

# Rayna M. Harris, PhD

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EDUCATION	<p><b>The University of Texas at Austin</b>, Austin, Texas Biochemistry; B.S., 2006</p> <p><b>The University of Texas at Austin</b>, Austin, Texas Cell and Molecular Biology; Ph.D., 2017.</p> <p><b>The University of California</b>, Davis, California Population Health and Reproduction, Postdoctoral Scholar, 2018</p> <p><b>The University of California</b>, Davis, California Neurobiology, Physiology and Behavior, Postdoctoral Scholar, current</p>
HONORS AND AWARDS	<p>AAAS Community Engagement Fellowship (2019) rstudio::conf 2019 Diversity Scholarship (2019) University Graduate Continuing Fellowship, UT Austin (2016 - 17) William Livingston Outstanding Graduate Student Academic Employee Award, UT Austin (2017) Grant in Aid of Research, Society for Integrative and Comparative Biology (2016) Academic Enrichment Fund Award, UT Austin (2014, 15, 16)</p>
PUBLICATIONS	<p><i>Full list of publications:</i> <a href="http://orcid.org/0000-0002-7943-5650">http://orcid.org/0000-0002-7943-5650</a> <i>Google Scholar:</i> <a href="https://scholar.google.com/citations?user=_bVy9pMAAAAJ&amp;hl=en">https://scholar.google.com/citations?user=_bVy9pMAAAAJ&amp;hl=en</a> <i>Google Scholar statistics as of July 2020:</i> 961 citations; h-index of 12, i10-index of 14</p>
PREPRINTS	23. <b>Harris RM</b> , Kao H-Y, Alarcon JM, Fenton AA Hofmann HA (2020) Transcriptome analysis of hippocampal subfields identifies gene expression profiles associated with long-term active place avoidance memory. <i>bioRxiv</i> 10.1101/2020.02.05.935759
LITERATURE REVIEWS AND COMMENTARIES	22. <b>Harris RM</b> , O'Connell LA, Hofmann HA (2016) Brain Evolution, Development, and Plasticity, in <i>The Wiley Handbook of Evolutionary Neuroscience</i> (ed S. V. Shepherd), John Wiley & Sons, Ltd, Chichester, UK. doi: 10.1002/9781118316757.ch15 21. Oldfield RG, <b>Harris RM</b> , Hofmann HA (2015) Integrating Resource Defence Theory with Nonapeptide Expression to Explain Variation in Mating Systems. <i>Front. Zool.</i> 12:S16. 20. <b>Harris RM</b> , Hofmann HA (2015) Seeing is believing: Dynamic evolution of opsin genes. <i>Proc. Natl. Acad. Sci. U.S.A.</i> 112:1252-1253. 19. <b>Harris RM</b> , Hofmann HA (2014) Neurogenomics of Behavioral Plasticity. <i>Adv. Exp. Med. Biol.</i> 781:149-68.
EDUCATIONAL PUBLICATIONS	18. Nederbragt L, <b>Harris RM</b> , Hill AP, Wilson GV (2020) Ten Quick Tips For Teaching With Participatory Live Coding. <i>PLOS Comp Biol.</i> doi: 10.1371/journal.pcbi.1008090 17. Devenyi GA, Emonet R, <b>Harris RM</b> , Hertweck KL, Irving D, Milligan I, Wilson G (2017) Ten simple rules for collaborative lesson development. <i>PLoS Comput Biol</i> 14(3): e1005963. 16. <b>Harris RM</b> , Otopalik AG, Smith C, Bucher D, Golowasch J, Hofmann HA (2017) Single-Neuron Gene Expression Analysis Using the Maxwell 16 LEV System. <i>BioRxiv</i> 107342.
PEER-REVIEWED RESEARCH	15. Lang AL, Austin SH, <b>Harris RM</b> , Calisi RM, MacManes MD (2020) Stress-mediated convergence of splicing landscapes in male and female Rock Doves. <i>BMC Genomics</i> 21, 251. 14. Northcutt AJ, Kick DR, Otopalik AG, Goetz BM, <b>Harris RM</b> , Santin JM, Fenton AA, Hofmann HA, Marder E, Schulz DJ (2019) Molecular profiling of single neurons of known identity in two ganglia from the crab <i>Cancer borealis</i> . <i>Proc. Natl. Acad. Sci. U.S.A.</i>

