## DR. CATHERINE M. HULSHOF, PHD

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## ACADEMIC APPOINTMENTS

2023 -	Associate Professor, Department of Biology, Virginia Commonwealth University
2018 -	Research Associate, Smithsonian Institution National Museum of Natural History
2018 - 2023	Assistant Professor, Department of Biology, Virginia Commonwealth University
2014 - 2017	Assistant Professor, Department of Biology, University of Puerto Rico Mayagüez
2013 - 2014	NSF Postdoctoral Research Fellow, Department of Environmental Science & Policy,
	University of California Davis

## **EDUCATION**

2013	PhD in Ecology and Evolutionary Biology, Minor in Global Change
	Department of Ecology and Evolutionary Biology, University of Arizona
2006	BA in Biology with a double major in Chemistry, University of Pennsylvania

## **PROFESSIONAL EXPERIENCE**

2009 - 2012	NSF Graduate Research Fellow, Department of Ecology and Evolutionary Biology,
	University of Arizona
2011 - 2012	Research Assistant, Water Resources Research Center, University of Arizona
2009	Grant Writer, Environmental Education Exchange, Tucson, Arizona
2007 - 2008	Research Associate, Conservation International TEAM Network
2002 - 2006	Federal Work-Study, Department of Biology, University of Pennsylvania

# **COMPETITIVE RESEARCH GRANTS**

- 2021 2026 NSF CAREER: Predicting functional trait variation across spatial, temporal, and biological scales (\$1.06M)
- 2016 2020 NSF Macrosystems Biology Early Career Award: Climate change and plants on unusual soils (\$300K)
- 2017 NSF EPSCoR Research Infrastructure Improvement Track 4: Image analysis of tropical Lepidoptera – Using Artificial Intelligence for biodiversity collections in the Big Data era (\$195K)
- 2016 2017 Puerto Rico Science, Technology, and Research Trust: Digitization of museum Lepidoptera collections for biodiversity conservation (\$70K)
- 2015 2017 USFS Endangered Species Grant: The ecology of edaphic endemism (\$45K)
- 2014 2016 University of Puerto Rico Mayagüez Internal Competitive Research Grant (\$5K)
- 2010 Institute of the Environment Graduate Dissertation Grant, University of Arizona (\$5K)
- 2008 Latin America Tinker Summer Field Research Grant, University of Arizona (\$5K)

# **AWARDS & FELLOWSHIPS**

- 2021 VCU College of Humanities & Sciences Excellence in Scholarship Award
- 2021 rstudio::global(2021) Diversity Scholar
- 2016 Ecological Society of America Education Scholar
- 2014 Carl Storm Underrepresented Minority Fellowship
- 2013 NSF Postdoctoral Research Fellowship in Biology
- 2012 Ecological Society of America SEEDS Travel Award
- 2010 Philanthropic Educational Organization Scholar Award National Nominee
- 2009 NSF Graduate Research Fellowship Program
- 2009 Ford Foundation Diversity Fellowship Doctoral Program
- 2008 Organization for Tropical Studies NSF International Research Fellowship
- 2007 Graduate Diversity Fellowship Award, University of Arizona
- 2006 Nassau Research Award, University of Pennsylvania
- 2006 Binns-Williams Research Award, University of Pennsylvania

# PUBLICATIONS

\* Graduate Student, + Undergraduate Student, **‡** Corresponding Author

Under Review or In Prep (MS available, data deposition in Dryad planned upon publication)

- 1. **‡ Hulshof CM**, +Ojeda Cana O, +Velázquez Román L, Ackerman J, Franqui RA, Restrepo C. Taxonomic and functional homogenization of Puerto Rico Lepidoptera. *Under Review. Diversity and Distribution*.
- 2. Umaña MN, **CM Hulshof**. Trait variation is stable across spatial and temporal scales in a subtropical forest. *Under Review. Ecology*.
- 3. Walter JA, Atkins JW, Hulshof CM. Climate and topography shape variation in the tropical dry forest-rainforest ecotone. *Under Review. Ecology.*

