

GEORGIA G. HERNÁNDEZ

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ORCID 0000-0002-1076-7200

Languages: **Spanish** (native language), **English** (fluent: speaking, reading, writing), **Italian** (high: listening; intermediate: reading; basic: writing, speaking), **Portuguese** (high: reading, listening, basic: writing, speaking)

WORK EXPERIENCE

Coordinator and Instructor of the Graduate Course (2026 – 2027)

“Tropical Biology: An Ecological Approach”

Organization for Tropical Studies, Costa Rica

Post-doctoral Scholar (2024 – 2026)

University of California Davis, USA

Program Director & Scientific Lead (2014 – 2019)

Brenesii, Costa Rica

Designed scientific guides and led hands-on research projects for high school students, creating accessible field experiences, teaching field techniques and data analysis while fostering a passion for scientific inquiry.

Implemented the organizational structure for science field trips, managing logistics, schedules, and student safety to ensure successful program delivery.

EDUCATION

Ph.D. Ecology and Evolutionary Biology (2024)

Dissertation: “Understanding Variation in Heat Tolerance Among Tropical Plant Communities: Implications for a Warming World”

University of Connecticut, USA

B.Sc. Biology (2017)

Thesis: “Evaluation of the Net Primary Productivity in high altitude pastures for livestock purposes”

Universidad Nacional de Costa Rica, Costa Rica

RESEARCH INTERESTS

I am interested in understanding how global change reshapes plant communities. By combining leaf-level physiological metrics with evolutionary and community contexts, my

work focuses on the limits of species' climate tolerance, temporal shifts, and adaptation. My current research spans tropical, subtropical, and urban ecosystems, using ecophysiological tools to examine how extreme thermal stress and invasive species dynamics interact to alter native plant communities.

PUBLICATIONS (*mentees)

6. **Hernández G G**, Slot M, Godoy L d C, Castro-Lara R*, Perez-Enriquez*, Seemann J S, García-Robledo C. (2026). Keeping up with the heat: Evaluating plants' ability to acclimate to local temperatures using a long-term survey of heat tolerance in a tropical plant community. *New Phytologist*, 251(5). DOI: 10.1111/nph.71394
5. **Hernández G G**, Perez T, Vargas O M, Kress W J, Molina R, Cordero R, Seemann J R, García-Robledo C. (2022). Evolutionary history constrains heat tolerance of native and exotic tropical Zingiberales. *Functional Ecology*, 36, 3074-3084. DOI: 10.1111/1365-2435.14191
4. Slot M, Nardwattanawong T, **Hernández G G**, Bueno A, Riederer M, Winter K. (2021). Large differences in leaf cuticle conductance and its temperature response among 24 tropical tree species from across a rainfall gradient. *New Phytologist*, 232(4), 1618-1631. DOI: 10.1111/nph.17626
3. García-Robledo C, Kuprewicz E K, Baer C, Clifton E, **Hernández G G**, Wagner D L. (2020). The Erwin Equation of Biodiversity: From little steps to quantum leaps in the discovery of tropical diversity. *Biotropica*, 52(4), 590-597. DOI: 10.1111/btp.12811
2. **Hernández G G**, Slot M and Winter K. (2020). Similar temperature dependence of photosynthetic parameters in sun and shade leaves of three tropical tree species. *Tree Physiology*, 40(5), 637-651. DOI: 10.1093/treephys/tpaa015
1. Slot M, Krause G H, Krause B, **Hernández G G**, Winter K. (2018). Photosynthetic heat tolerance of shade and sun leaves of three tropical tree species. *Photosynthesis Research*, 141:119-130. DOI: 10.1007/s11120-018-0563-3

PUBLICATIONS IN REVIEW (*mentees)

5. **Hernández G G**, Brafford K E, Castaneda M R, Rew M M*, Rose-Beech A, Valliere J M, Wainwright B, Funk J. Seedling traits mediate vulnerability and resilience to climate extremes. (Invited paper, In Review: *Annals of Botany*)
4. Hernández M J*, Parra O A, LaForgia M L, **Hernández G G**, Valliere J M. A simple approach for generating native soil inoculum to aid desert restoration. (In Review: *Ecological Restoration*)

3. **Hernández G G**, Rew M M*, Nelson K C*, Funk J, Bucciarelli G, Valliere J M. (2026). “Photosynthetic heat tolerance is shaped by trait coordination, acclimation, and evolutionary history”. (In Review: New Phytologist)
2. **Hernández, G G**, Valliere, J M. A widescale assessment of heat tolerance in the California flora: identifying predictors and vulnerabilities for plant conservation in a warming world. California’s Fifth Climate Change Assessment, CNRA-CCC5A-2026. (In Review: California Natural Resources Agency)
1. **Hernández G G**, Seemann J S, Godoy L d C, García-Robledo C. Heat tolerance of tropical herbaceous plants increases with elevation. (Preprint)

