



Jacob A. Gorneau

GRADUATE STUDENT

California Academy of Sciences | University of California, Berkeley

☎ +1 (518) 487-9889 | ✉ jgorneau@calacademy.org | 🏠 jacobgorneau.github.io | 📷 jacobgorneau | 🌐 jacobgorneau
| 🐦 @jacobgorneau | 📞 0000-0001-9230-9774 | 🎓 Jacob A. Gorneau

Education

Ph.D. in Environmental Science, Policy and Management

University of California, Berkeley

IN PROGRESS

August 2023 — Present

- Advisors: Damian Elias, Ph.D., Rosemary Gillespie, Ph.D., Lauren Esposito, Ph.D.

Master's in Biology

San Francisco State University

CONCENTRATION: ECOLOGY, EVOLUTION, AND CONSERVATION BIOLOGY

August 2020 — December 2022

- Advisor: Lauren Esposito, Ph.D.

Bachelor's in Entomology

Cornell University

MAGNA CUM LAUDE, WITH DISTINCTION IN RESEARCH

August 2016 — May 2020

- Honors Thesis: The evolution of huntsman spiders (Araneae: Sparassidae): insights into life-history and notes on morphology, advised jointly by Linda S. Rayor, Ph.D. and Corrie S. Moreau, Ph.D.
- Systematic research on moth genus *Argyresthia* advised by Jason J. Dombroskie, Ph.D.

Publications

Published

1. Gorneau, J.A., Cala-Riquelme, F., Tourinho, A.L., and Esposito, L.A. 2024. Biodiversity of Arachnids, in: Scheiner, S.M. (Ed.), Encyclopedia of Biodiversity (Third Edition). Academic Press, Oxford, pp. 453–489.
9. Jain P., Forbes H., Gorneau J.A., Esposito L.A. 2023. A new species of alkali-sink *Paruroctonus* Werner, 1934 (Scorpiones, Vaejovidae) from California's San Joaquin Valley. ZooKeys.
8. Gorneau, J.A., Crews, S.C., Cala-Riquelme, F., Montana, K.O., Spagna, J.C., Ballarin, F., Almeida-Silva, L.M. and Esposito, L.A. 2023. Webs of intrigue: museum genomics elucidate relationships of the marronoid spider clade (Araneae). Insect Systematics and Diversity.
7. Gorneau, J.A., Dombroskie, J.J. 2023. Three new species of the genus *Argyresthia* Hübner, 1825 from Guatemala, with notes on host plant evolution and Nearctic taxa (Lepidoptera: Argyresthiidae). SHILAP Revista de Lepidopterología.
6. Gorneau, J.A., Kulkarni, S., Cala-Riquelme, F., Esposito, L.A. Measuring What We Don't Know: Biodiversity Catalogs Reveal Bias in Taxonomic Effort. BioScience.
5. Gorneau, J.A., Rayor, L.S., Rheims, C.A., & Moreau, C.S. Molecular, morphological, and life history data to support research of huntsman spiders (Araneae: Sparassidae).
4. Gorneau, J.A., Rheims, C.A., Moreau, C.S., & Rayor, L.S. 2022. Huntsman spider phylogeny informs evolution of life history, egg sacs, and morphology. Molecular Phylogenetics and Evolution.
3. Losey, J.E., Chen, C., Davis, A.E., Deitsch, J.F., Gertin, J.G., Gorneau, J.A., Hallock, E.M., Jordán, J.P., Kim, Z.J., Kubinski, E.G., Laurenz, N., Li, S.B., Mullen, E.K., O'Brien, A., Richardson, L.I., Vincent, S., Wang, S.Y., Yarhouse, E.L., Schydrowsky, A., & Curtis, P.D. Insect and spiders on the web: Monitoring and mitigating online exploitation of species and services. Global Ecology and Conservation.
2. Gorneau, J.A., Ausich, W.I., Bertolino, S., Bik, H., Daly, M., Demissew, S., Donoso, D.A., Folk, R., Freire-Fierro, A., Ghazanfar, S.A., Grace, O.M., Hu, A.Q., Kulkarni, S., Lichter-Marck, I.H., Lohmann, L.G., Malumbres-Olarte, J., Muasya A.M., Pérez-González, A., Singh, Y., Siniscalchi, C. M., Specht, C.D., Stigall, A.L., Tank, D.C., Walker, L.A., Wright, D.F., Zamani, A., & Esposito, L.A. 2022. Framing the Future for Taxonomic Monography: Improving Recognition, Support, and Access. Bulletin of the Society of Systematic Biologists.
1. Esposito, L.A., Daly, M., Fujita, M.K., Gorneau, J.A., Rapacciolo, G., Rocha, L., Scheinberg, L., Ware, J., Welch, C.K., Young, A., & Bell, R.C. 2022. A New Framework for Assessing the Contributions of Professionals in the Natural Sciences. Bulletin of the Society of Systematic Biologists.

