DR. NICHOLAS C. BRANDLEY

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EDUCATION

2015	Ph.D.	Department of Biology, Duke University, Durham, NC. (Dr. Sönke Johnsen, advisor)
2008	B.S.	University of Michigan, Ann Arbor, MI. Degree with distinction in Ecology and Evolutionary Biology

RESEARCH INTERESTS

What evolutionary, ecological, and morphological factors lead to variation in visual acuity?
How does animal coloration evolve under multiple selective pressures?
How is animal communication limited by an organism's sensory physiology?

PUBLICATIONS

***** denotes undergraduate author

Martin, Z.*, H.L. Steinmetz*, S.Y. Baek*, F.R. Gilbert*, and **N.C. Brandley** (in press). Rapid shifts in visible Carolina grasshopper (Dissosteira carolina) coloration during flights. *Frontiers in Ecology and Evolution*.

Duncan, A.B.*, B.A. Salazar*, S.R. Garcia*, and **N.C. Brandley** (2021). A sexual dimorphism in the spatial vision of North American band-winged grasshoppers. *Integrative Organismal Biology* 3(1).

Green, P.A., **N.C. Brandley**, and S. Nowicki (2020). The many dimensions of categorical perception: a response to comments on Green et al.. *Behavioral Ecology* 31:872

Green, P.A., **N.C. Brandley**, and S. Nowicki (2020). Categorical perception in animal communication and decision-making. *Behavioral Ecology* 31:859-867

Caves, E.M., **N.C. Brandley,** and S Johnsen (2018). Visual acuity and the evolution of signals. *Trends in Ecology & Evolution* 33: 358-372

Brandley N.C., M Johnson, and S. Johnsen (2016). Aposematic signals in North American black widows are more conspicuous to predators than to prey. *Behavioral Ecology* 27: 1104-1112

Brandley N.C., D.I. Speiser, and S. Johnsen (2013). Eavesdropping on visual secrets. *Evolutionary Ecology* 27:1045–1068

Greig, E.I., K. Spendel, and **N. C. Brandley** (2010). A predator-elicited vocalisation in the Variegated Fairy-wren (*Malurus lamberti*) *Emu* 110: 165–169

Popular press of research in: *Smithsonian Magazine*, mentalfloss.com, IFL Science, and others.

Publications in preparation

Gilbert E*, and **N. C. Brandley** (in prep). Match --- and mismatch --- between eye morphology and predator avoidance behavior in the Carolina locust.

PROFESSIONAL EXPERIENCE

2018-current	*Assistant Professor*, College of Wooster
2017-2018	*Walter D. Foss Visiting Assistant Professor*, College of Wooster

2015-2017	*Visiting Assistant Professor*, Colorado College
2015	*Instructor of record*, Duke University Intensive Summer Session
2014	*Adjunct Instructor,* Elon University
2014	*Instructor,* NC Governor's School East
2013	*Instructor of record,* Duke University
2010-15	*Teaching Assistant,* Duke University
2009	*Teaching Assistant*, University of Michigan Biological Station
2008	*Research Assistant*, University of Chicago

TEACHING

At College of Wooster

100 level:

BIOL 11100 - Foundations of Biology
FYSM 11100 - First Year Seminar in Critical Inquiry

200 level:

BIOL 20200 - Gateway to Ecology, Evolution, and Organismal Biology
BIOL 20200L - Gateway to Ecology, Evolution, and Organismal Biology Lab
NEUR 20000 - Introduction to Neuroscience

300 level:

BIOL 30400 - Human Physiology (with lab)
BIOL 34400 - Comparative Animal Physiology (with lab)
BIOL 39905 - Visual Ecology
BIOL 39908 - Sensory Biology (with lab)

400 level:

BIOL 401 – Independent Study and Biostatistics (Junior I.S.)

At Other Institutions

High school level:

Animal Adaptations (North Carolina Governor's School East)

Lower level:

Animal Adaptations (Duke University Intensive Summer Session), Biology of Animals (Colorado College), Ecology (Colorado College), Human Physiology Lab (Elon University), Human Physiology Lecture (Elon University)

Upper level:

Animal Behavior (Colorado College), Comparative Animal Physiology (Colorado College), Extreme Animal Adaptations (Duke University), Undergraduate Research (Colorado College), Visual Ecology (Colorado College)

PEDAGOGICAL DEVELOPMENT

BioQUEST Summer Workshop (2021)
Faculty for Undergraduate Neuroscience Annual Conference (2020)
Regular attendee of the Stem Faculty Learning Community (previously ISFLC, 2017-current)
Wooster Safe Zone Basic Training (2020)
FYS Workshop (2019)
College of Wooster's Unconscious Bias Training (2018)
GLCA Workshop on Developing Case Study Based Modules for Teaching Animal Behavior (2018)
STEM Success Initiative's workshop on Building Inclusive Classrooms (2017 and 2018)
Certificate in College Teaching from Duke University (2015)

