdoctoral Teaching Fellowship, Tulane University, New Orleans
2008	Honors Graduate in Biology, Universidad del Valle, Cali-Colombia

RESEARCH GRANTS

2025-2028	NSF 25-504 MMORCC solicitation (\$342,188): Collaborative Research- PI: Developing a new framework to understand the evolution of specialization in plant-endosymbiont response to varying environments.
2024-2026	NACA-USDA cooperative agreement (\$30,000): Genomic variation of US native <i>Persea spp</i>
2024-2025	NAFANT CWR Award (\$4,000) – PI: Genomic resources for the US native <i>Persea species</i>
2022-2024	Maryland Native Plant Society (\$3,000) – PI: Parasitism-mutualism continuum in coastal tree forests under extreme climate events
2022	Faculty Development Grant SMCM (\$2400): Parasitism-mutualism continuum in coastal tree forests under extreme climate events

- 2020-2023 California Conservation Genomics Project (\$50,000)- PI: J.L.Sachs; Co-PI: Population genomics of a foundational California native plant, *Acmispon strigosus*
- 2017 CELT Faculty development grant, Tulane University (\$500)
- 2017-2018 CELT Faculty Mentored Undergraduate Research Award (\$2,000)-PI: Influence of soil microbiome on Baldcypress responses to extreme flooding
- 2014-2016 NSF Dissertation Improvement Grant (\$20,020)- PI: N.C. Emery; Co-PI: Gene flow by seed and pollen: implications for plant adaptation to changing climates
- 2014 – 2015 Northern California Botanists Scholarship (\$1,000)- PI: Evolutionary potential for responding to climate change in vernal pool goldfields
- 2013 – 2015 PRF Grant, Purdue University (\$44,000)

TRAVEL GRANTS

- 2025 Faculty Development Grant SMCM (\$2400)
- 2024 Faculty Development Grant SMCM (\$2400)
- 2023 Faculty Development Grant SMCM (\$2400)
- 2015 Women in science at Purdue travel grant (\$1,500)
- 2013 Frederick N. Andrews Environmental Research Travel Grant, Purdue University (\$1,500)

RESEARCH GRANTS OBTAINED BY UNDERGRADUATE STUDENTS UNDER MY SUPERVISION

- 2026 – Seahawk Undergraduate Research Fellowship (\$4900) to Riley Strohecker
- 2026 – Flores Award (\$5000) to Jeremiah D. Lee
- 2025 – Maryland Native Plant Society (\$3500) to Krystal Moore-nicks (co-mentored)
- 2025 – Maryland Native Plant Society (\$3500) to Aurora Lewis
- 2025 – Flores Award (\$5000) to Krystal Moore-nicks (co-mentored)
- 2025 – Flores Award (\$5000) to Aurora Lewis
- 2025 – Seahawk Undergraduate Research Fellowship (\$4900) to Stella L'Italien
- 2025 – Sigma Xi (\$950) to Sophia Koontz
- 2024 – Beta, Beta, Beta Honor's Society Research Fellowship (\$950) to Sophia Koontz
- 2023 – Seahawk Undergraduate Research Fellowship (\$4900) to Sophia Koontz
- 2023 – Flores Award (\$5000) to Andrew Raley
- 2022 – Sigma Xi (\$1000) to Jordan Manns
- 2022 – Seahawk Undergraduate Research Fellowship (\$4900) to Mel Byrne

AWARDS OBTAINED BY UNDERGRADUATE STUDENTS UNDER MY SUPERVISION

- 2026 - *Excellence in Completion of a St. Mary's Project* to Krystal Moore-nicks. SMCM Biology
- 2026 - *Excellence in Oral Presentation of a St. Mary's Project* to Stella L'Italien. SMCM Biology
- 2026 – *New discovery through a St. Mary's Project* to Emma Shepard. SMCM Biology
- 2026 – *Myron G. Marlay Award for Science* to Krystal Moore-nicks. SMCM
- 2026 - *Biology Department Award for Academic Distinction and Service* to Aurora Lewis. SMCM
- 2026 - *Excellence in Biochemistry Award* to Ugonna Ejekwu. SMCM Biochemistry
- 2025 – *Overall Excellence in Completion of a St. Mary's Project* to Sophia Koontz. SMCM Biology
- 2025 - *Excellence in Completion of a Student-Initiated St. Mary's Project* to Isabella Schindler. SMCM Biology
- 2025 – *Excellence in Biology* to Sophia Koontz. SMCM Department Awards
- 2025 – *Best Oral Presentation* to Sophia Koontz. TriBeta Chapter Conference
- 2024 - *Interdisciplinary Award for Environmental Challenges* to Sophia Koontz. Sigma Xi Student Research Showcase Virtual Conference
- 2023 - *Excellence in Completion of a Student-Initiated St. Mary's Project* to Colleen Smith. SMCM Biology
- 2023 - *Excellence in Oral Presentation of a St. Mary's Project* to Andrew Rawley. SMCM Biology

