Alyssa J. Sargent

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EDUCATION

Ph.D., Biology (ongoing: candidate), Behavioral Ecophysics Lab, University of Washington — 2020–
Topic: Characterization and modeling of movement behavior in hummingbirds (Advisor: Dr. Alejandro Rico-Guevara)

B.Sc., Environmental Science, Messiah University — 2014–18
Independent research: Avian habitat associations and environmental impact assessment for Oakwood Hills (2017–18, Advisor: Dr. David Foster)
Departmental honors independent research: Noninvasive individual identification of the Panamanian golden frog (2016–17, Advisor: Dr. Erik Lindquist)

PUBLICATIONS & MANUSCRIPTS

Sargent AJ, Ward M, Fernandes AM, Talwekar Y, Muñoz-Amaya AM, Téllez-Colmenares N, Rico-Guevara A. Investigating the home ranges of hummingbirds in Colombia using two automated radio telemetry approaches. In prep for *Ornithology* (automated telemetry special issue). — In prep

Falk JJ, **Sargent AJ,** Medina-Madrid J, Rico-Guevara A. The daily life of a hummingbird: high-throughput tracking shows a spectrum of feeding and movement strategies. In review with *PLOS Biology*. Preprint: https://www.biorxiv.org/content/10.1101/2025.02.25.640146v1. — In review

Sargent AJ, Fernandes AM, Clarkson A, Martinez SLG, Coenen A, Hansell L, Talwekar Y, Muñoz-Amaya AM, Téllez-Colmenares N, Elting R, Sun Y, Cartwright OA, Büttner N, Rico-Guevara A. Tiny radio-tag backpacks impact, but do not significantly affect, hummingbird time budgets in captivity. In review with *Animal Biotelemetry.* Preprint: https://doi.org/10.1101/2025.01.29.635563. — In review

Rueda-Uribe C, **Sargent AJ**, Echeverry-Galvis MÁ, Camargo-Martínez PA, Capellini I, Lancaster LT, Rico-Guevara A, Travis JM. 2024. Tracking small animals in complex landscapes: a comparison of localisation workflows for automated radio telemetry systems. *Ecology and Evolution.* 14:10, p.e70405. https://doi.org/10.1002/ece3.70405. — 2024

Falk J, **Sargent AJ**. 2024. The glitter in the green: in search of hummingbirds. *The Condor: Ornithological Applications* (invited commentary: book review). duae026. https://doi.org/10.1093/ornithapp/duae026. — 2024

Van Dyke F, Harju S, Hindy M, Cannata N, Schmidt E, Hillman E, **Sargent AJ**, Keas B. 2023. Bird communities of jack pine and red pine stand types: implications of multi- versus single-species management. *The Wilson Journal of Ornithology.* 135:3, 311–326. https://doi.org/10.1676/22-00062. — 2023

Hewes A, Cuban D, Groom DJE, **Sargent AJ**, Beltrán DF, Rico-Guevara A. 2022. Comparative functional morphology of nectar-feeding birds. *Journal of Morphology.* https://doi.org/10.1002/jmor.21513. — 2022

Van Dyke F, Harju S, Hindy M, Cannata N, Schmidt E, Hillman E, **Sargent AJ**, Keas B. 2022. Comparative detection, density, and reproductive performance of the Kirtland's Warbler in jack and red pine habitats. *Journal of Wildlife Management.* e22233. https://doi.org/10.1002/jwmg.22233. — 2022

Cuban D, Hewes A, **Sargent AJ**, Groom DJE, Rico-Guevara A. 2022. On the feeding biomechanics of nectarivorous birds. *Journal of Experimental Biology*. 225:2, p.jeb243096. https://doi.org/10.1242/jeb.243096. — 2022

Sargent AJ, Groom DJE, Rico-Guevara A. 2021. Locomotion and energetics of divergent foraging strategies in hummingbirds: a review. *Integrative and Comparative Biology.* 61:2, 736–748. https://doi.org/10.1093/icb/icab124. — 2021

