Chad M. Eliason

1 Professional experience

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

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

2 Education

2014 Ph.D. Integrated Bioscience The University of Akron, Akron OH Dissertation: "Mechanisms and evolution of iridescent feather colors in birds" Advisor: Matthew D. Shawkey

2006 M.S. Education The University of Akron, Akron OH} 2006\

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

3 Publications

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)***

2016 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.

2016 **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)***

2014 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.

2013 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)***

2011 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. (PDF)

4 Awards and scholarships

2015 David H. Smith Conservation Postdoctoral Research Fellowship (URL)

2015 Simon Fraser University Dean of Graduate Studies Convocation Medal (URL)

2014 Garfield Weston Foundation / BC Packers Ltd. Graduate Fellowship in Marine Sciences

2014 Graduate Fellowship (two semesters), Simon Fraser University

2012–13 Canadian Fulbright Scholar award to the University of Washington

2011 Canadian Governor General's Academic Gold Medal for the top-ranked Master's Natural Sciences and Engineering thesis at Dalhousie University in 2010

2011–14 Provost Prize of Distinction, Simon Fraser University

2011–14 Natural Sciences and Engineering Research Council of Canada Postgraduate Scholarship (Doctoral)

2007–10 Faculty Research Grant Scholarship, Dalhousie University

2007–09 Graduate Studies Scholarship, Dalhousie University

2007 Environmental Programmes Honour Society Medal, Dalhousie University

5 Software

2014 **Anderson, S.C.**, J.W. Moore, M.M McClure, N.K. Dulvy, A.B. Cooper. metafolio: Metapopulation simulations for conserving salmon through portfolio optimization. `http://cran.r-project.org/package=metafolio`

2013 **Anderson, S.C.**, C.C. Monnahan, K.F. Johnson, K. Ono, J.L. Valero, C.J Cunningham, F. Hurtado-Ferro, R. Licandeo, C.R. McGilliard, C.S. Szuwalski, K.A. Vert-pre, A.R. Whitten. ss3sim: Fisheries stock assessment simulation testing with Stock Synthesis. `http://cran.r-project.org/package=ss3sim`

2013 **Anderson, S.C.**, A.B. Cooper, N.K. Dulvy. ecofolio: Tools to quantify metapopulation portfolio effects. `https://github.com/seananderson/ecofolio`

6 Invited talks and conference presentations

2016 **Anderson, S.C.**, A.B. Cooper, O.P. Jensen, C. Minto, J.T. Thorson, J.C. Walsh, M. Dickey-Collas, K.M. Kleisner, C. Longo, G.C. Osio, D. Ovando, I. Mosqueira, A.A. Rosenberg, E.R. Selig. Improving estimates of population status and trend with superensemble models. World Fisheries Conference, Busan, South Korea. (Presented *in absentia* by J.T. Thorson.)

2015 **Anderson, S.C.**, A.B. Cooper, O.P. Jensen, C. Minto, J.T. Thorson, J.C. Walsh, M. Dickey-Collas, K.M. Kleisner, C. Longo, G.C. Osio, D. Ovando, I. Mosqueira, A.A. Rosenberg, E.R. Selig. Improving estimates of population status and trend with superensemble models. American Fisheries Society Annual Meeting, Portland, OR, United States.

2013 **Anderson, S.C.**, A.B. Cooper, N.K. Dulvy. False prophets: The challenges of quantifying ecological portfolios (slides), Quantitative Seminar, School of Aquatic and Fishery Sciences, University of Washington, Seattle, WA, United States.

2012 **Anderson, S.C.**, A.B. Cooper, N.K. Dulvy. False prophets: The ecological portfolio effect overestimates the benefit of diversity. Branch Lab, School of Aquatic and Fishery Sciences, University of Washington, Seattle, WA, United States.

2012 **Anderson, S.C.**, A.B. Cooper, N.K. Dulvy. Metapopulation dynamics and the generality of the ecological portfolio effect. Les Ecologistes Departmental Seminar, Simon Fraser University, Burnaby, BC, Canada.

2010 **Anderson, S.C.** The rise of invertebrates, the fall of sea cucumbers, and the risk of maturing late. Earth2Ocean Research Group, Simon Fraser University, Burnaby, BC, Canada.

2009 **Anderson, S.C.**, J.E. Mills Flemming, R. Watson, H.K. Lotze. Ecosystem impacts of the global expansion of invertebrate fisheries. International Oceans Past II Conference *Multidisciplinary Perspectives on the History and Future of Marine Animal Populations*. Vancouver, BC, Canada.

