

Curriculum Vitae

Ryan L. Earley

Department of Biological Sciences

University of Alabama

Contact Information

Department of Biological Sciences
300 Hackberry Lane, Box 870344, Tuscaloosa, AL 35487

Phone: 205-348-1827
E-mail: rlearley@ua.edu

Fax: 205-348-1786
Web Page: <http://rlearley.people.ua.edu>

Education

1997–2002

- **Ph.D. in Biology**, University of Louisville, GPA 4.0 of 4.0 (August 1997-May 2002; advisor: Dr. Lee Alan Dugatkin).
- **Masters in Biology**, University of Louisville, GPA 4.0 of 4.0 (degree awarded May 2001; advisor: Dr. Lee Alan Dugatkin).

1993–1997

- **Bachelor of Science in Biology** with Honors (cum laude), Syracuse University, Department of Biology. GPA 3.6 of 4.0 (August 1993-May 1997; advisors: Dr. Larry Wolf & Dr. Yuying Hsu).
- **School for International Training**, Wildlife Conservation and Ecology Program, *Program Location*: Arusha, Tanzania, East Africa, GPA 3.6 of 4.0 (January 1996-May 1996; advisor: Saba Douglas-Hamilton).

Professional Experience

2008 – *present*

- **Associate Professor**, Department of Biological Sciences, University of Alabama (2014-)
- **Assistant Professor**, Department of Biological Sciences, University of Alabama (2008-2014)
- **Affiliated Faculty**, Evolutionary Studies Minor, Neuroscience Minor, Alabama Water Institute, Alabama Life Research Institute
- **Adjunct Faculty**: Department of Biology, California State University Fresno
- **Graduate Faculty**: Valdosta State University, Texas State University, Bowling Green State University, University of Massachusetts, University of California Davis, Colorado State University

2006–2008

- **Assistant Professor**, Department of Biology, California State University Fresno
- **Interim Program Director**, NIH MBRS-RISE, Cal State Fresno (September 2007-July 2008)

2002-2006

- **NIH Ruth L. Kirschstein Postdoctoral Fellow**, Department of Biology, Georgia State University, Atlanta, GA (June 2004-August 2006; sponsor: Dr. Matthew Grober)
- **Visiting Assistant Professor of Biology** at Morehouse College – Atlanta, GA (September 2005-August 2006)
- **NSF Center for Behavioral Neuroscience Postdoctoral Fellow**, Atlanta, GA (June 2002-June 2004; sponsor: Dr. Matthew Grober).

Research Interests

- Endocrine and metabolic correlates of performance in aggressive contests.
- Neuroendocrine mechanisms of experience-dependent changes in behavior.
- Assessment strategies employed by animals during aggressive contests.
- Social eavesdropping, audience effects, and winner-loser effects.
- Adaptive value of carotenoid-based color and mechanisms underlying flexible expression
- Developmental plasticity and adult phenotypic flexibility of life history, endocrine, and behavioral traits.
- Gene x environment interactions and the evolution of integrated phenotypes.
- Social, endocrine, and genomic mechanisms of environmental sex determination and sex change.
- Seasonal and diurnal fluctuations in steroid hormone concentrations.
- Parasites as drivers of behavioral variation; evolutionary implications
- Non-invasive hormone sampling in fishes and amphibians.

Field Experience & Activities

2011 – present: *Belize mangrove ecosystems* (study organism: mangrove rivulus, *Kryptolebias marmoratus*). Localities: Long Caye (6 sites), Northern Caye (2 sites), Sandbore Caye (1 site), Belize City. Population surveys; field collections (capture, fin clip, return) for population genetics; field collections (take) for laboratory stock; manipulating selection regimes in the wild; field endocrinology and metabolism; field experimentation on aggression and emersion behavior; assessment of ecological parameters (temperature, salinity, dissolved oxygen, tidal flux, depth, canopy cover, crab burrow densities, heterospecific competitor densities).

2009 – present: *Florida mangrove ecosystems* (study organism: mangrove rivulus, *Kryptolebias marmoratus*). Localities: 20+ sites on the eastern and western coasts and in the Florida Keys. Same activities as above (Belize mangrove ecosystems) but at these sites, we run transects and collect water, sediment, invertebrate, and fish samples to evaluate bioaccumulation of endocrine disrupting compounds. Transects also are erected to explore genetic similarity x distance relationships (dispersal).

2009 – present: Lake Xiloa, Nicaragua (study organism: convict cichlid fish, *Amatitlania siquia*). SCUBA-based research. Field observations of convict cichlid behavior; erecting vertical and horizontal transects; quantifying competition and predation pressure, food availability, temperature at various depths, turbidity; nest excavation and underwater capture of cichlids and eleotrid predators (night dives).

2005 – 2006: USC Wrigley Institute for Environmental Studies, Santa Catalina Island, CA (study organism: bluebanded goby, *Lythrypnus dalli*). SCUBA-based research. Field observations and manipulations of bluebanded goby social groups; animal collections for on-land experiments in marine flow through tanks.

2004: Flint River Watershed, GA: sampling blood from cottonmouths (*Agkistrodon piscivorous*) to assess seasonal hormone profiles; assistant to Sean Graham.

1996: Zanzibar, East Africa: distribution surveys and population assessment in mangrove forests; laying transects; identification of seven mangrove tree species at various life history stages; work with local villages and the Forestry Commission to determine best plans of action for mangrove cutting regimes.

1996: Tanzania, East Africa: population ecology and conservation of large mammals; primarily behavioral observations.

Professional Societies

Current Memberships

- American Society for Naturalists (4/2011 – present)
- Fisheries Society of the British Isles (2/2010 – present)
- Society for Integrative and Comparative Biology (9/2007-present)
- Full member, Sigma Xi, The Scientific Research Society (3/2006-present)
- Divers Alert Network (12/2004 – present)
- Society for the Study of Evolution (6/2014 – present)

Past Memberships

- Animal Behavior Society (1998-2010)
- Society for Behavioral Neuroendocrinology (2001-2006)
- International Society of Behavioral Ecology (2000-2004)
- Georgia Citizens for the Integrity of Science Education (2004-2008)
- Pacific Coast Cichlid Association (2007 – 2009)

Peer-Reviewed Publications, Books & Book Chapters

In preparation (*manuscript draft available*)

(144) Graham MA, Cooney BN, Baker JA, **Earley RL** & Foster SA (201X). Evolution of maternal effects of threespine stickleback fish in divergent social environments. Prepared for *Animal Behaviour*.

(143) Li CY, Kueltz D, Ward AK & **Earley RL** (201X). Social experience alters different types of learning abilities controlled by distinct brain nuclei. Prepared for *Proceedings of the National Academy of Sciences USA*.

(142) **Earley RL**, Garcia MJ & Wilson AJ (201X). Does G predict among-population divergence of life histories in the selfing mangrove killifish, *Kryptolebias marmoratus*? Prepared for *Evolution*.

(141) Kolluru GR, Akky YJ, Banh J, Ore M, Weissman A & **Earley RL** (201X). Aggression, boldness and their phenotypic correlates in females of a poeciliid fish. Prepared for *Physiology & Behavior*.

- (140) Garcia MJ, Li CY & **Earley RL** (201X). More than the next fight: new perspectives on when and why experience effects are adaptive. Prepared for *Behavioral Ecology*.
- (139) Kernahan N, Jones R, Anderson C, Lynn C & **Earley RL** (201X). Does female color elicit aggression in convict cichlids? Prepared for *Ethology*.
- (138) Li CY, Waits A & **Earley RL** (201X). High temperature drives the expression of androgenic enzymes in the gonad of hermaphroditic mangrove rivulus fish: implications for sex change. Prepared for *Functional Ecology*.
- (137) Miller GCL, Marson KM, Styga JM & **Earley RL** (201X). Do wild mangrove rivulus jettison from the water in response to predator-associated cues? Prepared for *Behaviour*.
- (136) Fuller A & **Earley RL** (201X). Heterospecific selection on sexual signals. Prepared for *Trends in Ecology and Evolution*.
- (135) de Bournonville C, Gray JC, Balthazart J, Cornil CA & **Earley RL** (201X). Aromatase activity in the brain and gonads of mangrove rivulus (*Kryptolebias marmoratus*): effects of temperature and differences between lineages. Prepared for *Proceedings of the Royal Society of London*.
- (134) Gresham J, Johnson LL, Hanninen AF, Davis AG, Wong SC, Taylor DS, Weinersmith KL & **Earley RL** (201X). Hormonal and reproductive flexibility in variable environments: a test with the mangrove rivulus (*Kryptolebias marmoratus*). Prepared for *Functional Ecology*.
- (133) Sevene-Adams P, Corbitt C, Dugatkin LA & **Earley RL** (201X). Local adaptation of the stress response in guppies (*Poecilia reticulata*) from areas of high- and low-predation. Prepared for *Biology Letters*.
- (132) Speares Noel P, Mendonca MT, **Earley RL** & Johnston CE (201X). Acoustic vocalizations as social cues: hormone modulation in response to vocalization playbacks. Prepared for *Hormones and Behavior*.
- (131) Malloy KH, **Earley RL** & Langkilde T (201X). Evaluating stress mediation of predator-induced defenses in Eastern newts (*Notophthalmus viridescens*). Prepared for *Canadian Journal of Zoology*.
- (130) Fuller A, Sakrejda K, Burrows R & **Earley RL** (201X). Interspecific assessment of sexual signals: can heterospecifics choose the best hosts? Prepared for *Proceedings of the Royal Society of London*.
- (129) Johnson EL & **Earley RL** (2018). Maintaining behavior in a changing world. Prepared for *Animal Behaviour*.

2020 - submitted

- (128) Assis BA, Avery JD, Tylan C, Engler HI, **Earley RL** & Langkilde T (2020). Honest signals and sexual conflict: female lizards carry unwanted condition-dependent traits. Submitted, *American Naturalist*.
- (127) **Earley RL**, Anderson CT, Moscicki MK, Norton BB, Brown AC & Clotfelter ED (2020). Carotenoid availability and trade-offs in female convict cichlids, a reverse sexually dichromatic fish. Submitted, *Environmental Biology of Fishes*.

- (126) Assis BA, Avery JD, **Earley RL** & Langkilde (2020). Are ornamented female lizards more successful in securing a limited thermal resource? Submitted, *Behavioral Ecology*.
- (125) Robertson CM, Giakas JA, Styga JM, Fortunato JA & Earley RL (2020). Phenotypic and genetic correlations between life history traits in a self-fertilizing hermaphroditic fish. Submitted, *Evolutionary Ecology*.
- (124) Stone T, **Earley RL**, Burnash S & Wingo J (2020). Menstrual cycle effects on cardiovascular drift and oxygen uptake during heat stress. Submitted, *Journal of Applied Physiology*.
- (123) Mathiron AGE, Dixneuf C, Mondy N, **Earley RL** & Goubault M (2019). Ecdysteroids affect female reproductive status and outcome of contests over hosts in the parasitoid wasp *Eupelmus vuilleti*. Submitted to *Proceedings of the Royal Society of London Series B*.
- (122) Johnson EL, Sisti AR, Murali S, Li CY & Earley RL (2020). Compound- and route-specific phenotypic effects of estrogenic endocrine disruptors. Submitted, *Aquatic Toxicology*.
- (121) Houslay TM, Earley RL, White SJ, Lammers W, Grimmer AJ, Travers LM, Johnson EL, Young AJ & Wilson AJ (2020). Genetic integration of the stress response. Available at bioRxiv.
- (120) Carion A, Markey A, Hétru J, Carpentier C, Suarez-Ulloa V, Denoël M, **Earley RL** & Silvestre F (2019). Behavior and gene expression in the brain of adult self-fertilizing mangrove rivulus fish (*Kryptolebias marmoratus*) after early life exposure to the neurotoxin beta-N-methylamino-L-alanine (BMAA). Submitted to *NeuroToxicology*.
- (119) Johnson EL, Houslay TM, Wilson AJ, Scarsella GE, Buckley CM & **Earley RL** (201X). Endocrine disruptors restructure behavioral (co)variance: implications for behavioral evolution. Submitted, *Animal Behaviour*.
- (118) Harrison NA, **Earley RL** & Salekin R (201X). Reconsidering the role of sex hormones in psychopathy development: estrogen and psychopathy among male justice-involved youth. Submitted, *Psychobiology*.
- (117) Tatarenkov A, **Earley RL**, Taylor DS, Davis WP & Avise JC (201X). Extensive hybridization but no introgression between divergent lineages in a quasi-clonal hermaphroditic fish: ramifications for species concepts and taxonomy. Accepted, *Journal of Evolutionary Biology*.
- (116) McCain SC, Kopelic S, Houslay TM, Wilson AJ, Lu H & **Earley RL** (2020). Choice consequences: salinity preferences and hatchling survival in the mangrove rivulus fish, *Kryptolebias marmoratus*. Accepted, *Journal of Experimental Biology*.
- (115) Gresham JD & **Earley RL** (2020). Sex change as a survival strategy. *Evolutionary Ecology* 34: 27-40.

2019

- (114) Turko AJ, Doherty JE, Yin-Liao I, Levesque K, Kruth P, Holden JM, **Earley RL** & Wright PA (2019). Prolonged survival out of water is linked to a slow pace of life in a selfing amphibious fish. *Journal of Experimental Biology* 222: jeb209270.

- (113) Flatt AA, Esco MR, Allen JR, Robinson JB, Bragg A, Keith CM, Fedewa MV & **Earley RL** (2019). Cardiac-autonomic responses to in-season training among Division-1 college football players. *Journal of Strength and Conditioning Research* (in press).
- (112) Styga JM, Pienaar J, Scott P & **Earley RL** (2019). Does body shape in *Fundulus* adapt to variation in habitat salinity? *Frontiers in Physiology - Aquatic Physiology* 10: 1400.
- (111) Goubault M, Exbrayat M & **Earley RL** (2019). Fixed or flexible? Winner/loser effects vary with habitat quality in a parasitoid wasp. *Behavioral Ecology and Sociobiology* 73: 74.
- (110) Snarr RL, Esco MR, Tolussa DV, Hallmark AV, Bishop P, Earley RL, Higginbotham J & Fedewa MV (2019). Agreement of lactate and electromyographical thresholds after an exercise bout. *Journal of Strength & Conditioning Research* 33: 3322-3331.
- (109) Styga JM, Houslay T, Wilson AJ & **Earley RL** (2019). Development of G: a test in an amphibious fish. *Heredity* 122: 696-708.
- (108) Ligocki I, **Earley RL** & Hamilton IM (2019). How individual and relative size affect participation in territorial defense and cortisol levels in a social fish. *Journal of Experimental Zoology Part A: Ecological Genetics & Physiology* 331: 217-226.
- (107) Mathiron A, **Earley RL** & Goubault M (2019). Juvenile hormone manipulation affects female reproductive status and aggressiveness in a non-social parasitoid wasp. *General and Comparative Endocrinology* 274: 80-86.
- (106) Marson KM, Taylor DS & **Earley RL** (2019). Cryptic male phenotypes in the mangrove rivulus fish, *Kryptolebias marmoratus*. *Biological Bulletin* 236: 13-28.
- (105) Fellous A, **Earley RL** & Silvestre F (2019). Identification and expression of mangrove rivulus (*Kryptolebias marmoratus*) histone deacetylase (Hdac) and lysine acetyltransferase (Kat) genes. *Gene* 69: 56-69.
- (104) Fellous A, **Earley RL** & Silvestre F (2019). The KMD/KMT gene families in the self-fertilizing mangrove rivulus fish, *Kryptolebias marmoratus*, suggest an implication of the histone methylation machinery in development and reproduction. *Gene* 687: 173-187.
- (103) Houslay TM, **Earley RL**, Young AJ & Wilson AJ (2019). Habituation and individual variation in the endocrine stress response in the Trinidadian guppy (*Poecilia reticulata*). *General & Comparative Endocrinology* 270: 113-122.
- 2018**
- (102) Li CY, Hofmann HA, Harris ML & **Earley RL** (2018). Real or fake? IEG expression patterns reveal the ability of the brain to discriminate different types of social stimuli. *Proceedings of the Royal Society of London* 285: 20181610.
- (101) Li CY, Jones R & **Earley RL** (2018). Contest decisions are governed by own size and opponent size category in mangrove rivulus fish, *Kryptolebias marmoratus*. *Animal Behaviour* 146: 97-103.

- (100) Graham MA, **Earley RL**, Baker JA, Foster SA (2018). Evolution of steroid hormones in reproductive females of the threespine stickleback fish. *General & Comparative Endocrinology* 268: 71-79.
- (99) Tatarenkov A, **Earley RL**, Taylor DS & Avise JC (2018). Natural hybridization between divergent lineages in a selfing hermaphroditic fish. *Biology Letters* 14: 20180118.
- (98) Fellous A, Labeid-Veydert T, Voisin A-S, Locrel M, **Earley RL** & Silvestre F (2018). Global DNA methylation patterns provide insight into epigenetic regulation in the self-fertilizing mangrove rivulus (*Kryptolebias marmoratus*). *Ecology & Evolution* 8: 6016-6033.
- (97) James WR, White S, Styga J, Marson KM & **Earley RL** (2018). Phenotypically plastic responses to predation threat in the mangrove rivulus fish (*Kryptolebias marmoratus*): behavior and morphology. *Evolutionary Ecology* 32: 453-468.
- (96) Styga JM, Houslay T, Wilson A & **Earley RL** (2018). Ontogeny of the morphology-performance axis in a jumping, self-fertilizing hermaphroditic fish (*Kryptolebias marmoratus*). *Journal of Experimental Zoology Part A: Ecological Genetics & Physiology* 327: 620-634.
- (95) Li CY, Huang SP, Fuller A, Garcia M, Hsu Y & **Earley RL** (2018). Sexual phenotype drives variation in endocrine responses to social challenge in a quasi-clonal animal. *Royal Society Open Science* 5: 180002.
- (94) Chouinard-Thuly LC, Leris I, Reddon A, **Earley RL** & Reader S (2018). Developmental plasticity of the stress response in female but not male guppies. *Royal Society Open Science* 5: 172268.
- (93) Turko AJ, Tatarenkov A, Currie S, **Earley RL**, Platek A, Taylor DS & Wright PA (2018). Emersion behavior underlies variation in aquatic respiratory function in the amphibious fish *Kryptolebias marmoratus*. *Journal of Experimental Biology* 221: jeb168039.
- (92) Kim DS, Chavera C, Gabor CR & **Earley RL** (2018). Individual variation in reactive scope for females of a livebearing fish, *Poecilia latipinna*, at different gestational stages. *General & Comparative Endocrinology* 261: 51-58.
- (91) Lins LFS, Trojahn S, Sockell A, Yee M-C, Tatarenkov A, Bustamante C, **Earley RL** & Kelley JL (2018). Whole-genome sequencing reveals heterozygosity in a preferentially self-fertilizing hermaphroditic vertebrate. *Genome (Special Issue on Ecological Genomics)* 61: 241-247.
- (90) Li CY, Curtis C & **Earley RL** (2018). Fighting your reflection: a new type of mirror test elicits behavior that more accurately predicts performance against live opponents. Nonreversing mirrors elicit behaviour that more accurately predicts performance against live opponents. *Animal Behaviour* 137: 95-105.
- (89) Scarsella GE, Gresham JD & **Earley RL** (2018). Relationships between externally sexually dimorphic characteristics and internal gonadal morphology in the sex-changing fish, *Kryptolebias marmoratus*. *Journal of Zoology* 305: 133-140.
- (88) Flatt AA, Esco MR, Allen JR, Robinson JB, **Earley RL**, Fedewa MV, Bragg A, Keith CM & Wingo JE (2017). Heart rate variability and training load in American college football players throughout spring camp. *Journal of Strength and Conditioning Research* 32: 3127-3134.

2017

- (87) Good C, Davidson J, **Earley RL**, Styga J & Summerfelt S (2017). The effects of ozonation on select waterborne steroid hormones in recirculation aquaculture systems containing sexually mature Atlantic salmon *Salmo salar*. *Aquatic Engineering* 79: 9-16.
- (86) Tatarenkov A, Lima SMQ, **Earley RL**, Berbel-Filho WM, Vermeulen F, Taylor DS, Marson K, Turner BJ & Avise JC (2017). Deep and concordant subdivisions in the self-fertilizing mangrove killifishes (*Kryptolebias*) revealed by nuclear and mtDNA markers. *Biological Journal of the Linnean Society* 122: 558-578.
- (85) Lomax J, Carlson R, Wells J, Crawford P & **Earley RL** (2017). Factors affecting egg production in the selfing mangrove rivulus (*Kryptolebias marmoratus*). *Zoology* 122: 38-45.
- (84) Clotfelter ED, Johnson EM, Anderson C & **Earley RL** (2017). Evidence for male alternative reproductive tactics in convict cichlids (*Amatitlania siquia*) in Lake Xiloa, Nicaragua. *Environmental Biology of Fishes* 100: 655-662.
- (83) Hall EM, Brady SP, Mattheus N, **Earley RL**, Diamond M & Crespi EJ (2017). Physiological consequences of exposure to salinized roadside ponds on wood frog larvae and adults. *Biological Conservation* 209: 98-106.

2016

- (82) Voisin A-S, **Earley RL** & Silvestre F (2016). Delayed impacts of developmental exposure to ethinylestradiol in the self-fertilizing fish *Kryptolebias marmoratus*. *Aquatic Toxicology* 180: 247-257.
- (81) Martin LB, Ahn A, **Earley RL**, Ghalambor CK & Woods AH (2016). Integrative and Comparative Biology. *Integrative & Comparative Biology* 56: 755-757.
- (80) Kelley JL, Yee M-C, Quackenbush C, Brown AP, Richardson R, Tatarenkov A, Lee C, Levandowsky E, Shah M, Harkins T, Bustamante CD & **Earley RL** (2016). The genome of the self-fertilizing mangrove rivulus fish, *Kryptolebias marmoratus*: a model for studying phenotypic plasticity and physiological adaptations to extreme environments. *Genome Biology & Evolution* 8: 2145-2154.
- (79) Weinersmith KL & **Earley RL** (2016). Better with your parasites? Lessons from evolved dependence and conditionally helpful parasites for behavioural ecology. *Animal Behaviour* 118: 123-133.
- (78) Scarsella GE, Duque KS, Wong SC, Sivaraman B & **Earley RL** (2016). Hormonal responses to non-contact aggression in the convict cichlid fish. *Journal of Experimental Zoology Part A: Ecological Genetics & Physiology* 325: 219-230.
- (77) Anderson C, Jones R, Moscicki M, Clotfelter E & **Earley RL** (2016). Seeing orange: breeding convict cichlids exhibit more aggression towards more colorful intruders. *Behavioral Ecology and Sociobiology* 70: 647-657.

(76) Weinersmith KL, Hanninen AF, Sih A, McElreath R & **Earley RL** (2016). The relationship between handling time and cortisol release rates changes as a function of brain parasite densities in California killifish. *Journal of Fish Biology* 88: 1125-1142.

(75) Garcia MJ, Ferro JM, Mattox T, Kopelic S, Marson K, Jones R, Svendsen JC & **Earley RL** (2016). Sex differences in the costs and benefits of reproduction in the mangrove rivulus fish (*Kryptolebias marmoratus*). *Journal of Experimental Biology* 219: 988-997.

(74) Johnson EL, Weinersmith KL & **Earley RL** (2016). Changes in reproductive physiology of mangrove rivulus *Kryptolebias marmoratus* following exposure to environmentally relevant doses of ethinyl oestradiol. *Journal of Fish Biology* 88: 774-786.

2015

(73) Foster SA, Wund MA, Graham ME, **Earley RL** & Baker JA (2015). Iterative development and the scope for plasticity: insights from an adaptive radiation. *Heredity* 115: 335-348.

(72) Ligocki IY, **Earley RL**, Hellmann JK & Hamilton IM (2015). Variation in glucocorticoid levels in relation to direct and third-party interactions in a social fish. *Physiology & Behavior* 151: 386-394.

(71) Garcia MJ, Williams J, Sinderman B & **Earley RL** (2015). Ready for a fight? The physiological effects of detecting an opponent's pheromone cues prior to a contest. *Physiology & Behavior* 149: 1-7.

(70) Tatarenkov A, **Earley RL**, Taylor DS, Turner BJ & Avise JC (2015). Genetic subdivision and variation in selfing rates among Central American populations of the mangrove rivulus, *Kryptolebias marmoratus*. *Journal of Heredity* 106: 276-284.

(69) Wofford SJ, **Earley RL** & Moore PA (2015). Evidence for assessment disappears in mixed-sex contests of the crayfish, *Orconectes virilis*. *Behaviour* 152: 995-1018.

(68) Kolluru GR, Walz J, Hanninen AF, Downey K, Kalbach B, Gupta S & **Earley RL** (2015). Exploring the flexibility of behavior and hormones across light environment in guppies from low predation populations. *Behaviour* 152: 963-993.

(67) Boulton K, Couto E, Grimmer AJ, **Earley RL**, Canario A, Wilson AJ, Walling CA (2015). How integrated are behavioural and endocrine stress response traits? A repeated measures approach to testing the stress coping style model. *Ecology and Evolution* 5: 618-633.

(66) Anderson C, Wong SC, Fuller A, Zigelsky K & **Earley RL** (2015). Carotenoid-based coloration is associated with predation risk, competition, and breeding status in female convict cichlid fish (*Amatitlania siquia*) under field conditions. *Environmental Biology of Fishes* 98: 1005-1013.

2014

(65) Mesak F, Tatarenkov A, **Earley RL** & Avise JC (2014). Hundreds of SNPs versus dozens of SSRs: which dataset better characterizes natural clonal lineages in a self-fertilizing fish? *Frontiers in Ecology and Evolution* 2: 74.

