

Stanford



Lauren O'Connell

Assistant Professor of Biology

Curriculum Vitae available Online

Bio

BIO

Lauren O'Connell is an Assistant Professor in the Department of Biology at Stanford University. She studies amphibians to learn how animals adapt their behavior and physiology to changing environments. She received her Ph.D. from the University of Texas at Austin and then started her own lab at Harvard University as a Bauer Fellow before joining the Stanford faculty in 2017. Projects in the lab include investigating parent-offspring interactions and the physiology of chemical defenses in poison frogs.

ACADEMIC APPOINTMENTS

- Assistant Professor, Biology
- Member, Bio-X
- Member, Maternal & Child Health Research Institute (MCHRI)
- Faculty Fellow, Sarafan ChEM-H
- Member, Wu Tsai Neurosciences Institute

HONORS AND AWARDS

- Frank A. Beach Award, Society for Behavioral Neuroendocrinology (2018)
- For Women in Science Fellowship, L'Oreal USA (2015)
- Capranica Prize, International Society for Neuroethology (2013)
- Young Investigator Award, International Society for Neuroethology (2012)
- Early Career Award, Society for Social Neuroscience (2011)

BOARDS, ADVISORY COMMITTEES, PROFESSIONAL ORGANIZATIONS

- Member, International Society for Neuroethology (2008 - present)
- Member, Society for the Study of Evolution (2015 - present)

PROFESSIONAL EDUCATION

- Ph.D., University of Texas at Austin , Cellular and Molecular Biology (2011)
- B.S., Cornell University , Biological Sciences (2006)
- A.A., Tarrant County Community College , Natural Sciences (2004)

COMMUNITY AND INTERNATIONAL WORK

- Spatial cognition in reptiles and toads, Australia

- Maternal behavior in poison frogs, Madagascar
- How poison frogs get their toxins, Ecuador

LINKS

- Lab Website: <https://oconnell.stanford.edu/>

Research & Scholarship

CURRENT RESEARCH AND SCHOLARLY INTERESTS

The O'Connell lab studies how genetic and environmental factors contribute to biological diversity and adaptation. We are particularly interested in understanding (1) how behavior evolves through changes in brain function and (2) how animal physiology evolves through repurposing existing cellular components.

Behavior

(1) How do neonates communicate nutritional need to parents? How do parents interpret the cries of their infants? Communication between parents and offspring is required for survival in altricial animals, like mammals (including humans), birds, and some amphibians. Yet we understand very little about the co-evolution of parent-offspring communication from a mechanistic perspective. We are studying the neural basis of parent-offspring communication in poison frog species where tadpoles beg mothers for meals.

(2) How do poison frogs navigate their environment? Poison frogs transport their tadpoles from the leaf litter to pools of water. In some species, mothers place tadpoles individually in small plants and then return to feed each tadpole every few days for several months. These behaviors are energetically expensive and cognitively demanding, as not only do frog parents need to remember where these pools are located, but some moms frequently return to feed their tadpoles. We are investigating the neural basis of species differences in spatial cognition as a function of sex differences in parental behavior.

(3) Does the convergent evolution of pair bonding across vertebrates rely on similar neural mechanisms? Social bonds, such as pair bonds, are critical for mental health. In order to identify generalizable and thus translatable principals, we are studying the underlying mechanisms of pair bonding across phylogenetically diverse taxa, including butterflyfish, poison frogs, skinks, quail, and voles. This project re-traces the deep, ~450 million years of evolutionary history of vertebrate pair bonding and aims to identify fundamental neural principles that might inform the human condition.

Physiology

(1) How does variation in diet and habitat influence poison frog toxicity? Some poison frog species carry toxic chemicals to avoid predation. Poison frogs do not make their own toxins, but rather sequester toxins from the ants and mites in their diet. Thus, the frogs' ability to defend themselves is tightly linked to their environment. We are studying the trophic ecology of poison frog toxicity by linking together information about habitat, diet, and toxins across many populations and species.

