

Y Alyssa J. Sargent Y

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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
- Sargent AJ**, Fernandes AM, Elting R, Martinez SL, Clarkson A, Coenen A, Hansell L, Cartwright O, Talwekar Y, Muñoz-Amaya AM, Téllez-Colmenares N, Rico-Guevara A. Tiny backpacks: experimentally monitoring the behavior of radio-tagged hummingbirds in Colombia. In prep for *Animal Biotelemetry*. In prep
- 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. bioRxiv preprint: <https://doi.org/10.1101/2024.04.14.589351>. Preprint
- 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: Fellowships (>\$178,500)

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

Funding: Research Grants (>\$19,000)

- Student Research Grant**, American Ornithological Society, \$2,450 2024
- Robert T. Paine Experimental & Field Ecology Award**, University of Washington, \$6,600 2024
- Richard C. Snyder Award**, University of Washington, \$500 2024
- Walter & 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	2022
Orians Award for Tropical Studies , University of Washington, \$1,500 ('21), \$900 ('24)	2021, '24
Margo & Tom Wyckoff Award , University of Washington, \$3,500	2021

Funding: Scholarships and 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

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

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

Development: Personally conceived & 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, hands-on “deeper dive” activities (morphology & energy content vs. feeding efficiency trade-offs)

Playtested at: Aki Kurose Middle School (73 students, '23), Lake Washington Girls Middle School (29 students, '24), Escuela Rural de Bermejál in Colombia (32 Spanish-speaking students, '24), community outreach events/sessions (175 attendees, see below)

Science Communication: Community Education & Events

Girls in Science session leader, Burke Museum of Natural History Led middle school educational curriculum (HSR), shared research/career trajectory (10 student attendees)	2024
DIY Science Zone , GeekGirlCon Hosted booth to playtest board game on behavioral trade-offs faced by hummingbirds (45 booth attendees)	2023
Outreach Fair , Animal Behavior Society Hosted booth to playtest board game on behavioral trade-offs faced by hummingbirds (120 booth attendees)	2023
YouthForce (Boys & Girls Club) with Behavioral Ecophysics Lab Arranged & co-hosted career-oriented connection event (30 attendees)	2020
President of Sigma Zeta Science and Mathematics Honor Society, Messiah University Coordinated seminars, public scientific demonstrations, judging K-8 science fairs	2016–18
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

Science Communication: Writing & Publications

Science Journalist , Integrative and Comparative Biology (blog articles) Disseminated novel research through interview-based articles (e.g., hummingbird combat and coloration)	2024
Editor for <i>Exploration Revealed</i> , Scientific Exploration Society Worked with contributing authors to conceptualize and hone submitted articles	2023–
Exploration Revealed , Scientific Exploration Society (Feature article, Issue 3) From backyards to beyond: the surprising odysseys of radio-tagged hummingbirds	2023
Science Journalism Fellowship , Puget Sound Institute & <i>Salish Sea Currents</i> (Feature article) Bird populations improve after Elwha Dam removals	2022
TED-Ed collaboration for hummingbird-focused animation Created supplementary learning materials for animation (>1,009,000 views)	2021
Current Conservation (Feature article, Vol. 14.4) The secret world of owl migration	2021
Dispatches from the Field (Guest article) Praia, paradise, & petrel poop	2020
Selected, additional publications on human-nature coexistence Artwork (<i>Peregrine Review</i>), personal essays (<i>Kelsey Review</i> , <i>Aspirations</i>), LEGO (Beautiful LEGO: Wild!)	2013–18

Science Communication: Talks, Interviews, & Panels (>3,400 citizens reached)

Invited guest speaker , Philanthropic Educational Organization “On-board devices & outreach: new perspectives for studying and sharing about hummingbirds” (19 attendees)	2024
Scientific consultation on hummingbird behavior Wildlife film consultation for WildStar Films (National Geographic, Disney+), BBC	2023–
Wildlife Webinar , Washington Chapter of The Wildlife Society “Fast & furious: tracking the movements of territorial hummingbirds” (20 attendees)	2023
Young Birders Talk , Seattle Audubon Invited storytelling on career trajectory, fieldwork, & research (13 student attendees)	2022
Selected interviews on hummingbirds Seattle Audubon blog post ('21), #itsawildlife blog post and podcast ('22), Birds & Blooms article ('24)	2021–
Virtual Open Door , Burke Museum of Natural History and Culture Invited Instagram Live Q&A on research (>1,050 views)	2021
Research Spotlight , Burke Museum of Natural History and Culture Presentation with museum donors on research (51 attendees)	2021
Career Café with Girls in Science , Burke Museum of Natural History and Culture Invited livestream career talk and iNaturalist activity (>800 student attendees)	2021
Skype a Scientist 28 hummingbird talks with all ages, class- and school-wide presentations (>1,450 student attendees)	2020–

