KELLY J. WALLACE, PH.D

National Science Foundation Postdoctoral Fellow
Department of Psychology, Emory University
kelly.wallace@emory.edu • kellyjwallace.github.io

EDUCATION & PROFESSIONAL APPOINTMENTS

2021— Postdoctoral Fellow, NSF Postdoctoral Research Fellowship in Biology
Emory University
Sponsor: Dr. Aubrey Kelly (*thekellylab.org*)

2021 Doctor of Philosophy in Ecology, Evolution, and Behavior
University of Texas at Austin
PhD Advisors: Dr. Hans Hofmann (*cichlid.biosci.utexas.edu*) & Dr. Michael Ryan

2015 Bachelor of Science in Biological Sciences, Minor in Music
Cornell University
Undergraduate Research Advisor (2013-2015): Dr. Alex Ophir (*ophirlab.com*)

RESEARCH INTERESTS

My research investigates how the social environment influences individual behavior and cognition. I integrate ecological, behavioral, physiological, and neuromolecular perspectives.

Keywords: cognitive ecology, social neuroscience, individual variation, neural gene expression, cortisol, testosterone, dopamine, vasopressin, oxytocin, *Microtus ochrogaster, Gambusia affinis, Astatotilapia burtoni, Meriones unguiculatus, Acomys cahirinus*

MAJOR AWARDS

Postdoctoral Research Fellowship in Biology, 2020
The National Science Foundation, $138,000

Ford Foundation Predoctoral Fellowship, 2017
The National Academies of Sciences, Engineering, and Medicine $72,000

ADDITIONAL AWARDS

Postdoctoral Poster Award (Society for Behavioral Neuroendocrinology, $250) 2021

Travel Award (Society of Behavioral Neuroendocrinology) 2020

University Graduate Continuing Fellowship (University of Texas at Austin, $44,000) 2020

Broadening Participation Award (Society for Integrative & Comparative Biology, $500) 2020

Junior Scientist Workshop Award (Howard Hughes Medical Institute) 2019

BEACON Student Travel Fund Award (BEACON Center for Evolution in Action, $500) 2019

First Place Student Poster Award (Ecological Integration Symposium, Texas A&M, $100) 2019

IB Doctoral Dissertation Improvement Grant (University of Texas at Austin, $8,000) 2019

IB Joint Graduate Program Travel Award (University of Texas at Austin, $580) 2018

Best Student Presentation Award (7^{th} Meeting of Poeciliid Biologists) 2017

EcoLabs Research Grant (Texas EcoLabs, $2,100) 2017

Graduate School Continuing Fellowship (University of Texas at Austin, $8,000) 2017

Diversity Travel Award (Animal Behavior Society, $300) 2016

EEB Startup Fellowship (University of Texas at Austin, $2,000) 2016

Graduate School Mentoring Fellowship (University of Texas at Austin, $36,000) 2015

Charles H. Turner Award (Animal Behavior Society) 2014

PUBLICATIONS

JA Gonzalez Abreu, A Rosenberg, BA Fricker, **KJ Wallace**, AW Seifert, AM Kelly (2022) Species-typical group size differentially influences reward, but not social, neural circuitry during nonreproductive social interactions. *iScience* **25**(5): 104230 (doi.org/10.1016/j.isci.2022.104230)

KJ Wallace, KD Choudhary, LA Kutty, DH Le, MT Lee, K Wu, HA Hofmann (2021) Social ascent changes cognition, behavior, and physiology in a highly social cichlid fish. *Philosophical Transactions of the Royal Society B* **377**: 20200448 (*doi.org/10.1098/rstb.2020.0448*)

KJ Wallace & HA Hofmann (2021) Decision-making in a social world: integrating cognitive ecology and social neuroscience. *Current Opinion in Neurobiology* **68**:152-158 (*doi.org/10.1016/j.conb.2021.03.009*)

KJ Wallace & HA Hofmann (2021) Equal performance but distinct behaviors: Astatotilapia burtoni sex differences in a novel object recognition task and spatial maze. *Animal Cognition* **24**:1057–1073 (*doi.org/10.1007/s10071-021-01498-0*)

