

CHRISTINE RENÉE LATTIN

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RESEARCH

Current position: Howard Hughes Medical Institute Postdoctoral Fellow of the Life Sciences Research Foundation, Positron Emission Tomography Center, Yale University, New Haven, CT, Aug. 2014-present. I am using *in vivo* positron emission tomography and computed tomography imaging in wild songbirds to ask new questions about the relationship between neuroendocrine traits, successful coping with environmental challenges over the short term, and ultimate fitness.

PhD: Biology, Tufts University, Medford, MA, May 2014. Dissertation title: "*Beyond circulating hormones: investigations upstream and downstream of plasma corticosterone.*" This project examined hypothalamic-pituitary-adrenal functioning and corticosterone receptors in the wild house sparrow (*Passer domesticus*) to test hypotheses about seasonal variation in the stress response, the effects of chronic stress, and endocrine disruption from toxicant exposure.

MS: Biology, Eastern Kentucky University, Richmond, KY. June 2008. Thesis title: "*Intra- and intersexual functions of singing by male Blue Grosbeaks: The role of within-song variation.*" This field-based study combined descriptive and experimental approaches to investigate the signaling function of varying song performance in different social contexts and during different breeding stages.

B.A.: Major: Linguistics, minor Biology, Swarthmore College. Swarthmore, PA. June 2001. Senior honors thesis title: "*The potential of data sharing in quantitative sociolinguistics: /t,d/ deletion as a case study.*" Graduated with High Honors.

AWARDS AND HONORS

- Doctoral award for Outstanding Academic Performance from the Tufts Graduate School of Arts and Sciences, 2014.
- Award for best poster at the 31st New England Endocrinology Conference, 2013.
- Provost's Fellowship, Tufts University, 2008.
- Award for Best Senior Thesis in Linguistics, Swarthmore College, 2001.

GRANTS

Research grants:

- Graduate Women in Science Research fellowship, 2016. Amount awarded: \$10,000.
- American Philosophical Society Franklin Research grant, 2015. Amount awarded: \$6000.
- Life Sciences Research Foundation fellowship, 2014-2017. Amount awarded: \$180,000 (including three years of stipend and research expenses).

- National Science Foundation post-doctoral fellowship. Declined. Amount awarded: \$138,000 (including two years of stipend and research expenses).
- EPA Science to Achieve Results (STAR) fellowship, 2011-2014. Amount awarded: \$126,000 (including three years of stipend, research expenses and tuition).
- American Ornithologists' Union research grants, 2012 and 2015. Cumulative amount awarded: \$3161.
- Tufts Institute for the Environment fellowship, 2012. Amount awarded: \$6000.
- Tufts University Graduate School research grants, 2010, 2012 and 2013. Cumulative amount awarded: \$2100.
- Kentucky Society of Natural History research grant, 2007. Amount awarded: \$500
- Marcia Athey research grant, Kentucky Academy of Science, 2007. Amount awarded: \$1000.
- Joel Dean fellowship, Swarthmore College, 2000. Amount awarded: \$5000

Travel grants:

- PLOS Early Career Travel Award, 2016.
- Society for Integrative and Comparative Biology Broadening Participation grant, 2014.
- Society of Environmental Toxicology and Chemistry travel grant, 2013.
- Graduate Women in Science travel grant, 2012.
- Tufts Institute for the Environment travel grants, 2012 and 2013.
- Society for Integrative and Comparative Biology Charlotte Mangum student travel grants, 2011 and 2013.
- Tufts University Graduate School travel grants, 2010-2013.
- American Ornithologists' Union student travel grant, 2010.
- Wilson Ornithological Society student travel grant, 2008.

PEER-REVIEWED PUBLICATIONS

- Lattin, C. R.,** F. A. Stabile and R. E. Carson. In review. Estradiol modulates neural response to conspecific and heterospecific song in female house sparrows: an *in vivo* positron emission tomography (PET) study.
- Lattin, C. R.,** A. V. Pechenko and R. E. Carson. 2017. Experimentally reducing corticosterone mitigates rapid captivity effects on behavior, but not body composition, in a wild bird. *Hormones and Behavior* 89:121-129.
- Crossin, G. T., R. A. Phillips, **C. R. Lattin,** L. M. Romero, X. Bordeleau, C. M. Harris, O. P. Love and T. D. Williams. 2016. Costs of reproduction and carry-over effects in breeding albatrosses. *Antarctic Science*. doi:10.1017/S0954102016000560
- Lattin, C. R.,** C. W. Breuner and L. M. Romero. 2016. Does corticosterone regulate the onset of breeding in free-living birds?: The CORT-Flexibility Hypothesis and six potential mechanisms for priming corticosteroid function. *Hormones and Behavior* 78:107-120.
- Lattin, C. R.,** D. E. Keniston, J. M. Reed and L. M. Romero. 2015. Are receptor concentrations correlated across tissues within individuals? A case study examining glucocorticoid and mineralocorticoid receptor binding. *Endocrinology* 156(4):1354-1361.
- Lattin, C. R.,** S. E. Durant, and L. M. Romero. 2015. Wounding alters blood chemistry parameters and skin mineralocorticoid receptors in house sparrows (*Passer domesticus*). *Journal of Experimental Zoology Part A* 323(5):322-330.