WORKS IN PROGRESS (*mentees)

3. **Hernández G G**, Rew M M*, Nelson K C*, Valliere J M. No difference in heat tolerance between native and non-native riparian species in California.
2. **Hernández G G**, Kay K, García-Robledo C, Muñoz P, Funk J. Thermal acclimation of *Costus* sister species from contrasting temperature habitats.
3. **Hernández G G**, García-Robledo C, Slot M. Plastic responses of high and low elevation plant morphotype to current and future warming temperatures.
2. **Hernández G G**, Slot M. Heat tolerance of tropical trees along the canopy gradient and its capacity to dissipate heat in a future global warming context.
1. **Hernández G G**, Cordero R, Fetcher N. Long-term photosynthetic acclimation of tropical tree seedlings to gradual increase of atmospheric CO₂.

INVITED ORAL PRESENTATIONS (*mentees)

4. **Hernández G G**, Rew M M*, Nelson K C*, Funk J, Bucciarelli G, Valliere J M. (2026). Photosynthetic heat tolerance is shaped by trait coordination, acclimation, and evolutionary history.
Invited speaker at the Symposium: Heating Up: The Role of Temperature in Plant Ecology and Evolution
Botany 2026, Arizona, USA
3. **Hernández G G**. (2026). “The architecture of survival: How evolutionary constraints and plasticity shape heat tolerance”
Keynote speaker, 1st Annual Coastal Postdoc Symposium
EEB, University of California, Santa Cruz, USA
2. **Hernández G G**, Castro R*, Pérez-Enriquez A*, García-Robledo C. (2022). “Heat tolerance on two extreme life stages of the Zingiberales community of a tropical lowland wet forest”

Invited speaker at the Symposium: Plant ecophysiology in a changing world: from theory to application. ATBC Meeting 2022, Colombia

1. **Hernández G G**, Seemann J R, García-Robledo. C. (2021). “Heat tolerance and thermal safety margins of tropical plants increase with elevation: Are lowland plant communities at higher risk to global warming?”

Invited speaker at the Symposium: Emerging Frontiers in Tropical Ecology: voices from the Next Generation. ATBC Virtual Meeting 2021

CONTRIBUTED ORAL PRESENTATIONS & POSTERS (*mentees)

6. **Hernández G G**, Rew M M*, Nelson K C*, Funk J, Bucciarelli G, Valliere J M. (2026). “What drives leaf heat tolerance? Trait coordination, temperature acclimation, and evolutionary history across plant California species”
California Native Plant Society, California, USA
5. **Hernández G G**, Valliere J M. (2025). “A widescale assessment of heat tolerance in the California flora: Identifying predictors and vulnerabilities for plant conservation in a warming world”
California’s Fifth Climate Change Assessment. Governor’s Office of Land Use and Climate Innovation, California, USA
4. García-Robledo C, **Hernández G G**, Kuprewicz E. (2022). “Thermal mismatches between host plants and insect herbivores along elevational gradients: Implications for global warming”
ATBC Meeting 2022, Colombia
3. **Hernández G G**, Perez T, Vargas O, Kress W J, Molina R, Cordero R, Seemann J R & García-Robledo C. (2019). **Poster**: “Phylogenetic constraints or convergent adaptation? Leaf thermal tolerance of native and exotic Zingiberales in a tropical lowland forest”
43rd New Phytologist Symposium Interaction networks and trait evolution
2. **Hernández G G**, Slot M & Winter K. (2018). **Poster**: “Temperature dependence of photosynthetic parameters in tropical trees; comparing mechanisms in sun and shade leaves”
Ecological Society of America Annual Meeting 2018 (ESA)
1. Hernández R & **Hernández G G**. (2016). “Leaf crown position determines heat and light stress in *Dipterix panamensis*”
IV Cuban Tropical Biodiversity and Ecology Conference

AWARDS

2023. **Honorable mention, Tree Physiology Best Graduate Student Paper Award.** For the paper "Similar temperature dependence of photosynthetic parameters in sun and shade leaves of three tropical tree species (2020)".

2019. **Environmental Leadership Award.** Office of Environmental Policy and the Environmental Policy Advisory Council, University of Connecticut – for my contribution to education, commitment to environmental literacy of Costa Rican students (BRENESII).