PEER-REVIEWED  
RESEARCH  
(CONTINUED)

13. Clarke DJB *et. al.*. FAIRshake: Toolkit to Evaluate the FAIRness of Research Digital Resources (2019) Cell Systems 10.1016/j.cels.2019.09.011
12. **Harris RM**, Kao H-Y, Alarcon JM, Hofmann HA, Fenton AA (2019) Hippocampal transcriptomic responses to enzyme-mediated cellular dissociation. Hippocampus DOI: 10.1002/HIPO.23095.
11. Renn SPC, Machado H, Duftner N, **Harris RM**, Sessa AK, Hofmann HA (2018). Gene Expression Signatures of Mating System Evolution. Genome. DOI: 10.1139/gen-2017-0075.
10. Dijkstra PD, Maguire SM **Harris RM**, Rodriguez AA, DeAngelis RS Flores SA, Hofmann HA (2017) The melanocortin system regulates body pigmentation and social behaviour in a colour polymorphic cichlid fish. Proc. R. Soc. B. DOI: 10.1098/rspb.2016.2838.
9. Goppert C, **Harris RM**, Theis A, Boila A, Hohl S, Ruegg A, Hofmann HA, Salzburger WE, Boehne A (2016) Inhibition of aromatase induces partial sex change in a cichlid fish: Distinct functions for sex steroids in brains and gonads. Sex. Dev. 10:97-110.
8. Simoes JM, Barata EN, **Harris RM**, O'Connell LA, Hofmann HA, Oliveira RF (2015) Social odors conveying dominance and reproductive information induce rapid physiological and neuromolecular changes in a cichlid fish. BMC Genomics 16:114.
7. Stiver KA, **Harris RM**, Townsend JP, Hofmann HA, Alonzo SH (2015) Gene Expression Profiles and Androgen Levels Underlie Alternative Reproductive Tactics in the Ocellated Wrasse, *Symphodus ocellatus*. Ethol. 121:152-167.
6. Smith CC, **Harris RM**, Lampert KP, Scharl M, Hofmann HA, Ryan MJ (2015) Copy number variation in the melanocortin 4 receptor gene and alternative reproductive tactics in swordtail *Xiphophorus multilineatus*. Environ. Biol. Fishes 98:23-33.
5. Brawand et al. (2014) The genomic substrate for adaptive radiation: Genomes of five African cichlid fish. Nature 513: 375-381
4. Fischer EK, **Harris RM**, Hofmann HA, Hoke KL (2014) Predator exposure alters stress physiology in guppies across timescales. Horm. Behav. 65: 165-172.
3. **Harris RM**, Dijkstra PD, Hofmann HA (2014) Complex Structural and Regulatory Evolution of the Pro-opiomelanocortin Gene Family. Gen. Compar. Endocrinol. 195: 107-115.
2. Sessa AK, **Harris RM**, Hofmann HA (2013) Sex Steroid Hormones Modulate Responses to Social Challenge & Opportunity in Males of the Monogamous Convict Cichlid, *Amatitlana nigrofasciata*. Gen. Compar. Endocrinol. 189: 5965.
1. Oldfield RG, **Harris RM**, Hendrickson DA, Hofmann HA (2013) Arginine Vasotocin and Prolactin Pathways are Associated with Mating System Variation in North American Cichlid Fishes. Horm. Behav. 64:44-52.

BLOG

Science, teaching, community building, and more <https://www.raynamharris.com/blog/>

SOFTWARE

Musical Genes: Visualize and sonify gene expression in parenting pigeons  
<https://raynamharris.shinyapps.io/musicalgenes/>

SELECTED GITHUB  
REPOSITORIES

[macmanes-lab/DoveParentsRNAseq](#) Reproducible workflow for analysis of the molecular variation in the reproductive axis of male and female rock doves during parental care transitions.

