

Adriana I. Hernández

Postdoctoral Research Fellow
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California Academy of Sciences
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Education

Ph.D. Cornell University August 2017 – May 2022
Plant Biology

B.A. University of California, Santa Barbara September 2011
Biological Sciences

Professional Appointments

Postdoctoral Research Fellow, California Academy of Sciences September 2022 – present
Graduate Research Assistant, Cornell University May – August 2018
Senior Lab Technician, UC Berkeley June – August 2017
Conservation Technician, Santa Barbara Botanic Garden May 2016 – May 2017
Property Manager, Bartlein & Co., Inc. 2012 – 2016
Research & Editorial Assistant, UC Santa Barbara 2010 – 2012

Academic Fellowships & Awards

Total \$138,000

Edward A. Bouchet Graduate Honor Society Scholar, Cornell University Chapter 2022
Lewis and Clark Field Scholar, American Philosophical Society 2021 – 2022
Atkinson Center for Sustainability Research Fellow, Cornell University 2021 – 2022
NSF Graduate Research Program Fellow (\$138,000) 2019 – 2022
NextGen Professors Program, Cornell University 2019 – 2020
Yale Ciencia Academy Fellow 2018 – 2019

Research Grants

Total \$28,789

Lewis and Clark Fund for Exploration and Field Research, American Philosophical Society (\$5,000) 2021
Sustainable Biodiversity Fund, Cornell Atkinson Center for Sustainability (\$5,968) 2021
Schmittau-Novak Integrative Plant Science Grant (\$4,000) 2021
Bill Dahl Grad Student Research Award, Botanical Society of America (\$1,500) 2019
American Society of Plant Taxonomists Student Research Grant (\$1,200) 2019
Schmittau-Novak Integrative Plant Science Grant (\$5,000) 2019
Andrew W. Mellon Student Research Grant (\$780) 2019
Botanical Society of America, Genetics Section Student Research Grant (\$500) 2019
Schmittau-Novak Integrative Plant Science Grant (\$4,841) 2018

Field work

- Planned and completed independent field excursions throughout California (2017, 2018, 2019, 2021) including acquiring funding, obtaining permits, and planning multi-month trips
- Led teams with members ranging from no experience to competent in field research, to identify plants using keys, collect tissue for molecular studies, dissect and image plants for morphological analyses, collect community and habitat data for ecological studies, and collect voucher specimens for herbaria (2023)
- Teaching Assistant for undergraduate field courses focused on training first and second year students in botanical identification in Argentina & Chile (2018), Argentina (2019)

Project Management

Postdoctoral research

- Planned and implemented field work including development of sampling scheme, plant tissue imaging, tissue preservation, obtained collection permits, and trained and mentored four interns
- Supervised and trained research interns in laboratory techniques and morphometric analyses
- Disseminated preliminary results to the broader scientific community at a national conference

Doctoral dissertation research

- Led conceptualization of research ideas
- Obtained research funding for two dissertation projects
- Planned and conducted field work including permitting, and all laboratory work
- Supervised and mentored four undergraduate researchers
- Performed computational analyses, data manipulation, data exploration, and made figures
- Interpreted results and wrote synthesis for publication in scientific journals
- Communicated results to land managers, collaborators, and the broader scientific community

Property Management

- Managed multimillion-dollar budgets, property maintenance, and legal communication for >50 properties in Santa Barbara County, e.g., single family homes, HOAs, and apartment complexes
- Regularly advised property owners, HOAs, homeowners, and tenants on best practices
- Built relationships with contractors to provide clients with thorough and reasonable bids
- Developed and implemented plans and deadlines for property owners to maintain properties
- Met deadlines with the financial and maintenance departments, and supervised three assistants
- Practiced working knowledge and understanding of Federal, State, County, and City laws, e.g., Davis-Sterling Common Interest Dev. Act, US Dept. of Housing & Urban Dev.

