Graham A. Montgomery

PhD Candidate | Tingley Lab
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Education

2019– Ph.D. student & candidate in Ecology & Evolutionary Biology
Thesis: *Insect declines, population variability, and the consequences for insectivorous birds*
Tingley Lab, University of California, Los Angeles

2018–2019 Ph.D. student in Ecology & Evolutionary Biology
Tingley Lab, University of Connecticut

2011–2015 B.Sc. Biology & B.Sc. Entomology with Distinction in Research
Honors thesis: *Evolution of a Genus of South African Melittid Bees: Rediviva*
Danforth Lab, Cornell University

Employment

2019– **Research & Teaching Assistant**, University of California, Los Angeles
Research and teaching while pursuing a PhD in Ecology and Evolutionary Biology. Includes Great Smoky Mountains National Park resurvey project and insect population fluctuation project.

2018–2019 **Research & Teaching Assistant,** University of Connecticut
Research and teaching while pursuing a PhD in Ecology and Evolutionary Biology.

2018 **Seasonal Biologist**, Institute for Bird Populations
Trained & supervised a backcountry bird monitoring crew in the backcountry of Sequoia-Kings Canyon & Yosemite National Parks, CA.

2017–2018 **Instructor,** McAllen Nature Center (City of McAllen, Texas)
Invasive species removal, restoration, basic maintenance and landscaping, & environmental education programming for a diverse multicultural community of all ages.

2017 **Point Count Technician**, University of Rhode Island Breeding Bird Atlas
Fall avian point count surveys in Rhode Island, plus concurrent plant & invertebrate surveys.

2017 **Seasonal Biologist**, Institute for Bird Populations
Trained & supervised a bird monitoring crew in the backcountry of Yosemite National Park, CA.

2016–2017 **Research assistant**, University of British Columbia
Avian playback experiments & mist-netting in Costa Rica, Panamá, Ecuador, & Peru; independently planning field logistics and conducting field work.

2016 **Crew co-leader**, Institute for Bird Populations
Trained & supervised a bird monitoring crew in the backcountry of North Cascades National Park, WA.

2015–2016 **Field assistant**, Texas Tech University
Duck monitoring in rural Texas using aerial drones, including aquatic invertebrate sampling, interacting with landowners, driving UTVs, hauling trailers.

2015 **Research assistant**, University of Pittsburgh
Spider behavior lab experiments & fieldwork in the Kalahari Desert, South Africa.

2015 **Biological Science Aid**, National Park Service
Conducted backcountry fisher surveys by camera trap in Olympic National Park, WA.

2015 **Avian monitoring intern**, Institute for Bird Populations
Conducted backcountry point counts in Olympic National Park, WA.

2014 **Field assistant**, Cornell Lab of Ornithology
Point counts & playback experiments for Swainson's & Bicknell's Thrush in Adirondack Park, NY.

2011–2015 **Lab assistant**, Danforth Native Bee Lab, Cornell Department of Entomology
Native bee surveys, collections databasing & molecular work (DNA extraction, PCR, gel electrophoresis).

Honors & funding

- Lida Scott Brown quarter funding award ($7500 stipend)
- Lead author for a Bruin Birding Club & Audubon Society grant ($3000)
- Wilson Ornithological Society Fuertes grant ($2500)
- Appalachian Highlands Research reimbursements grant ($1800)
- SysRev.org grant for systematic review ($1000); with Eliza Grames
- NSF GRF Honorable Mention
- Lewis & Clark Society award ($3300)
- Explorer's Club Mamont Scholar ($2500)
- UCONN Provost's teaching commendation (x2)
- Cornell Summer Institute for Life Sciences ($3000)

Research

ORCID: 0000-0002-8217-8800 | Google Scholar

Publications (in review)

- Tonelli, B. *, J. X. Wu* and **G. A. Montgomery.** * A biomass perspective adds nuance to widespread demographic declines of North American avifauna. In review.

- Eiseman, C. E., O. Lonsdale, **G. A. Montgomery,** J. M. Jacobsen, E. X. Kahn, M. C. Rosati, M. Hauser, G. R. Parikh, & D. Yu. Invasive Cape ivy (Asteraceae: Delairea odorata Lem.) confirmed as a host for the North American leafminer Liriomyza temperata Spencer (Diptera: Agromyzidae). In review.

