Science CV

Kendra Kemp

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EDUCATION

Swarthmore College | Swarthmore, PA **May 2022**
B.A. with a major in Biology and minor in Psychology | *Cumulative GPA*: 3.4

HONORS and AWARDS

- *NSF REU / Blinks / BEACON Intern*, **Friday Harbor Laboratories, University of Washington** (**Summer 2021)**
- Swarthmore Meinkoth Field Funds for summer research in marine biology and biomechanics (**Summer 2020)**
- Induction in Sigma Xi Honors Research Society (**Spring 2020**)
- Howard Hughes Medical Institute Grant to support summer research (**Summer 2019)**
- National Merit Scholarship (**Spring 2019)**

PUBLICATIONS and PRESENTATIONS

Poster **January 2022**
Kemp, K.A. & Hardy, E.R. Sediment properties and the burrowing abilities of two species of lugworm in False Bay, WA. The Society for Integrative and Comparative Biology, San Francisco, CA. (Also published in Friday Harbor Laboratories Library, University of Washington, 2020, presented at Friday Harbor Laboratories, 2019, and presented as a poster at the Sigma Xi Poster Session, Swarthmore College, 2020)

Poster **July 2021**
Srinivasan, U. & Kemp, K. The role of executive function in children's language comprehension and production. 42nd Annual Meeting of the Jean Piaget Society, Toronto, Canada. (Also presented as a poster at the Sigma Xi Poster Session, Swarthmore College, 2019)

RESEARCH EXPERIENCE

Burrowing and Sediment Mechanics **May – August 2019**
Friday Harbor Laboratories, University of Washington | Friday Harbor, WA
REU conducted with Dr. Ellen Hardy

- Applied new laboratory findings about burrowing techniques to understand animal distribution in the field
- Examined relationships between material properties and grain size composition of sediment, distribution of *Abarenicola*, and worm burrowing success
- Collaboratively designed experiment, collected data in the field and laboratory, and carried out data analysis
- Designed new research technique to test material properties of sediment in the field
- Findings suggest each species lives in sediment with distinct material properties and grain size distributions, and burrowing abilities may limit the distribution of one species

Biomechanics Project on Effect of Light on *Cassiopea* Behavior **March – May 2019**
Department of Biology, Swarthmore College, Swarthmore, PA
Independent Research, advised by Dr. Ellen Hardy

- Measured changes in pulsating rate of the upside-down jellyfish *Cassiopea* at different lights and temperatures to examine the function of bell movement, incorporating published models of fluid movement around *Cassiopea*
- Worked collaboratively with an engineering student to design experiment, carry out research, and analyze and interpret results
- Findings suggest that pulsating increases with higher light and temperature, possibly removing toxic byproducts of photosynthesis, and that flow patterns produced at different pulsating rates may correspond to distinct functions
- Research for double-credit honors seminar in biomechanics that culminated in a paper and presentation for the class

RELEVANT COURSE and LAB EXPERIENCE

Biomechanics – Swarthmore College **January - May 2022**

- Learned engineering basics and application to biological questions
- Became familiar with relevant instrumentation including tensometer, flow tank, and methods of measuring flow

Evolution – Swarthmore College **September - December 2021**

- Designed three experiments expanding on class exercises: Examining evolution in bacterial strains through antibacterial resistance, creating molecular and morphological phylogenies, and examining speciation through pre- and postzygotic isolation using behavioral measures

Developmental Biology – Swarthmore College **January - May 2021**

- Dissected chick embryos throughout development, which required precise motor control and an understanding of developmental stages; examined and manipulated development of sea urchin and zebra fish embryos

Invertebrate Biology – Swarthmore College **September - December 2020**

- Focused on examinations of functional morphology in fossils and living organisms
- Supplemented morphological examinations in the laboratory with field observations of species

Cell Biology – Swarthmore College **January - May 2020**

Learned a variety of lab techniques, including:

- SDS-PAGE and Western blot
- PCR
- Agarose gel electrophoresis
- Staining and confocal analysis

Organic Chemistry and General Chemistry – Swarthmore College **January - May 2019, 2020**

Learned a variety of lab techniques, including:

- NMR/IR Spectroscopy
- Chromatography: Column, Thin Layer, Gas
- UV Spectrophotometry
- Crystallization
- Extraction
- Melting/Boiling Point Identification

Relevant Coursework in Math and Physics

- Earned through AP classes: 1 semester Physics (mechanical), 1.5 semesters calculus (AB), 1 semester statistics
- **Data Analysis and Visualization, Spring 2020,** statistical modeling of relationships and structure in data

LEADERSHIP and ADDITIONAL EXPERIENCE

Writing Associates Program, *Writing Associate (peer writing tutor)* – Swarthmore College **Sept. 2020 – Present**

- Worked with peers in conferences to improve writing, crafting constructive written and oral feedback
- Critically examined aspects of ethical and effective peer tutoring in full credit, semester-long training course
- Developed listening skills to personalize conferences and help peers organize and articulate their thoughts
- Helped students with clarity of writing from argumentation to grammar
- During weekly 2.5 or 5 hour shifts, held half-hour conferences with students from across the disciplines
- Conferenced with 6-12 students from a single course repeatedly throughout each semester, communicating and coordinating with faculty to scaffold student learning

Outreach Coordinator – Swarthmore College **September 2019 – Present**

- Oversaw Writing Center operation, helped make policy decisions, and trained and supported Writing Associates
- Organized service projects through a program for high school students; worked individually and in a classroom on writing and college preparation
- Acted as liaison between leadership team and Writing Associates and campus community
- Collaborated with leadership team to organize events for campus including workshops, speakers, and panels