

## Kelsey N. Lucas

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### Education

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2019            **Ph.D.**, Organismic and Evolutionary Biology, Harvard University, Cambridge, MA  
2017            **M.A.**, Organismic and Evolutionary Biology, Harvard University, Cambridge, MA  
2012            **B.S.**, *Summa cum laude*, Biology (Minor: Mathematics), Roger Williams University,  
Bristol, RI

### Research Experience

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2019-Present    **Postdoctoral Research Fellow**, University of Michigan, Ann Arbor, MI. Advisor: Karen Alofs  
2013-2019       **PhD Candidate & NSF Graduate Research Fellow**, Harvard University, Cambridge, MA. Advisors: Peter Girguis (Harvard), Eric Tytell (Tufts)  
2013            **Visiting Researcher**, California Institute of Technology, Pasadena, CA. Advisor: John Dabiri  
2010-2013       **Undergraduate Researcher**, Roger Williams University, Bristol, RI & Marine Biological Laboratory, Woods Hole, MA. Advisor: Sean Colin  
2009-2012       **Laboratory Technician (Rhyne Lab)**, Roger Williams University, Bristol, RI  
2007-2008       **Student Research Assistant**, Project Oceanology, Groton, CT

### Grants and Fellowships

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2020-2022       **Postdoctoral Research Fellowship in Biology**, National Science Foundation (NSF)  
2020            **Travel Award**, University of Michigan Postdoctoral Association  
2014-2019       **Graduate Research Fellowship**, NSF  
2016-2018       **Learning Lab Fellowship**, Derek Bok Center for Teaching & Learning  
2013, 2016       **Robert A. Chapman Memorial Award**, Harvard University  
2013-2016       **James Mill Peirce Fellowship**, Harvard University  
2012            **Summer Undergraduate Research Fellowship**, NSF (through EPSCoR RI)  
2011, 2012       **Provost Fund for Student Research Award**, Roger Williams University

### Publications

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Costello JH, Colin SP, Dabiri JO, Gemmell BJ, **Lucas KN**, and Sutherland KR. (Early access) Jellyfish swimming: jellyfish as models for vehicle design. *Annu Rev Mar Sci* [\[Link\]](#)  
Dabiri JO, Colin SP, Gemmell BJ, **Lucas KN**, Leftwich MC, and Costello JH. (2020) Jellyfish and fish solve the challenges of turning similarly to achieve high maneuverability. *Fluids* 5(3): 106 [\[Link\]](#)  
**Lucas KN**, Lauder GV, and Tytell ED. (2020) Airfoil-like mechanics generate thrust on the anterior body of swimming fishes. *Proc Natl Acad Sci.* 117(19): 10585–10592 [\[Link\]](#)

- Jaspers C, Costello JH, Sutherland K, Gemmell B, **Lucas KN**, Tackett J, Dodge K, and Colin SP. (2018) Resilience in moving water: Effects of turbulence on the predatory impact of the lobate ctenophore *Mnemiopsis leidyi*. *Limnol Oceanogr*. 63: 445–458 [[Link](#)]
- Lucas KN**, Dabiri JO, and Lauder GV. (2017) A pressure-based force and torque prediction technique for the study of fish-like swimming. *PLoS ONE*. 12(12): e0189225 [[Link](#)]
- Rosic MLN, Thornycroft PJM, Feilich KL, **Lucas KN**, and Lauder GV. (2017) Performance variation due to stiffness in a tuna-inspired flexible foil model. *Bioinspir Biomimetics*. 12: 016011 [[Link](#)]
- Lucas KN**, Thornycroft PJM, Gemmell BJ, Colin SP, Costello JH, and Lauder GV. (2015) Effects of non-uniform stiffness on swimming performance of a passively-flexing, fish-like foil model. *Bioinspir Biomimetics*. 10: 056019 [[Link](#)]
- Lucas KN**, Johnson N, Beaulieu WT, Cathcart E, Tirrell G, Colin SP, Gemmell BJ, Dabiri JO, and Costello JH. (2014) Bending rules for animal propulsion. *Nat Commun*. 5:3293 [[Link](#)]
- Lucas K**, Colin SP, Costello JH, Katija K, and Klos E. (2013) Fluid interactions that enable stealth predation by the upstream foraging hydromedusae *Craspedacusta sowerbyi*. *Biol Bull*. 225: 60-70 [[Link](#)]

#### Presentations

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Titles and author lists available on my extended CV at: <https://www.kelseynlucas.com/about.html>

