

dv236

Dylan Vu's Individual Contribution Page

Fall 2016 Contributions

This is my first semester with AguaClara, and I am very excited to be a part of this team. As a first semester freshman and a prospective ChemE major, I hope to learn what it is truly like to think as an engineer. For me, this semester with AguaClara entails my first experience with laboratory research and hands-on design. My goal for this semester is to learn everything I can from my AFB subteam friends about Anaerobic Fluidized Beds, water filtration, and processes which are essential to Chemical Engineering along the way. While simultaneously learning, I hope to contribute specifically to the mechanical problems with AguaClara's current AFB design; these problems include the clogging of biomass, reactor geometry, headloss, washout, and fluidization.

Came up with the design for the winding declogging mechanism as a solution for the clogging granules problem in the AFB reactors. Contributed to the implementation of such a design using the rotating mechanism of a peristaltic pump. System was ultimately unsuccessful because the weight used was not heavy enough to break through granule clogs.

Spring 2016 Contributions

As a member of the new Arsenic Sensor Team, I hope to use what I learned in the first semester with AguaClara to develop this new team and make strides in previous technologies and methods in arsenic detection.

After numerous attempt at recreating the experiments found in the report found by the group, the team was unable to recreate the chemistry that was shown by the authors of the paper. Modifications to the experimental procedure were performed by the group to create the color gradient that would correlate to arsenic concentrations in our sample water. However, all of these modifications were ultimately unsuccessful. The team suggested that future works should redefine the problem from arsenic detection to arsenic removal.

Fall 2017 Contributions

This semester, I am performing research on the StaRS Filter Theory Team. Coming into this semester with two semesters worth of research experience in AguaClara and two semesters worth of research experience in Archer Lab (ChemE dept.), I will use my newfound experience to help out the new members of the subteam and guide the project this semester. I hope to extensively test various assumptions in the Team's WIP paper, and strengthen the model presented. Furthermore, I want to apply the conclusions from experimentation to optimize the current filter apparatus in the lab. Lastly, I wish to learn extensively about filtration theory such that I can apply my knowledge to field work in Honduras this upcoming winter.