

CURRICULUM VITAE: NOAH TODD ASHLEY

formerly Noah Todd Owen-Ashley

Last updated: August, 2024

ADDRESS:

Department of Biology
Western Kentucky University
1906 College Heights Blvd #11080
Bowling Green, KY 42101-1080
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EDUCATION:

University of Washington. Ph. D. (Zoology) 2004
Advisor: John C. Wingfield
Dissertation Title: Environmental Regulation of Immune-Endocrine
Phenomena in Songbirds

Colby College, Waterville, ME. Bachelor of Arts, Biology 1997
Summa cum laude

EMPLOYMENT:

Professor, Dept. of Biology 2022-present
Western Kentucky University

Associate Professor, Dept. of Biology 2018-2022
Western Kentucky University

Assistant Professor, Dept. of Biology 2012-2018
Western Kentucky University

Postdoctoral Researcher, Dept. of Neuroscience 2011-2012
The Ohio State University College of Medicine
Advisor: Dr. Randy Nelson

Affiliate Assistant Professor, Dept. of Biological Sciences 2009-2010
University of Alaska, Anchorage

National Science Foundation Postdoctoral Fellow 2009-2010
University of Alaska, Anchorage & Univ. of California, Berkeley
Advisors: Dr. Loren Buck and Dr. George Bentley

Wildlife Biologist, Department of Wildlife Management, North Slope Borough 2006- 2008
* Staff Biologist examining impacts of oil field development on ecology
and physiology of arctic-breeding birds and mammals

Research Assistant, Department of Zoology, University of Washington 1999-2004

- Developed and conducted experiments involving avian ecology and physiology (see Research Experience below).

Teaching Assistant, Department of Zoology, University of Washington	1998-2002
• Instructed undergraduate-level biology courses (See teaching experience)	
Field Assistant, Archbold Biological Research Station, Florida	1997
Research Assistant, Smithsonian, Washington, D. C.	1996
Teaching Assistant, Colby College, Waterville, Maine	1994-1997

FELLOWSHIPS AND GRANTS (WKU total- \$3,293,319; Career total- \$3,831,287)

Extramural grants since joining WKU

NIH/KY INBRE MCDA Award (\$50,394)	2024
Alternation & Renovation Supplement, KY INBRE 5-year grant (\$250,000)	2024
RCAP I Award (internal grant, WKU, \$16,000)	2023-2024
NSF MRI (Co-Pi, PI-Banga; \$297,393)	2023-2026
NIH/KY INBRE Postdoctoral Support Grant (\$140,580)	2021-2024
NIH R15 renewal (NIGMS, \$429,768)	2021-2024
KBRIN Bridge Grant (\$70,705)	2020-2021
NSF MRI (Co-PI, PI- Srivastava; \$377,259)	2019-2022
NIH R15 (NIGMS; \$400,803)	2016-2020
NSF IOS (\$964,048)	2016-2021
NIH/KBRIN Postdoctoral Support Grant (\$106,500)	2016-2019
RCAP I Award (internal grant, WKU; \$11,269)	2015
KBRIN-IDeA Award (\$138,600)	2013-2015
RCAP I Award (internal grant; WKU; \$15,000)	2013
KBRIN start-up award (\$25,000)	2012

Previous funding

NSF Polar Programs Postdoctoral Fellowship (\$140,000)	2009-2010
National Petroleum Reserve-Alaska Impact Grant (Co-PI; \$323,000)	2007-2009
International Behavioral Ecology Travel Award (\$1000)	2004
NSF Dissertation Improvement Grant (\$9,388)	2003-2005
SICB Division of Comparative Endocrinology Travel Award (\$400)	2003
Marcia Brady Tucker Travel Award (\$600)	2002
American Ornithologists' Union (AOU) Research Grant (\$1,780)	2002
Society of Integrative and Comparative Biology (SICB) Research Grant (\$1000)	2001
Sigma-Xi (\$800)	2001
NSF Predoctoral Fellowship (\$60,000)	1999-2001

HONORS AND AWARDS:

Ogden College of Science and Engineering Research Award, WKU	2018
One Million Dollar Grant Club, WKU	2017
Ogden College of Science and Engineering Junior Research Award, WKU	2016
Lancaster Professor, WKU	2015
Junior Investigator Award, WKU	2015
Chair, Zoology Division, Kentucky Academy of Sciences	2014

Junior Investigator Award, WKU	2014
Certificate of Excellence in Reviewing, General & Comparative Endocrinology	2013
North Slope Science Initiative, Appointed Staff Member	2007-2008
Aubrey Gorbman Award, Best Student Presentation, Society for Integrative and Comparative Biology	2004
Richard Snyder Vertebrate Zoology Award, University of Washington	1999
Biology Senior of the Year, Colby College	1997
Charles A. Dana Award, Colby College	1996
Julius Seeyle Bixler Award, Colby College	1995
Phi Beta Kappa Award	1995

PUBLICATIONS (* indicates undergraduate student authorship, † indicates graduate student authorship) (22 since @ WKU position, Google Scholar citations = 2,606, H index = 22)

