Chad M. Eliason

Education

The University of Akron, Akron OH — 2014
Ph.D. Integrated Bioscience

The University of Akron, Akron OH — 2006
M.S. Education

Baldwin-Wallace University, Berea OH — 2002
B.S. Biology

Appointments

The Field Museum of Natural History, Chicago IL — 2016-
Interdisciplinary Postdoctoral Scientist, Division of Birds
Advisor: Shannon Hackett

The University of Texas at Austin, Austin TX — 2014-2016
Postdoctoral Scholar, Jackson School of Geosciences
Advisor: Julia Clarke

Publications (13 total, 8 h-index; *undergraduate co-author):

2016 Riede T, **Eliason CM**, Miller EH, Goller F, Clarke JA. 2016. Coos, booms, and hoots: the evolution of closed-mouth vocal behavior in birds. Evolution 70:1734-1746. ***(Received extensive media coverage, including The Tonight Night Show with Jimmy Fallon, Time Magazine, NPR Weekend Edition)***

Iskandar J-P*, **Eliason CM**, Astrop T, Igic B, Maia R, Shawkey MD. 2016. Morphological basis of glossy red plumage colors. Biological Journal of the Linnaean Society 119:477-487.

Eliason CM, Shawkey MD, Clarke JA. 2016. Evolutionary shifts in the melanin-based color system of birds. Evolution 70:445-455.

2015 **Eliason CM**, Maia R, Shawkey MD. 2015. Modular color evolution in ducks facilitated by a complex nanostructure. Evolution 69:357-367.

2014 **Eliason CM**, Shawkey MD. 2014. Antireflection-enhanced color by a natural graded refracting index (GRIN) structure. Optics Express 22:A642-A650. ***(Highlighted in Virtual Journal of Biomedical Optics)***

D'Alba LD, Jones DN, **Eliason CM**, Badawy HT, Shawkey MD. 2014. Antimicrobial properties of a nanostructured eggshell from a compost-nesting bird. Journal of Experimental Biology 217:116-1121.

2013 **Eliason CM**, Bitton, P-P, Shawkey MD. 2013. How hollow melanosomes affect iridescent colour production in birds. Proceedings of the Royal Society: B 280:20131505.

Maia R, **Eliason CM**, Bitton, P-P, Doucet SM, Shawkey MD. 2013. pavo: an R package for the analysis, visualization and organization of spectral data. Methods in Ecology and Evolution 4:906-913.

2012 **Eliason CM**, Shawkey MD. 2012. A photonic heterostructure produces diverse iridescent colours in duck wing patches. Journal of the Royal Society Interface 9(74):2279-2289. ***(Received press coverage in Science and Spiegel Online)***

2011 **Eliason CM**, Shawkey MD. 2011. Decreased hydrophobicity of iridescent feathers: a potential cost of shiny plumage. Journal of Experimental Biology 214:2157-2163. ***(Named as Editor's Choice for that issue of JEB, and as one of the top eight articles of the year; received press coverage in Spiegel Online)***

Shawkey MD, D'Alba L, Wozny J, **Eliason CM**, Koop JAH, Jia L. 2011. Structural color change following hydration and dehydration of iridescent mourning dove (Zenaida macroura) feathers. Zoology (Jena) 114:59-68.

2010 **Eliason CM**, Shawkey MD. 2010. Rapid, reversible response of iridescent feather color to ambient humidity. Optics Express 18:21284-92.

2007 Blackledge TA, **Eliason CM.** 2007. Functionally independent components of prey capture are architecturally constrained in spider orb webs. Biology Letters 3:456-458.

In Revision/Review

D'Alba L, Torres R, Waterhouse G, **Eliason CM**, Hauber M, Shawkey MD. What does the eggshell cuticle do? A functional comparison of eggshell cuticles. For Physiological and Biochemical Zoology.

Eliason CM, Hudson L*, Watts T*, Garza H*, Clarke JA. Exceptional preservation and the fossil record of tetrapod integument. In review at PNAS.

Dongyu H, Clarke JA, **Eliason CM**, Qiu R, Li Q, Shawkey MD, Zhao C, D'Alba L, Jiang J, Xu X. A bony-crested Jurassic dinosaur with iridescent plumage highlights complexity in early paravian evolution. In revision at Science.