Hereward H, Facey R, **Sargent AJ**, Roda S, Couldwell M, Renshaw E, Shaw K, Devlin J, Long S, Porter B, Henderson J, Emmett C, Astbury L, Maggs L, Rands S, Thomas R. 2021. Raspberry Pi nest cameras: an affordable tool for remote behavioral and conservation monitoring of bird nests. *Ecology and Evolution.* 00, 1–13. https://doi.org/10.1002/ece3.8127. — 2021

FUNDING (>$318,000 PERSONALLY SECURED, $1,200,000 COAUTHORED)

Coauthored Grants ($1,200,000)

CAREER: Hummingbird bill performance while feeding on and fighting for flowers (2440668), National Science Foundation, $1,200,000 — 2025–30
Lead author: Education and Broader Impacts section (4.5 pages) of Project Description (personally wrote, compiled bibliography, and secured necessary Letters of Support)

Coauthor: Intellectual Merit section of Project Description (writing, formatting, bibliography); Project Summary; Budget; Budget Justification; Data Management Plan; and Facilities, Equipment, and Other Resources document

Fellowships (>$178,000)

Graduate Research Fellowship, National Science Foundation (NSF GRFP), $152,000	2022–25
Graduate Student Excellence Fellowship, Washington Research Foundation and Benjamin Hall, $10,866	2022
Barbara Eddy Outreach Fellowship, Burke Museum of Natural History and Culture, $15,982	2021

Research Grants (>$51,000)

P.E.O. Scholar Award, Philanthropic Educational Organization International, $25,000	2025
Explorer Award for Inspirational and Scientific Trailblazing, Scientific Exploration Society, £5,000	2024
Student Research Grant, American Ornithological Society, $2,450	2024
Robert T. Paine Experimental and Field Ecology Award, University of Washington, $6,600	2024
Richard C. Snyder Award, University of Washington, $500	2024
Walter and Margaret Sargent Award, University of Washington, $2,000	2023
Hoag Award, University of Washington, $500	2023
Personal Fundraising, Private donors, $300	2022–
Outreach Grant, Animal Behavior Society, $1,000 (’22), $1000 (’25)	2022, ’25
Orians Award for Tropical Studies, University of Washington, $1,500 (’21), $900 (’24)	2021, ’24
Margo and Tom Wyckoff Award, University of Washington, $3,500	2021

Scholarships & Travel Awards (>$87,000)

Charlotte Mangum Student Support, Society for Integrative and Comparative Biology, $125	2024
Travel Award, American Ornithological Society, $931	2023
Graduate School Conference Presentation Award, University of Washington, $500	2023
Biology Department Graduate Student Travel Award, University of Washington, $500	2023
Graduate Student Travel Grant, Animal Behavior Society, $700	2023
Federal Work-Study, Messiah University, $6,998	2015–18
Messiah University Grant, Messiah University, $19,440	2014–18
Provost Scholarship, Messiah University Honors Program, $58,000	2014–18

AWARDS & HONORS

Sesquicentennial Fund (Alice Virginia Coffin) Scholar, Philanthropic Educational Organization International (one of 16 awardees out of 776 nominees)	2025–26
Founders Memorial Award for Outstanding Poster, Honorable Mention, Animal Behavior Society	2023
Certified Field Naturalist, Au Sable Institute	2018
Departmental Honors (Research), Department of Biology, Messiah University	2016–18
Dean’s List; School of Science, Engineering, and Health; Messiah University	2014–18

SCIENCE COMMUNICATION

Hummingbird Sugar Rush / Fiebre de Azúcar en Colibríes: Curriculum Development (2021–Present)

Development: Personally conceived and developed educational curriculum "Hummingbird Sugar Rush" ("Fiebre de Azúcar en Colibríes" in Spanish), with assistance from the Burke Museum's Education Department and Colombian early-career colleagues

Curriculum components: Board game, life-sized field game, two hands-on "deeper dive" activities (bill morphology vs. floral access trade-offs, nectar energy content vs. feeding efficiency trade-offs)

Execution:

Full curriculum: Playtested with **30 students** (Burke Museum of Natural History and Culture's Girls in Science program, two total sessions, '24–25)

