

## EDUCATION

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

## AWARDS AND GRANTS (SELECTED)

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

## RESEARCH (BIOLOGY, APPLIED PHYSICS, & SUSTAINABILITY)

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### 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:** Found that an arms race between maternal / fetal interests shaped hormones.

### 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

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### POLICY EXPERIENCE (SELECTED)

- Data Scientist, CovidLoanTracker** ([www.covidloantracker.com/](http://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](https://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.
- 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

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### 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

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- 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

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