Publications (in prep)

- **Montgomery, G. A.,** E. M. Grames, D. W. Wagner, E. X. Kahn, J. M. Jacobsen, Q. Wu, M. C. Rosati, A. Leyel, & M. W. Tingley. Are insect populations inherently more variable? A multi-taxa approach to characterizing interannual fluctuations in insect time series. In prep.

- **Montgomery, G. A.,** D. W. Wagner, D. Wilcove & M. W. Tingley. The Great Smoky Mountains bird & insect resurvey reveals winners & losers with habitat & climate change. In prep.

- **Montgomery, G. A.** Hidden in plain site: A new barklouse species for North America (Paracaeciliidae: Chilenocaecilius ornatipennis) discovered via crowd-sourced science. In prep.

Selected peer-reviewed publications

- **Montgomery, G. A.**, M. W. Belitz, R. P. Guralnick, and M. W. Tingley. 2021. Standards and Best Practices for Monitoring and Benchmarking Insects. Frontiers in Ecology and Evolution 8:579193.

- **Montgomery, G. A.**, R. R. Dunn, R. Fox, E. Jongejans, S. R. Leather, M. E. Saunders, C. R. Shortall, M. W. Tingley, and D. L. Wagner. 2020. Is the insect apocalypse upon us? How to find out. Biological Conservation 241:108327

- Curti, J. N., M. Barton, R. G. Flores, M. Lechner, A. Lipman, **G. A. Montgomery**, A. Y. Park, K. Rochel, and M. W. Tingley. 2024. Using unstructured crowd-sourced data to evaluate urban tolerance of terrestrial native animal species within a California Mega-City. Plos one 19:e0295476.

- Youngflesh, C., **G. A. Montgomery**, J. F. Saracco, D. A. W. Miller, R. P. Guralnick, A. H. Hurlbert, R. B. Siegel, R. LaFrance, and M. W. Tingley. 2023. Demographic consequences of phenological asynchrony for North American songbirds. Proceedings of the National Academy of Sciences 120:e2221961120.

- Grames, E. M., **G. A. Montgomery**, C. Youngflesh, M. W. Tingley, and C. S. Elphick. 2023. The effect of insect food availability on songbird reproductive success and chick body condition: Evidence from a systematic review and meta-analysis. Ecology Letters 26:658–673.

- **Montgomery, G. A.**, F. Spooner, and B. G. Freeman. 2018. Apparent cooperative breeding at a nest of the Silvery-throated Jay (Cyanolyca argentigula) and first nest description. Wilson Journal of Ornithology 130:543–547.

- Grames, E. M., **G. A. Montgomery**, D. H. Boyes, L. V. Dicks, M. L. Forister, T. A. Matson, S. Nakagawa, K. S. Prendergast, N. G. Taylor, M. W. Tingley, D. L. Wagner, T. E. White, P. Woodcock, and C. S. Elphick. 2022. A framework and case study to systematically identify long-term insect abundance and diversity datasets. Conservation Science and Practice.

- Tingley, M. W., **G. A. Montgomery**, R. L. Wilkerson, D. R. Cluck, S. C. Sawyer, and R. B. Siegel. 2023. Multi-trophic occupancy modeling connects temporal dynamics of woodpeckers and beetle sign following fire. PloS one 18:e0281687.

- Magnier, B. R.*, and **G. A. Montgomery**. 2017*. Novel Wing-Flashing Behavior in a Scorpionfly (Panorpa debilis) May be Competitive. Journal of Insect Behavior 30:247–258.
- Freeman, B. G., and **G. A. Montgomery**. 2017. Using song playback experiments to measure species recognition between geographically isolated populations: A comparison with acoustic trait analyses. Auk 134:857–870.
- Neate-Clegg, M. H. C., B. A. Tonelli, C. Youngflesh, J. X. Wu, **G. A. Montgomery**, Ç. H. Şekercioğlu, and M. W. Tingley. 2023. Traits shaping urban tolerance in birds differ around the world. Current Biology 33:1677-1688.e6.
- Pauw, A., B. Kahnt, M. Kuhlmann, D. Michez, **G. A. Montgomery**, E. Murray, and B. N. Danforth. 2017. Long-legged bees make adaptive leaps: Linking adaptation to coevolution in a plant-pollinator network. Proceedings of the Royal Society B: Biological Sciences 284.
- Kahnt, B., **G. A. Montgomery**, E. Murray, M. Kuhlmann, A. Pauw, D. Michez, R. J. Paxton, and B. N. Danforth. 2017. Playing with extremes: Origins and evolution of exaggerated female forelegs in South African Rediviva bees. Molecular Phylogenetics and Evolution 115:95–105.
- Freeman, B. G., and **G. A. Montgomery**. 2015. Interspecific aggression by the Swainson's Thrush (Catharus ustulatus) may limit the distribution of the threatened Bicknell's Thrush (Catharus bicknelli) in the Adirondack Mountains. Condor 118:169–178.