(2) How do frogs sequester toxic small molecules from their diet to serve as chemical defenses? Poison frogs have developed special physiological mechanisms that allow them to uptake and store lipophilic alkaloids from their diet. To accomplish this, they need proteins for alkaloid transport throughout the body and modifications to ion channels that allow toxin resistance. We are studying the evolution of toxin sequestration from an organismal physiology perspective to characterize the toxin uptake system in poison frogs.

PROJECTS

- Spatial cognition in rainforest frogs - Stanford University, Centro Jambatu
- Evolution of chemical defenses in poison frogs - Stanford University
- Evolution of pair bonding in vertebrates - Stanford University

Teaching

COURSES

2023-24

- Organismal Biology Lab: BIO 161 (Aut)

2022-23

- Herpetology: BIO 159 (Win)
- Organismal Biology Lab: BIO 161 (Aut)
- Physiology: BIO 84 (Win)

2021-22

- Physiology: BIO 84 (Win)

2020-21

- Physiology: BIO 84 (Win)

STANFORD ADVISEES

Doctoral Dissertation Reader (AC)

Leonardi Gozali, Livia Wyss, Alina Xiao, Ilana Zucker-Scharff

Postdoctoral Faculty Sponsor

Najva Akbari, Consuelo Betancourt Cundar, Julie Butler, Ricardo Cossio Martinez, Katie Fiocca, Marie-Therese Fischer, Bryan Juarez, Camilo Rodriguez Lopez, Victoria Watson-Zink

Doctoral Dissertation Advisor (AC)

Billie Goolsby, Neil Khosla, Mila Pamplona Barbosa, Amanda Pohlman, Shirley Jennifer Serrano Rojas, Daniel Shaykevich

Doctoral (Program)

Billie Goolsby, Neil Khosla, Amanda Pohlman

GRADUATE AND FELLOWSHIP PROGRAM AFFILIATIONS

- Biology (School of Humanities and Sciences) (Phd Program)

Publications

PUBLICATIONS

- A toxic environment selects for specialist microbiome in poison frogs. *bioRxiv : the preprint server for biology*
Caty, S. N., Alvarez-Buylla, A., Vasek, C., Tapia, E. E., Martin, N. A., McLaughlin, T., Weber, P. K., Mayali, X., Coloma, L. A., Morris, M. M., O'Connell, L. A. 2024
- Binding and sequestration of poison frog alkaloids by a plasma globulin. *eLife*
Alvarez-Buylla, A., Fischer, M. T., Moya Garzon, M. D., Rangel, A. E., Tapia, E. E., Tanzo, J. T., Soh, H. T., Coloma, L. A., Long, J. Z., O'Connell, L. A. 2023; 12
- Selection on Visual Opsin Genes in Diurnal Neotropical Frogs and Loss of the SWS2 Opsin in Poison Frogs. *Molecular biology and evolution*
Wan, Y. C., Navarrete Méndez, M. J., O'Connell, L. A., Uricchio, L. H., Roland, A. B., Maan, M. E., Ron, S. R., Betancourt-Cundar, M., Pie, M. R., Howell, K. A., Richards-Zawacki, C. L., Cummings, M. E., Cannatella, et al
2023; 40 (10)
- Tissue-specific in vivo transformation of plasmid DNA in Neotropical tadpoles using electroporation. *PloS one*