# Peer-reviewed

- 1. Beidler K, Powers J, Dupuy JM, **Hulshof CM**, Medvigy D, Pizano C, Salgado-Negret B, Van Bloem S, Vargas Gutierrez G, Waring B, Kennedy P. Incorporating seasonally and spatially dynamic ectomycorrhizal fungal communities strengthens predictions of soil biogeochemical cycling in neotropical dry forests. *Journal of Ecology*.
- 2. + Samojedny TJ, \*Garnica Diaz C, **‡ Hulshof CM**, Rajakaruna N. 2023. Specific leaf area is modulated by ultramafic soils across biogeographical regions. *Plant Ecology and Diversity*. Data.
- 3. **‡ Hulshof CM**, Umaña MN. 2023. Power laws and predicting plant trait variation across spatiotemporally heterogeneous environments. *Global Ecology and Biogeography*.
- \* Garnica-Díaz C, Berazaín Iturralde R, Cabrera B, \*Calderón Morales E, Felipe Tamé FL, García R, Gómez Hechavarría JL, Guimarães AF, Medina E, Paul ALD, Rajakaruna N, Restrepo C, Siebert SJ, van den Berg E, Van der Ent A, Velasquez G, and **‡** CM Hulshof. Global plant ecology of tropical ultramafic ecosystems. *The Botanical Review*. <u>Paper</u>. <u>Data</u>.
- \* Richins A, Hulshof CM. 2022. Deer exclusion regenerates native plant functional responses, but not species richness in an eastern serpentine savannah. *Frontiers in Conservation Science*. 3:874304. <u>Paper</u>. Data forthcoming.

- 6. McEntire K, Gage M, Gawne R, Hadfield M, **Hulshof CM**, Johnson M, Levesque D, Segura J, Pinter N. 2021. Understanding drivers of variation and predicting variability across levels of biological organization. *Integrative and Comparative Biology*, icab160. <u>Paper</u>.
- Vargas G, Brodribb T, Dupuy J, González-M R; Hulshof CM, Medvigy D, Allerton T, Pizano C, Salgado-Negret B, Schwartz N, Van Bloem S, Waring B, Powers J. 2021. Beyond leaf habit: Generalities in plant function across 102 tropical dry forest tree species. *New Phytologist* 232: 148-161. <u>Paper</u>. <u>Data</u>. Cited by 1.
- Waring B, De Guzman M, Du D, Dupuy J, Gei M, Gutknecht J, Hulshof CM, Jelinski N, Margenot A, Medvigy D, Pizano C, Salgado-Negret B, Schwartz N, Trierweiler A, Van Bloem S, Vargas G, Powers J. 2021. Soil biogeochemistry across Central and South American tropical dry forests. *Ecological Monographs* 91: e01453. <u>Paper</u>. <u>Data</u>. Cited by 5.
- 9. **‡ Hulshof CM**, Spasojevic MJ. The edaphic control of plant diversity. 2020. *Global Ecology and Biogeography* 29: 1634-1650. <u>Paper</u>. <u>Data</u>. Cited by 38.
- 10. **‡ Hulshof CM**, Waring BG, Powers JS, Harrison SP. 2020. Trait-based signatures of cloud base height in a tropical cloud forest. *American Journal of Botany* 107: 1-9. Paper. Data. Cited by 2.
- Swenson NG, Hulshof CM, Katabuchi M, Enquist BJ. 2020. Long-term shifts in the functional composition and diversity of a tropical dry forest: a 30-yr study. *Ecological Monographs* 90: e01408. Paper. Data. Cited by 17.
- \* Wales S, Kreider M, Hulshof CM, Atkins J, Fahey RT, Nave LE, Nadelhoffer KJ, Gough CM. 2019. Stand age, disturbance history and the temporal stability of forest production. *Forest Ecology and Management* 460: 117865. <u>Paper</u>. Cited by 16.
- **‡ Hulshof CM**, Powers JS. 2019 Tropical forest composition and function across space and time: Insights from diverse gradients in Área de Conservación Guanacaste. *Biotropica* 52: 1065-1075. Top Cited Paper 2021-2022. <u>Paper</u>. Cited by 7.
- 14. + Echevarría Ramos M, **‡ Hulshof CM**. 2019. Using digitized museum collections to understand the effects of habitat on wing coloration in the Puerto Rican monarch *Biotropica* 51: 477-483.
   <u>Paper</u>. Data. Cited by 4.
- 15. Wieczynski D, Boyle B, Buzzard V, Duran S, Henderson A, Hulshof CM, Kerkhoff A, McCarthy M, Michaletz S, Swenson S, Asner G, Bentley L, Enquist B, Savage V. 2019. Climate shapes and shifts functional biodiversity in forests worldwide. *Proceedings of the National Academy of Sciences* 116: 587-592. Paper. Data. Cited by 93.
- \* Derroire G, Powers J, Hulshof CM, Varela L, Healy J. 2018. Contrasting patterns of leaf trait variation among and within species during tropical dry forest succession in Costa Rica. *Nature Scientific Reports* 8: 285. <u>Paper</u>. <u>Data</u>. Cited by 37.
- 17. Agosta SJ, **Hulshof CM**, \*Staats E. 2017. Herbivore performance, climate, and leaf traits in regenerating tropical dry forests. *Journal of Animal Ecology* 86: 590-604. <u>Paper</u>. <u>Data</u>. Cited by 11.
- Allen K, Dupuy JM, Gei MG, Hulshof CM, Medvigy D, Pizano C, Salgado-Negret B, Smith CM, Trierweiler A, Van Bloem SJ, Waring BG, Xu X, Powers JS. 2017. Will seasonally dry tropical forests be sensitive or resistant to future changes in rainfall regimes? Special Issue *Environmental Research Letters* 12: 023001s. Featured in Highlights of 2017. <u>Paper</u>. Cited by 200.
- \* Buzzard V, Hulshof CM, Violle C, Enquist BJ. 2016. Regrowing a tropical dry forest: Functional trait diversity during secondary succession. *Functional Ecology* 30: 1006-1013. <u>Paper</u>. <u>Data</u>. Cited by 81.

