Amanda K. Hund

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ACADEMIC POSITIONS

2022 - present: Visiting Research Assistant Professor of Biology, Carleton College

- 2018 2022: James S McDonnell Foundation Postdoctoral Fellow, University of Minnesota Advisors: Dr. Emilie Snell-Rood & Dr. Daniel Bolnick (University of Connecticut)
- 2017 2018: Postdoctoral Researcher, University of Colorado at Boulder Advisor: Dr. Scott Taylor

EDUCATION

2011 – 2017: Ph.D, University of Colorado at Boulder, Dept. of Ecology & Evolutionary Biology Advisor: Dr. Rebecca Safran

2006 – 2010: Bachelor of Arts in Biology, Carleton College

PUBLICATIONS (* indications undergraduate coauthor)

1) Broyles GR, Myers BM, Friedman NR, Gawin DF, Mohd-Taib FS, Sahlan PG, Seneviratne SS, de Silva NCG, Thakshila MLT, **Hund AK**, Scordato ESC, (2023) "Evolutionary history of Oceanic swallows: cryptic diversity and introgression in a longdistance disperser" *Accepted at Evolution*

2) Koa AB[‡], Hund AK[‡], Santos FP, Young JG, Bhat D, Garland J, Oomen A, McCreery HF
 [‡], (2023) "Opposing responses to scarcity emerge from functionally unique sociality drivers"
 In press at The American Naturalist [‡] Contributed equally
 Co-led funded working group through the Santa Fe Institute

3) Bolnick DI, **Hund AK**, Nosil P, Peng F, Ravinet M, Stankowski S, Subramanian S, Wolf J, Yukilevich R, (2023) "A multivariate view of the speciation continuum" **Evolution**, 77(1), 318-328.

4) **Hund AK**, Fuess L, Kenney M, Maciejewski M*, Marini J*, Shim KC, Bolnick D, (2022) "Population-level variation in parasite resistance due to differences in immune initiation and rate of response" **Evolution Letters**, 6 (2) 162-177.

5) Shield DR, *and 18 coauthors including* **Hund AK**, (2021) "Sex-linked genetic diversity and differentiation in a globally distributed avian species complex." **Molecular Ecology**, 30 (10) 2313-2332.

6) **Hund AK**, Hubbard JK, Krausová S, Munclinger P, Safran RJ, (2021) "Different underlying mechanisms drive associations between multiple parasites and the same sexual signal." **Animal Behaviour**, 172, 183-196

7) **Hund AK**, Hubbard JK, Albrecht T, Vortman Y, Munclinger P, Krausová S, Tomášek O, Safran RJ, (2020) "Divergent sexual signals reflect costs of local parasites." **Evolution**, 74(10): 2404-2418.

8) Carter JK, *and 32 coauthors including* **Hund AK**, (2020) "Complete mitochondrial genomes provide current refined phylogenomic hypotheses for relationships among ten *Hirundo* species." **Mitochondrial DNA**, 5(3): 2899-2903.

9) Turbek SP[‡], **Hund AK**[‡], McCahill K^{*}, Hernandez M^{*}, Hubbard JK, (2019) "Overlooked costs of coloniality: Mislaid eggs and the double incubation of separate nests." **The American Midland Naturalist**, 182(1):52-62. **[‡] Co-first author**

10) Safran RJ, Iris II, Fosdick BK, Mcdermott MT, Semenov GA, **Hund AK**, Scordato ESC, Turbek SP, (2019) "Using network to connect individual-level reproductive behavior to population patterns." **Trends in Ecology and Evolution**, 34 (6):497-501.

11) Levin II, Fosdick BK, Tsunekage T, Aberle MA*, Bergeon-Burns CM, **Hund AK**, Safran RJ, (2018) "Experimental manipulation of a signal trait reveals complex phenotypic-behavior coordination." **Scientific Reports**, 8:15533.

12) Theodosopoulos AN[‡], **Hund AK**[‡], Taylor SA, (2018) "Parasites and host species barriers in animal hybrid zones." **Trends in Ecology and Evolution**, 34 (1):19-30. **‡Co-first author**

13) Smith CCR, Flaxman SM, Scordato ESC, Kane NC, **Hund AK**, Sheta BM, Safran RJ (2018) "Demographic inference in barn swallows using whole genome data shows signal for bottleneck and subspecies differentiation during the holocene." **Molecular Ecology**, 27 (21):420-4212.

