MARY CASWELL STODDARD

ASSOCIATE PROFESSOR • DEPARTMENT OF ECOLOGY AND EVOLUTIONARY BIOLOGY
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EDUCATION

PhD 2012 **University of Cambridge, Cambridge, UK,** PhD in Zoology, Marshall Scholar
2012 Zoological Society of London Thomas Henry Huxley Award and Marsh Prize for top thesis

BS 2008 **Yale University, New Haven, CT, USA**
summa cum laude, Bachelor of Science in Biology
Phi Beta Kappa

PROFESSIONAL APPOINTMENTS

2021-present Associate Professor at Princeton University, Department of Ecology and Evolutionary Biology
2021-present Associated Faculty in the Lewis-Sigler Institute for Integrative Genomics
2021-present Affiliated Faculty in the Princeton Bioengineering Initiative
2017-present Faculty Associate in the High Meadows Environmental Institute
2016-present Affiliated Principal Investigator at the Rocky Mountain Biological Laboratory (RMBL)
2016-2021 Assistant Professor at Princeton University, Department of Ecology and Evolutionary Biology
2012-2016 Junior Fellow in the Harvard Society of Fellows, Harvard University

CURATORIAL APPOINTMENTS

2016-present Research Associate at the American Museum of Natural History (Ornithology)
2015-2025 Curatorial Affiliate in the Division of Vertebrate Zoology, Yale University Peabody Museum of Natural History

FELLOWSHIPS AND GRANTS

2022-2027 Schmidt Science Polymath Award
2022-2023 Princeton Council on Science and Technology Award
2020-2024 NSF IOS Collaborative Grant: "Mechanisms of color vision in wild hummingbirds." Lead PI (collaborative with UC Berkeley)
2020-2023 AFOSR Grant: "Avian eggshell: engineering and evolution of a remarkable multifunctional material." Lead PI (collaborative with Virginia Tech)
2020-2022 High Meadows Environmental Institute Climate and Energy Grand Challenges Grant
2018-2023 Packard Fellowship for Science and Engineering
2018-2020 Alfred P. Sloan Research Fellowship in Computational and Evolutionary Molecular Biology \
2018-2020 High Meadows Environmental Institute Climate and Energy Grand Challenges Grant
2016 Wissenschaftskolleg (WiKo) Institute of Advanced Studies, Berlin, Germany: *Animal Coloration Focus Group*, Visiting Fellow
2015 L'Oréal International Rising Talents Fellow (1 of 15 internationally)
2013 L'Oréal USA For Women In Science Fellowship and Research Grant (1 of 5 in USA)

2013 Harvard Milton Fund Award
2013 Harvard University Faculty Aide Award to support undergraduate research projects
2012-2016 Harvard Society of Fellows
2008-2012 Marshall Scholar
2008-2012 National Science Foundation Graduate Research Fellow
2008 Hanne and Torkel Weis-Fogh Fund Award
2007 Goldwater Scholar

AWARDS AND HONORS

2022 Schmidt Science Polymath Award (Press Release)
2020 Animal Behavior Society Outstanding New Investigator Award, top award given annually to an early-career researcher
2020 George A. Bartholomew Award, top award given annually by the Society for Integrative & Comparative Biology to an early-career researcher; delivered the Bart Lecture at the SICB meeting in Austin, Texas
2020 Elected Fellow of the American Ornithological Society
2018 Packard Fellow (Press Release)
2018 Alfred P. Sloan Research Fellow
2017 Elective Member of the American Ornithological Society
2016 Dobzhansky Prize, awarded by the Society for the Study of Evolution to an outstanding young evolutionary biologist; delivered the Dobzhansky Prize Lecture at the SSE meeting in Austin, Texas
2016 Ned K. Johnson Young Investigator Award, given annually by the American Ornithological Society for outstanding and promising work by an early-career ornithologist
2015 American Society of Naturalists Jasper Loftus-Hills Young Investigator Award
2015 Kavli Frontiers of Science Fellow of the National Academy of Sciences
2015 L'Oréal International Rising Talents Fellow (1 of 15 internationally) (Video)
2014 Cooper Ornithological Society Young Professional Award for outstanding contributions to ornithology
2013 L'Oréal USA For Women In Science Fellow (1 of 5 in the USA) (Press Release and Video)
2012 Winner of the Zoological Society of London Thomas Henry Huxley Award and Marsh Prize for top thesis in zoology in the United Kingdom
2008 Marshall Scholar
2008 William Belknap Prize for Excellence in Biology (Highest Honors), Yale University
2008 Yamanaka Prize for Best Senior Thesis awarded by the Yale Peabody Museum of Natural History
2008 Andrew Patterson Prize for Distinguished Contribution to Morse College, Yale University
2007 Goldwater Scholar
2004 Delegate to the National Youth Science Camp

PUBLICATIONS

Link to Google Scholar Profile

51. Carlson, M. L., J. Kawalec, Madison H. Hamilton, and **M. C. Stoddard**. Behavioral experiments provide mixed support for plumage mimicry in hairy and downy woodpeckers. *In Review*.