KJ Wallace* & JM York* (2020) A systems change framework for evaluating academic equity and inclusion in an Ecology and Evolution Graduate Program. *Ecology & Evolution* **10**(20): 10922-10929 (*doi.org/10.1002/ece3.6817)*

KJ Wallace, RT Rausch, ME Ramsey, ME Cummings (2020) Sex differences in cognitive performance and style across domains in mosquitofish (*Gambusia affinis*). *Animal Cognition* **23**: 655–669 (*doi.org/10.1007/s10071-020-01367-2*)

MA Rice, LE Hobbs, **KJ Wallace,** AG Ophir (2017) Cryptic sexual dimorphism in spatial memory and hippocampal oxytocin receptors in prairie voles (*Microtus ochrogaster*). *Hormones and Behavior* **95**: 94–102 (*doi.org/10.1016/j.yhbeh.2017.08.003*)

MANUSCRIPTS

PS Queller, Y Shirali, **KJ Wallace,** RS DeAngelis, V Yurt, LP Reding, ME Cummings. Development of female personality and behavioral syndromes varies by mating environment complexity (*in review at Current Biology*)

AM Kelly, BA Fricker, **KJ Wallace**. Protocol for multiplex fluorescent immunohistochemistry in free-floating vertebrate tissue *(in review at STAR Protocols)*

TK Solomon-Lane, **KJ Wallace**, RM Butler, HA Hofmann. Social behavioral consistency over development and across contexts in a highly social cichlid fish (*in prep*)

KJ Wallace*, EK Chun*, AG Ophir†, AM Kelly†. Comparing patterns of neural activity in the social behavior network across distinct social and nonsocial contexts in prairie voles (*Microtus ochrogaster*) (*in prep*)

SOFTWARE

KJ Wallace (2020) Cowlogdata: an R package to analyze and visualize observations generated by the event logging software CowLog (*github.com/kellyjwallace/cowlogdata*)

REVIEWED WORKS

Hormones and Behavior (1), Scientific Reports (1), Trends in Cognitive Sciences (1)
Behavioral Ecology (2), International Journal of Avian Science (1)
Marine and Freshwater Behaviour and Physiology (1)

AFFILIATIONS

Society for Advancement of Chicanos/Hispanics and Native Americans in Science
Society for Integrative & Comparative Biology
Animal Behavior Society
Society for Behavioral Neuroendocrinology
BEACON Center for Evolution in Action
Ford Fellows Foundation
American Society of Naturalists

MENTORSHIP

I have mentored 38 undergraduate students and three high school students on topics including experimental design, computer coding, animal husbandry, brain tissue processing, electronic circuitry, and statistical analysis.

Undergraduate Trainees Supervised

** denotes supervision at Emory, all other students were supervised at UT Austin*
‡ denotes co-author on a peer-reviewed manuscript
§ denotes honors thesis mentee
¶ denotes trainee poster presenter for which I was the primary supervisor

Camille Akin	Matt Armstrong	Jeffrey Alliston	Lauren Borland
Connor Bianchi	Kavyaa Choudhary‡	Rahi Dakwala	Solanch Dupeyron*§¶
Rachel Ellerd	Marisa Farjado	Caleb Fleischer	Lily Guevara
Daniel Hauser	Randa Kabbani	Sam Kagel	Kathryn Kaihlanen
Amogh Kashyap	Rachel Koeter	Layla Kutty‡¶	Don Le‡¶
Matthew Lee‡¶	Mark Li*¶	Presley Mackey	Claire Mayorga
Jessika McFarland	An Nguyen	Lily Parsi	Huynh Pham
Adam Redmer	Albert Reyes	Remedy Rule	Vishaal Sakthivelnathan
Eduardo Saucedo	Madison Schumm	Jennifer Schlauch	Benjamin Whelan
Anirudh Yerrapragada	Karleen Wu‡¶		

High School Students Supervised (Crockett High School Mentorship Program)
Isaac Carroll, Gabe Rocha, Isaac Munoz

Navigating the Academic Mentor-Mentee Relationship, 2020
Talk, University of Texas at Austin Department of Integrative Biology

Passport to UT Mentorship Program, 2017-2019
I have mentored three international students (China, Ghana) during their transition to the United States and to the University of Texas at Austin.