- Delia, J., Gaines-Richardson, M., Ludington, S. C., Akbari, N., Vasek, C., Shaykevich, D., O'Connell, L. A.
2023; 18 (8): e0289361
- **Activity of FoxP2-positive neurons correlates with begging behavior in a social tadpole.** *bioRxiv : the preprint server for biology*
Ludington, S. C., McKinney, J. E., Butler, J. M., O'Connell, L. A.
2023
 - **Home security cameras as a tool for behavior observations and science equity.** *bioRxiv : the preprint server for biology*
Goolsby, B. C., Fischer, M., Pareja-Mejia, D., Lewis, A. R., Raboissone, G., O'Connell, L. A.
2023
 - **Definition of a saxitoxin (STX) binding code enables discovery and characterization of the anuran saxiphilin family**
Zakrzewska, S., Chen, Z., Hajare, H. S., Alvarez-Buylla, A., Abderemane-Ali, F., Bogan, M., Ramirez, D., O'Connell, L. A., Du Bois, J., Minor, D. L.
CELL PRESS.2023: 164A
 - **Definition of a saxitoxin (STX) binding code enables discovery and characterization of the anuran saxiphilin family.** *Biophysical journal*
Zakrzewska, S., Chen, Z., Hajare, H. S., Alvarez-Buylla, A., Abderemane-Ali, F., Bogan, M., Ramirez, D., O'Connell, L. A., Du Bois, J., Minor, D. L.
2023; 122 (3S1): 164a
 - **Albino Xenopus laevis tadpoles prefer dark environments compared to wild type.** *microPublication biology*
Adebogun, G. T., Bachmann, A. E., Callan, A. A., Khan, U., Lewis, A. R., Pollock, A. C., Alfonso, S. A., Arango Sumano, D., Bhatt, D. A., Cullen, A. B., Hajian, C. M., Huang, W., Jaeger, et al
2023; 2023
 - **Argentine ant extract induces an osm-9 dependent chemotaxis response in C. elegans.** *microPublication biology*
Alfonso, S. A., Arango Sumano, D., Bhatt, D. A., Cullen, A. B., Hajian, C. M., Huang, W., Jaeger, E. L., Li, E., Maske, A. K., Offenberg, E. G., Ta, V., Whiting, W. W., Adebogun, et al
2023; 2023
 - **Glassfrogs conceal blood in their liver to maintain transparency.** *Science (New York, N.Y.)*
Taboada, C., Delia, J., Chen, M., Ma, C., Peng, X., Zhu, X., Jiang, L., Vu, T., Zhou, Q., Yao, J., O'Connell, L., Johnsen, S.
2022; 378 (6626): 1315-1320
 - **Poison frog dietary preference depends on prey type and alkaloid load.** *PloS one*
Moskowitz, N. A., D'Agui, R., Alvarez-Buylla, A., Fiocca, K., O'Connell, L. A.
2022; 17 (12): e0276331
 - **Contrasting parental roles shape sex differences in poison frog space use but not navigational performance.** *eLife*
Pasukonis, A., Serrano-Rojas, S. J., Fischer, M., Loretto, M., Shaykevich, D. A., Rojas, B., Ringler, M., Roland, A. B., Marcillo-Lara, A., Ringler, E., Rodriguez, C., Coloma, L. A., O'Connell, et al
2022; 11
 - **Definition of a saxitoxin (STX) binding code enables discovery and characterization of the anuran saxiphilin family.** *Proceedings of the National Academy of Sciences of the United States of America*
Chen, Z., Zakrzewska, S., Hajare, H. S., Alvarez-Buylla, A., Abderemane-Ali, F., Bogan, M., Ramirez, D., O'Connell, L. A., Du Bois, J., Minor, D. L.
2022; 119 (44): e2210114119
 - **Noninvasive Detection of Chemical Defenses in Poison Frogs Using the MasSpec Pen.** *ACS measurement science Au*
Krieger, A. C., Povilaitis, S. C., Gowda, P., O'Connell, L. A., Eberlin, L. S.
2022; 2 (5): 475-484
 - **Evidence that toxin resistance in poison birds and frogs is not rooted in sodium channel mutations and may rely on "toxin sponge" proteins**
Abderemane-Ali, F., Rossen, N. D., Kobiela, M. E., Craig, R. Z., Garrison, C. E., Chen, Z., Colleran, C. M., O'Connell, L. A., Du Bois, J., Dumbacher, J. P., Minor, D. L.
CELL PRESS.2022: 25
 - **Aggressive but not reproductive boldness in male green anole lizards correlates with baseline vasopressin activity.** *Hormones and behavior*
Kabelik, D., Julien, A. R., Waddell, B. R., Batschelet, M. A., O'Connell, L. A.
1800; 140: 105109
 - **Molecular physiology of pumiliotoxin sequestration in a poison frog.** *PloS one*