2009 **Anderson, S.C.**, J.E Mills Flemming, R. Watson, H.K. Lotze. Global invertebrate fisheries: trends and consequences. NCEAS (National Center for Ecological Analysis and Synthesis) Working Group *Finding Common Ground in Marine Conservation and Management*. Santa Barbara, CA, USA.

2009 **Anderson, S.C.**, H.K. Lotze, N.L. Shackell. Evaluating the knowledge base for expanding low-trophic level fisheries in Atlantic Canada. Harvest Fisheries Seminar Series. Bedford Institute of Oceanography, Fisheries and Oceans, Dartmouth, NS, Canada.

2008 **Anderson, S.C.**, H.K. Lotze, N.L. Shackell. Evaluating the knowledge base for expanding low-trophic level fisheries in Atlantic Canada. Departmental Seminar, Biology Department, Dalhousie University, Canada.

7 Teaching

2014–16 Developed self-directed lecture and exercises on ggplot2 for FISH 554: Beautiful graphics in R, School of Aquatic and Fishery Sciences, University of Washington,

Seattle, WA, United States.
http://seananderson.ca/ggplot2-FISH554/

2013–14 Organizer of Stats Beerz — a statistical help group attended by graduate students and postdocs primarily in the Earth to Oceans research group, but also the wider SFU Biology and Geography Departments, and the School of Resource and Environmental Management (REM).

2013 Two-part workshop on data manipulation for Stats Beerz and Earth to Oceans groups at Simon Fraser University with approximately 25 participants. An introduction to plyr, advanced concepts with plyr and function debugging, and an introduction to dplyr.
https://github.com/seananderson/plyr-statsbeerz

2013 Instructor for BISC-888-1: Data Wrangling and Visualization in R, a graduate-level course at Simon Fraser University, Burnaby, BC, Canada with approximately 20 participants. Co-developed curriculum and developed/delivered lectures, exercises, notes, and assignments for three of six two-hour classes.
https://github.com/seananderson/datawranglR (see classes 03, 04, 05)

2012 Introduction to ggplot2. (notes, slides) Lecture for FISH 507H: Beautiful Graphics in R, School of Aquatic and Fishery Sciences, University of Washington, Seattle, WA, United States

2012 Workshop on the R package plyr. (notes, slides, examples) Branch Lab, School of Aquatic and Fishery Sciences, University of Washington, Seattle, WA, United States

2011 Multipanel plotting in R with base graphics. (notes, slides). Earth2Ocean Research Group, Simon Fraser University, Burnaby, BC, Canada.

2011 A brief introduction to R. (notes, workshop code). Earth2Ocean Research Group, Simon Fraser University, Burnaby, BC, Canada.

2011 Workshop on the R package plyr (notes, slides). Earth2Ocean Research Group, Simon Fraser University, Burnaby, BC, Canada.

2007–08 Teaching Assistant, Organismal Biology and Ecology, Dalhousie University, two semesters (BIOL 1021).

2007–08 Teaching Assistant, Marine Mammology, Dalhousie University (BIOL 4060).

8 Working groups and workshops

2015-16 NCEAS (National Center for Ecological Analysis and Synthesis, Santa Barbara, CA) *Applying portfolio effects to the Gulf of Alaska ecosystem: Did multi-scale diversity buffer against the Exxon Valdez oil spill?* (URL)

2015-16 Gordon and Betty Moore Foundation funded working group *Applying data-limited stock status models and developing management guidance for unassessed fish stocks*.

2011–13 NESCent (National Evolutionary Synthesis Center, Durham, NC) Working Group *Determinants of Extinction in Ancient and Modern Seas* led by Paul Harnik, Seth Finnegan, and Rowan Lockwood. (URL)

2010 Atlantic Halibut Assessment Science Peer Review Meeting, Fisheries and Oceans, Dartmouth, NS, Canada.

2007–09 NCEAS (National Center for Ecological Analysis and Synthesis, Santa Barbara,

CA) Distributed Graduate Seminar, in association with the Working Group *Finding Common Ground in Marine Conservation and Management* led by Ray Hilborn and Boris Worm. (URL)

2008 Workshop on Canadian Science and Management Strategies for Sea Cucumber (*Cucumaria frondosa*), Fisheries and Oceans, Dartmouth, NS, Canada (work presented *in absentia*).

2007 Workshop on Canadian Science and Management Strategies for Atlantic Hagfish, Fisheries and Oceans, Dartmouth, NS, Canada. (URL)

9 Reviews

Reviewer for Science, Ecology, Ecological Applications, Conservation Biology, Fish and Fisheries, Marine Policy, Population Ecology, International Journal of Tropical Biology and Conservation, Journal of Environmental Management, Endangered Species Research, Aquatic Conservation
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Last updated: October 6, 2016