PUBLICATIONS

undergraduate and high-school students are underlined

JOURNAL PUBLICATIONS

17. **Torres-Martínez, L.** Escalona, M., Toffelmier, E., Miller, C., Shaffer, B., Purcell, J and J.L. Sachs.. 2026. Chromosome-level reference genome of a foundational California native legume, *Acmispon strigosus*. *Journal of Heredity*, 00:1-10. <https://doi.org/10.1093/jhered/esag007>
16. **Torres-Martínez, L.** 2026. Invited Commentary: Shedding new light on the effects of domestication in plant–microbe interactions. *New Phytologist*, 249: 1566-1568. <https://doi.org/10.1111/nph.70837>
15. Kehlet-Delgado, H., Montoya, A.P., Jensen, K., Wendlandt, C.E., **Torres-Martínez, L.**, Dexheimer, C., Roberts, R., Friesen, M. L., Griffith, J.S. & S.S. Porter. 2024. The evolutionary genomics of adaptation to stress in wild soil microbiota. *Proceedings of the National Academy of Sciences*, 121(13).
14. Rahman, A., Mancini, M., Cassandra N., Perez, I.A, Farsamin, W.F., Lampe, M.T, Le, T.H., **Torres-Martínez, L.**, Weisberg, A.J., Chang, J.H & J.L. Sachs. 2023.Competitive interference among rhizobia reduces legume benefits. *Current Biology*, 33:2988-3001.
13. Ortiz-Barbosa G.S., **Torres-Martínez, L.**, Rothschild, J., and , J.L. Sachs. 2022. Lotus japonicus regulates root nodulation and nitrogen fixation dependent on the molecular form of nitrogen fertilizer. *Plant and Soil*, 483: 533-545.
12. Mancini, M., Mercado, O.G., Camantigue, R.X., Nguyen, T., Rothschild, J., Khairi, F., Neal, S., Farsamin, W.F., Lampe, M.T., Perez, I.A., Le, T.H., Ortiz-Barbosa, G.S., **Torres-Martínez, L.**, and J.L. Sachs. 2022. Live soil inocula, not host population or domestication status, is the predominant driver of growth benefits to cowpea. *Plant and Soil*, 482: 585-600.
11. Santamaría-Acevedo, L., Levy, M.M., **Torres-Martínez, L.**, Marchant, S., Rondón-González, F., Stashenko, E.E., Levy, M., and J.L. Fuentes. 2022. Genome-derived microsatellite markers in *Lippia organoides* from Colombia. 2022. *Journal of Herbs, Spices and Medicinal Plants*, 00:1-15.
10. Lumibao, C., **Torres-Martínez, L.**, Megonigal, P., Van Bael, S., and M. Blum. 2022. Microbial mediation of salinity stress response varies by plant genotype and provenance over time. *Molecular Ecology*, 00:1-15.
9. Ortiz-Barbosa G.S., **Torres-Martínez L.**, Neal S., Soubra T., Khairi F., Trinh J., Cardenas P., Porter A. and J.L. Sachs. 2021. No disruption of rhizobial symbiosis during early stages of cowpea domestication. *Evolution*, 76: 496-511.
8. **Torres-Martínez, L.**, Porter, S.S., Wendlandt, C., Purcell, J., Ortiz-Barbosa, G., Rothschild, J., Lampe, M., Warisha, F., Le, T., Weisberg, A.J., Chang, J.H. and Sachs, J.L. 2021. Evolution of specialization in a plant-microbial mutualism is explained by the oscillation theory of speciation. *Evolution*, 75: 1070-1086.
7. **Torres-Martínez, L.**, Sanchez, M., Kimbrought, L., Hendrix, T., Hendrix, M., Day, R.D., Krauss, K.W. and S. Van Bael. 2020. Influence of microbiota on *Taxodium distichum* seedling performance during extreme flooding events. *Part of special thematic issue on applying microbial community research to improve conservation and restoration outcomes. Plant Ecology*, 221: 773-793.
6. **Torres-Martínez, L.**, McCarten, N. and N.C. Emery. 2019. Adaptive potential of plant populations under extreme climate events. *Ecology Letters*, 22 (5), 866-874.
5. Tittes S, Walker J, **Torres-Martínez L** and NC Emery. 2019. Grow where you thrive or where only you can survive? A Bayesian analysis of tolerance curve evolution in a clade with diverse habitat affinities. *The American Naturalist*, 93 (4), 530-544.
4. **Torres-Martínez, L.**, P. Weldy, M. Levy and N.C. Emery. 2017. Spatiotemporal heterogeneity in precipitation patterns explain population-level germination strategies in an edaphic specialist. *Part of special issue on endemism hotspots in Annals of Botany*, 119 (2): 253-265.
3. **Torres-Martínez, L.** and N.C. Emery. 2016. Using RADseq to discover SNP markers in the California vernal pool endemic herb, *Lasthenia fremontii* (Asteraceae). *Conservation Genetic Resources*, 8:145–158.