14) Dube WC^{*‡}, **Hund AK**[‡], Turbek SP, Safran RJ, (2018) "Microclimate and host body condition influence mite population growth in a wild bird-ectoparasite system." **International Journal for Parasitology: Parasites and Wildlife**, 7 (3):301-308. **‡ Co-first author**

15) Zelagin DM*, **Hund AK**, Breed MD, (2018) "Spatial aspects of corpse removal in the western harvester ant, *Pogonomyrmex occidentalis.*" **Journal of Insect Behavior**, (2018): 1-14.

16) Donahue KJ*, **Hund AK**, Levin II, Safran RJ, (2018) "Predictors and consequences of nest-switching behavior in barn swallows (*Hirundo rustica erythrogaster*)." **The Auk**, 135 (2) 181-191.

17) Hubbard JK, **Hund AK**, Levin II, McGraw KJ, Wilkins MR, Safran RJ, (2016) "The importance of cross-validation, accuracy, and precision for measuring plumage color: A comment on Vaquero-Alba et al. (2016)." **The Auk, Ornithological Advances**, 134: 24-38.

CV 18) Wilkins MR, Karaardiç H, Vortman Y, Parchman RL, Albrecht T, Petrželková A, Özkan L, Pap PL, Hubbard, JK, Hund AK, Safran B L (2016) "Phenotypic differentiation is associated

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Pap PL, Hubbard JK, **Hund AK**, Safran RJ, (2016) "Phenotypic differentiation is associated with divergent sexual selection among closely related barn swallow populations." **Journal of Evolutionary Biology**, 29:2410-2421.

19) **Hund AK**, Blair JT*, Hund FW, (2015) "A review of available methods and description of a new method for eliminating ectoparasites from bird nests." **Journal of Field Ornithology**, 86 (3): 191-204.

20) **Hund AK**, Aberle MA*, Safran RJ, (2015) "Parents respond in sex-specific and dynamic ways to nestling parasites." **Animal Behaviour**, 110: 187-196.

21) Moore AH, Bigbee MJ, Boynton GE, Wakeham CM, Rosenheim HM, Staral CJ, Morrissey JL, **A.K. Hund**, (2010) "Non-steroidal anti-inflammatory drugs in Alzheimer's Disease and Parkinson's Disease: Reconsidering the role of neuroinflammation." **Pharmaceuticals**. 3:1812-1841.

Peer-Reviewed Teaching and Mentoring Publications:

22) **Hund AK**, Stretch B, Smirnoff D, Roehrig G, Snell-Rood E, (2023) "Broadening the taxonomic breadth of organisms in the bio-inspired design process." **Biomimetics**, 8(1), 48.

23) Emery N, **Hund AK**, Burks RL, Duffy M, Scoffoni C, Swei A, (2019) "Students as ecologists: Strategies for successful mentorship of undergraduate researchers." **Ecology and Evolution**, 9:4316-4326.

24) **Hund AK**, Churchill AC, Faist AM, Havrilla CA, Love Stowell SM, McCreery HF, Ng J, Pinzone CA, Scordato ESC, (2018) "Transforming mentorship in STEM by training scientists to be better leaders." **Ecology and Evolution**, 8:9962-9974. *One of the top downloaded articles from this journal for 2018*

25) Stowell SM, Churchill AC, **Hund AK**, Kelsey KC, Redmond MD, Seiter SA, Barger NN, (2015) "Transforming graduate training in STEM education" **Ecological Society of America**, 96(2), 317-323.

