

## ALEXANDRA B. BENTZ

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|--------------------------------------|---|---------------|
| POSITIONS                            | Assistant Professor, University of Oklahoma<br>Department of Biology  | starting 2021 |
|                                      | Postdoctoral Fellow (NIH Trainee), Indiana University<br>Center for the Integrative Study of Animal Behavior<br>Laboratories of Drs. Kimberly Rosvall & Ken Nephew  | 2019-2021     |
|                                      | Postdoctoral Scholar, Indiana University<br>Department of Biology<br>Laboratory of Dr. Kimberly Rosvall   | 2017-2019     |
| EDUCATION                            | Ph.D., University of Georgia<br>Department of Poultry Science<br>Dissertation: The role of maternal hormones in programming offspring aggression<br>Advisor: Kristen Navara   | 2017          |
|                                      | M.S., Appalachian State University<br>Department of Biology<br>Thesis: Effects of social aggression on tree swallow ( <i>Tachycineta bicolor</i> ) offspring behavior and physiology<br>Advisor: Lynn Siefferman            | 2012          |
|                                      | B.S., Appalachian State University<br>Biology Major (University Honors, Summa Cum Laude)<br>Honors Thesis: Influence of female age and plumage coloration on offspring fitness in tree swallows, <i>Tachycineta bicolor</i> | 2010          |
| FELLOWSHIPS                          | Postdoctoral Fellow, NIH T32 NRSA training grant (2yrs: \$112,370)  | 2019–2021     |
|                                      | Darwin Fellow, Univ. of Mass. (awarded but declined; 2yrs: \$96,850)  | 2017          |
|                                      | Graduate Research Fellowship, NSF (3yrs: \$132,000)   | 2012–2017     |
|                                      | Cellular and Molecular Biosciences Fellow, Auburn Univ. (1yr: \$22,500)   | 2012–2013     |
|                                      | Chancellor's Fellowship, Appalachian State Univ. (2yrs: \$15,800)   | 2010–2012     |
| <i>Total Fellowships = \$379,520</i> |   |               |
| GRANTS & AWARDS                      | Center for the Integrative Study of Animal Behavior Travel Award (\$500)  | 2019          |
|                                      | IUB Provost Travel Award for Women in Science (\$1,100)   | 2017, 2018    |
|                                      | Doctoral Dissertation Improvement Grant (#1601396), NSF (\$18,719)  | 2016          |
|                                      | E. Broadus Browne Award Departmental Nominee, Univ. of Georgia  | 2016          |
|                                      | American Society of Mammalogists Research Grant (\$1,446)   | 2016          |
|                                      | Global Programs International Travel Award, Univ. of Georgia (\$618)  | 2016          |
|                                      | Society for Integrative and Comparative Biology (SICB) Research Grant (\$979)   | 2016          |
|                                      | Adrian M. Wenner Strong Inference Award, SICB   | 2016          |
|                                      | Animal Behavior Society Research Grant (\$2,500)  | 2015          |
|                                      | American Ornithologists' Union Research Grant (\$4,491)   | 2011, 2015    |
|                                      | North American Bluebird Society Research Grant (\$600)  | 2013          |
|                                      | Sigma Xi Research Grant (\$2,000)   | 2010, 2011    |
| <i>Total Grants = \$32,953</i>       |   |               |

**PUBLICATIONS** Google scholar: <https://scholar.google.com/citations?user=ZiHgwYAAAAAJ&hl=en>  
(339 citations; h-index = 11)