Life-sized field game:

- **English:** Played with **152 students** in Seattle: (Aki Kurose Middle School, 73 students, '23; Lake Washington Girls Middle School, 29 students, '24; Birds Connect Seattle Nature Camp, 18 students, '25)
- **Spanish:** Played with **139 students** in Colombia: (Escuela Bermejal, 66 students, '24–25; Institución Educativa Municipal Francisco José de Caldas, 53 students, '25; Escuela Tierra Negra, 20 students, '25)

Board game: Playtested at community outreach events/sessions (see below) with **275 booth attendees** in total

Community Education & Events

Miyawaki Urban Forest Pollinator Party, Shoreline Historical Museum — 2025
Hosted booth to exhibit Burke Museum hummingbird specimens and playtest board game (110 attendees)

DIY Science Zone, GeekGirlCon — 2023
Hosted booth to playtest board game on behavioral trade-offs faced by hummingbirds (45 booth attendees)

Outreach Fair, Animal Behavior Society — 2023
Hosted booth to playtest board game on behavioral trade-offs faced by hummingbirds (120 booth attendees)

Assorted outreach events, Burke Museum of Natural History and Culture — 2021–
Hosted hummingbird booth at annual spring fundraiser ('21–'24), "Rare Air" exhibit closing celebration ('25)

President of Sigma Zeta Science and Mathematics Honor Society, Messiah University — 2016–18
Coordinated seminars, public scientific demonstrations, judging K–8 science fairs

Oakes Museum of Natural History Assistant Collections Manager, Messiah University — 2015–18
Volunteer guide; curated, identified, and catalogued bird, egg, nest, mammal, insect specimens; gave ornithological talks to public, created displays, contributed to blog

Writing & Publications

Science Journalist, Integrative and Comparative Biology (blog articles) — 2024
Disseminated novel research through interview-based articles (the Luxury Effect, hummingbird combat/coloration)

Editor for *Exploration Revealed,* Scientific Exploration Society — 2023–
Guided, honed, and edited articles from contributing authors on their wildlife research expeditions (e.g., mammals, hummingbirds, honeyeaters)

***Exploration Revealed*,** Scientific Exploration Society (Feature article, Issue 3) — 2023
From backyards to beyond: the surprising odysseys of radio-tagged hummingbirds

Science Journalism Fellowship, Puget Sound Institute and *Salish Sea Currents* (Feature article) — 2022
Bird populations improve after Elwha Dam removals

TED-Ed collaboration for hummingbird-focused animation — 2021
Created supplementary learning materials for animation (>1,028,000 views)

Current Conservation (Feature article, Vol. 14.4) — 2021
The secret world of owl migration

Dispatches from the Field (Guest article) — 2020
Praia, paradise, & petrel poop

Selected additional publications on human-nature coexistence — 2013–18
Artwork (*Peregrine Review*), personal essays (*Kelsey Review*, *Aspirations*), LEGO (*Beautiful LEGO: Wild!*)

Talks & Presentations (>3,800 citizens reached)

Invited guest speaker, Olympic BirdFest (Olympic Peninsula Audubon Society, Dungeness River Nature Center, and Jamestown S'Klallam Tribe) 2025
Talk and trivia: "The swashbuckling and fantastical lives of hummingbirds" (55 attendees)

Invited guest speaker, Cayuga Bird Club 2024
"Hitchhiking on hummingbirds with tiny tech" (75 attendees)

Community Speaker Series (invited), Birds Connect Seattle 2024
"Hummingbird war and peace: field research informing science education" (70 attendees)

Invited guest speaker, Philanthropic Educational Organization 2024
"On-board devices & outreach: new perspectives for studying and sharing about hummingbirds" (19 attendees)

Wildlife Webinar, Washington Chapter of The Wildlife Society 2023
"Fast & furious: tracking the movements of territorial hummingbirds" (20 attendees)

Young Birders Talk, Seattle Audubon 2022
Invited storytelling on career trajectory, fieldwork, and research (13 student attendees)