- (37) Pullum, K.*, Hodinka, B.†, Ward, Z.*, Morrissette, G.*, Richter, M. M., Hunt, K. E., **Ashley, N.T.** 2024. Effect of melatonin supplementation upon parental care and nestling growth in arctic-breeding songbirds. Journal of Experimental Zoology Part A: Ecological and Integrative Physiology, 1–10.
- (36) Hasan Z.W.†, Nguyen V.T., **Ashley N.T.** 2024. Effect of glucocorticoid blockade on inflammatory responses to acute sleep fragmentation in male mice. PeerJ. Jun 28;12:e17539. doi: 10.7717/peerj.17539.
- (35) Nguyen, V.T., Fields, C. J.*, **Ashley N. T.** 2023. Temporal dynamics of pro-inflammatory gene expression after acute sleep fragmentation in male mice. PLOS One 18(12):e0288889.
- (34) Mishra, I., Pullum, K.B.*, Eads, K. N.*, Strunjas, A. R.*, **Ashley, N.T.** 2022. Peripheral sympathectomy alters neuroinflammatory and microglial responses to sleep fragmentation in female mice. Neuroscience 505:111-124.
- (33) Ensminger, D. C., Wheeler†, N. D., Al Makki, R., Eads, K. N.*, **Ashley, N. T.** 2022. Contrasting effects of sleep fragmentation and angiotensin-II treatment upon pro-inflammatory responses of mice. Scientific Reports 12:14763.
- (32) Wheeler, N. D.†, Ensminger, D. C., Rowe, M. M.*, Wriedt, Z. S.*, **Ashley, N. T.** 2021. Alpha- and beta-adrenergic receptors regulate inflammatory responses to acute and chronic sleep fragmentation in mice. PeerJ 9:e11616.
- (31) Payette, W. I.†, Hodinka, B.L.†, Pullum, K.B.*, Richter, M.M., **Ashley, N.T.** 2021. An anti-narcolepsy drug reveals behavioral and fitness costs of extreme activity cycles in arctic-breeding songbirds. Journal of Experimental Biology 224, jeb237198. doi:10.1242/jeb.237198.

- (30) Hodinka, B. L.†, **Ashley, N. T.** 2020. Effect of sleep loss on executive function and plasma corticosterone levels in an arctic-breeding songbird, the Lapland longspur (*Calcarius lapponicus*). Hormones and Behavior 122:104764
- (29) Mishra, I., Pullum, K.B*., Thayer, D. C.*, Plummer, E. R.*, Conkright, B. W.*., Morris, A. J., O'Hara, B. F., Demas, G. E., **Ashley, N. T.** 2020. Chemical sympathectomy reduces peripheral inflammatory responses to acute and chronic sleep fragmentation. American Journal of Physiology- Regulatory, Integrative and Comparative Physiology 318:R781-R789.
- (28) Mishra, I., Knerr, R.M*., Stewart, A.A*., Payette, W.I.†, Richter, M.M., **Ashley, N. T.** 2019. Light at night disrupts diel patterns of cytokine gene expression and endocrine profiles in zebra finch (*Taeniopygia guttata*). Scientific Reports 9(1):15833. doi: 10.1038/s41598-019-51791-9.
- (27) Scalf, C. S.†, Chariker, J. H., Rouchka, E. C., **Ashley, N. T.** 2019. Transcriptomic analysis of immune response to bacterial lipopolysaccharide in zebra finch (*Taeniopygia guttata*). BMC Genomics 20:647.
- (26) Cooper, L. N.†, Mishra, I., **Ashley, N.T.** 2019. Short-Term Sleep Loss Alters Cytokine Gene Expression in Brain and Peripheral Tissues and Increases Plasma Corticosterone of Zebra Finch (*Taeniopygia guttata*). Physiological and Biochemical Zoology 92:80-91.
- (25) Villeneuve, D.L., Landesmann, B., Allovena, P., **Ashley, N.**, Bal-Price, A., Corsini, E., Halappanavar, S., Hussell, T., Laskin, D., Lawrence, T., Nikolic-Patterson, D., Pallardy, M., Paini, A., Pieters, R., Roth, R., Tschudi-Monnet, F. 2018. Representing the Process of Inflammation as Key Events in Adverse Outcome Pathways. Toxicological Sciences 163:346-352.
- (24) Dumaine J.E.†, **Ashley N.T.** (2018) Acute sleep fragmentation does not alter pro-inflammatory cytokine gene expression in brain or peripheral tissues of leptin-deficient mice. PeerJ 6:e4423.
- (23) **Ashley, N. T.** and Demas, G. E. 2017. Neuroendocrine-immune circuits, phenotypes, and interactions. Hormones and Behavior 87:25-34.
- (22) Demas, G. E. and **Ashley, N. T.** 2017. Introduction to the Special Issue on Neuroendocrine-immune Interactions: Implications for Integrative and Comparative Physiologists. Hormones and Behavior 88:1-3.
- (21) **Ashley, N.T.**, Brown, A. C*., Sams, D.W*., and Dumaine, J. E†. 2016. Novel environment influences the effect of paradoxical sleep deprivation upon brain and peripheral cytokine gene expression. Neuroscience Letters 615:55-59.
- (20) Dumaine, J. E.†, and **Ashley, N. T.** 2015. Acute sleep fragmentation induces tissue-specific changes in cytokine gene expression and increases serum corticosterone concentration.