50. Carlson, M. L., J. Kawalec, and **M. C. Stoddard**. Woodpeckers are more cryptic against tree bark on which they forage. *In Revision*.

49. **M. C. Stoddard**. New Frontiers in Avian Color Research. *In Press* at Oxford University Press as part of a new book on advances in ornithology.

48. Dixit, T., K-C. Chen, **M. C. Stoddard**, L. Mahadevan, C. P. Town, C. N. Spottiswoode. 2023. Repeatable randomness, invariant properties, and the design of biological signatures of identity. *Evolution*: qpad134.

47. Carlson, M. L. and **M. C. Stoddard**. Evolution of plumage patterns in pattern morphospace: A phylogenetic analysis of melanerpine woodpeckers. 2023. *In Press* at *American Naturalist*.

46. Akkaynak, D. and **M. C. Stoddard**. Common cuckoos do not mimic the size and shape of host eggs. 2023. *Behavioral Ecology*: arad044.

45. Mainwaring, M., **M. C. Stoddard**, I. Barber, D. C. Deeming, and M. E. Hauber. The evolutionary ecology of nests: a cross-taxon approach. *Philosophical Transactions of the Royal Society B* 378: 20220136.

44. Ocampo, D., T. De Silva, C. Sheard and **M. C. Stoddard**. Evolution of nest architecture in tyrant flycatchers and allies. 2023. *Philosophical Transactions of the Royal Society B* 378: 20220148.

43. Childers, R. A., G. D. Bernard, H. Huang, C-C Tsai, **M. C. Stoddard**, B. G. Hogan, J. S. F. Greenwood, E. Soucy, M. Cornwall, M. L. M. Lim, M. Liénard, N. Yu, and N. E. Pierce. 2023. A hypothesis for robust polarization vision: An example from the Australian Imperial Blue butterfly, *Jalmenus evagoras*. *Journal of Experimental Biology*: jeb-244515.

42. **Stoddard, M. C.** 2022. Bird eggs. *Current Biology* 32: R1126-R1132.

    Also see: *My bird: Painted Bunting (Passerina ciris)* in the same issue.

41. Miller, A. E., B. G. Hogan, and **M. C. Stoddard.** 2022. Color in motion: Generating 3-dimensional multispectral models to study dynamic visual signals in animals. *Frontiers in Ecology and Evolution* 10:983369.

40. Nordén, K., C. Eliason, and **M. C. Stoddard**. 2021. Evolution of brilliant iridescent feather nanostructures. *eLife* 10:e71179.

39. Echeverri, S. A., A. E. Miller, J. Chen, E. W. McQueen, M. Plakke, M. Spicer, K. L. Hoke, **M. C. Stoddard**, and N. I. Morehouse. 2021. How Signaling Geometry Shapes the Efficacy and Evolution of Animal Communication Systems, *Integrative and Comparative Biology* icab090.

38. Price-Waldman, R. and **M. C. Stoddard**. 2021. Avian coloration genetics: Recent advances and emerging questions. *Journal of Heredity* esab015.

37. Jamie, G. A., S. M. Belleghem, B. G. Hogan, S. Hamama, C. Moya, J. Troscianko, **M. C. Stoddard**, R. M. Kilner, and C. N. Spottiswoode. 2020. Multimodal mimicry of hosts in a radiation of parasitic finches. *Evolution* 14057.

36. **Stoddard, M. C.**, H. N. Eyster*, B. G. Hogan*, D. H. Morris, E. R. Soucy, and D. W. Inouye. 2020. Wild hummingbirds discriminate nonspectral colors. *Proceedings of the National Academy of Sciences USA* 1919377117. *Equal contribution.

Covered by New York Times**,** National Geographic**,** Smithsonian**,** CNN**,** Science Friday Radio**.**

35. Quach, L.*, A. Miller*, B. G. Hogan*, and **M. C. Stoddard**. 2020. Egg patterns as identity signals in colonial seabirds: a comparison of four alcid species. *Journal of Experimental Zoology B* 2020: 1-11. *Equal contribution.

34. **Stoddard, M. C.**, C. Sheard, D. Akkaynak, E. H. Yong, L. Mahadevan, and J. Tobias. 2019. Evolution of avian egg shape: underlying mechanisms and the importance of taxonomic scale. *Ibis* 161: 922-925.

33. Wu, Z., T. Yang, Z. Deng, B. Huang, Y. Wang, Y. Chen, **M. C. Stoddard**, L. Li, and Y. Zhu. 2019. Automatic crack detection and analysis for biological cellular materials in x-ray in situ tomography Measurements. *Integrating Materials and Manufacturing Innovation* 8: 559-569.

32. Price, T. D., **M. C. Stoddard**, S. K. Shevell, and N. I. Bloch. 2019. Understanding how neural responses contribute to the diversity of avian colour vision. *Animal Behaviour* 155: 297-305.

