

# Y Alyssa J. Sargent Y

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## Education

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- 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

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- 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
- 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: Fellowships (>\$178,000)

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- 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 (>\$25,000)

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- Explorer Award for Inspirational & Scientific Trailblazing**, Scientific Exploration Society, £5,000 2024
- Student Research Grant**, American Ornithological Society, \$2,450 2024

<b>Robert T. Paine Experimental &amp; Field Ecology Award</b> , University of Washington, \$6,600	2024
<b>Richard C. Snyder Award</b> , University of Washington, \$500	2024
<b>Walter &amp; Margaret Sargent Award</b> , University of Washington, \$2,000	2023
<b>Hoag Award</b> , University of Washington, \$500	2023
<b>Personal Fundraising</b> , Private donors, \$300	2022–
<b>Outreach Grant</b> , Animal Behavior Society, \$1,000	2022
<b>Orians Award for Tropical Studies</b> , University of Washington, \$1,500 ('21), \$900 ('24)	2021, '24
<b>Margo &amp; Tom Wyckoff Award</b> , University of Washington, \$3,500	2021

### **Funding: Scholarships and Awards (>\$87,000)**

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

### **Awards & Honors**

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<b>Founders Memorial Award for Outstanding Poster</b> , Honorable Mention, Animal Behavior Society	2023
<b>Certified Field Naturalist</b> , Au Sable Institute	2018
<b>Departmental Honors (Research)</b> , Department of Biology, Messiah University	2016–18
<b>Dean's List</b> ; School of Science, Engineering, and Health; Messiah University	2014–18

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

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**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 Bermejil in Colombia (32 Spanish-speaking students, '24), community outreach events/sessions (175 attendees, see below)

### **Science Communication: Community Education & Events**

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<b>Girls in Science</b> session leader, Burke Museum of Natural History Led middle school educational curriculum (HSR), shared research/career trajectory (10 student attendees)	2024
<b>DIY Science Zone</b> , GeekGirlCon Hosted booth to playtest board game on behavioral trade-offs faced by hummingbirds (45 booth attendees)	2023
<b>Outreach Fair</b> , Animal Behavior Society Hosted booth to playtest board game on behavioral trade-offs faced by hummingbirds (120 booth attendees)	2023
<b>YouthForce</b> (Boys & Girls Club) with Behavioral Ecophysics Lab Arranged & co-hosted career-oriented connection event (30 attendees)	2020
<b>President</b> 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

### Science Communication: Writing & Publications

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**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–  
Worked with contributing authors to conceptualize and hone submitted articles

**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 & *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!](#))

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

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

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

**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, & research (13 student attendees)

**Selected interviews** on hummingbirds 2021–  
Birds Connect Seattle [blog](#) ('21), #itsawildlife [blog](#) and [podcast](#) ('22), Birds & Blooms [article](#) ('24), KUOW [article](#) ('24)

**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–  
30 hummingbird talks with all ages, class- and [school-wide](#) presentations (>1,500 student attendees)

### Teaching Assistantships (\* included curriculum development; 185 students instructed)

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**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/peers instructed)**

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**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, 11 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)**

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**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**

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**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 2020–  
Facilitator of Q&A panel for prospective grad students (>140 total attendees)

**Biology Website Accessibility Redesign**, University of Washington 2020

Established, co-led taskforce to enhance website accessibility for prospective grad students

## Academic Peer Review (2020–present)

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

## Students Mentored (14)

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- 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

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- 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, proposals, and papers
- Banding Assistant & 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 & 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 (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

## Skills Overview

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**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, & 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)