KATHRYN C. GRABENSTEIN

ORCID 0000-0003-4725-3008

Cornell Lab of Ornithology
159 Sapsucker Woods Rd
Ithaca, NY 14850

kcg37@cornell.edu
www.KathrynGrabenstein.com
GitHub: KathrynGrabenstein

APPOINTMENTS

2023 - Present **Rose Postdoctoral Fellow,** Cornell Lab of Ornithology
Supervisor: Dr. Irby Lovette

EDUCATION

2016 - 2022 **PhD** **University of Colorado, Boulder,** Ecology & Evolutionary Biology
Advisor: Dr. Scott A. Taylor

2010 - 2014 **B.A.** **Cornell University,** Biological Sciences (Neurobiology & Behavior), *cum laude*
Honors Thesis Advisor: Dr. Michael S. Webster

REFEREED PUBLICATIONS †Equal author contribution *undergraduate mentee

2023

9) Kaiser, S.A.†, **Grabenstein, K.C.†,** Sillett, T.S., and Webster, M.S. No experimental support for resource-dependent offspring sex allocation in a migratory songbird. ***Behavioral Ecology and Sociobiology.*** 77(11), 1-15.

8) Theodosopoulos, A.N., **Grabenstein, K.C.,** Larrieu, M E., *Arnold, V. & Taylor, S.A. Similar parasite communities but dissimilar infection patterns in two closely related chickadee species. ***Ornithology***. ukad033.

7) **Grabenstein, K.C.,** Otter, K., Burg, T., & Taylor, S.A. Hybridization between closely related songbirds is related to human habitat disturbance. ***Global Change Biology.*** 29(4), 955-968. https://doi.org/10.1111/gcb.16476 ***Top 5% of all research outputs scored by Altmetric.***

2022

6) **Grabenstein, K.C.,** Otter, K., Burg, T., & Taylor, S.A. Sympatry leads to lower body condition for two closely related taxa. ***Ecology & Evolution.*** 12(4), e8756. https://doi.org/10.1002/ece3.8756

2021

5) Theodosopoulos, A.N., **Grabenstein, K.C.**, Bensch, S. & Taylor, S.A. A highly invasive malaria parasite has expanded its range to non-migratory birds in North America. ***Biology Letters.*** 17(9), 20210271. https://doi.org/10.1098/rsbl.2021.0271

4) *Feldmann, K., **Grabenstein, K.C.**, & Taylor, S.A. Achromatic plumage variation between and within closely-related hybridizing chickadees. ***The Journal of Field Ornithology.*** 92(2), 184-202. https://doi.org/10.1111/jofo.12368

2019

3) *Feldmann, K., Funk, E., **Grabenstein, K.**, Jackson, D., Theodosopolous, A., Wagner, D. N. & Taylor, S. A. Book Review: The Ascent of Birds. ***The Journal of Field Ornithology***. 90(1), 101-102. https://doi.org/10.1111/jofo.12286

2) Schroeter, I., Forrester, C., Brigham, L., Fried, E., **Grabenstein, K.,** Karban, C., & McDermott, M. Diverging from the Dogma: A Call to Train Creative Thinkers in Science, ***Bulletin of the Ecological Society of America***, 100(1) 1-7.

2018

1) **Grabenstein, K.C.** & Taylor, S.A. Breaking barriers: causes, consequences, and experimental utility of human-mediated hybridization. ***Trends in Ecology & Evolution***, 33(3), 198-212. https://doi.org/10.1016/j.tree.2017.12.008 ***Featured Cover Article***

In Revision 1) **Grabenstein, K.C.,** Theodosopoulos, A.N., Provadosuv, V.V., & Taylor, S.A. Disturbance-mediated hybridization leads to extensive local introgression in common backyard birds. **Evolution Letters.**

In Review 1) Anderson, W.C., Funk, E.R., Theodosopoulos, A.N., **Grabenstein, K.C.,** Spellman, G., & Taylor, S.A. Genomic data reveals a novel avian hybrid zone along the Front Range of the Rocky Mountains. ***Ornithology.***

In Prep 1) *Taylor, O., **Grabenstein, K.C.**, Theodosopoulos., A.N., *Leeson, H., Taylor, S.A., & Branch, C.L. Vocal character displacement in hybridizing chickadees.