- (19) **Ashley, N. T.**, Ubuka, T., Schwabl, I. Goymann, W., Salli, B. *, Bentley, G. E., and Buck, C. L. 2014. Revealing a circadian clock in captive arctic-breeding songbirds, Lapland longspurs (*Calcarius lapponicus*), under constant illumination. Journal of Biological Rhythms 29:456-69.
- (18) **Ashley, N. T.**, Walton, J. C. †, Haim, A. †, Zhang, N., Prince, L. A.*, Fruchey, A. M.*, Lieberman, R. A.*, Weil, Z. M., Magalang, U. J., Nelson, R. J. 2013. Sleep deprivation attenuates cytokine gene expression independent of photoperiod and circulating cortisol in endotoxin-challenged male Siberian hamsters. Journal of Experimental Biology 216:2581-6.
- (17) **Ashley, N. T.**, Schwabl, I., Goymann, W., and Buck, C. L. 2013. Keeping time under the midnight sun: behavioral and melatonin profiles of free-living Lapland Longspurs (*Calcarius lapponicus*) during the Arctic summer. Journal of Experimental Zoology Part A. 319:10-12.
- (16) **Ashley, N. T.**, Weil, Z. M., and Nelson, R. J. 2012. Inflammation: mechanisms, costs, and natural variation. Annual Review of Ecology, Evolution, and Systematics. 43:385-406.
- (15) **Ashley, N. T.**, Zhang, N., Weil, Z. M., Magalang, U., Nelson, R. J. 2012. Photoperiod alters the duration and intensity of non-REM sleep following immune challenge in Siberian hamsters (*Phodopus sungorus*). Chronobiology International. 29:683-692.
- (14) **Ashley, N. T.** and J. C. Wingfield. 2012. Sickness Behavior in Vertebrates: Allostasis, Life History Modulation, and Hormonal Regulation. In: G. E. Demas and R. J. Nelson, eds. Ecoimmunology. Pp. 45-91. Oxford University Press.
- (13) **Ashley, N.T.**, Barboza, P. S., Macbeth, B. J., Janz, D. M., Cattet, M. R. L., Booth, R. K., Wasser, S. K. 2011. Glucocorticosteroid concentrations in feces and hair of captive caribou and reindeer following adrenocorticotrophic hormone challenge. General and Comparative Endocrinology 172:382-391.
- (12) **Ashley, N.T.**, Hays, Q. R*, Bentley, G. E., and J. C. Wingfield. 2009. Testosterone treatment diminishes sickness behavior in male songbirds. Hormones and Behavior 56:169-176.
- (11) **Owen-Ashley, N. T.**, D. Hasselquist, L. Raberg†, and J. C. Wingfield. 2008. Latitudinal variation of immune defense and sickness behavior in the White-crowned Sparrow (*Zonotrichia leucophrys*). Brain Behavior and Immunity 22:614-625.
- (10) **Owen-Ashley, N. T.** and J. C. Wingfield. 2007. Acute phase responses of passerines: characterization and seasonal variation. Journal of Ornithology 148 (Suppl 2):S583-S591

- (9) **Owen-Ashley, N. T.** and J. C. Wingfield. 2006. Seasonal modulation of sickness behavior in free-living song sparrows (*Melospiza melodia morphna*). Journal of Experimental Biology 209:3062-3070.
- (8) **Owen-Ashley, N. T.**, M. Turner*, T. P. Hahn, and J. C. Wingfield. 2006. Hormonal, behavioral, and thermoregulatory responses to bacterial lipopolysaccharide in captive and free-living Gambel's White-crowned Sparrow (*Zonotrichia leucophrys gambelii*). Hormones and Behavior 49:15-29.
- (7) **Owen-Ashley, N. T.** and L. K. Butler (Authors contributed equally). 2004. Androgens, interspecific competition and species replacement in hybridizing warblers. Proceedings of the Royal Society of London. Series B. 271:S498-S500.
- (6) **Owen-Ashley, N. T.**, Hasselquist, D., and J. C. Wingfield. 2004. Androgens and the immunocompetence handicap hypothesis: unraveling direct and indirect pathways of immunosuppression in song sparrows. American Naturalist 490-505.
- (5) Wingfield, J. C, **N.T. Owen-Ashley**, Z.M. Benowitz-Fredericks, S.E. Lynn, T. P. Hahn, H. Wada, C. Breuner, S. L. Meddle, and L.M Romero. 2004. Arctic spring: the arrival biology of migrant birds. Acta Zoologica Sinica 50:948-960.
- (4) Meddle, S. L., **N. T. Owen-Ashley**, M. I. Richardson, and J. C. Wingfield. 2003. Modulation of the hypothalamic-pituitary-adrenal axis in the polygynandrous Smith's Longspur (*Calcarius pictus*). Proceedings of the Royal Society of London. Series B 270:849-1856.
- (3) Breuner, C. W., M. Orchink, T. P. Hahn, S. L. Meddle, I. T. Moore, **N. T. Owen-Ashley**, T. S. Sperry, and J. C. Wingfield. 2003. Mechanisms for plasticity of the stress response in three subspecies of white-crowned sparrow. American Journal of Physiology: Regulatory, Integrative, and Comparative Physiology 285:R594-R600.
- (2) **Owen-Ashley, N. T.**, S. J. Schoech, and R. L. Mumme. 2002. Context-specific response of Florida Scrub-Jay pairs to Northern Mockingbird vocal mimicry. Condor 104:858-865.
- (1) **Owen-Ashley, N. T.** and Wilson, D. E. 1998. *Micropteropus pusillus*. Peter's Dwarf Epauletted Fruit Bat. Mammalian Species. No. 577:1-5.

PRESS COVERAGE:

Owen-Ashley, N. T. and J. C. Wingfield. 2006. Seasonal modulation of sickness behavior in free-living song sparrows (*Melospiza melodia morphna*). J. Exp. Biol. 209:3062-3070.

Science magazine: <http://sciencenow.sciencemag.org/cgi/content/full/2006/804/2>

Owen-Ashley, N. T. and L. K. Butler. 2004. Androgens, interspecific competition and species replacement in hybridizing warblers. Proc. R. Soc. Lond. B. S498-500.s

Reuters: <http://www.reuters.com/newsArticle.jhtml?type=topNews&storyID=6067047>

Los Angeles Times: <http://www.latimes.com/news/nationworld/nation/la-sci-briefs28.4aug28,1,5029276.story>

Newswise: <http://www.newswise.com/articles/view/506700/>

MSNBC: <http://www.msnbc.msn.com/id/5809902/>

Environmental News Network (ENN): http://www.enn.com/news/2004-08-25/s_26687.asp

Ashley, N. T., Schwabl, I., Goymann, W., and Buck, C. L. 2013. Keeping time under the midnight sun: behavioral and melatonin profiles of free-living Lapland Longspurs (*Calcarius lapponicus*) during the Arctic summer. Journal of Experimental Zoology Part A. 319:10-12.