- 20. **# Hulshof CM**, Swenson N, Weiser M. 2015. Tree height-diameter allometry across the United States. *Ecology and Evolution* 5: 1193-1204. <u>Paper</u>. Cited by 92.
- 21. **‡ Hulshof CM**, Violle C, Spasojevic M, McGill B, Damschen E, Harrison S, Enquist B. 2013. Intra-specific and interspecific variation in specific leaf area reveal the importance of abiotic and biotic drivers of species diversity across elevation and latitude. *Journal of Vegetation Science* 24: 921-931. <u>Paper</u>. Cited by 163.
- 22. **# Hulshof CM**, Martinez-Yrizar A, Burquez A, Boyle B, Enquist B. 2013. Functional plant trait variation in tropical dry forests: A review and synthesis. In Tropical Dry forests of the Americas: Ecology, Conservation, and Management (eds. J. Powers and A. Sanchez), CRC Press, New York. pp 129-140. <u>Book chapter</u>. Cited by 26.
- Violle C, Enquist BJ, McGill B, Jiang L, Albert CH, Hulshof CM, Jung V, and J Messier. 2012. Viva la variance! A reply to Nakagawa & Schielzeth. *Trends in Ecology and Evolution* 27: 475-476. <u>Paper</u>. Cited by 9.
- 24. Violle C, Enquist B, McGill B, Jiang L, Albert C, **Hulshof CM**, Jung V, Messier J. 2012. The return of the variance: intraspecific variability in community ecology. *Trends in Ecology and Evolution* 27: 244-252. Paper. Cited by 1365.
- 25. **‡** Hulshof CM, Swenson NG, Stegen JJ, Enquist CF, Enquist BJ. 2012. Interannual variability of growth and reproduction in the tropical tree Bursera simaruba The role of allometry and resource variability. *Ecology* 93:180–190. <u>Paper</u>. Cited by 22.
- 26. **# Hulshof CM**, Swenson NG. 2010. Variation in leaf functional trait values within and across individuals and species: An example from a Costa Rican dry forest. *Functional Ecology* 24: 217 223. <u>Paper</u>. Cited by 239.

# DEPARTMENTAL SEMINARS & SELECTED CONFERENCE PRESENTATIONS

(\* INVITED)

- 2023 \* University of Minnesota, Plant and Microbial Biology Seminar Series Biodiversity science for understanding local to planetary scale responses to climate change
- 2022 \* University of Guelph, Department of Biology Biodiversity for a Changing Planet
  - \* University of Puerto Rico Rio Piedras, Department of Biology Biodiversity for a Changing Planet
  - \* University of Massachusetts Amherst, Organismic and Evolutionary Biology Program Biodiversity science for understanding local to planetary scale responses to climate change
  - \* Virginia Commonwealth University, Depatment of Biology Biodiversity science for understanding local to planetary scale responses to climate change
  - \* University of Virginia, Department of Environmental Sciences Ecotones are sentinels of climate change at local to continental scales
  - \* *Trinity University, Department of Biology* Ecotones are sentinels of climate change at local to continental scales
  - \* *Iowa State University, Department of Ecology, Evolution and Organismal Biology* Ecotones are sentinels of climate change at local to continental scales
- 2021 \* *The University of Washington at St. Louis Tyson Research Center Seminar Series* Climate change in the tropical wet forest - dry forest transition zone
  - \* Ekmanianthe Dominican Association of Students of Biology (in Spanish) Los ecotonos tropicales y el cambio climático
  - \* University of Maine, School of Biology and Ecology Beyond Big Data: What is the next scientific revolution?