- Alvarez-Buylla, A., Payne, C. Y., Vidoudez, C., Trauger, S. A., O'Connell, L. A.
2022; 17 (3): e0264540
- **Long distance homing in the cane toad (*Rhinella marina*) in its native range.** *The Journal of experimental biology*
Shaykevich, D. A., Pasukonis, A., O'Connell, L. A.
1800
 - **Evidence that toxin resistance in poison birds and frogs is not rooted in sodium channel mutations and may rely on "toxin sponge" proteins.** *The Journal of general physiology*
Abderemane-Ali, F., Rossen, N. D., Kobiela, M. E., Craig, R. A., Garrison, C. E., Chen, Z., Colleran, C. M., O'Connell, L. A., Du Bois, J., Dumbacher, J. P., Minor, D. L.
2021; 153 (9)
 - **Evolutionary insights into sexual behavior from whiptail lizards.** *Journal of experimental zoology. Part A, Ecological and integrative physiology*
O'Connell, L. A., Crews, D.
2021
 - **Rapid toxin sequestration modifies poison frog physiology.** *The Journal of experimental biology*
O'Connell, L. A., LS50: Integrated Science Laboratory Course, O'Connell, J. D., Paulo, J. A., Trauger, S. A., Gygi, S. P., Murray, A. W.
2021
 - **The Parental Dilemma: How Evolution of Diverse Strategies for Infant Care Informs Social Behavior Circuits.** *Frontiers in neural circuits*
Autry, A. E., O'Connell, L. A.
2021; 15: 734474
 - **Social boldness correlates with brain gene expression in male green anoles.** *Hormones and behavior*
Kabelik, D., Julien, A. R., Ramirez, D., O'Connell, L. A.
2021; 133: 105007
 - **The skin microbiome facilitates adaptive tetrodotoxin production in poisonous newts.** *eLife*
Vaelli, P. M., Theis, K. R., Williams, J. E., O'Connell, L. A., Foster, J. A., Eisthen, H. L.
2020; 9
 - **The plant terpenoid carvone is a chemotaxis repellent for *C. elegans*.** *microPublication. Biology*
Ellington, C., Hayden, A., LaGrange, Z., Luccioni, M., Osman, M., Ramalan, L., Vogt, M., Guha, S., Goodman, M., O'Connell, L.
2020; 2020
 - **Multi-glomerular projection of single olfactory receptor neurons is conserved among amphibians.** *The Journal of comparative neurology*
Weiss, L., Jungblut, L. D., Pozzi, A. G., Zielinski, B. S., O'Connell, L. A., Hassenkloover, T., Manzini, I.
2020
 - **Multiglomerular projections of single olfactory receptor neurons are a conserved and distinct feature of the amphibian olfactory system**
Weiss, L., Jungblut, L. D., Pozzi, A. G., Zielinski, B. S., O'Connell, L. A., Hassenkloever, T., Manzini, I.
OXFORD UNIV PRESS.2020: 122
 - **Studying convergent evolution to relate genotype to behavioral phenotype.** *The Journal of experimental biology*
Gallant, J. R., O'Connell, L. A.
2020; 223 (Pt Suppl 1)
 - **Prospects for sociogenomics in avian cooperative breeding and parental care.** *Current zoology*
Termignoni-Garcia, F. n., Louder, M. I., Balakrishnan, C. N., O'Connell, L. n., Edwards, S. V.
2020; 66 (3): 293–306
 - **Neural correlates of winning and losing fights in poison frog tadpoles.** *Physiology & behavior*
Fischer, E. K., Alvarez, H. n., Lagerstrom, K. M., McKinney, J. E., Petrillo, R. n., Ellis, G. n., O'Connell, L. A.
2020: 112973
 - **Gene expression correlates of social evolution in coral reef butterflyfishes.** *Proceedings. Biological sciences*
Nowicki, J. P., Pratchett, M. S., Walker, S. P., Coker, D. J., O'Connell, L. A.
2020; 287 (1929): 20200239

