

Curriculum vitae

JOHN EDWARD STEFFEN

CURRENT APPOINTMENT AND ADDRESS

Assistant Professor of Biology
Department of Biology
Shepherd University
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EDUCATION

2007	Ph.D. Biological Sciences	Auburn University	Auburn, AL
2001	M.S. Biological Sciences	Western Washington University	Bellingham, WA
1989	B.S. Biology	Ohio University, Graduated Summa Cum Laude	Athens, OH

CURRENT TEACHING POSITION

2010-16 Assistant Professor Shepherd University, Shepherdstown, WV. I teach a variety of undergraduate lecture and lab courses (listed below), including General Ecology and Fundamentals of Biology II: Diversity of Life.

PREVIOUS COURSES TAUGHT

General Biology, undergraduate majors (Biology, Function and Development of Organisms), Penn State Behrend. Spring terms 2011-2017.

Mechanisms of Vertebrate Cell Physiology, Penn State Behrend. Fall term 2010, 2011, 2012, Spring term 2014, 2015, 2016.

Mammalian Physiology, Penn State Behrend. Spring term 2012, Fall term 2014.

Experimental Design, Penn State Behrend. Fall terms 2010-2016.

Animal Behavior, Penn State Behrend. Spring 2011, Fall 2013, 2015.

Herpetology, Penn State Behrend. Spring 2012, Fall 2014, 2016.

Neotropical Studies, Penn State Behrend. Spring 2014, 2015.

PREVIOUS TEACHING EXPERIENCE

Graduate Teaching Assistantships			
2001-07	Organismal Biology 1030	Auburn University	Auburn, AL
2004-06	Genetics 3000	Auburn University	Auburn, AL
2002, 03	Vertebrate Biodiversity 4020	Auburn University	Auburn, AL
2001-02	Mammalian Physiology 4000	Auburn University	Auburn, AL
1999-00	Organismal Biology	Western Washington University	Bellingham, WA
1999-01	Herpetology (Ecol. Methods)	Western Washington University	Bellingham, WA

2015. **Steffen, J.E.**, Learn, K.M*., Drumheller, J.S*., Boback, S.M., McGraw, K.J. Carotenoid composition of colorful body stripes and patches in the painted turtle (*Chrysemys picta*) and red-eared slider (*Trachemys scripta*). *Chelonian and Conservation Biology*, 11(2): 8 pages.
2014. **Steffen, J.E.** The Influence of Light on Visual Discrimination of Sexually Dichromatic Dewlap Color in Male and Female Brown Anoles. *Lizards: Thermal Ecology, Genetic Diversity and Functional Role in Ecosystems*. Nova Science Publishers, Hauppauge, NY. 20 pages.
2014. **Steffen, J.E.** and C.G. Guyer. 2014. Display behavior and dewlap color as predictors of contest success in Brown Anoles. *Biological Journal of the Linnaean Society*. 111:646-655.
2013. Alfonso, Y.U., Morris, H.J., Guiterez, A., Rodriguez-Schettino, L., **Steffen, J.E.** Dewlap color variation based on pterin and carotenoid pigments in three *Anolis jubar* subspecies of the Cuban southern coast. *Copeia*, 2013(2): 201-205.
2013. Peterson, J.D., **Steffen, J.E.**, Reinert, L.K., Cobine, P.L., Appel, A.G., Rollins-Smith, L., Mendonca, M.T. Host Stress Response Is Important for the Pathogenesis of the Deadly Amphibian Disease, Chytridiomycosis, in *Litoria caerulea*. *PLoS ONE* 8(4): e62146. doi:10.1371/journal.pone.0062146.
2012. **Steffen, J.E.** and A.G.Appel. The effect of temperature on standard metabolic rate (SMR) of male and female Brown Anoles. *Accepted. Amphibia-Reptilia*.
2010. **Steffen, J.E.** Perch height differences among female *Anolis polylepis* exhibiting dorsal pattern polymorphism. *Reptile and Amphibian Conservation and Natural History*, 17(3):172-174.
2010. **Steffen, J.E.**, Hill, G.E., and C.G. Guyer. Carotenoid access, nutritional stress and dewlap color of male Brown Anoles. *Copeia*, 2010(2):239-246.
- 2009 **Steffen, J.E.** Assessment of allometry for sexual size dimorphism in *Norops* lizards. *South American Journal of Herpetology*, 4(3):245-252.
- 2009 **Steffen, J.E.** and K.J. McGraw. Dewlap size and coloration in relation to sex and pigment content in the Brown Anole, *Norops sagrei*. *Comparative Biochemistry and Physiology, Part B*, 154:334-340.
- 2009 Liu, M., Siefferman, L., Mays, Jr. H., **Steffen, J.E.**, and G.E.Hill. 2009. A field test of female mate preference for male plumage coloration in eastern bluebirds. *Animal Behaviour*, 77(8): 1707-1720.
- 2008 **Steffen, J.E.** Perch-height specific predation on tropical lizard clay models: implications for habitat selection in mainland Neotropical lizards. *International Journal of Tropical Biology*, 57(3):859-864.
- 2008 Amsberry, L.K. and **J.E. Steffen**. Do colorful unripe fruits of the neotropical tree, *Ardisia nigropunctatus*, attract avian seed dispersers? *Biotropica*, 40(5):575-580.