NON-REFEREED PUBLICATIONS & REPORTS †Equal author contribution

2019 4) **Grabenstein, K.C. "**The Boulder Chickadee Study: Establishing a long-term research framework." Colorado Birds, ***Colorado Field Ornithologists Quarterly Publication.*** 53.1 Winter, pg 11-20. https://cobirds.org/colorado-birds-journal/2019-winter/

2018 3) Forrester, C.†, **Grabenstein, K.C.†,** & Solon, A.J.† EBIO Departmental Inclusive Excellence Action Plan. 20 pg Strategic Plan voted on and adopted by CU Boulder EBIO Faculty.

2014 2) **Grabenstein, K.C.** "Seven Ways of Looking at a Fairywren: Student Research in Australia." ***All About Birds***, 13 Aug. 2014. https://www.allaboutbirds.org/seven-ways-of-looking-at-a-fairywren-student-research-in-australia/

2012 1) **Grabenstein, K.C.** "Research News: Can Clark's Nutcrackers help keep white bark pine forests alive?" ***Project FeederWatch***, 5 Mar. 2012. http://feederwatch.org/blog/research-news-can-clarks-nutcrackers-help-keep-whitebark-pine-forests-alive/

FELLOWSHIPS AND GRANTS

As a graduate student, I fully funded both myself and my research, garnering >$290K in grants (2016 - 2022) and fellowships, with a funding rate of 64%.

Total Fellowships: $369,870

2023	**Rose Postdoctoral Fellowship,** Cornell Lab of Ornithology	**$222,000**
2020	**Summer Graduate Fellowship,** Ecology & Evolutionary Biology, University of Colorado, Boulder	**$8,370**
	Figueroa Family Fellowship, Graduate School, University of Colorado, Boulder	**$1,500**
2017	**Graduate Research Program Fellowship (GRFP),** National Science Foundation	**$138,000**

Total Grants: $141,651

2022	**Graduate Student Travel Grant,** Department Ecology & Evolutionary Biology, University of Colorado, Boulder	**$1,000**
	Student Travel Grant, American Ornithological Society	**$530**
	Graduate and Professional Student Government Travel Grant, University of Colorado	**$300**
2020	**Paddon/Gelhorn Grant,** Indian Peaks Wilderness Alliance	**$2,000**
	NSF INTERN Supplement, National Science Foundation	**$50,220**
	Student Research Grant, Department Ecology & Evolutionary Biology, University of Colorado, Boulder	**$1,700**
	Cynthia H. Schultz Graduate Student Grant (awarded to top applicants), Graduate School, University of Colorado, Boulder	**$2,000**
2019	**Microgrant Outreach Award,** Office for Outreach and Engagement, University of Colorado, Boulder	**$1,000**
	Undergraduate Research Opportunities Program Team Grant, University of Colorado	**$3,000**
	Francis M. Peacock Scholarship, Garden Club of America	**$4,500**
	Project Grant, Colorado Field Ornithologist Society	**$1,075**

	Education & Conservation Grant, Denver Field Ornithologists	**$1,000**
2018	**Undergraduate Research Opportunities Program Team Grant,** University of Colorado (declined)	**$3,000**
	CU RIO Seed Grant, PIs: Dr. Scott Taylor, Dr. Mariana Kassianidou, & Dr. Alexandra Rose, **Co-written by Kathryn Grabenstein,** Research & Innovation Office, University of Colorado, Boulder	**$49,576**
	Hesse Award, American Ornithological Society	**$2,300**
	Student Research Grant, Department Ecology & Evolutionary Biology, University of Colorado, Boulder	**$2,300**
	Frank Chapman Memorial Award, American Museum of Natural History	**$2,000**
	Beverly Sears Research Grant, Graduate School, University of Colorado, Boulder	**$1,000**
	Museum Grant, University of Colorado Museum of Natural History	**$1,000**
2017	**Rosemary Grant Award**, Society for the Study of Evolution	**$2,500**
	Research Grant Award, Boulder County Naturalist Association	**$2,100**
	Student Research Grant, Department Ecology & Evolutionary Biology, University of Colorado, Boulder	**$2,000**
	Graduate Student Research Grant, Society of Systematic Biologists	**$1,300**
	Project Grant, Colorado Field Ornithologist Society	**$750**
2014	**Undergraduate Research Program Award,** College of Arts and Sciences, Cornell University	**$500**
	Office of Undergraduate Biology Travel Award, Cornell University	**$500**
2013	**Office of Undergraduate Biology Travel Award,** Cornell University	**$500**
2012	**Redhead Fund Travel Award,** Cornell Lab of Ornithology	**$2,000**