- (64) Li CY, **Earley RL** Huang SP & Hsu Y (2014). Fighting experience alters brain androgen receptor expression dependent on testosterone status. *Proceedings of the Royal Society of London Series B* 281: 20141532.
- (63) Good C, Davidson J, **Earley RL**, Lee EA & Summerfelt S (2014). The impact of water exchange rate and biofiltration on circulating hormones in water recirculation aquaculture systems containing sexually maturing Atlantic salmon *Salmo salar*. *Journal of Aquaculture Research & Development*, 5: 5 (<http://dx.doi.org/10.4172/2155-9546.1000260>).
- (62) Hofmann HA, Beery AK, Couzin ID, Blumstein DT, **Earley RL**, Goodson JL, Hayes LD, Hurd PL, Lacey EA, Martins EP, Phelps SM, Solomon NG, Taborsky M, Young LJ & Rubenstein DR (2014). An evolutionary framework for studying mechanisms of social behavior. *Trends in Ecology & Evolution*, 29: 581-589.
- (61) Elwood RW, Stoilova V, McDonnell A, **Earley RL** & Arnott G (2014). Do mirrors reflect reality in agonistic encounters? A test of mutual cooperation in displays. *Animal Behaviour* 97: 63-67.
- (60) Hoss S, Garcia MJ, **Earley RL** & Clark RW (2014). Fine-scale hormonal patterns associated with parturition and maternal attendance of neonates in the cottonmouth, *Agkistrodon piscivorous*. *General & Comparative Endocrinology*, 208: 85-93.
- (59) Garcia MJ, Murphree J, Wilson J & **Earley RL** (2014). Mechanisms of decision-making during contests in green anole lizards: prior experience and assessment. *Animal Behaviour* 92: 45-54.
- (58) Mitchell DL, Fernandez AA, Garcia R, Paniker L, Lin K, Hanninen A, Zigelsky K, May M, Nuttall, M, Lo H, Person MD & **Earley RL** (2014). Acute exposure to ultraviolet-B radiation modulates sex steroid hormones and their receptors in the skin and may contribute to the gender-bias of melanoma. *Pigment Cell and Melanoma Research* 27: 408-417.
- (57) Jellen BC, Graham SP, **Earley RL** & Aldridge RD (2014). Oestrous in a secretive species: endogenous estradiol varies throughout the shed cycle and influences attractiveness in wild northern watersnakes (*Nerodia sipedon*). *Behaviour* 151: 403-419.

2013

- (56) **Earley RL** (2013) Instructor's Manual to accompany *Principles of Animal Behavior* (3rd Edition) by Lee Alan Dugatkin, W.W. Norton & Co. Published online (books.wwnorton.com). 229 pp.
- (55) **Earley RL** & Hsu Y (2013). Contest behaviour in fishes. In: *Animal Contests* (eds. I.C.W. Hardy & M. Briffa). Cambridge University Press, pp. 199-227.
- (54) **Earley RL**, Lee IH, Lu CK, Wong SC, Li CY & Hsu Y (2013). Winner and loser effects are modulated by hormonal states. *Frontiers in Zoology*, 10:6.

2012

- (53) Lorenzi V, **Earley RL** & Grober MS (2012). Differential responses of brain, gonad and muscle steroid levels to changes in social status and sex in a sequential and bidirectional hermaphroditic fish. *PLoS ONE* 7(12): e51158. doi:10.1371/journal.pone.0051158.
- (52) Boulton K, Sinderman B, Pearce MR, **Earley RL*** & Wilson AJ* (2012). He who dares only sometimes wins: physiological stress and contest behaviour in *Xiphophorus helleri*. *Behaviour* 149: 977-1002. *authors contributed equally
- (51) **Earley RL**, Hanninen AF, Fuller A, Garcia MJ & Lee EA (2012). Phenotypic plasticity and integration in the mangrove rivulus (*Kryptolebias marmoratus*). A prospectus. *Integrative & Comparative Biology* 52: 814-827.
- (50) Chang C, Li CY, **Earley RL** & Hsu Y (2012). Aggression and related traits: the impact of winning and losing and the role of hormones. *Integrative & Comparative Biology* 52: 801-813.
- (49) Kelley JL, Lee C, Yee MC, Levandowsky E, Shah M, Harkins T, **Earley RL** & Bustamante CD (2012). The promise of de novo genome assembly and population genetics of the fish *Kryptolebias marmoratus*. *Integrative & Comparative Biology* 52: 737-742.
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- (47) Archard GA, **Earley RL**, Hanninen AF & Braithwaite VA (2012). Correlated behaviour and stress physiology in fish exposed to different levels of predation pressure. *Functional Ecology* 26: 637-645.
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Book Reviews

(2) **Earley RL** (2006). Wee guppies pack an evolutionary punch. A book review of Anne E. Magurran's *Evolutionary Ecology: The Trinidadian Guppy* (Oxford University Press, New York, 206 p.). *Ecology*, 87: 2682-2683.

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Current Research Funding

Validating a non-invasive method for estimating abundance in threatened or cryptic marine animals. University of Alabama Office for Research & Economic Development - Small Grants Program (\$5,994). PI; awarded 12/19.

If you can't see it, it doesn't exist. Or does it? Validating a technique to estimate abundance in a vulnerable, highly enigmatic marine fish. College of Arts & Sciences Academy of Research, Scholarship & Creative Activity. (\$5,999). PI; awarded 12/19.

Randomized control study on the effect of animal-assisted activities on quality of life and stress levels of residents in nursing homes: a pilot study. College of Arts & Sciences Undergraduate Creativity and Research Academy (\$995.00). Student: Emma Harper; awarded 12/15/19.

Learning mechanisms underlying winner-loser effects. **College of Arts & Sciences Undergraduate Creativity and Research Academy** (\$996.80). Students: John Paul Williams Soriano & Anna McComas; awarded 3/8/20.

Validation of a new vertebrate translational model for studies of the development of stress responsivity. **Alabama Life Research Institute** (\$24,759). Co-PI with Dr. Andrea Glenn (Psychology); awarded 6/18/18.

Pending Research Funding

Past Research Funding

External

DISSERTATION RESEARCH: Mechanisms that maintain behavior in the face of environmental change - **National Science Foundation – DDIG** – awarded 2/15/17, 1 year, \$19,370. NSF-IOS-1701787.

Integrating mechanistic and evolutionary approaches to the study of social stress. **Biotechnology and Biological Sciences Research Council - United States Partnering Award** (£23,600, awarded 3/5/15, co-PI with Dr. Alastair Wilson, University of Exeter, UK).

Carotenoid trade-offs in a species with colorful females: environmental influences and fitness consequences. **National Science Foundation Behavioral Systems** (\$233,169), 3 years, awarded 5/10, co-PI with Dr. Ethan Clotfelter, Amherst College (NSF IOS-1051682).
+ \$5000 REU supplement awarded May 2, 2012

DISSERTATION RESEARCH: Local adaptation of the integrated phenotype: can life history and physiology mediate behavioral evolution? - **National Science Foundation – DDIG** – submitted 11/9/12, 1 year, \$18,866 (awarded August 2013; NSF IOS-1311347).

Do hormones drive metabolic and reproductive plasticity in tidal environments? A reaction norm approach in an amphibious fish. **National Science Foundation Graduate Research Fellowship** (awarded to Amanda Hanninen [Masters student, Earley lab], 6/1/2011; \$121,500).

*A behavioral approach to understanding population fragmentation of bluenose shiners (*Pteronotropis welaka*) in Alabama.* **Cooperative Endangered Species Conservation Fund, Section 6 Proposal** (awarded 6/2010), \$18,037.

Metabolic and endocrine plasticity in response to environmental stressors in the 'clonal' mangrove killifish. **Fisheries Society of the British Isles** (awarded 10/2010), \$8,000.

Exploring behavioral variability through neuroepigenetics. **Whitehall Foundation, Inc.** (Grants-in-Aid; awarded 12/3/2007), \$30,000.

Regulatory effects of stress on reproductive behavior. **National Institutes for Health, Ruth L. Kirschstein National Research Service Award** (2004-2006). \$145,272

A conundrum for sex-changing fish: how to achieve dominance and preserve future reproductive opportunity? **American Museum of Natural History, Lerner Gray Fund** (2004). \$1610

Internal

Dose-dependent and sex-specific effects of synthetic estrogens on reproductive function (Kryptolebias marmoratus). **College of Arts & Sciences Undergraduate Creativity and Research Academy** (\$750). Student: Nathaniel Hill; awarded 11/6/18.

Heart rate variability for reflecting psychophysiology recovery following physically and mentally stressful events. **University of Alabama Research Grants Committee – Level 3 Collaborative Project** (\$145,000). Co-PI with Dr. Michael Esco (Kinesiology), Dr. Philip Gable (Psychology), Dr. Philip Bishop (Kinesiology); awarded 1/16

Investigating Early Sex-Based Phenotypic Distinctions in the Sex-Changing Mangrove Rivulus Fish (Kryptolebias marmoratus). **College of Arts & Sciences Undergraduate Creativity and Research Academy** (\$686.20). Student: Lauren Robinet & Emma Fay; awarded 3/31/18.

How Developmental Stress Influences Physiology and Behavior in Adult Mangrove Rivulus Fish). **College of Arts & Sciences Undergraduate Creativity and Research Academy** (\$900). Student: Carlo Rodriguez; awarded 3/31/18.

How do social experiences sculpt the brain? **College of Arts & Sciences Academy of Research, Scholarship, and Creative Activity** (\$4,886, awarded 3/17, PI).

Temperature-dependent sex determination in mangrove rivulus fish. **College of Arts & Sciences Undergraduate Creativity and Research Academy** (\$700). Student: Mae Crumbley; awarded 10/26/17.

Investigating energetic content of male vs. hermaphrodite gonads in the sex-changing mangrove rivulus fish (Kryptolebias marmoratus). **College of Arts & Sciences Undergraduate Creativity and Research Academy** (\$525). Student: Jordan Tzabari, Alyssa Woltemath, Katy Marotto, Julianna Myrick; awarded 10/26/17.

Using Polymerase Chain Reaction and Agarose Gel Electrophoresis to Assess Outcrossing Events in the Mangrove Rivulus Fish (Kryptolebias marmoratus). **College of Arts & Sciences Undergraduate Creativity and Research Academy** (\$1000). Student: Justin Lomax & Rachel Carlson; awarded 3/16/16.

Salinity preferences in a fish that inhabits extreme environments. **College of Arts & Sciences Undergraduate Creativity and Research Academy** (\$700). Student: Sydney Kopelic; awarded 11/1/16.

Fate and fish: does maternal exposure to environmental contaminants affect the growth and development of offspring? **College of Arts & Sciences Undergraduate Creativity and Research Academy** (\$704.35). Student: Abigail Sisti; awarded 3/27/17.

Evolution of functional 'trade-offs' in a family of amphibious fish. **College of Arts & Sciences Undergraduate Creativity and Research Academy** (\$997). Student: Andrew Burks & Benjamin Greenberg; awarded 3/27/17.

Early life stress sculpts adult behavior and physiology – for better or worse? **University of Alabama Research Grants Committee** (\$4991, awarded 4/25/14, PI).

Detergents, contraceptives, and the "invisible" endocrine disruptors: are we jeopardizing our own mental health and reproduction? **College of Arts & Sciences Academy of Research, Scholarship, and Creative Activity** (\$3,450, awarded 3/14, PI).

Probing the genetic basis of behavioral and life history traits. **University of Alabama Research Grants Committee** (awarded 5/12), 2 years, \$6000, PI.

Can the environment power dramatic behavioral variation in clones? **University of Alabama Research Grants Committee** (awarded 5/2009), \$5000.

Integration in the Classroom: Transforming the way students think about biology. **University of Alabama, College of Arts & Sciences Teaching Grant** (awarded 6/2009), \$2000.

Receptor-mediated shifts in serotonin metabolism: implications for aggressive behavior. **California State University Program for Education and Research in Biotechnology**, Faculty-Student Collaborative Research Seed Grant Program (awarded 12/2007), \$15,000.

Exploring the neurophysiological control of appetite: insights into hyperphagia (overeating) in type-2 diabetic individuals. Provost Research Activity Award, California State University Fresno, coPI with Dr. Larry Riley (awarded 5/2007), \$40,000.

How can behavioral variation exist among genetically identical individuals? Provost Research, Scholarship & Creative Activities Award, California State University Fresno (awarded 5/2007), \$5,000.

Dominance status, stress, and the regulation of reproductive function. **Georgia State University Brains & Behavior Seed Grant**, coPI with Dr. Matthew Grober and Dr. Laura Carruth (2005), \$30,000.

The neuroendocrine correlates of dominance and subordination in convict cichlids. **Center for Behavioral Neuroscience Venture Grant**, co P.I. with Dr. Matthew Grober (2003). \$13,000.

Major Grants Submitted but not Funded

EDGE: The American Killifish Initiative. **National Science Foundation, Integrative Organismal Systems EDGE**, full proposal (Total: \$1,680,000), PI. Co-PIs: Dr. Eric Haag (University of Maryland), Dr. Kellee Siegfried (UMass-Boston), Dr. Mark Hahn (Woods Hole Oceanographic Institution), Dr. Joanna Kelley (Washington State University), submitted February 2019.

EDGE: The American Killifish Initiative. **National Science Foundation, Integrative Organismal Systems EDGE**, full proposal (Total: \$1,991,940; Earley subaward: \$381,778). Co-PI with Dr. Eric Haag

(University of Maryland), Dr. Kellee Siegfried (UMass-Boston), Dr. Mark Hahn (Woods Hole Oceanographic Institution), Dr. Joanna Kelley (Washington State University), submitted February 2018.

Probing the brain social decision-making network for genotype-dependent behavioral and proteomic responses to winning and losing. **National Science Foundation, Division of Integrative Organismal Systems/Animal Behavior.** Pre-proposal submitted January 2017. PI, invited full proposal submitted August 2017.

Identifying neurobiological substrates involved with experience-induced changes in aggressive behavior. **Harry Frank Guggenheim Foundation**, 1-year research grant, submitted August 2017 (\$39,968)

Social environments sculpt the brain: can fish provide insights into the neurobiology of autism spectrum disorder? **University of Alabama Innovation Fund**, 1-year research grant, submitted November 2017 (\$15,000)

Environmental drivers of spatial and temporal variation in mating strategy in a predominantly self-fertilizing fish. **National Geographic Committee for Research and Exploration**, 2-year research grant, pre-application accepted September 2016; full proposal submitted February 2017 (\$19,979).

Plasticity of protein expression networks in response to divergent social experiences. **Whitehall Foundation, Inc.**, 3-year research grant, letter of intent submitted April 2017.

Temperature-induced sexual plasticity: Genomic signatures and evidence for selection. **National Science Foundation, Division of Integrative Organismal Systems/Physiological & Structural Systems.** Pre-proposal submitted January 2017. Co-PI with Joanna Kelley.

Did vertebrate terrestrial locomotion get a jump start? Constraint, selection and macroevolutionary patterns. **National Science Foundation, Division of Environmental Biology/Evolutionary Genetics.** Pre-proposal submitted January 2017. PI with co-PI Jason Pienaar.

Why do males exist? Inbreeding, outbreeding, and biogeographical variation in the mating system of a selfing vertebrate. **National Science Foundation, Division of Environmental Biology/Evolutionary Ecology.** Pre-proposal submitted January 2017. PI with co-PI Andrei Tatarenkov.

Determining psychophysiological readiness and stress following physically and mentally challenging events using heart rate variability. **Department of Defense, Special Operations Command – Extramural Biomedical Research and Development Award.** Co-PI with Mike Esco, Philip Gable, Jonathan Wingo, Phillip Bishop, Randal Schumacker, Andrew Flatt., submitted July 2016.

Validation of a new vertebrate translational model for studies of the development of stress responsivity. **National Institutes for Health, R21.** Co-PI with Dr. Andrea Glenn (UA, Psychology), submitted, October 2016; \$275,000.

How the brain processes social victory and defeat: molecular and behavioral perspectives. **Harry F. Guggenheim Foundation**, 2 year research grant, submitted August 2016.

Genetic tools for the mangrove killifish, Kryptolebias marmoratus. **National Science Foundation, Integrative Organismal Systems EDGE**, full proposal. Co-PI with Dr. Eric Haag (University of Maryland), Dr. Matthew Harris (Harvard University), Dr. Joanna Kelley (Washington State University), submitted June 2016.

Thresholds for temperature-induced sexual plasticity: genomic signatures and evidence for selection. **National Science Foundation, Integrative Organismal Systems**, pre-proposal. Co-PI with Dr. Joanna Kelley (Washington State University), August 2016. ** invited for full proposal

Evolution of functional "trade-offs": has selection for high jumping performance compromised swimming performance in a family of killifish? **College of Arts & Sciences Academy of Research, Scholarship, and Creative Activity**, submitted October 2016.

Neural mechanisms guiding behavioral responses to social experience. **Whitehall Foundation, Inc.**, 3-year research grant, submitted letter of intent April 2016.

Experience-induced changes in social behavior network function: a proteomic analysis. **National Science Foundation, Integrative Organismal Systems**, pre-proposal. PI with Dr. Deitmar Kueltz (UC-Davis) and Dr. Hans Hofmann (UT-Austin) as Senior Personnel, January 2016.

Evolution and development of the morphology-performance axis: quantitative genetic and comparative perspectives. **National Science Foundation, Division of Environmental Biology**, pre-proposal. PI with Dr. Miriam Ashley-Ross (Wake Forest) as co-PI and Dr. Alice Gibb (N Arizona University) and Dr. Alastair Wilson (U Exeter) as Senior Personnel, January 2016.

Fish as projectiles: have prodigious jumping abilities evolved at the expense of swimming performance in an amphibious fish? **College of Arts & Sciences Academy of Research, Scholarship, and Creative Activity**, submitted February 2016.

Thresholds for temperature-induced sexual plasticity: genomic signatures and evidence for selection. **National Science Foundation, Integrative Organismal Systems**, pre-proposal. Co-PI with Dr. Joanna Kelley (Washington State University), August 2015. ***INVITED FULL PROPOSAL.

Sex change in sequential hermaphrodites: a simple assay for healthy post-adult aging in vertebrates. **National Institutes for Health, RO3**. Co-PI with Dr. Eric Haag (University of Maryland), June 2015.

Neural mechanisms underlying changes in aggressive behavior after social competition. **Harry F. Guggenheim Foundation Research Grant**, PI, submitted August 2015.

Fish as projectiles: have prodigious jumping abilities evolved at the expense of swimming performance in an amphibious fish? **College of Arts & Sciences Academy of Research, Scholarship, and Creative Activity**, submitted October 2015.

Neural mechanisms guiding behavioral responses to social experience. **Whitehall Foundation, Inc.**, 3-year research grant, submitted letter of intent April 2015 (not invited).

The evolution of maternal stress and its impact in an adaptive radiation. **National Science Foundation, Integrative Organismal Systems**, pre-proposal. Co-PI with Dr. Susan Foster & Dr. John Baker (Clark University), January 2015.

Environmental estrogens as agents of selection in natural systems: mechanisms, fitness, and the problem of mismatch. **National Science Foundation, Division of Environmental Biology**, pre-proposal. PI with Dr. Varenka Lorenzi (Cal State Long Beach) as co-PI. January 2015.

Genetic Influences on Sensitivity to Deviant Peers in the Development of Risk Factors Associated with Substance Use. **National Institutes for Health, R21 CEBRA** (\$250,000), 2 years. Co-PI with Dr. Andrea Glenn (UA, Psychology) and Dr. Joanna Kelley (Washington State University), August 2014.

Thresholds for temperature-induced sexual plasticity: genomic signatures and evidence for selection. **National Science Foundation, Integrative Organismal Systems**, pre-proposal. Co-PI with Dr. Joanna Kelley (Washington State University), January 2014. ** INVITED FULL PROPOSAL

Environmental estrogens as agents of selection in natural systems: mechanisms, fitness, and the problem of mismatch. **National Science Foundation, Division of Environmental Biology**, pre-proposal. PI, January 2014. ** INVITED FULL PROPOSAL

Evidence of selection on the stress response in sticklebacks: egg cortisol load and maternal effects. **National Science Foundation, Integrative Organismal Systems**, pre-proposal. Co-PI with Dr. John Baker, Dr. Susan Foster, and Dr. Neva Meyer (Clark University), January 2014.

DISSERTATION RESEARCH: Heterospecific selection for elaborate traits in the longear sunfish (Lepomis megalotis) - **National Science Foundation – DDIG** – submitted 11/6/13, 1 year, \$17,782.

University of Alabama Research Stimulation Grant; submitted December 2013 (co-PI with Dr. Andrea Glenn)

University of Alabama Research Stimulation Grant; submitted December 2013 (co-PI with Dr. Frederic Silvestre)

DISSERTATION RESEARCH: Heterospecific selection for elaborate traits in the longear sunfish (Lepomis megalotis). – **National Science Foundation – DDIG** – submitted 11/9/12, 1 year, \$19,047.

CAREER: Phenotypic plasticity and integration in a selfing vertebrate. **National Science Foundation – Physiological Systems (Organism-Environment Interactions)**, submitted 7/12, 5 years, \$1,088,515.

Neural mechanisms of behavioral plasticity. **Whitehall Foundation** (pre-proposal submitted, 1/12), 3 years. PI.

Neural mechanisms of behavioral plasticity. **University of Alabama – CARSCA** (\$7744.40), 1 year, submitted 2/12.

Using population genomics to investigate variation in male frequency across populations of a predominantly hermaphroditic species. **University of Alabama Research Stimulation Program** (submitted 1/12). 2 years, \$70,000, PI.

Coping with stress – how animals adapt to living in high predation environments. **National Science Foundation – Physiological & Structural Systems, Organism-Environment Interactions** (\$163,192), 3 years, submitted 7/11).

How does experience drive changes in aggression and social standing? Deciphering the nexus among genes, hormones, brain, and the social milieu. **University of Alabama – CARSCA** (\$9573.40), 1 year, submitted 10/11.

Adapting to life with predators: from corticoid receptors to behavioral phenotype. **National Science Foundation Behavioral Systems** (\$), 3 years, submitted 7/10 (co-PI with Dr. Victoria Braithwaite, Pennsylvania State University).

Phenotypic plasticity, flexibility, and integration: gene-environment interactions in a selfing vertebrate. **National Science Foundation CAREER Award** (\$820,413), 5 years, submitted 7/10

Phenotypic plasticity and behavioral syndromes across light environments: proximate influences on behavior in a model system. **National Science Foundation Behavioral Systems** (\$203,392), 3 years, submitted 7/10 (co-PI with Dr. Gita Kolluru, California Polytechnic University).

Diving into the volcanic crater lakes of Nicaragua: capitalizing on a wealth of opportunity for discovery, integrative and collaborative research, student training, and international educational outreach. **University of Alabama – College Academy of Research, Scholarship and Creative Activity** (\$19,525), 1 year, submitted 10/10

Nicaragua's crater lakes foster research and educational opportunity. **PADI Foundation, Inc.** (\$15,545), 2 years

Developing a new, noninvasive method for assessing stress in paedomorphic salamanders. **Morris Animal Foundation** (submitted 11/13/09; \$14,395); co-investigator; PI: Gerald Binczik

Latitudinal temperature gradients: can climate impact gender in clones? **University of Alabama Research Stimulation Program** (\$70,000), 2 years, submitted 1/10.

Diving into the volcanic crater lakes of Nicaragua: capitalizing on a wealth of opportunity for discovery, integrative and collaborative research, student training, and international educational outreach. **College Academy of Research, Scholarship, and Creative Activities** (\$19,925), 1 year, submitted 2/10

The nature of nurture: exploring environmental effects on phenotypic variability within clones. **National Science Foundation CAREER program** (submitted 7/09; \$740,730)

Stress hormones and contest performance: reciprocal actions. **National Science Foundation Research Initiation Grant** (\$159,651; 2 years); submitted 1/08.

Social and molecular foundations of deviant aggression. **National Institutes for Health MBRS-SCORE** (submitted 9/06; pending) - \$925,000 (5 years; **not awarded**).

The nature of nurture: exploring environmental impacts on behavioral and life history traits in the clonal mangrove killifish. **PADI Foundation** (\$6,390), 1 year, submitted 2/09.