Grants and Fellowships

2016 Field Museum Interdisciplinary Postdoctoral Scientist fellowship, 2016-2018 (**PI**, $94,000)

2014 NSF EAR 1355292 Collaborative Research: Phylogenomics of palaeognathous birds and understanding the evolution of flightlessness 2014-2017 (**Senior Personnel**, $950,000)

2011 The University of Akron, Tiered Mentoring Research Program (**Co-PI**, $1000)
Funded mentorship of undergradate researcher J.-P. Iskandar

Invited Talks

2015 Diversity of form and function in the avian integument, Paleontology Seminar, The University of Texas at Austin

2014 Linking form and function to understand the evolution of complex traits in birds. PI Meeting, Harvard University, Boston, MS, USA. June 30, 2014.

Form-function relationships in iridescent bird feathers: optical and evolutionary implications. Biology Seminar. Baldwin-Wallace University, Berea, OH, USA. April 25, 2014.

2013 Linking form and function to understand color diversity in birds, Introductory Physics Course, The University of Akron

Eliason CM, Maia R, Bitton P-P, Shawkey MD. Linking form and function to elucidate the evolution of iridescent colors in birds. Physiological and Functional Advances in Avian Coloration Symposium, American Ornithological Union Meeting. Chicago, IL. August 13-17, 2013.

2012 Diversity of structural colors in birds, Introductory Physics Course, The University of Akron

Contributed Presentations (most recent 3 of 12; †poster, ‡talk):

Eliason CM, Hudson L, Watts T, Garza H, Clarke JA. Exceptional preservation and the fossil record of tetrapod integument. Geological Society of America annual meeting, Sept 25-28, 2016.†

Riede T, **Eliason CM**, Miller EH, Goller F, Clarke JA. Coos, booms, and hoots: the evolution of closed-mouth vocal behavior in birds. International Congress of Vertebrate Morphology annual conference. Washington D.C. June 29 - July 3, 2016.‡

Eliason CM, Clarke JA. Pipelines and methods for visualization and analysis of phenomic data. Society for the Study of Evolution annual conference. Austin, TX. June 17 - 21, 2016.†

Teaching and Mentorship

Instructor

The University of Texas at Austin
2016 Research methods, data analysis and visualization in paleobiology
Developed statistical workshops in R, faciliated active learning and student peer-review.

The University of Akron
2013 Programming and Applied Statistics using R (12 hour workshop)

Teaching Assistant

The University of Akron
2012 Comparative Vertebrate Morphology

2010-2012 Microbiology
2011 Ornithology
2009-2010 Principle of Biology
2005 Genetics
2005 Microbiology

Research Mentor

The University of Texas at Austin
2014-2016 Supervised undergraduate research (8 undergraduates, 1 McNair Scholar)

The University of Akron
2010-2013 Advised and supervised undergraduate of two undergradates (Jean-Pierre Iskandar, Chance Mitan)

Guest Lecturer

The University of Akron
2014 Ornithology (3h class)

Professional Service and Outreach

Reviewer

Proceedings B, PLoS One (2), Ecology and Evolution, Journal of Anatomy, Behavioral Ecology and Sociobiology (2), Journal of Applied Spectroscopy, Optics Express (2)

Departmental and Society Service

2015 Society for the Study of Evolution Annual Meeting, July 2015.
2012 Volunteer Science Fair Judge, Buchtel High-School, Akron, OH
2011-2012 Interviewer for the Honors College scholarship selection process, The University of Akron
2011 Society for Integrative and Comparative Biology Annual Meeting, January 2011.
2005 Volunteer Science Fair Judge, Science and Technology EXPO, Akron, OH
2005 Research mentor, K-12 “Science Buddies” Program, Akron, OH

Selected Media Coverage

New Research Debunks The Dinosaur’s Roar (NPR Weekend Edition, July 2016)

Dinosaurs didn’t roar. They cooed, according to scientists (CBC Radio, July 2016)

Dinosaurs May Have Cooed Instead of Roared, Scientists Find (Time, July 2016)

Bird feathers with lotus effect (Frankfurter Allgemeine Zeitung, March 2012)

Light of nature: nanostructures [in] duck feathers glisten (Spiegel Online Science, October 2012)

Flashed by a duck (ScienceNOW, April 2012)

Society Membership

Society for the Study of Evolution

References

Matthew D. Shawkey
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