

# EVA K. FISCHER

September 2020

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Department of Evolution, Ecology, and Behavior  
School of Integrative Biology  
University of Illinois at Urbana-Champaign  
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## EDUCATION & PROFESSIONAL EXPERIENCE

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Assistant Professor	Department of Ecology, Evolution, and Behavior School of Integrative Biology, University of Illinois	2020 - present
Postdoctoral Fellow	Department of Biology, Stanford University Supervisor: Dr. Lauren A. O'Connell	2017 - 2020
Postdoctoral Fellow	Center for Systems Biology, Harvard University Supervisor: Dr. Lauren A. O'Connell	2015 - 2017
Ph.D. Zoology	Department of Biology, Colorado State University Supervisor: Dr. Kim L. Hoke	2009 - 2015
Research Technician	Psychology Department, University of Colorado Boulder, CO USA	2008 - 2009
Instructor	Premedical Program, Cornell Weill Medical College Doha, Qatar	2007 - 2008
Bachelor of Arts	College of Arts and Sciences, Cornell University Biology and French (double major)	2003 - 2007

## GRANTS & AWARDS

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Hanse-Wissenschaftskolleg Junior Fellow	2020
Sammy Kuo Prize in Neuroscience (semi-finalist)	2019
International Society for Neuroethology Young Investigator Award	2018
National Science Foundation Postdoctoral Research Fellowship in Biology (\$138,000)	2016
JB Johnston Club Thomas Karger Award for Excellence in Evolutionary Neuroscience	2015
Excellence in Graduate Student Teaching Award, CSU Biology Department	2015
Laboratory Exchange Fellowship, NSF Research Coordination Network (\$3,500)	2014
NSF Doctoral Dissertation Improvement Grant (\$19,273)	2013
Sigma Delta Epsilon Graduate Women in Science Research Grant (\$6,500)	2013
Colorado State University Student Travel Award (\$600)	2012, 2013
Heiligenberg Student Travel Award, International Society for Neuroethology (\$700)	2011, 2013
Sigma Xi Grants in Aid of Research (\$400)	2010, 2012
National Science Foundation Graduate Research Fellowship (honorable mention)	2011
Society for the Study of Evolution Rosemary Grant Student Research Award (\$2,110)	2010

PUBLICATIONS

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\* undergraduate student co-author \*\* high school student co-author

- Fischer EK**, Song Y, Hughes KA, Zhou W, Hoke KL (*in revision*). Non-parallel transcriptional divergence during parallel adaptation. *Molecular Ecology*.
- Fischer EK**, \*Alvarez H, Lagerstrom KM, \*McKinney JE, \*\*Petrillo R, \*\*Ellis G, O'Connell LA (2020). Neural correlates of winning and losing fights in poison frog tadpoles. *Physiology & Behavior*. 112973.
- Lynch KS, Louder MM, Friesen CN, **Fischer EK**, Xiang Angell, Steele A, Shalov J (2020). Examining the disconnect between prolactin and parental care in avian brood parasites. *Genes, Brains and Behavior*.
- Fischer EK**, O'Connell LA (2020). Hormonal and neural correlates of care in active versus observing poison frog parents. *Hormones & Behavior* 120: 104696.
- Fischer EK**, Roland AB, Moskowitz NA, Vidoudez C, Ranaivorazo N, Tapia EE, Trauger SA, Vences M, Coloma LA, O'Connell LA (2019). Mechanisms of convergent egg-provisioning in poison frogs. *Current Biology* 29(23): 4145.e3.
- Fischer EK**, Roland AB, Moskowitz NA, Tapia EE, Summers K, Coloma LA, O'Connell LA (2019). The neural basis of tadpole transport in poison frogs. *Proceedings of the Royal Society B* 286: 20191084.
- Fischer EK**, Nowicki JN, O'Connell LA (2019). Evolution of Affiliation: patterns of convergence from genomes to behaviour. *Philosophical Transactions of the Royal Society B* 374(1777): 20180242.
- Lynch KS, O'Connell LA, Louder MIM, Balakrishnan CN, **Fischer EK** (2019). Understanding the loss of maternal care in avian brood parasites using preoptic area transcriptome comparisons in brood parasitic and non-parasitic blackbirds. *Genes Genomes Genetics* 9(4): 1075-1084.
- Moskowitz NM, Roland AB, **Fischer EK**, Ranaivorazo N, Vidoudez C, Aguilar MT, Caldera SM, Chea J, Cristus MG, Crowdis JP, DeMessie B, Desjardins-Park CR, Effenberger AH, Flores F, Giles M, He EY, Izmaylov, NS, Lee CC, Pagel NA, Phu KK, Rosen LU, Seda DA, Shen Y, Vargas S, Murray AW, Abebe E, Trauger SA, Donoso DA, Vences M, O'Connell LA (2018). Seasonal changes in diet and toxicity in the Climbing Mantella frog (*Mantella laevigata*). *PloS ONE* 13(12): e0207940. [work conducted as part of an HHMI funded interdisciplinary STEM course for undergraduates]
- Northcutt AJ, **Fischer EK**, Puhl JC, Mesce KA, Schulz DJ (2018). An annotated CNS transcriptome of the medicinal leech, *Hirudo verbena*: de novo sequencing to characterize genes associated with nervous system activity. *PloS ONE* 13(7): e0201206.
- Fischer EK**, Westrick SE, \*Hartsough L, Hoke KL (2018). Differences in neural activity, but not behavior, across social contexts in guppies, *Poecilia reticulata*. *Behavioral Ecology and Sociobiology* 72: 131.
- Fischer EK** & O'Connell LA (2018). Spotlight: Circuit architecture underlying distinct components of parental care. *Trends in Neurosciences* 41(6): 334-336.
- Hoke KL, Hughes KA, **Fischer EK**, Ghalambor CK (2018). Untangling the role of selection and drift in population divergence via transcriptional network simulations: Extended analysis of Ghalambor et al. (2015). *bioRxiv* 277830.
- Ghalambor CK, Hoke KL, Ruell EW, **Fischer EK**, Reznick DN, Hughes KA (2018). Brief communication arising: Ghalambor et al. reply. *Nature* 555(7698): 688.
- Fischer EK** & O'Connell LA (2017). Modification of feeding circuits in the evolution of social behavior. *Journal of Experimental Biology* 220: 92-102.
- Fischer EK**, Ghalambor CK, Hoke KL (2016). Can a network approach resolve how adaptive vs nonadaptive plasticity impacts evolutionary trajectories? *Integrative and Comparative Biology* 56(5): 877-888.
- Fischer EK**, Ghalambor CK, Hoke KL (2016). Plasticity and evolution in correlated suites of traits. *Journal of Evolutionary Biology* 29: 991-1002.
- Fischer EK** (2016). Flexibility and constraints in the evolution of gene expression and behavior. *Brain, Behavior, and Evolution* 87:1-3.

