

Curriculum Vitae

Dr. Kristen J. Navara

Assistant Professor of Endocrinology
Department of Poultry Science
The University of Georgia
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Athens, GA 30605
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Education

- 2000 – 2005 **PhD in Biological Sciences**
Department of Biological Sciences
Auburn University, Auburn, AL
Advisors: Dr. Mary T. Mendonça & Dr. Geoffrey E. Hill
Dissertation Title: Differential allocation of yolk content in birds: Do females play favorites?
- 1996 – 2000 **B.S. in Biology** – Conc. in Vertebrate Phys.
Minor in English
Department of Biology
The Pennsylvania State University

Professional Experience

- 2007-present **Assistant Professor**
Department of Poultry Science
The University of Georgia
Athens, GA 30602
- 2006 - 2007 **Postdoctoral Fellow**
Depts of Psychology & Molecular Virology, Immunology, & Medical Genetics
The Ohio State University, Columbus, OH
Advisor: Dr. Randy Nelson
- 2000 **Summer Research Intern**
Department of Clinical Research
Unilever Corporation, Edgewater, NJ
- 1996-2000 **Summer Research Assistant**
Department of Cell Biology
Synaptic Pharmaceutical Corporation

Teaching Experience

- 2007-present **Instructor of record for two courses at UGA**
POUL 3123 – Avian Biology: Behavior, Physiology, & Ecology
POUL 8120 – Scientific Writing & Literature Retrieval
- Oct. 2004 **Guest Lecturer**
Anatomy and Physiology I – The Nervous System
- Apr. 2002 **Guest Lecturer**
Anatomy and Physiology I – Muscle Physiology
- Aug – Dec 2001-2 **Teaching assistant**
Anatomy and Physiology I Laboratory
Auburn University, Auburn, AL

Jan – May 2001 Supervisor: Dr. Mary T. Mendonça
Teaching assistant
Anatomy and Physiology II Laboratory
Auburn University, Auburn, AL
Aug – Dec 2000 Supervisor: Dr. Mary T. Mendonça
Teaching assistant
Mammalian Physiology Laboratory
Auburn University, Auburn, AL
Supervisor: Dr. Lawrence C. Witt

Grants and Fellowships

2008 US Poultry & Egg – Research Grant - \$90,293
2007 UGA – CAES Seed Grant - \$15,000
2007 University of Georgia – Faculty Research Grant - \$8,300
2006-8 NIH Institutional Postdoctoral Fellowship, Ohio State University
2005 Auburn University Graduate Research Award
2003 Auburn University Graduate Research Award
2003 American Ornithol. Union Graduate Research Award
2003 Sigma Xi Research Grant
2001-5 Auburn University Graduate Research Fellowship
2001 Department of Biological Sciences Student Travel Award
2001 Auburn University College of Science and Math Travel Award
2000 Auburn University Presidential Fellowship

Awards and Honors

2004 Kenneth Ottis Distinguished Graduate Award
2001 SICB student paper competition – honorable mention

Publications

Navara, KJ, Workman JL, Oberdick, JD, and RJ Nelson. (in press) Day length influences primary sex ratio in mammals. *Physiological and Biochemical Zoology*

Navara, KJ (2009) Humans at tropical latitudes produce more females. *Biology Letters* – Published online DOI: 10.1098/rsbl.2009.0069

Navara, KJ and RJ Nelson (2009) Prenatal environmental influences on the production of sex-specific traits in mammals. *Seminars in Cell and Developmental Biology* – Published online DOI: 10.1016/j.semcdb.2008.12.004

Allen, LC, Turmelle, AS, Mendonça, MT, **Navara, KJ**, Kunz, TH, and GF McCracken. (2009). Adaptive and innate immunity vary with habitat type and reproductive condition in the big brown bat: An epidemiological implication for ecoimmunology? *Journal of Comparative Physiology*
Published online: DOI 10.1007/s00360-008-0315-3.