Capital of Texas Undergraduate Research Conference Judge, 2018

University of Texas at Austin CNS Undergraduate Research Forum Judge, 2016

TEACHING EXPERIENCE & CERTIFICATION

Emory FIRST IRACDA Program Associate, 2021
As an Emory IRACDA Associate I am participating in pedagogical coursework which includes designing and co-teaching a course titled "Death and Biology." I am also partnering with a faculty mentor at Agnes Scott College for a mentored teaching experience. Agnes Scott College is a traditionally women's college and emerging minority-serving institute in Decatur, GA.

Emory CFDE Inclusive Assessment Workshop, 2022

Emory CIMER Entering Mentoring Certificate (10-workshop series), 2021

Teaching Assistant: *Bio370 Evolution* (H. Ochman & T. Juenger, UT Austin)
I led weekly discussion sections (~30 students) on readings and material to supplement lectures.

Teaching Assistant: *Bio 359K Animal Behavior* (M. Cummings, UT Austin)
I organized a semester-long group research project in which students attended weekly sections to collect behavioral data, perform statistical analyses, write a final report, incorporate feedback I provided, and present their work orally.

Grading Assistant: *Bio 373 Ecology* (L. Gonzalez, UT Austin)

UT Austin Advanced Teaching Preparation Series Certificate, 2019

R Analysis for Behavioral Data, 2019
I developed a tutorial on R basics for behavioral data which was presented to 92 students in *Bio359K* Animal Behavior Course.

INVITED TALKS

EEBOB Bio Seminar, Kennesaw State, 2022 (Invitation by Dr. Sarah Guindre-Parker)
Cognition and behavior in the social world of cichlid fish

Frontiers in Biology Seminar Series, Duke University, 2022 (Dr. Steve Nowicki)
Cognition in a social world: integrating cognitive ecology and social neuroscience

Biopsychology Colloquium Series, University of Michigan, 2022 (Dr. Jill Becker)
Cognition in a social world: integrating cognitive ecology and social neuroscience

EEB Seminar Series, Texas A&M University, 2021 (Dr. Gil Rosenthal)
A systems change framework for evaluating academic equity and inclusion in an EEB Program

Neuro II: Systems Course, Claremont McKenna College, 2020 (Dr. Tessa Solomon-Lane)
Learning in a dynamic social world

Animal Cognition Graduate Course, University of Cincinnati, 2020 (Dr. Elizabeth Hobson)
Equal performance but distinct behaviors: Astatotilapia burtoni sex differences in a novel object recognition task and spatial maze

Animal Behavior Course, University of Texas at Austin, 2020 (Dr. Felicity Muth)
Fish are smarter than we think!

Osher Lifelong Learning Institute, University of Texas at Austin, 2020 (Dr. Larry Gilbert)
Fish are smarter than we think!

ORAL PRESENTATIONS

Research Across Psychology, Emory University 2021
The influence of the early life social environment on cognitive style

Society for Integrative & Comparative Biology, Virtual Meeting 2021
Decision-making in a social world: sex and status differences in cognition in A. burtoni

Brain Behavior, and Evolution Seminar, University of Texas at Austin, 2020
Cognition in a dynamic social world

Annual Meeting of the Animal Behavior Society, Virtual Meeting, 2020
Sex differences in cognition in the highly social cichlid fish Astatotilapia burtoni

Brain Behavior, and Evolution Seminar, University of Texas at Austin, 2020
Neuroendocrine basis of social competence & cognition in a highly social cichlid fish

Janelia Junior Scientist Workshop on Mechanistic Cognitive Neuroscience, HHMI, 2019
Neuroendocrine basis of social competence & cognition in a highly social cichlid fish

Brain Behavior, and Evolution Seminar, University of Texas at Austin, 2018
Sex differences in Cognitive Style and Domain Relationships in Mosquitofish (G. affinis)

Conference of Ford Fellows, National Academy of Sciences, 2018
Sex differences in cognitive style across domains in mosquitofish (Gambusia affinis)

Annual Meeting of the Animal Behavior Society, University of Wisconsin, 2018
Sex differences in cognitive style across domains in mosquitofish (Gambusia affinis)