- Ghalambor CK, Hoke KL, Ruell EW, **Fischer EK**, Reznick DN, Hughes KA (2015). Non-adaptive plasticity potentiates rapid adaptive evolution of gene expression in nature. *Nature* 525: 372-375.
- Fischer EK**, \*Schwartz AJ, Hoke KL, Soares D (2015). Social context modulates predator evasion strategy in guppies. *Ethology* 121(4): 364-371.
- Fischer EK**, Harris RM, Hofmann HA, Hoke KL (2014). Predator exposure alters stress physiology in guppies across timescales. *Hormones & Behavior* 65(2): 165-172.
- Fischer EK**, Soares D, \*Archer KR, Ghalambor CK, Hoke KL (2013). Genetically and environmentally mediated divergence in lateral line morphology in the Trinidadian guppy (*Poecilia reticulata*). *Journal of Experimental Biology* 216: 3132-3142.
- Wall VL, **Fischer EK**, Bland ST (2012). Isolation rearing attenuates social interaction-induced expression of immediate early gene protein products in the medial prefrontal cortex of male and female rats. *Physiology & Behavior* 107(3): 440-450.

## PROFESSIONAL PRESENTATIONS

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### Conference Talks

Society for Integrative and Comparative Biology. Austin, TX USA	2020
German Zoological Foundation Conference. Jena, Germany	2019
Gordon Research Conference for Neuroethology. Mount Snow, VT USA	2019
Society for the Study of Evolution. Montpellier, France	2018
International Congress for Neuroethology. Brisbane, Australia	2018
Herpetology Satellite, International Congress for Neuroethology. Brisbane, Australia	2018
Society for Integrative and Comparative Biology. San Francisco, CA USA	2018
Society for Integrative and Comparative Biology. New Orleans, LA USA	2017
Society for the Study of Evolution. Austin, TX USA	2016
Amphibian Satellite, International Congress for Neuroethology. Montevideo, Uruguay	2016
JB Johnston Club Meeting for Evolutionary Neuroscience Meeting. Chicago, IL USA	2015
Gordon Research Seminar for Neuroethology. Lucca, Italy	2015
Society for Integrative and Comparative Biology. Austin, TX USA	2020
Society for the Study of Evolution Rosemary Grant Student Research Award (\$2,110)	2010