31. **Stoddard, M. C.**, B. G. Hogan, M. Stevens, and C. N. Spottiswoode. 2019. Higher-level pattern features provide additional information to birds when recognizing and rejecting parasitic eggs. *Philosophical Transactions of the Royal Society B* 374: 20180197.

Covered by Science.

30. **Stoddard, M. C.**, and D. Osorio. 2019. Animal coloration patterns: linking quantitative analysis to spatial vision. *American Naturalist* 193: 164-186.

29. Hogan, B. G., and **M. C. Stoddard**. 2018. Synchronization of speed, sound, and iridescent color in a hummingbird aerial courtship dive. *Nature Communications* 9: 5260.

28. **Stoddard, M. C.**, A. Miller, H. N. Eyster, and D. Akkaynak. 2018. I see your false colours: how artificial stimuli appear to different animal viewers. *Royal Society Interface Focus* 9: 20180053.

27. Cuthill, I., [… *multiple authors*], **M. C. Stoddard**, D. Stuart-Fox, L. Talas, E. Tibbetts, and T. Caro. 2017. The biology of color. *Science* 357: eaan0221.

26. **Stoddard, M. C.**, E. H. Yong, D. Akkaynak, C. Sheard, J. Tobias, and L. Mahadevan. 2017. Avian egg shape: Form, function and evolution. *Science* 356: 1249-1254. Cover article.

Covered by New York Times, LA Times, the Atlantic, the Times, Washington Post, Smithsonian Magazine, National Geographic, Science, NPR, NPR Newstime, Science Podcast, BBC.
Also see the Perspective published in *Science*.

25. **Stoddard, M. C.**, and M. E. Hauber. 2017. Color, vision and coevolution in avian brood parasitism. *Philosophical Transactions of the Royal Society B* 372: 20160339.

24. Caro, T.*, **M. C. Stoddard***, and D. Stuart-Fox.* 2017. Animal coloration research: why it matters. *Philosophical Transactions of the Royal Society B* 372: 20160333. *Equal contribution.

23. Caro, T.*, **M. C. Stoddard***, and D. Stuart-Fox.* 2017. Animal coloration: Production, Perception, Function and Application. *Philosophical Transactions of the Royal Society B* 372: 20170047. *Equal contribution.

22. Burns, K. J.*, K. J. McGraw*, A. J. Shultz*, **M. C. Stoddard***, and D. B. Thomas*. 2017. Advanced methods for studying pigments and coloration using avian specimens. *in* The Extended Specimen: Emerging Frontiers in Collections-based Ornithological Research. Studies in Avian Biology, CRC Press, Boca Raton, FL. *Equal contribution.

21. **Stoddard, M. C.**, K. Kupán, H. N. Eyster, W. Rojas-Abreu, M. Cruz-López, M. Alejandro Serrano-Meneses, and C. Küpper. 2016. Camouflage and clutch survival in plovers and terns. *Scientific Reports* 6: 32059.

20. Johnstone, R. A., A. Manica, A. L. Fayet, **M. C. Stoddard**, M. A. Rodriguez-Gironés, and C. A. Hinde. 2016. Evidence for conditional cooperation: a response to Schlicht et al. *Behavioral Ecology* 27: e6-e7.

19. Mayani-Parás, F., R. M. Kilner, **M. C. Stoddard**, C. Rodríguez, and H. Drummond. 2015. Behaviorally induced camouflage: A new mechanism of avian egg protection. *American Naturalist* 186: E91-E97.

18. **Stoddard, M. C.**, R. M. Kilner, and C. Town. 2014. Pattern recognition algorithm reveals how birds evolve individual egg pattern signatures. *Nature Communications* 5: 4117.

    Covered by Nature, Science, Smithsonian Magazine, ABC News, AAAS Science Update Radio.

17. Feeney W.E., **M. C. Stoddard**, R. M. Kilner, and N.E. Langmore. 2014. 'Jack of all trades' egg mimicry in the brood parasitic Horsfield's bronze-cuckoo? *Behavioral Ecology* 25: 1365-1373.

16. Ellis, J. C., S. M. Bogdanowicz, **M. C. Stoddard**, and L. W. Clark. 2014. Hybridization of a lesser black-backed gull and herring gulls in eastern North America. *Wilson Journal of Ornithology* 126: 338-345.

15. Johnstone, R., A. Manica, A. Fayet, **M. C. Stoddard**, M. Rodríguez-Gironés, and C. Hinde. 2013. Reciprocity, turn-taking and conditional cooperation between great tit parents. *Behavioral Ecology* 25: 216-222.

14. Hanley, D., **M. C. Stoddard**, P. Cassey, and P. Brennan. 2013. Eggshell conspicuousness in ground nesting birds: do conspicuous eggshells signal nest location to conspecifics? *Avian Biology Research* 6: 147-156.

13. **Stoddard, M. C.**, and R. M. Kilner. 2013. The past, present and future of 'cuckoos versus reed warblers.' *Animal Behaviour* 85: 693-699.