- **Conservation of Glomerular Organization in the Main Olfactory Bulb of Anuran Larvae.** *Frontiers in neuroanatomy*
Weiss, L., Jungblut, L. D., Pozzi, A. G., O'Connell, L. A., Hassenklover, T., Manzini, I.
2020; 14: 44
- **Frank Beach Award Winner: Lessons from poison frogs on ecological drivers of behavioral diversification.** *Hormones and behavior*
O'Connell, L. A.
2020: 104869
- **Land use impacts poison frog chemical defenses through changes in leaf litter ant communities** *NEOTROPICAL BIODIVERSITY*
Moskowitz, N. A., Dorritie, B., Fay, T., Nieves, O. C., Vidoudez, C., Fischer, E. K., Trauger, S. A., Coloma, L. A., Donoso, D. A., O'Connell, L. A., Cambridge Rindge Latin 2017 Biol, Masconom 2017 Biotechnology Clas
2020; 6 (1)
- **Hormonal and neural correlates of care in active versus observing poison frog parents.** *Hormones and behavior*
Fischer, E. K., O'Connell, L. A.
2020: 104696
- **Bringing immersive science to undergraduate laboratory courses using CRISPR gene knockouts in frogs and butterflies.** *The Journal of experimental biology*
Martin, A. n., Wolcott, N. S., O'Connell, L. A.
2020; 223 (Pt Suppl 1)
- **Mechanisms of Convergent Egg Provisioning in Poison Frogs.** *Current biology : CB*
Fischer, E. K., Roland, A. B., Moskowitz, N. A., Vidoudez, C., Ranaivorazo, N., Tapia, E. E., Trauger, S. A., Vences, M., Coloma, L. A., O'Connell, L. A.
2019
- **The neural basis of tadpole transport in poison frogs.** *Proceedings. Biological sciences*
Fischer, E. K., Roland, A. B., Moskowitz, N. A., Tapia, E. E., Summers, K., Coloma, L. A., O'Connell, L. A.
2019; 286 (1907): 20191084
- **Molecular physiology of chemical defenses in a poison frog.** *The Journal of experimental biology*
Caty, S. N., Alvarez-Buylla, A., Byrd, G. D., Vidoudez, C., Roland, A. B., Tapia, E. E., Budnik, B., Trauger, S. A., Coloma, L. A., O'Connell, L. A.
2019
- **Understanding the Loss of Maternal Care in Avian Brood Parasites Using Preoptic Area Transcriptome Comparisons in Brood Parasitic and Non-parasitic Blackbirds** *G3-GENES GENOMES GENETICS*
Lynch, K. S., O'Connell, L. A., Louder, M. M., Balakrishnan, C. N., Fischer, E. K.
2019; 9 (4): 1075–84
- **Understanding the Loss of Maternal Care in Avian Brood Parasites Using Preoptic Area Transcriptome Comparisons in Brood Parasitic and Non-parasitic Blackbirds.** *G3 (Bethesda, Md.)*
Lynch, K. S., O'Connell, L. A., Louder, M. I., Balakrishnan, C. N., Fischer, E. K.
2019
- **Conserved transcriptomic profiles underpin monogamy across vertebrates** *PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF THE UNITED STATES OF AMERICA*
Young, R. L., Ferkin, M. H., Ockendon-Powell, N. F., Orr, V. N., Phelps, S. M., Pogany, A., Richards-Zawacki, C. L., Summers, K., Szekely, T., Trainor, B. C., Urrutia, A. O., Zachar, G., O'Connell, et al
2019; 116 (4): 1331–36
- **Conserved transcriptomic profiles underpin monogamy across vertebrates.** *Proceedings of the National Academy of Sciences of the United States of America*
Young, R. L., Ferkin, M. H., Ockendon-Powell, N. F., Orr, V. N., Phelps, S. M., Pogany, A., Richards-Zawacki, C. L., Summers, K., Szekely, T., Trainor, B. C., Urrutia, A. O., Zachar, G., O'Connell, et al
2019
- **Evolution of affiliation: patterns of convergence from genomes to behaviour.** *Philosophical transactions of the Royal Society of London. Series B, Biological sciences*
Fischer, E. K., Nowicki, J. P., O'Connell, L. A.
2019; 374 (1777): 20180242
- **Diversity within diversity: Parasite species richness in poison frogs assessed by transcriptomics** *MOLECULAR PHYLOGENETICS AND EVOLUTION*

Santos, J. C., Tarvin, R. D., O'Connell, L. A., Blackburn, D. C., Coloma, L. A.
2018; 125: 40–50

● **Protection from UV light is an evolutionarily conserved feature of the haematopoietic niche** *NATURE*