Virtual Open Door, Burke Museum of Natural History and Culture 2021
Invited Instagram Live Q&A on research (>1,050 views)

Research Spotlight, Burke Museum of Natural History and Culture 2021
Presentation with museum donors on research (51 attendees)

Career Café with Girls in Science, Burke Museum of Natural History and Culture 2021
Invited livestream career talk and iNaturalist activity (>800 student attendees)

Skype a Scientist 2020–
39 hummingbird talks with all ages, class- and school-wide presentations (>1,600 student attendees)

Interviews & Consultation

Write for You podcast episode, "Writing across genres, working in collaboration, and finding strategies that suit you" 2025

Mechanical Engineering Magazine article, "Hummingbirds fitted with tiny backpacks for research" 2025

KUOW/NPR podcast episode, "Hummingbirds: swords for sugar?!" 2025

The Society for Integrative and Comparative Biology article, "Tiny backpacks for tiny birds: tracking hummingbird behaviors without weighing them down" 2025

UW News article, "Miniature backpack-like tags offer insight into the movement of hummingbirds" 2024

KUOW/NPR article, "Angry birds: Hummingbirds are cute, but they're primed to fight" 2024

Birds & Blooms article, "Grow nectar-rich native plants for hummingbirds" 2024

Wildlife film consultation on hummingbird behavior for WildStar Films (National Geographic, Disney+), BBC 2023–

#itsawildlife podcast episode, "Humming about bird research and outreach with Alyssa Sargent" 2022

Birds Connect Seattle article, "Snow dance: Anna's Hummingbirds in winter" 2021

TEACHING ASSISTANTSHIPS (* *INCLUDED CURRICULUM DEVELOPMENT*; 185 STUDENTS INSTRUCTED)

Scientific Writing in Marine Biology, University of Washington (48, 42 undergraduates) 2022–23

***Ornithology,** University of Washington (32 undergraduates) 2021

Introductory Biology, University of Washington (51 undergraduates) 2020

Environmental Chemistry, Messiah University (12 undergraduates) 2018

INVITED ACADEMIC TALKS & GUEST LECTURES (124 STUDENTS/PEERS INSTRUCTED)

Ornithology Course, University of Washington (24 undergraduates) 2025
Lecture: Ornithological careers: the limitless creativity of fieldwork

Functional Morphology Course, University of Washington (13 undergraduates) 2024

Lecture: Fight or flight . . . or both? Relating foraging strategies to hummingbird morphology

Ornithology Course, University of Puerto Rico Mayaguez (14 undergraduates) 2023
Talk: Rápidos y furiosos: seguimiento de los movimientos de los colibríes territoriales

Plastic Punk Animal Games Workshop, University of Washington (20 graduate engineers) 2022
Talk: Using games and bespoke field methodology to increase understanding of hummingbirds

Graduate & Professional Life Course, University of Washington 2021–
Lecture: "What is outreach, anyway?" Resources to communicate complex topics well ('23–'24: 23 total graduates)
Lecture: The mechanics of science communication: effectively engaging with diverse audiences ('22: 13 graduates)
Lecture: Unpacking science communication and getting plugged in ('21: 17 graduates)

ACADEMIC CONFERENCE PRESENTATIONS (* *GRANTED AWARD*)

Sargent AJ, Pen J, Stockham C, Canning K, Canaday R, Rockwood A, Clark A, Rico-Guevara A. Learning through games: a case-study in urban outreach. Society for Integrative and Comparative Biology, *Poster*. 2024

Sargent AJ, Fernandes AM, Elting R, Clarkson A, Martinez SL, Hansell L, Coenen A, Talwekar Y, Muñoz-Amaya M, Téllez-Colmenares N, Rico-Guevara A. Tiny backpacks: experimentally monitoring the behavior of radio-tagged hummingbirds in Colombia. Society for Integrative and Comparative Biology, *Talk*. 2024

