

Abstract Submitted  
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**Service Learning in a Physical Science Program: Implementation of a Water Filtration System and Relevant K-12 Energy-themed Pedagogic Material in a Post-Conflict Community** JUAN BLANDON, Angelo State University, JAIME VELEZ, BORIS RODRIGUEZ, University of Antioquia — We present a project with undergraduate physical science, physics, and engineering students to design and build a water treatment system and create corresponding pedagogic material to be used in a Study Abroad Program that engages post-conflict, under-served communities in Medellin, Colombia. Under the concept of a “physical science ambassador,” students are working to implement a three-stage system to coagulate, filter and disinfect water from a flowing stream. The aim is to teach area K-12 students and teachers how to provide potable water, and to use the project as a bridge to foster dialogue amongst community groups. Students will investigate electro-flocculation, multi-layer media filtration, RO, 3-D printed filter parts, a water pump, a power generator, UVC light, bleaching, and ozone generation. The pedagogic material will focus on K-12 students, and will implement the 5-E approach to help certify area high school physics teachers. For K-6, emphasis will be placed on conceptual understanding and original scientific thinking using the 5-E approach. Study abroad students will be tested and surveyed on ability to apply classroom lessons to “real life” problems, and appreciation of science.

Juan Blandon  
Angelo State University

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