Dugdug: <http://www.dugdug.com/dr-noah-ashley-discusses-timekeeping-in-the-arctic>

Commentary on Circadian Rhythms in Birds (July 2013):

National Geographic: <http://news.nationalgeographic.com/news/2013/06/130618-circadian-rhythm-arctic-bird-migrating-science/>

WKU News: “WKU Biology professor awarded NIH grant for research in impacts of sleep loss.” March 19th, 2021.

U.S. Congressman Brett Guthrie- “Guthrie Announces \$430,000 Grant for WKU Research” <https://guthrie.house.gov/news/documentsingle.aspx?DocumentID=387366>

PUBLISHED ABSTRACTS

Owen-Ashley, N. T., L. K. Butler, S. Rohwer, and J. C. Wingfield. 2002. The role of testosterone in a moving avian hybrid zone. Annual Meeting of the Society for Integrative and Comparative Biology, Anaheim, California, USA, January 02-06, 2002

Owen-Ashley, N. T., Q. Hays*, G. E Bentley, and J. C. Wingfield. 2003. Testosterone reduces sickness behavior in songbirds. Annual Meeting and Exhibition of the SICB (Society for Integrative and Comparative Biology), Toronto, ON, Canada, January 04-08, 2003

Owen-Ashley, N. T., D. Hasselquist, and J. C. Wingfield. 2003. Indirect mechanisms of testosterone-induced immunosuppression in songbirds: A new paradigm. Annual Meeting and Exhibition of the SICB (Society for Integrative and Comparative Biology), Toronto, ON, Canada, January 04-08, 2003

Owen-Ashley, N. T., M. Turner*, T. P. Hahn, and J. C. Wingfield. 2004. Hormonal, behavioral, and thermoregulatory consequences of lipopolysaccharide-induced sickness in the White-crowned Sparrow (*Zonotrichia leucophrys gambelii*). Annual Meeting and Exhibition of the SICB (Society for Integrative and Comparative Biology), New Orleans, LA, USA, January 05-09, 2004.

- Owen-Ashley, N. T.**, and J. C. Wingfield. 2004. Seasonal differences in expression of sickness behavior after experimental 'pseudoinfection' in free-living song sparrows (*Melospiza melodia morphna*). Annual Meeting and Exhibition of the SICB (Society for Integrative and Comparative Biology), New Orleans, LA, USA, January 05-09, 2004.
- Owen-Ashley, N. T.**, D. Hasselquist, and J. C. Wingfield. 2005. Examining the indirect effects of testosterone-induced immunosuppression in songbirds. I.) Effects of corticosterone and estradiol on acquired immune function. Annual Meeting and Exhibition of the SICB (Society of Integrative and Comparative Biology), San Diego, CA, January 4-8, 2005.
- Owen-Ashley, N. T.**, D. Hasselquist, and J. C. Wingfield. 2005. Examining the indirect effects of testosterone-induced immunosuppression in songbirds. II.) Effect of pharmacological adrenalectomy on humoral immune responses in testosterone-implanted birds. Annual Meeting and Exhibition of the SICB (Society of Integrative and Comparative Biology), San Diego, CA, January 4-8, 2005.
- Salli, B.*, **Ashley, N. T.**, Buck, C. L. 2011. Effect of testosterone on the synchronization of activity rhythms to low amplitude zeitgebers in an arctic-breeding songbird. Annual Meeting and Exhibition of the SICB (Society of Integrative and Comparative Biology)
- Ashley, N.T.**, Zhang, N., Weil, Z. M., Magalang, U. J., Nelson, R. J. 2013. Sleeping dwarfs: photoperiodic modulation of infection-induced sleep in Siberian hamsters (*Phodopus sungorus*). Annual Meeting and Exhibition of the SICB (Society of Integrative and Comparative Biology), San Francisco, CA, January 3-7th, 2013.
- Brown, A.C.*, Sams, D. W.*, **Ashley, N. T.** 2013. Sleep deprivation increases cytokine gene expression and plasma corticosterone levels in a murine model: a possible link between stress and inflammation? Kentucky Academy of Sciences Annual Meeting, Morehead, KY, Nov. 8-9, 2013.
- Ashley, N.T.**, and Wingfield, J. C. 2014. Testosterone at the Top of the World: Disparate hormone-behavior interrelationships between two high-arctic breeding populations of Lapland Longspurs (*Calcarius lapponicus*). Annual Meeting and Exhibition of the SICB (Society of Integrative and Comparative Biology), Austin, TX, January 3-7th, 2014.
- Ashley, N.T.**, Hasselquist, D., and Wingfield, J. C. 2015. Testosterone and immunosuppression in an arctic-breeding songbird. Annual Meeting and Exhibition of the SICB (Society of Integrative and Comparative Biology), West Palm Beach, FL, January 4-8th, 2015.
- Cooper, L. N, and **Ashley, N. T.** 2016. Effects of sleep disruption upon cytokine gene expression of zebra finch (*Taenopygia guttata*). Annual Meeting and Exhibition of the SICB (Society of Integrative and Comparative Biology), Portland, OR, January 3-7th, 2016.
- Richter, M. M., **Ashley, N. T.**, and L. N. Cooper. 2017. A polar day's worth of stress- circadian variation of adrenocortical responses to stress in arctic-breeding passerine birds. Annual

Meeting and Exhibition of the SICB (Society of Integrative and Comparative Biology), New Orleans, LA, January 4-8th, 2017.