HONORS AND AWARDS

2021	**General Council Talk Award,** American Ornithological Society
	Graduate Student Teacher Award, Ecology & Evolutionary Biology Department, University of Colorado-Boulder
2018	**Graduate Student Teacher Award,** Ecology & Evolutionary Biology Department, University of Colorado-Boulder
	Best Graduate 12-minute Talk, Spring Student Research Symposium, University of Colorado-Boulder
2014	**Runner-up in Genesis Award for Outstanding Undergraduate Poster Presentation,** Animal Behavior Society
	Cynthia Kagarise Sherman Award for Best Undergraduate Thesis in Behavior, Department of Neurobiology & Behavior, Cornell University
	Honorable Mention in Knight Prize for Writing in the Majors, Cornell University
	Dean's List, College of Arts and Sciences, Cornell University, Fall 2013, Spring 2014

INVITED PRESENTATIONS (n = 8)

2023	**Grabenstein, KC,** Theodosopolous, AN, & Taylor, SA. How I came to study birds: a very biased and highly subjective approach to the pursuit of objectivity. ***Ornithology Seminar.*** Ithaca, NY.
	Grabenstein, KC, Theodosopolous, AN, & Taylor, SA. A tale of two cities: cryptic chickadee hybridization in an urban world. ***Cayuga Bird Club*****.** Ithaca**,** NY.
2022	**Grabenstein, KC,** Theodosopolous, AN, & Taylor, SA. Insights from the Boulder Chickadee Study. ***Annual Boulder Chickadee Symposium,*** Boulder, CO. **Virtual Talk.**
	Grabenstein, KC, Theodosopolous, AN, & Taylor, SA. Human-mediated hybridization in common backyard birds. ***INSTAAR Colloquium Series****,* Boulder, CO. **Virtual Talk**.
2021	**Grabenstein, KC** & Taylor, SA. The Boulder Chickadee Study: Insights from backyard birds, ***Wild Bear Mountain Ecology Center,*** Nederland, CO. **Virtual Talk**.
2019	**Grabenstein, KC** & Taylor, SA. Combining research, teaching, and community science in CU Boulder's Urban Forest. ***Tree City USA Quarterly Meeting,*** CU Boulder, Boulder, CO.
	Grabenstein, KC & Taylor, SA. Little Birds, Big Data. ***Talks at Google,*** Google, Boulder, CO.

2018 **Grabenstein, KC,** Burg, TM, Otter, KA, and Taylor, SA. Experimental utility of hybridization following human landscape disturbances. ***American Ornithological Society,*** Tucson, AZ.

PRESENTATIONS *undergraduate student mentee **community college mentee ***high school mentee

Total of 24 presentations: 11 first author presentations and 13 co-author presentations (including 6 mentee led presentations)

2023 **Grabenstein, K.C.,** Theodosopoulos, A.N., Semenov, G.A., Provadosuv, V.V., & Taylor, S.A. Disturbance-mediated hybridization leads to extensive local introgression in two common backyard birds. *American Ornithological Society*, London, ON, CA. **Talk.**

*Taylor, O., **Grabenstein, K.C.**, Theodosopoulos., A.N., *Leeson, H., Taylor, SA, & Branch, CL. Vocal character displacement in hybridizing chickadees. *American Ornithological Society*, London, ON, CA. **Poster.**

2022 **Grabenstein KC,** Burg TM, Otter KA, and Taylor SA. Human mediated hybridization in common backyard birds. *American Ornithological Society*, San Juan, PR. **Talk.**

Theodosopoulos AN, Chafin TK, **Grabenstein KC**, Rice AM, Weir JT, Pravosudov VV, Taylor SA. Systematics and hybridization in the genus "Poecile" with insights from immune genes. *American Ornithological Society,* San Juan, PR. **Talk.**

Theodosopoulos AN, Chafin TK, **Grabenstein KC**, Rice AM, Weir JT, Pravosudov VV, Taylor SA. Systematics and hybridization in the genus "Poecile" with insights from immune genes. *Evolution Annual Meeting.* **Talk.**

*Carver C, **Grabenstein KC,** Theodosopoulos AN, Taylor SA. The effects of urbanization on chickadee nestling condition. *Denver Field Ornithologists Meeting*, Aurora, CO. **Talk.**

2021 **Grabenstein KC**, Burg TM, Otter KA, Taylor SA. Exploring disturbance mediated hybridization in backyard songbirds. *American Ornithological Society*. **Virtual Talk**.

