

# Katherine A. Corn

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## Education

2016 – pres. **Ph.D. Evolution & Ecology**, University of California, Davis, CA 95616

Major professor: Dr. Peter C. Wainwright

Expected graduation date: June 2021

2016 **B.S. Biological Sciences**, Cornell University, Ithaca, NY 14850

*cum laude*, with Distinction in Research

Honors thesis advisor: Dr. William E. Bemis

2013 **A.A.**, Bard College at Simon's Rock, Great Barrington, MA 01230

## Publications

Price, S.A., O. Larouche, S.T. Friedman, **K.A. Corn**, P.C. Wainwright, C.M. Martinez. *in press*. A CURE for a major challenge in phenomics: a practical guide to implementing a quantitative specimen-based undergraduate research experience. *Integrative Organismal Biology*, doi: 10.1093/iob/obaa004.

Price, S.A., S.T. Friedman, **K.A. Corn**, C.M. Martinez, O. Larouche, P.C. Wainwright. 2019. Building a body shape morphospace of teleostean fishes. *Integrative and Comparative Biology*, 59(3), 716-730, doi: 10.1093/icb/icz115.

Farina, S.C., M.L. Knope, **K.A. Corn**, A.P. Summers, W.E. Bemis. 2019. Functional coupling in the evolution of suction feeding and gill ventilation of sculpins (Perciformes: Cottoidei). *Integrative and Comparative Biology*, 59(2), 394-409, doi: 10.1093/icb/icz022.

**Corn, K.A.**, S.C. Farina, A.P. Summers, A.C. Gibb. 2018. Effects of organism and substrate size on burial mechanics of English sole, *Parophrys vetulus*. *Journal of Experimental Biology*, 221(18), doi: 10.1242/jeb.176131.

**Corn, K.A.**, S.C. Farina, J. Brash, A.P. Summers. 2016. Modeling tooth-prey interactions in sharks - the importance of dynamic testing. *Royal Society Open Science* 3: 160141, doi: 10.1098/rsos.160141.

## Manuscripts in progress

**Corn, K.A.**, C.M. Martinez, E.D. Burress, P.C. Wainwright. A trade-off shapes rates of evolution of fish feeding mechanisms. *in review* at *Evolution*.

Friedman, S.T., S.A. Price, **K.A. Corn**, O. Larouche, C.M. Martinez, P.C. Wainwright. Body shape diversification along the benthic-pelagic axis in marine fishes. *in revision* for *Proceedings of the Royal Society B: Biological Sciences*.

Larouche, O., B. Benton, B., **K.A. Corn**, S.T. Friedman, D. Gross, M. Iwan, B. Kessler, C.M. Martinez, S. Rodriguez, H. Whelpley, P.C. Wainwright, S.A. Price. Reef-associated fishes have more maneuverable body shapes at a macroevolutionary scale. *in review* at *Coral Reefs*.

### Fellowships, Grants, & Awards

- 2020            **David and Marvalee Wake Award:** Best Student Oral Presentation in the Division of Phylogenetics and Comparative Biology at the Society for Integrative and Comparative Biology Annual Meeting
- 2019 – 2020   **\$11,000:** Peggy Huntington, Susan Oberndorf, Kiki Pescatello, & Kaye Woods Scholar; Achievement Rewards for College Scientists Foundation
- 2019            **\$1,000:** UC Davis Center for Population Biology Travel Award to attend the *Evolutionary Quantitative Genetics Workshop* at Friday Harbor Labs
- 2019            **\$500:** UC Davis Graduate Student Association Travel Award
- 2018            **\$1,300:** UC Davis Center for Population Biology Research Award
- 2018            **Honorable Mention,** National Science Foundation Graduate Research Fellowship
- 2016            **\$500:** Cornell University Office of Undergraduate Biology Travel Award
- 2015            **Sigma Xi Best Undergraduate Poster Prize** at the 40<sup>th</sup> Annual Cornell University Department of Ecology and Evolutionary Biology Graduate Symposium.
- 2015            **\$4,000:** NSF Research Experience for Undergraduates (REU) internship with Dr. Adam Summers at Friday Harbor Laboratories
- 2015            **\$1,000:** Dextra Undergraduate Research Endowment Fund
- 2015            **\$2,000:** Brooks and Suzanne Ragen Endowed Scholarship (*declined*)
- 2015            **\$500:** Cornell University Office of Undergraduate Biology Travel Award
- 2014            **\$1,000:** Stephen and Ruth Wainwright Endowed Fellowship to attend *Functional Morphology and Ecology of Fishes* at Friday Harbor Labs.
- 2011-2013     **\$50,000:** Bard College at Simon's Rock, Acceleration to Excellence Program Scholar

## Teaching Experience

- 2020 EVE 12: *Life in the Sea*, UC Davis.  
Lead Graduate Teaching Assistant, 1 quarter
- 2019 EVE 105: *Phylogenetic Analysis of Vertebrate Structure*, UC Davis.  
Lead Graduate Teaching Assistant, 1 quarter  
**Overall TA Evaluation: 4.9/5.0**, n = 24 students
- 2017 – 2018 EVE 198: *Biodiversity of Fishes: Methods and Experimental Design in Macroevolution*, UC Davis. **Course Instructor**, 3 quarters
- 2017 – 2018 BIS 2B: *Introduction to Biological Sciences: Principles of Ecology and Evolution*, UC Davis. Graduate Teaching Assistant, 2 quarters  
**Overall TA Evaluation: 4.9/5.0**, n = 98 students
- 2016 BioEE 2740: *Vertebrates: Structure, Function, & Evolution*, Cornell University.  
Undergraduate Teaching Assistant, 1 semester
- 2015 BioEE 1540: *Introduction to Oceanography*, Cornell University.  
Undergraduate Teaching Assistant, 1 semester

## Invited Seminars

- 2019 **Corn, K.A.** Effects of coral reefs on evolution of fish feeding mechanisms.  
University of California, Davis, Center for Population Biology. Davis, CA.
- 2017 **Corn, K.A.** From shark saws to fish jaws: Using biomechanics to explore evolution.  
Sonoma State University, Biology Department. Petaluma, CA.