Presentations

2024 *(Nov)* *Poster:* LandManageR: A simple, open-source dashboard for eco-informatic data. Organization for Biological Field Stations annual meeting.

2024 *Contributed talk:* Characterizing interannual fluctuations in insect population time series. Ecological Society of America annual meeting.

2023 *Contributed talk:* 40 years of avifaunal change in Great Smoky Mountains National Park. Great Smoky Mountains National Park Science Colloquium.

2023 *Invited symposium talk:* 40 years of avifaunal change in Great Smoky Mountains National Park. Annual Bird Monitoring Symposium, Bird Monitoring in India (2023).

2022 *Contributed talk:* Collecting data on insects: A primer for ornithologists. American Ornithological Society/Birds Caribbean annual meeting.

2021	*Invited symposium talk:* Standards and Best Practices for Insect Monitoring. Entomological Society of America annual meeting.
2020–2022	UCLA EEB Eco-Evo Pub graduate student seminar series (x3)
2019	UConn EEB Graduate Student Symposium
2018	UConn EEB Department Tuesday Evening Seminar
2015	Cornell Undergraduate Research Symposium

Teaching

Teaching assistant (20+ hrs/week; leading labs or discussion sections)

- *Field courses:* California Ecology & Conservation (UC NRS) across six UC reserves, Field & Marine Biology Quarter (UCLA) at Bodega Marine Laboratory
- *UCLA:* EEB 114 (Ornithology), EEB 142 (Aquatic Communities), EEB 120 (Evolution), LS 7B (Genetics, Evolution, & Ecology)
- *University of Connecticut:* EEB 4230 (Methods of Ecology), EEB 4260 (Ornithology)
- *Cornell University:* ENTOM 2120 (Insect Biology)

Mentorship

- *"Finch Itch" team:* mentored four undergraduates in a collaborative, student-driven natural history collections project resulting in:
    - three presentations at Ecological Society of America's 2024 meeting,
    - two honor's theses
    - three grants for their work (including two prestigious $5,000 research awards through UCLA's Undergraduate Research Scholar's Program)
    - four publications *in prep*
- *Insect biodiversity of Sage Hill, UCLA:* mentored one undergraduate in insect monitoring methods & bioinformatics, creating a checklist of the insects of Sage Hill at UCLA.
- *Insect population fluctuations project:* oversaw 10 undergraduates as they learned evidence synthesis methods and digitized data for the entoGEM project for research credit, including scheduling, weekly one-on-one paper discussions, and training workshops on research topics
- *UCLA EEB graduate mentorship program:* mentored one first-year graduate student in strategies for success in graduate school.

- *UConn Connects:* provided mentorship & support for one undergraduate student on academic probation

Guest lectures

- *Urban Ecology (UCLA, Spring 2024):* Birds, insects, and their responses to urban environments
- *Field & Marine Biology Quarter (UCLA, Spring 2024):* How to build a scientific presentation, Reading & understanding scientific papers, An introduction to literature searches & tools in EEB
- *California Ecology & Conservation (UC NRS, Fall 2022):* Behavioral ecology; iNaturalist data CEC workshop; Research overview & graduate school
- *Ornithology (University of Connecticut, Spring 2019):* Breeding systems & behavior

