KELLY J. WALLACE

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EDUCATION

2015— Doctor of Philosophy, Ecology, Evolution, and Behavior
University of Texas at Austin
PhD Advisors: Dr. Hans A Hofmann (*cichlid.biosci.utexas.edu*) & Dr. Michael J Ryan

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

RESEARCH INTERESTS

My research investigates how the social environment influences individual behavior and cognition by integrating ecological, behavioral, physiological, and neuromolecular perspectives. I have explored this topic via the monogamous prairie vole *Microtus ochrogaster*, the western mosquitofish *Gambusia affinis*, and social African cichlid *Astatotilapia burtoni.*

Keywords: animal cognition, social neuroscience, behavioral ecology, individual variation, neural gene expression, cortisol, testosterone, dopamine, vasopressin

MAJOR AWARDS

Postdoctoral Research Fellowship in Biology (National Science Foundation, $138,000) 2020
Ford Foundation 2017 Predoctoral Fellowship (National Academies of Sciences, Engineering, and Medicine $72,000) 2017

AWARDS

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 (7th Meeting of Poeciliid Biologists) 2017
EcoLabs Research Grant (Texas EcoLabs, $2,100) 2017
Graduate Dean's Prestigious Supplement (University of Texas at Austin, $3,000) 2017-2020
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

KJ Wallace, RT Rausch, ME Ramsey, ME Cummings (2020) Sex differences in cognitive performance, 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*)

CODING RESOURCES

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

MANUSCRIPTS

KJ Wallace, HA Hofmann. Equal performance but distinct behaviors: Astatotilapia burtoni sex differences in a novel object recognition task and spatial maze (*in review, preprint available on BioRxiv, doi.org/10.1101/2020.08.03.234658*)

KJ Wallace*, JM York*. Using a Systems Change Framework to Evaluate Academic Equity & Climate Efforts in a Graduate Program (*accepted at Ecology & Evolution, preprint available on BioRxiv, doi.org/10.1101/848101)*

KJ Wallace, HA Hofmann. Decision-making in a social world: integrating animal cognition and social neuroscience (*invited manuscript in prep, Current Opinion in Neurobiology*)

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)*

INVITED TALKS

Animal Cognition Graduate Course, University of Cincinnati, 2020
Invited Guest Lecture (Dr. Elizabeth Hobson): *Equal performance but distinct behaviors: Astatotilapia burtoni sex differences in a novel object recognition task and spatial maze*
Osher Lifelong Learning Institute, University of Texas at Austin, 2020
Invited Lecture: *Fish are smarter than we think!*

ORAL PRESENTATIONS

Annual Meeting of the Animal Behavior Society, Virtual Meeting, 2020
Lightning Talk: *Sex differences in cognition in the highly social cichlid fish Astatotilapia burtoni*
Brain Behavior, and Evolution Seminar, University of Texas at Austin, 2020
Talk: *Neuroendocrine basis of social competence & cognition in a highly social cichlid fish*
Janelia Junior Scientist Workshop on Mechanistic Cognitive Neuroscience, HHMI, 2019
Talk: *Neuroendocrine basis of social competence & cognition in a highly social cichlid fish*
Brain Behavior, and Evolution Seminar, University of Texas at Austin, 2018
Talk: *Sex differences in Cognitive Style and Domain Relationships in Mosquitofish (G. affinis)*
Conference of Ford Fellows, National Academy of Sciences, 2018
Talk: *Sex differences in cognitive style across domains in mosquitofish (Gambusia affinis)*
Annual Meeting of the Animal Behavior Society, University of Wisconsin, 2018
Talk: *Sex differences in cognitive style across domains in mosquitofish (Gambusia affinis)*
Brain Behavior, and Evolution Seminar, University of Texas at Austin, 2018
Talk: *Comparative cognition in Gambusia affinis*
7th Meeting of Poeciliid Biologists, Oklahoma University, 2017
Talk: *Investigating individual variation in cognition and behavior in Gambusia affinis*
Brain Behavior, and Evolution Seminar, University of Texas at Austin, 2017
Talk: *Investigating individual variation in cognition*
Integrative Biology Graduate Research Symposium, University of Texas at Austin, 2016
Talk: *Stress and cognition: an improvement on a numerosity learning assay*
Cornell Undergraduate Research Board Fall Forum, Cornell University, 2014
Poster: *Sex differences in spatial memory, hippocampal volume, and OTR Expression*
Annual Meeting of the Animal Behavior Society, Princeton University, 2014
Poster: *Sex differences in spatial memory, hippocampal volume, and OTR Expression*

