

Curriculum Vitae - Rayna M. Harris

EDUCATION

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

The University of Texas at Austin, Austin, Texas; Hans Hofmann Lab
Cell and Molecular Biology; PhD., May 2018

HONORS AND AWARDS

University Graduate Continuing Fellowship, UT Austin (2016 - 2017).

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)

Honorable mention, National Science Foundation Graduate Research Fellowship (2013, 14)

PRE-PRINTS

Full publication list: <http://orcid.org/0000-0002-7943-5650>

Google Scholar statistics as of July 2017: 366 citations; h-index of 7, i10-index of 7

PEER REVIEWED PUBLICATIONS

19. Devenyi GA, Emonet R, **Harris RM**, Hertweck KL, Irving D, Milligan I, Wilson G. Ten Simple Rules for Collaborative Lesson Development. arXiv:1707.02662.
18. **Harris RM**, Kao H-Y, Alarcon JM, Hofmann HA, Fenton AA (2017) Analysis of hippocampal transcriptomic responses to technical and biological perturbations. *BioRxiv* 153585; doi: <https://doi.org/10.1101/153585>.
17. 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.
16. 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.
15. 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.
14. Stiver KA, **Harris RM**, Townsend JP, Hofmann HA, Alonzo SH (2015) Behavioral and physiological examinations of cooperation in *Symphodus ocellatus*, a species with alternative male reproductive tactics. *Ethol.* 121:152-167.
13. 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.
12. Brawand D, Wagner CE, Li YI, Malinsky M, Keller I, Fan S, Simakov O, Ng AY, Lim ZW, Bezault E, Turner-Maier J, Johnson J, Alcazar R, Noh HJ, Russell P, Aken B, Alföldi J, Amemiya C, Azzouzi N, Baroiller JF, Barloy-Hubler F, Berlin A, Bloomquist R, Carleton KL, Conte MA, D'Cotta H, Eshel O, Gaffney L, Galibert F, Gante HF, Gnerre S, Greuter L, Guyon R, Haddad NS, Haerty W, **Harris RM**, et al. (2014) The genomic substrate for adaptive radiation: Genomes of five African cichlid fish. *Nature* 513: 375-381
11. Fischer EK, **Harris RM**, Hofmann HA, Hoke KL (2014) Predator exposure alters stress physiology in guppies across timescales. *Horm. Behav.* 65: 165172.
10. **Harris RM**, Dijkstra PD, Hofmann HA (2014) Complex Structural and Regulatory Evolution of the Pro-opiomelanocortin Gene Family. *Gen. Compar. Endocrinol.* 195: 107-115.
9. 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.
8. 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.

TECHNICAL
REPORTS

7. **Harris RM**, Otopalik AG, Smith C, Bucher D, Golowasch J, Hofmann HA (2017) Single-Neuron Gene Expression Analysis Using the Maxwell 16 LEV System. *BioRxiv* 107342; doi: <https://doi.org/10.1101/107342>

INVITED ARTICLES
AND REVIEWS

6. **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
5. Oldfield RG, **Harris RM**, Hofmann HA (2015) Integrating Resource Defence Theory with Nonapeptide Expression to Explain Variation in Territory-based Mating Systems. *Frontiers in Zoology*, 12:S16.
4. **Harris RM**, Hofmann HA (2015) Seeing is believing: Dynamic evolution of opsin genes. *Proc. Natl. Acad. Sci. U.S.A.* 112:1252-1253.
3. **Harris RM**, Hofmann HA (2014) Neurogenomics of Behavioral Plasticity. *Adv. Exp. Med. Biol.* 781:149-68.