BOOK CHAPTERS

2. Schuster M., **Torres-Martínez L.**, Dukes J.S. 2012. Distribution of terrestrial ecosystems and changes in plant community composition. In: Freedman B. (Ed.) Global Environmental Change. ***Handbook of Global Environmental Pollution***. Springer Netherlands, pp. 341-347.
1. Emery, N, **L. Torres-Martínez**, E. Forrestel, B.G. Baldwin and Ackerly, D.D. 2011. The ecology, evolution and diversification of the Vernal Pool Niche in *Lasthenia* (Madieae, Asteraceae) p 39- 57. In: Alexander, D.G and R.A. Schlising. 2011. Research & Recovery in Vernal Pool Landscapes. ***Studies from the Herbarium***. Number 16. California State University, Chico.

TECHNICAL REPORTS

- Sweet, L.C., La Doux, T., **Torres-Martínez, L** and J.L. Sachs. 2021. 2018-2021 Study Results for the Triple-Ribbed Milkvetch (*Astragalus tricarinatus*). Report On behalf of Joshua Tree National Park to USFWS.
- Sweet, L.C., S. Heacox, M. Davis, P. Ramstead, **L. Torres-Martínez**, C. Barrows. 2020. Monitoring Results for the triple ribbed milkvetch (*Astragalus tricarinatus*) within the Coachella Valley MSHCP Area. Final Report. Prepared for: ***Coachella Valley Conservation Commission***.
- Bocanegra, J.L, C. Villafañe, R. Moreno, **L. Torres M**, A. Velásquez, L. Fory and G. Gallego. 2010. Genetic Characterization of wild cultivars and species of yucca (*Manihot* sp.) on the Colombian Amazon and Orinoco. In: ***Capacity building for implementation of the Protocol of Cartagena in Colombia: Sector Ambiente*** - / Instituto de Investigación de Recursos Biológicos Alexander von Humboldt; Orjuela-R. M.A. y Moreno V. R. (comp.). Bogotá D.C.: Colombia: Ministerio de Ambiente, Vivienda y Desarrollo Territorial; Instituto de Investigación de Recursos Biológicos Alexander von Humboldt.
- Villafañe, C., J.L. Bocanegra, R. Moreno, **L. Torres M**, V.H. García. 2010. Genetic Characterization of wild cultivars of rice (*Oryza* spp.) collected in Vichada Colombia. In: ***Capacity building for implementation of the Protocol of Cartagena in Colombia: Sector Ambiente*** - / Instituto de Investigación de Recursos Biológicos Alexander von Humboldt; Orjuela-R. M.A. y Moreno V. R. (comp.). Bogotá D.C.: Colombia: Ministerio de Ambiente, Vivienda y Desarrollo Territorial; Instituto de Investigación de Recursos Biológicos Alexander von Humboldt.
- Torres L**, Lopez D, Palacio J.D., Duque M.C., Perez Galindo C.A., Gonzalez Vargas I.A and H.C. Cardenas. 2009. Evaluation of the Polymorphism of Microsatellites Markers in *Guadua angustifolia* (Poaceae: Bambusoideae). ***VIII World Bamboo Congress Proceedings***, 5: 64-79.

JOURNAL PUBLICATIONS UNDER REVIEW

- Rahman, A., **Torres-Martínez, L.**, Weisberg, A.J., Chang, J.H & J.L. Sachs. Bradyrhizobium haplotypes adapt to host metapopulations via acquisition of diverse, host-specific symbiosis ICEs. *In review at Molecular Ecology*.

JOURNAL PUBLICATIONS IN PREPARATION (*Manuscripts available upon request*)

- Torres-Martínez, L.**, Sweet, L.C, Fraga, L., LaDoux, N.S., Heacox, T., Davis, M. and J.L. Sachs. Genomic diversity of the narrow endemic and endangered legume *Astragalus tricarinatus*.
- Torres-Martínez, L.**, Weisberg, A.J., Peterman, S., Porter, S., Ortiz-Barbosa, G, Khairi, F., Chang, J.H & J.L. Sachs. Genomics of ecological specialization in a rhizobia metacommunity.
- Koontz, S., & **Torres-Martínez, L.**, Native rhizobia promote the growth of an important Maryland cover crop under saltwater intrusion.

Fillius, J., Velez, G.A., Raley, A., McLean, J., Dioko, T., Lopez, D.C & Torres-Martínez, L. Cover crops decreased fungal diversity in historical farmland soil.

