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Innovations Grant Report: SOAR 2019

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The Summer Opportunities in Anatomy Research (SOAR) program is 10-week internship program that offers hands-on experiences in anatomical research, education, and outreach to undergraduate students. SOAR specifically targets undergraduate populations that do not share a campus with a graduate anatomy program or have similar opportunities at their home institutions. The mission of SOAR is to recruit the next generation of anatomists from diverse and underrepresented groups, with a focus on retaining those students through individual mentorship and early career preparation.

“I learned a lot about myself and have gained clarity on my career path,” said intern Janessa Bushman. “I am very grateful that I was able to network and gain mentors that are willing to assist wherever my path may lead.”

The 2019 SOAR program ran from May 15-July 19 and culminated in research poster presentations by SOAR interns at a campus-wide research appreciation day. The 2019 and 2020 SOAR programs are funded by the AAA’s Innovations Program. The SOAR faculty and students wish to express their sincere appreciation for this support, and the association’s commitment to diversity and inclusion within the anatomical sciences.

The application for the 2020 SOAR program will be open January 15 – March 1, 2020, and the program will run May 13 – July 17.

Meet the SOAR Interns

The 2019 applicant pool of 87 was narrowed down to a selection of finalists (20% of total applicants) based on their indicated interest in a research-based graduate program and the anatomical sciences. SOAR is specifically designed as a pre-graduate school program and includes workshops on selecting and applying to graduate school, careers in the anatomical

sciences, etc. For non-finalist students not interested in research-based graduate programs, we directed them toward other pre-medical/allied health sciences programs.



Jenessa Bushman is an undergraduate nursing student at Salt Lake Community College in Utah (anticipated graduation date: Spring 2021). Jenessa is a first-generation college student, and is currently applying to graduate programs in nursing and serving as a gross anatomy teaching assistant and prosector.



Amber Cooper is an undergraduate biological anthropology student at the University of Arkansas in Fayetteville (anticipated graduate date: Spring 2022). Amber is a first-generation college student, and is currently a research assistant in the laboratory of Dr. Claire Terhune at her home institution. She is interested in pursuing doctoral-level research in human evolutionary anatomy. Amber's experience in SOAR greatly improved her self-confidence. She writes that her most valuable experience in the program was gaining the "ability to ask questions without fear of feeling stupid."



Holly LaRocque is an undergraduate biology student at Humboldt State University in California (anticipated graduation date: Fall 2021). Holly is a first-generation college student and is a non-traditional student with delayed postsecondary enrollment. She is completing a year-long research practicum focused on brain cancer at her home institution, and is excited to apply the quantitative histology skills she learned as a SOAR intern. Holly is interested in graduate training opportunities that will allow her to combine her passion for teaching anatomy with research in neurophysiology.

The 2019 interns will submit the following abstracts for the AAA Annual Meeting at Experimental Biology 2020.

1. **Bushman J**, Maddux SD, Menegaz RA. 2019. **The Effects of Diet on Hard Palate Morphology in Humans**. Federation of American Societies for Experimental Biology (FASEB) Journal 34(S1), in preparation.
2. **Cooper A** and Maddux SD. 2019. **Human Adaptation to Equatorial Climate: a Comparison of West African and Papua New Guinea Nasal Morphology**. Federation of American Societies for Experimental Biology (FASEB) Journal 34(S1), in preparation.
3. **LaRocque HL**, Rossiter JA, Menegaz RA. 2019. **Dietary Effects on Fiber Type Plasticity in the Masseter Muscle**. Federation of American Societies for Experimental Biology (FASEB) Journal 34(S1), in preparation.

SOAR Activities

In addition to completing mentor-guided research projects, the SOAR program included the following activities, among others.

- A seminar series in biomedical sciences research hosted by the UNTHSC Center for Diversity and International Programming (CDIP).
- A trip to Texas A&M Health Science Center in Dallas, hosted by AAA members Drs. Shaun Logan and Matthew Kesterke. The SOAR interns attended a neuroscience lecture by Dr. Logan, toured the anatomy facilities, and discussed careers in the anatomical sciences.
- A tour of the UNTHSC Human Vascular Physiology lab, where Dr. Steven Romero and lab members gave demonstrations of the research techniques used to study physiology in human volunteers.
- The Texas Academy for the Biomedical Sciences (TABS) Summer Bridge Program, a 4-day program for new 9th grade students at the TABS high school. SOAR and UNTHSC students led workshops in gross anatomy, forensic osteology, a neuromuscular reflex clinic, a “scrub-in” clinic teaching aseptic technique, and a student-run panel on careers in the biomedical sciences.
- Workshops in scientific communication, including lightning talks on their research projects and practice presentations on the research posters for the AAA Annual Meeting.
- Several professional development activities, including seminars on Ph.D. careers and careers in anatomy, as well as workshops on preparing a curriculum vitae/resume and applying to graduate school.
- Gross anatomy workshops, including a 4-day prosection-based workshop on functional anatomy of the upper limbs taught by Dr. Scott Maddux for pre-matriculation UNTHSC students and a series of half-day prosection-based anatomy labs taught by Center for Anatomical Sciences faculty on head and neck anatomy, cardiopulmonary anatomy, and neuroanatomy.





As a result of the 2019 SOAR program, interns' confidence increased markedly across seven measurements, most notably in their abilities to design a research poster and prepare an application to graduate school.

"I am much more prepared for applying to graduate programs with the guidance I received in the SOAR program," LaRocque said.