

Clifford E. Harpole

Curriculum Vitae



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Education

- 2009–2020 **Doctor of Philosophy, Biology**, *University of Kentucky*.
2005–2009 **Bachelor of Science, Biology**, *University of Kentucky*.

Current Position

- 2021–present **Post-doctoral researcher**, *Cold Spring Harbor Laboratory*, Advisor: Arkarup Banerjee.

Publications

- 2021 **Harpole, CE**, Cassone, VM. Context and novelty increase strength of auditory cues as a weak circadian zeitgeber in songbirds. *Chronobiology International* 38 (7): 1042-51. <https://doi.org/10.1080/07420528.2021.1903484>.
- 2020 **Harpole, CE**, Miles, MM, and Cassone, VM. Melatonin duration gates photoperiodic vocal state change in a songbird. *Journal of Pineal Research* 68 (2): 1-37. <https://doi.org/10.1111/jpi.12625>.
- 2017 Cassone, VM, Paulose, JK, **Harpole, CE**. Aging and the Circadian Control of the Gastrointestinal System: From the Brain to the Gut Microbiome (and Back). In S. M. Jazwinski, V. P. Belancio, & S. M. Hill (Eds.), *Circadian Rhythms and Their Impact on Aging* (Vol. 7, pp. 83–89). Springer International Publishing. https://doi.org/10.1007/978-3-319-64543-8_4.
Cassone, VM, Paulose, JK, **Harpole, CE**, Li, Y, Whitfield-Rucker, M. Avian Circadian Organization. In V. Kumar (Ed.), *Biological Timekeeping: Clocks, Rhythms and Behaviour* (pp. 241–256). New Delhi: Springer India. https://doi.org/10.1007/978-81-322-3688-7_11.
- 2014 Wang G, **Harpole CE**, Paulose JK, Cassone VM. The role of the pineal gland in the photoperiodic control of bird song frequency and repertoire in the house sparrow, *Passer domesticus*. *Horm. Behav.* <https://doi.org/10.1016/j.yhbeh.2014.02.008>.
- 2012 Wang G, **Harpole CE**, Trivedi AK, Cassone VM. Circadian regulation of bird song, call, and locomotor behavior by pineal melatonin in the zebra finch. *J. Biol. Rhythms* 27:145–55. <https://doi.org/10.1177/0748730411435965>.
- 2009 Esser KA, **Harpole CE**, Prins GS, Diamond AM. Physical activity reduces prostate carcinogenesis in a transgenic model. *Prostate* 69:1372–7. <https://doi.org/10.1002/pros.20987>.

PhD Dissertation

- Title *The role of melatonin in biological rhythms of songbirds*
- Supervisor Vincent M. Cassone, PhD
- Description Melatonin's darkness-only expression profile allows it to serve as a transmitter-of-time to vertebrates on two scales: circadian and seasonal. This research explores how this is accomplished in songbirds: pineal melatonin as a potential synchronizing cue to peripheral clocks, with a marginal effect, and as a gating mechanism to seasonal expansion of vocalization, which it does perform. DOI: 10.13023/etd.2020.478

Teaching Experience

University of Kentucky Department of Biology

- 2021 **Instructor**, BIO-152 Principles of Biology & BIO-103 Basic Ideas of Biology.
taught a semester of both majors and non-majors biology in an in-person environment
- 2019-2020 **Co-instructor**, BIO-101 Careers in Math & Science, freshman research experience.
led a small classroom of freshman in a research experience
- 2015-2019 **Teaching assistant**, BIO-101 Careers in Math & Science.
- 2013-2014 **Teaching assistant**, BIO-155 Introduction to Biology Laboratory.
- 2010-2013 **Teaching assistant**, BIO-350 Animal Physiology Laboratory.
- 2010 **Teaching assistant**, BIO-151 Principles of Biology Laboratory.
- 2009 **Teaching assistant**, BIO-148 Introduction to Biology, *alternate curriculum pilot*.

Honors and Awards

- 2015 **Member**, *University of Kentucky Biology Department Neuroscience Faculty Search Committee*.
- 2013 **Member**, *University of Kentucky Biology Department Graduate Affairs Committee*.
- 2013 University of Kentucky Department of Biology Ribble Mini-Grant
- 2011-2012 **President**, *University of Kentucky Biology Graduate Student Association*.
- 2010-2011 **Secretary**, *University of Kentucky Biology Graduate Student Association*.

Seminar Presentations

Talks

- 2018 **Society for Research on Biological Rhythms (SRBR) 16th Biennial Meeting**, *Sex differences in seasonal house sparrow vocalizations and pineal gland control*.
- 2017 **5th Biennial Conference of Rhythms in the Southeast Region (RISER)**, *The role of melatonin in the photoperiodic control of birdsong distribution and repertoire in the house sparrow, Passer domesticus*.
- 2016 **11th International Symposium on Avian Endocrinology (ISAE)**, *The effect of melatonin on circadian and seasonal rhythms of vocalizations in oscine passerine birds*.
- 2016 **3rd Midwest Chronobiology Seminar**, *The role of melatonin in the photoperiodic control of bird song distribution and repertoire in the house sparrow, Passer domesticus*.

Posters

- 2019 **6th Biennial Conference of Rhythms in the Southeast Region (RISER)**, *Behavioral entrainment to song*.

- 2016 **Society for Research on Biological Rhythms (SRBR) 15th Biennial Meeting**, *The role of melatonin in the photoperiodic control of bird song frequency and repertoire in the house sparrow, Passer domesticus.*
- 2015 **4th Biennial Conference of Rhythms in the Southeast Region (RISER)**, *The role of melatonin in the photoperiodic control of bird song frequency and repertoire in the house sparrow, Passer domesticus.*
- 2014 **Society for Research on Biological Rhythms (SRBR) 14th Biennial Meeting**, *The role of the pineal gland in the photoperiodic control of bird song frequency and repertoire in the house sparrow.*

Synergistic Activities

- 2018, 2019 **Science fair judge**, *Western Elementary School, Georgetown, KY.*
- 2011 **Science fair judge**, *Maxwell Elementary School, Lexington, KY.*

Interests

- Circadian rhythms
- Neurobehavior
- Microbiome-host interactios
- Seasonal rhythms
- Non-model organisms