Publications ORCID: 0000-0001-7882-3427

1. **Hernández, A.I.**, Landis, J.B., and Specht, C.D. (2022). Phylogeography and population genetics reveal ring species patterns in a highly polymorphic California lily. *Journal of Biogeography*, 49(2), 416-430. <https://doi.org/10.1111/jbi.14313>
2. **Hernández, A. I.**, & Specht, C. D. (2023). Putative adaptive loci show parallel clinal variation in a California-endemic wildflower. *Molecular Ecology*, 32, 4298-4312. <https://doi.org/10.1111/mec.17029>

3. De La Cerda, G. Y., Landis, J. B., Eifler, E., **Hernández, A. I.**, ... & Specht, C. D. (2023). Balancing read length and sequencing depth: Optimizing Nanopore long-read sequencing for monocots with an emphasis on the Liliales. *Applications in Plant Sciences*. 11(3), e11524. <https://doi.org/10.1002/aps3.115241>
4. Karimi, N., ...**Hernández, A. I.**, ...Givnish, T.J. Chromosomal evolution, environmental heterogeneity, and migration drive spatial patterns of species richness in *Calochortus* (Liliaceae) (*in review*, PNAS)
5. **Hernández, A.I.**, Landis, J.B, Tribble, C.M., Eifler, E., Givnish, T.J., Strickler, S., & Specht, C.D. Comparative transcriptomics of key trichome genes reveals unique expression patterns across floral syndromes in *Calochortus* (Liliaceae) (*in prep.*)

Invited Presentations

The following is a selected list of invited talks among 34 total oral presentations (**24 first author**) and 6 poster presentations. The complete list will be emailed upon request.

Hernandez, A. I. Evolution across heterogeneous landscapes: linking genes to phenotypes to environments in *Calochortus*. San Francisco State University, San Francisco, CA, April 13, 2023

Hernandez, A. I. Evolution across the floral spectrum, California Botanic Garden, Claremont, CA, February 9, 2023

Hernandez, A. I. and C.D. Specht. Genome-wide association analyses reveal genes putatively adapted to local climate in a California wildflower, *Calochortus venustus*. The 2022 California Native Plant Society Conference: Rooting Together. San Jose, CA, October 20-22, 2022

Hernandez, A.I. Leveraging clinal variation to investigate ecological specialization in the face of gene flow. Evolution Conference, Society for the Study of Evolution Presidential Symposium, Cleveland, OH, June 24-28, 2022

Hernandez, A.I. Cultivating community action towards conservation. Director of Conservation Job Talk, San Diego Natural History Museum, San Diego, CA, June 20, 2022

Hernandez, A.I. Disentangling phenotypic patterns from evolutionary processes: an integrative approach to natural history research in highly diverse California wildflowers. Director of Conservation Job Talk, San Diego Natural History Museum, San Diego, CA, June 20, 2022

Hernandez, A.I. Floral trait evolution and population genetics across the landscape in the highly polymorphic *Calochortus venustus* (Liliaceae). Smithsonian NMNH Department of Botany seminar series (virtual), April 15, 2021.

Hernandez, A.I. Population genetics and floral trait evolution across the landscape in *Calochortus venustus* (Liliaceae). The University and Jepson Herbaria at the University of California, Berkeley, Botany Lunch (virtual), March 5, 2021.

Hernandez, A.I. Developing *Calochortus venustus* as a model system to understand petal pigment diversity. Cornell University, Plant Biology Section Seminar, School of Integrative Plant Science, Ithaca, NY, April 24, 2020.