In Review or Revision:

26) **Hund AK**, Mitchell T, Ramirez I, Zambre A, Hagg L*, Stene A*, Karilyn P*, Carper A, Agnew L, Shephard A, Kobiela M, Oberhouser K, Taylor C, Snell-Rood EC. "Road salt and monarch butterfly development: minimal effects on larval growth, immunity, wing coloration, survival, and migration to Mexico." *In review at PNAS, also on bioRxiv.*

27) Shepard AM, **Hund AK**, Snell-Rood EC. "Metabolic stress as a driver of life history plasticity: flight promotes longevity and antioxidant production in monarch butterflies." *In revision for Proceedings of the Royal Society B*

28) **Hund AK**, McCahill K*, Turbek S, Ardia D, Terrien RC, Safran RJ. "An experimental analysis of the fine-scale effects of nest ectoparasites on incubation behavior" *In revision for Ornithology, also on bioRxiv.*

29) **Hund AK**, Tiffin P, Young JG, Bolnick DI. "The promise of trans-species gene expression in studying the coevolution and ecology of symbiosis" *In revision for Evolution, also on bioRxiv.*

In Preparation (manuscripts available upon request):

30) Fuess LE, **Hund AK**, Kenney ML, Maciejewski MF*, Marini JM*, Bolnick DI. "Timing and magnitude of response contributes to variability in parasite resistance phenotypes among host populations."

Non-Peer Reviewed:

Hund AK, Greene K, Reeg H, Tomlin D, (2017) "Bird related science lessons for the middle level" four-week science curricula developed for Boulder Valley School District

Hund AK (2016) "The science behind the vaccine controversy." workshop with classroom materials for high school teachers: University of Colorado Teaching Workshop.

Hund AK (2015) "Emerging infectious disease and how it impacts our world" workshop with classroom materials for high school teachers: University of Colorado Teaching Workshop.

FELLOWSHIPS

- 2019: Fulbright Specialist (Israel), U.S. Department of State (\$10,000)
- 2017: Postdoctoral Fellowship Award, James S McDonnell Foundation (\$200,000) Dissertation Completion Fellowship, University of Colorado (\$11,022) Dissertation Completion Fellowship, EBIO Department (\$7,734)
- 2016: Carol Lynch Fellowship for Integrative Research, University of Colorado (\$2,500)
- 2015: Graduate Teaching Fellowship, EBIO Department (\$10,800)
- 2012: Graduate Research Fellowship, National Science Foundation (\$132,000) GK-12 Fellowship, National Science Foundation (\$44,000)
- 2011: Graduate Research Fellowship, Honorable Mention, National Science Foundation

AWARDS AND HONORS

- 2021: University of Minnesota Postdoc Award in Teaching & Mentoring, Honorable Mention
- 2021: Dobzhansky Prize, Honorable Mention, Society for the Study of Evolution
- 2020: Julia B. Platt Best Postdoc Presentation Award, American Society of Naturalists
- 2017: Allee Award for Best Student Paper Finalist, Animal Behavior Society
- 2016: Excellence in Graduate Teaching Award, Ecology and Evolutionary Biology Dept. Ed Ricketts Best Student Presentation Award, American Society of Naturalists
- 2010: Magna Cum Laude, Carleton College

SELECTED RESEARCH GRANTS

- 2022: National Science Foundation: EEID program (PI, RUI grant: \$2,999,697)
- 2018: American Ornithological Society Postdoc Research Grant (\$2,500)
- 2017: American Society of Naturalists Research Award (\$2,000) American Museum of Natural History Chapman Research Award (\$1,500) University of Colorado International Conference Travel Grant (\$500)
- 2016: Undergraduate Research Opportunities Program Team Grant (\$3,000) National Science Foundation: Doctoral Dissertation Improvement Grant (\$19,900)

EBIO Department Graduate Student Research Award (\$2,500) American Museum of Natural History Chapman Research Grant (\$3,000) University of Colorado Beverly Sears Student Research Grant (\$1,000)

- 2015: Undergraduate Research Opportunities Program Team Grant (\$3,000) EBIO Department Graduate Student Research Award (\$2,000) American Ornithologists' Union Conference Travel Grant (\$250)
- 2014: Undergraduate Research Opportunities Program Team Grant (\$3,000) EBIO Department Graduate Student Research Award (\$2,000) University of Colorado Dean's Grant Research Award (\$10,000)
- 2013: American Ornithologist's Union Student Research Grant (\$2,130) Undergraduate Research Opportunities Program Team Grant (\$3,000) American Museum of Natural History Chapman Research Grant (\$1,500) EBIO Department Graduate Student Research Award (\$2,500) University of Colorado Beverly Sears Student Research Grant (\$2,000)
- 2012: Animal Behavior Society Student Research Grant (\$1,230) Society for the Study of Evolution Rosemary Grant Award (\$2,000) EBIO Department Graduate Student Research Award (\$2,000) NSF Eco-Immunology Research Exchange Network Grant (\$2,500) University of Colorado United Graduate Government Travel Grant (\$300) University of Colorado Beverly Sears Student Research Grant (\$1,000)
- 2011: University of Colorado Beverly Sears Student Research Grant (\$1,000)