Richter, M. M., **Ashley, N. T.** 2018. Making hay while the sun shines: How an arctic-breeding songbird copes with 24 hours of daylight. Annual Meeting and Exhibition of the SICB (Society of Integrative and Comparative Biology), San Francisco, 3-7th, 2018.

Richter, M. M. Scalf, C. S., Pullum, K. B., Cooper, L. N., **Ashley, N. T.** 2019. Effect of polar daylight upon the adrenocortical response to stress in arctic-breeding passerine songbirds. Annual Meeting and Exhibition of the SICB (Society of Integrative and Comparative Biology), Tampa, FL, 3-7th, 2019.

Payette, W.I., Hodinka, B.L. Pullum, K. B., Richter, M.M., **Ashley, N.T.** 2020. Effect of sleep loss on parental care in arctic-breeding songbirds. Annual Meeting and Exhibition of the SICB (Society of Integrative and Comparative Biology), Austin, TX, Jan 3-7th, 2020

Hodinka, B.L., **Ashley, N.T.** 2020. Effect of sleep loss on executive function and corticosterone levels in an arctic-breeding songbird, the Lapland longspur (*Calcarius lapponicus*). Annual Meeting and Exhibition of the SICB (Society of Integrative and Comparative Biology), Austin, TX, Jan 3-7th, 2020.

INVITED SYMPOSIA AND PRESENTATIONS (*10 since joining WKU*)

Owen-Ashley, N. T. and Butler, L. K. 2004. Are endocrinological “rules of thumb” sufficient to explain the movement of a *Dendroica* warbler hybrid zone? E-bird ESF/NSF/NSERC workshop. Tradeoffs and constraints. Groningen, Netherlands.

Owen-Ashley, N. T. and J. C. Wingfield. 2006. Acute phase responses of passerines: characterization and life history modulation. International Ornithological Congress, Hamburg, Germany.

Ashley, N.T., T., Ubuka, G. E. Bentley, and C. L. Buck. 2010. Circadian organization of arctic-breeding songbirds. International Ornithological Congress, Campus do Jordão, Brazil.

Ashley, N.T. 2011. Testosterone-induced immunosuppression in songbirds: trouble or triumph? North American Society for Comparative Endocrinology. University of Michigan, Ann Arbor, Michigan

Ashley, N. T. 2012. Endotoxemia and sleep: effects of day length. Ohio State University Medical Center Grand Rounds (Davis Heart and Lung Institute).

Ashley, N. T. 2015. The Vertebrate Inflammatory Response: Mediation by Life-History Tradeoffs. Departmental Seminar. Dept. of Biological Sciences, University of Alabama.

Ashley, N. T. 2015. The Vertebrate Inflammatory Response: Mediation by Life-History Tradeoffs. Departmental Seminar. Dept. of Biological Sciences, Northern Arizona

University.

Ashley, N. T. Spring 2015. The Vertebrate Inflammatory Response: The Good, The Bad, And the Ugly. Center for the Integrative Study of Animal Behavior. Indiana University, Bloomington, IN.

Ashley, N. T. Fall 2017. The Inflammatory Response in Vertebrates. The European Commission. Workshop “Inflammation and the AOP Framework.” Ispra, Italy (videoconference).

Ashley, N. T. Spring 2019. Inflammation in sick and healthy animals. University of Alaska, Fairbanks, AK.

Ashley, N. T. 2021. Sympathetic regulation of inflammation from sleep fragmentation. KY INBRE Seminar. Zoom.

Ashley, N. T. 2021. Circadian Rhythms, Hormones, and Sleep in Arctic-breeding Songbirds. Western Kentucky University, Bowling Green, KY.

Ashley, N. T. 2022. Cool clocks: circadian rhythms, hormones, and sleep in arctic-breeding songbirds. University of Louisville, Louisville, KY

Ashley, N. T. 2023. Cool rhythms: investigating activity cycles, hormones, and sleep in arctic-breeding songbirds. Simon Fraser University, Burnaby, British Columbia, Canada

Ashley, N.T. 2024. Inflammatory Responses to Sleep Loss: How, When, and Why? 1st Annual KY INBRE ARC conference. Lexington, KY.

STUDENT PRESENTATIONS (*34 student presentations since joining WKU*)

Taylor, C. B., Sharma, M.V., Nguyen, V.T and Ashley, N. T. Effect of chronic sleep fragmentation upon pro-inflammatory gene expression of male mice. 1st Annual KY INBRE ARC conference, Lexington, KY

Akangbe, T. J., Nguyen, V. T, and Ashley, N.T. 2024. Does Sex Affect Neuromuscular and Motor Coordination of Mice in Response to Sleep Fragmentation? 1st Annual KY INBRE ARC conference, Lexington, KY

Hasan, Z. W., Nguyen, V. T., Ashley, N.T. 2023. Effect of glucocorticoid blockade on inflammatory responses to acute sleep fragmentation in male mice. Southeast IDEA Regional Conference. Columbia, SC

Nguyen, V. T., Fields, C. J., Honaker, O. W., Ashley, N. T. 2023. Temporal dynamics of inflammatory responses and glucocorticoid release from acute sleep fragmentation in male mice. Southeast IDEA Regional Conference. Columbia, SC