Theodosopoulos AN, **Grabenstein KC**, Bensch S, Taylor SA. Range expansion of an invasive avian malaria parasite and its potential effects on North American birds. *American Ornithological Society.* **Virtual Talk.**

Grabenstein KC, Burg TM, Otter KA, Taylor SA. Exploring disturbance mediated hybridization in backyard songbirds. *Evolution Annual Meeting*. **Virtual Talk**.

2020 **Grabenstein KC,** Burg TM, Otter KA, Taylor SA. Evaluating how human land disturbances influence species barriers at continent-wide and regional scales. *American Society of Naturalists*, Asilomar, CA. **Talk.**

Theodosopoulos AN, **Grabenstein KC**, Taylor SA (2020) Blood parasite prevalence and effects on two closely related passerines across an urban-rural and elevation gradient. *ESA Annual Meeting.* **Virtual Talk.**

2019 **Grabenstein KC,** Burg TM, Otter KA, Taylor SA. Exploring chickadee hybridization in the face of human disturbances. *Joint Evolutionary Biologists Lab Retreat*, Nederland, CO..**Talk.**

Theodosopoulos AN, **Grabenstein KC**, and Taylor SA. Blood parasite infections across an elevational contact zone between chickadees. *ASN Annual Meeting.* **Talk.**

Arnold V, **Grabenstein KC, Theodosopolous AN, Taylor, SA. Chickadees prefer south-facing nest boxes. *Summer Researcher Poster Session*, UCAR Boulder, CO. Poster.

Grabenstein KC & Taylor SA. Understanding species boundaries in Colorado backyard birds. *Front Range Student Ecology Symposium*, Fort Collins, CO. **Talk.**

*Feldmann KB, **Grabenstein KC**, Funk ER, Taylor, SA. Plumage patterns in chickadees: quantifying plumage variation between and within *Poecile atricapillus* and *Poecile gambeli. Front Range Student Ecology Symposium*, Colorado State University, Fort Collins, CO. Poster.

2018 Brackett A, Frankel-Goldwater L, **Grabenstein KC,** Nocito E, Roberts V. Bolstering the front lines: Empowering educators to make excellence inclusive. *The University of Colorado Diversity Summit*, Boulder, CO. **Workshop.**

***Rose K, ***Pineda A, **Grabenstein KC,** Hansen AN, Taylor, SA. Chickadees hybridizing in Boulder County, *CU Science Discovery & Nature Kids Lafayette Research Experience Symposium.* Poster.

***Pineda A, ***Rose K, **Grabenstein KC,** Hansen AN, Taylor, SA. Chickadees in Boulder County, *CU Science Discovery & Nature Kids Lafayette Research Experience Symposium*. Poster.

Grabenstein KC, Burg TM, Otter KA, Taylor SA. Experimental utility of hybridization following human landscape disturbances. *Spring Student Research Symposium,* Boulder, CO, **Talk.**

2017 **Grabenstein KC** and Taylor SA. Breaking barriers: anthropogenic hybridization in disturbed habitats. *Guild of Rocky Mountain Ecology and Evolutionary Biologists Society*, Nederland CO, **Talk**.

2014 **Grabenstein KC,** Kaiser SA, Webster MS. No experimental support for resource-dependent sex allocation in a migratory songbird, *The 51st Annual Conference of the Animal Behavior Society*, Princeton, NJ August 2014, Poster.

Grabenstein KC, Kaiser SA, Webster MS. No experimental support for resource-dependent offspring sex allocation in a migratory songbird. *Neurobiology & Behavior Thesis Symposium*, Cornell University, May 2014, Poster.