TEACHING EXPERIENCE

2023: <u>Instructor of Record: Carleton College</u> Disease Ecology and Evolution – BIOL 220 *Upper division undergraduate course, 26 students, writing rich*

Genes, Evolution, and Development Lab Course – BIOL 125 Introductory undergraduate biology lab course, 20 students

- 2022: <u>Instructor of Record: Carleton College</u> Genes, Evolution, and Development – BIOL 125 *Introductory undergraduate biology course, 60 students, problem-solving format*
- 2020, 2021: Instructor of Record: University of Minnesota Nature of Life: Itasca Field Station- July 2020 and 2021 *First year undergraduate field course, Canceled because of the COVID-19 pandemic*
- 2019: Instructor of Record: Tel Hai College, Israel Avian Parasitology on a Migratory Flyway- November, 2019 *Graduate field course, 24 students from 8 countries*
- 2016: <u>Instructor of Record: University of Colorado</u> Leadership & Mentoring in Science – EBIO 6100 *Graduate seminar, 12 students*

- 2016: <u>Teaching Assistant: University of Colorado</u> Evolution Lab – EBIO 3080 *Taught three lab sections of 20 students each, helped re-design & update lab units*
- 2015: <u>Instructor of Record: University of Colorado</u> Ecology and Evolution of Disease – EBIO 4800 *Upper division undergraduate course, 32 students* **Awarded fellowship to design and teach new course as a graduate student**
- 2013: <u>Instructor of Record: University of Colorado</u> Parasitology – EBIO 3600 *Upper division undergraduate course, 35 students, updated to include active learning*
- 2012- 2013: <u>NSF GK-12 Fellow: Manhattan Middle School</u> 7th Grade Life Science Designed and taught units in classroom, helped run after-school science program
- 2011- 2012: <u>Teaching Assistant: University of Colorado</u> General Biology I Lab – EBIO 1230 General Biology II Lab – EBIO 1240 *Taught three lab sections of 20 students each*

Pedagogy Training:

2022-2023: Carleton Perlman Learning & Teaching Center (many workshops & seminars) 2021: First-Gen Institute: Unpacking Inequalities (half-day workshop)

- University of Pittsburgh Mentoring and Advising Summit (day-long workshop) Inclusive Science Education Fellowship (semester-long training program)
- 2020: Teaching with Writing Workshop (day-long workshop)
- 2017: Inclusive Pedagogy (day-long workshop)
- 2011-2017: Graduate Teaching Program (>50 hours of workshops, 3 teaching evaluations)
- 2016: Active Learning Workshop (day-long workshop)
- 2015: Graduate Teaching Fellowship (designed and taught my own course with mentor) Best Practices in Science Education (semester-long graduate seminar, EBIO 6100)
- 2014: Best Practices in Science Education (semester-long graduate seminar, EBIO 6100)
- 2013-2014: Science Education Reading Group (weekly journal club)
- 2012-2013: NSF GK-12 Program (teaching 7th grade, regular teaching workshops)
- 2011: Science Pedagogy Course (semester-long graduate course, EBIO 5460)

MENTORING

- Advised Independent Study Students:
- 2022-2023: Amy Chen, Cate Patterson, Kai Johnson, Sara Negasi, Gwen Casey, Shira Dubin, Raquel Santamaria
- 2020-2021: Oliva Stoa, Emily Orr, Marian Mohamud
 - Alexandra Struble: wrote & received grant, honors thesis Vanessa Loe: wrote & received grant
- 2019-2020: Rose Newell: received internship funding for research Jeanna Edlund: wrote & received grant

Karilyn Porter: presented at research symposium, coauthored publication

- Hund 7 CV
- 2015-2017: Mara Hernandez: wrote & received 3 grants, coauthored publication Emily Sheridan: coauthored publication