OPEN ACCESS
EDUCATIONAL
MATERIALS

2. Ahmadi A, Allen J, Banaszekiewicz P, Becker E, Bekolay T, Blischak J, Boughton A, Bray E, Cabunoc Mayes A, Crouch S, Davis N, Davis M, Duckles J, Emonet, R; Fortin, FA, Gonzalez I, Hamm C, Hansen M, **Harris RM**, et al. (2016) Software Carpentry: Instructor Training. Zenodo. 10.5281/zenodo.57571
1. **Harris RM**, Hofmann HA (2014). Laboratory Experiments for the 2014 Integrative Molecular Neuroscience Module. Zenodo. 10.5281/zenodo.60725

SELECTED GITHUB
REPOSITORIES

DissociationTest My UNIX and R markdown workflow for testing the influence of cellular dissociation on hippocampal gene expression in laboratory mice.
<https://github.com/raynamharris/DissociationTest>

IntegrativeProjectWT2015 My UNIX and R markdown workflow for the integrative analysis of animal behavior, electrophysiology, and gene expression data in laboratory mice.
<https://github.com/raynamharris/IntegrativeProjectWT2015>

instructor-training The collaboratively developed teaching materials for the Software Carpentry and Data Carpentry Instructor Training Course. I am the top 4th of 61 contributors.
<https://github.com/swcarpentry/instructor-training>

publication-RR-Jupyter The collaboratively developed teaching materials for a Reproducible Research Course using Jupyter Notebooks.
<https://github.com/Reproducible-Science-Curriculum/publication-RR-Jupyter>

SOCIAL MEDIA
AND BLOGS

Twitter: Personal @raynamharris, Bioinformatics @texas_cbrs, and Neuroscience @nsb_mbl
Professional/personal blog: <https://medium.com/@raynamharris/>.

INVITED AND
CONTRIBUTED
TALKS

University of California, Berkeley Michael Eisen Lab. January 13, 2017
The University of Texas at 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, Oeiras, Portugal COPEWELL Workshop on: Functional neuroanatomy of Fish: Mapping behavior and internal states into the brain. 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, Bergen, Norway NORDFORSK Behavioural Fish Neuroscience Network Workshop. November 16, 2012
University of Bergen Behavioural Fish Neuroscience Network Conference. November 12, 2012

SCIENTIFIC
POSTERS

2017 The Moore Foundation Early Career Researcher Symposium. Waikoloa Beach, Hawaii
 2016 Society for Neuroscience Annual Meeting. San Diego, CA
 2016 International Congress of Neuroethology. Montevideo, Uruguay
 2016 Society for Integrative and Comparative Biology 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 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. Austin, TX
 2013 Gordon Research Conference in Neuroethology. West Dover, VT
 2013 Society for Behavioral Neuroendocrinology Annual Meeting. Atlanta, GA
 2012 Gordon Research Conference in Genes and Behavior. Galveston, TX

PROFESSIONAL
ACTIVITIES

Peer-reviewer Behavioral Ecology; Gene; Genes, Genomes & Genetics; Journal of Experimental Zoology Part A; Physiology & Behavior; PLOS ONE; Proceedings of the Royal Society B. (Detailed information provided on Publons.)
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 Complementary Session to Symposium - New Frontiers in the Integrative Study of Animal Behavior, Society for Integrative & Comparative Biology Annual Meeting, January 2016
Member Software Carpentry Mentoring Committee, since March 2015
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
Spanish Translator Welcome to the World of Mushrooms, INBio Park, Costa Rica, 2009

TEACHING

Lesson Development

- Instructor Training, Software Carpentry and Data Carpentry
- Reproducible Research with Jupyter Notebooks, Data Carpentry
- Integrative Molecular Neuroethology, Neural Systems & Behavior Course

Lead or Co-Lead Instructor

- Instructor Training, Software Carpentry and Data Carpentry (2016 present)
- Integrative Molecular Neuroethology, Neural Systems & Behavior Course (2013 - present)
- Introduction to Git for Bioinformatics, UT Austin (2017)
- Introduction to Unix and R, for Bioinformatics, UT Austin (2016)
- The UNIX Shell, Software Carpentry (2015)
- Version Control with Git, Software Carpentry (2015)
- Introduction to Spanish, Futura Language Professionals (2008 - 2009)

Teaching Assistant

- 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)

Guest Lecturer

- Comparative Animal Physiology (BIO 361T), UT Austin (2016)
- Introduction to Biological Statistics, UT Austin (2014)
- Neurobiology of Social Behavior, University of the Republic of Uruguay (2013)