FELLOWSHIPS (Total: \$46 360)

2026. **Botanical Society of America** – Professional Member & Invited Speaker Travel Award (\$500 & \$1255)

2026. University of California Davis – Postdoctoral Scholars Association **Travel Grant** (\$400)

2023. American Philosophical Society – **Lewis and Clark Fund for Exploration and Field Research** (\$5000)

2023. Organization for Tropical Studies Fellowship. Glaxo Centro America Fellowship – **Organization for Tropical Studies** (\$4500)

2019 – 2023. Ecology and Evolutionary Biology Department – Botany Award. **University of Connecticut** (total of \$7500)

2022. Conference Participation Award – Graduate School. **University of Connecticut** (\$750)

2022. Organization for Tropical Studies Fellowship. Glaxo Centro America Fellowship – **Organization for Tropical Studies** (\$5600)

2020. Organization for Tropical Studies Fellowship. David and Deborah Clark & Rudy Ruggles Research Fellowship – **Organization for Tropical Studies** (\$5440)

2020. ATBC Seed Research Grant. **Association for Tropical Biology and Conservation Award** (\$1000)

2019. UCONN@COP25 Fellowship. Fellowship to attend the **United Nations Climate Change Conference** (formally known as the Conference of Parties, COP25-Chile) in Madrid, Spain

2019. **Heliconia Society International Award** for Botanical and Horticultural Research Projects on the Zingiberales (\$1000)

2019. **New Phytologist Trust Student Award** (\$1400)

2019. **The Explorers Club** – Mamont Scholar Grant (\$3000)

2019. Organization for Tropical Studies Fellowship. Glaxo Centro America Fellowship – **Organization for Tropical Studies** (\$5200)

2018. Tropical Ecology and Conservation (\$1000): **Organization for Tropical Studies & Universidad de Costa Rica**

2018. **Smithsonian Tropical Research Institute**: Travel Award Program (\$1000)

2018. El Instituto – Institute of Latina/o, Caribbean, and Latin American Studies. University of Connecticut (\$500): Whetten Fund Grant- **University of Connecticut**

2017. Organization for Tropical Studies Fellowship (\$2370): Rudy Ruggles Research Fellowship – **Organization for Tropical Studies**

2016. **Universidad Nacional de Costa Rica**: Travel Award (\$500)

2016. Dry Forest Ecology Course (\$600): **Universidad de Costa Rica**

STUDENT RESEARCH MENTORED

Graduate Students

Mayra Hernández (PhD Student, UC Davis, 2026)

Kekoa C. Nelson (PhD Student, UC Davis, 2024-2025)

Maisey M. Rew (Junior specialist, UC Davis, 2024-2025)

Undergraduate Students

Kayla Dubbs (Undergraduate Senior Project, UCONN, 2022)

Raquel Castro (Research Assistant, NSF-REU Project, Universidad Nacional Costa Rica, 2021-2023)

Alejandra Pérez (Research Assistant, NSF-REU Project, Universidad Nacional Costa Rica, 2021)

Julian Batista Lugo (Undergraduate student, NSF-REU Project, Pontifical Catholic University of Puerto Rico, 2021)

Megana Varma (Undergraduate honor thesis, UCONN, 2020)

TEACHING EXPERIENCE

2025 – 2026. Instructor

Seminar: Scientific Writing

University of California Davis

2025 – 2026. Instructor

R & Statistical Analysis Workshop: Developed and delivered a comprehensive workshop on R programming and statistical analysis for undergraduate students.

Tropical Biology, Semester Course
Organization for Tropical Studies

2025 – 2026. Invited Faculty

Led a student research project providing mentorship and guidance in experimental design, data collection, and analysis within my expertise at La Selva Biological Station, Costa Rica.

Tropical Biology, Undergraduate Semester Course
Organization for Tropical Studies

2024. Administrative Teaching Assistant

General Biology for Science majors
University of Connecticut

2024. Invited Faculty

Led a student research project providing mentorship and guidance in experimental design, data collection, and analysis within my expertise at Las Cruces Biological Station, Costa Rica.

Tropical Biology, Graduate Semester Course
Organization for Tropical Studies

2018 – 2023. Teaching Assistant

General Biology for Science majors and non-majors
University of Connecticut

2021. Research Mentor

Research Experience for Undergraduates, Costa Rica
NSF/LSAMP – Organization for Tropical Studies
Coordinator: Dr. Carissa Ganong

2018. Co-coordinator and Teaching Assistant

Research Experience for Undergraduates, Costa Rica
NSF/LSAMP – Organization for Tropical Studies
Coordinator: Dr. Carissa Ganong

2015 – 2017. Teaching Assistant

Plant Anatomy & Physiology
Universidad Nacional de Costa Rica
Professor: Dr. Roberto Cordero