PRESENTATIONS

undergraduate and high-school students are underlined

INVITED SEMINARS

- 2022 Texas A&M University, Corpus Christi, USA
- 2021 Clark University, Worcester, USA
- 2019 University of California, Riverside, USA
- 2018 Universidad Nacional de Manizalez, Colombia
- 2018 St. Mary's College of Maryland, USA
- 2016 Tulane University, USA

INVITED CONFERENCE PRESENTATIONS

- Torres-Martínez, L.** 2025. Working towards the conservation of endemic US *Persea* species: a key educational model of undergraduate research. *North American Fruit & Nut Tree Crop Wild Relatives Working Group* (NAFANT CWR Working Group) virtual meeting.
- Torres-Martínez, L.,** Sweet, L.C., Naomi S. Fraga, N.S., La Doux, T., Heacox, S., Davis, M., and Joel L. Sachs. 2024. Genomic diversity of the narrow endemic and endangered legume *Astragalus tricarinatus*. *Southern California Botanist Symposium, Claremont, CA.*
- Torres-Martínez, L.,** Porter, S., Rothschild, J., Ortiz, G., Lampe, M., Farsamin, W., Le, T., and J. Sachs. 2020. Rapid evolution of specialization in a plant-microbial mutualism. *Northern California Botanists Symposium. California State University, Chico, CA.*
- Torres-Martínez, L.,** and N.C. Emery. 2019. The adaptive potential of plant populations in response to extreme climate events. *SoCal Evolutionary Genetics meeting (SCaE), University of California, Irvine.*
- Emery, N.C. and **L. Torres-Martínez.** 2015. Evolution of phenotypic plasticity and ecological specialization in temporally varying environments. Organized oral session: "Shifting dimensions: temporal ecology for the next 100 years and beyond." *Ecological Society of America Annual Meeting, Baltimore, MD.*
- Emery, N.C. and **L. Torres-Martínez.** 2015. Rapid Evolution and Phenotypic Plasticity of Vernal Pool Plants in Response to Climate Change. Symposium title: "Best Management Practices for Climate Change Adaptation: A Wetlands Perspective." *Society for Wetland Scientists, Providence, RI.*
- Torres-Martínez, L.** and N.C. Emery. 2014. Germination and Dormancy Variation in Fremont's Goldfields: Implications for Vernal Pool Plant Responses to Climate Change. *Northern California Botanists Symposium. California State University, Chico, CA.*
- Torres-Martínez, L.,** D. Lopez, C. Perez-Galindo, M.C. Duque, I.A. Gonzalez, J.D. Palacio and H. Cardenas. 2009. Molecular Characterization with microsatellites markers of the Juan Maria Cespedes Botanical Garden germ bank accessions of *Guadua angustifolia* (Poaceae: Bambusoideae). *I International Congress of Guadua, other Bamboos and Natural Fibers. Armenia, Colombia.*

CONTRIBUTED PRESENTATIONS

- Koontz, S. & **Torres-Martínez, L.** 2023. Native rhizobia promote growth of an important Maryland cover crop under saltwater intrusion. *Sigma Xi Student Research Showcase Virtual Conference* *(Awarded First Place Undergraduate research & Interdisciplinary Award for Environmental Challenges)
- Kehlet-Delgado, H., Montoya, A.P., Jensen, K., Wendlandt, C.E., **Torres-Martínez, L.**, Dexheimer, C., Roberts, R., Friesen, M. L., Griffiths, J.S. & S.S. Porter. 2023. The evolutionary genomics of adaptation to stress in wild soil microbiota. Oral Talk. *Ecological Society of America Annual Meeting, Portland, Oregon, USA*
- Van Bael, S., Kimbrough, E., Lumibao, C., **Torres-Martínez, L.**, Formel, S., Conner, W., Day, R and K. Krauss. 2021. Sea level rise and the microbial communities of baldcypress. Organized Oral

- Symposium. Plant-microbe interactions in wetland ecosystems: challenges under increasing environmental pressures. *Ecological Society of America Annual Meeting, Virtual meeting 2021*.
- Torres-Martínez, L.**, C. Wendlandt, J. Purcell and J. Sachs. 2019. Climate, but not symbiosis, drives local adaptation of an annual legume. *Symbiosis symposium. Yosemite, California, USA*
- Torres-Martínez, L.** and N.C. Emery. 2015. The spatial scale of genetic differentiation in wetland plant populations: implications for adaptation to changing climate. *Evolution. Guarujá, Sao Paulo, Brazil*.
- Emery, N.C., **L. Torres-Martínez**, and M. Madden. 2013. Reaction norm evolution and habitat specialization in California goldfields (*Lasthenia*, Asteraceae). *Evolution. Snowbird, UT*.