## Presentations (listed: presenting author only)

- 2020 **Corn, K.A.**, C.M. Martinez, E.D. Burress, P.C. Wainwright. High rates of evolution of cranial mobility are characteristic of suction feeding. Society for Integrative and Comparative Biology. January 3-7, Austin, TX. Oral presentation.  
**Won: David and Marvalee Wake Award** for Best Student Oral Presentation in the Division of Phylogenetics and Comparative Biology
- 2019 **Corn, K.A.**, C.M. Martinez, P.C. Wainwright. Feeding mode and prey type affect cranial mobility in coral reef fishes. Society for Integrative and Comparative Biology. January 3-7, Tampa, FL. Oral presentation.
- 2017 **Corn, K.A.**, W.E. Bemis. Tooth Microstructure, Development, and Replacement in the Sharpnose Sevengill Shark, *Heptranchias perlo*. Society for Integrative and Comparative Biology. January 4-8, New Orleans, LA. Oral presentation.

- 2016 **Corn, K.A.**, S.C. Farina, A.C. Gibb, A.P. Summers. Scaling of Burial Mechanics in *Parophrys vetulus*, the English Sole. International Congress of Vertebrate Morphology. June 29 - July 3, Washington, DC. Poster.
- 2016 **Corn, K.A.**, S.C. Farina, A.C. Gibb, A.P. Summers. Scaling of Burial Mechanics in *Parophrys vetulus*, the English Sole. Society for Integrative and Comparative Biology. January 3-7, Portland, OR. Oral Presentation.
- 2015 **Corn, K.A.**, S.C. Farina, J. Brash, A.P. Summers. Jawzall: Effects of Shark Tooth Morphology and Repeated Use on Cutting. *Presented at:*  
40<sup>th</sup> Annual Cornell University Department of Ecology and Evolutionary Biology Graduate Symposium. December 8, Ithaca, NY. Poster.  
**Won: Sigma Xi Undergraduate Poster Prize**  
Cornell Undergraduate Research Board Spring Forum. April 22, Ithaca, NY. Poster.  
Cornell Institute of Biological Engineering BioExpo. March 18, Ithaca, NY. Poster.  
Society for Integrative and Comparative Biology. January 3-7, West Palm Beach, FL. Poster.

### Service & Outreach

- 2020 – pres. Logistics Co-coordinator, Ecology & Evolution Graduate School Preview Day, by the Population Biology Graduate Group Diversity Committee
- 2020 *STEM Squad* Fish Dissection Activity Lead at Winters Middle School
- 2019 – 2020 Women in Life Sciences at Davis Administrative Team
- 2019 – 2020 Population Biology Graduate Group Admissions Committee graduate student representative
- 2019 – 2020 Population Biology Graduate Group Curriculum Committee graduate student representative
- 2019 Social Media Ambassador for symposium: “Multifunctional structures and multistructural functions: Functional coupling and integration in the evolution of biomechanical systems” at the annual meeting of the Society for Integrative and Comparative Biology
- 2017 – pres. Station Leader and Presenter – UC Davis Annual Picnic Day “Explore the Tree of Life” exhibit  
**Won: Best “Secrets of Nature” Exhibit Award (2017)**  
**Won: Best “Planet Earth” Exhibit Award (2019)**
- 2017 – pres. Exhibitor – UC Davis Annual Museum Biodiversity Day, fish exhibit
- 2017 – 2018 UC Davis Academic Senate Distinguished Teaching Awards Committee Graduate Student Association Representative

- 2017 – 2018 Population Biology Graduate Group Representative – UC Davis Graduate Student Association
- 2016 – pres. Founding member, Population Biology Student Diversity Committee  
*\*Recruitment & University connections* subcommittees  
**\*Coordinator: Winter 2019**
- 2015 – 2016 Facilitator – Expanding Your Horizons STEM Conference for 7-9th grade girls – Marine Biology Workshop
- 2015 Peer Mentor – Cornell Undergraduate Research Board mentorship program
- 2015 Presenter – Cornell Office of Undergraduate Biology research outreach
- 2015 Interview with Science Magazine. “[A chainsaw spiked with shark teeth.](#)”
- 2015 Interview with Popular Science. “[Watch A Power Saw Made With Shark Teeth Slice Through Salmon.](#)”

### Research Experience

- 2017 – 2018 University of California, Davis at Smithsonian Institution – Macroevolution of body shape in fishes
- 2016 – pres. University of California, Davis – PhD research: Effects of coral reefs on evolution of fish feeding mechanisms
- 2015 – 2016 Cornell University – Undergraduate honors thesis: Microstructure and histology of Sixgill and Sevengill shark teeth
- 2015 NSF-REU, Friday Harbor Laboratories – Biomechanics of flatfish burial
- 2015 Cornell University – Evolutionary morphology of sculpin cranial anatomy
- 2014 Friday Harbor Laboratories – Shark tooth cutting ability
- 2013 Bard College at Simon’s Rock Biology internship – Fish ecology, molecular biology

### Reviews

- Integrative and Comparative Biology (1)
- Journal of Fish Biology (2)

### Professional Affiliations

- 2019 – pres. American Society of Naturalists
- 2016 – pres. International Society of Vertebrate Morphology
- 2014 – pres. Society for Integrative and Comparative Biology
- 2016 – pres. PADI Divemaster