SERVICE

Peer reviewer for: American Journal of Botany, Global Change Biology, Global Ecology and Conservation, Journal of Ecology, Oecologia, Tree Physiology

2026. Judge to the Postdoctoral Scholars Association Travel Award, **University of California Davis**

2023 – 2024. DEI Committee Member. EEB, University of Connecticut

PROFESSIONAL AFILIATIONS

2026. Botanical Society of America

2022. Association for Tropical Biology and Conservation (ATBC)

OUTREACH & VOLUNTEER ACTIVITIES

2025. Volunteer at the Arboretum & Botanic Garden, **University of California Santa Cruz**

2023-2024. Volunteer at the George Safford Torrey **Herbarium CONN**

2023. [Blog](#) featured in **Functional Ecologists**, Behind the paper

2023. Talk at the **Willimantic Public Library Program**, Connecticut, USA. “How do tropical plants beat the heat?”

2021. Talk for international educators at the **La Selva Biological Station – OTS**, Costa Rica. “History of La Selva and ongoing research on plant heat stress”

2019 – 2020. Outreach Committee Coordinator. Graduate Student Association, **EEB University of Connecticut**

2015 – 2019. **Program Director & Scientific Lead of Brenesii**, Costa Rica. A science communication program of young students in Costa Rica. www.brenesii.com, [video](#)

Brenesii Awards:

UNA INCUBA, Universidad Nacional de Costa Rica (2014).

Premio Yo Creo, Universidad Latina (2015)

Member of Youth Action Network (2015)

Mention of BRENESII in the local press: [La República \(2015\)](#), [El Financiero \(2015\)](#)

CERTIFICATES, COURSES & WORKSHOPS

2026. **Using Digitized Herbarium Data in Research: Applications for Exploration, Taxonomy, and Ecology**. Botany Conference.
Professors: Drs. Pam Soltis & Doug Soltis

2026. **Google Project Management Certificate**. Coursera

2025. Workshop: **Classroom Strategies to Support First Gen Students**. Center for Educational Effectiveness, UC Davis

2025. Workshop: **Global Diversity, Equity and Inclusion**. Graduate studies, UC Davis

2025. Workshop: **Intercultural Communication**. Graduate studies, UC Davis

2024. Workshop: **Mentoring Academy for Postdoctoral Scholars**. Graduate studies, UC Davis

2018. Course: **Tropical Ecology and Conservation**. Organization for Tropical Studies & Universidad de Costa Rica (OTS funded: \$1000).

2016. Course: **Dry Forest Ecology**. Universidad de Costa Rica & UNAM (UCR funded: \$600).
 Professors: Drs. Mauricio Quesada, Silvana Martén, Jorge Lobo & Ariel Fuchs
 Santa Rosa National Park, Costa Rica

2016. Course: **Modeling of Fundamental Processes in Ecology**. Universidad Nacional de Costa Rica
 Professor: Dr. Esteban Acevedo

2015. Course: **Introductory course in Meta-analysis for Ecology**. Universidad Nacional de Costa Rica & UNAM
 Professor: Dr. Romeo Saldaña

2014. Workshop: **Curatorial procedures for Natural History Collections**. Universidad Nacional de Costa Rica & Instituto de Ecología y Sistemática Cuba

INTERNSHIPS

2018. **Smithsonian Internship** (\$3000): Smithsonian Tropical Research Institute
 Mentors: Drs. Martijn Slot and Klaus Winter
 Project: “Ecophysiology of Tropical Plants”

2018. **Smithsonian Internship** (\$2400): Hollister-Smith Endowment Program-Smithsonian Tropical Research Institute
 Mentors: Drs. Martijn Slot and Klaus Winter
 Project: “Ecophysiology of Tropical Plants”

2017. **Thesis program for undergraduates**. Research Center for Environmental Contamination, Universidad de Costa Rica (UCR)
 Mentor: Dr. Christina Chinchilla
 Project: “Limitations to primary production of pastures under low radiance and nutrients”

2016. **Research Experience for Undergraduates**. NSF- Organization for Tropical Studies (\$2480):

Mentors: Drs. Roberto Cordero & Ned Fetcher

Coordinator: Dr. Carissa Ganong

Project: “Long-term photosynthetic acclimation of tropical tree seedlings to gradual increase of atmospheric CO₂”

REFERENCES

1. Martijn Slot, Staff Scientist, Smithsonian Tropical Research Institute, Panamá, slotm@si.edu
2. Justin Valliere, Assistant Professor of Cooperative Extension, University of California Davis, USA, jmvalliere@ucdavis.edu
3. Jennifer Funk, Professor, University of California Davis, USA, funk@ucdavis.edu