12. Stournaras, K. E., E. Lo, K. Böhning-Gaese, E. Cazetta, D. M.Dehling, M. Schleuning, **M. C. Stoddard**, M. J. Donoghue, R. O. Prum, and H. M. Schaefer. 2013. How colorful are fruits? Limited color diversity in fleshy fruits on local and global scales. *New Phytologist* 198: 617-629.

11. Mendes-Pinto, M. M., A. M. LaFountain, **M. C. Stoddard**, R. O. Prum, H. A. Frank, and B. Robert. 2012. Variation in carotenoid-protein interaction in bird feathers produces novel plumage coloration. *Journal of The Royal Society Interface* 9: 3338-3350.

10. Prum, R. O., A. Fountain, J. Berro, **M. C. Stoddard**, and H. Frank. 2012. Molecular diversity, metabolic transformation, and evolution of carotenoid feather pigments in cotingas (Aves: Cotingidae). *Journal of Comparative Physiology B* 182: 1095-1116.

9. **Stoddard, M. C.** 2012. Mimicry and masquerade from the avian visual perspective. *Current Zoology* 58: 630-648.

8. **Stoddard, M. C.**, A. Fayet, R. M. Kilner, and C. Hinde. 2012. Egg speckling patterns do not advertise offspring quality or influence male provisioning in great tits. *PLoS ONE* 7: e40211.

7. **Stoddard, M. C.**, K. Marshall, and R. M. Kilner. 2011. Imperfectly camouflaged avian eggs: artefact or adaptation? *Avian Biology Research* 4: 196-213.

6. **Stoddard, M. C.**, and R. O. Prum. 2011. How colorful are birds? Evolution of the avian plumage color gamut. *Behavioral Ecology* 22: 1042-1052.

   Covered by Science in Editor's Choice and selected as a Faculty of 1000 "must-read."

5. **Stoddard, M. C.**, and M. Stevens. 2011. Avian vision and the evolution of egg color mimicry in the common cuckoo. Cover article. *Evolution* 65: 2004-2013.

   Covered by BBC Earth and Science News, BBC Radio 5 Live, CBC Radio (Canada) and NPR (USA).

4. **Stoddard, M. C.**, and M. Stevens. 2010. Pattern mimicry of host eggs by the common cuckoo, as seen through a bird's eye. *Proceedings of the Royal Society B* 277: 1387-93.

   Covered by BBC News Big Picture and New York Times.

3. Stevens, M., **M. C. Stoddard**, and J. P. Higham. 2009. Studying primate color: towards visual system-dependent methods. *International Journal of Primatology* 30: 893–917.

2. **Stoddard, M. C.**, and R. O. Prum. 2008. Evolution of avian plumage color in a tetrahedral color space: a phylogenetic analysis of New World buntings. *American Naturalist* 171: 755–776.

1. Ellis, J.C., **M. C. Stoddard**, and L. W. Clark. 2008. Breeding by a lesser black-backed gull (*Larus fuscus*) on the Atlantic coast of North America. *North American Birds* 61: 546-548.

POPULAR ARTICLES

Stoddard, M. C. 2017. Lesser is More: The True Story of the First Lesser Black-backed Gull to Breed Successfully in North America. BirdWatching Magazine, June 2017 issue.

EDITOR

Guest Editor for the 2023 theme issue "**The evolutionary ecology of nests: a cross-taxon approach**" in *Philosophical Transactions of the Royal Society B*.

Guest Editor for the 2017 theme issue "**Animal Coloration**" in *Philosophical Transactions of the Royal Society B.*

Faculty of 1000, Contributing Member in the Behavioral Ecology Section (2018-2021)

CONFERENCE PRESENTATIONS

Stoddard, M. C. 2023. *Schmidt Polymaths Meeting*. Rhinebeck, NY.
"*The biology, engineering, math and physics of birds.*"

Stoddard, M. C. and L. Li. 2022. *AFOSR Annual Meeting* (virtual).

Stoddard, M. C. and L. Li. 2021. *AFOSR Annual Meeting* (virtual).

Stoddard, M. C. 2021. *Phase Behavior in Soft and Living Matter*, Princeton, NJ.
Invited speaker: *"The Soft and Living Matter of Birds"*

Stoddard, M. C., Z. Jia, Z. Deng, J. Weaver and L. Li. 2021. *American Physical Society* (virtual).
Invited speaker: "*Evolution and Engineering of Avian Eggs*"

Stoddard, M. C. and B. Hogan. 2021. *Society for Integrative and Comparative Biology* (virtual). **Invited symposium speaker: "*Spatiotemporal dynamics of a hummingbird courtship dive*"**

Stoddard, M. C. and L. Li. 2020. *AFOSR Annual Meeting* (virtual).

Stoddard, M. C. 2020. *Packard Fellows Meeting*: *Our Virtual Coast* (virtual).

