



Jacob A. Gorneau

GRADUATE STUDENT · ENTOMOLOGIST

Institute for Biodiversity and Sustainability, California Academy of Sciences

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Education

Master's in Biology, California Academy of Sciences (CAS)

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.

High School Diploma

Greenville High School

ADVANCED REGENTS DIPLOMA | VALEDICTORIAN

September 2012 — June 2016

Publications

Published

1. **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*.
2. 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*.
3. **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.**, Rapacciuolo, 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 Review

1. **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).
2. **Gorneau, J.A.**, Dombroskie, J.J. Three new species of the genus *Argyresthia* Hübner, 1825 from Guatemala, with notes on host plant evolution and Nearctic taxa (Lepidoptera: Argyresthiidae).
3. **Gorneau, J.A.**, Kulkarni, S., Cala-Riquelme, F., Esposito, L.A. Biodiversity catalogs reveal taxonomic effort and geographic bias: a case study.

Talks

Asterisk (*) indicates presenter.

Oral Papers

9. **Gorneau, J.A.***, Cala-Riquelme, F., Crews, S.C., Kulkarni, S., Montana, K., Esposito, L.A. Low-coverage whole genomes reveal a well-resolved understanding of marronoid phylogeny and morphological basis for ingroup families. 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

Research Assistant

DR. LINDA S. RAYOR AND DR. CORRIE MOREAU

Cornell University

February 2019 — Present

- Completed Senior Honor's Research Thesis studying the social and life-history evolution of huntsman spiders; manuscript in review.

Research Assistant

DR. JASON J. DOMBROSKIE

Cornell University Insect Collection

August 2016 — Present

- Described Neotropical species of *Argyresthia* (Lepidoptera: Argyresthiidae) from Guatemala, in preparation for publication.

Field Assistant

DR. NUSHA KEYGHOBADI

Western University

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

DR. JASON J. DOMBROSKIE

Cornell University Insect Collection

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

DR. BRYAN N. DANFORTH

Cornell University

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

DR. LAUREN ESPOSITO

California Academy of Sciences

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

DR. LAURA HARRINGTON

Cornell University

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

DR. LAUREN ESPOSITO

California Academy of Sciences

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

DR. LINDA S. RAYOR

Cornell University

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.

Website Manager

ANNE W. MITCHELL & LOUISE STONEY

Alliance for Early Childhood Finance

2015 — 2017

- Updated and maintained website by fixing broken links, uploading missing files, updating newsletter mailings, and proofreading the site.

Production Technician

ROBERT HENRY

GlaxoSmithKline, PLC

July 2016 — August 2016

- Worked in a FDA-regulated facility at GSK's Consumer Healthcare Manufacturing plant in Oak Hill, NY as a production technician in the packaging department for Aquafresh® and Sensodyne® toothpaste products.

Honors & Awards

GRANTS

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

SCHOLARSHIPS

2020	\$6,000 , Scholarship for Academic Excellence (2016 - 2020)	New York State
2019	\$500 , Travel Scholarship	SACNAS
2019	\$2,000 , Travel Scholarship	NSF REU
2017	\$2,500 , Federated Garden Clubs Tuition Scholarship	New York State

AWARDS

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

Teaching

Plagues and People Teaching Assistant

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

Cornell University

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

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

Cornell University

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

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

Western University

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

ENTOM 2120 (DR. COLE GILBERT)

Cornell University Insect Collection

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.

Trustee

Cornell University

STUDENT LIBRARY ADVISORY COMMITTEE

August 2017 — May 2018

- Voiced student concerns to administration about issues and items related to the library.

CALS Ambassador

COLLEGE OF AGRICULTURE AND LIFE SCIENCES

- Communicated resources and opportunities at the College of Agriculture and Life Sciences to prospective students and their families.

Cornell University

2017 — 2020

Trustee

GREENVILLE EDUCATIONAL FOUNDATION

- Served as a student representative to direct resources for enhancing the educational experience of students throughout the district.

Greenville Central School District

2014 — 2016

Event Guide

MOTHAPALOOZA

- Co-led a tour for annual Mothapalooza event and helped share moth identification tips. Presented about community science and National Moth Week.

Ohio

2015

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	DNA Extraction, PCR Amplification & Optimization, Gel Electrophoresis, Sanger Sequencing
Programming	R (including R Markdown), Python (limited), LaTeX (limited)
Digital Platforms	Google Sites, GitHub Pages, Weebly, WordPress, Social Media Management (Twitter, Instagram, Facebook)
Computational	Molecular phylogenetic programs (Mesquite, Geneious, PopART, MrBayes, RAxML, IQ-TREE), GIS (limited)
Languages	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