Sargent AJ, Ward M, Fernandes AM, Talwekar Y, Muñoz-Amaya MA, Téllez-Colmenares N, Rico-Guevara A. Investigating the home ranges of hummingbirds in Colombia using two automated radio-telemetry approaches. American Ornithological Society, *Talk ("Automating ornithology: Advances in avian ecology through automated radio telemetry"* symposium*).* 2023

Sargent AJ, Pen J, Canaday R, Stockham C, Rockwood A, Clark A, Rico-Guevara A. Become the hummingbird: using games to engage with underrepresented groups in science. American Ornithological Society, *Poster.* 2023

***Sargent AJ,** Canaday R, Pen J, Rockwood A, Clark A, Stockham C, Rico-Guevara A. Hummingbird Sugar Rush: teaching complex behavioral trade-offs through games. Animal Behavior Society, *Poster.* 2023

Sargent AJ, Rico-Guevara A. Where do they go? Mysterious hummingbird foraging. Animal Behavior Society, *Talk.* 2021

Sargent AJ, Groom D, Rico-Guevara A. Reassessing hummingbird foraging: the territoriality-traplining continuum. Society for Integrative and Comparative Biology, *Talk ("Physical mechanisms of behavior"* symposium*).* 2021

Sargent AJ, Hindy M, Van Dyke F. Examining nesting site flexibility of the Kirtland's Warbler—an endangered, extreme habitat specialist. School of Science, Engineering, and Health Research Symposia, Messiah University, *Talk.* 2018

Sargent AJ, Foster D. Survey of the Oakwood Hills avian community, stratified by habitat type. School of Science, Engineering, and Health Research Symposia, Messiah University, *Poster.* 2018

Sargent AJ, Hindy M, Van Dyke F. Kirtland's Warbler use of red pine stands in Northern Lower Michigan. Internal Research Symposium, Au Sable Institute, *Talk.* 2017

Sargent AJ, E Lindquist. Non-invasive individual identification of the Panamanian golden frog (*Atelopus zeteki*). School of Science, Engineering, and Health Research Symposia, Messiah University, *Talk* ('16), *Poster* ('17). 2016–17

PROFESSIONAL SERVICE

Outreach Committee member, Biology Department, University of Washington 2025

"Decisions, Decisions—Taking Ownership over the Dissertation Process" panelist, Odegaard Writing and Research Center, University of Washington (21 attendees) 2025

Panelist; Gabriel E. Gallardo Research, Student Leadership, & Advocacy Symposium; University of Washington 2025
Panel: "Funding Graduate School—Fellowships" (70 attendees)
Panel: "Applying to and Attending Graduate School" (41 attendees)

Career-building workshop discussion leader, Program on Climate Change, University of Washington (22 attendees) 2023

Departmental awards peer reviewer, Biology Department, University of Washington 2023

NSF GRFP workshop peer reviewer, Graduate School, University of Washington 2022

"Applying to Graduate School" panelist and host, Biology Department, University of Washington (>140 attendees) 2020–22

"Biology, Wildlife, Conservation, & More" career networking event co-arranger, panelist, and co-host, YouthForce, Boys & Girls Club of King County (30 attendees) 2020

Biology website redesign taskforce creator and co-leader, Biology Department, University of Washington (enhancing website information and accessibility for prospective grad students) 2020

ACADEMIC PEER REVIEW (2020–PRESENT)

Biology Letters (1), *Journal of Pollination Ecology* (1), *The Oriole* (1), *Integrative and Comparative Biology* (1), *Journal of Field Ornithology* (1)

MENTORSHIP & SUPERVISION (18 STUDENTS/PROFESSIONALS)

Project (supervision): How artificial nectar hotspots affect territoriality in a hummingbird assemblage 2025–
Centro de Investigación Colibrí Gorriazul: Marialejandra Castro Farias (biologist), Juan Camilo Reyes (engineer), Samantha-Lynn Martinez (wildlife filmmaker), Catalina Montaño (educator)

Project (mentorship): Biologging ethics and time budgets of radio-tagged hummingbirds 2023–
University of Washington: Samantha-Lynn Martinez (also mentored for 2024 Mary Gates Leadership Scholarship), Laney Hansell, McKenna Dailey, Yutong Sung, Olivia Cartwright, Alexandra Coenen, Jonathan Bristle
Texas A&M University: Aeris Clarkson