Navara, KJ and MT Mendonça (2008) Yolk androgens as pleiotropic mediators of physiological processes: a mechanistic review. *Comparative Biochemistry and Physiology A* 150: 378-386

Martin, LM II, **Navara, KJ**, Bailey, MT, Hutch, CR, Powell, ND, Sheridan, JF, and RJ Nelson (2008) Food restriction compromises secondary antibody production in deer mice (*Peromyscus maniculatus*) by reducing spleen-derived antibody-producing B-cell numbers. *Physiological and Biochemical Zoology*. 81: 366-372

Navara, KJ & RJ Nelson (2007) The dark side of light at night: Medical, ecological, and epidemiological consequences. *Journal of Pineal Research* 43: 215-224.

Navara, KJ, Trainor, BT, and RJ Nelson. (2007) Photoperiod affects macrophage responsiveness but not expression of toll-like receptors in the Siberian hamster. *Comparative Biochemistry and Physiology*. 148: 354-359.

Martin II, LB, **Navara, KJ**, Weil, ZB, and RJ Nelson. (2007) Maintenance of immunological memory is compromised by food restriction in male deer mice, *Peromyscus maniculatus*. *American Journal of Physiology*. 292:R316-R320.

Navara, KJ, Badyaev, AV, Mendonça, MT, and GE Hill. (2006) Yolk antioxidants vary with male attractiveness and female condition in the house finch. *Physiological and Biochemical Zoology*. 79(6): 1098-1105

Navara, KJ, Hill, GE, and MT Mendonça (2006). Yolk androgens vary independently of maternal androgens in eastern bluebirds: An experimental study. *Functional Ecology*. 20: 449-456

Navara, KJ, Hill, GE, and MT Mendonça. (2006). Yolk androgens stimulate growth and immunity in house finch nestlings. *Physiological and Biochemical Zoology*. 79(3): 550-555

Navara, KJ, Hill, GE, and MT Mendonça. (2006) Yolk androgen deposition as a compensatory strategy. *Behavioral Ecology and Sociobiology*. 60(3): 392-398.

Badyaev, AV, Seaman, DA, **Navara, KJ**, Hill, GE, and MT Mendonça. (2006) Evolution of sex-biased maternal effects in birds: III. Adjustment of ovulation order enables sex-specific allocation of hormones, carotenoids, and vitamins. 19(4): 1044-1057.

Siefferman, LM and **KJ Navara**. (2006) Female condition is correlated with egg color in Eastern Bluebirds. *Behavioral Ecology and Sociobiology* 59(5): 651-656

Badyaev, AV, Schwabl, H, Young, R.L., Duckworth, R.A., **Navara, KJ**, Parlow, AF. (2005). Adaptive sex differences in growth of pre-ovulation oocytes in a passerine bird. *Proceedings of the Royal Society of London, Series B*. 272(1577):1-8

Navara, KJ, Hill, GE, and MT Mendonça. (2005). Variable effects of yolk androgens on the growth and immunity in bluebird nestlings. *Physiological and Biochemical Zoology*. 78(4):570-578

McGraw, KJ, Hill, GE, **Navara, KJ**, and RS Parker. (2004) Differential accumulation and pigmentation ability of dietary carotenoids in colorful finches. *Physiological and Biochemical Zoology*. 77(3):484-491

Navara, KJ & GE Hill. (2003) Dietary carotenoid pigments and immune function in a songbird with extensive carotenoid-based plumage coloration. *Behavioral Ecology*. 14(6) 909-916

Gam, AE, Mendonça, MT, and **KJ Navara** (in review) Corticosterone biases primary offspring sex ratios produced by zebra finches during meiosis. *Proceedings of the Royal Society B*.

Okekepe, CC, **Navara, KJ**, Hill, GE, and MT Mendonça. (in review) Effect of diet quality and availability on maternal condition and primary offspring sex ratio in the zebra finch. *Comparative Physiology*.

Navara, KJ and SB Pinson. (in review) Yolk and albumin corticosterone concentrations in eggs laid by brown and white laying hens. *Poultry Science*

Huggins, KA, **Navara, KJ**, Mendonça, MT, and GE Hill. (in review) Toxic Pigments: The dark side of bright coloration. *Functional Ecology*

Published Abstracts

Navara KJ, Hill GE, and MT Mendonça. (2004). Females deposit more yolk androgens into eggs sired by less attractive males: a contradiction to the Differential Allocation Hypothesis? *Integrative and Comparative Biology* 44(6): 611-611

Huggins KA, **Navara KJ**, Hill GE, and MT Mendonça. (2004). Are carotenoids toxic in songbirds with extensive carotenoid-based plumage coloration? *Integrative and Comparative Biology* 44(6): 707-707.