2013 O'Toole KE, **Grabenstein KC,** Hinton MG, Swaddle JP, Karubian J, Webster MS. Post-fire vegetation structure and food availability may impact habitat preference for a tropical passerine. *Annual Meeting of the Wilson's Ornithological Society*, The College of William & Mary. Poster.

TEACHING EXPERIENCE AND TRAINING

My average instructor evaluation score across 5 semesters and 175+ students at CU Boulder was a 5.7 (out of 6.0; university average is 5.1). *I acknowledge the known bias in course evaluations (Kreitzer & Sweet-Chushman 2021[1]) but they are the only metric provided by CU Boulder to evaluate my teaching.*

Graduate Teaching Assistantships

Spring 2021 **Ornithology,** Online Course. 30 students. University of Colorado, Boulder.

Spring 2018 **Ornithology,** 30 students**.** Designed laboratory component and wrote course Lab Manual. University of Colorado, Boulder

Fall 2017 **Animal Behavior**, 30 students. In addition to leading Lab sections, organized & led weekly (n = 16) pedagogy seminar for undergraduate teaching assistants (n = 6). University of Colorado, Boulder.

Spring 2017 **General Biology II,** 60 students. University of Colorado, Boulder.

Fall 2016 **General Biology I,** 60 students. University of Colorado, Boulder.

Invited Guest Lectures

Spring 2024 **Ornithology,** Breeding Biology. Cornell University.

Spring 2018 **Ornithology,** Life History & Timing of Breeding, University of Colorado, Boulder.

Trainings

Fall 2019 **Course-based Undergraduate Research (CURE) Design & Implementation**, 16-week Course. University of Colorado, Boulder.

Spring 2018 **Inclusive Pedagogy**, 16-week Course. University of Colorado, Boulder.

Fall 2017 **Best Practices in Science Education**, 16-week Course. University of Colorado, Boulder.

Spring 2017 **Pedagogy**, 16-week Course. University of Colorado, Boulder.

Fall 2016 **How to Teach Everyone: The Kolb LSI**, 1 hr Workshop, University of Colorado, Boulder.
Planning and Managing STEM Labs, 1 hr Workshop, University of Colorado, Boulder.

[1] Kreitzer, Rebecca J. & Sweet-Cushman, Jennie (2021). Evaluating Student Evaluations of Teaching: a Review of Measurement and Equity Bias in SETs and Recommendations for Ethical Reform. Journal of Academic Ethics 20 (1):73-84.

MENTORING

I empower & train student researchers by fostering strong mentorship relationships through hands-on training, clear communication, and flexibility. While it is hard to measure the intangible outcomes of mentorship, I have a 100% retention rate of undergraduate students I directly mentored (n = 5) (*i.e.,* all students I mentored worked in the lab until graduation).

Direct Mentor for Honors Thesis Students (n = 2)

2022 **Cori Carver,** CU Boulder Undergraduate, *summa cum laude*
Chickadees Appear to Thrive on Urban Diets in Boulder Backyards

C. Carver Total Funding: $9,850
Biological Sciences Initiative Scholars Program, CU Boulder - $2,500
Denver Field Ornithologists Research Grant - $1,350
Colorado Field Ornithologists Research Grant - $1,500
Alexander and Verderber Undergraduate Research Grant, CU Boulder - $1,500
Undergraduate Research Opportunities Program Individual Grant, CU Boulder - $3,000

2020 **Katherine Feldmann,** CU Boulder Undergraduate, *summa cum laude*
Achromatic plumage is morphologically distinct between sexually monochromatic chickadees
Associated publication: https://doi.org/10.1111/jofo.12368

K. Feldmann Total Funding: $15,567
NSF Research Experience for Undergraduates Fellowship - $7,067
Undergraduate Research Opportunities Program – Individual Grant, CU Boulder - $3,000
Marion and Gordon Alexander Memorial Fellowship Award, CU Boulder - $1,500
Biological Sciences Initiative Scholars Program, CU Boulder -$2,500
Undergraduate Research Opportunities Program, CU Boulder – $1,500

Direct Mentor for Independent Study Students (n = 5):
2020 – 2021: Harriet Leeson, CU Boulder Undergraduate
Spring 2019: Rachael Merkt, CU Boulder Undergraduate
Fall 2018: Torrey Davis, CU Boulder Undergraduate
Summer 2018: Heather Rose & Alex Pineda, Centaurus High School Students, CU Science Discovery & Nature Kids/ Jóvenes de la Naturaleza Lafayette