Kapp, F. G., Perlin, J. R., Hagedorn, E. J., Gansner, J. M., Schwarz, D. E., O'Connell, L. A., Johnson, N. S., Amemiya, C., Fisher, D. E., Woelfle, U., Trompouki, E., Niemeyer, C. M., Driever, et al
2018; 558 (7710): 445–+

● **Circuit Architecture Underlying Distinct Components of Parental Care** *TRENDS IN NEUROSCIENCES*

Fischer, E. K., O'Connell, L. A.
2018; 41 (6): 334–36

● **Variation in social systems within Chaetodon butterflyfishes, with special reference to pair bonding** *PLOS ONE*

Nowicki, J. P., O'Connell, L. A., Cowman, P. F., Walker, S. W., Coker, D. J., Pratchett, M. S.
2018; 13 (4): e0194465

● **Seasonal changes in diet and chemical defense in the Climbing Mantella frog (*Mantella laevigata*)**. *PloS one*

Moskowitz, N. A., Roland, A. B., Fischer, E. K., Ranaivorazo, N., Vidoudez, C., Aguilar, M. T., Caldera, S. M., Chea, J., Cristus, M. G., Crowdus, J. P., DeMessie, B., desJardins-Park, C. R., Effenberger, et al
2018; 13 (12): e0207940

● **Y Radiation of the polymorphic Little Devil poison frog (*Oophaga sylvatica*) in Ecuador** *ECOLOGY AND EVOLUTION*

Roland, A. B., Santos, J. C., Carriker, B. C., Caty, S. N., Tapia, E. E., Coloma, L. A., O'Connell, L. A.
2017; 7 (22): 9750–62

● **Interacting amino acid replacements allow poison frogs to evolve epibatidine resistance** *SCIENCE*

Tarvin, R. D., Borghese, C. M., Sachs, W., Santos, J. C., Lu, Y., O'Connell, L. A., Cannatella, D. C., Harris, R., Zakon, H. H.
2017; 357 (6357): 1261–65

● **Developmental morphology of granular skin glands in pre-metamorphic egg-eating poison frogs** *ZOOMORPHOLOGY*

Stynoski, J. L., O'Connell, L. A.
2017; 136 (2): 219–24

● **Modification of feeding circuits in the evolution of social behavior** *JOURNAL OF EXPERIMENTAL BIOLOGY*

Fischer, E. K., O'Connell, L. A.
2017; 220 (1): 92–102

● **Ant and Mite Diversity Drives Toxin Variation in the Little Devil Poison Frog** *JOURNAL OF CHEMICAL ECOLOGY*

McGugan, J. R., Byrd, G. D., Roland, A. B., Caty, S. N., Kabir, N., Tapia, E. E., Trauger, S. A., Coloma, L. A., O'Connell, L. A.
2016; 42 (6): 537–51

● **Convergent Substitutions in a Sodium Channel Suggest Multiple Origins of Toxin Resistance in Poison Frogs** *MOLECULAR BIOLOGY AND EVOLUTION*

Tarvin, R. D., Santos, J. C., O'Connell, L. A., Zakon, H. H., Cannatella, D. C.
2016; 33 (4): 1068–81

● **Lenomyrmex hoelldobleri: a new ant species discovered in the stomach of the dendrobatid poison frog, *Oophaga sylvatica* (Funkhouser)** *ZOOKEYS*

Rabeling, C., Sosa-Calvo, J., O'Connell, L. A., Coloma, L. A., Fernandez, F.
2016; 79–95

● **Poison frogs as a model system for studying the neurobiology of parental care** *CURRENT OPINION IN BEHAVIORAL SCIENCES*

Roland, A. B., O'Connell, L. A.
2015; 6: 76–81

● **Social odors conveying dominance and reproductive information induce rapid physiological and neuromolecular changes in a cichlid fish** *BMC GENOMICS*

Simoes, J. M., Barata, E. N., Harris, R. M., O'Connell, L. A., Hofmann, H. A., Oliveira, R. F.
2015; 16: 114