2007 **Steffen, J.E.** and K.J. McGraw. Contributions of pterin and carotenoid pigments to dewlap coloration in two anole species. *Comparative Biochemistry and Physiology, Part B*, 146: 42-46.

2006 **Steffen, J.E.** and R.A. Anderson. Abundance of the Long-Nose Leopard Lizard, *Gambelia wislizenii* correlates inversely with shrub cover and sagebrush abundance in southeast Oregon. *American Midland Naturalist*, 156: 201-207.

BOOK REVIEWS

2012. **Steffen, J.E.**. The Optics of Life: A Biologist's Guide to Light in Nature. By Sönke Johnsen. *Integrative and Comparative Biology*, 52(2): 331.

PUBLISHED NOTES

2007 **Steffen, J.E.** and R. Birkhead. Geographic range expansion for the Brown Anole, *Norops sagrei*. *Herpetological Review*, 38(3): 353.

MANUSCRIPTS IN REVIEW OR IN PREPARATION * denotes student co-authors

Steffen, J.E. Males make the moves: male dominance—not pre-copulatory female choice—results in mate success in brown anoles. *In Review*. *Ethology*.

Steffen, J.E., A. Agato, I. Radhi, V. Stepanyan and C. Bush*. No preference for more colorful or showier males among female brown anoles. *In Review*. *Journal of Ethology*.

Steffen, J.E., Hultberg, J.*, Drozda, S*. Dietary access to carotenoids causes color change in male Painted Turtles. *In preparation*.

Steffen, J.E., Drozda, S*, Hultberg, J*. Cryptic sexual dichromatism in Painted Turtles. *In preparation*.

Steffen, J.E., Wisniewski, P., Duda, Z*., and K.J. McGraw. Carotenoid supplementation influences retinal carotenoid concentrations in male Brown Anoles. *In preparation*.

GRANTS, FELLOWSHIPS, AND AWARDS

2015 **Steffen, J.E.** Penn State Behrend Chancellor's Sponsored Research Seed Grant Program. 'Ecological physiological significance of carotenoid-based shell and skin color in Painted Turtles (*Chrysemys picta*)'. Awarded \$2,252.

2015. Drozda, S and **J. E. Steffen**. Penn State Sigma Xi Undergraduate Research Grant. Ecological and Physiological Significance of Carotenoid color in Painted Turtles. Awarded \$1,400.

2015. Kellogg, J and **J.E. Steffen**. Penn State Sigma Xi Undergraduate Research Grant. Occurrence of chytrid fungus (*Batrachochytrium dendrobatidis*) at La Selva Biological Station. Awarded \$1,000

2014. Kulkarni, K., Roberts, C., and **J.E. Steffen**. Penn State Sigma Xi Undergraduate Research Grant. The efficacy of tooth-whitening chewing gum (initiated as a NSF style proposal in Biol 402W Experimental Design. Awarded \$1,400

2013 **Steffen, J.E.** Penn State Faculty Research Incentive Grant 'Carotenoid absorption, transportation and deposition in reptiles with carotenoid-rich nuptial coloration. Awarded \$2,500,

2013. R. Lewis and **J.E Steffen**. Penn State Sigma Xi Undergraduate Research Grant. Dragonfly social behavior research. Awarded \$700

2013. Patel, J. and **J.E. Steffen**. Penn State Sigma Xi Undergraduate Research Grant. Anatomical basis to UV reflectance in Brown Anole dewlaps. Awarded \$700. Poster was awarded 2nd place Best Student Poster in the NW PA Sigma Xi conference, J. Patel was