CATHERINE M. HULSHOF DE LA PEÑA

- 2020 \* Cornell University, Department of Ecology and Evolutionary Biology Seminar Series Advancing a trait scaling theory to predict variance in space and time
  - \* Association for Tropical Biology and Conservation Special Symposium (cancelled)
- 2018 *Ecological Society of America Annual Meeting* Species and trait diversity of an insular tropical Lepidoptera assemblage
  - \* University of Florida Gainesville, Department of Biology Seminar Series How seasonal is seasonal? Wavelet analysis of climatic and functional trait data in seasonal tropical forests
- 2017 *Congreso de Biodiversidad Caribeña, Santo Domingo, República Dominicana (in Spanish)* Variabilidad climática y la diversidad funcional en los bosques secos tropicales
  - \* *Research Experience for Undergraduates Blandy Experimental Farm* The functional trait approach in ecology
- 2016 *Ecological Society of America Annual Meeting* Climatic variability and functional diversity in tropical dry forests
- 2015 \* Association of Tropical Biology and Conservation Symposium Trait-based signatures of climate-induced changes in cloud base height in a tropical cloud forest
  - \* University of Puerto Rico Rio Piedras Seminar Series (in Spanish) Variabilidad climática y la diversidad funcional en los bosques secos tropicales
- 2014 \* *Gordon Research Conference Unifying Ecology across Scales* Caterpillar performance, climate, and leaf traits in a regenerating tropical forest
- 2011 \* Organization for Tropical Studies, Undergraduate Tropical Ecology Semester Course The functional trait approach for testing long-standing ideas in ecology

# MENTORING

Mentees' current position in italics

Chair	<b>Perla Ortiz Colón</b> (PhD, accepted, deferred to 2023 start date). Functional diversity of tropical seedling communities.
	<b>Pablo Lopez Bustamante</b> (PhD, 2022 – ). Reassembly of tropical montane
	forests.
	Emelia Kusi (co-chair with Karen Kester, MSc 2019-2021). The effects of
	abiotic and biotic factors on hornworm distributions. Awarded Department of
	Biology Outstanding Graduate Student Award. PhD student, University of
	Massachusetts.
	Dayneris Aparicio Jimenez (MSc 2018–2020). The effects of wing traits on
	the recovery of Lepidoptera post-Hurricane Maria. Community engagement in
	Tampa, FL.
	Claudia Garnica-Diaz (MSc 2018–2020). Effects of climatic and edaphic
	factors on plant trait variation across elevation. PhD student, University of
	Florida Gainesville.
	Allyson Richins (MSc 2018–2020). Plant-pollinator associations in an eastern
	serpentine savannah and the effects of overbrowsing. Awarded Rice River
	Center Research Award. Data Analytics, Bureau of Land Management, New
	Mexico.