POSTER PRESENTATIONS

- Lewis, A. & **Torres-Martínez, L.** 2026. Influence of invasive plant species in the diversity and behavior of bee communities in Southern Maryland. *Ecological Society of America Mid-Atlantic Conference, Townson University, Maryland, USA*.
- L'Italien, S. & **Torres-Martínez, L.** 2026. Incidence and genetic variation of the fungal pathogen *Harringtonia lauricola* in US endemic *Persea* species. *Ecological Society of America Mid-Atlantic Conference, Townson University, Maryland, USA*.
- Brown, L. & **Torres-Martínez, L.** 2026. Bridging Tradition and Science: A Review of Medicinal Plant Knowledge in St. Mary's City, Maryland. *Ecological Society of America Mid-Atlantic Conference, Townson University, Maryland, USA*.
- McGonigle, E., Lewandoski, R., Rounsaville, T., & **Torres-Martínez, L.** 2025. Niche overlap and conservatism in endemic *Persea* species in the US. *Ecological Society of America Annual Conference, Baltimore, Maryland, USA*.
- Lewis, A., & **Torres-Martínez, L.** 2025. Incidence and genetic variation of the invasive plant pathogen *Rafaella lauricola* in endemic *Persea* species in the US. *Proposal poster. Ecological Society of America Annual Conference, Baltimore, Maryland, USA*.
- Chuma-Dutan, E., & **Torres-Martínez, L.** 2025. Endophyte community characterization in wild relatives of avocado in the US. *Proposal poster. Ecological Society of America Annual Conference, Baltimore, Maryland, USA*.
- Koontz, S., McClean, J., Smith, C., LaBorie, M., Raley, A., & **Torres-Martínez, L.** 2025. Native rhizobia promote the growth of an important Maryland cover crop under saltwater intrusion. *Ecological Society of America Annual Conference, Baltimore, Maryland, USA*.
- Torres-Martínez, L.**, Fillius, J., Velez, G.A., Raley, A., McLean, J., Dioko, T., & Lopez, D.C. 2025. Cover crops decreased microbial diversity in historical farmland soil. *Ecological Society of America Annual Conference, Baltimore, Maryland, USA*.
- L'Italien, S. & **Torres-Martínez, L.** 2025. Influence of invasive plant species in the diversity and behavior of bee communities in Southern Maryland. *Ecological Society of America Annual Conference, Baltimore, Maryland, USA*.
- Moore-nicks, K., Hamman, E & **Torres-Martínez, L.** 2025. Feedbacks between snail grazing and marsh fungal endophytes. *Proposal poster. Ecological Society of America Annual Conference, Baltimore, Maryland, USA*.
- Schindler, I. & **Torres-Martínez, L.** 2025. Evolution of cadmium-resistant bacteria in agricultural soils. *Annual Meeting of the American Society for Biochemistry and Molecular Biology, Chicago, IL, USA*
- Koontz, S. & **Torres-Martínez, L.** 2023. Native rhizobia promote growth of an important Maryland cover crop under saltwater intrusion. *Sigma Xi International Forum on Research Excellence, Long Beach, California, USA*
- Torres-Martínez, L.**, Muir, S., Byrne, M., and J. Manns. 2023. Sea water intrusion influences *Phytophthora* abundance in Southern Maryland coastal soils. *Ecological Society of America Annual Conference, Portland, Oregon, USA*.
- Koontz, S. & **Torres-Martínez, L.** 2023. Impact of Saltwater Intrusion on an Important Maryland Cover Crop. *Seahawk Undergraduate Research Fellowship Symposium, St. Mary's City, Maryland*

- Sweet, L.C., **Torres-Martínez, L.**, Naomi S. Fraga, N.S., La Doux, T., Heacox, S., Davis, M., and Joel L. Sachs. 2021. Genomic diversity of the narrow endemic and endangered legume *Astragalus tricarlinatus*. *Ecological Society of America Annual Conference, Virtual meeting 2021*.
- Torres-Martínez, L.**, C. Wendlandt, J. Purcell and J. Sachs. 2019. Climate, but not symbiosis, drives local adaptation of an annual legume. *Gordon Research Seminar (GRS) on Genomic Changes Behind Adaptation and Ecosystem Functions. Southern New Hampshire University, Hooksett, NH*.
- Torres-Martínez, L.**, Hendrix, T., Kimborough, L., Hendrix, M., Sánchez, M., and S. Van Bael. 2018. The role of root fungi swamp cypress seedling tolerance to extreme climate events. *Ecological Society of America Annual Conference, New Orleans*.
- Sánchez, M., **Torres-Martínez, L.** and S. Van Bael. 2018. Impact of differential flooding regimes on the Arbuscular Mycorrhizal Fungi and Root Fungal Endophytes of Baldcypress seedlings (*Taxodium distichum*). *International Mycological Congress, San Juan, Puerto Rico*.
- Hendrix, T., **Torres-Martínez, L.**, Kimborough, L., Hendrix, M., Sanchez, M., and S. Van Bael. 2018. Influence of root fungi on the resilience of swamp cypress seedlings to extreme climate events. *CELT Student Poster Presentation, Tulane University, New Orleans*.
- Torres-Martínez, L.**, D. Lopez, C. Perez-Galindo, M.C. Duque, I.A. Gonzalez, J.D. Palacio and H. Cardenas. 2009. Evaluation of the polymorphism of microsatellites markers in *Guadua angustifolia* (Poaceae: Bambusoideae). *VIII World Bamboo Congress. Thailand, Bangkok*.
- Torres-Martínez, L.**, D. Lopez, C. Perez-Galindo, M.C. Duque, I.A. Gonzalez, J.D. Palacio and H. Cardenas. 2009. Molecular Characterization with microsatellites markers of the Juan Maria Cespedes Botanical Garden germ bank accessions of *Guadua angustifolia*. *V Colombian Congress of Botany. Nariño University, Pasto, Colombia*.