- Akangbe, T. J., Nguyen, V. T., Ashley, N. T. 2023. Assessment of the neuromuscular and motor coordination of female mice in response to acute sleep fragmentation. Southeast IDEA Regional Conference. Columbia, SC
- Sharma, M., Taylor, C. Fields, C. J. Nguyen, Ashley, N. T. 2023. Characterizing the onset of peripheral inflammation responses to acute sleep fragmentation in male mice. Western Kentucky University Student Showcase. Bowling Green, KY
- Gorecki, E. Im, D., Chelson, C., Ashley, N. T. 2023. The inflammatory effect of glucocorticoids on sleep. Western Kentucky University Student Showcase. Bowling Green, KY
- Taylor, C., Sharma, M. Nguyen, V. T., Ashley, N. T. 2023. The neuroinflammatory response to acute sleep fragmentation in female mice. Western Kentucky University Student Showcase. Bowling Green, KY
- Fields, C. J., Nguyen, V. T., Ashley, N. T. 2023. Inflammation from acute sleep fragmentation begins in peripheral tissues instead of the brain. Western Kentucky University Student Showcase. Bowling Green, KY
- Allen, P., Fields, C. J., Stansell, M., Weaver, H., Nguyen, V. T., Ashley, N. T. 2022. Inflammatory response to sleep fragmentation in skeletal, cardiac, and smooth muscle tissues in female mice. Western Kentucky University Student Showcase. Bowling Green, KY
- Rzayeva, M., Nguyen, V. T., Muradova, Y., Ashley, N. T. 2022. Comparison of effects of sleep fragmentation on pro-inflammatory cytokines of male and female adult mice. Western Kentucky University Student Showcase. Bowling Green, KY
- Payette, W.I., Hodinka, B.L. Pullum, K. B., Richter, M.M., Ashley, N.T. 2020. Effect of sleep loss on parental care in arctic-breeding songbirds. Annual Meeting and Exhibition of the SICB (Society of Integrative and Comparative Biology), Austin, TX, Jan 3-7th, 2020
- Hodinka, B.L., Ashley, N.T. 2020. Effect of sleep loss on executive function and corticosterone levels in an arctic-breeding songbird, the Lapland longspur (*Calcarius lapponicus*). Annual Meeting and Exhibition of the SICB (Society of Integrative and Comparative Biology), Austin, TX, Jan 3-7th, 2020.
- Eads, K.N., Mishra, I., Ashley, N.T. 2019. The effects of chronic sleep fragmentation and chemical sympathectomy on microglial activity. Kentucky Academy of Sciences Annual Meeting, Murray, KY
- Strunjas, A., Mishra, I., Ashley, N.T. 2019. Effects of acute sleep fragmentation and chemical sympathectomy on microglial cells. Kentucky Academy of Sciences Annual Meeting, Murray, KY
- Knerr, M., Mishra, I., Wheeler, N., Ashley, N.T. 2019. The effect of artificial light at night on

- IL-1 β , IL-6, and IL-10 gene expression in brain and peripheral tissues of zebra finches. Kentucky Academy of Sciences Annual Meeting, Murray, KY
- Hodinka, B. L., Ashley, N. T. 2019. Effect of sleep loss on cognitive function and baseline plasma corticosterone levels in an arctic-breeding songbird, the Lapland Longspur (*Calcarius lapponicus*). Annual Meeting and Exhibition of the SICB (Society of Integrative and Comparative Biology), Tampa, FL, 3-7th, 2019.
- Scalf, C. and Ashley, N.T. 2018. Transcriptomic Response to Immune Challenge in Zebra Finch (*Taeniopygia guttata*) using RNA-seq. Annual Meeting of the Society of Integrative and Comparative Biologists, San Francisco, CA, January 3-7th, 2018.
- Scalf, C. and Ashley, N.T. 2017. Transcriptomics of the avian immune response. WKU Annual Student Research Conference, Bowling Green, KY
- Bishop, A. and Ashley, N.T. 2016. Investigating the link between circadian rhythms and cytokine gene expression in zebra finch. WKU Annual Student Research Conference, Bowling Green, KY
- Cooper, L.N. and Ashley, N.T. 2016. Effect of sleep disruption upon cytokine gene expression of zebra finch, *Taeniopygia guttata*. WKU Annual Student Research Conference, Bowling Green, KY
- Dumaine, J. E. and Ashley, N. T. 2015. Acute sleep fragmentation induces tissue-specific changes in cytokine gene expression and increases serum corticosterone concentration. WKU Annual Student Research Conference, Bowling Green, KY
- England, J. L, Vo, H. D. L., Ashley N. T. 2015. Sleep deprivation increases the sensitivity of the hypothalamo-pituitary-adrenal axis to dexamethasone treatment in C57BL/6j mice. WKU Annual Student Research Conference, Bowling Green, KY
- Owens, N., Doctrow, J., Ashley, N.T. 2015. Effects of Chronic Sleep Fragmentation on Corticosterone Levels in Mice. WKU Annual Research Conference, Bowling Green, KY
- Dumaine, J. E. and Ashley, N. T. 2014. Acute sleep fragmentation induces tissue-specific changes in cytokine gene expression and increases serum corticosterone concentration. Kentucky Academy of Sciences Annual Meeting, Lexington, KY
- Dumaine, J. E. and Ashley, N. T. 2014. Acute sleep fragmentation induces tissue-specific changes in cytokine gene expression and increases serum corticosterone concentration. Gregory P. Domin Graduate Research Conference, Columbus State University, Columbus, GA.
- Sams, D.W., and Ashley, N. T. 2014. Sleep deprivation, stress, and inflammation: controls matter. Kentucky Academy of Sciences Annual Meeting, Lexington, KY

Dotson, K. A. and Ashley, N. T. 2014. Effect of Black and Turkey Vulture Regurgitation upon *Escherichia coli* bacteria. Kentucky Academy of Sciences Annual Meeting, Lexington, KY

Sams, D.W., and Ashley, N. T. 2014. Sleep deprivation, stress, and inflammation: controls matter. Annual BSURE symposium, Bowling Green, KY

Sams, D. W., Brown, A.C., Ashley, N. T. 2014. Sleep deprivation increases cytokine gene expression and plasma corticosterone levels in a murine model: a possible link between stress and inflammation? WKU Annual Student Research Conference, Bowling Green, KY

Dotson, K. A. and Ashley, N. T. 2014. Effect of Black and Turkey Vulture Regurgitation upon *Escherichia coli* bacteria. WKU Annual Student Research Conference, Bowling Green, KY

Smith, A., Huff, A., and Ashley, N.T. 2014. Sexual differences in anxiety following sleep deprivation. WKU Annual Student Research Conference, Bowling Green, KY

Brown, A.C., Sams, D. W., Ashley, N. T. 2013. Sleep deprivation increases cytokine gene expression and plasma corticosterone levels in a murine model: a possible link between stress and inflammation? Kentucky Academy of Sciences Annual Meeting, Morehead, KY, Nov. 8-9, 2013.