Mechanisms of decision-making in animal contests. **National Science Foundation** (\$456,704), 3 years; submitted 1/09

Funding for Graduate Work

- Animal Behavior Society Student Research Grant (6/01)
- Kentucky Academy of Science – Marcia Athey Fund (3/01)
- Sigma Xi Grants-in-Aid (1/00)
- University of Louisville Research Grant - Co P.I. with Dr. Lee Dugatkin (12/99)
- Kentucky Academy of Science - Marcia Athey Fund (3/99)
- University of Louisville In-house Grant – Co P.I. with Dr. Lee Alan Dugatkin (5/98)
- Kentucky Academy of Science- Marcia Athey Fund (4/98)
- American Livebearers Association Vern Parrish Fund Grant (4/98)
- Sigma Xi Grants-in-Aid (1/98)

External Professional Activities

Editorial Boards

- *Integrative & Comparative Biology*, Associate Editor: 2015 - present
- *Royal Society Open Science*, Associate Editor: 2017 - present
- *Frontiers Behavioral & Evolutionary Ecology*, Review Editor: 2014 – present
- *Frontiers in Aquatic Physiology*, Review Editor – May 2011 – present
- *Behaviour*, Associate Editor – April 2011 – April 2014
- *PLoS ONE*, Academic Editor – October 2008 – March 2011 (32 ms's communicated)

Manuscripts reviewed for (285 total; 61 different journals):

- *Acta Ethologica* (10/03; 5/04; 1/08; 11/11; 9/13; 1/15; 6/15; 11/16)
- *Aggressive Behavior* (10/14)
- *American Naturalist* (4/12; 5/13; 8/13)
- *Animal Behaviour* (6/06; 7/06; 9/06; 10/06 x 2; 1/07; 8/07 x2; 11/07 x 3, 12/07; 1/08; 2/08; 5/08; 8/08 x 2; 7/10; 12/10; 4/11; 10/11; 1/12; 1/13; 9/13; 3/14; 5/14; 10/15; 10/16; 8/17; 11/17; 4/18; 8/18; 12/18; 1/19; 3/20)
- *Animal Biology* (5/07)
- *Animal Cognition* (4/12; 3/13)
- *Animal Welfare* (10/14)
- *Aquaculture* (5/07; 6/07 x 2, 7/07 x 2; 9/07; 3/08; 6/08; 7/08; 9/08; 10/08; 1/09; 3/09 X 2; 5/09; 6/09, 9/09; 10/09, 1/10; 8/10; 12/10; 10/11; 1/12)
- *Behaviour* (5/02; 11/04; 3/06; 8/06; 5/07 x 2, 1/08, 2/08; 4/08 x 2; 4/11 x 2, 10/13; 8/16; 1/17; 2/19)
- *Behavioural Brain Research* (10/10; 12/10)
- *Behavioural Processes* (7/07)
- *Behavioral Ecology* (8/03; 6/04; 10/04; 10/05; 8/08; 3/09; 9/09; 11/09; 6/10; 7/10; 4/11; 5/11; 12/11; 1/12; 6/12; 2/13; 3/14)
- *Behavioral Ecology and Sociobiology* (10/04; 7/05; 1/06; 9/08; 3/09; 12/09; 2/10; 6/10; 6/11; 9/11; 6/12; 12/13; 10/14)
- *Bioessays* (5/14)
- *Biological Bulletin* (6/18)

- Biology Letters (9/07; 7/10; 1/11; 2/11; 4/11; 8/12; 8/13; 2/14; 12/18; 1/19; 2/19)
- Biotropica (5/16)
- Bulletin of Mathematical Biology (3/06; 6/06)
- Comparative Biochemistry & Physiology (10/08; 11/11; 6/12)
- Copeia (6/08)
- Current Biology (6/10; 4/11)
- Current Zoology (3/08; 7/17)
- Ecology Letters (3/12)
- Environmental Biology of Fishes (3/14)
- Ethology (7/99; 6/10; 12/10; 9/11; 1/12; 3/12; 5/14; 10/14; 6/15; 9/15)
- Ethology, Ecology & Evolution (6/11)
- Evolution (8/13; 11/13; 6/20)
- Evolutionary Applications (9/16)
- Fish Physiology & Biochemistry (1/15; 4/15)
- Frontiers in Aquatic Physiology (3/12)
- Frontiers in Ecology & Evolution (8/17, 5/18, 6/18)
- Functional Ecology (2/17)
- General and Comparative Endocrinology (6/13; 9/13)
- Hormones & Behavior (2/03; 3/05; 1/06; 6/06; 10/06; 1/07; 6/07, 11/07; 4/08; 7/08; 11/09; 2/10; 8/11; 1/12; 7/12; 9/12; 1/13; 7/13; 10/13; 1/14; 4/14; 5/14; 8/14; 12/14; 2/18; 6/20)
- Hydrobiologia (1/14; 2/18)
- Integrative and Comparative Biology (10/04, 3/08; 6/08; 7/08; 5/14)
- Journal of Animal Ecology (4/01)
- Journal of Chemical Ecology (9/15)
- Journal of Comparative Psychology (7/11)
- Journal of Comparative Physiology – B (7/12; 10/12)
- Journal of Ethology (6/08)
- Journal of Experimental Biology (6/06; 1/07; 3/08; 12/12; 4/12; 4/17; 6/17, 9/17, 11/17)
- Journal of Experimental Zoology Part A: Ecological Genetics and Physiology (11/11; 1/12; 2/15; 5/15, 8/16; 11/17; 12/17; 10/18)
- Journal of Fish Biology (8/06; 1/07; 9/08; 2/12; 4/12; 6/12; 10/14; 3/17; 7/17; 9/17; 8/18; 10/18)
- Marine and Freshwater Research (1/10)
- Marine and Freshwater Behaviour and Physiology (1/13)
- Marine Progress Series (12/12)
- Oecologia (7/14; 6/16)
- Oikos (10/08)
- Pharmacology, Biochemistry & Behavior (2/07)
- Philosophical Transactions of the Royal Society (12/11; 3/12)
- Physiological and Biochemical Zoology (2/12; 9/12; 7/13; 10/13; 5/15)
- Physiology & Behavior (4/13; 6/14)
- PLoS ONE (1/12, 8/12, 9/13; 11/13; 8/14 x 2)
- Proceedings of the Royal Society of London Series B (12/07, 1/08; 4/08; 10/11; 5/12; 2/13; 5/13; 5/15; 10/16; 7/17; 12/18; 1/19, 9/19)
- Quarterly Review of Biology (8/07)
- Scientific Reports (4/19)
- The Open Reproductive Science Journal (4/09)
- Zebrafish (12/05)

- Zoology (8/14, 9/16; 2/17)

Grant Reviewing, Panels, Tenure Reviews:

- NSF Behavioral Systems CAREER panel (9/18)
- NSF Evol. Ecology-Evol. Genetics, Division of Environmental Biology full proposal Panel (11/17)
- NSF Evol. Ecology-Evol. Genetics, Division of Environmental Biology pre-proposal Panel (3/17)
- NSF Animal Behavior, Division of Integrative Organismal Systems full proposal Panel (10/16)
- NSF Processes, Structure, and Integrity Program Panel (Physiological & Structural Systems) (4/12)
- NSF Animal Behavior Panel, Division of Integrative Organismal Systems (10/11)
- NSF DDIG Panel, Division of Environmental Biology (2/11)
- National Science Foundation, ad hoc (8/06; 2/07; 8/07; 2/08; 3/08; 8/08; 3/09; 9/09; 9/10; 3/11; 9/11; 9/12 x2; 9/14; 1/17; 5/17; 8/18; 10/18 x 2)
- National Science Foundation LTREB program (8/13)
- National Science Foundation International Research Fellowship Program (10/10)
- Biotechnology and Biological Sciences Research Council, UK, ad hoc reviewer (10/04; 08/11; 2/13; 12/13; 6/18)
- Graduate Women in Science Fellowship, ad hoc reviewer (3/15)
- National Geographic Society Committee Research & Exploration (2/03; 1/05; 1/09; 9/10)
- Florida Fish & Wildlife Conservation Commission (FWCC) Biological Status review for the mangrove rivulus *Kryptolebias marmoratus* (1/11)
- M.J. Murdock Charitable Trust grant proposal review (10/10)
- University of Florida, CRIS research proposal reviewer (12/08)
- California Polytechnic University Junior Faculty Grant (2/08)

Book Chapters & Book Proposals reviewed for:

- W.W. Norton & Company review for Dugatkin's *Principles of Animal Behavior* (5/15)
- Oxford University Press for Nordell & Valone's *Animal Behavior: Concepts, Processes & Applications* (5/15)
- Review for Woods, Martin, Ghalambor's *Integrative Organismal Biology* (4/13)
- Sinauer Associates book proposal review, *Integrative Endocrinology* (1/13)
- Nature Education Principles of Biology Accuracy review (1/13)
- Sinauer Associates Introductory Biology textbook (Life: Concepts) (9/10)
- Review for Hardy & Briffa's *Animal Contests* (10/08)
- Elsevier Life Sciences book proposal review (9/08)
- Cambridge University Press book proposal review (1/07)

Professional Classes & Workshops Attended:

- QEM/BIO workshop for National Science Foundation grant proposals (9/14-9/17/06)
- PADI Nitrox Diver Certification Course (10/07)
- NAUI Master Diver Certification Course (4/06-5/06)
- DAN Oxygen Provider Certification Course (11/05)
- Red Cross First Aid/CPR/AED Certification (2/05-present)
- NAUI Rescue SCUBA Diver Certification (1/05-4/05)
- NAUI SCUBA Diver Certification (10/04-12/04)
- Fundamentals of Professional Grant Proposal Writing Workshop, Georgia Tech (6/1- 6/3/04)

- Intensive MATLAB Introduction to Modeling Course (10/29-10/30/03)
- Center for Behav Neurosci Topics Class – *Hormones & Behavior* (9/02-12/02)

External Service Activities:

- Nominated as Member-at-Large for Society for Integrative & Comparative Biology
- American Philosophical Society (Lewis & Clark Fund for Exploration and Field Research); reviewer for year 2018-2019, 2019-2020
- Invited letter writer for Philip Leverhulme Prize (UK)
- Judge for Division of Comparative Endocrinology at 2016 SICB meeting
- Participant in Data Management Plan Workshop (sponsored by NSF) at 2016 SICB meeting
- Judge for Stillman College Research Symposium (3/17/15)
- Chair, Student Support Committee, Society for Integrative & Comparative Biology (2015-2018)
- Student Support Committee, Society for Integrative & Comparative Biology (2012-2015)
- Outreach for the Girl Scouts of America – Safety Training (3/19/14)
- Judge for Division of Animal Behavior student presentations at 2014 SICB meeting
- Judge for Division of Comparative Physiology student presentations at 2014 SICB meeting
- Outreach at the Capitol School in Tuscaloosa, AL; "Fish flipping out!" (4/25/13)
- Participated in science blog – "The Weekly Weinersmith" (5/15/12)
- Society for Integrative & Comparative Biology (SICB) Student Support Committee (3 years; 2012-2014)
- Scientific Advisory Board for The Copperhead Institute, South Carolina (1/12 – present)
- Judge for Division of Comparative Endocrinology student presentations at 2012 SICB meeting
- Judge for Division of Ecology & Evolution student presentations at 2012 SICB meeting
- Judge for Division of Animal Behavior student presentations at 2012 SICB meeting
- Interview with *Admissions Advisor* – website for prospective students about career paths (11/11)
- Session Chair for "Social Behavior" section at 2011 SICB meeting
- Judge for graduate student presentations at 2011 SICB meeting
- Participant in roundtable discussion on careers at 2009 SICB meeting
- Session chair at 2009 SICB annual meeting
- Judge for Division of Animal Behavior student presentations at 2009 SICB meeting
- NAUI SCUBA Diver Certification Course assistant (January 2004 – June 2006)
- Moderated 1 session 1st Annual Southeastern Ecology & Evolution Conference (3/04)
- Judge for Atlanta area high school science and mathematics fair (2/03)
- Moderated 2 sessions at Animal Behavior Society National Meeting (7/02)
- Judge for national high school Science Fair, Atlanta, GA (3/02)
- Jefferson Forest, KY Cleanup Program (3/2000)
- Bernheim Forest Insect & Arachnid survey - Dr. C.V. Covell (Summer 1999)
- KWA Splashing in Kentucky Workshop - presentation (Spring 1998)
- Salt River Watershed Watch - supervising sampler (Summer 1998)

Internal Professional Activities

Committees - University of Alabama

- Institutional Animal Care and Use Committee (IACUC) (10/17 – present)
- Advisory Board - Office of Undergraduate Research (9/18 - present)
- Undergraduate Council, University of Alabama (3/20 – present)

- Department of Biological Sciences, Graduate Committee (9/18 - present)
- Faculty Advisor for UA's Not On My Campus (Sexual Assault Awareness) Club (1/19-present)
- Faculty Advisor for UA's MARS (Men Against Sexual Assault) Club (1/19 – present)
- Faculty Advisor for UA's student Archery Club (12/19-present)
- Department of Biological Sciences, Graduate Program Committee (9/15 – 9/18)
- Faculty Advisor for UA's student Marine Science Club (6/12 – present)
- Chair, Department of Biological Sciences, Disease Ecology Search Committee (Fall 2015)
- Core Curriculum Oversight Committee, University-Level (9/10 – 5/16)
- Chair of M/NS Subcommittee for CCOC, University-Level (9/15 – 5/16)
- Chair, Department of Biological Sciences, Ecoimmunologist Search Committee (Fall 2014)
- Department of Biological Sciences, Freshwater Ecology Search Committee (Fall 2013)
- Department of Biological Sciences Awards Committee (2/13-5/15)
- Department of Biological Sciences Vision Committee (9/12-5/15)
- Department of Biological Sciences Seminar Committee Chair (2010-2012)
- Psychology/Biological Sciences Behavioral Genomics Search Committee (Fall 2011)
- Department of Biological Sciences Genomics Search Committee (Fall 2009)

Service – University of Alabama

- Camp 1831 Participant (Summer 2019)
- Judge for 2019 URSCA conference (oral session; 4/19)
- Hosted high-school student for "Scientist for a Day" (Fall 2018)
- Organized 3-Minute Thesis Competition (Fall 2018)
- Legacy Scholars Mentor (2018-present)
- Presentation for Tri-Beta Honors Society (9/16, 10/18)
- STEM Entrepreneurship Academy Outreach – Biomimicry (grades 9-12) (7/16)
- Presentation for Marine Science Club (3/16, 4/17, 9/18)
- STEM Entrepreneurship Academy Outreach – Biomimicry (grades 9-12) (7/15)
- Judge for LSAMP conference (4/15)
- Participant in the SACS QEP discussion during the SACS on-site visit (3/15)
- Judge for Department of Biological Sciences 3MT Competition (10/14)
- Invited Panelist at the New Faculty Orientation (8/14)
- UA Honors College: Honors Academy participation (7/17/14)
- Participated in the American Society for Cell Biology video shoot (12/13)
- Faculty invite (student nominated) to the University Fellows Banquet (11/13)
- University Fellows dinner (3/23/11, 10/2/13, 3/14/16, 4/19/17)
- Participation in UA-Biology promotional video about research at the university (6/19/13)
- SACS Quality Enhancement Plan "Advancing Undergraduate Research Training and Experiences" workshop; one of eight faculty at UA invited to participate (7/2/13)
- SACS Quality Enhancement Plan "Sharpening Critical Thinking and Analytical Reasoning Skills" workshop; one of ten faculty at UA invited to participate (6/18/13)
- Interviewer for the University Fellows Program (Spring 2012, 2013, 2014)
- Participation in University Emerging Scholars Program (2011-2013)
- Judge for Frontiers in Biology Graduate Student Colloquium (4/20/11)
- Judge for 13th Annual Research & Thesis Conference (3/27/10)
- Café @ UA breakfast with Mark Lanier (3/5/10)
- Judge for 3rd Annual Undergraduate Research & Creative Activity Conference (4/15/10)

- Judge for 2nd Annual Undergraduate Research & Creative Activity Conference (4/13/09)
- Participation in University Computer-Based Honors Program (2010-2013)
- Community Breakfast (3/6/09)
- Graduate TAP class – CV development and roundtable (11/21/08)

Committees & Service – California State University Fresno

- LSAMP curriculum vitae development seminar (10/26/07)
- Classroom visit – exposing pre-schoolers to reptiles (10/23/07)
- Evolution-Development Faculty Search Committee (Fall 2007)
- Graduate/Research Committee (2007 –2008)
- Participating Faculty –Honors College Information Days (Fall 2007)
- Faculty Advisor - Students for the Advancement of Biological Research (2007 –2008)
- Faculty Advisor - American Medical Student Association club (2007 –2008)
- Participating Faculty – LSAMP Entering College Freshman Summer Program (Summer 2007)
- Participating Faculty – “Dog Days Orientation” (Summer 2007)
- Recruitment “Preview Day” co-presenter (Spring 2007)
- Participating Faculty, NIH-MBRS-RISE program (2006 –2008)
- Participating Faculty –Marine Science Program (2006 –2008)
- Radiation Safety Committee (2006 –2008)
- Department of Biology Scholarship & Awards Committee (2006 – 2007)

Committees & Service – Center for Behavioral Neuroscience (postdoc)

- Judge for Brains & Behavior Spring Symposium poster competition (June 2006)
- Judge for CBN “BRAIN” undergraduate research poster symposium (August 2005)
- Designed ‘Brain Booth’ for Brains Rule! Brain Fair (CBN sponsored) (March 2003, 2004, 2005)
- Chair, GSU Neuroscience Annual Symposium Organizational Committee (Fall 2004)
- Committee to organize Annual Post-doc GSU Neuroscience Symposium (Fall 2003)
- Developed and maintained CBN postdoc website (2003- 2006)
- Co-Chair of CBN Postdoctoral Committee (2003- 2006)
- Committee to organize Annual Post-doc GSU Neuroscience Symposium (Fall 2002)

Committees & Service – University of Louisville (graduate)

- Organized Seminar Speaker series at UofL (Dr. Michael Ruse) (Spring 2002)
- Organized Seminar Speaker series at UofL (Dr. Charles Canham) (Spring 2002)
- Biology Graduate Student Association Secretary (4/01-4/02)
- Graduate representative on UofL Dept. Biology Curriculum Committee (4/01-4/02)
- Judge for Otter Creek (KY) elementary school Ecology Meet (May 2001)
- UofL Department of Biology guide to incoming undergraduates (April 2001)
- Biology Graduate Student Association – interim secretary (2/01 – 4/01)
- Selected to Attend the Mentor Banquet for Student Athletes (February 2001)
- Organized Seminar Speaker series at UofL (Dr. David Haig) (Spring 2001)
- Organized Seminar Speaker series at UofL (Dr. Matthew Grober) (Fall 2000)
- Neuroscience Position Search Committee at University of Louisville (Spring 2000)
- Organized Seminar Speaker series at UofL (Dr. Judy Stamps) (Spring 2000)

- Organized Seminar Speaker series at UofL (Dr. Steven Lima) (Spring 2000)
- Biology Graduate Student Association - secretary (Summer 1999 - Summer 2000)

Invited Seminars (77 total)

- University of Florida (4/20)
- University of Namur, Belgium (12/19)
- Auburn University, School of Fisheries, Aquaculture, and Aquatic Sciences (10/19)
- University of Arkansas (9/18)
- University of Tours (France), Institut de Recherche sur la Biologie de l’Insecte (6/18)
- Georgia Southern University (4/18)
- University of New Orleans (4/18)
- Colorado State University, Department of Biology (2/18)
- University of Exeter (UK), Center for Ecology & Conservation (11/17)
- Georgia State University, Department of Biology (3/16)
- University of Tours (France), Institut de Recherche sur la Biologie de l’Insecte (5/15)
- Penn State University – Center for Brain, Behavior and Cognition (3/15)
- University of Texas at Austin – Department of Integrative Biology (1/15)
- Washington State University – Center for Reproductive Biology (10/14)
- Tuskegee University School of Veterinary Medicine (10/14)
- Clark University – Department of Biology/Environmental Science (10/14)
- University of Tours (France) (9/14, via videoconferencing)
- E.O. Wilson Biodiversity Symposium, University of Alabama (4/14)
- Florida State University – Department of Biology (3/14)
- University of Tours (France) (11/13, via videoconferencing)
- Amherst College, Department of Biology (11/13)
- University of Massachusetts, Amherst, Department of Biology (11/13)
- Mississippi University for Women (11/13)
- Florida State University – Department of Mathematics (10/13)
- University Southern Mississippi – Grad Student Forum (Biology), Keynote (4/13)
- Bowling Green State University – Department of Biological Sciences (4/13)
- University of Tennessee – Department of Ecology and Evolutionary Biology (3/13)
- University of Alabama Birmingham – Department of Biology (11/12)
- University of Alabama, Huntsville – Department of Biology (11/12)
- Northern Arizona University – Department of Biology (10/12)
- Wake Forest University – Department of Biology (10/12)
- University of South Florida – Department of Integrative Biology (10/12)
- University of Akron – Integrated Biosciences (4/12)
- Wofford College – Department of Biology (3/12)
- Texas Tech University – Department of Biological Sciences (2/12)
- Ohio State University – Evolution, Ecology & Organismal Biology Division (2/12)
- McMaster University, Canada, Ecology, Evolution & Behavior Group (11/11)
- University of Guelph, Canada, Department of Biology (11/11)
- University of Mississippi, Department of Biological Sciences (3/11)
- University of Oklahoma, Department of Zoology (2/11)
- University of Louisville, Department of Biology (1/11)
- Mississippi State University, Department of Biological Sciences (1/11)

- Texas State University, Department of Biology (2/10)
- Auburn University, Department of Fisheries (10/09)
- Valdosta State University, Department of Biology (10/09)
- National Taiwan Normal University, Department of Biology (5/09)
- Pennsylvania State University, Department of Biology (4/09)
- Lehigh University, Department of Biological Sciences (3/09)
- Indiana University Southeast – Department of Biology (2/09)
- Café Scientifique – Fresno (5/08)
- California Polytechnic State University, Dept Biological Sciences (2/08)
- University of Alabama, Department of Biological Sciences (2/08)
- Stanford University, Department of Biology (11/07)
- University of California, Berkeley Museum of Vertebrate Zoology (11/07)
- Modesto Junior College, Modesto, CA (10/07)
- Fresno City College – Biology Club (10/07)
- Moss Landing Marine Laboratories – Moss Landing, CA (4/07)
- Fresno City College – Biology Club (3/07)
- CSU Fresno – Department of Biological Sciences (2/07), department seminar
- University of California, Davis – Animal Behavior Graduate Group (1/07)
- “Contests in Biology and Economics” Workshop – Berlin, Germany (7/06)
- California State University, Fresno – Dept Biology (2/27/06)
- Florida Atlantic University – Department of Biological Sciences (2/8/06)
- University of Lethbridge, Canada – Department of Psychology (2/1/06)
- University of Idaho – Department of Biological Sciences (1/24/06)
- University of Arkansas at Little Rock – Department of Biology (12/5/05)
- “Contests in Biology and Economics” Workshop – Berlin, Germany (10/05)
- University of Southern California, WIES (5/22/05)
- University of Minnesota – Dept Ecology, Evolution & Behavior (1/31/05)
- National Taiwan Normal University, Dept. Biology (11/13/03) – 2 seminars
- Emory University – Neuroscience & Animal Behavior Issues Seminar (10/9/03)
- University of Louisville – Department of Biology (6/19/03)
- University of Montana – Department of Biology (4/17/03)
- Center Behav Neuroscience Aggression Collaboratory Presentation (11/19/02)
- Center for Behavioral Neuroscience Site Visit Presentation (9/10/02)
- W.M. Keck Center, NC State University – 4th Annual Symposium (2/2/02)
- Emory University – Neuroscience & Animal Behavior Issues Seminar (12/5/02)
- Indiana University – CISAB Brown Bag Lunch (10/8/02)
- University of Kentucky – Ecolunch (9/14/01)

Symposia and Workshops Organized & Participated

(10) *Hormones and Behavior in Arthropods* - University of Tours (France); June 5-6, 2018.

(9) *Phenotypic Plasticity and the Evolution of Fixed Traits* – 12th International Congress on the Biology of Fish, Texas State University; June 12-16, 2016.

(8) *E. O. Wilson Biodiversity Symposium* – University of Alabama, Tuscaloosa, AL; panel discussion leader with Jonathan Losos and Meg Lowman; April 22-24, 2014.

- (7) *National Evolutionary Synthesis Center (NESCent)* - EvoDevo workshop (led by Cassandra Extavour and Allen Rodrigo); invited as participant and as one of ~10 co-organizers; scheduled December 11-13, 2013.
- (6) *Fish Living On the Edge: Coping with Extreme Environments* – American Fisheries Society, Physiology Section's 10th International Congress on the Biology of Fish; Madison, WI (July 15-19, 2012).
- (5) *Ethology Investigates: Cooperation* – Participation as an author for online discussion (Nov 29 – Dec 2, 2011).
- (4) *National Evolutionary Synthesis Center (NESCent)* – Integrative models of vertebrate sociality: evolution, mechanism and emergent properties. Organized by Dustin Rubenstein, Eileen Lacey, Steven Phelps, and Nancy Solomon. Funded: currently in progress.
- (3) *Integrative Biology and the Mangrove Rivulus: Pushing the Boundaries of Phenotypic Variation* – Society for Integrative & Comparative Biology 2012 (co-organizer with Edward Orlando & Brian Ring)
- (2) *Integrative Perspectives on Animal Contests* – 30th International Ethological Conference, Dalhousie University, Nova Scotia (8/07), Symposium Participants: Mark Briffa, Ryan Earley, Yuying Hsu, Dómhnaill Jennings, Øyvind Øverli & Albert Ros.
- (1) *Methods for Steroid Hormone Extraction and Assay* – National Taiwan Normal University (invited 3 day workshop for Department of Biology)

Conference & Symposium Presentations (National-International)

2020

- (165) International Congress of Entomology (7/20). Mathiron AGE, Dixneuf C, Mondy N, Earley RL, Lecureuil C & Goubault M. Do juvenile hormone and ecdysteroids mediate aggressive behavior in a solitary parasitoid wasp?
- (164) Allied Genetics Conference, Washington DC (4/20). Haag ES, **Earley RL**, Anlage T, Boyer L, Chafitz A, Gerard E, Pierce B, Markstein D, McLoughlin A & Muniz M. Genetic architecture of population differences in the sequential hermaphroditism of *Kryptolebias marmoratus*.
- (163) Society for Integrative & Comparative Biology, Austin, TX (1/20). Silvestre F, Cario A, Chapelle V, Voisin AS, Fellous A, Suarez-Ulloa V, Markey A, Hetru J, Goujon V, Wauthier E, Chatterjee A & **Earley RL**. The self-fertilizing mangrove rivulus as a model species in environmental epigenetics.
- (162) Society for Integrative & Comparative Biology, Austin, TX (1/20). Pyatt JE, Li CY, Waits A & **Earley RL**. Mechanisms of temperature-dependent sex change.
- (161) Society for Integrative & Comparative Biology, Austin, TX (1/20). Robertson CM, Giakas JA, Styga JM, Fortunato JA & **Earley RL**. Phenotypic and genetic correlations between life history traits in a self-fertilizing hermaphroditic fish.

(160) Society for Integrative & Comparative Biology, Austin, TX (1/20). Keck CMT, **Earley RL** & Gresham JD. How do males reproduce when prospective partners prefer to mate with themselves?

(159) Society for Integrative & Comparative Biology, Austin, TX (1/20). Longmire A, Clark AE, **Earley RL** & Gresham JD. Self-compatibility in a self-fertilizing fish.

(158) Society for Integrative & Comparative Biology, Austin, TX (1/20). Assis BA, Avery JD, Tylan C, **Earley RL** & Langkilde T. Honest signaling, sexual conflict and female ornamentation: an undesired quality signal?

2019

(157) American Society of Criminology Meeting, San Francisco, CA (11/19). Glenn AL, **Earley RL** & McCormick B. An emerging model for understanding aggression.

(156) Joint Conference of the American Society of Naturalists, Society of Systematic Biologists & Society for the Study of Evolution, Providence, Rhode Island (6/19). Gresham JD & **Earley RL**. What is the adaptive value of males in a self-fertilizing hermaphroditic fish?

(155) Joint Conference of the American Society of Naturalists, Society of Systematic Biologists & Society for the Study of Evolution, Providence, Rhode Island (6/19). McCain SC & **Earley RL**. Age-dependent survival and fitness consequences across an extreme salinity gradient in a euryhaline fish, the mangrove rivulus (*Kryptolebias marmoratus*).

(154) National Conference for Undergraduate Research, Kennesaw State University (4/19). Robertson C, Fortunato J & **Earley RL**. Genetic contribution to variation in fecundity and egg size in mangrove rivulus fish.

(153) Society for Integrative & Comparative Biology, Tampa, FL (1/19). Sisti AR, Johnson EL & **Earley RL**. Maternal effects and the mismatch hypothesis: dietary exposure to endocrine disruptors in mangrove rivulus fish.

(152) Society for Integrative & Comparative Biology, Tampa, FL (1/19). Assis BA, Avery J, Tylan C, **Earley RL** & Langkilde T. Inheritance, hormonal drivers and fitness implications of female ornamentation in fence lizards.