- awarded \$125).
2013. J. Drumheller, Learn, K., and **J.E.Steffen**. Penn State Sigma Xi Undergraduate Research Grant. Xanthophyll carotenoid supplementation: its transportation through the blood and liver & its effects on nuptial coloration in Brown Anoles. Awarded \$1,400
2012. Z. Duda, Stepanyan, V., and **J.E.Steffen**. Penn State Sigma Xi Undergraduate Research Grant Use of color in Damselflies. Awarded \$1,400
2012. C. Bush and **J.E.Steffen**. Penn State Sigma Xi Undergraduate Research Grant Investigation of female preference for males with carotenoid-rich dewlaps in Brown Anole lizards. Awarded \$700
2011. Duda., Z. and **J.E. Steffen**. Penn State Sigma Xi Undergraduate Research Grant to Measuring nuptial coloration of Brown Anole lizards using reflectance spectrometry. Awarded \$700
2011. A.Agato and **J.E.Steffen**. Penn State Sigma Xi Undergraduate Research Grant Using digital photography and behavior to analyze female choice in Brown Anole lizards. Awarded \$700
- 2010 **Steffen, J.E.** Co-PI for a NSF MRI grant proposal which is a Science/Engineering collaboration for purchase of SEM equipment. Awarded 2015. SEM is housed in School of Engineering.
- 2006 **Steffen, J.E.** NSF Dissertation Improvement Grant, 'Dewlap color as a social signal in the Brown Anole, *Norops sagrei*. Requested \$ 12,000. Not awarded.
- 2004 **Steffen, J.E.** Andrew W. Mellon Foundation, Doctoral Award (\$5,000), 'Dewlap color variation and territorial success in the Ground Anole, *Norops humilis*. Organization for Tropical Studies.
- 2002 **Steffen, J.E.** Andrew W. Mellon Foundation Award (\$1,500), 'Sex ratios and SSD in Costa Rican *Norops* lizards'. Organization for Tropical Studies.
- 2002 **Steffen, J.E.** International Scholarship Program, Auburn University sex ratios and SSD Costa Rican *Norops* lizards. Awarded \$2,000,
- 2002 **Steffen, J.E.** OTS Tropical Ecology Course, Tuition Award (\$2000).
- 2000-01 **Steffen, J.E.** and R.A.Anderson. Challenge Cost-Share Fund, (\$8,000). Oregon Bureau of Land Management Ecological correlates of habitat use in the Long-nosed leopard lizard in S.E. Oregon.
- 2000 **Steffen, J.E.** and R.A.Anderson. Enhancement of Student Graduate Research Award. (\$1,500). Western Washington University.
- 1989 **Steffen, J.E.** and R.A.Anderson. Independent Research Scholarship (stipend \$5,000). Savannah River Ecology Laboratory.

GRANTS IN PREPARATION

2016. STEFFEN, J.E. A Benefit to Obesity?: Cancer-causing ROS levels decrease with increasing obesity . National Institute of health (NIH) research grant (R03)— research grant for pilot and feasibility studies.

CONFERENCE PRESENTATIONS

- 2015 John Carroll University. The Physiological role of carotenoid-based stripe and spot colors in Painted Turtles. November 2, 2015. **John E. Steffen**
2014. Carotenoid colors and the Painted Turtle: a health-enhancing, sexually selected trait? Pennsylvania Ecology Conference at Lake LACAWAC, PA. **John E. Steffen**
2013. Ecological and Physiological Significance of Carotenoid color in Painted Turtles. American Society of Ichthyologists and Herpetologists, Albuquerque, N.M. **John. E. Steffen**
- 2010 Energetics of male sexual displays in Brown Anole lizards. American Society of Ichthyologists and Herpetologists. **John E. Steffen**
- 2008 Light Habitat Influences Dewlap Color Conspicuousness in Male and Female Brown Anoles. American Society of Ichthyologists and Herpetologists, Montreal, Quebec. **John E. Steffen**