Stoddard, M. C. 2020. *Princeton Intracelluar Phase Transition/Condensate Symposium* (virtual).
Invited keynote speaker: *"**Bird Biomolecules: A Closer Look at Feathers, Eyes & Eggshells in the Avian World"***

Stoddard, M. C. 2020. *Society for Integrative and Comparative Biology*. Austin, Texas, USA.
Bart Award Lecture: *"Diversity of Form and Function in the Colorful World of Birds"*

Stoddard, M. C. 2019. *Sensorium*. University of Illinois at Urbana-Champaign. Urbana-Champaign, Illinois, USA. **Invited plenary speaker: *"Color, Courtship and Trickery in the Visual World of Birds"***

Stoddard, M. C. 2019. *Packard Fellows Meeting*. Monterey Bay, California.

Stoddard, M. C. 2019. *Association for the Study of Animal Behavior (ASAB): New Frontiers in the Study of Animal Behaviour.* Konstanz, Germany. **Invited plenary speaker: "*Bird's-eye View: How Color, Courtship and Deception Shape the Avian Visual World*"**

Stoddard, M. C. 2019. *Color Vision: Circuits and Behavior*. Janelia Research Campus. Ashburn, Virginia, USA. **Invited speaker.**

Stoddard, M. C. 2019. *Symposium on Frontiers in Behavioural Research*. Max Planck Institute for Ornithology. Seewiesen, Germany. **Invited speaker.**

Stoddard, M. C. 2019. *Winter Animal Behavior Conference.* Steamboat Springs, Colorado, USA.

Stoddard, M. C., L. Li, and J. Weaver. 2019. *Society for Integrative and Comparative Biology*. Tampa, Florida, USA. **Invited symposium speaker: "*The Avian Egg: A Marvel of Evolution and Engineering*"**

Stoddard, M. C. 2018. *International Society for Behavioural Ecology*. Minneapolis, Minnesota, USA.

Stoddard, M. C. 2018. *Santa Fe Institute: The Complexity of Time*. Santa Fe, NM, USA.
Invited speaker: "*Avian Ecology and Evolution in Time and Morphospace"*

Stoddard, M. C. 2018. *Living Light: Light-matter interactions in living organisms.* University of Cambridge, UK. **Invited speaker: "*The Ecology and Evolution of Avian Color"***

Stoddard, M. C. 2018. *CamoCon*. University of Bristol, UK.
Invited keynote speaker: "*Adventures in Avian Color"*

Stoddard, M. C. 2018. *Resolving the Mysteries of the Avian Egg* conference. University of Sheffield, UK.
Invited keynote speaker: "*The Ecology and Evolution of Avian Eggs"*

Stoddard, M. C. 2018. *Society for Integrative and Comparative Biology*. San Francisco, California, USA.

Stoddard, M. C. 2017. *Evolution*. Portland, Oregon, USA.

Stoddard, M.C. 2017. *EPiC: Evolution in Philadelphia Conference*. Philadelphia, Pennsylvania, USA.
Invited plenary speaker: "***Mimicry, Mechanics and Macroevolution in Avian Eggs"***

Stoddard, M. C. 2016. *North American Ornithological Congress*. Washington, D. C.

Stoddard, M. C. 2016. *Evolution*. Austin, Texas, USA
Dobzhanksy Prize Lecture: *"A Multidisciplinary Perspective on the Evolution of Avian Eggs"*

Stoddard, M. C. 2016. *Wissenschaftskolleg (WiKo) Institute of Advanced Studies*, Berlin, Germany.

Stoddard, M. C. 2015. *The 2015 Kavli Frontiers of Science Indo-U.S. Symposium at the National Academy of* Sciences. Irvine, California, USA.
Invited symposium speaker: "***The Biomechanical Basis of Animal Behavior"***

Stoddard, M. C. 2015. *Evolution*. Guarujá, Brazil.
American Society of Naturalists Young Investigator Award Symposium:
"Mimicry, Recognition and the Evolution of New Phenotypes"

Stoddard, M. C. 2014. *American Ornithologists' Union*. Estes Park, Colorado, USA.
Invited plenary speaker: "*Avian vision and the coevolution of bird eggs"*

Stoddard, M. C. 2014. *International Ornithological Congress*. Tokyo, Japan.
Invited keynote symposium speaker: "*Avian brood parasitism - novel findings and new puzzles"*

Stoddard, M. C., R. M. Kilner, and C. Town. 2014. *International Society for Behavioural Ecology*. New York City, New York, USA.

Stoddard, M. C., R. M. Kilner, and C. Town. 2014. *Evolution*. Raleigh, North Carolina, USA.

Stoddard, M. C. 2013. *American Ornithologists' Union*. Chicago, Illinois, USA.
Invited symposium speaker: "*Physiological and functional advances in avian coloration*"

Stoddard, M. C. 2012. *International Symposium on Avian Brood Parasitism.* Hainan Normal University. Hainan, China. **Invited symposium speaker.**

Stoddard, M. C. 2011. *Animal Behavior Society*. Bloomington, Indiana, USA.

