

STEM Scholars Summer Field Site Experience Tyndall Air Force Base

Participating School Districts



Panhandle Area Educational Consortium

Patrick L. McDaniel, Executive Director

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Through the Panhandle Area Educational Consortium's *FloridaLearns STEM Scholars* Project STEM Talent Development Program, talented and gifted high school juniors and seniors from small and rural districts across Florida had the opportunity to take part in locally-available Field Site/Workplace Experiences this summer. These experiences, made possible through partnerships with leaders in STEM (Science, Technology Engineering, and Math), such as industries, local businesses, agencies, the military, and higher education faculty, gave students an opportunity to actively engage in doing "real" STEM work.

STEM Scholars from Port St. Joe and Wewahitchka took part in one of two 8-day experiences at the Tyndall Air Force Base, Air Force Civil Engineer Center. The experiences were coordinated by Joe Wander, Ph.D., and led by researchers Robert Diltz, Ph.D., and Jeffery Owens, Ph.D. Teacher leaders were Scott Lamberson and Pam Watford from Port St. Joe High School. Upon arrival, the junior scientists were given one of two missions under a common theme, "Protect Your Soldier". The mission for students Bailey Amison and Keith Wadleigh was to develop an anaerobic digester. This is a reactor that contains two populations of bacteria that can make methane, which can be used as a fuel source, in the absence of oxygen. Port St. Joe High School student Dallas Bird and Wewahitchka High School student Cordale Green were tasked with creating a master fabric sample that could be used to protect soldiers from harmful microorganisms they might encounter in the field.

While at Tyndall, students gained insights into potential STEM career options and a greater understanding of the relevance of the rigorous math and science courses they are taking while in high school. They also benefited by learning professional workplace expectations, using precise laboratory equipment and procedures to conduct a meaningful scientific investigation, collecting and making sense of data, presenting findings, and interacting with highly-skilled researchers.



Dallas Bird and Cordale Green learn about some of the highly technical equipment they will be using to carry out their mission.

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Students Keith Wadleigh and Bailey Amison view an image of the bacteria used in the anaerobic digester using a scanning electron microscope