- 2008 Light Habitat Allows the Perception of Colorful Social Displays in the Invasive Brown Anole. Virginia Chapter of the Wildlife Society, Auburn, AL. **John E. Steffen**
- 2008 UV and non-UV dewlap color as a social signal in the Brown Anole. Georgia Southern University, Statesboro, GA. Invited Seminar. **John E. Steffen**
- 2007 Does dewlap color correlate with bite force in the Brown Anole (*Norops sagrei*)? Society for Integrative and Comparative Biology, Phoenix, AZ. **John E. Steffen** and Lance D. McBrayer
- 2006 Carotenoid-based dewlap color correlates with dominance for females in *Norops sagrei*. Animal Behavior Society, Salt Lake City, UT. **John E. Steffen**
- 2006 J Carotenoid-based dewlap color correlates with dominance for females in *Norops sagrei*. Joint Meeting for American Society of Ichthyologists and Herpetologists, New Orleans, LA. **John E. Steffen**
- 2006 Sexual dichromatism in pigment composition of the Brown Anole, *Norops sagrei*. Society for Integrative and Comparative Biology, Orlando, FL. **John E. Steffen** and Kevin J. McGraw
- 2004 Assessment of allometry for male-biased and female-biased sexual size dimorphism in mainland *Norops* lizards. Joint Meeting of Society for the Study of Amphibians and Reptiles and Association for the Study of Ichthyology and Herpetology, Norman, OK. **John E. Steffen**
- 2004 Assessment of allometry for male-biased and female-biased sexual size dimorphism in mainland *Norops* lizards. Southeast Ecology and Evolution Conference, Atlanta, GA. **John E. Steffen**
- 2003 Field tests of sexual selection in two species of mainland *Norops* lizards. Auburn University Biolunch, Auburn, AL. **John E. Steffen**
- 2003 Dewlap display behavior is dependent on ecological context in the common anole, *Norops polylepis*: differences between courtship and territorial aggression behavior. OTS 40th Anniversary, San Jose, Costa Rica. **John E. Steffen**

MEMBERSHIP

American Society of Ichthyologists and Herpetologists (ASIH)
 Animal Behavior Society (ASB)
 Society for Integrative and Comparative Biology (SICB)

Association of Tropical Biologists (ASB)
 Organization for Tropical Studies (OTS)
 National Association of Biology Teachers (NABT)
 Presque Isle Audubon Society

OUTREACH

MANUSCRIPT REVIEWER

Acta Oecologica
Behavioral Ecology and Socobiology
Biotropica
Chelonian Conservation and Biology
Herpetologica
Herpetological Review

International Journal of Tropical Biology
Physiological and Biochemical Zoology
PLOS One
Journal of Avian Biology
Phyllomedusa

INVITED TALKS

2016. Edinboro University. The Biological role of carotenoid-based stripe and spot colors in Painted Turtles.
2015. Regional Science Consortium. The Physiological role of carotenoid-based stripe and spot colors in Painted Turtles.
2015. John Carroll University. The Physiological role of carotenoid-based stripe and spot colors in Painted Turtles.
2015. Ohio University-John Carroll University Herpetology Conference. The Physiological role of carotenoid-based stripe and spot colors in Painted Turtles.
2011. Presque Isle Audubon Society, 'How Vampire Bats Suck Your Blood and Other Creepy Things' Halloween Lecture. Tom Ridge Environmental Center, Erie, PA.
2011. Sigma Xi Lecture Series, 'A Tinbergen approach to studying sexual coloration in an *Anolis* lizard'. The Brewerrie, Erie, PA.

PUBLIC PRESENTATIONS

Saint James Academy, Science Olympiad 'Herpetology in the U.S.' (2008)
A.U. Summer YES Camp: Herpetology in Alabama (2004-2007)
Opelika High School. Herpetology in Alabama (2004-2005)
Smith Station High School. Herpetology in Alabama (2003)

GUEST LECTURES

Animal Coloration (2008)
Mating Systems (2005)
Comparative Methods (2004)
Reptiles and Amphibians of Washington (2001)

SERVICE

COLLEGE

Faculty Representative of Tri-Beta (BBB) Undergraduate Student Biological Society (2011-2014)
Research Committee Member, 2 terms (2012-2016)
Recruitment activities for College of Sciences (2010-present)

DEPARTMENT

School of Science Scholarship and Awards Committee Member (2013-2015)
Biology Strategic Planning Committee Member (2013-2014).
Program Assistant Committee Member (2011)
Lab Coordinator Search Committee Member (2010)

ACADEMIC SOCIETY

Student Awards Committee, Co-chair. American Society of Ichthyologists and Herpetologists (2010-2012)

TECHNICAL SKILLS

Confident use of a wide variety of field-based vertebrate capture & mark techniques, including use of small and large seines, bird mistnetting, amphibian and reptile pitfall traps, hoop nets, and capture surveys.