Stoddard, M. C. 2011. *Cambridge Graduate School of Life Sciences Poster & Image Symposium*. University of Cambridge, UK. **Grand prize poster winner.**

Stoddard, M. C. 2011. *Association for the Study of Animal Behaviour.* Cambridge, UK.
Best student presentation award.

Stoddard, M. C., and M. Stevens. 2010. *International Society for Behavioral Ecology.* Perth, Australia.
Travel award.

Stoddard, M. C., and R. O. Prum. 2010. *International Ornithological Congress.* Campos do Jordão, Brazil.

Stoddard, M. C., and M. Stevens. 2010. *Association for the Study of Animal Behaviour*. Exeter, UK.

Stoddard, M. C., and M. Stevens. 2009. *American Ornithologists' Union*. Philadelphia, Pennsylvania, USA.
Student presentation award and **Marcia Brady Tucker Travel award.**

Stoddard, M. C., and R.O. Prum. 2006. *North American Ornithological Conference*, New Insights on Avian Color session, Veracruz, Mexico.

INVITED TALKS AND GUEST LECTURES

2023 Georgia Institute of Technology (Bhama Lab; virtual), SUNY Stony Brook University (virtual), Hummingbird Conservation Networks (virtual)

2022 Princeton University (Mechanical and Aerospace Engineering), Watlington Environmental Group (UK, virtual), Delaware Valley Ornithological Club (virtual), University of Washington (virtual), University of Montana (virtual), Princeton University (High Meadows Environmental Institute)

2021 St. Andrews International Day of Women and Girls in Science Distinguished Public Lecture (virtual)**,** University of Virginia (virtual), University of Oldenburg (Germany, virtual), Universidad de los Andes (Colombia, virtual), Bowman's Hill Wildflower Preserve (virtual), Nuttall Ornithological Club (virtual)

2020 University of Melbourne (virtual), Yale Peabody Museum: Celebrating Women (virtual), Stanford Hopkins Marine Station (virtual), The Rockefeller University (virtual), Eastern Carolina University (virtual)

2019 Harvard University, UC Berkeley, Max Planck Institute for Ornithology (Seewiesen, Germany), University of Texas at Austin, University of Maryland, Rocky Mountain Biological Laboratory (Gothic, Colorado)

2018 Columbia University, UCLA, UC Davis, University of Arizona, Santa Fe Institute, Rutgers University, UC Riverside, University of Wisconsin-Madison, University of Sheffield (*Annual Margaret Savigear Lecture*), Max Planck Institute for Ornithology (Seewiesen, Germany), American Museum of Natural History (NYC)

2017 Duke University, University of Washington, Smithsonian Conservation Biology Institute

2016 Wissenschaftskolleg (WiKo) Institute of Advanced Studies (Berlin, Germany), Yale University, Tulane University

2015 Yale University, Stanford University, Princeton University, University of Chicago, University of Michigan, UC Santa Barbara, University of Massachusetts (Boston), Marine Biological Laboratory at Woods Hole, American Museum of Natural History (NYC)

2014 Dartmouth College, University of North Carolina-Chapel Hill, Cornell University, University of British Columbia, University of Pennsylvania, Brown University, University of New Hampshire, Shoals Marine Laboratory

2013 Marine Biological Laboratory at Woods Hole, University of Massachusetts at Dartmouth, University of Texas at Austin, Shoals Marine Laboratory, University of Chicago, Queens College CUNY, Cornell University, Boston University

2012 University of Bern (Switzerland), University of Oxford and Edward Grey Institute of Field Ornithology (UK), Natural History Museum (UK)

2011 Harvard University, Marine Biological Laboratory at Woods Hole, University of Maryland, Baltimore County, Natural History Museum (UK)

TEACHING EXPERIENCE

EEB 329 Sensory Ecology (Fall 2016, Fall 2017, Fall 2018, Fall 2019, Fall 2020, Fall 2021)
EEB 507 Recent Research in Population Biology (Fall 2018, Fall 2019)
EEB 504 Fundamental Concepts in Ecology, Evolution and Behavior (Fall 2016, Fall 2018, Fall 2020)
EEB 522 Colloquium on the Biology of Populations (seminar organizer) (2016-2017, 2017-2018, 2018-2019)
EEB Junior Tutorial on Animal Behavior (Fall 2017, Fall 2019)

SOFTWARE

EGGXTRACTOR: a Matlab-based computer tool for the analysis of egg sizes and shapes (Stoddard et al. 2017).

TETRACOLORSPACE: a Matlab-based computer tool for the analysis of reflectance spectra in avian tetrahedral color space (Stoddard & Prum 2008).

NATUREPATTERNMATCH: a computer vision tool for extracting and matching visual features (Stoddard, Kilner & Town 2014). See http://www.naturepatternmatch.org/.

EDGEDETECTOR: a low-level computer vision tool for extracting and quantifying edges in complex visual scenes (Stoddard et al. 2016).

