

Sabrina M. McNew

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EDUCATION

Ph.D. Univ. of Utah, Salt Lake City. May 2018
B.A. Biology, Pomona College, Claremont CA. May 2009

PROFESSIONAL APPOINTMENTS

Assistant Professor	University of Arizona	January 2023
Collaborating Scientist	Charles Darwin Foundation	2018 – Present
Rose Postdoctoral Fellow	Cornell University	2018 – 2022
NSF Graduate Research Fellow	University of Utah	2012 – 2017
Post Baccalaureate Researcher	University of New Mexico	2010 – 2012
Fulbright Fellow	Esmeraldas, Ecuador	2009 – 2010

PUBLICATIONS

- [19] **McNew, S.M.**, Taff, C.C., and Vitousek, M.N. Manipulation of a social signal affects DNA methylation of a stress-related gene in a free-living bird. *In review*.
- [18] **McNew, S.M.**, Taff, C.C., Zimmer, C., Uehling, J., Ryan, T.A., von Oordt, D.C., Houtz, J.L., Injaian, A.S. and Vitousek, M.N. Developmental stage-dependent effects of perceived predation risk on physiology and fledging success of tree swallows (*Tachycineta bicolor*). *In review, Proc Roy Soc. B*. Preprint: <https://doi.org/10.1101/2022.12.27.522041>
- [17] Taff, C.C., **McNew, S.M.**, Zimmer, C., Uehling, J.J., Houtz, J.L., Ryan, T.A., Chang van Oordt, D., Injaian, A.S. and Vitousek, M.N., 2023. Joint effects of social interactions and environmental challenges on physiology, internal microbiome, and reproductive performance in tree swallows (*Tachycineta bicolor*). *In revision, Journal of Experimental Zoology Part A*, Preprint: <https://doi.org/10.1101/2023.01.05.522952>
- [16] Boquete, T., **S.M. McNew**, and C. Richards. Applied epigenomics in a rapidly changing world. In Applied Environmental Genomics edited by. S. Jarman, C. Holleley, and O. Berry. CSIRO Publishing, Australia. *In press*.
- [15] **McNew, S.M.**, J. Yepez, C.D. Loyola, C. Andreadis, and B. Fessl. 2022. Transcriptomic responses of Galapagos finches to avian pox virus infection. *Molecular Ecology* DOI:10.1111/mec.16690

- [14] **McNew, S.M.**, T. Boquete, S. Espinoza-Ulloa, J. Andres, N. Wagemaker, S. Knutie, C. Richards, and D.H. Clayton. 2021. Epigenetic effects of parasites and pesticides on captive and wild nestling birds. *Ecology and Evolution*, DOI: 10.1002/ece2.7606
- [13] **McNew, S.M.**, L.N. Barrow, J.L. Williamson, S.C. Galen, H. Skeen, S.G. DuBay, A. M. Gaffney, A.B. Johnson, E. Bautista, P. Ordoñez, C. J. Schmitt, A. Smiley, T. Valqui, J. M. Bates, S.J. Hackett, and C. C. Witt. 2021. Contrasting drivers of diversity in hosts and parasites across the tropical Andes. *PNAS* 118(12): 2010714118.
- [12] **McNew, S.M.**, S.A. Knutie, and D.H. Clayton. 2020. Galápagos mockingbirds do not bias sex ratios of offspring in response to environmental stressors. *Journal of Avian Biology*, 51(4).
- [11] **McNew, S.M.**, G.B. Goodman, J. Yépez and D.H. Clayton. 2020. Parasitism by an invasive fly reduces future reproduction of Galápagos mockingbirds. *Oecologia* 192(2), 363–374.
- [10] Barrow, L.N., **S.M. McNew**, N. Mitchell, S.C. Galen, H.L. Lutz, H. Skeen, T. Valqui, J.D. Weckstein, and C.C. Witt. 2019. Deeply conserved susceptibility in a multi-host, multi-parasite system. *Ecology Letters* 22: 987–998.
- [9] **McNew, S.M.**, S.A. Knutie, G.B. Goodman, A. Saulsberry, A. Hansen, J Yépez, S.E. Bush and D.H. Clayton. 2019. Annual environmental variation influences host tolerance to parasites. *Proceedings of the Royal Society B: Biological Sciences*. 286(1987): 20190049.
- [8] **McNew, S.M.** and D.H. Clayton. 2018. Alien invasion: Biology of *Philornis downsi*, an introduced parasitic fly of Galápagos birds. *Annual Review of Entomology*. 63: 369–387.
- [7] **McNew, S.M.**, D. Beck, I. Sadler-Riggelman, S.A. Knutie, J.A. H. Koop, D.H. Clayton, and M.A. Skinner. 2017. Epigenetic variation between urban and rural populations of Darwin's finches. *BMC Evolutionary Biology* 17:183. *Press coverage*: Forbes, IFL Science, ScienceDaily, Utah Business.
- [6] Knutie, S.A., J.P. Owen, **S.M. McNew**, A.W. Bartlow, E. Arriero, J.M. Herman, E. DiBlasi, M. Thompson, J.A.H. Koop and D.H. Clayton. 2016. Galápagos mockingbirds tolerate introduced parasites that affect Darwin's finches. *Ecology*. 97(4): 940–950.
- [5] Knutie SA, **S.M. McNew**, A.W. Bartlow, D.A. Vargas, and D.H. Clayton. 2014. Darwin's finches combat introduced nest parasites with fumigated cotton. *Current Biology* 24(9):R355-6.
- [4] Dickerman, RW, **S.M. McNew**, and C.C. Witt. 2013. Long-distance movement in a Dusky Great Horned Owl and limits to phylogeography for establishing provenance. 2013. *Western North American Naturalist* 72(4): 401–408.
- [3] Baumann, M.J., **S.M. McNew**, and C.C. Witt. 2013. Morphological and molecular evidence confirm the first definitive eastern White-breasted Nuthatch (*Sitta c. carolinensis*) for New Mexico. *Western Birds* 44(2): 90–97
- [2] Johnson, A.B., **S.M. McNew**, M.S. Graus and C.C. Witt. 2011. Mitochondrial DNA and meteorological data indicate a Caribbean origin for New Mexico's first Sooty Tern (*Onychoprion fuscatus*). *Western Birds* 42:233–242.