Brown, A.C., Sams, D. W., Ashley, N. T. 2013. Sleep deprivation increases cytokine gene expression and plasma corticosterone levels in a murine model: a possible link between stress and inflammation? Annual BSURE conference, Bowling Green, KY

UNDERGRADUATE STUDENT MENTORING (*Since starting at WKU: 49 undergraduate students that include 17 Gatton Academy students and 9 Honors Thesis students*):

Honor Thesis Students: Audrey Brown, Amber Bishop, Dominique Thayer, Erica Plummer, Molly Taylor, Zachary Wriedt, Patton Allen, Manzar Rzayeva, Zoe Ward

Independent Research Students: Abigail Price, Megan Rowe, Manzar Rzayeva, Edwin Fields, Darby Tassell, Kelsey Littrell, Kristen Eads, Madison Sturdivant, Kaelee Stafford, Sasha Sairajeev (Gatton); Zoe Ward (Gatton), Amanda Strunjas (Gatton), Alexander Stewart (Gatton), Reinhard Knerr (Gatton) Natalie Ngong (Gatton), Keelee Pullum (Gatton), Dylan Sexton, Olivia Gilliam (Gatton), Benjamin Conkright (Gatton), Nakeya Owens (Gatton) Chase Knibbe, Dai Le Hieu Vo, Johnny England, Jamie Doctrow, Austin Smith (Gatton) Austin Huff, David Sams, Ryne Armes, Kaley Coffey, Cameron Fields, Darby Tassell (Gatton), Max Stansell, Maharshi Sharma, Cam Fields, Andrea Diaz Buezo, Abigail Portmann (Gatton), Gabrielle Kitchen, Yasmina Muradova (Gatton), Dain Im (Gatton), Cole Taylor, Owen Honaker, Tobi Akangbe, Henry Hurley (Gatton)

GRADUATE STUDENT MENTORING (*9 students chaired since joining WKU*)

Thesis Committee Chair

Jennie Dumaine- M. S. completed Spring 2015, received PhD from Univ. of Penn (2021)

Laken Cooper- M. S. completed Spring 2016
Cassandra Scalf- M.S. completed in Spring 2018, San Antonio Zoo
Brett Hodinka- M. S. completed in Spring 2019, currently Simon Fraser Univ. (doctoral)
Wes Payette- M.S. completed. in Spring 2020, high school biology teacher (Chattanooga)
Nick Wheeler- M. S. completed in Summer 2020, attending University of Mississippi
veterinary school
Hunter Weaver- M. S. completed in Spring 2022
Christian Chelson- M. S. completed in Spring 2023
Zim Warda Hasan- M. S. completed in Spring 2024, attending West Virginia University
Ph.D. program

Thesis Committee Member

Brigit Rooney- M.S. completed Spring 2019 (Chair, Dr. Bruce Schulte)
Georgia Ficarra- M.S. completed in Summer 2021 (Chair, Dr. Jarrett Johnson)
Victoria Willis- M. S. completed Spring 2020 (Chair, Dr. Phillip Gunter)
Shreya Neupane- M.S. completed in Fall 2022 (Chair, Dr. Simran Banga)
Serena Seiler- M.S. expected to complete Spring 2024 (Chair, Dr. Bruce Schulte)

External Committee Member for Ph.D. Dissertation

Elizabeth Carlton- Indiana University- defended Spring 2015
Patricio Garcia Neto- University of Sao Paulo (USP)- General Physiology, defending 2023

POSTDOCTORAL ASSOCIATES MENTORING

Melanie Richter- Dr. Richter (Ph.D. from University of Alaska, Fairbanks) was hired in June 2016 to oversee the arctic field biology studies on sleep loss in songbirds. Currently a Research Scientist at Memphis Zoo, Dept. of Conservation and Research

Ila Mishra- Dr. Mishra (Ph.D. from University of Delhi, India) was hired in November, 2017 to supervise the NIH-related research on sleep fragmentation in mice. Currently tenure-track assistant professor at University of Kentucky, Fall 2023

David Ensminger- Dr. Ensminger (Ph.D. from Penn State) was hired in April, 2019 to assist with completing NIH-related research on sleep fragmentation in mice. New tenure-track assistant professor at San Jose State University, Fall 2021.

Van Thuan Nguyen- Dr. Nguyen (Ph.D from Hallym University, South Korea) was hired in April, 2022 to assist with new aims of the R15 renewal grant.