Service

Community Engagement at the California Academy of Sciences

Indigenous Solidarity Committee Member 2022 – present

- Co-creating respectful and reciprocal relationships with local indigenous communities
- Developing an institutional land acknowledgement in relationship with the Association of Ramaytush Ohlone
- Building relationships for the exhibits team, including for the new California Hall exhibition
- Serving as a resource for departments across the Academy who are looking to develop Native partnerships, including the Nightlife team, the Thriving California initiative, Senior Leadership

Digital Engagement, California Academy of Sciences 2022 – present

- Provide educational and engaging content for media outlets (e.g. highlighting narrow endemics in the Bay area via [Instagram](#) and a short lecture on [YouTube](#))

Graduate Leadership at Cornell

CALS DEI Committee member 2021 – 2022

Cornell Graduate School and the College of Ag. & Life Sciences, in collaboration with the Assoc. Dean for Inclusion & Student Engagement and Sr. Asst. Dean for Graduate Student Life

- Appointed representative for the Advising/Mentoring Mutual Expectations working group which developed a set of [core mutual expectations](#) for graduate faculty and students to inform the development and progression of productive advising and mentoring relationships.
- Developed a recommended process for faculty and students to document, customize, and update their mutual expectations as the student progressed toward degree completion and postgrad outcomes.

Co-leader, Diversity Preview Weekend, Cornell University 2020 – 2022

- Led and developed a program (DPW) to help prospective URM graduate students in the life sciences navigate the graduate school application process, learn about research careers, and build both a research and social network at Cornell.
- As Chair of the DPW Mentorship Committee, I developed a guide for students to write their personal statements and CVs, matched participants with mentors to review application materials, and developed guidelines for mentors to provide constructive feedback.
- The Dean of the Graduate School recognized the success of our program, and I helped institutionalize DPW across the College to extend its impact across all other fields.

Graduate Student Chair of the Diversity Council, School of 2020 – 2022

Integrative Plant Science, Cornell University

- Developed a mentorship program for **NSF REU** students at the Boyce Thompson Institute (BTI), Ithaca, NY, to demystify challenges faced by most first-generation scholars, often referred to as the hidden curriculum.
- Developed a series of guidelines on how to navigate difficult discussions around identity and culture in academia.
- Recruited mentors in each of the current year REU students' fields of interest, and surveyed participants to evaluate measurable outcomes and to continue to build more impactful programming.

Graduate Student Ambassador, Cornell University Graduate School 2019 – 2022

- Appointed by the Graduate School to recruit prospective graduate students in the life sciences including recruiting at SACNAS national conferences and other networking events.

Service to Societies

- Executive Board Member-at-Large**, California Botanical Society 2022 – present
- Support the mission of the Society by helping organize the yearly banquet and biennial graduate student symposium, reviewing student grant proposals, recruiting members such as at conferences.
- Member of ROOT & SHOOT** Research Coordinated Network (RCN), “Rooting Out Oppression Together & SHaring Our Outcomes Transparently”, supported by an NSF LEAPS grant 2021 – 2022
- Identified inequities shared across seven participating botanical societies
 - Designed equitable conferences for the botanical community including the development of guidelines for conference organizers.
 - Supported continued recruitment of indigenous scholars in the botanical sciences by creating programming that fosters community, supports student identities, and educates societies.
- Graduate Student Representative of the Diversity Committee for the Botanical Society of America** (appointed position) 2019 – 2022
- Developed programming to recruit diverse future faculty in the botanical sciences including partnering with Indigenous scientific societies such as AISES.
 - Developed and reviewed strategic planning outcomes for the Society.
 - The programs developed were in part informed by conversations shared by BIPOC and LGBTQ+ communities at conference events I organized and hosted in 2021 and 2022.
- Outreach Chair** and Publicity Officer, Society for Advancement of Chicanos and NativeAmericans in Science (SACNAS), Cornell Chapter 2019 – 2021
- Mentored undergraduate students to successfully obtain NSF REUs.
 - Organized outreach events to local communities in Ithaca, NY.