Chair (cont.)	Amelia Mateo Jimenez (MSc 2016–2018). Phenology of a tropical dry forest in Dominican Republic. <i>Instructor, Universidad Autónoma de Santo Domingo</i> .
Member	Ariel Johnson (PhD, 2023–); Lisa Turner (PhD, 2018–); Sequoia Mosby (MSc, 2020–); Constance Bolte (PhD, 2018–2022); Tristan Allerton (PhD, 2017–2020); Baron Lin (MSc, 2019–2021); Alex Brown (MSc, 2019–2021); Shannon Walker (MSc, 2018–2020); Elsa Chen (MSc, 2018–2020); Maxim Grigri (MSc, 2018–2020); Rebecca Dahlberg Piri (MSc, 2017–2019); Audrey Kirschner (MSc, 2018–2019); Shea Wales (MSc, 2018–2019)
Undergraduate	<ul> <li>Caitlin Terry (VCU, 2022–). Lepidoptera research in Puerto Rico.</li> <li>Phoebe LaMountain (VCU, 2023). ESA SEEDS chapter at VCU</li> <li>Alanis Rosa-Santiago (UPRRP, 2022–2023). Functional plant diversity of Caribbean tropical dry forests. Awarded Puerto Rico Louis Stokes Alliance for Minority Participation Summer Research Award (\$6k).</li> <li>Eric Escobar-Chena (VCU, 2022–2023). ESA SEEDS chapter at VCU.</li> <li>Angela Hong (VCU, 2018–2019). Image analysis of butterfly size and color.</li> <li>Tristan Rivera (VCU, 2018–2019). Plant-insect associations in Puerto Rico.</li> <li>Luis Velázquez Román (UPRM, 2018). NSF REU Luquillo Long Term</li> <li>Ecological Research Network. The effect of climate change on Puerto Rican butterfly distribution. Presented work at ESA Annual Meeting. Received NSF REU travel award. <i>MSc student, University of Puerto Rico Rio Piedras</i>.</li> <li>Mariangelí Echevarría (UPRM, 2017). Phenotypic variation in the Puerto Rican monarch. Received Mindlin Foundation Undergraduate Research Award (\$5k) for travel and presentation at ATBC Annual Meeting in Malaysia 2018.</li> <li>Co-led butterfly technology exhibit at Feria Para La Naturaleza (the largest science fair on the island). <i>MSc student, Boston University</i>.</li> <li>Oscar Ojeda Cana (UPRM, 2017). Digitization of Puerto Rican Lepidoptera collections. Co-led butterfly technology exhibit at Feria Para La Naturaleza.</li> <li>Andrea Lopez (UPRM, 2015). Urban plant diversity and function. Presented work at the UPRM Undergraduate Biology Research Symposium, May 2016.</li> <li>Vanessa Buzzard (UA, 2010). Tropical dry forest succession. Published peerreviewed journal and presented at Ecological Society of America Annual Meeting. <i>Completed PhD, now research technician, University of Arizona</i>.</li> </ul>

### TEACHING

\* Indicates new curriculum development; in-person unless otherwise noted

Virginia Commonwealth University, Department of Biology

\*Online tutorials: YouTube channel: <u>Biodiversity Data Science</u>, 900 subscribers, 26,717 views \*Capstone: Envisioning Future Earth with SEEDS, Undergraduate, 2 credits <u>Fall 2022</u> 15 students, online synchronous

Ecology, Undergraduate, 3 credits

- Fall 202375 students, online asynchronous
- Fall 202275 students, online asynchronous
- Fall 2021235 students, online asynchronous

CATHERINE M. HULSHOF DE LA PEÑA

*EcoCode: Environ	nmental Data Science, Undergraduate, 3 credits
Fall 2020	9 students, online asynchronous; YouTube Playlist
*Data Science for I	Biologists, Graduate, 3 credits
Fall 2020	7 students, online asynchronous; YouTube Playlist
Fall 2019	14 students
Fall 2018	10 students

#### University of Puerto Rico Mayagüez, Department of Biology

Principles of Ecology, Undergraduate, 3 credits, 30 students Fall 2017; Spring 2015; Fall 2014
\*Quantitative Ecology in R, Graduate, 3 credits Spring 2016 15 students
\*Population Ecology in R, Graduate, 3 credits Fall 2016 15 students
Introduction to Biology for Majors, Undergraduate, 3 credits, 50 students Fall 2015; Fall 2014

#### Pima Community College, Desert Vista, Tucson, Arizona

Introduction to Biology for Non-Majors, 3 credits Fall 2012 25 students

#### SERVICE

Reviewer	American Naturalist, Annals of Botany, Biotropica, Ecography, Ecology, Ecology Letters, Frontiers in Plant Science, Functional Ecology, Global Ecology and Biogeography, Journal of Animal Ecology, Journal of Biogeography, Journal of Ecology, Journal of Vegetation Science, Nature, Oecologia, Oikos, PLoS ONE, Perspectives in Plant Ecology, Evolution and Systematics; Plant and Soil, Proceedings of the Royal Society B, Science, among others
	NSF Review Panels – Directorate of Biological Sciences: 2016 (2); 2018 (1); 2019 (1); 2020 (1, ad hoc); 2021 (2); 2022 (2); 2023 (2)
	Alberta Conservation Association Grants in Biodiversity (1); ForestGEO Grant Program (1)
Faculty Committees	<i>Department of Biology Ad hoc Diversity, Equity, and Inclusion Committee</i> (Fall 2020–2022): Evaluate existing and consider new strategies for increasing DEI in the Department; developed a mission statement and recommendations for the Department, moved to make <i>ad hoc</i> committee a standing committee.
	<i>Department of Biology PhD Prospectus Committee</i> (Fall 2019–2022): Part of a team of four faculty who prepared and submitted a proposal for the creation of a PhD in Biosciences program. Proposal was approved by Dean, Provost, and is now under review by the State Council of Higher Education for Virginia.