Teaching Assistantships (* included curriculum development; >180 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 (88 students instructed)

Functional Morphology Course , University of Washington (13 undergraduates) <i>Lecture</i> : Fight or flight . . . or both? Relating foraging strategies to hummingbird morphology	2024
Ornithology Course , University of Puerto Rico Mayaguez (14 undergraduates) <i>Talk</i> : Rápidos y furiosos: seguimiento de los movimientos de los colibríes territoriales	2023
Plastic Punk Animal Games Workshop , University of Washington (20 graduate engineers) <i>Talk</i> : Using games and bespoke field methodology to increase understanding of hummingbirds	2022
Graduate & Professional Life Course , University of Washington <i>Lecture</i> : "What is outreach, anyway?" Resources to communicate complex topics well ('23, 11 graduates) <i>Lecture</i> : The mechanics of science communication: effectively engaging with diverse audiences ('22, 13 graduates) <i>Lecture</i> : Unpacking science communication and getting plugged in ('21, 17 graduates)	2021–

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, <i>Poster</i> .	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, <i>Talk</i> .	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, <i>Talk</i> ("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, <i>Poster</i> .	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, <i>Poster</i> .	2023
Sargent AJ , Rico-Guevara A. Where do they go? Mysterious hummingbird foraging. Animal Behavior Society, <i>Talk</i> .	2021
Sargent AJ , Groom D, Rico-Guevara A. Reassessing hummingbird foraging: the territoriality-traplining continuum. Society for Integrative and Comparative Biology, <i>Talk</i> ("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, <i>Talk</i> .	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, <i>Poster</i> .	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, <i>Talk</i> .	2017
Sargent AJ , E Lindquist. Non-invasive individual identification of the Panamanian golden frog (<i>Atelopus zeteki</i>). School of Science, Engineering, and Health Research Symposia, Messiah University, <i>Talk</i> ('16), <i>Poster</i> ('17).	2016–17

Professional Service

Career-Building Workshop Discussion Leader , University of Washington	2023
Departmental Awards Peer Reviewer , University of Washington	2023
NSF GRFP Workshop Peer Reviewer , University of Washington	2022
Applying to Graduate School Panelist and Host , University of Washington Facilitator of Q&A panel for prospective grad students (>140 total attendees)	2020–
Biology Website Accessibility Redesign , University of Washington Established, co-led taskforce to enhance website accessibility for prospective grad students	2020

Academic Peer Review (2020–present)

Biology Letters (1), *Journal of Pollination Ecology* (1), *The Oriole* (1)

Students Mentored (14)

- Project: 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: Characterizing hummingbird movement ecology through automated telemetry** 2022–
Centro de Investigación Colibrí Gorriazul: Ana Melisa Fernandes
- Project: 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) 2023
Project: Thermoregulatory evolution of hummingbirds: using urban heat islands as a natural experiment
- Research Technologist**, University of Washington, Dr. Alejandro Rico-Guevara (WA) 2020
Lab maintenance; virtual outreach; wrote protocols, permits, proposals, and papers
- Banding Assistant & Owl Banding Crew Leader**, Long Point Bird Observatory, Kyle Cameron (Canada) 2019
Fall migration constant-effort banding
- Research Intern**, AMNH Southwestern Research Station, Dr. Susan Wethington (AZ) 2019
Project: Blue-throated Mountain-gem site preference and nest characterization
- Field Assistant**, Cardiff University, Drs. Hannah Hereward & Veronica Neves (Azores, Portugal) 2019
Project: Nesting study and conservation of the Monteiro's Storm-petrel
- Field Assistant**, Cornell University & University of Queensland, Dr. Will Feeney (Australia) 2018
Project: Avian brood parasitism and social behavior of Australian Fairy-wrens
- Field Assistant**, University of Missouri, Melissa Roach (MO) 2018
Project: Effects of lead (Pb) on success of ground-foraging birds in Southeast Missouri
- Research Student**, Au Sable Institute, Dr. Fred Van Dyke (MI) 2017
Project: Kirtland's Warbler use of red pine in Northern Lower Michigan

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 & 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 & nest burrow camera maintenance, camera trapping, field video recording (JVC, GoPro, Minolta)

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

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

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