Broad Community Engagement

- Science Communicator**, Skype a Scientist <https://www.skypeascientist.com/> 2019 – present
- Scientist pen pal**, Letters to a Pre-Scientist <https://prescientist.org> 2019 – present
- Awarded recognition for excellent science communication 2020 and 2021
- Workshop Leader**, “Virtual Plant Workshop”, Expanding Your Horizons, Cornell University. Ithaca, NY April 18, 2020
- Created [online resources](#) for students to learn about natural history collections, basic botany principles, and women in botany
- Workshop Leader**, “Squeaky Clean Brains”, [Expanding Your Horizons](#), Cornell University. Ithaca, NY May 27, 2019
- Organizer & Activity Leader**, Judy’s Day Family Learning Festival, Cornell Botanic Gardens, Ithaca, NY Sept. 30, 2018
- Science Facilitator**, [Free Science Workshop](#), Ithaca, NY 2017 – 2018
- Provide free access to creative science projects for low-income youth in the local community
- Outreach volunteer & Docent**, Santa Barbara Botanic Garden, Santa Barbara, CA 2013 – 2016
- Tutor**, Gateway Educational Services, Santa Barbara, CA 2011 – 2012
- Tutor**, Endowment for Youth, Franklin Elementary, Santa Barbara, CA 2010

Teaching

Guest lecturer, Summer Systematics Institute, California Academy of Sciences	2023
Guest lecturer, Morphology, homology and evolution, Wellesley College	2021
Graduate Teaching Assistant, Field Lab in Global Plant Biodiversity & Vegetation, Cornell University	2020
Graduate Teaching Assistant, Field Lab in Global Plant Biodiversity & Vegetation, Cornell University	2019
Graduate Teaching Assistant, Foundations in Biology, Cornell University	2018
Graduate Teaching Assistant, Plant Biodiversity & Evolution, Cornell University	2017
Guest lecturer and Undergraduate Teaching Assistant, Native American Religious Traditions & Ecology, UC Santa Barbara	2011

Formal Mentorship

Luigie Alequín, Master's student, SFSU molecular techniques, population biology, field work	2023
Lillie A. Case, SSI NSF REU, California Academy of Sciences morphometric analysis in R, figure drawing in R, field work, presentation	Summer 2023
Magdalene Lo, Research Intern, California Academy of Sciences molecular training, field work, data analysis in R, presentation	2022 – 2023
Nicholas Rocha, Cornell University, Class of 2023 field work, data analysis in R, data organization	Summer 2020 – 2022
Dariana Argueta-Zamora, Cornell University, Class of 2022 molecular training, data organization	Spring 2020
Jessica Dobler, Cornell University, Class of 2020 molecular training, sampling from herbarium specimens	Fall 2019 - Spring 2020
Martha Williams, Cornell University, Class of 2020 molecular training, data organization	Spring 2018 - Fall 2018
Carina Motta, UC Santa Barbara, Class of 2020 molecular training, sampling from herbarium specimens	2016 – 2017
Chelsea Wright, UC Santa Barbara, Class of 2018 sampling living collections, molecular training, data organization, presentation	2016 – 2017
Christina Mitine, UC Santa Barbara, Class of 2018 sampling living collections, molecular training, data organization, presentation	2016 – 2017
Joseph McKenna, Santa Barbara City College, Class of 2018 molecular training, morphometric analysis in R, figure drawing in R, presentation	Summer 2016
Brady Youngquist, Santa Barbara City College, Class of 2018 molecular training, morphometric analysis in R, figure drawing in R, presentation	Summer 2016
Alyssa Whorton, Santa Barbara City College, Class of 2018 molecular training, morphometric analysis in R, figure drawing in R, presentation	Summer 2016

Coding skills

- Competent in R including tidyverse for data wrangling, ggplot for data visualization, and various packages implementing analyses for population genetics, genomics, phylogenetics, biogeography, morphometrics, and species distribution modeling
- Comfortable in bash and Git/GitHub

Spanish Language proficiency

Native speaker

Professional Societies

Botanical Society of America, American Society of Plant Taxonomists, Society for the Advancement of Chicanos/Hispanics & Native Americans in Science, California Botanical Society, Southern California Botanists

PhD advisor

Chelsea D. Specht (Cornell University)

PhD committee members

- Monica A. Geber (Cornell University)
- Kevin C. Nixon (Cornell University)
- Robert A. Raguso (Cornell University)