Service

Professional

- Peer-reviewer for: *Behavioral Ecology, Biological Conservation, Tropical Conservation Science, Journal of Avian Biology, Insect Conservation & Diversity, Landscape Research, Frontiers in Ecology & the Environment, Conservation Science & Practice, Ecology & Evolution, Agricultural & Forest Entomology, Diversity & Distributions, Oecologia*
- Committees
    - Interim chair, NSF RCN Insect monitoring standardization working group (2023–)
    - UCLA EEB graduate student professional development committee (2022-24)
    - UCLA Committee on Library and Scholarly Communications (2021)
- Contributory science: iNaturalist identifications (>10,000, including the most for Psocodea of California), and observations (>22,000)

Community

- *ECUITY project, WestEd, 2023*–present
    - Collaboratively designed an 8-week curriculum focusing on wildlife corridors, mental health & environmental justice that meets Next-generation Science Standards. Worked with four grade school teachers & WestEd staff, as part of an NSF-funded grant to LA Sanitation & Environment, UCLA Institute of the Environment & Sustainability, and

WestEd; currently being implemented in Los Angeles Unified School District.

- *Public lectures & events*
    - Ojai Land Conservancy, 2024. *Exploring the Insects of Ojai & Southern California*. (60 participants). Included meeting with donors and leading two night nature walks.
    - ECUITY project, 2024. *Science & education panel discussion for teachers* (30 participants).
    - Bruin Birding Club & Audubon Society, 2023. *All-day introduction to birding workshop* (12 participants).
    - Los Angeles County Library, 2022. *Birds 101: An intro to birds and birdwatching in the Los Angeles area* (160 participants).
    - Great Smoky Mountains Institute at Tremont, 2021. *iNaturalist data workshop for educators* (80 participants).
    - Austin Butterfly Forum, 2021. *Insect & insectivorous bird declines: Current Research in the Appalachians & a Roadmap Moving Forward.* (40 participants).
    - Bird and nature walks, 2018–present. *>30 bird walks for organizations including Bruin Birding Club, Project Phoenix, Frontera Audubon Center, McAllen Nature Center, & Armand Bayou Nature Center*. (>300 participants)
- *Board member Bruin Birding Club & Audubon Society, 2020-2022:* organized birding & camping trips, led collaborative rewrite of club event SOPs for greater inclusivity.
- *Volunteer*: LAPL Adult Literacy Program (2020-2023), 1st grade ESL classroom helper (Fall 2014), Christmas Bird Counts (12 since 2010), avian point counts for Western Foundation of Vertebrate Zoology/Santa Monica Mountains NRA.
- *Media*: National Geographic: Where have all the insects gone? photo feature, UCLAvian: Simpli Birds explainer video, Cornell Daily-Sun: undergraduate thesis coverage, Cornell Daily-Sun: Mississippi River kayak expedition coverage.

Technical skills, certifications, and activities

- *Selected notable arthropod records (new species, lost species, and range expansions):* Kinnaridae (genus novum), Anilline carabid (sp. novum), Friscanus (sp. novum), five undescribed psocodean species, Chilenocaecilius ornatipennis (N.A. record), Osoriine rove beetle (N.A. record), Psocathropos lachlani (French Polynesia record), Aaroniella badonneli (N. A. west coast record), Trioza viridis (host plant record), Plagiophleboptena smaragdina (lost species), Herveyus mulaiki (lost species), Pseudocellus dorotheae (lost species), Penehuleria acuticephala (lost species).

- *Photography & videography:* Produced photos for UC NRS social media, cover of Behavioral Ecology Sept/Oct. 2019, Beetles of Eastern North America, the LA Sanitation & Environment Biodiversity Report (2023), and many other books & publications. Organized EEB photo contest (2019) & took headshot photos of incoming graduate students (2024).
- *Software:* R, RMarkdown, RShiny, basic web design/hosting/management (Hugo, git, html, CSS), Microsoft Access, Affinity Publisher, Affinity Designer
- *Selected trainings:* data visualization, synthesis & management (NCEAS at UCSB, Software Carpentry at UCLA), information literacy institute (UCLA Library), microscopy (CNSI at UCLA), bird specimen preparation (UCLA Dickey Collection, University of Connecticut EEB), Wilderness First Aid (3x; currently inactive), off-road vehicle training

Professional membership

- Organization for Biological Field Stations
- Ecological Society of America
- Southern California Botanists
- Southern California Academy of Sciences
- Entomological Society of America
- American Ornithological Society
- Wilson Ornithological Society