Project (supervision): Characterizing hummingbird movement ecology through automated telemetry 2022–
Centro de Investigación Colibrí Gorriazul: Ana Melisa Fernandes, Nicolas Téllez-Colmenares, Miguel Angel Muñoz Amaya

Project (supervision): Geometric morphometrics of hummingbird bills 2020
University of Washington: Linda Chen, Michelle Hsu, Monica Hu, Allison Li

ADDITIONAL RESEARCH & FIELD EXPERIENCE

Field Assistant, New York University, Dr. Valentina Alaasam (Puerto Rico, USA) 2023
Project: Thermoregulatory evolution of hummingbirds: using urban heat islands as a natural experiment

Research Technologist, University of Washington, Dr. Alejandro Rico-Guevara (Washington, USA) 2020
Lab maintenance; virtual outreach; wrote protocols, permits, and proposals; edited papers

Banding Assistant and Owl Banding Crew Leader, Long Point Bird Observatory, Kyle Cameron (Ontario, Canada) 2019
Fall migration constant-effort banding

Research Intern, AMNH Southwestern Research Station, Dr. Susan Wethington (Arizona, USA) 2019
Project: Blue-throated Mountain-gem site preference and nest characterization

Field Assistant, Cardiff University, Drs. Hannah Hereward and Veronica Neves (Azores, Portugal) 2019
Project: Nesting study and conservation of Monteiro's Storm-Petrels

Field Assistant, Cornell University and University of Queensland, Dr. Will Feeney (Brisbane, Australia) 2018
Project: Avian brood parasitism and social behavior of Australian fairywrens

Field Assistant, University of Missouri, Melissa Roach (Missouri, USA) 2018
Project: Effects of lead (Pb) on success of ground-foraging birds in Southeast Missouri

Research Student, Au Sable Institute, Dr. Fred Van Dyke (Michigan, USA) 2017
Project: Kirtland's Warbler use of red pine in Northern Lower Michigan

SELECTED EXTRACURRICULAR TRAININGS

Media Lab (9-day science and natural history filmmaking workshop), Jackson Wild 2025
Mentored by Day's Edge Productions and Helicase Media L.L.C. to produce 5-minute video for the Teton Raptor Center

Writing Children's Literature: Picture Books (10-week course), University of Washington 2024

Wilderness First Aid (2-day course), REI and National Outdoor Leadership School Wilderness Medicine ('21); Longleaf Wilderness Medicine ('25) 2021, '25

Research Data Management (4-day workshop), University of Washington 2020

Hummingbird Banding Training (6-day workshop), Hummingbird Monitoring Network 2019

SKILLS OVERVIEW

Taxa handling: Trochilidae, Passeriformes, Procellariiformes, Strigiformes, Cuculiformes, Piciformes

Avian processing: mist-netting and extraction, ground trapping, baited trapping, processing (e.g., aging, sexing, recording biometrics, banding), brachial blood sampling, aging nestlings and eggs

Avian field techniques: ID, resighting color bands, nest searching and monitoring, territory mapping, point counting, spot mapping, behavioral monitoring

Wildlife tracking techniques: Automated Radio-Telemetry System setup, maintenance, data cleaning/analysis (grid, tower, base station); radio-telemeter, accelerometer, and GPS logger application/removal (glue, backpack harness); passive integrated transponder (PIT tag) implantation; radio-frequency identification (RFID) antenna maintenance

Field electronics: Raspberry Pi load cell and nest burrow camera maintenance, camera trapping, field video recording (JVC, GoPro, Minolta), high-speed camera operation (Chronos), wind tunnel calibration and operation

Vegetation sampling: ID, line-transect, Daubenmire, quadrat, DBH, density, relative cover

Programming languages: R (advanced); Raspberry Pi, Python (beginner)

Software: BORIS, BioRender (proficient); Premiere Pro, Procreate, Canva (competent); SlicerMorph, Illustrator, Photoshop (beginner)