20. Wrobel, ER\*, **AB Bentz**\*, W Lorenz, S Gardner, MT Mendonça, and KJ Navara. Corticosterone and testosterone treatment influence expression of gene pathways linked to meiotic segregation in preovulatory follicles of the domestic hen. *PLoS ONE*. 15: e0232120. (\*equal contribution)
19. Rosvall, KA, **AB Bentz**, and E George. 2020. How research on female vertebrates contributes to an expanded challenge hypothesis. *Hormones and Behavior*. 123: 104565.
18. **Bentz, AB**, DB Rusch, A Buechlein, and KA Rosvall. The neurogenomic transition from territory establishment to parenting in a territorial female songbird. *BMC Genomics*. 20: 819.
17. **Bentz, AB**, G Thomas, DB Rusch, and KA Rosvall. Tissue-specific expression profiles and positive selection analysis in the tree swallow (*Tachycineta bicolor*) using a *de novo* transcriptome assembly. *Scientific Reports*. 9: 15849.
16. Lipshutz, SE, E George, **AB Bentz**, and KA Rosvall. 2019. Evaluating testosterone as a phenotypic integrator: From tissues to individuals to species. *Molecular and Cellular Endocrinology*. 496: 110531.
15. **Bentz, AB**, KJ Philippi, and KA Rosvall. 2019. Evaluating seasonal patterns of female aggression: case study in a cavity-nesting bird with intense female-female competition. *Ethology*. 125: 555-564.
14. **Bentz, AB**, EK Dossey, and KA Rosvall. 2019. Tissue-specific gene regulation corresponds with seasonal plasticity in female testosterone and aggression. *General & Comparative Endocrinology*. 270: 26-34.
13. Possenti, CD, **AB Bentz**, A Romano, M Parolini, M Caprioli, D Rubolini, K Navara, and N Saino. 2018. Predation risk affects egg mass but not egg steroid hormone concentrations in yellow-legged gulls. *Current Zoology*. doi: 10.1093/cz/zoy064
12. Becker, DJ, LM Bergner, **AB Bentz**, RJ Orton, S Altizer, DG Streicker. 2018. Genetic diversity, infection prevalence, and possible transmission routes of *Bartonella* spp. in vampire bats. *PLoS Neglected Tropical Diseases*. 12: e0006786.
11. Corti, M, A Romano, A Costanzo, **AB Bentz**, KJ Navara, M Parolini, N Saino, and D Rubolini. 2018. Protoporphyrin-based eggshell pigmentation is associated with female plumage colouration and predicts offspring sex ratio in the barn swallow. *Journal of Avian Biology*. 49:jav-01642.
10. **Bentz, AB**, VA Andreasen\*, and KJ Navara. 2018. An experimental test of the relationship between yolk testosterone and the social environment in a colonial passerine. *Journal of Avian Biology*. 49:jav-01635. (\*undergraduate mentee)
9. Becker DJ, GA Czirkjak, DV Volokhov, **AB Bentz**, MS Camus, KJ Navara, VE Chizhikov, SE Recuenco, AT Gilbert, S Altizer, and DG Streicker. 2018. Livestock abundance predicts vampire bat demography, immune profiles, and bacterial infection risk. *Philosophical Transactions of the Royal Society B*. 373: 20170089.

8. Pusch, EA, **AB Bentz**, DJ Becker, and KJ Navara. 2018. Behavioral phenotype predicts physiological responses to chronic stress in proactive and reactive birds. *General & Comparative Endocrinology* 255: 71-77.
7. Becker, DJ, MM Chumchal, **AB Bentz**, SG Platt, GA Czirjak, TR Rainwater, S Altizer, and DG Streicker. 2017. Predictors and immunological correlates of sublethal mercury exposure in vampire bats. *Royal Society Open Science* 4:170073.
6. **Bentz, AB**, DJ Becker, and KJ Navara. 2016. Evolutionary implications of interspecific variation in a maternal effect: a meta-analysis of yolk testosterone response to competition. *Royal Society Open Science* 3:160499.
5. **Bentz, AB**, A Sirman, H Wada, KJ Navara, and W Hood. 2016. Relationship between maternal environment and DNA methylation patterns of estrogen receptor alpha in wild Eastern Bluebird (*Sialia sialis*) nestlings: a pilot study. *Ecology and Evolution* 6: 4741-4752.
4. Robinson, TJ, L Siefferman, **AB Bentz**, and TS Risch. 2014. The separate effects of egg size and parental quality on the development of ornamental plumage coloration. *Ibis* 156:415-423.
3. **Bentz, AB**, L Siefferman, and KJ Navara. 2013. Phenotypic plasticity in response to breeding density in tree swallows: an adaptive maternal effect? *Hormones and Behavior* 64:729-736.
2. **Bentz, AB** and L Siefferman. 2013. Age-dependent trade-offs between coloration and reproduction in a species exhibiting delayed plumage maturation in females. *Journal of Avian Biology* 44:80-88.
1. **Bentz, AB**. 2009. A Review of Quercetin: Chemistry, Antioxidant Properties, and Bioavailability. *Journal of Young Investigators* 19:3416.