MENTORING EXPERIENCE AND INDEPENDENT STUDY

The College of Wooster

*# = Neurobiology, * = co-advised or double major*

2021-current	Henry Steinmetz (summer research): Various grasshopper related projects.
2022	Maris Woldin* (Senior I.S.): Prescribed burns in remnant prairies: pollinator fidelity for *Echinacea angustifolia* and plant composition. Advised while Dr. Ison on leave (Spring 2022)
2021-2022	Z Martin (Senior I.S. and summer research): Coloration as anti-predator defense in the Carolina grasshopper *Dissosteira carolina.*
2021-2022	Julian Ballesteros (Senior I.S.): The physiological and psychological effects of accelerated rehabilitation, visualization, and virtual reality on ACL rehabilitation.
2021-2022	Kellen Calhoun (Senior I.S.): Injury risk and career longevity for high-level athletes.
2021-2022	Atticus Moats# (Senior I.S.): A review and analysis of orientation selective retinal ganglion cells.
2021-2022	Cameron Papp (Senior I.S. and summer research): Continuous predator escape and escape angle preference of the *Dissosteira carolina* grasshopper.
2021	Hannah Greenland# (Senior I.S.): Opsins of the Siamese fighting fish *Betta splendens.*
2021	Oscar Carmona (Senior I.S.): Behavioral repertoire of visual signals in the Carolina locust.
2021	Jay Dibacco (Senior I.S.): Youth baseball participation and risk of later injury.
2021	Kelsey Stone* (Senior I.S.): diet similarities between mediating monks and Olympic athletes. Co-advised with Religious Studies Department.
2021	Jiyoung Min (Senior I.S.): coloration and background matching in grasshoppers. Co-advised with Psychology.
2020	Sosi Haile (Virtual Research Assistant): Visual acuity across invertebrates.
2019-2020	Frederick Gilbert[#] (Senior I.S. and Summer Research): Polymorphism and background matching in the Carolina Locust.
2019-2020	Kay Schwab[#] (Senior I.S. and Summer Research): Eye shape, visual parameters, and potential mutants in *Drosophila melanogaster*
2019-2020	Vienna Howard (Senior I.S. and Summer Research): Short-ranged visual behaviors of the Carolina Locust.
2019-2020	Matthew Conrad[*] (Senior I.S.): Water turbidity and eye scaling in PA fish. Co-advised with Earth Sciences Department.
2019-2020	Kamba Kayoka (Senior I.S.): Examining background matching in the Carolina Locust through a human-substitution approach.

2019	Mackenzie Goltz (Senior I.S.): Exploring a potential nutritive plant-animal mutualism between *Oophaga pumilio* and a bromeliad. Advised while Dr. Lehtinen on leave (Fall 2019).
2019	Maria Ferreira (Summer Research): Visual ecology of band-winged grasshoppers.
2018-2019	Sara Garcia* (Senior I.S. and Summer Research): Sex differences in grasshopper vision. Co-advised with English Department.
2018-2019	Andrew Klein (Senior I.S.): The visual challenges faced by soccer referees in making offside calls.
2018-2019	Abbey Martin (Senior I.S.): Project on variation in band-wing grasshopper coloration.
2018-2019	Mary Kate Norton* (Senior I.S.): The role of bumblebees in the maintenance of white pollen phenotypes in American Bellfower. Co-advised with Dr. Ison.
2018	Ezekiel Zellman (Senior I.S.): Differences in pollen deposition and removal from *Echinacea angustifolio* flowers by four solitary bee taxa. Advised while Dr. Ison on leave (Fall 2018).
2018	Jack Redick (Summer Research and Sophomore Research Assistant): Investigating background matching in grasshoppers.
2018	Jack Whalen (Summer Research): Visual ecology of band-winged grasshoppers.
2018	Eran Maina (Summer Research): Visual ecology of band-winged grasshoppers.
2018	Miura Wiley (Summer Research): Visual ecology of band-winged grasshoppers.
2017-2018	Patrick Johnson (Senior I.S.): The effects of Vitamin D on endurance performance in rats.
Colorado College	
2016-2017	Alexander Duncan (Honors Thesis): Spatial vision of band-winged grasshoppers.
2016-2017	Brae Salazar (work leading to an Honors Thesis in 2018): Conspicuous of band-winged grasshoppers to birds and conspecifics.
2016-2017	James Rushford (Summer Research Student and Research Block): Light microhabitats of red rock landscapes and their implications for animal vision.
2016-2017	Nicholas Weber (Research Blocks): Effects of sex and size on the visual acuity of the fiddler crab *Uca pugnax*.
2017	Ali Basom (Research Block): Predator escape in band-winged grasshoppers.

2017	Chanisse Hendrix (Research Block): Predator escape in band-winged grasshoppers.
2016	Brennan PetersonWood (Research Blocks): Effects of sex and size on the visual acuity of the fiddler crab *Uca pugnax*.
2016	Molly Kadota (Research Block): Potential adaptive variation in *Coccinellidae* coloration.
2016	Abigail Widman (Research Block): Potential adaptive variation in *Coccinellidae* coloration.

Duke University

2012-2014	J. P. Senter (Honors Thesis): Variation in black widow coloration patterns.

