



# 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

### In Review

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. A New Framework for Assessing the Contributions of Professionals in the Natural Sciences.
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. Framing the Future for Taxonomic Monography: Improving Recognition, Support, and Access.
3. **Gorneau, J.A.**, Rheims, C.A., Moreau, C.S., & Rayor, L.S. Huntsman spider phylogeny informs evolution of life-history, egg sacs, and morphology.

### In Preparation

1. **Gorneau, J.A.**, Dombroskie, J.J. Three new species of *Argyresthia* Hübner 1825 (Lepidoptera: Argyresthiidae) from Guatemala, with notes on hostplant associations and the taxonomy of congeners (Working Title: Subject to Change).

## Talks

Asterisk (\*) indicates presenter.

### Oral Papers

1. **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.
2. **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.
4. **Gorneau, J.A.**, Goodman, A.M.\*, Esposito, L.A. Niche partitioning among three vaejovoid scorpions near the San Francisco Bay Area (Scorpiones: Vaejovidae). Mary Bowerman Research Symposium, California, USA. 2019.
5. 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

1. **Gorneau, J.A.\***, Goodman, A.M., Esposito, L.A. Niche partitioning among three vaejovoid scorpions near the San Francisco Bay Area (Scorpiones: Vaejovidae). SACNAS National Diversity in STEM Conference in Honolulu, Hawaii, USA. 2019.
2. **Gorneau, J.A.\***, Goodman, A.M., Esposito, L.A. Niche partitioning among three vaejovoid 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.

## Experience

### Research Assistant

DR. LINDA S. RAYOR AND DR. CORRIE MOREAU

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

Cornell University

February 2019 — Present

### Research Assistant

DR. JASON J. DOMBROSKIE

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

Cornell University Insect Collection

August 2016 — Present

### Field Assistant

DR. NUSHA KEYGHOBADI

- 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.

Western University

June 2020 — July 2020

### Curatorial Assistant

DR. JASON J. DOMBROSKIE

- 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.

Cornell University Insect Collection

August 2016 — June 2020

### Lab Assistant

DR. BRYAN N. DANFORTH

- 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.

Cornell University

August 2018 — March 2020

### NSF Research Experiences for Undergraduates Intern

DR. LAUREN ESPOSITO

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

California Academy of Sciences

June 2019 — August 2019

### Curatorial Assistant

DR. LAURA HARRINGTON

- 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.

Cornell University

January 2019 - May 2019

### Field Assistant

DR. LAUREN ESPOSITO

- 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.

California Academy of Sciences

July 2018

### Lab Assistant & Museum Preparator

DR. LINDA S. RAYOR

- 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.

Cornell University

June 2017 — January 2018

### Website Manager

ANNE W. MITCHELL & LOUISE STONEY

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

Alliance for Early Childhood Finance

2015 — 2017

### Production Technician

ROBERT HENRY

- 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.

GlaxoSmithKline, PLC

July 2016 — August 2016

## Honors & Awards

### GRANTS

- |      |  |                    |
|------|--|--------------------|
| 2020 | <b>\$400</b> , Instructionally Related Activities Research Grant   | SF State           |
| 2019 | <b>\$500</b> , Jane E. Brody Undergraduate Research Award          | Cornell University |
| 2019 | <b>\$350</b> , CALS Alumni Association Academic Enrichment Program | Cornell University |
| 2018 | <b>\$1,000</b> , Research Grant                                    | CAS                |
| 2018 | <b>\$1,000</b> , Morley Student Research Grant                     | Cornell University |

### SCHOLARSHIPS

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

### 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

Western 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 Insect Collection

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

### 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

Cornell University

COLLEGE OF AGRICULTURE AND LIFE SCIENCES

2017 — 2020

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

### Trustee

Greenville Central School District

GREENVILLE EDUCATIONAL FOUNDATION

2014 — 2016

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

### Event Guide

Ohio

MOTHAPALOOZA

2015

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

## Outreach & Media

### Scorpions are Predators with a Sensitive Side YouTube Video

San Francisco, CA

KQED

March 2021 — October 2021

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

### Insectapalooza

Cornell University

DEPARTMENT OF ENTOMOLOGY

2016 — 2019

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

### Laphria Photo Featured in Paper

Canadian Journal of Arthropod ID

KATE LINDSAY & STEPHEN A. MARSHALL

2019

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

### Naturalist Outreach Practicum

Cornell University

DR. LINDA S. RAYOR

August 2018 — December 2018

- 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.

## 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

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

## Societies

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

## Collections

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