2018

(151) Interdisciplinary Workshop: Broader Perspectives on Animal Contests, Queens University Belfast, Ireland (8/18). **Earley RL**, Kültz D, Ward A & Li CY. The "other" behavioral responses to fighting experience, with a dash of brains.

(150) Interdisciplinary Workshop: Broader Perspectives on Animal Contests, Queens University Belfast, Ireland (8/18). Goubault M, Exbrayat M & **Earley RL**. Fixed or flexible? Winner/loser effects vary with habitat quality in a parasitoid wasp.

(149) Hormones and Behaviors in Arthropods 2018 Workshop, University of Tours, France (6/18). **Earley RL**, Li CY, Huang SP, Fuller A, Garcia M & Hsu Y. Sexual phenotype drives variation in endocrine responses to social challenge in a quasi-clonal animal.

- (148) Hormones and Behaviors in Arthropods 2018 Workshop, University of Tours, France (6/18). Mathiron AGE, **Earley RL** & Goubault M. Does juvenile hormone manipulation affect female reproductive status and aggressiveness during competition for hosts in a non-social parasitoid wasp?
- (147) 55th Annual Animal Behavior Society Conference, Milwaukee, WI (8/18). Graham MA, Baker JA, **Earley RL** & Foster SA. Life with cannibals: evolution of maternal effects in populations varying in a social stressor.
- (146) 17th International Behavioral Ecology Congress, Minneapolis, MN (8/18). Carion A, Mathieu D, **Earley RL**, Kueltz D & Silvestre F. Effects of kin on developmental plasticity in mangrove rivulus fish (*Kryptolebias marmoratus*): anchoring life history traits to behavioral traits and adult brain protein expression profiles.
- (145) Joint Meeting of the Society for Behavioral Neuroendocrinology and the International Congress of Neuroendocrinology, Toronto, Ontario, Canada (7/18). Li CY, Ward AK, Curtis C, Kueltz D & **Earley RL**. Social experience alters learning abilities controlled by distinct brain nuclei.
- (144) Gordon Conference - Mechanisms and Outcomes of Predator-Prey Interactions: Scaling across Space and Time, Ventura, CA (1/18). Ligocki IY, **Earley RL** & Hamilton IM. Sex- and threat-based responses to territorial intruders in a social fish.
- (143) Society for Integrative & Comparative Biology, San Francisco, CA (1/18). Graham MA, **Earley RL**, Baker JA & Foster SA. Regional differentiation of the stress axis in wild maternal stickleback fish and transgenerational effects.
- (142) Society for Integrative & Comparative Biology, San Francisco, CA (1/18). Ligocki IY, **Earley RL** & Hamilton IM. Sex- and threat-based responses to territorial intruders in a social fish.
- (141) Society for Integrative & Comparative Biology, San Francisco, CA (1/18). Marshall CA, **Earley RL** & Ghalambor CK. Salinity, stress and metabolism: integrated physiological correlates of osmoregulation in Trinidadian swamp guppies (*Poecilia picta*) along a salinity gradient.
- (140) Society for Integrative & Comparative Biology, San Francisco, CA (1/18). Gresham J & **Earley RL**. Fitness consequences of heterozygosity in a self-fertilizing fish.
- (139) Society for Integrative & Comparative Biology, San Francisco, CA (1/18). Houslay TM, **Earley RL** & Wilson AJ. The quantitative genetics of stress coping styles in the Trinidadian guppy.
- (138) Society for Integrative & Comparative Biology, San Francisco, CA (1/18). McCain SC & **Earley RL**. Age-dependent responses to an extreme salinity gradient in a euryhaline fish.
- (137) Society for Integrative & Comparative Biology, San Francisco, CA (1/18). Styga JM, Houslay T, Wilson A & **Earley RL**. Ontogeny of the morphology-performance axis in an amphibious, self-fertilizing hermaphroditic fish (*Kryptolebias marmoratus*).

2017

(136) Pan-American Society for Evolutionary Developmental Biology, University of Calgary (8/17). Ficklin J, Anlage T, Boyer L, Pierce B, Boldt H, Harris MP, **Earley RL** & Haag ES. Developing the mangrove killifish, *Kryptolebias marmoratus*, as a genetic for vertebrate sexual plasticity.

(135) Evolution (joint meeting of American Society for Naturalists, Society for the Study of Evolution and Society of Systematic Biologists), Portland, OR (6/17). Lins LFS, Trojahn S, Sockell A, Yee M-C, Bustamante C, **Earley RL** & Kelley JL. Molecular diversity of mangrove rivulus (*Kryptolebias marmoratus*) using genomic data.

(134) Society for Integrative & Comparative Biology, New Orleans, LA (1/17). Fellous A, Labed-Veydert T, Lescat L, Voisin AS, Locrel M, **Earley RL** & Silvestre F. DNA methylation reprogramming during development in the self-fertilizing mangrove rivulus, *Kryptolebias marmoratus*, and its environmental sensitivity.

(133) Society for Integrative & Comparative Biology, New Orleans, LA (1/17). Graham MA, Cooney B, **Earley RL**, Baker J & Foster SA. Evolutionary history matters: maternal hormonal response to a natural stressor and effects on offspring growth and behavior.

(132) Society for Integrative & Comparative Biology, New Orleans, LA (1/17). McCain S, Kopelic S, Staudhammer C & **Earley RL**. A brackish water specialist that prefers freshwater: the case of the mangrove rivulus fish.

(131) Society for Integrative & Comparative Biology, New Orleans, LA (1/17). Gresham JD & **Earley RL**. Fitness consequences of self-fertilization versus outcrossing for the mangrove rivulus fish.

(130) Society for Integrative & Comparative Biology, New Orleans, LA (1/17). Chouinard-Thuly L, Reddon AR, Leris I, **Earley RL** & Reader SM. Developmental experience affects habituation to a mild stressor in female but not male guppies.

(129) Society for Integrative & Comparative Biology, New Orleans, LA (1/17). Perlman BM, Ashley-Ross MA, Li CY & **Earley RL**. Exercise causes sex change in an amphibious fish.

2016

(128) Quebec Centre for Biodiversity Science, Montreal, Quebec (12/16). Chouinard-Thuly L, Reddon AR, Leris I, **Earley RL** & Reader SM. The effect of developmental experience and sex on cortisol response in guppies.

(127) Society of Environmental Toxicology and Chemistry North America 37th Annual Meeting, Orlando, FL (11/16). Fellous A, Lescat L, Labed-Veydert T, Voisin AS, Locrel M, **Earley RL** & Silvestre F. DNA methylation reprogramming during development in the self-fertilizing mangrove rivulus, *Kryptolebias marmoratus*, and its sensitivity to environmental pollutants.

(126) Society of Environmental Toxicology and Chemistry/iEOS/Environmental and (Eco)toxicological Omics and Epigenetics, Ghent, Belgium (9/16). Fellous A, Lescat L, Labed-Veydert T, Voisin AS, Locrel M, **Earley RL** & Silvestre F. DNA methylation reprogramming during development in the self-fertilizing mangrove rivulus, *Kryptolebias marmoratus*, and its sensitivity to environmental pollutants.

- (125) Society for Behavioral Neuroendocrinology. Montreal, Canada (8/16). Li CY, Waits A & **Earley RL**. High temperature drives the expression of androgenic enzymes in the gonad of hermaphroditic mangrove rivulus fish: implications for sex change.
- (124) 12th International Congress on the Biology of Fish, San Marcos, TX (6/16). Turko AJ, Doherty J, Anderson C, **Earley RL**, Kruth P, Levesque K, Yin-Liao I & Wright PA. Survival of the slowest: can plasticity in metabolism and life history traits explain why some amphibious fish can survive out of water longer than others?
- (123) 12th International Congress on the Biology of Fish, San Marcos, TX (6/16). Gresham J & **Earley RL**. Potential fitness consequences of self-fertilization versus outcrossing for the mangrove rivulus fish.
- (122) 12th International Congress on the Biology of Fish, San Marcos, TX (6/16). **Earley RL**. The evolution of sexual plasticity: mangrove rivulus fish as an extraordinary model.
- (121) Social Neuroscience: From Genomics to Behavior, Center for Behavioral Neuroscience (5/16). **Earley RL** & Li CY. How prior social experiences shape the brain and behavior: where do we go from here?
- (120) Society for Integrative & Comparative Biology, Portland, OR (1/16). Kim D, Gabor CR & **Earley RL**. Identifying the normal reactive scope of female sailfin mollies in different reproductive states.
- (119) Society for Integrative & Comparative Biology, Portland, OR (1/16). Ligocki IY, **Earley RL**, Hellmann JK & Hamilton IM. Variation in glucocorticoid levels in relation to direct and third-party interactions in a social cichlid fish.

2015

- (118) Society of Environmental Toxicology and Chemistry 39th Annual North America Meeting (11/15). Fellous A, Voisin AS, Locrel M, Zaoui F, Labed-Veydert T, Flamion E, Falisse E, Dorts J, **Earley RL** & Silvestre F. The self-fertilizing mangrove rivulus, *Kryptolebias marmoratus*: a new model vertebrate species in ecological epigenetics.
- (117) Coastal Estuarine Research Federation 23rd Biennial Conference (11/15). Johnson EL & **Earley RL**. The reproductive and behavioral effects of environmentally relevant doses of endocrine disruptors in mangrove rivulus.
- (116) Animal Behavior Society Annual Meeting, Anchorage, Alaska (6/15). Graham MA, Cooney BN, **Earley RL**, Baker JA & Foster SA. Evolution in divergent social environments: the maternal stress response and offspring phenotypes.
- (115) Animal Behavior Society Annual Meeting, Anchorage, Alaska (6/15). Weinersmith KL, Renick V, King T, Payne E, Sih A & **Earley RL**. Parasites and personality: does a brain-infecting trematode alter killifish personality and behavioral syndromes?
- (114) Animal Behavior Society Annual Meeting, Anchorage, Alaska (6/15). Li CY & **Earley RL**. Sex differences in the endocrine response to social challenge despite genotypic uniformity in the mangrove rivulus (*Kryptolebias marmoratus*).

(113) American Society for Parasitologists, Omaha, Nebraska (6/15). Weinersmith KL, Compton V, Payne E, King T, Sih A & **Earley RL**. Does a brain-infecting parasite influence host behavioral type and behavioral syndromes?

(112) Society of Environmental Toxicology and Chemistry, Salt Lake City, UT (4/15). Voisin AS, **Earley RL**, Kueltz D & Sivestre F. Developmental plasticity induced by an early-life exposure to ethinylestradiol in the self-fertilizing mangrove rivulus, *Kryptolebias marmoratus*.

(111) Genome 10K Conference, Santa Cruz, CA (3/15). Kelley JL, Quackenbush C, Cornelius C, Adams P, Lee C, Levandowsky E, Shah M, Harkins T, Bustamante CD & **Earley RL**. Uncovering the genes driving sex determination in a self-fertilizing hermaphroditic fish, *Kryptolebias marmoratus*.

(110) Society for Integrative & Comparative Biology, West Palm Beach, FL (1/15). Voisin AS, Locrel M, Flamion E, Falisse E, Dorts J, Fellous J, **Earley RL** & Silvestre F. DNA methylation in the mangrove rivulus and effects of EE2 on its developmental plasticity.

(109) Society for Integrative & Comparative Biology, West Palm Beach, FL (1/15). Cook M, Anderson C, Marson K & **Earley RL**. Female 'power' trumps color as a predictor of pair-bonding success in convict cichlids.

(108) Society for Integrative & Comparative Biology, West Palm Beach, FL (1/15). Kernahan N & **Earley RL**. Does female color elicit aggression in convict cichlids?

(107) Society for Integrative & Comparative Biology, West Palm Beach, FL (1/15). Marson K, Miller G, Barron E & **Earley RL**. Reproductive timing varies seasonally and geographically in a self-fertilizing hermaphroditic fish.

(106) Society for Integrative & Comparative Biology, West Palm Beach, FL (1/15). Miller G, Marson K & **Earley RL**. Does predation threat cause wild mangrove rivulus fish to jettison from the water?

(105) Society for Integrative & Comparative Biology, West Palm Beach, FL (1/15). Garcia MJ, Marson K, Svendsen J & **Earley RL**. Sex differences in the costs of reproduction in a sex changing fish, the mangrove rivulus (*Kryptolebias marmoratus*).

2014

(104) Southern California Evolutionary Genetics & Genomics Meeting, UCLA (11/14). Mesak F, Tatarenkov A, **Earley RL** & Avise JC. Hundreds of SNPs versus dozens of SSRs: which dataset better characterizes natural clonal lineages in a self-fertilizing fish?

(103) 51st Annual Animal Behavior Society Meeting, Princeton, NJ (8/14). Fogarty S, Weinersmith K & **Earley RL**. Coevolution between hosts and manipulative parasites selects for behavioral variation.

(102) International Society for Neuroethology, Sapporo, Japan (7/14). Moscicki MK, Devraj-Kizuk S, **Earley RL** & Hurd PL. Development of brain and behavioural asymmetries.

(101) E.O. Wilson Biodiversity Symposium, Tuscaloosa, AL (4/14). **Earley RL** Evolutionary innovations in extreme environments: hermaphroditic fish adapted to life on land.

- (100) Society for Integrative & Comparative Biology, Austin, TX (1/14). Wofford SJ, **Earley RL** & Moore PA. Battle of the sexes: male and female crayfish (*Orconectes virilis*) use the same type of assessment strategy in different ways.
- (99) Society for Integrative & Comparative Biology, Austin, TX (1/14). Fuller AB, Burrows JR & **Earley RL**. Choosing a caretaker: do heterospecifics eavesdrop on sexual signals to assess hosts for their offspring?
- (98) Society for Integrative & Comparative Biology, Austin, TX (1/14). Marson KM & **Earley RL**. Insights into the significance of epidermal club cell variation using a self-fertilizing hermaphroditic fish.
- (97) Society for Integrative & Comparative Biology, Austin, TX (1/14). James WR, White S & **Earley RL**. Developmental response to predator-related cues.
- (96) Society for Integrative & Comparative Biology, Austin, TX (1/14). Robinson SL & **Earley RL**. Plasticity and integration in mangrove rivulus: arginine vasotocin as a potential mediator of salinity-induced phenotypes.
- (95) Society for Integrative & Comparative Biology, Austin, TX (1/14). Weinersmith KL, Hanninen AF, Sih A & **Earley RL**. *Euhaplorchis californiensis*, a brain-infecting trematode parasite is associated with changes in physiology and behavior in its killifish second intermediate host.
- (94) Society for Integrative & Comparative Biology, Austin, TX (1/14). Lee EA, Schmitt A & **Earley RL**. Changes in endocrine status and gonadal morphology in mangrove rivulus exposed to ethinyl estradiol.
- (93) Society for Integrative & Comparative Biology, Austin, TX (1/14). Anderson C, Jones R, Moscicki M, Clotfelter E & **Earley RL**. Breeding convict cichlids (*Amatitlania siquia*) display differential aggression based on conspecific intruder coloration.
- (92) Society for Integrative & Comparative Biology, Austin, TX (1/14). Ashley-Ross MA, Perlman BM, Gibb AC & **Earley RL**. Terrestrial jumping performance differs among genetically isolated populations of mangrove rivulus, *Kryptolebias marmoratus*.
- (91) Society for Integrative & Comparative Biology, Austin, TX (1/14). Garcia M & **Earley RL**. Local adaptation of trait integration: predicting the evolutionary trajectories of complex phenotypes.

2013

- (90) 50th Annual Animal Behavior Society Conference, Boulder, CO (7/13). Anderson C, Jones R, Moscicki M, Clotfelter E & **Earley RL**. Female convict cichlid (*Amatitlania siquia*) coloration elicits aggression from conspecific breeding pairs.
- (89) 50th Annual Animal Behavior Society Conference, Boulder, CO (7/13). Garcia MJ & **Earley RL**. Local adaptation of trait integration: predicting the evolutionary trajectories of complex phenotypes.
- (88) 50th Annual Animal Behavior Society Conference, Boulder, CO (7/13). Fuller A, Burrows JR & **Earley RL**. Interspecific assessment of sexual signals: can heterospecific eavesdroppers choose the best hosts for their offspring?

(87) International Congress for Conservation Biology, Baltimore, MD (7/13). Lee EA & **Earley RL**. Hormonal changes in a hermaphroditic fish exposed to ethinyl estradiol

(86) Annual Meeting of the Society for Anthropological Sciences, Mobile, AL (2/13). Moore, L., Belanich, J., Lynn, C., **Earley, R**. Notice Anything New About Me?: Examining Intrasexual Competition through Animal Analogs.

(85) Society for Integrative and Comparative Biology, San Francisco, CA (1/13). Marson K, Anderson C, Klein A, Cook M & **Earley RL**. Female ornaments and male mate choice in convict cichlids.

(84) Society for Integrative and Comparative Biology, San Francisco, CA (1/13). Garcia MJ, Dobbins M, Vaughn S & **Earley RL**. Variation within and among populations in the behavioral types of mangrove rivulus (*Kryptolebias marmoratus*).

2012

(83) 14th International Behavioral Ecology Congress, Lund University, Sweden (8/12). Weissman AC, Akky YL, Hanninen AF, **Earley RL** & Kolluru G. Does fin clipping cause a stress response that influences reproductive output?

(82) 10th International Congress on the Biology of Fish (7/12). **Earley RL**. Surviving the swamp: extreme phenotypic plasticity in a selfing hermaphrodite.

(81) American Society of Parasitologists, Richmond, VA (7/12). Weinersmith K, **Earley RL**, Hanninen A, Hechinger R, Kuris A, Lafferty K & Sih A. Two behaviorally manipulative parasites modify the physiology and behavior of California killifish (*Fundulus parvipinnis*).

(80) Society for Molecular Biology and Evolution, Dublin, Ireland (7/12). Kelley JL, Yee MC, Lee C, Levandowsky E, Shah M, Cummings C, Harkins T, **Earley RL** & Bustamante CD. Population genomic analysis and *de novo* genome assembly of the mangrove killifish, *Kryptolebias marmoratus*, a self-fertilizing hermaphroditic fish.

(79) Annual Symposium of the Fisheries Society of the British Isles – *The Physiology of Fish Behaviour*, University of East Anglia, Norwich UK (7/12). Archard GA, **Earley RL** & Braithwaite VA. Population differences in stress physiology, personality and competition over food and their relationship with predation pressure.

(78) 49th Annual Animal Behavior Society Meeting, Albuquerque, New Mexico (6/12). Akky YL, Hanninen AF, **Earley RL**, Kolluru GR. Fishing for an answer: the proximate underpinnings and fitness consequences of boldness in the face of a predator.

(77) 49th Annual Animal Behavior Society Meeting, Albuquerque, New Mexico (6/12). Weissman AC, Akky YL, Hanninen AF, **Earley RL** & Kolluru G. Do behavioral studies cause a stress response that influences reproductive output?

(76) Ecological and Evolutionary Ethology of Fishes, University of Windsor, Ontario (6/12). Bernhardt L, Bechler DL, Ring BC, Elder JF & **Earley RL**. The impact of color on egg laying rates and outcrossing of *Kryptolebias marmoratus*.

- (75) Biology of Genomes, Cold Spring Harbor (5/12). Kelley JL, Cummings C, Yee MC, Lee C, Levandowsky E, Shah M, Harkins T, **Earley RL** & Bustamante CD. Population genomic analysis and multi-sequencing technology *de novo* assembly of a self-fertilizing hermaphroditic fish, *Kryptolebias marmoratus*.
- (74) Society for Integrative and Comparative Biology, Charleston, SC (1/12). **Earley RL**, Hanninen AF, Fuller A, Garcia MJ, Stanley S, Lee EA & Taylor DS. Plasticity, integration, and selection: prospects for exploring the evolution of complex phenotypes in a powerful fish model.
- (73) Society for Integrative and Comparative Biology, Charleston, SC (1/12). Perlman BM, Ashley-Ross MA, Gibb AC & **Earley RL**. Flipping out: jumping performance of mangrove rivulus (*Kryptolebias marmoratus*) from different geographic locations.
- (72) Society for Integrative and Comparative Biology, Charleston, SC (1/12). Ashley-Ross MA, Perlman BM, Carpenter-Carter S, Gibb AC & **Earley RL**. Heads or tails? Two different ways for fish to jump.
- (71) Society for Integrative and Comparative Biology, Charleston, SC (1/12). Currie S, Fuller A, **Earley RL**, Cooper C, Regan K, Taylor DS & Wright PA. Wild but not angry – mangrove rivulus (*Kryptolebias marmoratus*) captured from crab burrows in the field show little sign of aggression.
- (70) Society for Integrative and Comparative Biology, Charleston, SC (1/12). Kelley JL, **Earley RL** & Bustamante CD. Bringing genomics to non-model organisms: the promise of *de novo* genome assembly and population genetics of the fish *Kryptolebias marmoratus*
- (69) Society for Integrative and Comparative Biology, Charleston, SC (1/12). Cotrone MC, **Earley RL** & Draud MC. Contest behavior is mediated by resource payoff value in female convict cichlids (*Amatitlania nigrofasciata*).
- (68) Society for Integrative and Comparative Biology, Charleston, SC (1/12). Fuller A, Hanninen A, Robinson S, Lenox A & **Earley RL**. Social context and behavioral plasticity in the mangrove rivulus (*Kryptolebias marmoratus*).
- (67) Society for Integrative and Comparative Biology, Charleston, SC (1/12). Stanley S, Garcia MJ, Vaughn S, Taylor DS & **Earley RL**. Going to great lengths: population and genotypic effects on growth and development in the mangrove rivulus.
- (66) Society for Integrative and Comparative Biology, Charleston, SC (1/12). Garcia MJ, Stanley S, Vaughn S, Taylor DS & **Earley RL**. Evidence for local adaptation of life history traits in the mangrove rivulus (*Kryptolebias marmoratus*).
- (65) Society for Integrative and Comparative Biology, Charleston, SC (1/12). Lee EA, **Earley RL** & Hanninen AF. The hormonal response to fasting in an amphibious fish.
- (64) Society for Integrative and Comparative Biology, Charleston, SC (1/12). Hanninen AF, Davis AG, Lee EA, Wong SC & **Earley RL**. Endocrine and life-history plasticity in an amphibious fish.

2011

- (63) Society for Neuroscience (11/11), Washington DC. Smith VL, Hofmann HA, **Earley RL** & Rosenthal GG. Mechanisms of individual variation in mate choice in the swordtail *X. birchmanni*.
- (62) Bioactive Water Borne Chemicals – Third Faro Workshop (9/11), Portugal. **Earley RL**, Huang SP, Fuller A, Hanninen AF & Garcia MJ. Hormonal responses to aggressive contests: sex differences despite genetic identity.
- (61) Bioactive Water Borne Chemicals – Third Faro Workshop (9/11), Portugal. Hanninen AF, Davis G, Lee E, Wong SC & **Earley RL**. Plasticity of the endocrine response in tidal environments: a reaction norm approach.
- (60) Joint Meeting of the International Ethological Conference and Animal Behavior Society, Indiana University. Fuller A & **Earley RL** (7/11). The effects of social environment on mangrove rivulus *Kryptolebias marmoratus*.
- (59) Joint Meeting of the International Ethological Conference and Animal Behavior Society, Indiana University. **Earley RL**, May MM & Morris R, Pearce R, Thompson A & Powers J (7/11). Visualizing the costs of combat in fish: relevance for testing the predictions of assessment models.
- (58) Joint Meeting of the International Ethological Conference and Animal Behavior Society, Indiana University. Garcia MJ, Wilson J, Murphree J & **Earley RL**. Mechanisms driving winner and loser effects in the green anole lizard (*Anolis carolinensis*).
- (57) Joint Meeting of the International Ethological Conference and Animal Behavior Society, Indiana University. Hanninen AF, Davis GA, Lee E, Wong SC & **Earley RL**. Hormonal plasticity in tidal environments: a reaction norm approach in an amphibious fish.
- (56) Joint Meeting of the International Ethological Conference and Animal Behavior Society, Indiana University. Weinersmith KL, Hanninen AF, Sih A & **Earley RL**. Trematode parasites are associated with steroid hormone profiles in the California killifish.
- (55) Joint Meeting of the International Ethological Conference and Animal Behavior Society, Indiana University. Braithwaite VA, Archard GA, Hanninen AF & **Earley RL** (7/11). The influence of predation pressure on temperament and stress hormones in natural populations.
- (54) Gordon Conference – Quantitative Genetics & Genomics: From Genome to Phenotype, Galveston, TX (2/11). Kelley JL, Kidd JM, **Earley RL** & Bustamante CD. *De novo* assembly and population divergence analysis of the self-fertilizing fish *Kryptolebias marmoratus*.
- (53) Joint Meeting of the British Ecological Society, The Biochemical Society and the Society for Experimental Biology (*Stress responses – molecules, organisms and environments*), London, UK (1/11). Archard G, **Earley RL** & Braithwaite V. Hormones, behavior, and predation pressure in a freshwater fish.
- (52) Society for Integrative and Comparative Biology, Salt Lake City, UT (1/11). **Earley RL**, Huang SP, Fuller AB, Hanninen AF, Garcia MJ. Sex differences in the endocrine response to social challenge despite genetic uniformity in the mangrove rivulus (*Kryptolebias marmoratus*).

(51) Society for Integrative and Comparative Biology, Salt Lake City, UT (1/11). Fuller AB & **Earley RL**. The effects of social environment on behavioral and morphological development in isogenic strains of the mangrove rivulus (*Kryptolebias marmoratus*).

(50) Society for Integrative and Comparative Biology, Salt Lake City, UT (1/11). Hanninen AF & **Earley RL**. Plasticity of the stress response in variable environments: a reaction norm approach in the mangrove rivulus (*Kryptolebias marmoratus*).

(49) Society for Integrative and Comparative Biology, Salt Lake City, UT (1/11). Garcia MJ & **Earley RL**. Mechanisms driving winner and loser effects in the green anole lizard (*Anolis carolinensis*).

(48) Society for Integrative and Comparative Biology, Salt Lake City, UT (1/11). Wong SC, Fuller A, Zigelsky K & **Earley RL**. Female convict cichlids alter carotenoid-based traits in response to predation risk and changes in breeding status.

2010

(47) Animal Behavior Society, College of William & Mary, Virginia (8/10). Li CY, Huang SP, Earley RL & Hsu Y. Contest experience and androgen, estrogen, cortisol, and 5-HT1A receptor gene expression in *Kryptolebias marmoratus*.

