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Towards Clean Water Combining Multiple Filtration and Disinfection Techniques RAFAEL SANCHEZ, Student at Angelo State University, TONY ROY, Second Presenter. Student at Angelo State University, JUAN BLANDON, Professor at Angelo State University, JAIME ROBINSON, MATTHEW SMITH, DEYTON RIDDLE, ALYSSA DAVENPORT-HERBST, DANIEL ANABLE, Student at Angelo State University — We are working on a research project in which we are designing and building a water treatment system for an underprivileged community in Colombia. Our plan is to implement a 2-stage system in which we will filter and disinfect water from a flowing stream to provide safe water for people in this community for everyday use. Right now, our plan involves introducing bleach into the water, using a multi-layer filtration system, which includes using sand-like media of various sizes to filter the water, reverse osmosis, and a UV source with a proper setup to disinfect it. We will also be creating a generator specifically for this stream in which we will use the flow of the water from the stream to produce our own source of electrical energy in order to provide power to our UV setup. We will be using 3-D printing techniques to produce parts for this system. We will construct a sensor that will focus on testing the turbidity levels of the water. In addition, we will also create teaching modules for grade school kids as well as do some K-12 educational work with electro-flocculation along with elequa.io from San Antonio, TX.

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