In Press

1. Gorneau, J.A., Cala-Riquelme, F., Tourinho, A.L., & Esposito, L.A. 2024. Biodiversity of Arachnids. In S.M. Scheiner (Ed.), Encyclopedia of Biodiversity: Third Edition. Volume 2: 453-489. Elsevier.

Talks

Asterisk (*) indicates presenter.

Oral Papers

10. Gorneau, J.A.* , Crews, S.C., Cala-Riquelme, F., Montana, K., Esposito, L.A. Webs of intrigue: museum genomics elucidate relationships of the marronoid spiders (Araneae). International Congress of Arachnology, Montevideo, Uruguay. 2023.

9. **Gorneau, J.A.***, Crews, S.C., Cala-Riquelme, F., Kulkarni, S., Montana, K., Esposito, L.A. Webs of intrigue: museum genomics elucidate relationships of the marronoid spiders (Araneae). Joint Annual Entomology Meeting, Vancouver, Canada. 2022.
8. **Gorneau, J.A.***, Kulkarni, S., Cala-Riquelme, F., Esposito, L.A. Biodiversity catalogs reveal taxonomic effort and geographic bias: a case study. SACNAS National Diversity in STEM, San Juan, Puerto Rico, USA. 2022.
7. **Gorneau, J.A.***, Kulkarni, S., Cala-Riquelme, F., Esposito, L.A. Biodiversity catalogs reveal taxonomic effort and geographic bias: a case study. American Arachnological Society, Davis, California, USA. 2022.
6. **Gorneau, J.A.***, Ausich, W.I., Bertolino, S., Bik, H., Daly, M., Demissew, S., Donoso, D.A., Folk, R., Freire-Fierro, A., Ghazanfar, S.A., Grace, O.M., Hu, A.Q., Kulkarni, S., Lichter-Marck, I.H., Lohmann, L.G., Malumbres-Olarte, J., Muasya A.M., Pérez-González, A., Singh, Y., Siniscalchi, C. M., Specht, C.D., Stigall, A.L., Tank, D.C., Walker, L.A., Wright, D.F., Zamani, A., & Esposito, L.A. Framing the Future for Taxonomic Monography: Improving Recognition, Support, and Access. Entomological Society of America, Denver, Colorado, USA. 2021.
5. **Gorneau, J.A.***, Rayor, L.S., Moreau, C.S. The evolution of huntsman spiders (Araneae: Sparassidae): insights into life history. American Arachnological Society Virtual Summer Symposium. 2020.
4. **Gorneau, J.A.***, Rayor, L.S., Moreau, C.S. The evolution of huntsman spiders (Araneae: Sparassidae): insights into life history. Cornell Entomology Undergraduate Honors Thesis Symposium. 2020.
3. **Gorneau, J.A.***, Tartaglia, E. National Moth Week: Leveraging Citizen Science Data to Understand Bias and Biodiversity. Ninth Annual Cornell Entomology Symposium at Cornell University in Ithaca, New York, USA. 2020.
2. **Gorneau, J.A.**, Goodman, A.M.*, Esposito, L.A. Niche partitioning among three vaejovid scorpions near the San Francisco Bay Area (Scorpiones: Vaejovidae). Mary Bowerman Research Symposium, California, USA. 2019.
1. Rayor, L.S.*, **Gorneau, J.A.**, Moreau, C.S. Trait-mapping sociality and life-history adaptations in social and solitary huntsman spiders. Animal Behavior Society in Chicago, Illinois, USA. 2019.