(46) Society for the Study of Evolution, Portland, OR (6/10). Downey KTL, **Earley RL**, Walz J, Hanninen A & Kolluru GR. 'Perceived predation risk, hormones, and aggression in male guppies (*Poecilia reticulata*)'.

(45) Joint Meeting of Ichthyologists and Herpetologists, Providence, Rhode Island (7/10). Jellen BC, Graham SP, **Earley RL** & Aldridge RD. 'Estradiol varies throughout the shed cycle and influences attractivity in female watersnakes (*Nerodia sipedon*)'.

(44) 32nd Annual Winter Animal Behavior Conference, Steamboat Springs, Colorado (1/10). **Earley RL**. 'Wormholes and reaction norms: probing the environmental roots of behavioral variation'.

(43) Society for Integrative and Comparative Biology, Seattle, WA (1/10). Luzania RR, Upton KR, Earley RL & Riley LG. The effects of fasting and re-feeding on the neuroendocrine control of appetite in tilapia, *Oreochromis mossambicus*.

2009

(42) Joint Meeting of Ichthyologists and Herpetologists (Society for the Study of Reptiles & Amphibians; American Society of Ichthyologists & Herpetologists), Portland, Oregon (7/09). Graham S, **Earley RL**, Mendonca M, Sewell L. 'Interactions between the endocrine and immune system during reproduction in snakes.'

(41) Society for Behavioral Neuroendocrinology, East Lansing, Michigan (6/09). Lorenzi V, **Earley RL** & Grober MS. 'Steroids, sex change and social status: different tissues have different perspectives'.

(40) Champalimaud Foundation Neuroscience Program Symposium on *Social Modulation of Behavior: integrating mechanisms and function*, Lisbon, PORTUGAL (6/09). **Earley RL** 'Victory and defeat fuel future

contest behavior: powering forward by integrating across disciplines and levels of analysis' *Invited Symposium Presentation*

(39) Society for Integrative & Comparative Biology, Boston, MA (1/09). Graham SP, Sewell LM, **Earley RL** & Mendonca, MT. 'Complement bacterial killing in a snake: differences between reproductive conditions of female cottonmouths (*Agkistrodon piscivorus*).

(38) Society for Integrative & Comparative Biology, Boston, MA (1/09). **Earley RL**, Campbell JM & Hsu Y. 'Consistent behavioral and life history variation within clones of the killifish *Kryptolebias marmoratus*'

(37) Society for Integrative & Comparative Biology, Boston, MA (1/09). Copeland DL & **Earley RL** 'Fighting is costly for both winners and losers in the convict cichlid fish (*Amatitlania nigrofasciata*)'

2008

(36) Society for the Study of Evolution, Minneapolis, MN (6/08). Campbell JM, Janzen W, Medichetti S, Wong S & **Earley RL**. 'Phenotypic variation in the clonal mangrove killifish, *Kryptolebias marmoratus*'

(35) Western Groundfish Conference, Santa Cruz, CA (2/08). Barnett LAK, Ebert DA, Cailliet GM & **Earley RL**. 'Maturity, fecundity, and the reproductive cycle of the white-spotted ratfish, *Hydrolagus coliei* (Lay & Bennett 1839)'.

(34) Society for Integrative & Comparative Biology, San Antonio, TX (1/08). Copeland DL, Rodnick KJ, **Earley RL** & Secor SM. 'Cardiac enzyme and energetic compensation during post-prandial metabolism in Burmese pythons (*Python molurus*)'.

(33) Society for Integrative & Comparative Biology, San Antonio, TX (1/08). Ma J, Wong S & **Earley RL**. 'Social deprivation triggers increased stress responsiveness and aggression in convict cichlid fish (*Cryptoheros nigrofasciatus*)'.

(32) Society for Integrative & Comparative Biology, San Antonio, TX (1/08). Wong S, Ma J & **Earley RL**. 'Stressed out? Novel methods and experimental assessment of the interaction between social stress and aggression in convict cichlid fish (*Cryptoheros nigrofasciatus*)'

2007

(31) Workshop on *Bioactive Water Borne Chemicals: Pheromones and Welfare Indicators in Fish*, Centro de Ciências do Mar do Algarve (Center of Marine Sciences and University of Algarve), Faro, Portugal (9/07). **Earley RL**, Wong S, Campbell J, Copeland D. 'Exploring the relationship between cortisol and aggression in convict cichlid fish (*Archocentrus nigrofasciatus*): insights using non-invasive methodologies for hormone collection'.

(30) Animal Behavior Society, Burlington, VT (7/07). **Earley RL**, Rodgers EW, Lorenzi V, Cassell B, Grober MS. 'War of the sexes: similar rules of engagement, different endocrine responses'

(29) Animal Behavior Society, Burlington, VT (7/07). Wong S, Dykstra M & **Earley RL**. 'Validating a non-invasive hormone collection method in fish and its relevance to hormone-behavior relationships'

- (28) Animal Behavior Society, Burlington, VT (7/07). Campbell J, Janzen W & **Earley RL**. 'Does variability in stress hormones predict or respond to aggressive behavior? A test in the mangrove killifish *Kryptolebias marmoratus*'
- (27) Animal Behavior Society, Burlington, VT (7/07). Copeland D, **Earley RL**. 'Winners and losers mount different energetic responses to fighting'
- (26) Society for Behavioral Neuroendocrinology, Pacific Grove, CA (6/07). **Earley RL**, Rodgers EW, Lorenzi V, Cassell B, Grober MS. 'Endocrine sensitivity to contests depends on who's fighting and who's watching.'
- (25) Society for Behavioral Neuroendocrinology, Pacific Grove, CA (6/07). Campbell J, Janzen W & **Earley RL**. 'Stress and aggression in a killifish: possible relationships with DNA methylation patterns?'
- (24) Society for Behavioral Neuroendocrinology, Pacific Grove, CA (6/07). Wong S, Dykstra M & **Earley RL**. 'Bidirectional interactions between cortisol and aggression in convict cichlid fish'.
- (23) International Ethological Conference, Dalhousie University, Nova Scotia (8/07). Copeland DL & **Earley RL**. 'Fish fighting fuel: cichlids pay a price in territorial contests regardless of status'.
- (22) International Ethological Conference, Dalhousie University, Nova Scotia (8/07) **Earley RL**. 'Dissecting animal contests to identify trigger(s) for physiological and behavioral change'.
- (21) American Society for Ichthyologists & Herpetologists, St. Louis, MO (7/07) Graham SP, **Earley RL**, Grober MS. 'Plasma corticosterone variation in free-ranging male cottonmouths (*Agkistrodon piscivorus*): diel, seasonal, and captive handling effects, and interactions with plasma testosterone'.
- (20) Benthic Ecology Meeting, Georgia Tech, Atlanta, GA (3/07). Lorenzi V, **Earley RL**, Grober MS. 'Group composition and group stability in the sex-changing bluebanded goby'.

2006

- (19) 43rd Annual Animal Behavior Society Meeting, Snowbird, Utah (8/06). Sevene-Adams TG, **Earley RL**. 'Differential water-borne cortisol response in guppies from areas of high- and low-predation'.
- (18) Society for Neuroscience, Atlanta, GA (10/06). Black MP, **Earley RL**, Ressler KJ, Wilczynski W. 'Brain-derived neurotrophic factor expression in the adult green anole (*Anolis carolinensis*)'
- (17) Society for Behavioral Neuroendocrinology, Pittsburgh, PA (6/17-6/22/06). **Earley RL**, Lorenzi V, Rodgers EW, Grober MS. 'Sex steroid hormone profiles during protogynous sex change in the bluebanded goby (*Lythrypnus dalli*).' (poster)
- (16) Society for Behavioral Neuroendocrinology, Pittsburgh, PA (6/17-6/22/06). Grober MS, **Earley RL**. 'Social dominance, sex change, and cortisol in the sexually plastic bluebanded goby (*Lythrypnus dalli*).' (poster)
- (15) Society for Behavioral Neuroendocrinology, Pittsburgh, PA (6/17-6/20/06). Lorenzi V, **Earley RL**, Grober MS. 'Diurnal rhythms of cortisol, 11-ketotestosterone, testosterone, and estradiol in the bluebanded goby (*Lythrypnus dalli*).' (poster)

(14) International Conference on Comparative Cognition, Melbourne, FL (3/22-3/25/06). Bonnie KE, **Earley RL**. 'Stop, look, and listen: an integrative framework for social information use in animals'. (poster)

2005

(13) 42nd Annual Animal Behavior Society Annual Meeting, Snowbird, Utah (8/9-8/12/05). Dzieveczynski TL, **Earley RL**, Green TM, Rowland WJ. 'Context-dependent audience effects in Siamese fighting fish, *Betta splendens*'. (poster)

(12) 42nd Annual Animal Behavior Society Annual Meeting, Snowbird, Utah (8/9-8/12/05). Sevene-Adams TG, **Earley RL**. 'Do cortisol levels differ between 'bold' and 'shy' guppies (*Poecilia reticulata*)?'. (poster)

(11) Society for Behavioral Neuroendocrinology, University of Texas-Austin (6/22-6/25/05). Rodgers EW, **Earley RL** & Grober MS. '11-ketotestosterone and parental behavior: friends or foes?' (poster)

(10) International Conference on Animal Social Learning, St. Andrews University, Scotland (6/15-6/18/05). Bonnie KE & **Earley RL**. 'A framework for social information use: connecting 'watch and learn' concepts' (poster)

1999-2004

(9) Society for Behavioral Neuroendocrinology – 8th Annual Meeting, Lisbon, Portugal (7/26-7/30/04), **Earley RL**, Blumer LS, Edwards J and Grober MS. 'What circumstances elicit increased neuroendocrine stress axis activity in subordinates?'(poster)

(8) International Ethological Conference, Florianapolis, Brazil (8/20-8/27/03), **Earley RL**, Blumer L & Grober MS. 'The bilious consequences of social subordination in convict cichlids (*Archocentrus nigrofasciatus*)'.

(7) Society for Behavioral Neuroendocrinology – 7th Annual Meeting, University of Cincinnati, OH (6/25-6/28/03), **Earley RL** & Grober MS. 'An integrative analysis of chronic social subordination in convict cichlids (*Archocentrus nigrofasciatus*)'. (poster)

(6) Society for Behavioral Neuroendocrinology – 7th Annual Meeting, University of Cincinnati, OH (6/25-6/28/03), Grober MS, Schuett GW, **Earley RL**. 'Hibernation-induced anorexia, sporadic binge feeding, and digestive physiology of Gila Monsters, *Heloderma suspectum* (Reptilia, Squamata)'. (poster)

(5) Animal Behavior Society National Meeting, Indiana University (7/13-7/16/02), **Earley RL** & Dugatkin LA. 'Extending the scope of eavesdropping: does spectating prime swordtails (*Xiphophorus helleri*) for future combat?' (moderated 2 sessions at the meeting)

(4) International Ethological Conference, Tübingen, Germany (8/22-8/30/01), **Earley RL** & Dugatkin LA. 'Eavesdropping influences aggressive contest dynamics in *Xiphophorus helleri*'

(3) Society for the Study of Amphibians and Reptiles, Indiana University/Purdue University at Indianapolis (IUPUI) (7/27-7/31/01), **Earley RL** & Attum O. 'Varanid Combat: Perspectives from Game Theory' (poster)

(2) Animal Behavior Society National Meeting, Morehouse College/Zoo Atlanta, GA (8/5-8/9/00), **Earley RL** & Dugatkin LA. 'It takes three to tangle: Does bystander observation play a role in shaping contest dynamics?'

(1) Animal Learning and Behavior Conference, University of Kentucky (3/27-3/28/98), **Earley RL**, Hsu Y & Wolf LL. 'Predicting combat behavior in the killifish, *Rivulus marmoratus*' - (poster)

Conference Presentations (Regional-Local-University)

2020

(190) University of Alabama Undergraduate Research & Creative Activities Conference (3/20). Widelski L, Knight MM, Faunce A, Urness B, Thackston C & **Earley RL**. Autism and illusions: the relationship between social experience and spatial learning.

(189) University of Alabama Undergraduate Research & Creative Activities Conference (3/20). Wayne A, Gilliland C, Heitzler C, Duffalo D, Ash L, **Earley RL** & Robinson AT. Exploring self-awareness in "lower" animals.

(188) University of Alabama Undergraduate Research & Creative Activities Conference (3/20). Urness B, Brown C, Knight MM, Faunce A, Thackston C, Widelski L & **Earley RL**.

(187) University of Alabama Undergraduate Research & Creative Activities Conference (3/20). Quertermous HM, Blanchard C, Cook WH, Dotson BL, Hascher KM, Nangia P, Polinski AE, Roderich D, Williams Soriano JP & **Earley RL**. Social subordination and sex change in mangrove rivulus fish.

(186) University of Alabama Undergraduate Research & Creative Activities Conference (3/20). Pyatt J, Li CY, Waits A & **Earley RL**. High temperature drives the expression of androgenic enzymes in the gonad of hermaphroditic mangrove rivulus fish: implications for sex change.

(185) University of Alabama Undergraduate Research & Creative Activities Conference (3/20). Norden C, Reding A & **Earley RL**. The effects of body size on the intensity of aggressive interactions between female parasitoid wasps *Eupelmus vuiletti*.

(184) University of Alabama Undergraduate Research & Creative Activities Conference (3/20). Longmire A, Gresham JG & **Earley RL**. Self-compatibility in a self-fertilizing fish.

(183) University of Alabama Undergraduate Research & Creative Activities Conference (3/20). Robertson CM, Giakas JA, Styga JM, Fortunato JA & **Earley RL**. Phenotypic and genetic correlations between life history traits in a self-fertilizing hermaphroditic fish.

(182) Darwin Day 2020, University of Alabama (2/20). **Earley RL**. Why do males exist?

2019

(181) A&S Summit for Undergraduate Research, Scholarship, and Creative Activity (4/19). Lockwood-Oliviera A, Ward A, Maleknia P, O'Neal K, Urness B, Knight MM, Widelski L, Hobbs T & **Earley RL**. Developing a non-human model for understanding the neurobiology of autism spectrum disorder.

(180) A&S Summit for Undergraduate Research, Scholarship, and Creative Activity (4/19). Kalka MA, Fant AR, Terry C, Ross M, Angst G, Malkemus T, Styga JM & **Earley RL**. Sex differences in terrestrial jumping performance and its repeatability in an amphibious fish.

(179) A&S Summit for Undergraduate Research, Scholarship, and Creative Activity (4/19). Robertson C, Giakas J, Fortunato J & **Earley RL**. Genetic contribution to variation in fecundity and egg size in mangrove rivulus fish.

(178) A&S Summit for Undergraduate Research, Scholarship, and Creative Activity (4/19). Maas K, Horst C, Thornton AL, Watson H, Pottier P & **Earley RL**. **Embryonic exposure to endocrine disruptors: behavioral and physiological consequences in mangrove rivulus fish, *Kryptolebias marmoratus*.**

(177) University of Alabama Undergraduate Research & Creative Activities Conference (3/19). Colon V, Hill N & **Earley RL**. Dose-dependent and sex-specific effects of synthetic estrogens on reproductive function.

(176) University of Alabama Undergraduate Research & Creative Activities Conference (3/19). Robertson C, Giakas J, Fortunato J & **Earley RL**. Genetic contribution to variation in fecundity and egg size in mangrove rivulus fish.

(175) University of Alabama Undergraduate Research & Creative Activities Conference (3/19). Tzabari J, Myrick JP, Woltemath A, Brooks A, Secor SC & **Earley RL**. Sex differences in gonadal energy content: implications for sex change.

(174) University of Alabama Undergraduate Research & Creative Activities Conference (3/19). Kalka MA, Fant AR, Terry C, Ross M, Angst G, Malkemus T, Styga JM & **Earley RL**. Sex differences in terrestrial jumping performance and its repeatability in an amphibious fish.

(173) University of Alabama Undergraduate Research & Creative Activities Conference (3/19). Maas K, Horst C, Thornton AL, Watson H, Pottier P & **Earley RL**. **Embryonic exposure to endocrine disruptors: behavioral and physiological consequences in mangrove rivulus fish, *Kryptolebias marmoratus*.**

2018

(172) UA College of Arts & Sciences, Undergraduate Research, Scholarship & Creative Activities Conference (4/18). Maleknia P, Diaz G, Lockwood L, O'Neal K, Ward A, Li CY & **Earley RL**. Can rivulus fish see through the Muller-Lyer visual illusion?

(171) University of Alabama Undergraduate Research & Creative Activities Conference (4/18). Lightfoot CJ & **Earley RL**. Environmentally-driven sexual plasticity in mangrove rivulus fish

(170) University of Alabama Undergraduate Research & Creative Activities Conference (4/18). Adams D, **Earley RL** & Li CY. Age-dependent antipredator behavior in mangrove rivulus fish.

(169) University of Alabama Undergraduate Research & Creative Activities Conference (4/18). Maleknia P, Diaz G, Lockwood L, O'Neal K, Ward A, Li CY & **Earley RL**. Can rivulus fish see through the Muller-Lyer visual illusion?

(168) University of Alabama Undergraduate Research & Creative Activities Conference (4/18). Crumbley M, Sudderth S, Lambert J, Sawyer K, Norden C & **Earley RL**. Temperature-dependent gonad development in mangrove rivulus fish.

(167) University of Alabama Undergraduate Research & Creative Activities Conference (4/18). Ward A, **Earley RL** & Li CY. Spatial learning is influenced by winning and losing aggressive contests.

(166) University of Alabama Undergraduate Research & Creative Activities Conference (4/18). Burks A, Greenberg B, **Earley RL** & Styga J. Evolution of functional 'trade-offs' in a family of amphibious fishes.

(165) University of Alabama Undergraduate Research & Creative Activities Conference (4/18). Delia AL, **Earley RL** & Johnson EL. Does aggression in mangrove rivulus change when exposed to ethinyl estradiol?

2017

(164) University of Alabama Undergraduate Research & Creative Activities Conference (4/17). Litavec J, Morris A, Marson K & **Earley RL**. Do mothers allocate different amounts of fat and protein to their embryos depending on their diet?

(163) University of Alabama Undergraduate Research & Creative Activities Conference (4/17). Anderson R, Griffin T, Turko A & **Earley RL**. Survival of the weakest or just an illusion? Variation in survival and reproduction between fish with different tolerances for air exposure in ephemeral and fully aquatic environments.

(162) University of Alabama Undergraduate Research & Creative Activities Conference (4/17). Naumescu A, Scarsella G & **Earley RL**. Metabolic mechanisms underlying temperature-dependent sex change in a hermaphroditic fish (*Kryptolebias marmoratus*).

(161) University of Alabama Undergraduate Research & Creative Activities Conference (4/17). Pincheck B, Scarsella G & **Earley RL**. Relationships between external sexually dimorphic characteristics and internal gonad morphology in the sex changing fish, *Kryptolebias marmoratus*.

(160) University of Alabama Undergraduate Research & Creative Activities Conference (4/17). Lomax J, Carlson R & **Earley RL**. Factors affecting egg production in the selfing mangrove rivulus fish *Kryptolebias marmoratus*.

(159) University of Alabama Undergraduate Research & Creative Activities Conference (4/17). Cooper M, Phillis C, Gresham J & **Earley RL**. Potential fitness consequences of self-fertilization versus outcrossing for the mangrove rivulus fish.

(158) University of Alabama Undergraduate Research & Creative Activities Conference (4/17). Ward A, Li CY & **Earley RL**. Effects of social experience on spatial learning ability.

(157) University of Alabama Undergraduate Research & Creative Activities Conference (4/17). Curtis C, Li CY & **Earley RL**. Non-reversing mirror test: a new method for quantifying aggression and predicting contest behavior.

(156) Taking a Journey in Science, Rodgers Library seminar series (3/7/16). **Earley RL**. Why do males exist? Can a hermaphroditic fish provide us with any insight?

2016

- (155) University of Alabama Undergraduate Research & Creative Activities Conference (4/16). Johnson EM, Carlson R, Lomax J, Anderson C & **Earley RL**. Evidence of a sneaker male mating strategy in an isolated population of convict cichlid fish.
- (154) University of Alabama Undergraduate Research & Creative Activities Conference (4/16). Brooks AH, Johnson EL & **Earley RL**. The behavioral effects of endocrine disrupting compounds on mangrove rivulus fish.
- (153) University of Alabama Undergraduate Research & Creative Activities Conference (4/16). Burdick AJ, Scarsella G & **Earley RL**. Does temperature induce sex change in a hermaphroditic fish?
- (152) University of Alabama Undergraduate Research & Creative Activities Conference (4/16). Morrison B, Cook M & **Earley RL**. Does ocean acidification drive changes in the aggressive behavior of mangrove rivulus fish (*Kryptolebias marmoratus*)?
- (151) University of Alabama Undergraduate Research & Creative Activities Conference (4/16). Buckley CM, Johnson EL & **Earley RL**. The effect of endocrine disrupting compounds on the behavior of juvenile mangrove rivulus fish.
- (150) University of Alabama Undergraduate Research & Creative Activities Conference (4/16). Miller G, Marson K, Styga J & **Earley RL**. From water to land: jettisoning out of water in response to predator-associated cues in wild mangrove rivulus.
- (149) University of Alabama Undergraduate Research & Creative Activities Conference (4/16). Duque KS, Scarsella GE & **Earley RL**. Hormonal responses to non-contact aggression in convict cichlid fish.
- (148) Southeastern Ecology & Evolution Conference, Florida State University, Tallahassee, FL (3/16). Marson KM, Miller G, Barron E & **Earley RL**. Reproductive timing varies seasonally and geographically in mangrove rivulus fish.
- (147) Southeastern Ecology & Evolution Conference, Florida State University, Tallahassee, FL (3/16). Styga JM, Scott P, Ord T, Whitehead A & **Earley RL**. Has selection for salinity tolerance influenced the evolution of ontogenetic trajectories in *Fundulus*?
- (146) Southeastern Evolutionary Perspectives Meeting, University of Alabama (2/16). Potential fitness consequences of self-fertilization versus outcrossing for the mangrove rivulus fish.
- (145) EPSCoR Science & Technology Open House, Montgomery, AL (2/16). Marson KM, Miller G, Barron E & **Earley RL**. Reproductive seasonality in a self-fertilizing hermaphroditic fish.
- (144) Ontario Comparative Physiology and Biochemistry Meeting (1/16). Turko A, Currie S, **Earley RL**, Platek A, Tatarenkov A, Taylor DS & Wright P. Drivers of intraspecific variation in the hypoxia tolerance of wild mangrove rivulus, *Kryptolebias marmoratus*.

2015

- (143) University of Alabama Undergraduate Research & Creative Activities Conference (4/15). Miller G, Marson KM & **Earley RL**. Emersion in response to predator cues in wild mangrove rivulus.
- (142) University of Alabama Undergraduate Research & Creative Activities Conference (4/15). Wells J, Carlson R, Crawford P, Harrison E, Lomax J & **Earley RL**. Probing the cues for outcrossing in the mangrove rivulus fish (*Kryptolebias marmoratus*).
- (141) University of Alabama Undergraduate Research & Creative Activities Conference (4/15). Seeber RE, Marson KM & **Earley RL**. Metabolic response to maternal food limitation in embryonic mangrove rivulus.
- (140) University of Alabama Undergraduate Research & Creative Activities Conference (4/15). Mattingly C, Scarsella G & **Earley RL**. Thermal acclimation to increased temperature in mangrove rivulus fish.
- (139) University of Alabama Undergraduate Research & Creative Activities Conference (4/15). Laurich J, Marson KM & **Earley RL**. Climate variation and reproductive seasonality in mangrove rivulus fish.
- (138) University of Alabama Undergraduate Research & Creative Activities Conference (4/15). Clay C, Millirons CT, Davis K & **Earley RL**. Personality and fitness in mangrove rivulus fish.
- (137) University of Alabama Undergraduate Research & Creative Activities Conference (4/15). Fuger F, Marson KM & **Earley RL**. Transgenerational epigenetic inheritance of life history traits.
- (136) University of Alabama Undergraduate Research & Creative Activities Conference (4/15). Cook M & **Earley RL**. Do acidified environments alter aggressive behavior in mangrove rivulus fish?
- (135) University of Alabama Undergraduate Research & Creative Activities Conference (4/15). Mattox T, Scarsella G & **Earley RL**. Optimizing closed respirometry using dissolved oxygen probes in an aquatic system.
- (134) National Conference on Undergraduate Research (3/15). Miller G, Marson K & **Earley RL**. Does predation threat cause wild mangrove rivulus fish to jettison from the water?
- (133) Southeastern Ecology & Evolution Conference, University of Georgia (3/15). Johnson EL & **Earley RL**. A dose-response study examining the effects of endocrine disruptors on the behavior of a hermaphroditic fish.
- (132) Southeastern Ecology & Evolution Conference, University of Georgia (3/15). Gresham JD & **Earley RL**. Potential fitness consequences of self-fertilization versus outcrossing for the mangrove rivulus fish.
- (131) Southeastern Ecology & Evolution Conference, University of Georgia (3/15). Scarsella G & **Earley RL**. Effects of high metabolic load on sex change in mangrove rivulus fish (*Kryptolebias marmoratus*).
- (130) Southeastern Ecology & Evolution Conference, University of Georgia (3/15). Styga JM & **Earley RL**. Has selection for salinity tolerance influenced the evolution of ontogenetic trajectories in *Fundulus*?
- (129) Women in STEM Experience: Navigating the Future (1/15). Scarsella G & **Earley RL**. Does increased metabolic demand drive sex change in a hermaphroditic fish?

(128) Women in STEM Experience: Navigating the Future (1/15). Miller G, Marson K & **Earley RL**. Emersion in response to predator cues in wild mangrove rivulus.

(127) Women in STEM Experience: Navigating the Future (1/15). Gresham JD & **Earley RL**. Potential fitness consequences of self-fertilization versus outcrossing for the mangrove rivulus fish.

(126) Women in STEM Experience: Navigating the Future (1/15). Cook M, Anderson C, Marson K & **Earley RL**. Female 'power' trumps color as a predictor of pair-bonding success in convict cichlids.

(125) Women in STEM Experience: Navigating the Future (1/15). Johnson EL & **Earley RL**. The behavioral response to varying concentrations of endocrine disrupting compounds: a dose-response approach.

(124) National Conference on Undergraduate Research (4/15). Miller G, Marson K, Creden S & **Earley RL**. Does predation threat cause wild mangrove rivulus fish to jettison from the water?