Brain Behavior, and Evolution Seminar, University of Texas at Austin, 2018
Comparative cognition in Gambusia affinis

7th Meeting of Poeciliid Biologists, Oklahoma University, 2017 **award winner*
Investigating individual variation in cognition and behavior in Gambusia affinis

Brain Behavior, and Evolution Seminar, University of Texas at Austin, 2017
Investigating individual variation in cognition

Integrative Biology Graduate Research Symposium, University of Texas at Austin, 2016
Stress and cognition: an improvement on a numerosity learning assay

POSTER PRESENTATIONS

Society for Behavioral Neuroendocrinology, Atlanta GA, 2022
The influence of early life social complexity on adult behavior in the Spiny Mouse (A. cahirinus)
Society for Integrative & Comparative Biology, Virtual Meeting 2022
A novel method for examining neural responses at two timepoints within an individual
Society for Behavioral Neuroendocrinology, Virtual Meeting 2021 **award winner*
Cognition in a social world: assessing cognitive variation by sex and dominance status in the social cichlid fish Astatotilapia burtoni
Society for Integrative & Comparative Biology, Virtual Meeting 2021
A systems change framework for evaluating academic equity and inclusion in an ecology and evolution graduate program
Society for Integrative & Comparative Biology, Austin TX, 2020
Neuroendocrine basis of social competence & cognition in a highly social cichlid fish
Janelia Junior Scientist Workshop on Mechanistic Cognitive Neuroscience, HHMI, 2019
Neuroendocrine basis of social competence & cognition in a highly social cichlid fish
Society for Behavioral Neuroendocrinology, Indiana University, 2019
Neuroendocrine basis of social competence & cognition in a highly social cichlid fish
Spring Symposium in Behavioral Epigenetics, University of Texas at Austin, 2019
Social Competence & Cognition in Dynamic Communities of a Highly Social Cichlid Fish
Ecological Integration Symposium, Texas A&M University, 2019 **award winner*
Social Competence & Cognition in Dynamic Communities of a Highly Social Cichlid Fish
Conference of Ford Fellows, National Academy of Sciences, 2018
Comparative Cognition in Gambusia affinis
Spring Symposium in Behavioral Epigenetics, University of Texas at Austin, 2018
Comparative Cognition in Gambusia affinis
BEACON Congress, Michigan State University, 2016
Stress and cognition: an improvement on a numerosity learning assay
Annual Meeting of the Animal Behavior Society, University of Missouri, 2016
Stress and cognition: an improvement on a numerosity learning assay
Evolution Meeting, University of Texas at Austin, 2016
Stress and cognition: an improvement on a numerosity learning assay
Cornell Undergraduate Research Board Fall Forum, Cornell University, 2014
Sex differences in spatial memory, hippocampal volume, and OTR Expression
Annual Meeting of the Animal Behavior Society, Princeton University, 2014
Sex differences in spatial memory, hippocampal volume, and OTR Expression

SKILLS

Computer Programming
R/RStudio, Python, ffmpeg, HTML, Command Line, Jenkins, ImageJ, basic electronic circuitry, Github, Alibi Security, BORIS, CowLog, QuantStudio, Unity

Laboratory Techniques
Immunihistochemistry, Tissue microdissection, IP injections, animal perfusion, blood hormone collection, ELISA, RNA extraction (Maxwell), qPCR, light & fluorescence microscopy

Behavioral Procedures
VIE & Bead Tagging, husbandry and facility care (fish, rodents), mate choice, scototaxis, sociality task, Morris water maze, detour reaching task, shuttlebox, novel object recognition task, open field task, color discrimination task, simple spatial maze

Statistical Analyses
linear modeling, hierarchical clustering analysis with bootstrapping, t-tests, analysis of variance, heatmap visualization, covariance matrices, model-averaged importance of terms analysis, principal component analysis, discriminant function analysis, model selection, permutation tests

MEDIA & COMMUNICATION

UT "Choose Texas" Promotional Video, 2019 (*https://vimeo.com/343679289*)
I was one of three graduate students across the University interviewed in a promotional video for the Graduate School at the University of Texas at Austin.