### Invited Seminars

Department of Biology, University of Montana. Missoula, MT USA	2019
Museum of Vertebrate Zoology, University of California Berkeley. Berkeley, CA USA	2019
Department of Biology, California State University. Northridge, CA USA	2019
Janelia Research Campus. Ashburn, VA USA	2018
California Academy of Sciences. San Francisco, CA USA	2018
Department of Biology, Wooster College. Wooster, OH USA	2018
Department of Biology, East Carolina University. Greenville, NC USA	2017
Museum of Comparative Zoology. Harvard University. Cambridge, MA USA	2016

### Poster Presentations

Gordon Research Conference for Neuroethology. Mount Snow, VT USA	2019
Gordon Research Conference for Neuroethology. Les Diablerets, Switzerland	2017
International Congress for Neuroethology. Montevideo, Uruguay	2016
International Congress for Neuroethology. Sapporo, Japan	2014
Gordon Research Conference for Neuroethology. Mount Snow, VT USA	2013
Animal Behavior Society Annual Meeting. Boulder, CO USA	2013
Front Range Neuroscience Conference. Fort Collins, CO USA	2012
International Congress for Neuroethology. College Park, MD USA	2012

Gordon Research Conference for Neuroethology. Stonehill College, MA USA	2011
Front Range Neuroscience Conference. Fort Collins, CO USA	2010
International Congress for Neuroethology. Salamanca, Spain	2010

## TEACHING EXPERIENCE

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Instructor	Integrative Biology Honors Program University of Illinois, Urbana-Champaign, IL USA	2020
Instructor	Neural Systems and Behavior Marine Biological Laboratory, Woods Hole, MA USA	2016, 2017
Co-Instructor	Bioinformatics Workshop Universidad de la República de Uruguay, Montevideo, Uruguay	2016
Co-Instructor	Behavioral Genetics Colorado State University, Fort Collins, CO USA	2011, 2014
Teaching Assistant	Herpetology (2014) • Developmental Biology (2012, 2013) • Genetics (2010-2013) • Introductory Biology (2009) Colorado State University, Fort Collins, CO USA	2009 - 2014

## PROFESSIONAL ACTIVITIES

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### *Conference Organizer*

Gordon Research Seminar for Neuroethology. Les Diablerets, Switzerland. June 2017.

### *Editorial Board Member*

Brain, Behavior, and Evolution (2015 - 2019)

### *Peer Reviewer*

Acta Ethologica • Behavioral Brain Research • Biological Journal of the Linnean Society • Ethology • Integrative and Comparative Biology • The Journal of Experimental Biology • Genome Biology and Evolution • Nature Communications • Neuroscience • PlosONE • Proceedings of the Royal Society B

### *Society Member*

Animal Behavior Society • American Association for the Advancement of Science • International Society for Neuroethology • JB Johnston Club for Evolutionary Neuroscience • Society for Integrative and Comparative Biology • Society for the Study of Evolution

### *Mentoring of Postdoctoral Fellows*

Sarah Westrick

### *Mentoring of Graduate Students*

Lisa Surber

### *Mentoring of Undergraduate Students*

Scott Abela • Harmony Alvarez • Katbeth Archer • Nichole Benton • Hannah Buchek • Hilary Burr • Maimona Fadlemula • Lauren Hartsough • Christopher Jackson • Emma Lloyd • Rachel Mansfield • Mikaila Medinger • Thomas Morrison • Haley Peterson • Maggie Sinner • Sean Streich • Colin Wakeham

### *Mentoring of High School Students*

Gwen Ellis • Mary Erb • Amanda Field • Narinka Guichette • Randi Petrillo

**PUBLIC ENGAGEMENT & SCIENCE COMMUNICATION** 

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***Research Internships***

Ignited Research Internships for Teachers. Stanford University, Stanford, CA USA	2019
Biology Summer Research Program. Stanford University, Stanford, CA USA	2018, 2019
Froggers Research Internships. Harvard University, Cambridge, MA USA	2017
Science Club for Girls Internships. Harvard University, Cambridge, MA USA	2015, 2016
PaCE High School Internships. Colorado State University, Fort Collins, CO USA	2014

***K-12***

Neuroethology Summer Course. Harvard University, Cambridge, MA USA	2017
Froggers School Program. Stanford, CA USA	2017 – 2019
Froggers School Program. Cambridge, MA USA	2015 – 2017
Guppy Kit Project. Manhattan Middle School, Boulder, CO USA	2010 – 2014
Math, Science & Technology Day. Colorado State University, Fort Collins, CO USA	2013
Green Day. Bacon Elementary, Fort Collins, CO USA	2013
High School STEM Day. Colorado State University, Fort Collins, CO USA	2012
Girls in STEM Day. Colorado State University, Fort Collins, CO USA	2011

***General Public***

NightLife. California Academy of Sciences, San Francisco, CA USA	2018
Bay Area Science Festival. San Francisco, CA USA	2017