Indirect mentor for Independent Study Students (n = 4)
2022 – 2023: Olivia Taylor, CU Boulder Undergraduate
2020 – 2022: Vanessa Arnold, Front Rage Community College Student
2019 – 2020: Johanna Beam, CU Boulder Undergraduate
2019 – 2020: Shay Ding, CU Boulder Undergraduate

Crew leader for Boulder Chickadee Study field crews (n = 11)
2018 — trained 2 high school students in field ornithology techniques and scientific research
2019 — trained 6 undergraduates in field ornithology techniques and scientific research
2020 — trained 3 undergraduates in field ornithology techniques and scientific research

SERVICE

2023 **Search Committee,** Cornell Lab of Ornithology. Selected as Postdoctoral representative for DEIJ Lead Position search committee.

Judge, American Ornithological Society Student Presentations

2020 **Diversity & Inclusion Working Group,** University of Colorado, Boulder. Researched & developed Field Safety Plan for EBIO and Taylor Lab. For EBIO: purchased field vests for EBIO members to check out. For Taylor Lab: Purchased car magnets for field vehicles and developed Field Safety Plans for students doing field work.

2019 **Diversity & Inclusion Working Group,** University of Colorado, Boulder. Inclusive Excellence Plan voted on and adopted by Faculty. Researched & developed Best Hiring Practices document for EBIO faculty hiring.

2018 **Graduate Student Space Committee,** University of Colorado, Boulder.

Diversity & Inclusion Working Group, University of Colorado, Boulder. Removal of GRE requirement implemented in Fall 2018. First department at CU Boulder to remove the GRE requirement, and one of the first departments nation-wide.

Co-wrote 20-pg Inclusive Excellence Plan: specific, long-term departmental plan with actionable items to increase diversity, equity, and inclusion within EBIO at the undergraduate, graduate, & faculty/staff level.

2017 **Graduate Student Space Committee,** University of Colorado, Boulder. Created new graduate workspace, managed graduate student departmental library, organized meeting space reservations & maintenance logistics.

Graduate Orientation Improvement Committee, University of Colorado, Boulder.

Diversity & Inclusion Working Group, University of Colorado, Boulder. Overhauled website design & content to better highlight Department's commitment to DEIJB efforts.

2016 **Diversity & Inclusion Working Group,** University of Colorado, Boulder. Researched and co-wrote Departmental amendment to remove GRE as requirement for acceptance into EBIO graduate program.

CU Boulder Natural History Museum Collection Contributor, 2016 - 2022
Worked with museum curators to utilize collections for research projects and teaching (Ornithology) and donated numerous specimens (adults, nests, eggs, & chicks) from field work to museum collection to support collection-based science.

Reviewer for: Molecular Ecology, Landscape Ecology, BMC Biology, Environment and Climate Change Canada Grants, Cornell University CALS Student Grants, Evolutionary Ecology & Scientific Data.

OUTREACH

I view outreach as an essential part of the scientific process.

2023 **Scientist Consultant**, Art for Educations Sake. Selected as Scientist for one of 10 Artist/Scientist pairs to create art of recent scientific findings. MIX Art Gallery. 300+ attendees on opening night.

Panelist, Career Panel for Avian Ecology, Cornell University. 15 students.

Lead Organizer, Night at the Museum Showcase, Cornell Lab of Ornithology & Cornell Museum of Vertebrates. 75+ attendees.

Speaker, Hybridization in Birds Q&A, Bird of the World webinar, Cornell Lab of Ornithology. 430 participants. 9.1k views. https://www.youtube.com/watch?v=FtC3ab0lLfU&t=1257s

2022 **Consultant,** High school curriculum development, Institute of Cognitive Science, University of Colorado, Boulder.

Consultant, Graduate student Capstone Project, Environmental Sciences Department, University of Colorado, Boulder.

2020 **Facilitator,** Nest Box building Workshop, Cal-wood Education Center, Jamestown, CO. 50+ middle school children from greater Denver Area.

Museum Contributor, Boulder Watershed Exhibit, Museum of Boulder, Boulder, CO

2019 **Keynote Speaker,** CU Science Café, CU Science Discovery. 10 high school students.