Posters

2. **Gorneau, J.A.***, Goodman, A.M., Esposito, L.A. Niche partitioning among three vaejovid scorpions near the San Francisco Bay Area (Scorpiones: Vaejovidae). Cornell Undergraduate Research Board (CURB) Fall Forum at Cornell University in Ithaca, New York, USA. 2019.
1. **Gorneau, J.A.***, Goodman, A.M., Esposito, L.A. Niche partitioning among three vaejovid scorpions near the San Francisco Bay Area (Scorpiones: Vaejovidae). SACNAS National Diversity in STEM Conference in Honolulu, Hawaii, USA. 2019.

Experience

Field Assistant

Western University

DR. NUSHA KEYGHOBADI

June 2020 — July 2020

- Assisted graduate student Shayla Kroeze and Dr. Nusha Keyghobadi with tissue sampling for population genetic study of the Mottled Duskywing, *Erynnis martialis*, a species listed as Critically Imperiled in New York, since they could not cross the US-Canada border due to the COVID-19 pandemic.

Curatorial Assistant

Cornell University Insect Collection

DR. JASON J. DOMBROSKIE

August 2016 — June 2020

- Undergraduate lead on an NSF-funded grant to curate the macrolepidoptera and database John G. Franclemont's slide collection of moth genitalia and corresponding specimens.
- Three families curated, totalling over 6,000 species, with curation protocol set in place ongoing for existing curation projects.

Lab Assistant

Cornell University

DR. BRYAN N. DANFORTH

August 2018 — March 2020

- Worked to identify thousands of bees collected by New York State Department of Environmental Conservation for the Empire State Native Pollinator Survey, a project of the New York Natural Heritage Program.

NSF Research Experiences for Undergraduates Intern

California Academy of Sciences

DR. LAUREN ESPOSITO

June 2019 — August 2019

- Investigated the niche ecology of scorpions in the Bay Area and used genetic techniques (Sanger sequencing, etc.) to examine population genetics.

Curatorial Assistant

Cornell University

DR. LAURA HARRINGTON

January 2019 - May 2019

- Curated and inventoried Cornell University Medical and Veterinary Entomology Collection, containing over 9,600 specimens and 665 species, including medically important arthropods, diseases, and conditions.

Field Assistant

California Academy of Sciences

DR. LAUREN ESPOSITO

July 2018

- Collected nearly 150 scorpions in the genus *Centruoides* nightly for a two-week period at the UNAM Field Station in Los Tuxtlas, Veracruz, Mexico with graduate student Aaron Goodman.

Lab Assistant & Museum Preparator

Cornell University

DR. LINDA S. RAYOR

June 2017 — January 2018

- Trained in arthropod husbandry practices, including maintenance of live arachnids and insects. Collaborated with a team that collected and prepared over 350 dried spider specimens prepared in a lifelike position for The Australian Museum's *Spiders: Fear and Fascination* traveling museum exhibit.

Honors & Awards

GRANTS

2022	€500 , Oscar and Jan Francke Student Research Fund
2020	\$400 , Instructionally Related Activities Research Grant
2019	\$500 , Jane E. Brody Undergraduate Research Award
2019	\$350 , CALS Alumni Association Academic Enrichment Program
2018	\$1,000 , Research Grant
2018	\$1,000 , Morley Student Research Grant

ISA
SF State
Cornell University
Cornell University
CAS
Cornell University

SCHOLARSHIPS

2020	\$6,000 , Scholarship for Academic Excellence (2016 - 2020)
2019	\$500 , Travel Scholarship
2019	\$2,000 , Travel Scholarship
2017	\$2,500 , Federated Garden Clubs Tuition Scholarship

New York State
SACNAS
NSF REU
New York State

AWARDS

2018	NSF REU Intern , \$5,175 Stipend
2018	Outstanding Undergraduate TA in Entomology , \$100 BioQuip Gift Card
2015	Dennis Profant Memorial Award , \$100, for outstanding advocacy for Lepidoptera

CAS
Cornell University
Mothapalooza

Teaching

Summer Systematics Institute Co-mentor

California Academy of Sciences

DR. LAUREN ESPOSITO & DR. REBECCA JOHNSON

Summer 2021, 2022, 2023

- Co-mentored between one and four students each year on a variety of arachnology research projects. Trained students in research approaches ranging from lab work to computational work. Continuing to mentor one student on writing results in a scientific paper.