- [1] Baumann, M.J., N.D. Pederson, J. Oldenettel, M.S. Graus, **S.M. McNew** and C.C. Witt. 2011. Molecular and morphological evidence confirm the first record of Eastern Whip-poor-will (*Caprimulgus vociferus*) for New Mexico. *New Mexico Ornithological Bulletin* 39(1): 1–10.

FELLOWSHIPS, GRANTS, AND AWARDS

Fellowships

- 2019-2020 Imogene P. Johnson Teaching Fellowship, Cornell Lab of Ornithology
2018-2020 Rose Postdoctoral Fellowship, Cornell Lab of Ornithology,
2017-2018 Graduate Research Fellowship, U. of Utah
2016 George R. Riser Research Fellowship, U. of Utah
2013 Global Change and Sustainability Center Fellowship, U. of Utah
2012-2017 NSF Graduate Research Fellowship
2009-2010 Fulbright Fellow, Ecuador

Grants and Awards

- 2021 Cornell Atkinson Center's Sustainable Biodiversity Fund Grant "Understanding susceptibility of Darwin's finches to poxvirus infection," (\$7000)
2020 National Geographic Society Explorer Grant, "Building communities to monitor birds and emerging disease in the Galápagos Islands," (\$9,663)
2018 George G. Riser Award for Outstanding Research, U. of Utah
2017 NSF Doctoral Dissertation Improvement Grant, (\$19,000)
Global Change and Sustainability Center Research Award, U. of Utah, (\$2,895)
2016 Global Change and Sustainability Center Research Award, U. of Utah, (\$3000)
2013 Student Travel Award, University of Utah (\$500)
Student Travel Award, Global Change and Sustainability Center, (\$500)
2007 Mellon Summer Research Grant, Claremont McKenna College (\$3,000)

Patronyms

- Brueelia mcnewae* ex. Clark's nutcracker (*Nucifraga columbiana*)
Gustafsson et al. 2019, *J. Parasitology* 105(6): 893-903.