Panelist, NSF GRFP Panel, Graduate School, University of Colorado, Boulder.

Symposium Organizer, Boulder Chickadee Study End-of-Season Symposium, Boulder, CO.

Genomics Exhibit Contributor, CU Natural History Museum, Boulder, CO.

Nature Camp Research Instructor, Wild Bear Mountain Ecology Center, Nederland, CO. 11 students, age ranges 8-15 yr old.

Lead Organizer, Nest Box Building Workshop, Dharma's Garden, Boulder, CO.

Exhibit Leader, Community Science Outreach Day, CU Science Discovery & Boulder Public Library. Boulder, CO.

2018 **Nature Walk Biologist,** Americas for Conservation and the Arts, Evergreen, CO. 20 Latinx families.
Science Camp Research Instructor, CU Science Discovery Mountain Research Experience, Boulder, CO. 4 Latinx high school students.

Nature Camp Research Instructor, Wild Bear Mountain Ecology Center, Nederland, CO. 13 students, age ranges 8-15 yr old.

Keynote Speaker, CU Boulder Nerd Night, Boulder, CO. 50+ audience members.

Panelist, Undergraduate Research Expo, SASC (Student Academic Success Center), University of Colorado, Boulder. 100+ undergraduates from underserved groups

Graduate Curriculum Consultant, Teacher Professional Development Workshop, Biological Sciences Initiative, University of Colorado, Boulder. 20 middle school & high school teachers from Boulder County. Anticipated reach is 960 Boulder County K-12 students. https://vimeo.com/280221649

2014 **Speaker,** Middle School Classroom Presentations, Migration in North America, Ithaca, NY and Oak Ridge, TN. 60+ high school students.

Educational YouTube Bird Migration Video, Wrote and narrated informational video, **viewed 200,000+ times on YouTube**, Ithaca, NY 2014. https://www.youtube.com/watch?v=CwIT9pv4khw

QUANTITATIVE SKILLS

Coding Language & Program Proficiency: R, SQL, Linux/Unix environment, Python, Git & ArcGIS
Computational Proficiency: Big Data curation & manipulation, multivariate statistical analyses, data visualization, & bioinformatics

PROFESSIONAL EXPERIENCE

Intern, Embark Veterinary, Inc. **Aug 2020 - Jan 2021**
Secured NSF funding to complete an internship at fast-growing canine genomics company where I developed a canine paternity test for dog breeders to resolve breed pedigrees using whole-genome methods, which improved accuracy of microsatellite-based paternity tests by 60%.

Intern, Climate Change Science Institute, Oak Ridge National Laboratory **Aug 2014 - May 2015**
Combined large vegetation phenology datasets from satellites and 605 on-the-ground observational sources using R & SQL to 1) resolve space and time limitation trade-offs and 2) refine resolution of remote sensing sources, resulting in a 200% improvement (from 2km to 500m pixels) in imaging tools for future research.

Field Biologist, Southern Sierra Research Station **Jun 2014 - Aug 2014**
Monitored breeding population of Yellow-billed Cuckoos using radio telemetry, nest searching/monitoring, behavioral observations, point count surveys, canopy mist netting, and data analysis with ArcGIS.

Undergraduate Research Assistant, Fuller Evolutionary Lab **Jan 2011 - May 2014**
Conducted 1000+ genetic analyses to sex individuals and assign paternity using DNA extraction & PCR. This work generated nestling paternity data for graduate students assessing breeding success in their study populations.

Student Liaison/Fellow, NSF International Research Experience for Students (IRES) **Jan 2012 - Dec 2013**

Developed independent project during 8-week field component in Northern Territory, Australia using active mist netting, color band re-sighting, banding, jugular/brachial bleeding, hormone assays, point counts, survey transects, vegetation surveys, song analysis in Raven software, data entry, and data management. *Invited to return as Student Liaison in second year to assist with logistics of running IRES program (i.e., trip planning, data management, mentoring student projects).*

Undergraduate Field Researcher, Webster Lab **Dec 2010 - Jan 2011**
Performed behavioral observations on color banded population of Red-backed Fairy wrens in Brisbane, Australia to explore potential behavioral differences between sexually manipulated and control males