	2019; gradua advoca	<i>ctment of Biology Graduate Academic Committee</i> (Spring 2018; Fall Spring 2020): Reviewed and approved graduate applications; reviewed ate application requirements, reviewed new graduate course proposals. I ated for eliminating the Graduate Record Examination (GRE) ement which was unanimously approved by the Department.
Workshops Convened	2023	Introduction to Data Science, Scientists in Parks, National Park Service
	2019	Explore NEON, Virginia Commonwealth University, 30 participants. Access and analyze NEON data in R.
	2019	investigadoresACG Open House, Area de Conservación Guanacaste, Costa Rica, Organizing Committee, 60 participants (researchers, land
	2018	<ul> <li>managers, and environmental educators)</li> <li><u>Data Carpentry R for Ecology, University of Puerto Rico Rio Piedras</u>,</li> <li>25 participants. Data management, reproducibility, analysis, and visualizations.</li> </ul>
	2018	NSF Macrosystems in Biology Principal Investigator (PI) Meeting, Organizing Committee, 80 participants
	2016	Data Carpentry R for Ecology, University of Puerto Rico Mayagüez, 20 participants. Data management, reproducibility, analysis, and visualizations.
Diversity in	2021	Ecological Society of America Strategies for Ecology Education,
STEM	-	Diversity and Sustainability, VCU chapter faculty advisor (2021–), focused on underrepresented minority mentoring and research and career training.
	2022	Women of Color in Ecology and Evolutionary Biology Mentoring Program (mentor and mentee)
	2019	Científico Latino Graduate Student Initiative, faculty mentor
	2018	Ecological Society of America Annual Meeting SEEDS faculty mentor
	2017	ESA SEEDS, new UPRM chapter, faculty advisor (2014–2017)
	2010	Women in Science and Engineering mentor
Invited Public Outreach	2021	Henrico County Public Schools Hispanic Heritage Month Keynote (bilingual) Científiques como tí: Innovation Depends on Diversity
Ourreach	2021	(bilingual), Científiques como tú: Innovation Depends on Diversity Roots and Shoots Puerto Rico Pollinator Week (in Spanish), La diversidad de las mariposas de Puerto Rico

# PROFESSIONAL DEVELOPMENT

2022	2022 Virginia Commonwealth University Faculty Success Program Cohort
	Presented by the National Center for Faculty Development & Diversity. A 12-
	week program to implement skills and strategies for research productivity and
	work-life balance, including accountability, coaching, and peer support. Funded
	by the VCU Office of the Senior Vice President for Health Sciences.
2021 - 2022	National Ecological Observatory Network Ambassador Program
	Accelerating scientific discovery, diversity, and inclusion through NEON data.

2021 - 2022	Institute on Inclusive Teaching, Virginia Commonwealth University
	Strategies for becoming more inclusive instructors and leaders. A sustained,
	year-long process of design, application, and assessment of these strategies.
2019	NSF Jumpstart: Reintegrating Biology, Austin, TX
	Explored questions and new developments at the crossroads of modern biology.
	Resulted in publication (McEntireHulshof et al. 2021, Integrative and
	Comparative Biology).
2019	Virginia Commonwealth University Grant Writing Academy
	Writing workshops for grant preparation, led to funded NSF CAREER award.
2017	Data Carpentry Instructor Training, San Juan, PR
	Educational psychology, instructional design, and inclusive pedagogy.
2016	NEON Data Science Institute, Boulder, CO
	Remote sensing of vegetation using open-source tools and reproducible science
	approaches.
2016	Quantitative Undergraduate Biology Education and Synthesis (QUBES) and
	Ecological Society of America Faculty Mentoring Network 'Scaling Up:
	Bringing Research Data into Undergraduate Classrooms' program

# **PROFESSIONAL AFFILIATIONS**

American Geophysical Union

Association for Tropical Biology and Conservation (including Neotropical Chapter) Association for Women in Science Ecological Society of America (including Latin American & the Caribbean Chapter)

### LANGUAGES

English - native language; Spanish - fluent