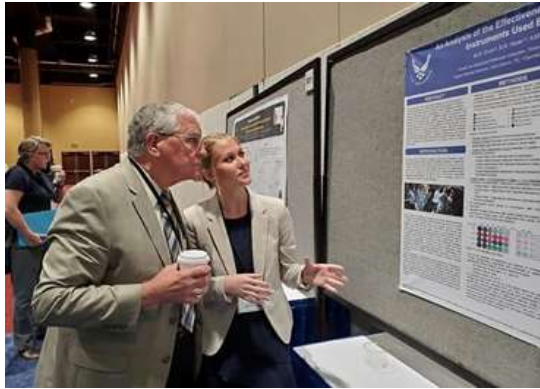


59MDW Science & Technology's 2019 Summer STEM Volunteer & Shadow Program

This summer, the 59MDW Science & Technology office, in support of Science, Technology, Engineering, and Mathematics (STEM) activities, had the pleasure of hosting a volunteer, Meredith Ervin, and a student provider shadow, Erin Agahan. Both participants enjoyed immersion into various physician and allied health shadowing opportunities. Additionally, volunteers are exposed to a variety of research activities including basic understanding of infection control, HIPAA and privacy protection, clinical laboratory techniques, surgical tool preparation and sterility, and were exposed to simulation and preclinical environments to observe and train on appropriate interventions in trauma. To ensure a well-rounded experience in research, participating volunteers are offered the experience to create and co-present a poster at the Military Health System Research Symposium (MHSRS), the Department of Defense's premier scientific meeting. MHSRS provides a venue for presenting new scientific knowledge resulting from military-unique research and development and is the only military or civilian meeting that focuses specifically on the unique medical needs of the Warfighter.

This year's MHSRS poster presenter selected was Ms. Meredith Ervin (age 16), a talented and dedicated high school senior, who participated in this year's WHASC volunteer program. The daughter of a military surgeon, Ms. Ervin plans to follow in her father's footsteps and pursue her education at Duke University to prepare her for medical school and subsequently a residency in trauma surgery.



Throughout her volunteer experience, Ms. Ervin sustained a heightened level of excitement and eagerness. With direct mentorship and training, she successfully assisted the Center for Advanced Molecular and Detection (CAMD) with a surgical instrument decontamination protocol that was in

progress which emphasized microbiology as the core scientific principle. Ms. Ervin actively participated in every aspect of the protocol consisting of testing various disinfectants aimed at reducing the bio-burden of surgical instruments used in austere battlefield environments. Additionally, she observed and was trained in assisting with the recreation of contaminated surgical instruments that could be found in the battlefield as part of the preclinical portion of the study. The CAMD evaluated the



efficacy of various disinfecting products using a myriad of laboratory methods. Ms. Ervin was mentored, trained, and mastered a multitude of laboratory procedures and methods from donning appropriate personal protective equipment (PPE), proper aseptic technique, performing serial dilutions, plate streaking, counting colony forming units (CFUs) as well as data analysis alongside CAMD staff. Additionally, she became proficient in operating a variety of laboratory equipment such as automated multichannel pipettes, anaerobic chambers, vortexes, incubators and biological safety cabinets.

Most notably, Ms. Ervin’s effort culminated in the co-presentation of a research poster at the Military Health Science Research Symposium (MHSRS) in August 2019. The poster presentation offered her an opportunity to successfully network with many high profile individuals in the military, like Vice Admiral Raquel C. Bono, and prestigious member of the scientific community. Ms. Ervin was able to experience firsthand the positive impact of research on military medical health. Her “can do” attitude was impressive to the 59MDW Science and Technology leadership and the CAMD team. The success of this volunteer opportunity provides evidence that continued mentorship in STEM activities allows for early development of warrior medics of the future. The 59MDW/ST’s goal is to continue to promote more STEM collaborations both internally and externally to grow military medical leaders and encourage young minds in their pursuit of STEM-related degrees.



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