**SUBMITTED  
MANUSCRIPTS**  
(available upon request)

**Bentz, AB**, C Niederhuth, L Carruth, and KJ Navara. Prenatal testosterone exposure triggers long-term behavioral changes: unraveling the neurogenomic mechanisms. In revision.

**Bentz, AB**, EM George, SE Wolf, DB Rusch, R Podicheti, A Buechlein, KP Nephew, and KA Rosvall. Experimental competition induces immediate and lasting effects on the neurogenome in free-living female birds. In revision.

Albers, AN, L Siefferman, **AB Bentz**, and KA Rosvall. Testing the pioneering hypothesis in a North American bird experiencing an unusual southward range shift. In revision.

**SCIENTIFIC  
MEETINGS**  
\*undergraduate mentee

**Bentz, AB**, EM George, SE Wolf, DB Rusch, A Buechlein, and KA Rosvall. Immediate and lasting neurogenomic responses to competition in a free-living songbird. Talk at The Society for Integrative and Comparative Biology, Annual Meeting, Austin, TX, January 3-7, 2020.

**Bentz, AB**, DB Rusch, and KA Rosvall. Seasonal shifts in neural gene expression in a territorial female songbird. Poster at Society for Behavioral Neuroendocrinology, Annual Meeting, Bloomington, IN, June 19-22, 2019.

\*Rodriguez Jimnez, YD, **AB Bentz**, and KA Rosvall. Sensitivity to testosterone in the avian eye is related to sex, species, and trait differences. Poster at the Animal Behavior Conference, Bloomington, IN, March 29-30, 2019.

**Bentz, AB**, DB Rusch, and KA Rosvall. Seasonal shifts in neural gene expression in a territorial female songbird. Talk at The Society for Integrative and Comparative Biology, Annual Meeting, Tampa, FL, January 3-7, 2019.

**Bentz, AB**, EM George, and KA Rosvall. Tissue-specific gene regulation corresponds with seasonal plasticity in female testosterone and aggression. Talk at The Society for Integrative and Comparative Biology, Annual Meeting, San Francisco, CA, January 3-7, 2018.

**Bentz, AB**, C Niederhuth, L Carruth, and KJ Navara. The mechanistic role of maternal hormones in programming offspring aggression. Talk at The Society for Integrative and Comparative Biology, Annual Meeting, New Orleans, LA, January 4-8, 2017.

**Bentz, AB**, DJ Becker, and KJ Navara. Species-specific traits shape patterns of yolk testosterone allocation in response to competition: a meta-analysis. Talk at The Society for Integrative and Comparative Biology, Annual Meeting, Portland, OR, January 3-7, 2016.

**Bentz, AB** and KJ Navara. The influence of social stimulation on maternal hormone allocation in zebra finches. Poster presented at The Society for Integrative and Comparative Biology, Annual Meeting, West Palm Beach, FL, January 3-7, 2015.

**Bentz, AB**, A Sirman, H Wada, and W Hood. Maternal effect alters epigenetic state of estrogen receptor 1 in eastern bluebird. Poster presented at The Society for Integrative and Comparative Biology, Annual Meeting, Austin, TX, January 3-7, 2014.

**Bentz, AB** and L Siefferman. Effects of density on Tree Swallow behavior and physiology. Poster presented at Animal Behavior Society, 48th Annual Meeting, Bloomington, IN, July 25-30, 2011.

**Bentz, AB** and L Siefferman. Influence of female age and color on offspring fitness in Tree Swallows. Association of Southeastern Biologists, 71st Annual Meeting, Asheville, NC, April 7-10, 2010.

## INVITED TALKS

**Bentz, AB**. Your past predicts your future: hormonal and genomic mechanisms of behavioral plasticity. Invited talk at University of Oklahoma Spring Seminar Series, Norman, OK, January 15, 2020.

**Bentz, AB**. Your past predicts your future: hormonal and genomic mechanisms of behavioral plasticity. Invited talk at Iowa State University Fall Seminar Series, Ames, IA, November 14, 2019.

**Bentz, AB**. The role of maternal hormones in programming offspring aggression. Invited talk at Indiana University EEB Brown Bag Seminar, Bloomington, IN, January 30, 2018.

**Bentz, AB**. The role of maternal hormones in programming offspring aggression. Appalachian State Univ. Seminar Series, Boone, NC, November 15, 2017.

**Bentz, AB.** The role of maternal hormones in programming offspring aggression. Indiana State Univ. Seminar Series, Terre Haute, IN, October 31, 2017.