William Dube: wrote & received grant, coauthored publication, honors thesis Kelley McCahill: wrote & received grant, coauthored publications, honors thesis

- 2013-2014: Megan Miller: wrote & received grant Jessica Blair: wrote & received grant, coauthored publication Matt Aberle: wrote & received grant, coauthored publication, honors thesis
- 2011-2012: Caroline Glidden: wrote & received grant, honors thesis

Undergraduate Students in the Field and Laboratory:

2011-2023: Worked with, Mentored, and Trained > 60 students involved in research

PRESENTATIONS

Invited Seminars:

How parasites shape host evolution: from mechanistic experiments to population comparisons. University of Connecticut, 2022 Transforming Mentoring in STEM by training scientists to be better leaders University of Wyoming, 2021 Rethinking Darwin's Degenerates: How Parasites Shape Host Evolution Carleton College, 2021 How can you become a good mentor? University of Minnesota, FieldGuides grad-undergrad mentoring program, 2020 Strategies for inclusive mentoring of undergraduate researchers Carleton College, Learning and Teaching Center, 2020, Canceled due to COVID-19 Mentorship strategies for STEM researchers ESA Early Career Ecologists, 2019. Link: vimeo.com/313861472 How parasites shape host behavior and evolution California State Polytechnic University, Pomona, California, 2018 How parasites shape behavior and evolution: experiments to population comparisons Truman State University, Missouri, 2018 How parasites shape host behavior and evolution within and across populations St. Thomas University, Minnesota, 2018 How parasites shape host behavior and evolution Okinawa Institute of Science and Technology, Japan, 2018 Parasite mediated sexual signaling and its role in the evolution of new species University of Colorado Boulder, 2017 The science behind the vaccine controversy University of Oregon Law School, Oregon child advocacy project, 2015 Parasites mediated sexual signaling and its role in the evolution of new species Institute of Vertebrate Biology, Czech Republic, 2014 Parasites mediated sexual signaling and its role in the evolution of new species National Academy of Science, Czech Republic, 2014 Plumage, parasites and parents National Academy of Sciences, Czech Republic, 2013

Invited Conference Presentations & Symposia:

Training scientists to be better mentors American Association of Medical Colleges Graduate Research, Education, and

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Teaching (GREAT) Conference, Seattle, WA, 2019

Behavior mediates the association between sexual signals and costly parasites

Animal Behavior Conference, Toronto Canada, 2017 *Allee Competition Finalist* Females gain information about local parasite costs using divergent sexual traits

Gordon Research Conference on Speciation, Selected poster highlight talk, Lucca Italy, 2017

Are parasites driving speciation?

University of Colorado, *Fresh Minds Event: New Graduate Student Research*, 2015 How graduate students can lead science outreach

Science Communication Conference, Lincoln, NE, 2015

Parasite mediated sexual signaling: What do females gain?

American Ornithologists' Union Conference, Symposium Talk, Estes CO, 2014

Selected Contributed Presentations and Posters:

Coordinated gene expression of hosts and parasites in resistant and tolerant populations Congress of the European Society of Evolutionary Biology, Prague CR, 2022

Exploring the evolution of parasite resistance and coinfection in stickleback Evolution Conference, Virtual meeting, 2021

Parasite recognition and resistance varies among closely related stickleback populations **American Society of Naturalists Conference,** Monterrey Bay CA, 2020. *Won best postdoc presentation award.*

Early environment and condition dependence: melanin signals in barn swallows Talk: Society for Integrative and Comparative Biology Conference, Tampa FL, 2019

Divergent sexual traits signal relevant information about local parasites International Society of Behavioral Ecology Conference, Minneapolis MN, 2018

Divergent sexual traits evolve with local parasites to signal relevant information to females American Society of Naturalists Conference, Monterrey Bay CA, 2018

Females gain information about local parasites using divergent sexual traits Poster: Gordon Research Conference on Speciation, Italy, 2017

Parasite mediated sexual selection in the barn swallow species complex North American Ornithological Conference, Washington D.C., 2016

Parasite mediated sexual selection and speciation in the barn swallow species complex

American Society of Naturalists Conference, Monterrey Bay CA, 2016.