(123) EPSCoR Science & Technology Open House (1/15). Miller G, Marson K, Creden S & **Earley RL**. Does predation threat cause wild mangrove rivulus fish to jettison from the water?

(122) EPSCoR Science & Technology Open House (1/15). Marson KM, Miller G & **Earley RL**. Reproductive timing varies seasonally and geographically in mangrove rivulus fish.

2014

(121) Howard Hughes Medical Institute Summer Symposium (8/14). Alexander KD, Skelton RN, Lee EA & **Earley RL**. Changes in gonadal morphology in mangrove rivulus exposed to ethinyl estradiol.

(120) Howard Hughes Medical Institute Summer Symposium (8/14). Skelton RN, Alexander KD, Lee EA & **Earley RL**. The effects of nonylphenol on the gonad morphology of the mangrove rivulus.

(119) Howard Hughes Medical Institute Summer Symposium (8/14). Seeber R, Marson KM & **Earley RL**. Metabolic response to predation cues in embryonic mangrove rivulus.

(118) Howard Hughes Medical Institute Summer Symposium (8/14). Miller G, Marson K & **Earley RL**. Emersion in response to predator cues in wild mangrove rivulus.

(117) California Polytechnic College of Science & Mathematics Conference (5/14). Banh J, Ore M, **Earley RL** & Kolluru GR. The first mixed sex study of *Girardinus metallicus*: a hormone and behavior study.

(116) E.O. Wilson Biodiversity Symposium (4/14). Fuller AF, Burrows R & **Earley RL**. Interspecific assessment of sexual signals: can heterospecific eavesdroppers choose the best hosts for their offspring?

(115) E.O. Wilson Biodiversity Symposium (4/14). Marson KM, Cook M & **Earley RL**. A reliable signal of predation risk in mangrove rivulus epithelium.

(114) E.O. Wilson Biodiversity Symposium (4/14). Anderson C, Jones R, Moscicki M, Clotfelter E & **Earley RL**. Breeding convict cichlids (*Amatitlania siquia*) display differential aggression based on conspecific intruder coloration.

- (113) University of Alabama System Honors Research Conference (4/14). Adams P, Cornelius WC & **Earley RL**. Using genomics to determine the effect of temperature on sex determination in the mangrove rivulus.
- (112) University of Alabama Undergraduate Research & Creative Activities Conference (4/14). Liang E, McWilliams B, Jenny M, **Earley RL** & O'Shields B. Age and sex effects on learning and memory in zebrafish.
- (111) University of Alabama Undergraduate Research & Creative Activities Conference (4/14). Bishop L, Buckely C, **Earley RL** & Lee EA. Revealing the effects of endocrine disrupting compounds on the behavior and physiology of fish: dose-response relationships.
- (110) University of Alabama Undergraduate Research & Creative Activities Conference (4/14). Seeber R, Anderson C, Miller G, Wells J, Brown S & **Earley RL**. Clones and crosses: pursuing the genetic basis of phenotypic traits in mangrove rivulus fish.
- (109) University of Alabama Undergraduate Research & Creative Activities Conference (4/14). Millirons CT & **Earley RL**. Consistent individual differences in behavior: do certain personalities confer greater fitness?
- (108) University of Alabama Undergraduate Research & Creative Activities Conference (4/14). Waits A & **Earley RL**. Temperature effects on sex steroids and gene expression in the hermaphroditic fish *Kryptolebias marmoratus*.
- (107) University of Alabama Undergraduate Research & Creative Activities Conference (4/14). Kopelic S, Walsh R, Cornelius C, Robinson SR & **Earley RL**. Salinity-induced developmental plasticity in *Kryptolebias marmoratus*.
- (106) University of Alabama Undergraduate Research & Creative Activities Conference (4/14). Miller G, Seeber R, Wells J, Brown S, Anderson CA & **Earley RL**. Uncovering the mechanism of heterozygosity in the mangrove rivulus.
- (105) University of Alabama Undergraduate Research & Creative Activities Conference (4/14). Golden CE, Gentry E, Ray E & **Earley RL**. Exploring the salinity preference of mangrove rivulus fish *Kryptolebias marmoratus*.
- (104) University of Alabama Undergraduate Research & Creative Activities Conference (4/14). Cook M, Marson KM & **Earley RL**. Prey responses to predation risk in acidified environments.
- (103) University of Alabama Undergraduate Research & Creative Activities Conference (4/14). Ferro J, Garcia MJ, Marson KM & **Earley RL**. Sex differences in behavior-physiology relationships in mangrove rivulus fish.
- (102) Alabama EPSCoR Annual Meeting, Montgomery, AL (2/14). Marson KM, Cook M & **Earley RL**. A reliable signal of predation risk in mangrove rivulus epithelium.

2013

- (101) Howard Hughes Medical Institute Summer Symposium (8/13). Schmitt A, **Earley RL** & Lee E. Effects of synthetic estrogen on reproductive qualities in mangrove rivulus.

- (100) Howard Hughes Medical Institute Summer Symposium (8/13). Kernahan N, Moore L & **Earley RL**. Does vibrant color elicit aggression in female convict cichlids?
- (99) University of Alabama Undergraduate Research & Creative Activities Conference (4/13). Moore L, Belanich J, Lynn C & **Earley RL**. Notice Anything New About Me?: Examining Intrasexual Competition through Animal Analogs.
- (98) University of Alabama Undergraduate Research & Creative Activities Conference (4/13). Shelton A, Gray M, Gray C, Sinderman B, Harrison TA & **Earley RL**. Temperature-dependent sex determination in the mangrove rivulus fish.
- (97) University of Alabama Undergraduate Research & Creative Activities Conference (4/13). Bishop L, Zahedi H & **Earley RL**. Discovering the Metabolic Potential of the Ideal "Cloning" Organism.
- (96) University of Alabama Undergraduate Research & Creative Activities Conference (4/13). Gentry E, Thomas B, Golden C, Ray E & **Earley RL**. A grain of salt: salinity preferences in the mangrove rivulus fish.
- (95) University of Alabama Undergraduate Research & Creative Activities Conference (4/13). Lenox A, White S, James R & **Earley RL**. Effect of male presence on outcrossing in *Kryptolebias marmoratus*.
- (94) University of Alabama Undergraduate Research & Creative Activities Conference (4/13). Ray E, Duke E, Schmitt A, Shackelford E, Tessler A, Thompson A, Thompson W, **Earley RL** & Lee EA. Reproductive responses of hermaphrodites and males to synthetic estrogen exposure.
- (93) University of Alabama Undergraduate Research & Creative Activities Conference (4/13). Burrows JR, Fuller A & **Earley RL**. Choosing a caretaker: alloparental dynamics in fish.
- (92) University of Alabama Undergraduate Research & Creative Activities Conference (4/13). Walsh R, Robinson S & **Earley RL**. Effects of salinity on the development of complex phenotypes in mangrove rivulus fish.
- (91) University of Alabama Undergraduate Research & Creative Activities Conference (4/13). Waits A & **Earley RL**. Temperature effects on sex steroids and gene expression in the hermaphroditic fish, *Kryptolebias marmoratus*.
- (90) University of Alabama Undergraduate Research & Creative Activities Conference (4/13). Thompson W, Duke E, Schmitt A, Ray E, Thompson A, Shackelford E, Venkatnarayanan A, Tessler A, **Earley RL** & Lee EA. Risky business: the effects of oral contraceptives on fish behavior.
- (89) University of Alabama Undergraduate Research & Creative Activities Conference (4/13). White S, James WR & **Earley RL**. Developmental response to predator-related cues.
- (88) University of Alabama Undergraduate Research & Creative Activities Conference (4/13). Grace J, Haddock M, Weinersmith K & **Earley RL**. Parasite manipulation of host personality in California killifish.
- (87) University of Alabama Undergraduate Research & Creative Activities Conference (4/13). Haddock M, Grace J, Weinersmith K & **Earley RL**. Parasites and personality: do trematodes manipulate boldness in California killifish?

- (86) University of Alabama Undergraduate Research & Creative Activities Conference (4/13). Seeber R, Zahedi H, Bishop L, Buckley C, Cianfarani R & **Earley RL**. Gender inequality: sex differences in metabolic rate in the mangrove rivulus *Kryptolebias marmoratus*.
- (85) University of Alabama Undergraduate Research & Creative Activities Conference (4/13). Kernahan N, Moore L & **Earley RL**. Adaptive implications of vibrant coloring for aggression between convict cichlid females.
- (84) University of Alabama Undergraduate Research & Creative Activities Conference (4/13). Jones R & **Earley RL**. Using 3D Quick Prototyped Models as Biological Analogs for Size Dependent Aggression
- (83). University of Alabama Undergraduate Research & Creative Activities Conference (4/13). Cook M, Marson K, Anderson C, Klein A, Broughton A, Dutra D & **Earley RL**. Reversed sexual dimorphism and male mate choice in convict cichlids (*Amatitlania nigrofasciata*).
- (82) University of Alabama Undergraduate Research & Creative Activities Conference (4/13). Adams P & **Earley RL**. Using genomics to understand the cause of male development in the mangrove rivulus.
- (81) 4th Annual Frontiers in Biological Sciences Colloquium (3/13). Marson & Earley RL. Female ornaments and male mate choice in convict cichlids.
- (80) 4th Annual Frontiers in Biological Sciences Colloquium (3/13). Garcia M & Earley RL.. Variation within and among populations in the behavioral types of mangrove rivulus fish.

2012

- (79) Georgia Academy of Sciences (9/12). Bernhardt L, Bechler, DL, Ring, BC, Elder JF & Earley RL. The impact of color on egg laying rates and outcrossing of *Kryptolebias marmoratus*.
- (78) Howard Hughes Medical Institute Summer Symposium (7/12). Waits A, Hanninen A, Lee E, Weinersmith K, Klein A & **Earley RL**. Temperature effects on sex steroids in the hermaphroditic fish *Kryptolebias marmoratus*.
- (77) California Polytechnic College of Science & Mathematics Conference (5/12). Beitdashtoo JD, Akky YL, Weissman AC, Hanninen AF, Earley RL & Kolluru GR. Does 11-ketotestosterone influence boldness?
- (76) University of Alabama Undergraduate Research & Creative Activities Conference (4/12). Griffin SE, Gray JC, Rainey KL, Powers JR & **Earley RL**. Temperature effects on sex determination in the mangrove rivulus: are some genotypes more sensitive than others?
- (75) University of Alabama Undergraduate Research & Creative Activities Conference (4/12). Belue M, Garcia MJ, Vaughn S, Sinderman B & **Earley RL**. Variation in growth rates in the mangrove rivulus (*Kryptolebias marmoratus*).
- (74) University of Alabama Undergraduate Research & Creative Activities Conference (4/11). Rainey K, Powers J, Gray M, Gray JC, Griffin S, Sinderman B, Cheney L, Oppenheimer A & **Earley RL**. Same genes, different sex: temperature dependent sex determination in a hermaphroditic fish.

- (73) University of Alabama Undergraduate Research & Creative Activities Conference (4/12). Dutra D, Jones R, Raulerson C, Adams P, Bryant A, Highbaugh L & **Earley RL**. The effect of exercise on swimming performance and physiology in mangrove killifish.
- (72) University of Alabama Undergraduate Research & Creative Activities Conference (4/12). Gray JC, Griffin SE, Powers JR, Rainey KL & **Earley RL**. Isolating environmental factors: temperature dependent sex determination in *Kryptolebias marmoratus*.
- (71) University of Alabama Undergraduate Research & Creative Activities Conference (4/12). Lenox A, White S, Wilson E & **Earley RL**. Effect of male presence on outcrossing in *Kryptolebias marmoratus*.
- (70) University of Alabama Undergraduate Research & Creative Activities Conference (4/12). Schmitt A, Lee E, Duke E, Waits A, Bryant A, Kraus R & **Earley RL**. Reproduction in hermaphroditic species: do females exist?
- (69) University of Alabama Undergraduate Research & Creative Activities Conference (4/12). Raulerson C, Jones R, Adams P, Bryant A, Dutra D, Highbaugh L & **Earley RL**. Linking biomechanics and behavior: swimming performance, muscle physiology, and endurance in fish.
- (68) University of Alabama Undergraduate Research & Creative Activities Conference (4/12). Sinderman B, Boulton K, Pearce MR, Wilson AJ & **Earley RL**. Stress recovery, contest initiation, and dominance in male green swordtail fish (*Xiphophorus helleri*).
- (67) University of Alabama Undergraduate Research & Creative Activities Conference (4/12). Bertalan TS & **Earley RL**. ESIM: A framework for simulation of dominance hierarchy formation in small animal groups.
- (66) University of Alabama Undergraduate Research & Creative Activities Conference (4/12). Robinson SR, Jones A, Highbaugh L & **Earley RL**. Phenotypic plasticity and integration: hormonal, morphological, and behavioral responses to salinity in a self-fertilizing, hermaphroditic fish (*Kryptolebias marmoratus*).
- (65) University of Alabama Undergraduate Research & Creative Activities Conference (4/12). Vaughn, S, Garcia MJ, Belue M & **Earley RL**. Adapting to local conditions: variation of fecundity in mangrove rivulus (*Kryptolebias marmoratus*).
- (64) 3rd Annual Frontiers in Biological Sciences Colloquium (3/12). Lee E, Earley RL & Hanninen A. The effects of fasting state on hormonal plasticity in the mangrove rivulus, *Kryptolebias marmoratus*.
- (63) 3rd Annual Frontiers in Biological Sciences Colloquium (3/12). Hanninen AF, Davis AG, Lee EA, Wong SC & Earley RL. Endocrine and life-history plasticity in an amphibious fish.
- (62) 3rd Annual Frontiers in Biological Sciences Colloquium (3/12). Garcia MJ, Vaughn S, Belue M, Fredricks V & Earley RL. Evidence for local adaptation of life history traits in the mangrove rivulus (*Kryptolebias marmoratus*).
- (61) 3rd Annual Frontiers in Biological Sciences Colloquium (3/12). Fuller A & Earley RL. The effect of heterospecifics on sexually selected traits.
- (60) Bama Grad Expo (1/12). Hanninen AF, Davis G, Lee E, Wong SC & Earley RL. Endocrine and life history plasticity in an amphibious fish.

2011

- (59) Howard Hughes Medical Institute Symposium (7/11). Payne W & **Earley RL**. Temperature effects on reproductive hormones in *Kryptolebias marmoratus*.
- (58) Howard Hughes Medical Institute Symposium (7/11). Aquino JV & **Earley RL**. Sex and stress steroid hormone receptor distributions in brains of the hermaphroditic rivulus, *Kryptolebias marmoratus*.
- (57) Howard Hughes Medical Institute Symposium (7/11). Lenox A & **Earley RL**. Factors that promote outcrossing in the self-fertilizing *Kryptolebias marmoratus*.
- (56) California Polytechnic State University College of Science & Mathematics Student Research Conference. Gupta S, Kalbach BG, Walz J, Earley RL, Hanninen A & Kolluru GR (5/11). The relationship between 11-ketotestosterone, cortisol, and testosterone and condition index for *Poecilia reticulata*.
- (55) 2nd Annual Frontiers in Research Colloquium, Department of Biological Sciences (4/11). Wong SC & **Earley RL**. Color in context: female convict cichlids alter carotenoid-based traits in response to predation risk and changes in breeding status.
- (54) 2nd Annual Frontiers in Research Colloquium, Department of Biological Sciences (4/11). Hanninen AF & **Earley RL**. Plasticity of the stress response in variable environments: a reaction norm approach in the mangrove rivulus (*Kryptolebias marmoratus*).
- (53) 2nd Annual Frontiers in Research Colloquium, Department of Biological Sciences (4/11). Garcia MJ, Wilson J, Murphree J & **Earley RL**. Mechanisms driving winner and loser effects in the green anole lizard (*Anolis carolinensis*).
- (52) 2nd Annual Frontiers in Research Colloquium, Department of Biological Sciences (4/11). Fuller A & **Earley RL**. The effects of social environment on mangrove rivulus *Kryptolebias marmoratus*.
- (51) University of Alabama Undergraduate Research & Creative Activities Conference (4/11). Hovell C, Whittelsey D & **Earley RL**. An examination of the neurobiology of social stress and its implications for memory acquisition and retention in cichlid fish.
- (50) University of Alabama Undergraduate Research & Creative Activities Conference (4/11). Lee E, Hall G & **Earley RL**. The stages of embryological development in *Kryptolebias marmoratus*.
- (49) University of Alabama Undergraduate Research & Creative Activities Conference (4/11). Powers J, Rainey K & **Earley RL**. Males in a hermaphrodite's world: what does temperature have to do with it?
- (48) University of Alabama Undergraduate Research & Creative Activities Conference (4/11). Rainey K, Powers J & **Earley RL**. Plasticity for plasticity's sake: a new perspective on gender roles in *Kryptolebias marmoratus*.
- (47) University of Alabama Undergraduate Research & Creative Activities Conference (4/11). Bertalan T, Raulerson C & **Earley RL**. Effects of eavesdropping on the emergence of linear dominance hierarchies.

(46) University of Alabama Undergraduate Research & Creative Activities Conference (4/11). Raulerson C, Bertalan T & **Earley RL**. Is infinite strength achievable? Implications for dominance hierarchy formation in animals.

(45) University of Alabama Undergraduate Research & Creative Activities Conference (4/11). Pearce RM, Thompson A, Morris R, May MM & **Earley RL**. The true cost of combat: exploring the effects of physical damage on fighting decisions using fluorescein dye.

2010

(44) Alabama Chapter of Partners in Amphibian and Reptile Conservation, Andalusia, AL (11/10). Garcia MJ & **Earley RL**. Effects of social experience on contest performance in the green anole lizard (*Anolis carolinensis*).

(43) Howard Hughes Medical Institute Symposium (7/10). Hanninen AF, Wong SC & **Earley RL**. Metabolic plasticity in the mangrove rivulus (*Kryptolebias marmoratus*): a hormonal perspective.

(42) Howard Hughes Medical Institute Symposium (7/10). Hovell C & **Earley RL**. An examination of the neurobiology of social stress and its implications for memory acquisition and retention in cichlid fish.

(41) Howard Hughes Medical Institute Symposium (7/10). Le S & **Earley RL**. Gonad morphology in males and hermaphrodites of the self-fertilizing mangrove rivulus, *Kryptolebias marmoratus*.

(40) University of Alabama Undergraduate Research & Creative Activities Conference (4/10). Hanninen A, Huang SP, Fuller A, Garcia M & **Earley RL**. 'Phenotypic variation in a clonal organism: perspectives from hormones and behavior'.

(39) University of Alabama Undergraduate Research & Creative Activities Conference (4/10). May M, Zelickson A, Nuttall M, Brown B, Turner J, Sivaraman B & **Earley RL**. 'Corticotropin-releasing hormone and the expression of aggressive behavior in cichlid fish (*Amatitlania nigrofasciata*)'.

(38) University of Alabama Undergraduate Research & Creative Activities Conference (4/10). Hovell C & **Earley RL**. 'Mineralocorticoid receptor expression in the brain: implications for social memory and aggression'.

(37) University of Alabama Undergraduate Research & Creative Activities Conference (4/10). Aquino J, Murphree J, Elrod R, Garcia MJ & **Earley RL**. 'Physiological mechanisms underlying experience-induced changes in fighting performance'.

(36) University of Alabama 13th Annual Research & Thesis Conference (3/10). Wong SC, Hanninen A, Sivaraman B, Roberts E & **Earley RL**. (10/09) Carotenoids: more than just color?.

(35) University of Alabama 13th Annual Research & Thesis Conference (3/10). Garcia MJ & **Earley RL**. 'Organization-activation: models for physiological mechanisms for fighting experience'.

(34) University of Alabama 13th Annual Research & Thesis Conference (3/10). Sivaraman B & **Earley RL**. 'Neural mechanisms of territorial aggression in the convict cichlid (*Amatitlania nigrofasciata*).

2009

(33) University of Alabama, Frontiers in Biology Research Colloquium. Wong SC, Hanninen A, Sivaraman B, Roberts E & **Earley RL**. (10/09) Carotenoids: more than just color?.

(32) University of Alabama, Frontiers in Biology Research Colloquium. Sivaraman B, Zelickson A, May M, Nuttall M, Brown B & **Earley RL**. (10/09) Neural mechanisms of territorial aggression in the convict cichlid (*Amatitlania nigrofasciata*).

(31) University of Alabama, Frontiers in Biology Research Colloquium. (10/09) Garcia MJ, Sivaraman B, Wong SC & **Earley RL**. Win, Lose, or Draw: Does fighting experience affect future contest success?.

(30) Central California Research Symposium, Fresno, CA (4/09). Campbell JM, Roth TL, Riley L & **Earley RL**. Variation in aggressive behavior within a clonal killifish, *Kryptolebias marmoratus*: investigations into gene expression and epigenetic modifications of monoamine oxidase.

2008

(29) Bama Grad Expo, Tuscaloosa, AL (11/08). Garcia MJ, Sivaraman B & **Earley RL**. 'The effects of fighting experience on future contest performance in the territorial lizard, *Anolis carolinensis*'

(28) LSAMP Symposium, Fresno, CA (5/08). Luzania R, Cheah A, **Earley RL** & Riley LG. 'Identification of NPY-containing neurons in the brain of the tilapia, *Oreochromis mossambicus*'.

(27) Central California Research Symposium, Fresno, CA (4/08). Medichetti S, Wong S & **Earley RL**. 'Does challenging convict cichlids with ACTH manipulate the stress axis?' – *won best poster presentation*

(26) Central California Research Symposium, Fresno, CA (4/08). Campbell J, Janzen W, Medichetti S, Wong S & **Earley RL**. 'Relationships between steroid hormones and aggression in the clonal mangrove killifish, *Kryptolebias marmoratus*'.

2007

(25) Annual Biomedical Research Conference for Minority Students (ABRCMS), Austin, TX (11/07). Garcia M, Tuy S, **Earley RL**. 'The role of NMDA receptors in social memory: exploring neurobiological correlates of individual recognition in the context of dominance interactions'.

(24) Annual Biomedical Research Conference for Minority Students (ABRCMS), Austin, TX (11/07). Copeland DL, **Earley RL**. 'Metabolic costs of fighting in two cichlid fish species'.

(23) Annual Biomedical Research Conference for Minority Students (ABRCMS), Austin, TX (11/07). Campbell J, Janzen W, **Earley RL**. 'Bidirectional relationships between hormones and aggressive behavior in the clonal species, *Kryptolebias marmoratus*'.

(22) Central California Research Symposium, Fresno, CA (4/07). Vang F, Tsukimura B, Kelly P, **Earley RL**, Riley L. 'Impacts of selenium on California red-legged frogs'

2006

(21) GA/SC Neuroscience Consortium, Charleston, SC (4/8/06). **Earley RL**, Grober MS. 'Social Structure, Sexual Phenotype and Brain Function'

(20) GA/SC Neuroscience Consortium, Charleston, SC (4/8/06). **Earley RL**, Grober MS. 'Chronic subordination stress in convict cichlid fish: cortisol, CRH-ir cell characteristics, and CRH receptor densities' (poster)

(19) GA/SC Neuroscience Consortium, Charleston, SC (4/8/06). Derakshan S, **Earley RL**, Grober MS. 'Social dominance, sex change, and cortisol in the sexually plastic bluebanded goby (*Lythrypnus dalli*).' (poster – won outstanding presentation award)

(18) GA/SC Neuroscience Consortium, Charleston, SC (4/8/06). Yang C, **Earley RL**, Grober MS. 'Sex steroid hormone profiles during protogynous sex change in the bluebanded goby (*Lythrypnus dalli*).' (poster – won outstanding presentation award).

1998-2005

(17) 1st Annual Southeastern Ecology and Evolution Conference, Georgia Institute of Technology, Atlanta, GA (3/5-3/7/04), **Earley RL**, Bragg JA & Brosnan SF. 'Simulating dominance hierarchy formation in animals: a critical look at earlier assumptions of seemingly infinite fighting abilities'.

(16) 1st Annual Southeastern Ecology and Evolution Conference, Georgia Institute of Technology, Atlanta, GA (3/5-3/7/04), Pepper DR, **Earley RL**, Wagner CM, Grober MS. Inter- versus intraspecific aggressive interactions: implications for conservation, ecology, and behavioral neuroscience.

(15) 1st Annual Southeastern Ecology and Evolution Conference, Georgia Institute of Technology, Atlanta, GA (3/5-3/7/04), Edwards J, **Earley RL**. Dominance status and cortisol levels: something fishy going on...

(14) 1st Annual Southeastern Ecology and Evolution Conference, Georgia Institute of Technology, Atlanta, GA (3/5-3/7/04), Netherton JD, Grober MS, **Earley RL**. The woes of fighting: different for winners and losers?

(13) Morehouse College Summer Undergraduate Research at Emory 2003 Program –Aseem O, Blumer LS, **Earley RL**, Grober MS. 'Stress in convict cichlids (*Archocentrus nigrofasciatus*). – won outstanding poster presentation award.

(12) Fourth Annual Student/Postdoc Symposium of the W.M. Keck Center for Behavioral Biology at North Carolina State University (2/2/02). **Earley RL** & Grober MS 'The effects of chronic social stress on the physiology of convict cichlids *Cichlasoma nigrofasciatus*'

(11) University of Kentucky – Spring Research Symposium (6/17-6/18), **Earley RL**. 'Integration and utilization of visual cues in swordtail fights – the simplest scenario'

(10) University of Louisville Graduate Research Symposium (4/19/02), **Earley RL** & Dugatkin LA. 'To see or not to see: does previewing a future opponent affect the fighting behavior of green swordtails?'