[raynamharris/IntegrativeProjectWT2015](#) My reproducible workflow to identify links between transcriptional variation in the mouse hippocampus and avoidance learning.

[carpentries/instructor-training](#) The collaboratively developed teaching materials for The Carpentries Instructor Training Course. I co-maintained and contributed to this repository.

YOUTUBE VIDEOS

**2020** Musical Genes: A Shiny App to Interactively Visualize and Sonify Gene Expression Data

**2020** Musical Genes Tutorial

**2020** The Transcriptional Symphony of Parental Care

**2019** Networking Strategies for Community Engagement

**2017** Practice postdoc fellowship elevator pitch

**2017** Reproducible Hippocampus Transcriptomics

*Note:* All videos available at <https://www.youtube.com/channel/UCqYtYCD9h2P7Dcxicv5pqTQ>

TEACHING  
EXPERIENCE

**Guest Lecturer**

- Biomedical Research Seminars (NSM9) Sacramento State University (2020)
- Meet and Analyze Data (MAD), UC Davis (2020)
- Biological Science for Social Justice (NPB 13), UC Davis (2019)
- Comparative Animal Physiology (BIO 361T), UT Austin (2016)
- Principles of Neuroscience (NEU 482T), UT Austin (2014)
- Introduction to Biological Statistics, UT Austin (2014)
- Neurobiology of Social Behavior, University of the Republic of Uruguay (2013)

**Lead or Co-Lead Instructor**

- Instructor Training, Software Carpentry and Data Carpentry (2016 - 2019)
- Integrative Molecular Neuroethology, Neural Systems & Behavior Course (2013 - 2017)
- Introduction to Git for Bioinformatics, UT Austin (2017)
- Introduction to Unix and R, for Bioinformatics, UT Austin (2016)
- The UNIX Shell and Version Control with Git, Software Carpentry (2015)

**Teaching Assistant**

- Children's Ski and Snowboard School, Northstar California Resort (winter 2019-2020)
- Biostatistics (SDS 328M), UT Austin (2017)
- Introduction to Core Next-generation Sequencing Tools, UT Austin (2015, 16, 17)
- Problems in Modern Biology (BIO 301E), UT Austin (2013)
- Organic Chemistry Laboratory (CH 210C), UT Austin (2007-2009)
- Advanced Organic Chemistry Laboratory (CH 118K/L), UT Austin (2007)

**Courses taught in Spanish**

- Instructor Training, The Carpentries (2018-2019)
- R for Reproducible Research, Data Carpentry (2018)
- Git for Version Control, Software Carpentry (2018)
- Introduction to Spanish, Futura Language Professionals (2008 - 2009)

Slides available at <https://speakerdeck.com/raynamharris>

SERVICE

**Peer-reviewer** AAS Open Research; Behavioral Ecology; Gene; Genes, Brain & Behavior; Genes, Genomes & Genetics; Journal of Experimental Zoology Part A; Nature; Physiology & Behavior; PLOS ONE; Proceedings of the Royal Society B; rOpenSci.

**Chair** Parental Care and Reproduction Symposium, Society for Integrative & Comparative Biology Annual Meeting, January 2020

**Coordinator** The Carpentries Spanish-speaking Maintainer onboarding program, 2018

**Member** Open Access Week Advisory Committee, 2018

**Secretary** Software Carpentry Steering Committee, 2017-2018

**Member** Software Carpentry Steering Committee, 2016-2017

**Poster Judge** College of Natural Science Undergraduate Research Forum, 2016, 17

**Coordinator** Annual Big Data in Biology Symposia, 2012 - 2017

**Coordinator** Summer School for Big Data in Biology, 2014 - 2017

**Co-Chair** New Frontiers in the Integrative Study of Animal Behavior Session, Society for Integrative & Comparative Biology Annual Meeting, January 2016

**Member** Software Carpentry Mentoring Committee, 2015 - 2017

**Blogger** PLOS Neuroscience Community, BEACON: An NSF Center for Evolution in Action, Data Carpentry, and Software Carpentry, Since 2014