POSTER PRESENTATIONS

Society for Integrative & Comparative Biology, Austin TX, 2020
Poster: *Neuroendocrine basis of social competence & cognition in a highly social cichlid fish*
Janelia Junior Scientist Workshop on Mechanistic Cognitive Neuroscience, HHMI, 2019
Poster: *Neuroendocrine basis of social competence & cognition in a highly social cichlid fish*
Society for Behavioral Neuroendocrinology, Indiana University, 2019
Poster: *Neuroendocrine basis of social competence & cognition in a highly social cichlid fish*
Spring Symposium in Behavioral Epigenetics, University of Texas at Austin, 2019
Poster: *Social Competence & Cognition in Dynamic Communities of a Highly Social Cichlid Fish*
Ecological Integration Symposium, Texas A&M University, 2019
Poster: *Social Competence & Cognition in Dynamic Communities of a Highly Social Cichlid Fish*
Conference of Ford Fellows, National Academy of Sciences, 2018
Poster: *Comparative Cognition in Gambusia affinis*

Spring Symposium in Behavioral Epigenetics, University of Texas at Austin, 2018
Poster: *Comparative Cognition in Gambusia affinis*
BEACON Congress, Michigan State University, 2016
Poster: *Stress and cognition: an improvement on a numerosity learning assay*
Annual Meeting of the Animal Behavior Society, University of Missouri, 2016
Poster: *Stress and cognition: an improvement on a numerosity learning assay*
Evolution Meeting, University of Texas at Austin, 2016
Poster: *Stress and cognition: an improvement on a numerosity learning assay*
Cornell Undergraduate Research Board Fall Forum, Cornell University, 2014
Poster: *Sex differences in spatial memory, hippocampal volume, and OTR Expression*
Annual Meeting of the Animal Behavior Society, Princeton University, 2014
Poster: *Sex differences in spatial memory, hippocampal volume, and OTR Expression*

SKILLS

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

Laboratory Techniques: Tissue microdissection, Cryostat, Cresyl Violet, blood hormone collection, ELISA, RNA extraction (Maxwell), qPCR, Leica light and fluorescence microscopy

Behavioral Procedures: VIE & Bead Tagging, fish husbandry & aquatic facility care, mate choice, scototaxis, two-choice sociality task, Morris water maze, detour reaching task, shuttlebox, novel object recognition task, color discrimination task, simple spatial maze

Statistical Analyses: linear regression with interaction effects, generalized linear models, hierarchical clustering analysis with bootstrapping, t-tests, analysis of variance, heatmap visualization, covariance matrices, model-averaged importance of terms analysis

AFFILIATIONS

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

REVIEWS

Hormones and Behavior (1)
Scientific Reports (1)
Trends in Cognitive Sciences (1)

GRAUDATE COURSEWORK

Learning and Memory (M. Domjan)
Animal Behavior (M. Cummings, M. Ryan)
Subjects and Skills in Ecology, Evolution, and Behavior
I (H. Ochman, C. Wilke) & II, (D. Hillis, L. Meyers)
Cognitive Ecology (M. Ryan)
Advanced Statistics (J. Hixon)

MENTORSHIP

I have trained 37 undergraduate and three high school volunteers (including twenty female students and eighteen students of different racial and ethnic minorities) on skills including experimental design, coding, fish husbandry, electronic circuitry, and data analysis.

Undergraduate Students Supervised (University of Texas at Austin)

Camille Akin	Matt Armstrong	Jeffrey Alliston	Lauren Borland
Connor Bianchi	Kavyaa Choudhary	Rahi Dakwala	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
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
Melody Ziari			

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

Teaching Assistant: *Bio370 Evolution* (H. Ochman & T. Juenger)

Teaching Assistant: *Bio 359K Animal Behavior* (M. Cummings)

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

Advanced Teaching Preparation Series Certificate, 2019 (semester-long workshop series)

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

MEDIA & COMMUNICATION

UT "Choose Texas" Promotional Video, 2019 (*https://vimeo.com/343679289*)
I was one of three graduate students across the University featured 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 & INCLUSIVITY

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 ($5,000)

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

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.

EEB Graduate Program Course Offering Survey, 2019

I developed 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.

EEB Program Graduate Student Writing Group, 2019

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

Article Contributor– Chronicle of Higher Education, 2018

In late August 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.

Austin Science Advocates, 2017-present *(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