PROFESSIONAL SERVICE

NSF reviewer:

- BIO Panelist: Wrote reviews of proposals prior to multi-day discussion, followed by the creation of panel summary reports (2017, 2020).
- Ad-hoc reviewer

Reviewer: Nature, Proceedings of the National Academy of Sciences, Nature Communications, Science Advances, Evolution, American Naturalist, Proceedings of the Royal Society B, Philosophical Transactions of the Royal Society B, Biology Letters, Biological Journal of the Linnaean Society, Interface Focus, Vision Research, Animal Behaviour, Behavioral Ecology, Behavioral Ecology and Sociobiology, Methods in Ecology and Evolution, Journal of Experimental Biology, Journal of Evolutionary Biology, Journal of Zoology, Evolutionary Ecology, PeerJ, Integrative Zoology, Journal of Heredity, Hormones and Behavior, Auk, Journal of Ornithology, Journal of Avian Biology, Avian Biology Research, Oecologia, Ostrich, Forktail, Austral Ecology

Symposium and workshop organizer:

- American Society of Naturalists Symposium Organizer: *The Evolution of Species Interactions*. Evolution Meeting, Austin, Texas, June 2016. Co-organizers: Jesse Lasky and Marjorie Weber.
- WiKo Animal Coloration workshop in Berlin, Germany, May 2016. Co-organizers: Tim Caro and Devi Stuart-Fox.

Service at meetings and for societies:

- Society for Integrative and Comparative Biology Bartholomew Award Committee (2020, 2021)
- Society for Integrative and Comparative Biology: Ecology & Evolution Faculty Mentor (2018, 2020)
- American Ornithological Society: Young Professional Award Committee (2015, 2016, 2020, 2021, 2022, 2023)
- Society for the Study of Evolution: Faculty Mentor (2020)
- North American Ornithological Conference: Faculty Mentor (2016, 2020)
- Student Conference on Conservation at AMNH: Mentor (2017)

Advisory boards:

- Yale Peabody Museum of Natural History Leadership Council (2018-present)
- Life Sciences Research Foundation Peer Review Committee (2023)

National Geographic Society: Ad-hoc reviewer

Full Member of Sigma Xi, Scientific Research Honor Society

SCIENCE OUTREACH AND SERVICE

Princeton Better for Birds Project (Princeton, New Jersey) (2022-present)

My lab recently launched this outreach and education program aimed at making Princeton's campus and the surrounding community a friendly and sustainable place for birds. Ongoing activities include: increased monitoring of campus buildings for bird collisions, advocating for bird-friendly glass, hosting a bird-themed art exhibition called BirDiversity, and planting a new pollinator garden at Stony Ford Research Station. We partner with the Princeton Birding Society, the Princeton Council on Science and Technology (CST), and the Princeton Office of Sustainability.

Princeton EEB Women in Science Partnership (EEB WiSP)

Faculty Mentor (2016-present)

Princeton Council on Science and Technology (2017-present)

Executive Council Member (2021-present)
Women in STEM panel for undergraduates (2017, 2018, 2019)
Guest speaker at the "Nature, Art, and the Subjectivity of Color" panel at the Princeton University Art Museum (2019)
Guest Lecturer in "Invention and Innovation: Intersections of Art and Science" Freshman Seminar (2018)

Princeton Birding Society

Faculty sponsor (2018-present)

American Museum of Natural History, New York City (2014-present)

Instructor for adult education class on the Animal Senses (November 2018)
Faculty mentor at the Student Conference on Conservation Science (October 2017)
Research featured in the exhibit Dinosaurs Among Us (2016)
Research featured in *Science Bulletins* video displayed in the Hall of Biodiversity (2014)

Rocky Mountain Biological Laboratory, Gothic, Colorado (2016-present)

RMBL Education program: "So You Want To Be A Hummingbird: What Every Elementary Schooler Should Know" (2022)
RMBL Education program: "Mountain Science for Middle Schoolers: Hummingbirds, Flowers and Field Research" (2021)
RMBL Education program: "Everything You Didn't Know About Hummingbirds" (2021)
Seminar for undergraduates (virtual): "Fieldwork in an Age of Uncertainty" (2020)
Seminar for research community and public: "The Visual World of Broad-tailed Hummingbirds" (2019)
RMBL Education program: "Meet the Hummingnerds" (2019)
Seminar for undergraduates: "Science communication and outreach: strategies for success" (2018)
RMBL Education Program: "Meet a Scientist: Inside the Secret Lives of Hummingbirds" (2018)
Seminar for undergraduates: "Communicating your science to the media: pros and cons" (2016)

Mountain Lake Biological Station, Pembroke, Virginia (2022-present)

Presented short talk and demonstration—"How to Study Hummingbird Color Vision in the Wild"—to a group of high school biology teachers (July 2022)

Nature & conservation talks

Hummingbird Conservation Networks (2023)
Delaware Valley Ornithological Club (2022)
Watlington Environmental Group (2022)
Nuttall Ornithological Club (2021)
Bowman's Hill Wildlife Preserve (2021)
Washington Crossing Audubon Society (2019)

Diversifying science (July 2022)

With Dr. Ling Li at Virginia Tech, we organized an event all about eggshell engineering ("Eggxtreme Bird Eggs") for the Black Engineering Excellence at Virginia Tech high school summer program.