TEACHING & MENTORING

INSTRUCTOR AND LECTURER

- | | |
|---------------------|--|
| Fall 2025 | Conservation (LEAD101)
<i>Introductory writing & communication freshman course</i>
St Mary's College of Maryland, St Mary's City, MD |
| Spring 2024-current | Microbiomes (BIOL380, special topics)
<i>Advanced & Specialty undergraduate level course</i>
St Mary's College of Maryland, St Mary's City, MD |
| Fall 2023- current | Micromaster in Conservation: Restoration Ecology Module
<i>Master level course – Invited Instructor</i>
Universidad Icesi, Cali, Colombia |
| Spring 2023-current | Conservation Biology (BIOL380, special topics)
<i>Advanced & Specialty undergraduate level course</i>
St Mary's College of Maryland, St Mary's City, MD |
| Fall 2022 | Genetics (BIO270) & Lab (BIO270L)
<i>Undergraduate level course covering main concepts in Genetics -Biology Major requirement</i>
St Mary's College of Maryland, St Mary's City, MD |
| Spring 2022-current | Principles of Biology II (BIOL106) & Lab (BIOL106L)
<i>Undergraduate level course covering main concepts in biology -Biology Major requirement</i> |

St Mary's College of Maryland, St Mary's City, MD

- Fall 2021 - current** **Plant Physiology & Lab (BIOL435 – 435L)**
Undergraduate level course covering main principles in plant physiology and evolution
 St Mary's College of Maryland, St Mary's City, MD
- Fall 2022 – current** **St Mary's Project (BIOL493 & BIOL494)**
Undergraduate level honor's thesis project
 St Mary's College of Maryland, St Mary's City, MD
- Spring 2022 -current** **Directed Research Plant Microbial Ecological genetics (BIOL497)**
Undergraduate level independent research in plant-microbe interactions
 St Mary's College of Maryland, St Mary's City, MD
- Fall 2023 -current** **Directed Research Plant-Insect Interactions (BIOL497)**
Undergraduate level independent research in plant-insect interactions
 St Mary's College of Maryland, St Mary's City, MD
- Fall 2021** **Principles of Biology I Lab (BIOL105L)**
Undergraduate level course covering main concepts in biology -Biology Major requirement
- 2017 -2018** **Genomics and Bioinformatics (EBIO 6660)**
Graduate level course covering main principles in programming and analyses of next generation sequencing technique.
 Tulane University, New Orleans, LA
- 2016-2018** **Plant Biology and Adaptations (EBIO 3591/6591)**
Graduate and undergraduate level course covering main principles in plant anatomy and physiology
 Tulane University, New Orleans, LA.
- Fall 2016** **Tropical Plant Biology (Independent Study Course)**
Reviewed taxonomy of tropical plants with PhD Student John White.
 Tulane University, New Orleans, LA

WORKSHOPS LED

- 2018** **Brown Bag Seminar Series: “How to teach science”**
Center for Engaged Learning at Tulane (CELT), New Orleans, USA April 4th
- 2017** **Genomics of adaptation: understanding the genetic basis of evolutionary change**
Bioinformatics Center of Colombia (BIOS), Manizales, Colombia, September 28-29th

TEACHING ASSISTANT

- 2012-2016** **Evolution (BIOL 580)**
 Department of Biological Sciences, Cluster of Ecology and Evolution. Purdue University, West Lafayette, IN. *Instructor: Dr. Morris Levy.*
- 2013-2015** **Biology (BIOL 110)**

2013

Department of Biological Sciences, Cluster of Ecology and Evolution. Purdue University, West Lafayette, IN. *Instructor: Dr. Athena Anderson*

Conservation Biology (BIOL 483)

Department of Biological Sciences, Cluster of Ecology and Evolution. Purdue University, West Lafayette, IN. *Instructor: Dr. Kerry Rabenold*

RESEARCH STUDENTS MENTORED (70 TOTAL)**HONOR THESIS (ST MARY'S PROJECT) – 19 students****2025-2026:**

Ugonna Ejekwu - *An assessment of different farming practices in the promotion of rhizobia bacteriophages*

Aurora Lewis - *Incidence of the invasive plant pathogen *Raffiaelea lauricola* in native *Persea* spp across the United States*

Stela L'Italien - *Influence of introduced plant species on the diversity of native bees in Southern Maryland*

Juniper Humphrey - *Fungal endophyte diversity in US endemic *Persea* species*

Emma Shepard - *Molecular Identification and Salinity Tolerance of Redbay Leaf Endophytes*

Elizabeth Brown - *Bridging Tradition and Science: A Review of Medicinal Plant Knowledge in St. Mary's City, Maryland*

Krystal Moore-nicks - *Feedbacks Between Snail Grazing and Fungal Endophyte Communities*

2024-2025:

Sophia Koontz – *Native rhizobia outcompete commercial inoculants in cover crops under salinity stress*