● **Neural control of maternal and paternal behaviors** *SCIENCE*

Dulac, C., O'Connell, L. A., Wu, Z.
2014; 345 (6198): 765–70

- **Evolutionary Development of Neural Systems in Vertebrates and Beyond** *JOURNAL OF NEUROGENETICS*
O'Connell, L. A.
2013; 27 (3): 69–85
- **Sex differences and similarities in the neuroendocrine regulation of social behavior in an African cichlid fish** *HORMONES AND BEHAVIOR*
O'Connell, L. A., Ding, J. H., Hofmann, H. A.
2013; 64 (3): 468–76
- **Prostaglandin F2 alpha facilitates female mating behavior based on male performance** *BEHAVIORAL ECOLOGY AND SOCIOBIOLOGY*
Kidd, M. R., Dijkstra, P. D., Alcott, C., Lavee, D., Ma, J., O'Connell, L. A., Hofmann, H. A.
2013; 67 (8): 1307–15
- **Neuroendocrine Mechanisms Underlying Sensory Integration of Social Signals** *JOURNAL OF NEUROENDOCRINOLOGY*
O'Connell, L. A., Rigney, M. M., Dykstra, D. W., Hofmann, H. A.
2013; 25 (7): 644–54
- **Aromatase regulates aggression in the African cichlid fish *Astatotilapia burtoni*.** *Physiology & behavior*
Huffman, L. S., O'Connell, L. A., Hofmann, H. A.
2013; 112-113: 77-83
- **Female preference for males depends on reproductive physiology in the African cichlid fish *Astatotilapia burtoni*** *GENERAL AND COMPARATIVE ENDOCRINOLOGY*
Kidd, M. R., O'Connell, L. A., Kidd, C. E., Chen, C. W., Fontenot, M. R., Williams, S. J., Hofmann, H. A.
2013; 180: 56–63
- **Neurochemical profiling of dopaminergic neurons in the forebrain of a cichlid fish, *Astatotilapia burtoni*** *JOURNAL OF CHEMICAL NEUROANATOMY*
O'Connell, L. A., Fontenot, M. R., Hofmann, H. A.
2013; 47: 106–15
- **Androgens coordinate neurotransmitter-related gene expression in male whiptail lizards** *GENES BRAIN AND BEHAVIOR*
O'Connell, L. A., Mitchell, M. M., Hofmann, H. A., Crews, D.
2012; 11 (7): 813–18
- **Distribution of nonapeptide systems in the forebrain of an African cichlid fish, *Astatotilapia burtoni*** *JOURNAL OF CHEMICAL NEUROANATOMY*
Huffman, L. S., O'Connell, L. A., Kenkel, C. D., Kline, R. J., Khan, I. A., Hofmann, H. A.
2012; 44 (2): 86-97
- **Evolution of a Vertebrate Social Decision-Making Network** *SCIENCE*
O'Connell, L. A., Hofmann, H. A.
2012; 336 (6085): 1154–57
- **Isotocin regulates paternal care in a monogamous cichlid fish** *HORMONES AND BEHAVIOR*
O'Connell, L. A., Matthews, B. J., Hofmann, H. A.
2012; 61 (5): 725–33
- **Rising StARs: Behavioral, hormonal, and molecular responses to social challenge and opportunity** *HORMONES AND BEHAVIOR*
Huffman, L. S., Mitchell, M. M., O'Connell, L. A., Hofmann, H. A.
2012; 61 (4): 631-641
- **Social Status Predicts How Sex Steroid Receptors Regulate Complex Behavior across Levels of Biological Organization** *ENDOCRINOLOGY*
O'Connell, L. A., Hofmann, H. A.
2012; 153 (3): 1341–51
- **The Vertebrate mesolimbic reward system and social behavior network: A comparative synthesis** *JOURNAL OF COMPARATIVE NEUROLOGY*
O'Connell, L. A., Hofmann, H. A.
2011; 519 (18): 3599–3639
- **The distribution of an AVT V1a receptor in the brain of a sex changing fish, *Epinephelus adscensionis*** *JOURNAL OF CHEMICAL NEUROANATOMY*
Kline, R. J., O'Connell, L. A., Hofmann, H. A., Holt, G., Khan, I. A.
2011; 42 (1): 72–88

- **Genes, hormones, and circuits: An integrative approach to study the evolution of social behavior** *FRONTIERS IN NEUROENDOCRINOLOGY*
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