- (9) University of Louisville Undergraduate Research Symposium (4/16/02), Druen M, **Earley RL** & Dugatkin LA. 'Repeatability of attack latency and correlations with contest outcome in *Xiphophorus helleri*' (won outstanding presentation award)
- (8) University of Louisville – Biology & Psychology Research Day (4/20/01), **Earley RL** & Dugatkin LA. 'Watch and learn: do green swordtail fish (*Xiphophorus helleri*) eavesdrop on aggressive contests between conspecifics?' (poster – won outstanding presentation award)
- (7) Kentucky Academy of Science, University of Kentucky, Lexington, KY (11/30-12/2/00), **Earley RL** & Dugatkin LA. 'It takes three to tangle: Does bystander observation shape contest dynamics?'
- (6) University of Louisville – Research!Louisville Poster Competition (10/30/00), **Earley RL** & Dugatkin LA. 'Do fish eavesdrop on aggressive contests between conspecifics?'
- (5) University of Louisville - Biology & Psychology Research Day (4/14/00), **Earley RL** & Dugatkin LA. 'When groups collide: fusion of dominance hierarchies incites struggle for social rank' - (poster)
- (4) Animal Behavior Society Midwest Regional, Bowling Green State University, Bowling Green, OH (9/24/99-9/26/99), **Earley RL** & Dugatkin LA. 'Group fusion and hierarchy structure in *Xiphophorus helleri*'
- (3) Midwest Ecology and Evolution Conference, Kent State University, Kent, OH (4/9/99-4/11/99), **Earley RL** & Dugatkin LA. 'Determinants of hierarchy structure following the fusion of *Xiphophorus helleri* triads'
- (2) Kentucky Academy of Science, JCC-Southwest, Louisville, KY (11/13/98-11/14/98), **Earley RL** & Dugatkin LA. 'Group fusion and the dynamics of hierarchy formation in *Xiphophorus helleri*'
- (1) Midwest Ecology and Evolution Conference, Eastern Illinois University (4/3-4/5/98), **Earley RL**, Hsu Y & Wolf LL. 'On the fighting behavior of the killifish, *Rivulus marmoratus*: Does aggression predict dominance?'

Conferences Attended:

- JB Johnston Club Annual Meeting & Karger Workshop, Atlanta, GA (10/12/06)
- JB Johnston Club Annual Meeting & Karger Workshop, Orlando, FL (11/2/02)
- Society for Neuroscience, Orlando, FL (11/2-11/7/02)
- Soc. Behav. Neuroendocrinol. Annual Meeting, AZ State University (6/27/01-7/1/01)
- Animal Behavior Soc. Natl Meeting, Southern Illinois University (7/18-7/22/98)
- Developmental Constraints Workshop, Univ Kentucky (9/24-9/26/98)

Honors & Awards

- Awarded the 2020 John L. Blackburn Advisor of the Year (Service & Leadership Awards, UA); for work with Not on My Campus and Men Against Rape & Sexual Assault
- Awarded the 2019 Outstanding Commitment to Students Award (Leadership Board, UA)
- Nominated for UA-AAA Outstanding Commitment to Advising Award (3/18)
- Nominated for UA Outstanding Commitment to Students Award (2/18)
- Awarded the 2017 Outstanding Faculty Award, The Other Club (University of Alabama)
- Nominated for UA-AAA Outstanding Commitment to Advising Award (3/15)

- Awarded the 2012 Outstanding Commitment to Teaching Award (National Alumni Association)
- Nominated for the Faculty Fellows in Service Learning Program at UA (4/10)
- Nominated for UA-AAA Academic Advising Excellence Award (3/10)
- Funded by Vice President for Research (Univ Alabama) to visit NSF Program Office (3/09)
- Nominated for 2008 Marquis Who's Who in America (2/08)
- CSUF College of Science & Mathematics International Activities Award, \$2000 (1/08)
- CSUF College of Science & Mathematics Creative & Scholarly Release Award (12/07)
- CSUF College of Science & Mathematics, Performance Enhancement Award, \$1000 (12/07)
- CSUF College of Science & Mathematics – 2007 Seminar Series Award, \$3500 (10/07)
- Research featured in California State University Fresno's *The Visionary* magazine (Spring 2007)
- CSUF College of Science & Mathematics – Summer Professional Develop. Award (4/07)
- CSUPERB Travel Grant, \$1000 (3/07)
- CSUF College of Science & Mathematics – Faculty Minigrant Award, \$1100 (1/07)
- CSUF College of Science & Mathematics – 3 Faculty-Student Research Grants, \$1400 each (12/06)
- CSUF College of Science & Mathematics – Faculty Research Equip. Award, \$4860 (12/06)
- CSUF College of Science & Mathematics – Performance Enhancement, \$1199 (12/06)
- CSUF College of Science & Mathematics – 2006 Seminar Series Award, \$2500 (12/06)
- CSUF Department of Biology – Major Travel Award, \$1100 (12/06)
- Awarded Copeland Fellowship at Amherst College (12/05) for Jan – May 2007 (declined)
- CBN Scholarship to attend Professional Grant Writing Workshop (4/28/04)
- Department of Biology (U of L) Outstanding Publication Award (4/19/02)
- Department of Biology (U of L) Outstanding Poster Presentation (4/20/01)
- Department of Biology (U of L) Outstanding Publication Award (4/20/01)
- Department of Biology (U of L) Outstanding Service Award (4/20/01)
- University of Louisville International Travel Grant, \$1000 (3/16/01)
- University of Louisville Research Assistantship (9/99-6/01)
- Department of Biology (U of L) Outstanding Teaching Award (4/14/00)
- Department of Biology (U of L) Outstanding Publication Award (4/14/00)
- Syracuse University Biology Department Research Achievement Award (5/97)
- David Orlin Prize for Outstanding Honors Thesis (5/97)
- Syracuse University Ralph Wilcox Scholarship (1/9/97)
- Syracuse University Harold Mitchell Scholarship (1/30/96)
- Golden Key National Honors Society (1994)
- Phi Eta Sigma National Honors Society (1994)
- Five Semesters Syracuse University Dean's List (12/93, 5/95, 12/95, 12/96, 5/97)
- Chancellor's Scholar at Syracuse University (1993-1997)
- Undergraduate Research Program at Syracuse University (1993-1997)
- Syracuse University Honors Society (1993-1997)

Student Mentorship

University of Alabama

Postdoctoral Fellow

- Trent Robinson (Spring 2019-present)

Current Ph.D. Students

- Shelly McCain (Summer 2015 – present)
- Jennifer Fortunato (Fall 2017 – present)
- Anthony Snead (Fall 2018 - present)
- Brandon McCormick (Fall 2019 – present; co-advised with Dr. Andrea Glenn)

Current Masters Students

- Carly Norden (Fall 2018 - present; Accelerated Masters Program)
- Anna Reding (Spring 2019 – present)
- Haylee Quertermous (Spring 2020 – present; Accelerated Masters Program)
- William (Harrison) Cook (Spring 2020 – present; Accelerated Masters Program)

Graduate Student Alumni

PhD

- Jennifer Gresham (Fall 2014 – Summer 2020) – now postdoc at Emory University
- Elizabeth Johnson – (Fall 2011 – Summer 2018) – outreach coordinator at Southern Research
- Cheng-Yu Li (Fall 2014 - Summer 2018) - postdoctoral fellow at University of Maryland (Scott Juntii)
- Joseph Styga (Summer 2014 – Spring 2018) - visiting assistant professor at Centre College
- Adam Fuller – (Fall 2009 – Summer 2014) - faculty at Feather River College, CA
- Mark Garcia (PhD) (Fall 2010-Summer 2014) - postdoctoral fellow at Salisbury University (Ryan Taylor) and University of Kentucky (Nicholas Teets)
- Anthony Mathiron (Fall 2016 - present; co-advised with Marlene Goubault; University of Tours)

Masters

- Patrice Pottier (Spring-Summer 2019; Masters Research Internship; from U of Tours, France) – University of Sydney, PhD program.
- Abigail Sisti (Spring 2018 – Spring 2019; Accelerated Masters Program) –Virginia Institute for Marine Science, PhD program
- Kristy Marson – (Spring 2012 – Spring 2017) - independent business with animal breeding
- Grace Scarsella (Fall 2014 – Spring 2017) - Program manager at Earth Force (outreach)
- Caleb Anderson (Fall 2014-Summer 2016) –Research technician, University of Colorado
- Stephanie Robinson (Fall 2014-Summer 2015) – middle school teacher, Basis Independent, San Antonio; laboratory technician at American Family Care
- Amanda Hanninen (Fall 2010-Summer 2013) –went on to PhD program at the University of Virginia; now grants specialist at UAB
- Boopathy Sivaraman (Fall 2008-Spring 2012) –earned PharmD program Auburn University
- Mark Garcia (Masters) (Fall 2008-Summer 2010)–PhD program at the University of Alabama

Exchange and visiting research students

- Shu-Ping Huang (postdoctoral fellow, National Taiwan Normal University)
- Cheng-Yu Li (Masters student, National Taiwan Normal University)

- Patricia Speares (Ph.D. student, Auburn University)
- Kelly Weinersmith (Ph.D. student, University of California Davis)
- Andrew Turko (Masters student, University of Guelph, Canada)
- Matthew Druen (post-doctoral fellow, University of Louisville)
- Victoria Smith (Ph.D. student, Texas A&M)
- Michael Wells (Masters student, University of Guelph, Canada)
- Tyler Frailie (PhD student, University of Louisville)
- Kelly Brossman (Masters student, Penn State)
- Gabrielle Archard (Post-doc, Penn State)
- Benjamin Perlman (PhD student, Wake Forest University)
- Melissa Graham (PhD student, Clark University)
- Tom Houslay (Post-doc, University of Exeter, UK)
- Stephen White (PhD student, University of Exeter, UK)
- Craig Marshall (PhD student, Colorado State University)
- Anne-Sophie Voisin (PhD student, University of Namur, Belgium)
- Braulio Assis (PhD student, Penn State)

California State University Fresno

Masters students (all graduated)

- Stephanie Wong (Biology Masters student)
- Marcel Garcia (MBRS-RISE Psychology Masters student)
- Swapna Medichetti (Biotechnology Masters student)

Thesis Committee Service

Present

Paula Adams (UA, Dept Biological Sciences, Fierst student)
Craig Marshall (Colorado State University, Ghalambor student)
Caleb Turberville (UA, Dept Biological Sciences, Pienaar student)
Jacob Dawson (UA, Dept Biological Sciences, Huryn student)
Wesley Neely (UA, Dept Biological Sciences, Becker student)
Valentine Chapelle (University of Namur, Belgium; co-supervisor)
Micayla Lacey (UA, Dept Psychology, Gable student)
Macie Smith (Ohio State University, Biology, Ian Hamilton student)
Morgan Jones (UA, Kinesiology, Winchester student)

Past – University of Alabama and External

Jenna Crovo (Auburn, Fisheries, Johnston student)
Alessandra Carrion (University of Namur, Belgium; co-supervisor)
Matthew Mireles (UA, Dept. Chemistry, Cassady student)

Meghan Murphy (UA, Dept Biological Sciences, Secor student)
 Tori Stone (UA, Kinesiology)
 Katie Sandin (UA, Dept Biological Sciences, Reed student)
 Melissa Graham (Clark University, Susan Foster's lab)
 Kelsey Lowman (UA, Dept Biological Sciences, Reed student)
 Son Young (Diana) Kim (Texas State University, Gabor student)
 Anne-Sophie Voisin (University of Namur, Belgium; co-supervisor)
 Corey Cates (Auburn University, Warner student)
 Elan Strange (UA, Dept Biological Sciences, Marcus student)
 Zezhi Yan (UA, Dept Biological Sciences, Marcus student)
 Natalie Harrison (UA, Dept Psychology, Salekin student)
 Sarah Wofford (Bowling Green State University, Paul Moore's lab)
 Matthew Lollar (UA, Dept Biological Sciences, O'Donnell student)
 Andrew Flatt (UA, Kinesiology)
 Ryan James (UAB, Department of Biology, McClintock student)
 Ron Snarr (UA, Kinesiology)
 Mylène Exbrayat (University of Tours, IRBI, Goubault student)
 Courtney Moore (UA, Dept Biological Sciences, Sobecky student)
 Sarah Duncan (UA, Dept Biological Sciences, Rissler student)
 Kelly Weinersmith (Environmental Science & Policy; University of California Davis)
 Evan Menzel (UA, Dept Biological Sciences, Secor student)
 Becca Kastner (UA, Dept Psychology, Sellbom student)
 Cigdem Tunckanat (UA, Dept Biological Sciences, Reed student)
 Whitney Lester (UA, Dept Psychology, Salekin student)
 Sean Graham (Auburn University, Department of Biology, Ph.D. student)
 Horace (Reid) Downer (UA, Dept Biological Sciences, Rissler student)
 Donald Copeland (University of Akron, Department of Integrated Biosciences, Ph.D. student)
 Marco Wu (University of Alabama, Engineering)
 David Hall (UA, Dept Biological Sciences, Secor student)
 Erica Thompson (UA, Dept Biological Sciences, Johnson student)
 Cassandra Coleman (UA, Dept Biological Sciences, Clark student)
 Nichole Mattheus (UA, Dept Biological Sciences, Rissler student)
 Maria (Virginia) De La Hoz Aristizabal (UA, Dept Biological Sciences, Graf student)
 Heath Howell (UA, Dept Biological Sciences, Harris student)
 Mario Sullivan (Department of Biology, Texas State University)
 Gbenga Doherty (UA, Department of Biological Sciences; O'Donnell student)
 Christopher O'Brien (UA, Dept Psychology, Barker student)
 Lynda Bernhardt (Valdosta State University, Department of Biology, Bechler student)
 Julia Stevens (UA, Dept Biological Sciences, Olson student)
 Alexandria Brown (Department of Biology, University of Massachusetts)
 Achsah Dorsey (UA, Dept Anthropology, DeCaro student)
 Elizabeth Wilson (UA, Dept Anthropology, Knight student)
 Dylan Marchione (UA, Dept. Biological Sciences, Marcus student)
 Kristin DiBona (University of Alabama, Department of Biological Sciences, Rasco student)

Past – California State University Fresno

Rama Devadi (Biotechnology Master's student, committee member – Riley student)
 Sarath Peddu (Biotechnology Master's student, committee member – Riley student)
 Caroline Rhodes (Biology Master's student, committee member – Katti student)
 Fong Vang (Biology Master's student, committee member – Tsukimura student)
 Rowena Chu (Biotechnology Master's student, committee member – Bush student)
 Vanessa Gonzalez (Biology Master's student, committee member – Tsukimura student)
 Melissa Gushiken (Chemistry Master's student, committee member – Wong student)
 Nagaraju Kotagiri (Biology Master's student, committee member – Tsukimura student)

Undergraduate Students Mentored

University of Alabama

Note: Special programs and/or current pursuits noted in parentheses

* CBH = Computer-Based Honors Student

* ES = Emerging Scholars Program

* HHMI = Howard Hughes Medical Institute Summer Research Fellow

* ROURA = Randall Outstanding Undergraduate Research Award Recipient

* UF = University Fellow

* H = Hollings Scholarship Recipient

Students Mentored (2/13/20): Total = 391 Women = 252 Minority = 37

Current:

* Gabrielle Angst	* Kailey Henson	* Thomas Penta
* Leah Ash	* Nathan Hill	* Walker Phillips
* Andrew Atkinson	* Taylor Hobbs (ES)	* Marie Pisani
* Emily Barnes	* Rachel Hooker	* Katie Presz
* Mary Morgan Barron	* Kylie Hopkins	* Jordan Pyatt (ES)
* Ellen Beechey	* Mikayla Jones	* Haylee Quertermous
* Courtney Blanchard	* Jaeden Joyner	* Kat Rathke
* David Bock	* Chloe Keck	* Morgan Ross
* Sarah Bowman	* Garrett Kennedy	* Michael Rowe
* Cameron Brown	* Hyunyoung (Emily) Kim	* Malik Seals
* Regan Brown	* Anna Catherine King	* Garrett Smith
* Isabel Burwitz	* Alex Kirby	* John Paul Williams Soriano
* Frances Case	* Alonza Klopfer	* Julia Sponholtz
* Shania Chambers	* Sarah Klusendorf	* Natalie Stoker
* Autumn Chistafore	* Mary Michael Knight	* Mason Strickland
* Anna Clark	* Alyssa Koehler	* Jessica Tabary (ES)
* Victoria Colon (ES)	* Corinne Lamanna	* Nicole Terfloth
* William (Harrison) Cook	* Peter Ledet	* Caroline Terry
* Aidan Creel	* Emily Linn (ES)	* Callie Thackston
* Charlotte Dolan (ES)	* Donald (Will) Long	* Amber Thibeaux
* Brenna Dotson	* Alexis Longmire	* Anna Lee Thornton
* Rebekah Dry	* Emily Lowery	* Hartwell Tickner
* Danika Duffalo	* Kyle Maas	* Tara Tischer
* Isaac Eastlund	* Molly Mabry	* Jordan Tzabari
* Hannah Edwards	* Pedram Maleknia	* Bianca Urness
* Joseph Faletra	* Taylor Malkemus	* Austin Wayne
* Alina Faunce	* Sydney McCain	* Meaghan Wharton (ES)
* Trevor Fields	* Cassidy McColl (ES)	* Abby White (ES)
* Heather Franklin	* Anna McComas	* Ashley White (ES)
* McKay Freeman (ES)	* Emmerson McGowan	* Lauren Widelski

* Elyse Geiger
 * Julian Giakas (ES)
 * Cayla Gilliland
 * Abbi Grathwohl
 * Philip Harden (ES)
 * Brooke Harris
 * Addison Harrison
 * Kevin Hascher
 * Dylan Hayes
 * Courtney Heitzler

* Jodie Meeks
 * Maggie Mestayer
 * Julianna Myrick
 * Priya Nangia
 * Anuska Narayanan
 * Abye Nelson
 * Nathaniel Olliff
 * Colin Orloski
 * Jonathan Parrish
 * Gabby Perdue

* Tameron Williams

Past:

Connor Adams
 Delaney Adams
 Paula Adams (CBH, H)
 Kaylee Alexander (Stillman, HHMI)
 Rachel Anderson
 Josh Aquino (HHMI)
 Peter Arvanitis
 Christina Ausley (ES)
 Marissa Balkcom
 Jordana Baraad (CBH, ES)
 Emily Barron
 Anna Bell
 Mitchell Belue
 Alyssa Bentley
 Zoe Berndt
 Thomas Bertalan (ROURA)
 Jessica Bhanasy
 Luke Bishop (CBH)
 Sarah Blackwell
 Ian Blaher
 Michael Blotner
 Brooke Bradley
 Austin Brooks (ES)
 Alyssa Broughton
 Ashley Bryant
 Ben Brown
 Sarah Brown
 Tommy Brown
 Leeonna Buckhannon
 Connor Buckley
 Alexander Burch
 AJ Burdick (ES)
 Andrew Burks (ES)
 Riley Burrows (ES)
 Blair Bush
 Kaitlyn Byrd
 Cameron Calhoun
 Megan Canevari
 Paige Cantrell
 Rachel Carlson
 Emily Caruso
 Leah Cheney
 Rose Cianfarani
 Carissa Clay (ES)
 Chris Cochrane

Candice Hovell (HHMI)
 Brady Hudson
 Brent Ishii
 Ryan James
 Brooke Anne Jennings
 Lizzie Johnson
 Mary Martin Johnson
 Chris Joiner
 Andrea Jones
 Ryan Jones (ROURA)
 Maggie Kalka
 Rachel Karcher
 Sarah Kennedy
 Nicole Kernahan (ES, HHMI, ROURA, H)
 Ian Kimbrough
 Tyler King
 Adrian Klein
 Sydney Kopelic (ES)
 Colin Kruger
 Riley Kraus
 Grace Kurosaka
 Creighton Ladd
 Jessica Lambert
 Morgan Lancaster
 Johnathan Laurich (ES)
 Sherry Le (HHMI)
 Elizabeth Lee
 Meghan Lemmen
 Annie Lenox (HHMI)
 Kever Lewis
 Mingyuan Li
 Emily Liang
 CJ Lightfoot (CBH)
 Jessica Litavec
 Quenteria Lockett
 Alexia Lockwood-Oliveira
 Justin Lomax (ROURA)
 Brandi Lowe
 Marly Lowery
 Katy Marotto
 Kayla Martin
 Cole Mattingly (ES)
 Tyler Mattox
 Matthew May (ROURA)
 Tanner McGill

Lidia Rynkiewicz
 Kathryn Sawyer
 Amy Schmitt (ES, HHM)
 Jennifer Schmitz
 Ben Schwartz
 Ricky Seeber (ES, HHMI)
 Erica Shackelford
 Abigail Shelton (ES, ROURA)
 Ben Sinderman
 Abigail Sisti (ROURA)
 Rachel Skelton (Stillman, HHMI)
 Carrie Smith
 Jasmine Smith
 Mark Smith
 Walt Smith
 Lana Stuart (now EMT)
 Hannah Studdard
 Sydney Sudderth
 Stephanie Summers
 Dawson Tan
 Alyssa Tessler
 Ben Thomas
 Caitlin Thomas
 Sandrilla Thomas
 Alexander Thompson
 Whitney Thompson (ES)
 Will Thompson
 Kathryn Tomlinson
 Bianca Tolbert
 Jenna Toler
 Susanna Tubbs
 Jake Turner
 Ashley Vaughan
 Sara Vaughn
 Adrika Venkatanarayanan
 Alexandra Waits (CBH, HHMI)
 Tommie Walker (ES)
 Ryan Walsh (ES)
 Victoria Walton
 Abigail Ward
 Audrey Ward (CBH, ROURA)
 Dana Watson
 Hunter Watson
 William Watson
 Judson Wells

Ashley Coleman	Nicole McKim	Alise Wenner
Gabby Coolbaugh	Michael Merck	Madison Wessel (ES)
Molly Cook (ROURA)	Joseph Mestayer	Travis Wheeler
Maggie Cooper	Katie Meyer	Luke White
Chris Cornelius	Genevieve Miller (ES, HHMI)	Sarah White
Victoria (Alessa) Cowal (from U Illinois)	Brianna Milner	Kristin Whitmire
Andrew Cox	Taylor Millirons	Dan Whittelsey
Patrice Crawford	Anne Miskelley	Claire Wilkes
Sam Creden	Molly Mitchell	Ford Williams
Logen Creighton	Peter Mitchell	John Williams
Mae Crumbley (ES)	James Mitsos	Josh Williams
Caitlin Curtis	Rodger (Michael) Moore	Jack Wilson
Brittany Daniel	Audrey Morris	Elizabeth Wilson
Collin Darwish	Richard Morris	Jonathan Wilson
Anna Davis	Blair Morrison (ES, H)	Alyssa Woltemath
Kimberly Davis (ES)	Jesse Morrison	Jesse Wu
Matthew Davis	Benjamin Munoz	James Wymer
Alyssa Delia (ES)	Sudarsan Murali	Nicholas Yam
Jessica Delo	Issac Murphree	Erin Yepsen
Gia Diaz	Joe Murphree	Courtney Zacharias
Michael Dobbins	Andrea Murrell	Hannah Zahedi
Emily Duke	Steven Nabers	Adam Zelickson
Emily Dumas	Joshua Nail	Helen Zhang
Kevin Duque	Ana Naumescu	Kyle Zigelsky
Danielle Dutra (ES)	Sarah Nelson	
Ben East	Tanya Nichols	
John Elder	Carly Norden	
William	Mark Nuttall	
Kip Eslava	Kathleen O'Neal	
Anthony Fant (ES)	Hannah Offenback	
Skyler Faul	Audra Oppenheimer	
Emma Fay	Hannah Ostendorf	
Jack Ferro (ES)	Lindsey Overstreet	
Kirby Fields	Maya Owens-Freeman	
Maria Fonseca (Brazilian Internship)	Mack Padgett	
Victoria Frederick	Robertson Pearce (ROURA)	
Francesca Fuger (ES)	Charles Peper	
Megan Galaviz	Callie Perkins (UF)	
Riley Garrett	Corey Phillis	
Megan Gelement	Blake Pincheck	
Alison Gentry (ES)	Trevor Pinchback	
Erik Gentry	Allison Polinski	
Virginia (Brooke) Gill	Shania Polson	
Carla Godoy (ES)	Jake Powers (ROURA)	
Chase Golden	Cara Pridmore	
Sierra Gould	Dennis Quertermous	
Jelani Grace (ES)	Kay Rainey (ROURA)	
Coulson Gray	Cedrina Randolph	
Margaret Gray	Chelsea Raulerson (CBH)	
Benjamin Greenberg	Elizabeth Ray (ES)	
Sarah Griffin	Jeslyn Redcross	
Teresa Griffin	Andrew Reed	
Griff Hall	Ryan Regan	
Madeleine Haddock	Caitlin Reilly	
Amanda Hanninen (HHMI)	Cassidy Reilly	
Brooke Harris (ES)	Erin Roberts	
Carly Harris	Whitney Roberts	
Alex Harrison	Clare Robertson	
Evan Harrison	Lauren Robinet	

Lindsay Highbaugh
Joe Holden
Matthew Honkanen
Conrad Horst
Courtney Hopkins
Jake Howell
Lee House

Stephanie Robinson
Carlos Robles
Danielle Roderich
Carlo Rodriguez
Madeline Ross
Julie Ruehl
Judson Russell

California State University, Fresno

Students Mentored: Total = 31, Women = 16, Minority = 12

- Alberto Aguilera (undergraduate; Health & Human Services) - *Co-president American Medical Student Association* – accepted for MPH in Nutrition at UC Davis
- Eduardo Avalos (undergraduate; Psychology)
- Caili Beebee (undergraduate)
- Kathryn Calderala (undergraduate)
- Janet Campbell (MBRS-RISE undergraduate) – *Recipient of California Pre-doctoral grant; 1 Cal State Fresno Internal Research grant; LSAMP Scholars Program; Accepted to competitive Epigenetics Conference; NIH MBRS-RISE Scholar, Ph.D. student at Washington State University (Dr. Gary Thorgaard's laboratory)*
- Alex Cheah (undergraduate; Health & Human Services)
- Donnie Copeland (MBRS-RISE undergraduate) – *NIH MBRS-RISE Scholar; Howard Hughes Scholar; Recipient of 1 Cal State Fresno Internal Research Grant –n Ph.D. program at University of Akron (Integrated Biosciences) in Dr. Richard Londraville's laboratory*
- Heidi Dunbar (undergraduate)
- Mark Dykstra (summer undergraduate intern from Dordt College, Iowa)
- Mark Garcia (undergraduate) – *Recipient of 1 Cal State Fresno Internal Research grant; Ph.D. student at University of Alabama*
- Allison Grant (undergraduate)
- Max Henning (undergraduate)
- Whitney Janzen (summer undergraduate intern, Mills College, Oakland) –*Master's program at California State University Fresno*
- Kevin Lee (undergraduate)
- Michelle Lennox (undergraduate)
- Brian Levay (undergraduate)
- Chris Lowe (post-baccalaureate, Chemistry)
- Jacqueline Ma (undergraduate) – *STAR scholar, NIH MBRS-RISE Scholar, Recipient of 1 Cal State Fresno Internal Research Grant; Recipient of Sigma Xi Grants-in-Aid*
- Lindsay MacChesney (undergraduate)
- Farzad Marzlom (undergraduate)
- Megan McDougal (summer undergraduate intern, University of California Berkeley)
- Kelly Miller (undergraduate) – *Co-president American Medical Student Association*
- Heather Nuanes (undergraduate)
- Margarita Ortiz (undergraduate)
- Laura Paiva (undergraduate; Music)
- Imron Ramos (undergraduate; Health & Human Services)

- Nasir Sadeghi (undergraduate)
- Boopathy Sivaraman (undergraduate); *now a Masters student at University of Alabama*
- Haley Stephenson (post-bacc from Wellesley College) –*Masters program at John's Hopkins University*
- Max Stephenson
- Sina Tuy (MBRS-RISE Psychology undergraduate) – *NIH MBRS-RISE Scholar*

Center for Behavioral Neuroscience & Georgia State University

- Yong Ah (GSU; Fall 2005 – present); Center for Disease Control, Atlanta
- Obaidullah Aseem (Morehouse; Summer 2002- 2003); Dartmouth Med School
- Brittany Cassell (GSU; Spring 2005 – present)
- Setareh Derakhshan (GSU; Fall 2005 – present)
- Jonathan Edwards (Fall 2002-Summer 2005); research technician at GSU
- Tiffany Elliott (GSU; Summer 2006 – present); Masters student at GSU
- Jeff Glenn (GSU; Spring 2005 – present)
- Nassim Nadavi (GSU; Fall 2005-present); Masters student at GSU
- Joshua Netherton (Spring 2003- 2005) –web developer, Atlanta Journal Constitution
- D. Robin Pepper (GSU; Spring 2003-present); position at Atlanta Zoo
- Scott Wilson (GSU; Fall 2005 – present); Masters student at GSU
- Chong Yang (GSU; Fall 2005 – present)
- Kathryn Felton (GSU; Summer 2002- 2003); consultant at CDC, Atlanta, GA

University of Louisville

- Michael Boles (Summer/Fall 1998) –Army Corps of Engineers, Florida
- Shanna Brotzge (Summer 2000).
- Mark Datovsky (Fall/Spring 1998).
- Matthew Druen (Fall 2001 – Summer 2002). Ph.D. student UofL
- Blair Gilliland (Fall 2000).
- Brian LaBore (Spring 2002)
- Meredith McGee (Summer 1999 – Summer 2002) –pre-dental hygiene at UofL
- Diane Scott (Fall 1999).
- Megan Tinsley (Summer 1999).
- Paula Thompson (Spring 2000).