Isabella Schindler – *Evolution of cadmium-resistant bacteria in agricultural soils*

Devon Crain – *Effects of microplastics on the symbiosis between white clover and rhizobia*

Aaron Roberts- *Effects of soil microbiota on coastal forest tree resistance to climate change*

2023-2024:

Colleen Smith – *Seawater intrusion effects on coastal forest mushrooms*

Andrew Rawley - *Effects of seed coating on the performance of an important legume cover crop in Maryland*

Joselyn Fillius – *Soil Microbial composition of historical farmland in southern Maryland after exposure to different cover crops*

Camille Louat – *Review of hydroponic systems and its applications on small-scale productions*

Morgan Marzec – *Darkling beetle insecticide resistance and efficacy in varying populations*

2022-2023:

Jordan Manns – *Salt intrusion effects in the symbiotic association between an iconic coastal forest tree and mycorrhizal fungi*

Mary Ardita – *Trait adaptive tradeoffs in response to drought in the legume-rhizobium symbiosis*

Kirsten Asis- *Bacteria resistance to salt stress*

DIRECTED RESEARCH STUDENTS AT SMCM (INDEPENDENT RESEARCH) – 23 students**2025-2026:**

Brianna Reber – *Phenotyping of fungal endophytes from Redbay trees*

Jd Lee – *Creation of a database that combines Plant-microbe interactions using R shiny*

Mara McCoughlin – *Genetic differentiation of *Spartina alterniflora* along a salinity gradient*

Ella Garret – *Characterization of cadmium resistant bacteria in Southern Maryland Farmlands*

Luke Williams – *Archival of fungal endophytes in *Persea* spp*

Riley Strohecker – *Characterization of PHA production in endophytes from *Persea* spp*

2024-2025:

Patton Harbour – *Soil nutrient characterization after cover crop planting*

Mara McCoughlin – *Characterization of stem endophytes from *Persea* spp*

Raina Zack - *Characterization of stem endophytes from *Persea* spp*

Stella L'Italien – *Diversity of native bee pollinators in historic St Mary's City*

Aurora Lewis - *Characterization of stem endophytes from *Persea* spp*

Elizabeth Chuma-Dutan - *Characterization of leaf endophytes from *Persea* spp*

Krystal Moore-nicks - *Characterization of leaf endophytes from *Persea* spp*

Juniper Humphrey - *Parasitism-mutualism continuum in coastal tree forests under extreme climate events*

2023-2024:

Juniper Humphrey - *Parasitism-mutualism continuum in coastal tree forests under extreme climate events*

Isabella Schindler – *Identification of cadmium-resistant bacteria in agricultural soils*

Jackson McClean – *Greenhouse technician*

Stella L'Itallien - *Characterization of native bee pollinators in historic St Mary's City (A review)*

Sophia Koontz – *Identification of native rhizobia associating with white clover*

2022-2023:

Sophia Koontz – *Evaluation of white clover symbiosis with rhizobia under salinity stress*

Sam Muir – *Identification Phytophthora fungi in coastal forests*

Tiffany Dioko – *Stomata characterization in Acmispon spp*

Kayla Webster – *Stomata characterization in carnivorous plants*

Andrew Rawley – *AMF screening in baldcypress trees*

2021-2022:

Chandler Williams - *Acmispon spp* inbred lines

Mary Ardita – *Acmispon spp* inbred lines

Jordan Manns – *AMF & DSE characterization in baldcypress trees from diverse soils across Maryland*

Mel Byrne – *Identification of Phytophthora fungi in coastal forests*

STUDENTS TRAINED BEFORE SMCM – 25 students

- Trained **three** graduate students, **six** undergraduate students, and **two** high school students in microbiological techniques, data analyses in R and scientific writing at the University of California, Riverside
- Trained **six** undergraduate students and **two** graduate students in molecular techniques, experimental evolution techniques, and scientific writing at Tulane University
- Trained **six** undergraduate students in experimental evolution techniques and DNA extraction protocols at Purdue University

PROFESSIONAL SERVICE

REVIEWER

- Scientific Journals: Nature Communications (1X), Molecular Ecology (1X), New Phytologist (2X), Proceedings of the Royal Society B (2X), Evolution (2X), Ecology & Evolution (2X), Advanced Science (2X), Ecosphere(1X), American Journal of Botany (2X), Madroño (1X), Conservation Genetics (3X), Agriculture (1X), Forest, Tree genetics & Genomes (2X), Plants (1X), PeerJ (1X), Plant Biology (1X), Journal of Nature Conservation (1X), JT Science newsletter (1X).
- Research Grants:
 Panelist- National Science Foundation (2026)
 Ad-hoc-National Science Foundation (2020 & 2022)
 Ruth Mathes Scholarship Program (Fall 2021, 2022, 2025)
 Flores Award of the Biology Department at SMCM (Spring 2022 & 2025)

ADMINISTRATIVE ROLES

2021– present: Greenhouse & Plant Teaching Collection Manager at St Mary's College of Maryland