**Bentz, AB.** Maternal effects. NC Bluebird Society, Raleigh, NC, April 21, 2012.

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| <b>TEACHING<br/>EXPERIENCE</b>          | Introduction to Statistics in R, Co-organizer, Indiana Univ.   | 2019           |
|   | 10-week graduate student workshop series   |                |
|   | Organismal Biology Lab, Instructor of Record, Univ. of Georgia   | 2016           |
|   | Avian Biology, Guest Lecturer, Univ. of Georgia  | 2014           |
|   | First Year Odyssey, Guest Lecturer, Univ. of Georgia   | 2015           |
|   | Graduate Teaching Assistantship, Appalachian State Univ.   | 2010–2012      |
|   | Introductory Biology, Ecology, and Animal Behavior labs  |                |
|   | Ecology, Guest Lecturer, Appalachian State Univ.   | 2011           |
|   | Upward Bound, Summer Course Instructor, Appalachian State Univ.  | 2011           |
| <b>MENTORING<br/>EXPERIENCE</b>         | Research Experience for Undergraduates, Research Mentor, Indiana Univ.   | 2020           |
|   | Tara Empson, “Ovarian response to social competition in tree swallows”   |                |
|   | Undergraduate Independent Study Mentor, Indiana Univ.  | 2019-2020      |
|   | Tara Empson, “Steroid sensitivity in the visual system in response to social competition”  |                |
|   | Research Experience for Undergraduates, Research Mentor, Indiana Univ.   | 2018           |
|   | Yvette Rodriguez-Jimenez, “Sensitivity to testosterone in the avian eye is related to sex, species, and trait differences”   |                |
|   | Senior Thesis Research Mentor, Univ. of Georgia  | 2015–2017      |
|   | Victoria Andreasen, “An experimental test of the relationship between yolk testosterone and the social environment in a colonial passerine”  |                |
|   | Thesis Committee Member, Appalachian State Univ.   | 2015-2017      |
|   | Kristen Content, “Individual variation in stress hormones and behavioral profiles represented by personality and plasticity in tree swallows”  |                |
| <b>RESEARCH<br/>WORK<br/>EXPERIENCE</b> | Biological Field Technician, National Audubon Society  | 2009,2010,2012 |
|   | Conservation project with golden-winged warblers   |                |
|   | Biological Field Technician, Southern Appalachian Highlands Conservancy  | 2010,2011      |
|   | Chemistry Research Assistant, Appalachian State Univ.  | 2008           |
|   | Raptor Rehabilitation Internship, Carolina Raptor Center   | 2007           |
| <b>ADDITIONAL<br/>TRAINING</b>          | “Transforming Your Research into a Course” Workshop, Center for Innovative Teaching and Learning, Bloomington, IN, June 4-July 30, 2019  |                |
|   | “De Novo Transcriptome Assembly” Workshop, National Center for Genome Analysis and Support, Bloomington, IN, April 30-May 1, 2018  |                |
| <b>SOCIETY<br/>MEMBERSHIPS</b>          | Society for Integrative & Comparative Biology, Society for Behavioral Neuroendocrinology, Animal Behavior Society, American Ornithologists’ Union, Ecological Society of America, Wilson Ornithological Society, American Society of Mammalogists  |                |
| <b>JOURNALS<br/>REVIEWED</b>            | Molecular Ecology, Biological Reviews, Hormones and Behavior, Biology Letters, Animal Behavior, Evolution Letters, Journal of Experimental Zoology Part B: Molecular and Developmental Evolution, Journal of Avian Biology, Ibis, Current Zoology, Wilson Journal of Ornithology, The Auk: Ornithological Advances |                |

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| <b>OUTREACH</b> | IU Science Fest  | 2018,2019 |
|                 | Women in Science Member  | 2015–2017 |
|                 | Georgia Science and Engineering Fair Judge                       | 2014–2016 |
|                 | Young Scholars Volunteer, Univ. of Georgia                       | 2014      |
|                 | Summer Science Institute Volunteer, Auburn Univ.                 | 2013      |
|                 | Greater East Alabama Regional Science and Engineering Fair Judge | 2013      |
|                 | Sigma Xi Showcase Judge  | 2013      |
|                 | Experience Resource Person, NSF Graduate Research Fellowship     | 2012      |