Princeton Department of Ecology and Evolutionary Biology

Take Your Kids to Work Day (2018, 2019). Stoddard Lab members organized activities designed to introduce kids to museum specimens, ultraviolet-sensitive cameras and hidden colors in the bird world.

L'Oréal USA For Women In Science

Watch the outreach video: Interview at the Harvard Museum of Comparative Zoology

Harvard Women in Science and Engineering (2013-2016)

Mentor to graduate women in science and engineering research programs

Mentor and advisor, Harvard University, USA (2013-2016)

Advisor to two undergraduate biologists, who developed independent research projects to pursue in my lab. I applied for and received grants from Harvard University to help support their research.

Iguazu Falls Civic Center, Argentina (2015)

Presented public lecture entitled "How to Study Bird Coloration: From Feathers to Eggs" (July 2015)

Harvard Museum of Natural History (2013-2014)

Scientific instructor for three-hour "Nests! The Intriguing World of Avian Architecture" science and art seminar for adults (October 2014)

Scientific instructor for three-hour "Investigating the Science of Avian Coloration through Observational Drawing" seminar for adults (January 2014)

Instructor for three-hour "Eggs and Nests: Engineering and Evolution in the Avian World" seminar for adults (March 2013)

Monhegan Island Associates, A Non-profit Land Conservation Organization (2014)

Presented public lecture entitled "The Gulls of Appledore Island, Maine: What Watching Birds Tells Us About Our Changing World" (July 2014)

BBC News (2011-2012)

Interviewed on BBC 5 Live Radio about cuckoo egg evolution (March 2011)

Guest presenter on BBC One Show "Monster Babies" filmed at the National Museum Cardiff, Wales (June 2011)

Natural History Museum, London (2011-2012)

Guest speaker at the "Nature Live" 2011 and 2012 talk series at the Natural History Museum, London

Research featured in exhibit on "Behind the Scenes" research at the national egg collections, Natural History Museum in Tring (July 2011)

Guest scientist at "Science Uncovered" at the Natural History Museum in Tring (September 2011)

Cambridge University Museum of Zoology (2008-2012)

Year-round employee and volunteer

Helped design and run workshop on cuckoo evolution for the Young Zoologists Club

Helped organize the 2010 Cambridge University Science Festival ("Colourful Creatures")

Cambridge University Birding Society (2008-2010)

Vice President

Yale Ecology and Evolutionary Biology Undergraduate Group (YEEBUG) (2006-2008)

Founder and President

Peabody Museum of Natural History (2006-2008)

Volunteer tour guide and events coordinator

MEDIA

Climate change and biodiversity:

Watch: Climate change and hummingbirds, Preserving biodiversity

Hummingbird color vision:

Read: New York Times, National Geographic, Smithsonian Magazine, CNN, Wall Street Journal, Princeton, Jennifer Ackerman's The Bird Way, Ed Yong's An Immense World

Listen: NPR Science Friday: Hummingbirds see beyond the rainbow

Attenborough's Wonder of Eggs (2018):

I was featured in a BBC documentary with David Attenborough, which aired in the UK in April 2018 and on PBS in April 2019. **Watch:** BBC Two Natural World

Evolution of egg shape (2017)

Read: New York Times, LA Times, the Atlantic, The Times, Washington Post, Smithsonian Magazine, National Geographic, Science, Forbes, Princeton

Listen: Science Podcast, BBC World Service, NPR, NPR Newstime, Naked Scientist, Gastropod

Explore: Science Magazine infographic: Cracking the mystery of egg shape

Bird coloration:

Listen: NPR Science Friday: A bird's-eye view of color (2019); AAAS Science Update Podcast: Bird colors (2011); AAAS Science Update: Birds of a feather (2011)

Cuckoos and egg mimicry:

Listen: AAAS Science Update Podcast: Fighting counterfeit eggs (2014); CBC Radio "As It Happens": Cheating cuckoos (2011); BBC Radio Live 5: Cuckoo color mimicry as seen by birds (2011)

Watch: BBC One Show; Guest presenter for segment on cuckoo egg mimicry, filmed at the National Museum Cardiff, Wales (2011)

Women in science:

Watch: Interview at the Harvard Museum of Comparative Zoology (2013); 10 Years of L'Oréal USA For Women in Science (2013); L'Oréal International Women in Science (2015)

Interdisciplinary research:

Read: Popular Mechanics: Hummingbirds can see colors we can't (2020); Physics World: Cuckoo forgeries—a bird's-eye view (2017); Harvard Gazette: Cracking the egg: Biologist collaborates across disciplines to yield insights on structure, color (2015)