Summer Systematics Institute Co-facilitator

California Academy of Sciences

DR. LAUREN ESPOSITO & DR. REBECCA JOHNSON

April 2022 - August 2022

- Co-organized lectures, collections tours, and presentation schedules. Trained nine students formally and informally in laboratory and computational approaches to systematic biology.

Plagues and People Teaching Assistant

Cornell University

ENTOM 2100 (DR. MARINA CAILLAUD & DR. LAURA HARRINGTON)

August 2019 — December 2019

- Co-led weekly discussion section and participated in active learning lecture environment in non-major class focusing on disease pathology, transmission, and human impacts.

Spider Biology Teaching Assistant

Cornell University

ENTOM 2150/3150 (DR. LINDA S. RAYOR)

August 2018 — December 2018

- Prepared displays for class, educated students on dichotomous keys and spider identification, co-led field trips, and helped with open lab activities for class including both majors and non-majors.

Alien Empire Teaching Assistant

Cornell University

ENTOM 2010/2011 (DR. MARINA CAILLAUD & DR. BRYAN N. DANFORTH)

January 2018 — May 2018

- Co-led weekly discussion section, took attendance, graded worksheets and exams in non-major class providing a broad overview of insects.

Insect Biology Teaching Assistant

Cornell University

ENTOM 2120 (DR. COLE GILBERT)

August 2017 — December 2017

- Helped prepare labs, taught students how to use a dichotomous key, and helped prepare lab practical stations for majors class.

Service

Entomology Joint Annual Meeting

SYMPOSIUM CO-HOST

2022

- Co-facilitated symposium titled "Many Eyes on Many Eyes: A Diverse Look at Arachnology" with Lauren Esposito.

SACNAS

SESSION CO-HOST

2022

- Co-facilitated session titled "Biological and Cultural Diversity in the Caribbean" with Lauren Esposito.

California Academy of Sciences

GRADUATE MENTOR

2021 — Present

- Graduate student mentor of students in Summer Systematics Institute undergraduate Research Experiences for Undergraduates (REU) program, both informally for the cohort consisting of 100% students underrepresented in science and more formally in mentoring a student project in conjunction with Lauren Esposito.

Team Member

NATIONAL MOTH WEEK

2015 — Present

- Lead initiatives with partner community science organizations to encourage people to submit observations to platforms such as iNaturalist and Project Noah.

President

Cornell University

SNODGRASS AND WIGGLESWORTH UNDERGRADUATE ENTOMOLOGY CLUB

January 2018 — December 2018

- Co-planned outreach and club events as well as the annual spring break trip which entailed visiting other entomology departments. Led effort to move up a student organization funding tier.

Outreach & Media

TikTok Social Media Features

CALIFORNIA ACADEMY OF SCIENCES

- Featured on [video](#) parodying different biologists as choose-your-player style video game.
- Featured on fieldwork [video](#) collecting spiders.

San Francisco, CA

2022

Scorpions are Predators with a Sensitive Side YouTube Video

KQED

- Consulted with Dr. Lauren Esposito for KQED [video](#) about scorpion sensory systems.

San Francisco, CA

March 2021 — October 2021

Insectapalooza

DEPARTMENT OF ENTOMOLOGY

- Engaged with thousands of attendees at annual Insectapalooza event about the Cornell University Insect Collection and live arachnids from the Rayor Lab.

Cornell University

2016 — 2019

Laphria Photo Featured in Paper

KATE LINDSAY & STEPHEN A. MARSHALL

- Photo of *Laphria champlainii* featured in [paper](#).