**Graduate Representative** Cell and Molecular Biology Graduate Program External Review Committee, October 2014

**Coordinator** Transdisciplinary Graduate Student Luncheon, October 2014

**Coordinator** Crockett High School UT Austin Internship Program, 2012-2014

**Coordinator** Annual Brain, Behavior, and Evolution Symposia, 2011-2013

**Spanish Translator** Welcome to the World of Mushrooms, INBio Park, Costa Rica, 2009

INVITED AND  
CONTRIBUTED  
TALKS

**CSCCE** Community Call: Exploring Diversity, Equity and Inclusion. Apr 22, 2020.  
**SICB 2020** Society for Integrative and Comparative Biology Meeting. Jan 6, 2020  
**UCLA FORCE11** Scholarly Communication Institute. Aug 5, 2019  
**UC Davis** Next-Gen Sequence Analysis Workshop. Jul 5, 2019  
**rOpenSci** Community Call: Multilingual Communities. Jun, 28 2019  
**UC Davis** Environmental Endocrinology Seminar. December 11, 2018  
**Universidad de Palermo** LatinR. September 4, 2018  
**Harvard University** Data Commons Pilot Phase Consortium Workshop. May 31, 2018.  
**IBM Buenos Aires** R Ladies Buenos Aires Meetup. March 27, 2018.  
**The North Door** Nerd Nite Austin Texas. January 10, 2018.  
**UT Austin** RNA/DNA Club. December 11, 2017  
**UT Austin** Ph.D. Thesis Defense. October 18, 2017.  
**UT Tyler** Biology Department. November 9, 2016  
**UT Austin** Brain, Behavior, & Evolution Graduate Seminar. October 2016  
**UT Austin** Chips & Dips Graduate Seminar. April 6, 2016  
**Michigan State University** Annual BEACON Congress. August 18, 2015  
**UT Austin** Waggoner Center for Alcohol Addiction Seminar. May 20, 2015  
**UT Austin** Brain, Behavior, & Evolution Graduate Seminar. April 17, 2015  
**Gulbenkian Institute of Science** COPEWELL Workshop. April 11, 2015  
**UT Austin** 10th Annual Integrative Biology Graduate Student Symposium. April 5, 2014  
**St. Edwards University** 3rd Annual Texas Poeciliid Conference. December 14, 2013  
**UT Austin** 9th Annual Integrative Biology Graduate Student Symposium. April 20, 2013  
**UT Austin** Darwin Day. February 10, 2013.  
**University of Bergen** Behavioural Fish Neuroscience Network Conference. November 12, 2012

SCIENTIFIC  
POSTERS

2019 Society for Behavioral Neuroendocrinology (SBN) Annual Meeting. Bloomington, IN  
 2019 Scientific Computing with Python (SciPy). Austin, TX  
 2017 The Moore Foundation Early Career Researcher Symposium. Waikoloa Beach, HI  
 2016 Society for Neuroscience (SfN) Annual Meeting. San Diego, CA  
 2016 International Congress of Neuroethology. Montevideo, Uruguay  
 2016 Society for Integrative and Comparative Biology (SICB) Meeting Portland, OR  
 2015 Celebration of Discovery at the Marine Biological Laboratories. Woods Hole, MA  
 2015 Annual Waggoner Center for Alcohol & Addiction Research Advance. Austin, TX  
 2015 National Science Foundation Data Science Workshop. Seattle, WA  
 2014 Society for Neuroscience (SfN) Annual Meeting. Washington DC  
 2014 Annual BEACON Congress. Lansing, MI  
 2014 Animal Behavior Conference. Bloomington, IN  
 2014 Brain Behavior & Evolution Symposium. Austin, TX  
 2014 Society for Integrative and Comparative Biology Meeting (SICB). Austin, TX  
 2013 Gordon Research Conference on Neuroethology. West Dover, VT  
 2013 Society for Behavioral Neuroendocrinology (SBN) Annual Meeting. Atlanta, GA  
 2012 Gordon Research Conference in Genes and Behavior. Galveston, TX

*References and supporting information are available upon request.*