

SUSTAINABLE RESILIENT COMMUNITIES

Students engaging in humanitarian engineering projects worldwide

Since 2014, OSU has worked with global communities to address complex societal challenges from a technical perspective. Starting with the Tanzania Program and Maji Marwa, Sustainable Resilient Communities (SRC) has grown within the Humanitarian Engineering (HE) space at OSU to offer a broad spectrum of programs and opportunities. The program has continued to grow and evolve in the way we connect with students to deliver meaningful engagement opportunities.

As alumni or program supporters of Tanzania, Maji Marwa, SRC, Global Capstone, or the HE minor courses, we hope you enjoy this newsletter updating you on the work at OSU.

OSU has partnered with AguaClara Reach (ACR) to expand Humanitarian Engineering drinking-water, sanitation and hygiene (WASH) offerings for undergraduate and graduate students.



- Promotes access to safe drinking water through*
- research and education,*
 - capacity building with local implementation partners, and*
 - design and innovation of community-scale, gravity-powered AguaClara water treatment technologies.*

OSU x ACR Partnership Timeline

Winter 2017

OSU students working on the Maji Marwa Project - in Tanzania focused on delivering a reliable source of clean drinking water to a rural Maasai community - found information about AguaClara water treatment plant designs online.

AguaClara's Dr. Monroe Weber-Shirk met with Patrick Sours and other's at OSU for introductions and discussions via ZOOM!

Winter 2018

Patrick traveled to Honduras to meet with partners at the University of Zamorano. While visiting, he toured the onsite AguaClara Water Treatment Plant.

OSU representatives visited Monroe in Ithaca to tour the ACC Research Lab.

Summer 2019

OSU student, Mike Reese, interned at the AguaClara research lab at Cornell University.

Fall 2020


Patrick Sours joined AguaClara Reach as a volunteer and launched the Undergraduate Research effort at OSU.

Fall 2021

ACR provided guidance and training to OSU to create AguaClara OSU within the Humanitarian Engineering Lab to provide undergraduate research and experimental learning.

Spring 2022

AguaClara's Safe Water on Tap course is run for the first time and water flows in the AguaClara filtration research station!



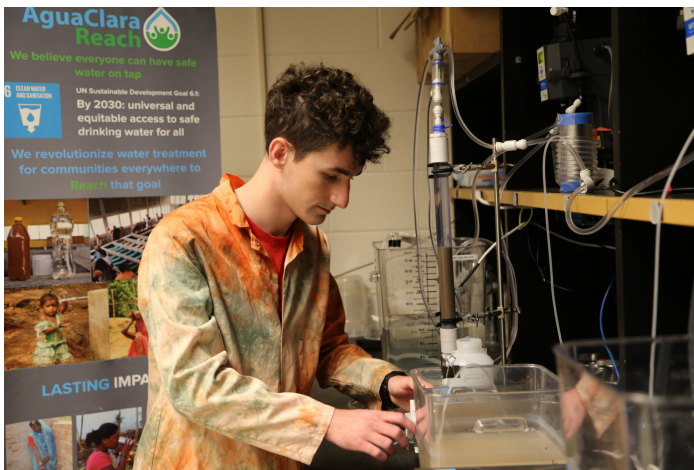
Now, OSU is the main hub of AguaClara education programs and is key to growing global access to safe water on tap.

New Humanitarian Engineering Lab

The new Humanitarian Engineering Lab is a focused student engagement space, and will allow student-driven projects to flourish. Students will be able to gain valuable insights into the viability of proposed community-based engagements while learning through experimental design and research. The shared Lab space fosters interdisciplinary collaboration and will be a hub for faculty and students to engage across OSU.



AguaClara OSU



The AguaClara OSU (ACO) research program has formally been established. ACO, directed by Patrick Sours, is actively conducting research on rapid sand filtration with technical support from ACR. Students across multiple stages of their academic careers and disciplines have been engaging with these efforts. The first undergraduate research thesis within Humanitarian Engineering, Matt Parsons (left), was supported by ACO.

Safe Water on Tap Course

Dr. Monroe Weber-Shirk and Patrick Sours taught the first course of Safe Water on Tap (SWoT) at OSU in Spring 2022. The course teaches about fundamental water treatment physics, and focuses on the gravity treatment of the AguaClara system. Students learn to design and model complete drinking water plants using Onshape and parametric modeling! SWoT leverages ACR's open-source modeling system to demonstrate complex treatment theory into practical designs.

Global Capstone Course

The former Tanzania Capstone Project has grown and transformed into its own Global Capstone Course. The course has supported 150+ students, projects and partners from 6 countries, and has local and international engineering in context design projects. The Global Capstone is positioned as the culminating experience for students within the Humanitarian Engineering minor. The course is multidisciplinary, bringing together perspectives and approaches to address the challenges conveyed by partners.

Opportunities for Humanitarian Engineering at OSU are at an all time high and continuing to grow. We are committed to addressing complex societal challenges and educating students who will be the next generation of problem-solvers.

OSU is supported by AguaClara Reach through:

- Providing technical mentorship to guide lab research. This includes regular meetings with researchers and professional engineers.
- Providing real-world projects from Implementation Partners for the Capstone Design course.
- Instructing the Safe Water on Tap course, building on ACR's years of educational best practices.



AguaClara OSU

ACR relies on generous donors to ensure that they can continue supporting efforts such as these.

To learn more or support OSU's partner,
AguaClara Reach:
www.aguacларareach.org/