Mastery of statistical analysis software packages such as SPSS, R, SAS, MATLAB, CAIC, PAUP, MS Excel, MS Word Access. Mastery of Sigma Plot graphing software package.

Excellence in technical writing for scientific publications.

Experience with GIS mapping of wildlife populations.

STATISTICAL CONSULTATION

Perform professional statistical analysis for clients. Consult with client, perform statistical research and analysis, and provide professional grade statistical analyses and results in the form of figures and tables, using SPSS, R, JMP, MS Word, Excel, and Powerpoint.

PREVIOUS WORK EXPERIENCE

2007-10	Postdoctoral Researcher	Auburn University, Auburn, AL. Projects: behavioral energetics of lizard displays, metabolic rates of amphibians, reptiles and insects. Supervisor: Art Appel (appelag@auburn.edu).
2004-05	Assistant Curator	Auburn University Natural History Museum, Auburn, AL. Supervisor: Craig Guyer (guyercr@auburn.edu). Maintained collections of reptiles and amphibians, developed web page for Herpetology branch of museum.
2003	Research Assistant	University of Montana, Missoula, MT. Supervisor: Lisa Eby (lisa.eby@umontana.edu). Performed morphometric measurements on body plans and eyes of whitefish and lake trout. Investigated these traits as evidence of character displacement.
2003-04	Research Assistant	Auburn University, Auburn, AL. Supervisor: Craig Guyer (guyercr@auburn.edu). Performed behavioral ecology and evolutionary research on a variety of vertebrates as required for a PhD.
2001-07	Teaching Assistant	Auburn University, Auburn, AL. Assistant taught undergraduate courses in Mammalian Physiology, Vertebrate Biodiversity, Genetics, and Organismal Biology for majors. Supervisors: various, but see references listed below.
1999-01	Teaching Assistant	Western Washington University, Bellingham WA. Assistant taught undergraduate courses in Organismal Biology and Herpetology / Field Ecology. Supervisors: Roger Anderson (Anderson@biol.wwu.edu).
1999-01	Research Assistant	Western Washington University, Bellingham WA. Supervisor: Roger Anderson (Anderson@biol.wwu.edu). Conducted ecological research in the Great Basin Desert, and maintained data bases for all aspects of research conducted at field site.

- 1995-99 Registered Counselor Youth Care, the Graham Street Shelter, Seattle, WA. (Phone: 206-694-4500). Supervisor: Robert Ranger, M.Psych. Served as counselor for teenagers who temporarily resided at the shelter. Planned social services for residents, and provided age-appropriate recreational activities for teenagers.
- 1993-95 Counselor The Cobb Center for Youth: Children's Home Society of Washington, Seattle, WA. (Phone: 800-456-3339). Supervisor, Deb Crandall, M.Psych. Provided supervision, support and care for abused children who were wards of the state.
- 1992-93 Volunteer, Floor Staff Youth Care, Orion Center, Seattle, WA. (Phone: 206-622-5555). Supervisor: Laura Davis. Interacted with homeless teenagers and tutored math to students who attended the Orion center's school.
- 1991-92 Laboratory Technician NOAA National Fisheries and Marine Mammal lab. Seattle, WA. Supervisor: Jon Bengston (John.Bengston@noaa.gov) Assessed diets of Antarctic Sea Lions.
- 1990 Herpetologist Savannah River Ecology Laboratory, Aiken, S.C. Supervisor: Justin Congdon (retired) and Roger Anderson (Anderson@biol.wvu.edu). Investigated habitat use of lizards and snakes on SREL site.
- 1987-89 Research Assistant Ohio University, Athens, OH. Ecomorphology of Phrynosomatid lizards. Collected lizards throughout Western U.S., and used LED-sensitive race track to investigate sprint speed relative to limb length in lizards. Supervisor: Don Miles (dmiles2@ohiou.edu).

REFERENCES

Dr. Craig Guyer, Professor (PhD Co-advisor), Department of Biological Sciences, Auburn University, Auburn, AL 36849-5414, phone: (334) 844-9234, email: guyercr@auburn.edu

Dr. Geoffrey E. Hill, Professor (PhD Co-advisor), Department of Biological Sciences, Auburn University, Auburn, AL 36849-5414, phone: (334) 844-9269, email: hillgee@auburn.edu

Dr. Pam Silver, Distinguished Professor (& Teaching Mentor), School of Science, Penn State Erie, The Behrend College, Erie, PA 16563-0203, phone: 814-898-7132, email: psb3@psu.edu