

“Innovations for Developing Nations”

Students from senior design course [BEE 469/470 Biological and Ecological Engineering Design](#), have been at the AAHL literally day and night testing their design prototypes for grid independent aquaculture pond aerators intended for developing countries.

The students, working in 5 teams, have been tasked with developing and evaluating different options for the provision of oxygen to unlined ponds to raise tilapia for human consumption. The system design has to be suitable for a location where line-power electricity is not available such as for countries in Africa or other areas in the sub tropics that do not have access to the grid.

Aquaculture is of growing global significance in satisfying the need for food. [Ganti Murthy](#) and [John Selker](#) instruct the class point out that “Technically there are many challenges in large-scale aquaculture systems, including oxygen consumption, quality of discharge, and maintenance of conditions for optimal growth of the target species. In this design challenge the students also need to consider legal, economic, project sustainability, long-term economic viability, social and environmental constraints.”

The team with the “winning design” will send 2 students to either Ghana, Africa or Vietnam to test their design in a real life field setting. The project is sponsored by [Hillary Egna](#), CAS Unit Leader and Director of [AquaFish Innovation Lab](#).



Students test their designs in large ponds and troughs at the AAHL



Solar panels power the students' aeration units