Won best graduate student presentation award.

Are parasites mediating sexual trait divergence?

Poster: Gordon Research Conference on Speciation, Ventura CA, 2015 Parasite mediated sexual signaling: What do females gain

Evolution Conference, Raleigh NC, 2014

Parasite mediated signaling- what do females gain? Animal Behavior Conference, Boulder CO, 2013

SELECTED SERVICE

2020-2022	Review panel: Undergraduate Research Opportunities Program (UROP)
2019-2022	Committee member: BREWs, Broadening Representation & Equity with Science
2020-2021	Organized weekly: Diversity Equity and Inclusion in STEM reading group
2020	Committee member: "Preparing our Undergraduates to Succeed"
2019	Session leader & poster judge: Society for Integrative and Comparative Biology
2018	Abstract review panel: International Society of Behavioral Ecology conference

2015-2017 Chair: 2017 Gordon Research Seminar on Speciation, Lucca Italy Organized meeting: topics & speakers, fund raising, & advertising
2016 Elected Graduate Representative to the Faculty, EBIO department Attended faculty meetings, held weekly office hours, worked towards initiatives for graduate students
2014-present Reviewer for: Molecular Ecology, Ibis, Animal Ecology, The Auk- Ornithological Advances, Behavioral Ecology and Sociobiology, Plos One, Journal of Field Ornithology, Texas Journal of Science, Canadian Field Naturalist, Oecologia, The American Naturalist, Ecological Monographs, PNAS, Proceedings of the Royal Society B, Animal Behavior, International Journal of Parasitology, Parasitology, Avian Biology, Evolution, Evolutionary Applications, Naturwissenschaften, Frontiers in Zoology, Animal Ecology

SOCIETY AFFILIATIONS

Society for the Study of Evolution, American Ornithological Society, American Society of Naturalists, Animal Behavior Society, Society for Integrative & Comparative Biology, International Society of Behavioral Ecology, American Society of Parasitologists, Ecological Society of America (Disease Ecology), European Society of Evolutionary Biology

SELECTED OUTREACH

2023: Science outreach for middle school girls, BLAST program, Northfield Public Schools 2020-2022: Skype a Scientist 2019: Meet a scientist at Willow Lane Elementary School Monarch watch citizen science project 2018-2019: Volunteer at the Butterfly House Science Corner, Minnesota State Fair Volunteer judge for Boulder Valley District 7th grade science fair 2017: Volunteer for Evolution Museum Day at University of Colorado Field Museum Presentation "Science of Vaccines", including classroom unit, at teaching workshop 2016: Organized barn swallow research outreach event for site owners and community 2012-2016: Chair of the Graduate Student Science Outreach Group Organized teaching workshop for middle & high school science teachers 2014-2016: Volunteer for University of Colorado Darwin Day celebrations Presentation "Disease Evolution", including classroom unit at teaching workshop 2015: 2013-2015: Organized evolution family day at University of Colorado Field Museum Presented for the Girls in STEM Program at Campus Middle School 2014: 2011-2014: Wrote evolution connection curricula for general biology lab manuals 2013-2014: Volunteer for Manhattan Middle School Science Club Volunteer for Summit Middle School poster session 2013: Led bird banding trip for Manhattan Middle School Science Club Volunteer for Parasite Museum Day at University of Colorado Field Museum. Organized barn swallow outreach event for field site owners and community

REFERENCES:

Dr. Jennifer Ross-Wolff (*Colleague at Carleton College*) Biology Department, Carleton College jwolff@carleton.edu

Dr. Emilie Snell-Rood (Postdoctoral Advisor)

Department of Ecology, Evolutionary, and Behavior, University of Minnesota emilies@umn.edu

Dr. Dan Bolnick (*Postdoctoral Advisor*) Department of Ecology and Evolutionary Biology, University of Connecticut daniel.bolnick@uconn.edu

Dr. Scott Taylor (*Postdoctoral Advisor*) Department of Ecology and Evolutionary Biology, University of Colorado, Boulder Scott.A.Taylor@colorado.edu

Dr. Rebecca Safran (Ph.D. Advisor)

Department of Ecology and Evolutionary Biology, University of Colorado, Boulder Rebecca.Safran@colorado.edu