

Rayna M. Harris, PhD

EDUCATION

The University of Texas at Austin, Austin, Texas
Biochemistry; B.S., 2006

The University of Texas at Austin, Austin, Texas
Cell and Molecular Biology; Ph.D., 2017.

The University of California, Davis, California
Population Health and Reproduction, Postdoctoral Scholar, 2018

The University of California, Davis, California
Neurobiology, Physiology and Behavior, Postdoctoral Scholar, current

HONORS AND AWARDS

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)

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>

PUBLICATIONS: SUBMITTED

23. Nederbragt L, **Harris RM**, Hill AP, Wilson GV (2020) Ten Quick Tips For Teaching With Participatory Live Coding. PLOS Comp. Biol.
22. **Harris RM**, 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. bioRxiv 10.1101/2020.02.05.935759

21. Ernst D, **Harris RM**, Chintamen S, Dickens M, Calisi RM. Differential influence of captive housing environments on zebra finch behavior, stress, and reproductive physiology. *Hormones and Behavior*.

PUBLICATIONS:
LITERATURE
REVIEWS

20. **Harris RM**, O'Connell LA, Hofmann HA (2016) Brain Evolution, Development, and Plasticity, in *The Wiley Handbook of Evolutionary Neuroscience* (ed S. V. Shepherd), John Wiley & Sons, Ltd, Chichester, UK. doi: 10.1002/9781118316757.ch15
19. Oldfield RG, **Harris RM**, Hofmann HA (2015) Integrating Resource Defence Theory with Nonapeptide Expression to Explain Variation in Mating Systems. *Front. Zool.* 12:S16.
18. **Harris RM**, Hofmann HA (2015) Seeing is believing: Dynamic evolution of opsin genes. *Proc. Natl. Acad. Sci. U.S.A.* 112:1252-1253.
17. **Harris RM**, Hofmann HA (2014) Neurogenomics of Behavioral Plasticity. *Adv. Exp. Med. Biol.* 781:149-68.

PUBLICATIONS:
PEER-REVIEWED
RESEARCH

16. Lang AL, Austin SH, **Harris RM**, Calisi RM, MacManes MD (2020) Stress-mediated convergence of splicing landscapes in male and female Rock Doves. *BMC Genomics* 21, 251.
15. Northcutt AJ, Kick DR, Otopalik AG, Goetz BM, **Harris RM**, 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 *Cancer borealis*. *Proc. Natl. Acad. Sci. U.S.A.*
14. Clarke DJB *et al.*. FAIRshake: Toolkit to Evaluate the FAIRness of Research Digital Resources (2019) *Cell Systems* 10.1016/j.cels.2019.09.011
13. **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.
12. 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.
11. Devenyi GA, Emonet R, **Harris RM**, Hertweck KL, Irving D, Milligan I, Wilson G (2017) Ten simple rules for collaborative lesson development. *PLoS Comput Biol* 14(3): e1005963.
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, Schartl 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: 165172.
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.

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

PROFESSIONAL
ACTIVITIES

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
Member Carpentries Instructor Trainer, 2016-2019
Production Manager *I Can Science* Documentary Series, 2019
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

SOFTWARE

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

BLOG

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

SCIENTIFIC
POSTERS

2019 Society for Behavioral Neuroendocrinology (SBN) Annual Meeting. Bloomington, IN
2019 Scientific Computing with Python (SciPy). Austin, TX **Poster**
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