

EDUCATION

Harvard University, Cambridge, MA, USA.	Expected 2021
PhD in Evolutionary Biology	
Oxford University, Oxford, UK.	2015
MPhil in Environmental Policy	
Yale University, New Haven, CT, USA	2013
BS in Biology	

AWARDS AND GRANTS (SELECTED)

Department of Defense NDSEG Graduate Fellowship (Army Research Office)	2016-present
Ashford Fellowship , awarded to 6 Harvard graduate students across all disciplines.	2015-present
Rhodes Scholarship	2013-15
Marshall Scholarship (elected)	2013
Harvard Office for Sustainability Grant (\$5,000)	2020
Bowdoin Prize for Graduate Essay in the Natural Sciences (\$10,000)	2020

RESEARCH (BIOLOGY, APPLIED PHYSICS, & SUSTAINABILITY)

OVERVIEW AND IMPACT

- work will be featured in a forthcoming United Nations Booklet on bioinspiration for sustainable design
- published 12 papers with more than 230 citations in the scientific literature (see [Google Scholar](#))
- media coverage in the [New York Times](#), [Scientific American](#), [Nat. Geographic](#), [The Atlantic](#), and more.
- methods include optical simulations, game theory, biological data science, and field work.

REPRESENTATIVE PROJECTS

- **Super Black:** Demonstrated that birds-of-paradise and peacock spiders, have structures which absorb >99% of light. With collaborators, fabricating bio-inspired coatings for solar panels.
- **City Trees and Urban Ecology:** Assembled a dataset of over 5 million city trees from US cities with species, exact location, condition, and more. Forthcoming paper on biodiversity and equity
- **Biology of Pregnancy:** Showed that pregnancy hormones represent an arms race between maternal and fetal interests.

PAPERS (SELECTED)

- McCoy, D. E., McCoy, V. E., Mandsberg, N. K., Shneidman, A. V., Aizenberg, J., Prum, R. O., & Haig, D. (2019). Structurally assisted super black in colourful peacock spiders. *Proceedings of the Royal Society B*, 286(1902), 20190589.
- McCoy, D. E.*, Feo, T.*, Harvey, T. A., & Prum, R. O. (2018). Structural absorption by barbule microstructures of super black bird of paradise feathers. *Nature communications*, 9(1), 1.
- McCoy, D. E. and Haig, D. (2020). Embryo selection and mate choice: can ‘honest signals’ be trusted? *Trends in Ecology and Evolution*, 35(4), 308-318.
- McCoy, D. E., Schiestl, M., Neilands, P., Hassall, R., Gray, R. D., & Taylor, A. H. (2019). New Caledonian Crows Behave Optimistically after Using Tools. *Current Biology*, 29(16), 2737-2742.
- McCoy, D.E., Ågren, J.A., Kotler, J. and Weir, B. (in review at *Evolutionary Applications*). Evolutionary conflict explains health problems during pregnancy

INVITED TALKS (SELECTED)

- “Sensory perception across species: evolution and machine learning.” Google Brain Research Team meeting. (July 31, 2020). Cambridge, MA.
- “Super Black in Animals.” The 28th First Annual IgNobel Prize Ceremony & Lectures; 24/7 Speech. (2018). Cambridge, MA.
- “Color, Feathers, and the Evolution of Beauty.” Museum of Natural History, (2018) Cambridge, MA.

POLICY AND OUTREACH

POLICY EXPERIENCE (SELECTED)

- Data Scientist, CovidLoanTracker** (www.covidloantracker.com/) 2020
Visualized data, analyzed data, and designed website for crowd-sourced effort to track the government loans to >30,000 small businesses during Covid-19. Media coverage in [CNN](#), [Forbes](#), [Researcher](#), **Anaerobic Digestion for Clean Energy**. Cambridge, MA & Quapaw Nation, OK. 2019-20
With teammates, wrote a white paper on the feasibility of anaerobic digestion—using microbes to break down food waste and produce electricity and fertilizer—for the Quapaw Nation. [LINK](#).
- Harvard GSAS Environmental Action Team** (facebook.com/HarvardGrEAT) 2016-present
Co-founder and President 2016-2019, Executive Board 2020.
Mobilize graduate students to use their research skills for good and become engaged citizens. Wrote and submitted public comments to Regulations.gov on environmental issues, host advocacy sessions.
- Research Assistant, Environmental Policy**. Oxford University, UK. 2014-15
Corporate Environmental Management at Smith School of Enterprise and the Environment.

POPULAR PRESS ARTICLES (SELECTED)

- Mastroianni, A. and McCoy, D.E. (May 17, 2018) “Countries with Less Gender Equity Have More Women in STEM--Huh?” *Scientific American*.
- Edelman, N.B., Goulet, B., and McCoy, D.E. (October 27, 2017) Ecologically Critical National Monument Lands are Under Attack. *Harvard Crimson*.
- Kolb, R. and McCoy, D.E.. (August 3, 2017) “Gene-editing tool raises questions about what is ‘disease’.” *San Francisco Chronicle*.
- McCoy, D.E. (June 2, 2017). Pittsburgh isn't the city you think it is, Mr. President. *PennLive*.

TEACHING AND MENTORING

TEACHING ASSISTANTSHIPS (SELECTED)

- Harvard Law School**
Climate Solutions Living Lab (Professor Wendy Jacobs) Spring 2020
- Harvard University (Faculty of Arts and Sciences)**
GenEd 1084: The First Nine Months (Professor David Haig) Spring 2020
OEB 101: Biology of Mammals (Professor Jonathan Losos) Fall 2017
- University of Oxford, Said Business School**
Corporate Environmental Management (Professors Alex Money and Gordon Clark) Spring 2015

MENTORING EXPERIENCE (SELECTED)

- Harvard Resident Advisor for Undergraduates** (Adams House Tutor) 2016-present
- NSF REU Advisor**, Organismic and Evolutionary Biology (Harvard University) 2020
- FDR Foundation Summer Research Advisor** (Harvard University) 2020
Fellowship program for students of highest financial need.

SKILLS

- Computer Science: familiar with Python and R; some experience with MATLAB
- Hobbies: a cappella singing, running (top ten all-time at Yale in 60m hurdles), bookbinding
- Languages: French (basic), American Sign Language (basic), Egyptian hieroglyphics (intermediate)

RAP MUSIC DISCOGRAPHY

- Backup Dancer**. La Perla, Puerto Rico, USA. 2012
Uncredited appearance as backup dancer in music video by Puerto Rican reggaeton artist Audi.