

Abstract Submitted  
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**Thirsty for Knowledge: Applying Classroom Physics Lessons to Design and Build a Water Filtration System for an Under-served Community in Medellin, Colombia**<sup>1</sup> ALYSSA DAVENPORT-HERBST, DANIEL ANABLE, JORDAN BUTLER, MICHAEL JUSTIS, JAMES ROBINSON, DEYTON RIDDLE, RAFAEL SANCHEZ, TONY ROY, JOSE DURAN, JUAN BLANDON, Angelo State University Physics Geosciences Department — Access to clean drinking water is a major public health issue that affects close to 1 billion people on a daily basis. Through our Physics Applied to Community Outreach (P. A. C. O.) Program we are working on a research project in which we are designing and building a water treatment system that will be implemented in an under-served community in Medellin, Colombia. Our plan is to implement a 3-stage system in which we will coagulate, filter and disinfect water from a flowing stream to provide safe water for people in this community. Right now, we are investigating the use of electro-flocculation to coagulate the dissolved solids, a multi-layer filtration system using sand-like media of various sizes, reverse osmosis, 3-D printed filter parts, a water pump, and a UV source or ozone generator for disinfection. We will also be developing a generator with which we will use the flowing water in the stream to produce our own electricity source to power our flocculator and UV source.

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Alyssa Davenport-Herbst  
Angelo State University Physics  
Geosciences Department

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