Navara, KJ, Hill, GE, and MT Mendonça. (2003). Differential effects of exogenous yolk testosterone on growth and immune response in bluebird nestlings. *Integrative and Comparative Biology* 43 (6): 927-927

Navara, KJ, Mendonça MT, and GE Hill. (2001). Are there immunological costs to carotenoid display in songbirds? *Integrative and Comparative Biology* 41(6): 1535-1535

Presentations

Pinson, SE, Wilson, JL, and **Navara, KJ**. The effects of acute corticosterone injection in the offspring sex of laying hens. Poster Presentation – American Ornithologists Union, Philadelphia, PA.

Gam, AE, Mendonça, MT, and **Navara, KJ**. Effects of progesterone and corticosterone administration on offspring primary sex ratio in the zebra finch (*Taeniopygia guttata*). August, 2009. Poster presentation – American Ornithologists Union. Philadelphia, PA

Pinson, SE, Wilson, JL, and **Navara, KJ**. The effects of acute corticosterone injection in the offspring sex of laying hens. Oral Presentation – Poultry Science Association, Raleigh, NC

Gam, AE, Mendonça, MT, and **Navara, KJ**. Effects of progesterone and corticosterone administration on offspring primary sex ratio in the zebra finch (*Taeniopygia guttata*). January 2009. Poster Presentation – Society of Int. and Comp. Biology, Boston, MA

Okekpe, CC, **Navara, KJ**, Hill, GE, and Mendonça, MT. Effect of diet on periovulatory levels of steroid hormones and primary sex ratio in zebra finches. January 2009. Poster Presentation – Society of Int. and Comp. Biology, Boston, MA

Navara KJ, Huggins, KA, Mendonça, MT, and Hill, GE. Detrimental effects of carotenoid pigments: the dark side to bright coloration. August 2008. Invited Oral Presentation – American Ornithologists' Union, Portland, OR

Huggins, KA, **Navara, KJ**, Hill, GE, and Mendonça, MT. Seasonal costs of carotenoid ingestion in songbirds with extensive carotenoid-based plumage coloration: Are carotenoids detrimental? January 2008. Poster Presentation – Society of Int. and Comp. Biology, San Antonio, TX

Navara, KJ, Workman, JA, and Nelson, RJ. Experimental manipulation of prenatal sex ratio using photoperiod in Siberian hamsters. January 2008. Oral Presentation – Society of Int. and Comp. Biology, San Antonio, TX

Martin, LB, Weil, ZM, **Navara, KJ**, Tuthill, C., Zucker, I., and Nelson, RJ. Melatonin organizes the immune system of Siberian hamsters. January 2008. Poster Presentation – Society of Int. and Comp. Biology, San Antonio, TX

Okekpe, CC, **Navara, KJ**, Hill, GE, Mendonça, MT. Effect of diet on periovulatory levels of steroid hormones and primary sex ratio in zebra finches. January 2008. Poster Presentation – Society of Int. and Comp. Biology, San Antonio, TX

Navara, KJ, Martin II, LB, Bailey, MT, Weil, ZM, Sheridan, JT, and RJ Nelson. Immunological memory is compromised by food restriction in deer mice, *Peromyscus maniculatus*. January 2007
Poster Presentation – Society of Int. and Comp. Biology, Phoenix, AZ

Mendonça, MT, **Navara, KJ**, Badyaev, AV, and GE Hill. Yolk antioxidants vary with male attractiveness and female condition in the house finch. January 2007
Poster Presentation – Society of Int. and Comp. Biology, Phoenix, AZ

Navara, KJ Yolk androgens as physiological mediators: Physiological consequences and adaptive implications for mothers and offspring. August 2006
Oral Presentation – Animal Behavior Society, Snowbird, UT

Mendonça, MT, **Navara, KJ**, Badyaev, AV, and GE Hill. Yolk antioxidants vary with male attractiveness and female condition in the house finch. January 2007
Poster Presentation – Animal Behavior Society, Snowbird, UT

Navara, KJ A multilevel approach to maternal effects: Physiological and molecular mechanisms and developmental implications. August 2006
Invited seminar – The Pennsylvania State University