Canadian Journal of Arthropod ID

2019

Naturalist Outreach Practicum

DR. LINDA S. RAYOR

- Student in Dr. Linda S. Rayor's Naturalist Outreach Practicum. Developed skills in delivering effective outreach to a variety of ages and outreach engagements. Created programs focused on general entomology and fossils of New York State. Gave a total of fifteen talks, eight of which were geared toward elementary-aged students in central New York.

Cornell University

August 2018 — December 2018

Homecoming 2018: community and fun enhanced by history Article

KATE KLEIN FOR THE CORNELL CHRONICLE

- Photographed in piece doing outreach with the undergraduate entomology club, Snodgrass and Wigglesworth.

Cornell University

27 September 2018

Insects and Entomology Presentation

HUGH W. GREGG ELEMENTARY SCHOOL

- Spoke to fifth grade classes about insects and the field of entomology with Casey Hale.

Corning, NY

2018

Entomology At Cornell YouTube Video

JOHNNY CHEN

- Featured in and helped create a [video](#) about the insect collection at Cornell University.

Cornell University Insect Collection

9 March 2018

It's alive: Students snare spiders for museum exhibit Article

BLAINE FRIEDLANDER FOR THE CORNELL CHRONICLE

- Quoted and photographed in a [piece](#) about preparing the *Spiders: Fear and Fascination* traveling museum exhibit.

Cornell University

19 February 2018

Sphingidae Image Contribution

TEÁ KESTING-HANDLY

- Provided images of adult and larval Sphingidae for [website](#) focusing on diversity, ecology, and identification of Sphingidae in the United States.

Sphingidae.us

2018

Gina goes to "Moth night"

LOCALLY SOURCED SCIENCE

- Featured in WFRI Community Radio's Locally Sourced Science [coverage](#) of a moth night.

WFRI Community Radio

Summer 2017

Welcome to the Dark Side: An Adventure Inside the World of Moths

JOHN BURROUGHS NATURAL HISTORY SOCIETY

- Spoke to members about moth ecology.

Kingston, NY

19 September 2015

Wildlife Ecology: Welcome to the Dark Side: An Adventure Inside the World of Moths

HUYCK PRESERVE AND BIOLOGICAL RESEARCH STATION

- Spoke to two cohorts of high school students in summer program about moth ecology. 17 July 2015 and 14 August 2015.

Rensselaerville, NY

Summer 2015

The Mothman proposal: Insect good for the environment Article

AUDREY MATOTT FOR THE DAILY MAIL

- Profiled in local newspaper about work with National Moth Week.

Catskill, NY

7 July 2015

National Moth Week Presentation

HIGH TECHNOLOGY HIGH SCHOOL

- Spoke to dozens of students about citizen science and National Moth Week.

Lincroft, NY (via Skype)

23 October 2013

Insects and Entomology Presentation

SCOTT M. ELLIS ELEMENTARY

- Spoke to second grade elementary class about insects and the field of entomology.

Greenville, NY

13 September 2013

Skills

Molecular Programming	Experience in DNA extraction, through sequencing, both Sanger and high-throughput
Digital Platforms	R, bash, Python (limited), LaTeX (limited), particularly for genomic data analysis and phylogenetic inference
Computational Languages	Google Sites, GitHub Pages, Weebly, WordPress, Social Media Management (Twitter, Instagram, Facebook)
	Molecular phylogenetic programs (Mesquite, Geneious, PopART, MrBayes, RAxML, IQ-TREE, phyluce, SPAdes), GIS (limited)
	English, Latin (proficient, from High School)

Societies

Society for the Preservation of Natural History Collections	2021 — Present
Society of Systematic Biologists	2021 — Present
American Arachnological Society	2020 — Present
Entomological Society of America	2020 — Present
Society for the Advancement of Chicanos and Native Americans In Science (SACNAS)	2019 — Present
The Lepidopterists' Society	2015 — Present (intermittent)

Collections

Bishop Museum	Fall 2019
California Academy of Sciences	Affiliated
Canadian National Collection	Spring 2017
Cornell University Insect Collection	Affiliated
Cornell University Museum of Vertebrates	Fall 2016
Illinois Natural History Survey Insect Collection	Summer 2015
Purdue University Insect Collection	Summer 2015
Smithsonian Collection (Diptera, Coleoptera)	Spring 2018