MENTORED UNDERGRADUATE PRESENTATIONS

Presentations with undergraduate students as the first and presenting author:

2021	Frederick Gilbert - Society for Integrative and Comparative Biology Washington D.C.
2018	Alexander Duncan - Society for Integrative and Comparative Biology San Francisco, CA
2018	Brae Salazar - Society for Integrative and Comparative Biology San Francisco, CA
2016	Brae Salazar - Annual Meeting of the Animal Behavior Society, Columbia, MO
2016	Nicholas Weber - Annual Meeting of the Animal Behavior Society, Columbia, MO
2014	J. P. Senter - Annual Meeting of the Animal Behavior Society, Princeton, NJ

INVITED TALKS

2021	Life Sciences Seminar (split with S. Kelly), College of Wooster
2021	North Carolina Governor's School East
2019	Integrated Biosciences Seminar, Akron University
2017	Biology Department Seminar, Ohio Wesleyan University
2017	Life Sciences Seminar (split with E. Elderbrock), College of Wooster
2015	Biology Department Seminar, Colorado College

FIRST AUTHOR CONFERENCE PRESENTATIONS

2022	Evolution Conference, Cleveland, OH
2021	Society for Integrative and Comparative Biology, Washington D.C.
2020	Evolution Conference (COVID-19 Cancelled)
2019	Annual Meeting of the Animal Behavior Society, Chicago, IL
2019	Society for Integrative and Comparative Biology, Tampa Bay, Fl
2017	Society for Integrative and Comparative Biology, New Orleans, LA

2016	Annual Meeting of the Animal Behavior Society, Columbia, MO
2016	Society for Integrative and Comparative Biology, Portland, OR
2015	Annual Meeting of the Animal Behavior Society, Anchorage, AK
2014	Annual Meeting of the Animal Behavior Society, Princeton, NJ
2013	Annual Meeting of the Animal Behavior Society, Boulder, CO
2013	Society for Integrative & Comparative Biology, San Francisco, CA
2012	Society for Integrative & Comparative Biology, Charleston, SC
2011	Annual Meeting of the Animal Behavior Society, Bloomington, IN
2010	International Sensory Ecology Course, Lund University, Sweden
2010	Annual Meeting of the Animal Behavior Society, Williamsburg, VA
2010	Society for Integrative & Comparative Biology, Seattle, WA

FELLOWSHIPS, GRANTS, AND HONORS

2018	Sherman-Fairchild team-based summer research (~$15,000)
2018	Walter D. Foss Funds ($2,000)
2017	Hevey Family Fund for Student Research ($4,000)
2017	Enderson Award in Field Biology ($4,000)
2016	Faculty Student Collaborative Research Grant ($4,247)
2016	Jackson Fellowship Research Grant ($3,600)
2015	Finalist, Animal Behavior Society's Walder Clyde Allee Competition for Best Student Paper
2013-2014	Anne T. and Robert M. Bass Fellowship for Undergraduate Instruction (full tuition and stipend)
2009-2013	James B. Duke Fellowship ($20,000 total)
2012-2013	Duke University Summer Research Fellowship ($10,000 total)
2011, 2012, 2014	Duke Biology Grant-in-aid-of-research ($3,000 total)
2009-2013	Society of Duke Fellows

PROFESSIONAL SOCIETIES

American Society of Naturalists
Animal Behavior Society
Society for Integrative and Comparative Biology
Faculty for Undergraduate Neuroscience

SERVICE

Discipline

Reviewer for Evolutionary Ecology, Proceedings of the Royal Society B: Biological Sciences, Frontiers in Ecology and Evolution, Animal Behavior, Journal of Experimental Biology

College

Equity advisor for tenure track search (2022-current)
Committee on Committees (2021-current)
Faculty Mentoring Cohort Program (2020-current)
Conduct Board (2019-2020)
HHMI Inclusive Excellence pre-proposal team (2019-2020)
ARCH Mentor (summer 2019, 2021)

Sustainability Committee (2018-2019)

Department/Program

Advisor to many (~25 simultaneous) Biology and Neuroscience majors (2017-current)
Co-organizer of the *Life Sciences Seminar Series* (2018-2020)
Second reader for 31 I.S. theses (2018-2022)
Search Committee for Visiting Assistant Professor of Physiology/Behavior (2020)
Biology Department subcommittee on seminars (2018-2019)
Biology Department subcommittee on curriculum (2018-2019)

Colorado College

Regularly attended departmental meetings (2015-2017)
Advised multiple successful student grants for conference or research funds (2015-2017)
Updated the skull teaching collection with a grant from the Dean's Office (~$4000; 2016)
Secondary reader for Honors Theses (2015-2017)
Had numerous potential admission students observe class (2015-2017)

Duke University

Assistant Dean Search Committee (2012)
University Judicial Board (2013-2014)
Career Development Chair, Graduate and Professional Student Council (2012-2013)
Student Life Chair, Graduate and Professional Student Council (2011-2012)
Steering Committee, Duke University Biology Department (2010-2011)
Recruitment Committee, Duke University Biology Department (2009-2010)