- Lattin, C. R.** and L. M. Romero. 2015. Seasonal variation in glucocorticoid and mineralocorticoid receptors in metabolic tissues of the house sparrow (*Passer domesticus*). *General and Comparative Endocrinology* 214:95-102.
- Gilmour, M. E., **C. R. Lattin**, L. M. Romero, M. F. Hausmann and D. C. Dearborn. 2015. Finding the best predictor of reproductive performance of Leach's Storm-Petrels. *Auk: Ornithological Advances* 132(1):191-205.
- Lattin, C. R.** and L. M. Romero. 2014. Chronic exposure to a low dose of ingested petroleum disrupts corticosterone receptor signaling in a tissue-specific manner in the house sparrow (*Passer domesticus*). *Conservation Physiology* 2(1): cou058. Doi: 10.1093/conphys/cou058.
- Lattin, C. R.**, Ngai, H. M. and L. M. Romero. 2014. Evaluating the stress response of wild birds as a bioindicator of sub-lethal effects of crude oil exposure. *PLOS One* 9: e102106.
- Lattin, C. R.** and L. M. Romero. 2014. Chronic stress changes concentrations of corticosterone receptors in a tissue-specific manner in wild house sparrows (*Passer domesticus*). *Journal of Experimental Biology* 217:2601-2608.
- Lattin, C. R.** and L. M. Romero. 2013. The size of a melanin-based plumage ornament correlates with glucocorticoid receptor concentrations in the skin of that ornament. *Biology Letters* 9: doi:10.1098/rsbl.2013.0440.
- Knapp, C. R., K. N. Hines, T. Zachariah, C. L. White, J. B. Iverson, S. D. Buckner, S. C. Hallach, L. M. Romero, **C. R. Lattin**. 2013. Physiological effects of tourism and associated food provisioning in an endangered iguana. *Conservation Physiology* 1(1):cot032. Doi: 10.1093/conphys/cot032.
- Lattin, C. R.** and L. M. Romero. 2013. Seasonal variation in corticosterone receptor binding in brain, hippocampus and gonads in house sparrows (*Passer domesticus*). *Auk* 130(4):591-598.
- Crossin, G. T., R. A. Phillips, **C. R. Lattin**, L. M. Romero and T. D. Williams. 2013. Corticosterone mediated costs of reproduction link current to future breeding. *General and Comparative Endocrinology* 193:112-120.
- Medina, C. O., **C. R. Lattin**, M. McVey and L. M. Romero. 2013. There is no correlation between glucocorticoid receptor mRNA expression and protein binding in the brains of house sparrows (*Passer domesticus*). *General and Comparative Endocrinology* 193:27-36.
- Lattin, C. R.**, K. Waldron-Francis and L. M. Romero. 2013. Intracellular glucocorticoid receptors in spleen, but not skin, vary seasonally in wild house sparrows (*Passer domesticus*). *Proceedings of the Royal Society of London B* 280:doi:10.1098/rspb.2012.3033.
- Kennedy, E. A., **C. R. Lattin**, L. M. Romero and D. C. Dearborn. 2013. Feather coloration in museum specimens is related to feather corticosterone. *Behavioral Ecology and Sociobiology* 67:341-348.
- Lattin, C. R.**, Waldron-Francis, K., Richardson, J. W., deBruijn, R., Bauer, C. M., Breuner, C. W. and L. M. Romero. 2012. Pharmacological characterization of intracellular glucocorticoid receptors in nine tissues from house sparrow (*Passer domesticus*). *General and Comparative Endocrinology* 179:214-220.
- Lattin, C. R.**, Bauer, C. M., de Bruijn, R. and L. M. Romero. 2012. Hypothalamus-pituitary-adrenal axis activity and the subsequent response to chronic stress differ depending upon life history stage. *General and Comparative Endocrinology* 178:494-501.
- Keyel, A. C., C. M. Bauer, **C. R. Lattin**, L. M. Romero and J. M. Reed. 2012. Testing the role of patch openness as a causal mechanism for apparent area sensitivity. *Oecologia* 169:407-418.