- *Oversee greenhouse usage for research, teaching and outreach activities*

2024-present: Academic Advisor of Beta, Beta, Beta Biological Honor's Society of the Biology Department at St Mary's College of Maryland

- *Coordinate bi-weekly meetings with the board of the student association, provide administrative help to student-led fundraising activities within the college, serve as a liaison between biology students and faculty within the department*

2022-2024: Academic Advisor of WISH (Women in Science Housing) at St Mary's College of Maryland

- *Coordinate monthly meetings with the board of the student association, provide administrative help to student-led fundraising and academic activities within the college*

2022-2025: Coordinator of the Natural Sciences and Math colloquium for the Biology Department at St Mary's College of Maryland

- *Invite speakers for the colloquium & coordinate their visits to the college*

2016-2018: Plant Journal Coordinator

- *Scheduled meetings for the weekly discussions on plant biology research in the EEB department at Tulane University*

2013-2014: Secretary of CSAP (Colombian Student Association at Purdue University)

- *Supported the advancement of higher education of Colombian students at Purdue University*

ACADEMIC COMMITTEES

2026 – Strategic Planning Committee at St Mary’s College of Maryland

2024-present: IDEA Faculty Committee at St Mary’s College of Maryland

2025 – Faculty search committee for one tenure-track position in the Biology Department

2024 – Faculty search committee for one tenure-track position in the Biology Department

2023 - External Evaluator of Master research thesis at Universidad Industrial de Santander, Colombia

2022 – Faculty search committee for two tenure-track positions in the Environmental Studies Department

2022- External Evaluator of Undergraduate research thesis at Universidad del Valle, Colombia

ACADEMIC ADVISING**2023-2026 summer: eSOAR advisor at St Mary’s College of Maryland**

- Provided guidance to over 20 freshman students each summer on their curriculum and course selection

2022-present: Academic advisor of students at St Mary’s College of Maryland

- Provided guidance to over 21 students each semester on their curriculum and course selection, future career plans and best approaches to succeed in their courses.

OUTREACH ACTIVITIES**2023: Faculty representative for the National Hispanic Institute held at St Mary’s College of Maryland**

- *Liason between students and the college during the summer. Introduced the research experiences at the college*

2022: Invited to be Wonder Woman

- *As part of the STEMing initiative that aims to inspire the next generation of girls in science in Southern Maryland I was invited to share my path as a scientist to girls in elementary school in spring 2022*

2017: Volunteer of GIST (Girls in Stem at Tulane) & BATS (Boys at Tulane in Stem)

- *Helped in guiding and teaching girls and boys from elementary school different research techniques in plant-microbe interactions during spring 2018. This activity is developed by the Department of Ecology and Evolutionary Biology at Tulane University each year.*

2016-2018: Advisor for Women in Science at Tulane (WISE)

- *Advised several undergraduates in their career development and advancement in science*

PROFESSIONAL DEVELOPMENT

2026- Computational Pangenomics. Physalia Online Course, April 13-16

2017- Gulf Coast Summer Institute in scientific teaching workshop. Baton Rouge, July 17th-21th.

2017- Brown Bag Series: Lecturing can be fine- just add some spice!. Center for Engaged learning and Teaching, Tulane University.

2016- Building rapport with your students. Center for Instructional Excellence, Purdue University

2016 - Active Learning I: Encouraging active learning. Center for Instructional Excellence, Purdue University.

2016 - Active Learning II: Experiential learning. Center for Instructional Excellence, Purdue University.

2015 - Workshop in conservation genomics. Lakretz Field Station. University of California, Los Angeles, CA, USA. March 22-27, 2015

2011- Practical computing for biologist. NESCENT. North Carolina State University, Raleigh, NC, USA. June 6-1, 2011

2010- VI Workshop of Conservation genetics: micro-evolutionary processes in wild species. *Latin-American network of conservation genetics (REGENEC). Chillán, Chile. January 12-22, 2010*

2009- Specialization in Climate Global Change and the Kyoto Protocol *from Latin-American Science Institute, Lima, Peru. Thesis Research: Estimation of the potential distribution of Guadua angustifolia and the effect of climate change under two ecological scenarios for the 2050.*

2009 - Course in Phylogeography: sequence and microsatellites data analyses. *Universidad del Valle, Biological Sciences Department, Cali, Colombia. June 22-27, 2009.*

2007 - Workshop in phylogenetic applications of flow cytometry. *II Latin-American Symposium of Cytogenetics and Evolution. Universidad Nacional de Colombia. Palmira, Colombia. August 15-18, 2007*

PROFESSIONAL MEMBERSHIPS

Genetics Society of America (GSA)

Society for Advancement of Chicanos/Hispanics & Native Americans in Science (SACNAS)

American Phytopathological Society (APS)

Society for the Study of Evolution (SSE)

Ecological Society of America (ESA)

American Association for the Advancement of Science (AAAS)

Maryland Native Plant Society