Teaching Experience

University of Alabama – Primary courses

*G=graduate students; UG = undergraduate students; * = writing intensive courses*

Note: as a new faculty member, I was asked to select one semester "off" from teaching = Spring 2010

Note: to complete an NSF funded field project, I taught 2 Fall 2012 courses and had Spring 2013 "off"

Note: sabbatical, Fall 2017

Summary: 6 new course preparations from 2008-2018

Term	Year	Course No.	Course Title	Enrollment
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Spring	2020	BSC 449/549	Endocrinology*	30 UG, 5 G
Fall	2019	BSC 448/548	Animal Behavior*	40 UG, 6 G
Spring	2019	BSC 449/549	Endocrinology*	53 UG, 4 G
Fall	2018	BSC 448/548	Animal Behavior*	38 UG, 5 G
Summer	2018	BSC 448	Animal Behavior*	16 UG
Summer	2018	BSC 449	Endocrinology*	9 UG
Spring	2018	BSC 449/549	Endocrinology*	48 UG, 4 G
Summer	2017	BSC 448	Animal Behavior*	20 UG
Summer	2017	BSC 449	Endocrinology*	8 UG
Spring	2017	BSC 449/549	Endocrinology*	31 UG, 5 G
Fall	2016	BSC 449/549	Animal Behavior*	32 UG, 3 G
Summer	2016	BSC 449/549	Animal Behavior*	34 UG
Spring	2016	BSC 449/549	Endocrinology*	1G, 33 UG
Fall	2015	BSC 448/548	Animal Behavior*	3 G, 33 UG
Summer	2015	BSC 448/548	Animal Behavior*	1 G, 34 UG
Spring	2015	BSC 449/549	Endocrinology*	5 G, 28 UG
Fall	2014	BSC 448/548	Animal Behavior*	5 G, 31 UG
Summer	2014	BSC 448/548	Animal Behavior*	1 G, 34 UG
Spring	2014	BSC 449/549	Endocrinology*	1 G, 29 UG
Fall	2013	BSC 448/548	Animal Behavior*	3 G, 35 UG
Fall	2012	BSC 448/548	Animal Behavior*	3 G, 36 UG
Fall	2012	BSC 449/549	Endocrinology*	5 G, 33 UG
Spring	2012	BSC 215	Human Anatomy & Physiology I	88 UG
Fall	2011	BSC 448/548	Animal Behavior*	7 G, 29 UG
Spring	2011	BSC 400/500	Functional Vertebrate Morphology	4 G, 43 UG
Fall	2010	BSC 449/549	Endocrinology*	8 G, 31 UG
Summer	2010	BSC 215	Human Anatomy & Physiology I	79 UG
Summer	2010	BSC 216	Human Anatomy & Physiology II	80 UG
Fall	2009	BSC 497/695	Special Topics: Animal Behavior*	3 G, 22 UG
Summer	2009	BSC 215	Human Anatomy & Physiology I	68 UG
Summer	2009	BSC 216	Human Anatomy & Physiology II	65 UG
Spring	2009	BSC 116	Principles of Biology II	336 UG
Fall	2008	BSC 497/695	Special Topics: Endocrinology*	3 G, 14 UG

University of Alabama – Other courses

G=graduate students; UG = undergraduate students; ch = credit hours

Note: Integrative Biology Seminar is a primary literature discussion group for graduate students; visit the website (<http://bama.ua.edu/~rlearley/readinggroup.html>) for more details.

Term	Year	Course No.	Course Title	Enrollment
Spring	2020	BSC 398	Undergraduate Research	60 UG, 122 ch
Spring	2020	BSC 399	Presentation of Undergrad Research	5 UG, 10 ch
Spring	2020	BSC 507	Research Techniques in Biology	2 G, 4 ch
Spring	2020	BSC 607	Advanced Research Tech in Biology	2 G, 9 ch
Spring	2020	BSC 695	Integrative Biology Seminar	6 G, 6 ch

Spring	2020	BSC 698	Research not related to Research	1 G, 7 ch
Spring	2020	BSC 699	Dissertation Research	2 G, 16 ch
Fall	2019	BSC 398	Undergraduate Research	53 UG, 89 ch
Fall	2019	BSC 399	Presentation of Undergrad Research	3 UG, 6 ch
Fall	2019	BSC 507	Research Techniques in Biology	1 G, 3 ch
Fall	2019	BSC 598	Non-Thesis Research	1 G, 3 ch
Fall	2019	BSC 607	Advanced Research Tech in Biology	2 G, 8 ch
Fall	2019	BSC 695	Integrative Biology Seminar	4 G, 4 ch
Fall	2019	BSC 698	Research not related to Research	1 G, 2 ch
Fall	2019	BSC 699	Dissertation Research	2 G, 16 ch
Spring	2019	BSC 398	Undergraduate Research	34 UG, 65 ch
Spring	2019	BSC 695	Integrative Biology Seminar	6 G, 6 ch
Spring	2019	BSC 391	Tutorial in Biological Sciences	2 UG, 4 ch
Spring	2019	BSC 399	Presentation of Undergrad Research	1 UG, 2 ch
Spring	2019	BSC 507	Research Techniques in Biology	4 G, 10 ch
Spring	2019	BSC 607	Advanced Research Tech in Biology	1 G, 3 ch
Spring	2019	BSC 699	Dissertation Research	2 G, 16 ch
Fall	2018	BSC 507	Research Techniques in Biology	2 G, 3 ch
Fall	2018	BSC 698	Research not related to Research	2 G, 9 ch
Fall	2018	BSC 699	Dissertation Research	1 G, 8 ch
Fall	2018	BSC 607	Advanced Research Tech in Biology	1 G, 2 ch
Fall	2018	BSC 398	Undergraduate Research	32 UG, 66 ch
Fall	2018	BSC 399	Presentation of Undergrad Research	1 UG, 2 ch
Fall	2018	BSC 695	Integrative Biology Seminar	4 G, 4 ch
Summer	2018	BSC 699	Dissertation Research	1 G, 1 ch
Spring	2018	BSC 398	Undergraduate Research	23 UG, 43 ch
Spring	2018	BSC 399	Presentation of Undergrad Research	1 UG, 2 ch
Spring	2018	BSC 507	Research Techniques in Biology	1 G, 3 ch
Spring	2018	BSC 695	Integrative Biology Seminar	4 G, 4 ch
Spring	2018	BSC 698	Research not related to Dissertation	1 G, 8 ch
Spring	2018	BSC 699	Dissertation Research	4 G, 36 ch
Fall	2017	BSC 398	Undergraduate Research	21 UG, 39 ch
Fall	2017	BSC 507	Research Techniques in Biology	1 G, 3 ch
Fall	2017	BSC 698	Research not related to Dissertation	2 G, 8 ch
Fall	2017	BSC 699	Dissertation Research	4 G, 36 ch
Summer	2017	BSC 398	Undergraduate Research	2 UG, 7 ch
Spring	2017	BSC 390	Honors Thesis Research	1 UG, 1 ch
Spring	2017	BSC 398	Undergraduate Research	26 UG, 51 ch
Spring	2017	BSC 399	Presentation of Undergrad Research	1 UG, 2 ch
Spring	2017	BSC 507	Research Techniques in Biology	1 G, 2 ch
Spring	2017	BSC 598	Non-Thesis Research	2 G, 8 ch
Spring	2017	BSC 607	Adv Research Techniques in Biology	1 G, 2 ch
Spring	2017	BSC 695	Integrative Biology Seminar	4 G, 4 ch
Spring	2017	BSC 698	Research not related to Dissertation	2 G, 14 ch
Spring	2017	BSC 699	Dissertation Research	2 G, 12 ch
Fall	2016	BSC 398	Undergraduate Research	24 UG, 52 ch
Fall	2016	BSC 399	Presentation of Undergrad Research	1 UG, 2 ch

Fall	2016	BSC 507	Research Techniques in Biology	2 G, 6 ch
Fall	2016	BSC 598	Non-Thesis Research	1 G, 4 ch
Fall	2016	BSC 607	Adv Research Techniques in Biology	1 G, 3 ch
Fall	2016	BSC 695	Integrative Biology Seminar	3 G, 3 ch
Fall	2016	BSC 698	Research not related to Dissertation	1 G, 2 ch
Fall	2016	BSC 699	Dissertation Research	2 G, 12 ch
Summer	2016	BSC 398	Undergraduate Research	2 UG, 5 ch
Spring	2016	BSC 390	Honors Thesis Research	1 UG, 3ch
Spring	2016	BSC 391	Tutorial in Biological Sciences	1 UG, 2ch
Spring	2016	BSC 398	Undergraduate Research	33 UG, 62 ch
Spring	2016	BSC 399	Presentation of Undergrad Research	1 UG, 2 ch
Spring	2016	BSC 407	Honors Seminar in Biology	2 UG, 2 ch
Spring	2016	BSC 507	Research Techniques in Biology	3 G, 8 ch
Spring	2016	BSC 599	Thesis Research	1 G, 1 ch
Spring	2016	BSC 607	Adv Research Techniques in Biology	3 G, 10 ch
Spring	2016	BSC 695	Integrative Biology Seminar	6 G, 6 ch
Spring	2016	BSC 698	Research Not Related to Dissertation	4 G, 11 ch
Spring	2016	BSC 699	Dissertation Research	2 G, 12 ch
Fall	2015	BSC 390	Honors Thesis Research	2 UG, 6 ch
Fall	2015	BSC 398	Undergraduate Research	32 UG, 62 ch
Fall	2015	BSC 399	Presentation of Undergrad Research	1 UG, 2 ch
Fall	2015	BSC 507	Research Techniques in Biology	4 G, 11 ch
Fall	2015	BSC 607	Adv Research Techniques in Biology	4 G, 10 ch
Fall	2015	BSC 695	Integrative Biology Seminar	6 G, 6 ch
Fall	2015	BSC 695	Evolutionary Development	1 G, 3 ch
Fall	2015	BSC 698	Research not related to Dissertation	2 G, 5 ch
Fall	2015	BSC 699	Dissertation Research	1 G, 6 ch
Summer	2015	BSC 398	Undergraduate Research (both terms)	4 UG, 6 ch
Spring	2015	BSC 398	Undergraduate Research	32 UG, 67 ch
Spring	2015	BSC 399	Presentation of UG Research	3 UG, 6 ch
Spring	2015	BSC 507	Research Techniques in Biology	3 G, 7 ch
Spring	2015	BSC 607	Adv Research Techniques in Biology	2 G, 6 ch
Spring	2015	BSC 695	Integrative Biology Seminar	7G, 7ch
Spring	2015	BSC 698	Research not related to Dissertation	1G, 4 ch
Spring	2015	BSC 699	Dissertation Research	2 G, 9 ch
Fall	2014	BSC 398	Undergraduate Research	26 UG, 51 ch
Fall	2014	BSC 507	Research Techniques in Biology	1G, 2 ch
Fall	2014	BSC 607	Adv Research Techniques in Biology	3 G, 5 ch
Fall	2014	BSC 695	Integrative Biology Seminar	8G, 8 ch
Fall	2014	BSC 698	Research not related to Dissertation	1 G, 4 ch
Fall	2014	BSC 699	Dissertation Research	3 G, 15 ch
Summer	2014	BSC 699	Dissertation Research	1 G, 3 ch
Spring	2014	BSC 398	Undergraduate Research	18 UG, 41 ch
Spring	2014	BSC 507	Research Techniques in Biology	1 G, 3 ch
Spring	2014	BSC 598	Non-Thesis Research	1 G, 4 ch
Spring	2014	BSC 607	Adv Research Techniques in Biology	3 G, 10 ch
Spring	2014	BSC 695	Integrative Biology Seminar	7 G, 7 ch

Spring	2014	BSC 698	Research not related to Dissertation	1 G, 3 ch
Spring	2014	BSC 699	Dissertation Research	2 G, 16 ch
Fall	2013	BSC 398	Undergraduate Research	8 UG, 20 ch
Fall	2013	BSC 507	Research Techniques in Biology	4 G, 11 ch
Fall	2013	BSC 607	Adv Research Techniques in Biology	2 G, 5 ch
Fall	2013	BSC 695	Integrative Biology Seminar	7 G, 7 ch
Fall	2013	BSC 698	Research not related to Dissertation	1 G, 2 ch
Fall	2013	BSC 699	Dissertation Research	2 G, 11 ch
Summer	2013	BSC 398	Undergraduate Research	1 UG, 1 ch
Spring	2013	BSC 398	Undergraduate Research	15 UG, 30 ch
Spring	2013	BSC 507	Research Techniques in Biology	2 G, 6 ch
Spring	2013	BSC 598	Non-Thesis Research	1 G, 1 ch
Spring	2013	BSC 607	Adv. Research Techniques in Biology	3 G, 12 ch
Spring	2013	BSC 695	Integrative Biology Seminar	5 G, 5 ch
Spring	2013	BSC 699	Dissertation Research	2 G, 9 ch
Fall	2012	BSC 398	Undergraduate Research	12 UG, 21 ch
Fall	2012	BSC 507	Research Techniques in Biology	3 G, 8 ch
Fall	2012	BSC 607	Adv. Research Techniques in Biology	1 G, 2 ch
Fall	2012	BSC 695	Integrative Biology Seminar	8 G, 8 ch
Fall	2012	BSC 698	Research not related to Dissertation	1 G, 2 ch
Fall	2012	BSC 699	Dissertation Research	2 G, 7 ch
Summer	2012	BSC 497	Special Topics in Biology	1 UG, 2 ch
Summer	2012	BSC 598	Non-Thesis Research	1 G, 1 ch
Spring	2012	BSC 398	Undergraduate Research	11 UG, 20 ch
Spring	2012	BSC 507	Research Techniques in Biology	3 G, 14 ch
Spring	2012	BSC 598	Non-Thesis Research	2 G, 8 ch
Spring	2012	BSC 607	Adv. Research Techniques in Biology	3 G, 6 ch
Spring	2012	BSC 698	Research not related to Dissertation	2 G, 5 ch
Fall	2011	BSC 398	Undergraduate Research	12 UG, 25 ch
Fall	2011	BSC 507	Research Techniques in Biology	3 G, 8 ch
Fall	2011	BSC 598	Non-Thesis Research	3 G, 11 ch
Fall	2011	BSC 607	Adv. Research Techniques in Biology	3 G, 8 ch
Fall	2011	BSC 698	Research not related to Dissertation	1 G, 3 ch
Summer	2011	BSC 398	Undergraduate Research	5 UG, 8 ch
Summer	2011	BSC 507	Research Techniques in Biology	1 G, 2 ch
Summer	2011	BSC 607	Adv. Research Techniques in Biology	1 G, 4 ch
Spring	2011	BSC 398	Undergraduate Research	4 UG, 8 ch
Spring	2011	BSC 598	Non-Thesis Research	2 G, 9 ch
Spring	2011	BSC 607	Adv. Research Techniques in Biology	3 G, 10 ch
Spring	2011	BSC 698	Research not related to Dissertation	1 G, 1 ch
Fall	2010	BSC 398	Undergraduate Research	13 UG, 30 ch
Fall	2010	BSC 507	Research Techniques in Biology	2 G, 2 ch
Fall	2010	BSC 598	Non-Thesis Research	2 G, 4 ch
Fall	2010	BSC 607	Adv. Research Techniques in Biology	1 G, 4 ch
Spring	2010	BSC 398	Undergraduate Research	18 UG, 35 ch
Spring	2010	BSC 598	Non-Thesis Research	2 G, 9 ch
Spring	2010	BSC 607	Adv. Research Techniques in Biology	3 G, 12 ch

Spring	2010	BSC 695	Special Topics: Experimental Design	4 G, 4 ch
Fall	2009	BSC 391	Tutorial in Biological Sciences	1 UG, 1 ch
Fall	2009	BSC 398	Undergraduate Research	21 UG, 52 ch
Fall	2009	BSC 507	Research Techniques in Biology	1 G, 2 ch
Fall	2009	BSC 598	Non-Thesis Research	2 G, 3 ch
Fall	2009	BSC 607	Adv. Research Techniques in Biology	3 G, 9 ch
Summer	2009	BSC 398	Undergraduate Research	7 UG, 15 ch
Spring	2009	BSC 298	Undergraduate Research	11 UG, 31 ch
Spring	2009	BSC 507	Research Techniques in Biology	1 G, 1 ch
Spring	2009	BSC 598	Non-Thesis Research	1 G, 1 ch
Fall	2008	BSC 398	Undergraduate Research	3 UG, 5 ch
Fall	2008	BSC 598	Non-Thesis Research	2 G, 8 ch

Additional Teaching Experience

University of Alabama

Part of Consortium of Speakers for: EVOLUTION FOR EVERYONE (ANT 150; UNDERGRADUATE)

University of Alabama; Department of Anthropology; 1/11 – present; course developed by Dr. Christopher Lynn (Anthropology)

California State University Fresno

NEUROPHYSIOLOGY (PHYAN 140) *California State University, Fresno*; Department of Biology, Fresno, CA; 1/07-5/08 (lecture), developed curriculum for this course independently

ENVIRONMENTAL STRESS IN ANIMALS (BIOL 265T; GRAD) *California State University, Fresno*; Department of Biology, Fresno, CA; 1/07-5/08 (graduate seminar), developed curriculum for this course independently

COMPARATIVE VERTEBRATE MORPHOLOGY (BIO 142) *California State University, Fresno*; Department of Biology, Fresno, CA; 8/06-5/08 (lecture and lab), developed curriculum for this course independently.

Center for Behavioral Neuroscience

INTRODUCTION TO BEHAVIORAL NEUROSCIENCE (GRAD) *Center for Behavioral Neuroscience*, Atlanta, GA; 1/03-5/03; co-taught and developed curriculum for this course independently.

Spalding University

LIVING SYSTEMS DEVELOPMENT (BIO 107) *Spalding University*; School of Natural Science, Louisville, KY; 11/99-4/02 (6 full-semester appointments); developed curriculum for this course independently.

Jefferson Community & Technical College

INTRODUCTION TO BIOLOGY LABORATORY (BIO 111) *Jefferson Community & Technical College;* Department of Biology, Louisville, KY; 8/00-5/01 (5 full-semester appointments; taught 2 sections in Fall 2001).

INTRODUCTION TO BIOLOGY (non-majors BIO 103) *Jefferson Community & Technical College;* Department of Biology, Louisville, KY.; 6/01-8/01.

Teaching Assistantships

- Ecology (8/01-5/02) – University of Louisville, graduate
- Intro to Zoology (7/00-8/00; 7/01-8/01) – University of Louisville, graduate
- Diversity of Animals (8/98 - 8/99) – University of Louisville, graduate
- Diversity of Organisms (8/97 - 8/98) – University of Louisville, graduate
- Physiology & Behavior (1/95-5/95, 1/97-5/97) – Syracuse University, undergrad
- Biological Diversity (8/94-12/94) – Syracuse University, undergraduate

Guest Lectures – University of Alabama

- Honors Introductory Biology (BSC 120) (4/4/18)
- Emerging Scholars Program (3/5/17)
- Comparative Endocrinology (BSC 400) (4/17/14)
- Sociobiology: Interface between biology and social sciences (HHMI program) (4/14/14)
- Endocrinology, Honors Introductory Biology (BSC 116) (2/26/14)
- Interdisciplinary aesthetics (UH 120) – Beauty in Biological Systems (2/18/14)
- Getting involved with undergraduate research. Pre-Dental Society (2/10/14)
- Immune system function (BSC 216, Human A&P) (2/11/14)
- Immune system function (BSC 216, Human A&P) (2/11/14)
- Why is undergraduate research so important? Tri-Beta Biology Honors Society (4/4/13)
- How eavesdroppers change everything!, Evolution for Everyone (ANT 150) (3/12/13)
- Endocrinology, Honors Introductory Biology (BSC 118) (2/27/13)
- Evolution of Manipulation and Deceit, Blount Undergraduate Initiative (10/22/12)
- Animal Behavior, Honors Introductory Biology (BSC 116) (8/12/12)
- The power of non-model organisms, Clinical Child Psychology Seminar (PY669) (8/5/12)
- Sociobiology (HHMI program) (4/16/12)
- Hormones & Behavior, Honors Introductory Biology (BSC 117) (3/21/12)
- Blount Undergraduate Initiative (11/7/11)
- Integrative Perspectives on Animal Behavior, Honors Intro Biology (BSC 118) (10/31/11)
- Sociobiology (HHMI program) (4/24/11)
- Hormones & Behavior, Honors Introductory Biology (BSC 117) (3/23/11)
- Gene x Environment interactions, Honors Introductory Biology (BSC118) (9/8/10)
- Fusing field and laboratory research (HHMI program) (6/18/10)
- Epigenetic mechanisms of behavioral variation, Genetics (BSC315) (4/13/10)
- Evolution & Behavior, Evolution (BSC483) (4/12/10)
- Hormones & Behavior, Honors Introductory Biology (BSC 117) (3/24/10)
- Neurobiology of aggression, Clinical Child Psychology Seminar (PY669) (1/20/10)
- Genetics of aggression, Center for Prevention of Youth Behavior Problems (9/12/09)
- Behavioral Ecology of fishes, Biology of Fishes (BSC 428/528) (12/3-12/5/09)

- Career choices in biology, Tri-Beta Biological Honors Society (9/17/09)
- Hormones & Behavior – something fishy?, Honors Intro Biology (BSC 117) (3/25/09)

Guest Lectures – California State University Fresno

- Reproductive strategies in fish – Ichthyology (ZOOL 171) (2/20/08)
- What is scientific research? – Reigning Theories in Science (NATSCI 106) (1/30/08)
- Research presentation – Introductory Biology (BIOSCI 1A) (11/9/07)
- Research presentation – Introduction to Research (NATSCI 40T) (2/6/07)
- Research presentation – Introductory Biology (BIOSCI 1A) (10/20/06)

Guest Lectures – Center for Behavioral Neuroscience Consortium

- Communication – Animal Behavior (PSYCH7560), Georgia State University (11/14 & 11/16/05)
- Neurobiology of Aggression - Neuroscience (BIO372), Spelman University (11/29/04)
- Endocrine Correlates of Parenting – Hormones & Behavior (BIO4241), GA State Univ. (10/28/04)
- Communication – Animal Behavior (PSYCH7560), Georgia State University (10/25/04)
- Reproduction & Development – Intro Biology (BIO1108K), GA State Univ. (4/10/03)

Guest Lectures – University of Louisville

- Dangerous Games – introduction to fighting behavior –Evolution (BIO569) (4/4/02)
- Communication Networks and Dominance – Evolution (BIO409) (11/15/01)
- Neutral Theory – Evolution (BIO409) (9/18/01)
- Phyla Platyhelminthes, Nematoda & Molluscs – Zoology (BIO241)(7/26/01)
- Phyla Porifera and Cnidaria – Zoology (BIO241) (7/25/01)
- Human Sensation – Introduction to Biology Lab (BIO104, 3 sections) (3/5-3/6/01)
- Biological Species Concept – Evolution (BIO569) (2/13/01)
- Postcranial Skeleton & Integument – Comparative Vertebrate Anatomy (BIO347) (2/7/01)
- Circulatory & Immune Systems – Introduction to Zoology (BIO240) (11/16/00)
- Order in Animal Societies – Animal Behavior (BIO569) (9/26/00)
- Concepts & Definitions of Species – Evolution (BIO569) (2/22/00)
- Basic Cell Function – Intro Biology (BIO107)- Jefferson Community College (9/2/99)
- Mate Selection and Game Theory– Evolution (BIO409) (9/2/99)
- Subphylum Vertebrata – Introduction to Zoology (BIO240) (8/4/99)
- Phyla Porifera & Cnidaria – Introduction to Zoology (BIO240) (7/31/99)
- Animal Behavior & Evolution (BIO107) - Jefferson Community College (4/23/99)
- Animal Behavior & Evolution (BIO107)- Jefferson Community College (4/21/99)