Navara, KJ A multilevel approach to maternal effects: Physiological and molecular mechanisms and ecological implications. July 2006.
Invited seminar – Eastern Kentucky University

Navara, KJ, Siefferman, LM, Hill, GE, and MT Mendonça. Yolk androgens vary independently of maternal androgens in eastern bluebirds: An experimental Study
Oral Presentation – Soc. of Int. and Comp. Biology, Orlando, FL

Navara, KJ, Hill, GE, and MT Mendonça. Females deposit more yolk androgens into eggs sired by less attractive males: a compensatory strategy? January, 2005
Oral Presentation – Soc. of Int. and Comp. Biology, San Diego, CA

Navara, KJ, Hill, GE, and MT Mendonça. Influences on yolk androgen allocation in the house finch: a correlational study. June, 2004
Oral Presentation – Animal Behavior Society, Oaxaca, Mexico

Navara, KJ, Hill, GE, and MT Mendonça. Differential effects of exogenous yolk testosterone on growth and immune response in bluebird nestlings. June, 2004
Poster – 8th Int. Meeting of Avian Endocrinology, Scottsdale, AZ

Navara, KJ, Hill, GE, and MT Mendonça. Variable effects of exogenous yolk testosterone on growth and immunity in bluebird nestlings. January 2004
Oral Presentation – Soc. of Int. and Comp. Biology, New Orleans, LA

Navara, KJ, Mendonça, MT, and GE Hill. Differential allocation of yolk content in the house finch *Carpodacus mexicanus*. June 2002
Poster – Animal Behavior Society, Bloomington, IN

Navara, KJ, Mendonça, MT, and GE Hill. Are there immunological costs to carotenoid display in songbirds (II) January, 2002
Oral Presentation – Soc. of Int. & Comp. Biology, Anaheim, CA

Navara, KJ, and GE Hill. Are there immunological costs to carotenoid display in songbirds (I) June, 2001
Oral Presentation – Animal Behavior Society, Corvallis, OR

Media Coverage

Mother birds give a nutritional leg-up to chicks with unattractive fathers. *Science Daily*. September 26th, 2006.

When Dad's not a looker, Mom compensates. *ABCNews.com*. October 4th, 2006

Mum's help chicks if Dad was ugly. *New Scientist*. September 29th, 2006.

Beefing Up Eggs Against Ugliness. *ScienceNOW*. October 5th, 2006

Seeing Red: The Strategies of Female House Finches. *Berkely Daily Planet* October 10th, 2006

One Bird's Battle With Ugliness. *LiveScience*. October 12th, 2006

Canadian Broadcasting Channel - Quirks and Quarks – "Ugly finches" – November 18th, 2006

Birds and Bugs Named as Steroid Users! *The New York Times*, December 25th, 2007

Immune System Needs Food To Function Well, So Feed That Cold, *Science Daily*, April 1, 2008

Sex ratio seen to vary by latitude, *The New York Times*, April 21st, 2009

Tropical parents more likely to hear "It's a Girl!", *ScienceNOW*, April 1st, 2009

Tropics have a bounty of baby girls, *New Scientist*, April 1st, 2009

Tropics are a boon for baby girls, *ABC News in Science*, April 2nd, 2009

More girls born in the tropics, *Discovery Channel News*, April 1st, 2009

Tropics are a boon for baby girls, *Arab Times Online*, April 1st, 2009

Study finds link between latitude and sex of babies, *DNA India*, April 1st, 2009

Tropics produce more baby girls than anywhere else, *Georgia Faces*, April 15th, 2009

Male or Female? The Chicken Industry Cares. *Georgia Faces*, August 6th, 2009

Journal Review

Animal Behaviour

Proceedings of the Royal Society of London, Series B

Proceedings of the Indian National Science Academy

Behavioral Ecology

Oecologia

Public Library of Science

Functional Ecology

Journal of Animal Biology

Behavioral Ecology and Sociobiology

Physiological and Biochemical Zoology

(2007-2008)

Functional Ecology (1)

Oecologia (1)

Journal of Experimental Biology (1)

Society Memberships

Animal Behavior Society
Society for Integrative and Comparative Biology
Poultry Science Association
American Ornithologists' Union
Penn State Alumni Association