Long-View Micro School Outreach Presentation, 2019
Talk: *Fish are smarter than we think!*

Science Under the Stars, 2018 *(https://scienceunderthestars.org/)*
Science Under the Stars is an organization run by graduate students in the Integrative Biology Department at UT that hosts monthly outdoor talks with children's activities, tours, and local wildlife displays. I presented an outdoor talk designed for the general public titled "*Fish are smarter than we think!*"

They Blinded Me With Science Radio Presentation, 2017
I presented my research and background on fish cognition and behavior on the weekly radio show (KVRX 91.7), hosted by UT graduate students.

DIVERSITY & INCLUSION

SBN Professional Development Panelist, 2022
Hosted by the Society for Behavioral Neuroendocrinology, I spoke on a panel titled "*Leveraging privilege to improve racial equity in academia: examples and insights from the SBN community*"

NextProf Science Workshop, 2021 *(https://sites.lsa.umich.edu/nextprof-science/)*
Hosted by the University of Michigan, *NextProf Science* is a workshop aimed at future faculty from underrepresented backgrounds designed to promote the benefits of a career in academia.

CNS Action Team on Racial Justice, 2020
I was invited by the College of Natural Sciences Dean Goldbart to join a 15-member action team that assessed needs and priorities in response to a college-wide request for action.

UT College of Natural Sciences Diversity and Inclusion Committee, 2019-2020
I was selected to serve on the college's D&I committee (*https://cns.utexas.edu/diversity/d-i-committee)* which has organized initiatives such as the "You Belong Here" Campaign.

Integrative Biology Diversity and Inclusivity Committee, 2017-2020
I am one of three founding student representatives of the Integrative Biology Department Diversity and Inclusivity Committee.

Natural Sciences Council Scholarship Committee Reviewer, 2020
I was recruited as an outside reviewer to help assess ~40 student applications to the Scholarship Committee's Diversity and Inclusion Award (award value of $5,000)

Equitable and Inclusive Recruitment Practices/ Sexual Harassment in Field Research 2019
I co-developed and led two seminars and discussions (~40 attendees)

Article Contributor– Chronicle of Higher Education, 2018
In 2018 I was interviewed and photographed by reporters for the Chronicle of Higher Education for a piece on efforts by the graduate students in the Integrative Biology Department at UT to improve cultural issues in the department and academia as a whole, specifically as it relates to addressing racial insensitivity and sexism.

African American Pioneers in Evolutionary Science: The Untold Story, 2017
I participated in a BEACON-funded project to develop scholarly publications on the history/ sociology of African American scientists in evolution.

Black History Month: Celebrating Black Scientists, 2016
I collaborated with the UT Austin EEB Program to run a social media campaign. This work inspired an additional program highlighting Hispanic-American scientists in September 2017.

PROGRAM DEVELOPEPMENT & SCIENCE POLICY

EEB Graduate Student Representative, 2018-2019

As the student representative, I attended faculty meetings and disseminated information. I organized town hall events, designed and administered a survey on the graduate student curriculum, developed a student writing group, and advocated for student concerns.

EEB Program Mentorship Plan, 2019

As the EEB Graduate Student Representative I implemented a Mentoring Plan designed to clarify expectations/responsibilities between incoming students and their advisors. The Mentoring Plan is a survey-like document that the student and advisor complete together soon after the student arrives. This plan is also being used as a template for the UT CMB (Cell & Molecular Biology) Graduate Program.

Course Offering Survey, 2019

I developed and administered a survey taken by students across six cohorts of EEB Graduate Students that provided insight on which topics students feel need to be taught, are currently being taught, number and types of courses required for graduation, and prior training undertaken.

Graduate Student Panelist– First Year Subject and Skills Course, 2019 & 2020

I presented with three other senior graduate students on topics including how to begin research projects, TA responsibilities, mentorship, and on-campus resources for graduate students.

Graduate Student Writing Group, 2019

I organized a weekly writing group for students in the EEB graduate program.

Austin Science Advocates, 2017-2020 *(https://austinscienceadvocates.wordpress.com/)*

Austin Science Advocates promotes science communication and science policy awareness. I am on the planning team which organizes guest speaker events, skills workshops, and "contact your local representative" sessions.

LANGUAGES

English *(native),* Spanish *(basic competency)*

REFERENCES

Available upon request