TEACHING EXPERIENCE

Full Courses

Endocrinology (BIOL464/G), Western Kentucky University (4)	2013-2023
Human Anatomy & Physiology (BIOL131), Western Kentucky University (4)	2012-2014
Ornithology (BIOL326), Western Kentucky University (4)	2015-2023
Ornithology Lab (BIOL356), Western Kentucky University (3)	2017-2023
Animal Biology & Diversity (BIOL224/H), Western Kentucky University (4)	2016-2020

Animal Physiology (BIOL330/H), Western Kentucky University (3)	2021-2023
Research Problems in Biology (BIOL399), 31 students	2012-2024
Contemporary Research in Biology (BIOL503), Western Kentucky University (3)	2017-2022
Professional Aspects of Biology (BIOL489), WKU	2024
Graduate Seminar (BIOL598), WKU	2024

Teaching assistantships

Introductory Physiology, University of Washington	1998, 2002
Vertebrate Zoology, University of Washington	1999
Comparative Vertebrate Anatomy, University of Washington	1999, 2002

Special Educational Programs

Future Teachers of Science Internship Program-

Developed with Dr. Martha Day (SkyTeach; WKU)-

Provides internships to WKU students to develop course modules in arctic science for middle school/high school students in Barrow, Alaska and southcentral KY

Participating students: Madison Wells, Kay Dee Vales, Addie Baldwin,
Paige Peterson, Nicole White, Emily McAfee 2016-2019

Gatton Academy-Barrow High School Research Experience

Students from the Gatton Academy and Barrow High School (Alaska) conduct summer research on arctic-breeding birds in Barrow, Alaska 2017-2019

Participating students:

Gatton Academy: Benjamin Conkright, Keelee Pullum, Natalie Ngong,
Zoe Ward, Anna Strunjas, Ian Storrs, Edwin Fields
Barrow High School: Eva Nowpakahok, Katelyn Delarosa, Jena Richards

SERVICE

University Service

Chair, WKU Institutional Animal Care and Use Committee (2015 to present)
Member, WKU Institutional Animal Care and Use Committee (2013-2015)
Member, Executive Council for Pre-health, Ogden College (2023-present)

Departmental Service

Primary Mentor, Pre-tenure Faculty (Dr. Hilary Katz; Fall 2023)
Member, Pre-health Committee (2021-present)
Member, Biotech Executive Committee (2021-present)
Member, Advisory committee (2021-2022)
Member, Hiring committee (2021-2022)
Member, Selection Committee for new Biology Chair (Spring 2019)
Primary Mentor, Pre-tenure Faculty (Dr. Kevin Bilyk; Fall 2019)
Chair, Biology Awards Selection (Spring 2018, Spring 2000)
Chair, Biology Departmental Seminar Committee (Fall 2015)
Member, Undergraduate Curriculum Committee (2015-2017)

Member, Advising Committee (2014-2015)
Member, Safety Committee (2013-2014)
Advisor, Pre-dental Society (2016-present)

Professional Service

Special Guest Editor (2023-present):

Journal of Experimental Zoology (Part A): Comparative Biology of Sleep and Circadian Rhythms. Co-edited with Dr. John Lesku (Latrobe University)

Editor (2023-present)- Scientific Reports

Special Guest Editor (2015-2017)

Hormones and Behavior: Special Issue “Neuroendocrine-Immune Interactions: Implications for Integrative and Comparative Physiologists” Publication Date: published in early 2017. Co-edited with Dr. Gregory Demas (Indiana University).

Symposium Organizer (2020-2022)

Co-chair (with Dr. Isabella Scheiber); International Ornithological Conference, “Living in Extremes: How birds in the Arctic and Antarctica cope with global climate change” 28th IOC Congress. Durban, South Africa, August 14th-20th, 2022.

Grant Reviewer

External

Dutch Research Council, *ad hoc review*, 2019

NSERC, *ad hoc review*, 2018

Department of Defense- Congressionally Directed Medical Research Programs, 2016, 2017, 2020

NSF IOS Pre-proposals (Modulation panel)- Washington, D. C. March, 2016

NSF IOS Modulation panel- October, 2020 (virtual)

Israeli Science Foundation, *ad hoc review*, 2012, 2013

NSF referee, IOS, *ad hoc review*, 2011, 2017

NSF referee, EPSCOR, *ad hoc review*, 2021

Internal

WKU FUSE grants, *ad hoc review*, 2013, 2014,

RCAP reviewer, 2023

Journal Reviewer (80 manuscripts reviewed since joining WKU; Total # = 121)

American Journal of Physiology: Regulatory, Integrative, and Comparative Biology; American Naturalist (3); Arctic; Auk (4); Behavioral Ecology and Sociobiology; Biology Letters (2); Brain, Behavior, and Immunity (15); General and Comparative Endocrinology (22; awarded Excellence in Reviewing); Evolutionary Ecology; Evolutionary Ecology Reviews; Evolution, Medicine, and Public Health; Frontiers in Neuroendocrinology; Functional Ecology (2); Hormones & Behavior (14); International Journal of Developmental Neuroscience; Journal of Avian Biology (2); Journal of Comparative Physiology, Part B; Journal of Experimental Zoology, Part A (5); Journal of Neuroendocrinology; Journal of Ornithology; Journal of Thermal Biology; Neuroimmunomodulation (2); Oecologia; Ornitologia Neotropical; PeerJ; Physiology & Behavior (4); Physiological and Biochemical Zoology (1) Psychoneuroimmunology (7); Proceedings of the Royal Society of London, B (7); Science; SLEEP; The Condor (3); Journal of Experimental Biology; Journal of Zoology

Public Service

Judge- student poster presentations, 2024, KY INBRE ARC conference- Lexington, KY
Kentucky Live & Far Away Places, Community presentation about arctic-breeding birds of
Alaska, 2017

Tuzzy Consortium Library, Schoolyard talk, Barrow, Alaska, 2016

Judge- “Zoology” student poster presentations, 2016, Kentucky Academy of Sciences,
Louisville, KY

Judge- “Zoology” student oral presentations, 2014, Kentucky Academy of Sciences, Lexington,
KY

Demonstrations- Potter Gray Elementary School, Science Fair, 2014

Judge- “Physiology” student oral presentations, 2012, Kentucky Academy of Sciences