- Lattin, C. R.**, J. M. Reed, D. DesRochers and L.M. Romero. 2011. Elevated corticosterone in feathers correlates with corticosterone-induced decreased feather quality: A validation study. *Journal of Avian Biology* 42:247-252.
- Nevarez, J. G., **C. R. Lattin**, L. M. Romero, B. Stacy and N. Kinler. 2011. Assessment of corticosterone levels in American alligators (*Alligator mississippiensis*) with dermatitis. *Journal of Herpetological Medicine and Surgery* 21:76-79.
- Lattin, C.** and G. Ritchison. 2009. Intra- and intersexual functions of singing by male Blue Grosbeaks: The role of within-song variation. *Wilson Journal of Ornithology* 121:714-721.

OTHER PUBLICATIONS

- Romero, L.M., C. M. Bauer, R. de Bruijn, and **C. R. Lattin**. 2016. Seasonal rhythms. Chapter in *Handbook of Stress Volume 2: Neuroendocrinology and Endocrinology*. G. Fink, editor.
- Gurung, S., **C. Lattin**, G. Quigley, R. Robles and V. Sympton. 2004. A comparison of counts of migrating Cooper's Hawks seen at Hawk Mountain Sanctuary and Bake Oven Knob, 1961-2003. *American Hawkwatcher* 28:11-16.

CONFERENCE PRESENTATIONS

- Society for Integrative and Comparative Biology meeting, Jan. 2017, poster presentation.
- International Symposium for Avian Endocrinology, Oct. 2016, oral presentation.
- Society for Behavioral Neuroendocrinology, Aug. 2016, poster presentation.
- Society for Integrative and Comparative Biology meeting, Jan. 2016, oral presentation.
- IEEE Nuclear Science Symposium and Medical Imaging Conference, Nov. 2015, poster presentation.
- Society for Integrative and Comparative Biology meeting, Jan. 2015, oral presentation.
- Society for Integrative and Comparative Biology meeting, Jan. 2014, poster and oral presentations, finalist in the Aubrey Gorbman competition for best student talk.
- Society of Environmental Toxicology and Chemistry meeting, Nov. 2013, poster presentation.
- New England Endocrine Conference, Sept. 2013, poster presentation.
- Experimental Biology meeting, April 2013, poster presentation.
- Society for Integrative and Comparative Biology meeting, Jan. 2013, oral presentation.
- International Symposium for Avian Endocrinology, June 2012, oral presentation.
- Society for Integrative and Comparative Biology meeting, Jan. 2012, oral and poster presentations.
- Society for Integrative and Comparative Biology meeting, Jan. 2011, poster presentation.
- American Ornithologists' Union conference, Feb. 2010, poster presentation.
- Society for Integrative and Comparative Biology meeting, Jan. 2009, oral presentation.
- Wilson Society/Association of Field Ornithologists conference, Apr. 2008, oral presentation.
- Kentucky Academy of Science meeting, Jan. 2007, oral presentation.
- Partners in Flight conference, Feb. 2007, poster presentation.

PROFESSIONAL SOCIETIES

- Society for Integrative and Comparative Biology

- Society for Behavioral Neuroendocrinology
- American Association for the Advancement of Science
- American Ornithologists' Union
- Graduate Women in Science

RELEVANT WORK EXPERIENCE

- **Lab Coordinator, Organisms and Populations, Tufts University, Medford, MA, 2011.** Organized and presented weekly meeting for lab instructors on content and methodology; handled student issues and scheduling; revised and updated lab content.
- **Ornithology Collection Research Assistant, Eastern Kentucky University, Richmond, KY, 2006-2008.** Prepared avian specimens for use in undergraduate and Master's-level Ornithology courses.
- **Naturalist, Eloise Butler Wildflower Garden and Bird Sanctuary, Minneapolis, MN, 2005-2006.** Led natural history programs for adults and children; created educational displays; developed new programs; organized monthly bird surveys.
- **Conservation Science Intern, Hawk Mountain Sanctuary, Kempton, PA, 2004.** Participated in daily bird counts; assisted in radio and satellite telemetry studies of migrating raptors; presented public programs; conducted a weekly raptor road survey.
- **Raptor Center Assistant and Naturalist, Glen Helen Outdoor Education Center, Yellow Springs, OH, 2003-2004.** Oversaw the care of resident birds of prey; assisted in the rehabilitation of injured raptors; presented public programs for children and adults; trained and supervised the naturalist staff.
- **Museum Guide, American Philosophical Society, Philadelphia, PA, 2003.** Guided visitors through the exhibition "Stuffing Birds, Pressing Plants, Shaping Knowledge: Natural History in North America, 1735-1860."