#### Invited Seminars and Addresses:

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|------|--|
| 2017 | School of Biology Seminar, Georgia Tech, Atlanta, GA                                   |
| 2017 | Marine & Natural Sciences Departmental Seminar, Roger Williams University, Bristol, RI |
| 2014 | Alumni Address, NSF ESPCoR SURF Conference, University of Rhode Island, Kingston, RI   |

#### Contributed Papers:

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|------|---|
| 2020 | American Fisheries Society, Virtual Meeting (due to COVID-19)                       |
| 2020 | Ocean Sciences Meeting, San Diego, CA   |
| 2020 | Society for Integrative and Comparative Biology (SICB), Austin, TX (multiple)       |
| 2019 | SICB, Tampa, FL   |
| 2018 | American Physical Society Division of Fluid Dynamics (APS DFD) Meeting, Atlanta, GA |
| 2018 | Ocean Sciences Meeting, Portland, OR (multiple)                                     |
| 2018 | SICB, San Francisco, CA   |
| 2017 | SICB, New Orleans, LA   |
| 2016 | SICB, Portland, OR  |
| 2015 | APS DFD, Boston, MA   |
| 2015 | SICB, West Palm Beach, FL   |
| 2014 | APS DFD, San Francisco, CA  |
| 2013 | SICB, San Francisco, CA   |
| 2012 | Ocean Sciences Meeting, Salt Lake City, UT (multiple)                               |

#### Teaching Experience

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#### Instructor/Co-instructor:

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| 2016-2018 | <b>Marine Biology</b> , Volunteer Training, Harvard Museum of Natural History (HMNH) |
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2018 **Communicating Science**, Workshop, Bok Center for Teaching & Learning  
2017 **Making a Concept Video**, Workshop, Bok Center  
2017 **Teaching with Objects**, Workshop, Bok Center  
2015 **Methods in Aquatic Field Ecology**, Workshop, Harvard Life Sciences Outreach  
2014 **Marine Invertebrate Zoology**, Volunteer Training, HMNH

**Teaching Fellow/Lab Instructor:**

2016 **Biology of Fishes**, Harvard University (1 semester)  
2015 **Human Anatomy & Physiology**, Harvard Extension School (2 semesters)  
2014 **Evolutionary Human Physiology & Anatomy**, Harvard University (1 semester)

**Guest Lecturer:**

2020 **Predator-Prey Interactions**, Ecology of Fishes (Karen Alofs), School for Environment and Sustainability, University of Michigan  
2019 **Water Quality Factors for Stream Fishes**, Stream Restoration (Aline Cotel), Civil and Environmental Engineering, University of Michigan

**Non-Traditional Teaching:**

2013-2019 **Topics in Biology & Evolution**, Gallery-Based Informal Educator, HMNH  
2016-2018 **Learning Lab Graduate Fellow**, Multimedia-Based Coursework Designer, Bok Center  
2015 **MCB80x: Fundamentals of Neuroscience**, Online Course Content Developer, HarvardX  
[\[Link\]](#)

*Additional Professional Experience*

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2019-present **Diversity, Equity, and Inclusion (DEI) Certification**, Center for Research in Learning and Teaching, University of Michigan, Ann Arbor, MI (in progress)  
2017-present **Freelance Science Writer**, Massive ([articles](#))  
2015-present **High School STEM Lesson Developer**, BiteScis ([lessons](#))  
2015 **ComSciCon participant**

*Affiliations, Service, & Outreach*

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**Memberships:** Society for Integrative and Comparative Biology, Association for the Sciences of Limnology and Oceanography, American Fisheries Society

**Public Outreach:**

2016-present **Freelance Science Writing**, Massive (2017-present), Science in the News (2016)  
2013-present **Museum-Based Education**, University of Michigan & Harvard Museums of Natural History

**Commitment to Diversity in STEM Fields:**

2019 **Doris Duke Conservation Scholars Program Mentor**, University of Michigan  
8-week summer research program for students from underrepresented backgrounds  
(2020 mentoring cancelled due to COVID-19)  
2020 **New Horizons in Conservation Poster Judge (UG)**  
Conference in support of undergraduates from backgrounds underrepresented in conservation (cancelled due to COVID-19)

**Service to K-12 Students & Teachers:**

2015-present **Lesson Plan Developer (HS level)**, BiteScis

2015 **Engaging Teachers in Ecology-Based Investigations** (Professional Development Workshop), Harvard Life Sciences Outreach, Concord Field Station, Bedford, MA

2010-2015 **Lab Ambassador (K-12)**, Harvard University, Caltech, & Roger Williams University  
Hosted lab tours and discussed the daily life of a scientist with local K-12 students