TEACHING EXPERIENCE

- 2022 Co-instructor: *Ecology and Conservation of Wildlife in the Neotropics*, Cornell University
2020 Instructor of Record: *The past, present and future of the Galápagos Islands*, Cornell University
Guest Lecturer: *Ornithology*, Cornell University
2019 Distinguished Field Scholar: *Conservation Challenges of Costa Rica*, Westminster College
Guest Lecturer: *Animal Behavior*, Cornell University
2017 Guest Lecturer: *Biology Senior Seminar*, Westminster College
2016 Guest Lecturer: *Biology Senior Seminar*, Westminster College

Teaching Assistant: *Advanced Statistical Modeling for Biologists*, U. of Utah
Guest Lecturer: *Evolution*, Caltech field course in the Galápagos Islands.
Guest Lecturer: *Marine and Natural History Photography*, Falmouth University field course in the Galápagos Islands

- 2014 Guest Lecturer: *Parasitology*, U. of Utah
2013 Teaching Assistant, *Evolution and Diversity of Life*, U. of Utah
2012 Teaching Assistant, *Principles of Biology*, U. of Utah

SELECTED PROFESSIONAL PRESENTATIONS

- McNew, S.M. 2022 Disease across scales: Lessons from birds and their parasites, University of Copenhagen, *Invited Seminar*
- McNew, S.M. 2022 Disease across scales: Lessons from birds and their parasites, University of Arizona, School of Natural Resources and the Environment, *Invited Seminar*
- McNew, S.M. 2022 Disease across scales: Lessons from birds and their parasites, Boise State University, *Invited Seminar*
- McNew, S.M. 2022 Introduced parasites of Galápagos birds: Opportunities for research, conservation and education. Estación Biológica Doña Ana. *Invited Seminar*
- McNew, S.M. 2021. Effects of poxvirus infection on Galápagos finch gene expression. BiPass Seminar, Columbia University. *Invited seminar.*
- McNew, S.M., 2021. Host-parasite interactions: from individuals to communities. EGI Seminar, Oxford University, *Invited seminar.*
- McNew, S.M. 2020. Effects of poxvirus infection on Darwin's finches / reflections on colonialism in ornithology. Ornithology Seminar, Cornell University.
- McNew, S.M. 2019. The ecology of tolerance: Galapagos mockingbirds and *Philornis downsi*. SUNY ESF, *Invited seminar.*
- McNew, S.M., L.N. Barrow, C.C. Witt et al. 2019. Contrasting drivers of host and parasite diversity in the Peruvian Andes. American Ornithological Society, Anchorage, AK. *Oral presentation.*
- McNew, S.M. D. Beck, I. Sadler-Riggelman, S.A. Knutie, J.A. H. Koop, D.H. Clayton, and M.A. Skinner. 2018. Epigenetic variation between urban and rural populations of Darwin's finches. American Ornithological Society, Tucson, AZ. *Poster presentation. Honorable Mention, student awards*
- McNew, S.M. D. Beck, I. Sadler-Riggelman, S.A. Knutie, J.A. H. Koop, D.H. Clayton, and M.A. Skinner. 2017. Epigenetic variation between urban and rural populations of Darwin's finches. Society for Molecular Biology and Evolution, Austin, TX. *Poster presentation.*
- McNew, S.M. 2017. Why tolerance to an introduced parasite varies in Galápagos mockingbirds. Utah Valley University Biology Dept. Seminar. *Invited seminar.*
- McNew, S.M., G. Goodman, A. Saulsberry, A. Hansen, J. Jackson and D. Clayton. 2016 Galápagos mockingbirds lose tolerance to introduced nest parasites in dry years. North American Ornithological Conference, Washington, DC. *Oral presentation.*
- McNew, S.M., G. Goodman, A. Saulsberry, A. Hansen, J. Jackson and D. Clayton. 2016 Galápagos mockingbirds lose tolerance to introduced nest parasites in dry years. Society for the Study of Evolution, Austin, TX. *Oral presentation.*
- McNew, S.M., Saulsberry, A. Effects of *Philornis downsi* on Galápagos mockingbirds. 2016. Visiting Scientist Talk, Charles Darwin Foundation, Santa Cruz, Galápagos.

- McNew, S.M. Effects of an introduced parasitic fly on Galápagos mockingbirds. 2015. Department of Biology “TGIF” Seminar. University of Utah. *Oral presentation.*
- McNew, S.M, E. Middleton, B. Kim S. Bush and D. H. Clayton. 2013. Testing for effects of blood parasites on homing ability of feral pigeons (*Columba livia*). Evolutionary Genetics Retreat, Park City, Utah. *Poster presentation.*
- McNew S.M. and D. H. Clayton. 2013. Assessing the cost of haemosporidian infection through flight performance in Rock Pigeons (*Columba livia*). International Conference on Malaria and Related Haemosporidian Parasites of Wildlife, Vilnius, Lithuania. *Oral presentation.*

ACADEMIC SERVICE AND OUTREACH

Service:

- 2023 CARE Committee, University of Arizona
- 2021 Organizer, Cornell EEB and Lab of Ornithology R Club
- 2020 Dept of EEB DEIBJ Hiring and Promotion Procedures Working Group
- 2019 AOS workshop: *CVs and Resume Building and Small Grant Preparation*
Organizer, Lab of Ornithology R Club
- 2018 Organizer, U. of Utah Biology R Club
- 2017 Biology Annual Retreat Organizing Committee, U. of Utah
Curator, Utah Biology Alumni Resources List
Founder and organizer, Biology R Club
- 2016 Graduate Student Committee, 7th Year Dept. of Biology Review, U. of Utah
Chair, Biology Graduate Student Advisory Committee, U. of Utah
- 2015 Biology Department Graduate Student Grant Committee, University of Utah
- 2014 Science Day Organizing Committee Member, College of Science, U. of Utah
Local organizing committee, Fifth International Conference on Phthiraptera
- 2013 Graduate Invited Speaker Organizer, Department of Biology, U. of Utah

Outreach:

- 2021 Workshop: *Building communities to monitor birds and emerging disease in the Galápagos Islands*. Two 1.5 day workshops, Santa Cruz, Galápagos.
- 2019 Workshop: *Introduction to Mist-netting Birds*. (3 day intensive). Galápagos.
Workshop: *Introduction to Avian Specimen Preparation*. Galápagos
- 2018 Presentation/Workshops: *Identification of Parasites in Nests of Birds*. Galápagos.
- 2017 Presentation to the Wasatch Avian Education Society “*Effects of an introduced parasite on Galápagos birds*”
- 2016 Workshop: *Introduction to Mist-netting Birds*. (3 day intensive). Galápagos.
Workshop: *Identification of parasites in nests of birds*. Santa Cruz, Galápagos.
Public Presentations: *Effects of an introduced parasitic fly on Galápagos birds*. Reached 150+ tourists and students on Santa Cruz Island, Galápagos.

Reviewer: Nature Communications, The American Naturalist, Ecology and Evolution, Ethology, Functional Ecology, Biological Invasions, The Netherlands Organisation for Scientific Research, Proceedings of the Royal Society B, Ibis, Evolutionary Applications, Parasites and Vectors, Behavioral Ecology, Molecular Ecology, Avian Conservation and Ecology, Oecologia, Evolutionary Applications, Urban Ecosystems.

Societies: American Ornithological Society (elected member), American Society of Naturalists (member), Society for the Study of Evolution (member), Wilson Ornithological Society (Council member, 2023-2025).

External Examiner: Massey University, Enzo Reyes, PhD 2022

CONTINUING EDUCATION

2023	Inclusive STEM Learning Project, Course and Learning Community. (7 week/module course)
2022	Inclusive Teaching Workshop, Cornell University (0.5 day) Intergroup Dialogue Project Workshop, Cornell University (1.5 day)
2020-2021	Postdoc Leadership Program, Cornell University 10-module program teaching skills and concepts for leadership to early-career professionals.
2019	WRIT 7100 Teaching Writing
2011	Summer Institute for Training in Biostatistics Washington University in St. Louis. Six-week intensive course in biostatistics funded by the NIH.

Languages: English (native), Spanish (fluent)

STUDENTS MENTORED

Yanella Tutiven*, Fall 2018 – Present (Charles Darwin Foundation, Ecuador)
Diana Loyola*†, Spring 2019 – Present (Charles Darwin Foundation, Ecuador)
Catherine Andreadis†, Fall 2020 – Spring 2022 (Cornell University)
Margaux Klingensmith, Fall 2016, Spring 2018 (University of Utah)
Antonia Sowunmi, Summer 2016 (Graduate Preparation Institute, University of Utah)
John Jackson, Fall 2015- Spring 2016 (University of Utah)
Janai Yépez*†, Spring 2015, 2016, 2018, 2019 (Charles Darwin Foundation, Ecuador)
Angela Hansen†, Spring 2014-Spring 2016 (University of Utah)
Ashley Saulsbury†, Spring 2016 (University of Utah)
Eric Middleton, Fall 2012-Spring 2013 (University of Utah)
Daniela Vargas*†, Spring 2013 (Charles Darwin Foundation, Ecuador)
Brian Kim, Summer 2013 (Hillcrest High School)
Alessandra Quiñonez*, Spring 2012 (University of New Mexico)

*denotes students mentored primarily or exclusively in Spanish. † denotes co-author