TEACHING

- **Tufts University Graduate Institute for Teaching (GIFT) fellow, 2013.** Participated in workshops on pedagogy and course development through the Graduate School of Arts and Sciences, and co-taught Endocrinology, an upper-level biology class, in fall 2013.
- **Tufts University Osher Lifelong Learning Institute fellow, 2010.** Developed and taught an eight-week course, "Why do Birds Sing?: An Exploration of the Mysteries of Birdsong," for senior citizens.
- **Guest lecturer, Tufts University, 2009-2012.** Gave lectures for an upper-level biology class (Endocrinology) on subjects such as techniques for quantifying hormone receptors and field endocrinology.
- **Teaching assistant, Tufts University, 2008-2010.** Taught the laboratory portion of two introductory undergraduate courses for biology majors (Cells and Organisms and Organisms and Populations). Lectured on lab materials; taught lab techniques; created lab quizzes and the final lab exam; worked with students on scientific writing skills.
- **Teaching Assistant, Introductory Biology for Non-majors, Eastern Kentucky University, 2006-2008.** Taught the laboratory portion of this course. Gave weekly lectures on lab materials; supervised labs; wrote and graded quizzes.

- **Teaching Assistant, Marine Biology, Swarthmore College, 2000.** Facilitated weekly discussion groups on course materials; assisted students with research projects in the lab and on field trips to Florida and the New Jersey Shore.

TRAINING (SERVED AS PRIMARY SUPERVISOR)

- Mona Asadi, class of 2016, University of Hartford Master's student in Neuroscience.
- Anita Pechenko, class of 2016, Yale University. Senior honors thesis on the behavior of wild songbirds during chronic captivity stress. Received a Yale University Trumbull College Richter Research Fellowship to support this work, co-author on 1 publication.
- Maxwell Emerson, class of 2015, Yale University Master's student in Biomedical Engineering. Independent project designing a customized 3D-printed avian holder used for PET-CT scans of anesthetized house sparrows, co-author on 1 publication.
- Heather Ngai, class of 2016, Tufts University. Worked in the lab for two years; co-author on 1 publication. Received a Tufts Institute for the environment summer fellowship and a Tufts undergraduate research award to support this work.
- Carlos Medina, class of 2012, Tufts University. Completed a summer project through the National Science Foundation's Research Experience for Undergraduates program and a senior honors thesis; received Thomas Harrison Carmichael and Emily Leonard Carmichael Prize Scholarship in Biology; first author on 1 publication.
- Kaiden Waldron-Francis, class of 2012, Tufts University. Worked in the lab for three years; completed senior honors thesis; co-author on 2 publications.
- Glenn Verner, class of 2011, Tufts University. Worked in the lab for two years.
- Holly Stewart, class of 2011, Tufts University. Worked in the lab for one year.
- Joyce Richardson, class of 2010, Northern Essex Community College. Completed a summer project through the National Science Foundation's Research Experience for Undergraduates program; co-author on 1 publication

SERVICE AND OUTREACH

- Organized science communication events and workshop at Yale in collaboration with the Provost's Office, the Center for Teaching and Learning, and the organization Story Collider (<http://www.storycollider.org/>), March 2017.
- Post-doctoral and Student Representative for the Division of Comparative Endocrinology, Society of Integrative and Comparative Biology, 2015-2017.
- Post-doc Board Member for the organization Women In Science at Yale (WISAY), 2014-present. Co-founded a new faculty-post-doc mentoring program serving ~80 post-docs.
- Peer reviewed manuscripts for Current Zoology, Functional Ecology, Amphibia-Reptilia, General and Comparative Endocrinology, PLoS One, Hormones and Behavior, Oecologia, Conservation Physiology, the Journal of Field Ornithology, Methods in Ecology and Evolution, Science of the Total Environment, Biology Letters and Scientific Reports.
- Judge for the Jackson Hole Wildlife Film Festival, Children's Education Category, 2014.
- Reviewer for the 2014 Student Research Grant Competition for the Center for Global Change and Arctic System Research at the University of Alaska Fairbanks, 2013.
- Guest blogger on the women-in-academia blog "Tenure She Wrote": tenureshewrote.wordpress.com.

- Treasurer of the Biology Graduate Student organization, Tufts University, 2008-2013.
- Volunteer at science outreach events for the public, including the AAAS Family Science Days, the Cambridge Science Festival and Science on the Street, 2012-2014.
- Organized Biology-Psychology Joint Colloquium, March 2010, Tufts University.
- Treasurer of the Biology Graduate Student organization, Eastern Kentucky University, 2006-2008.

LANGUAGES: Fluent written and spoken French, basic Spanish.