

**sfk48**

## Subhani Katugampala's Individual Contribution Page

### Spring 2017 Contributions

This semester, I will be working on the Upflow Anaerobic Sludge Blanket (UASB) team. UASB technology is used as the first step to treat wastewater. The Spring 2017 UASB team will focus on designing, fabricating, and testing a small scale UASB reactor. The ultimate goal of this team is to produce a small scale wastewater treatment plant for use in small communities in Honduras and India.

### Spring 2016 Contributions

This semester, I am on the Fabrication subteam, working specifically on modifying OStaRS (Open Stacked Rapid Sand Filter) assembly. The OStaRS is currently installed in AguaClara treatment plants in Honduras. In order to clean out these existing filters and to construct new ones, an easier assembly process must be developed. The tasks for our team is to create a movable platform for operators to stand on while installing modules, fabricating spacers to insert between modules, and designing a support structure for the trunk lines. Additionally, this semester I will be team leader and also advise the Enclosed Stacked Rapid Sand Filter (EStaRS) Team and the Ram Pump Team.

### Fall 2015 Contributions

This semester, I am working on the Stacked Rapid Sand Filter Filtration Injection and Extraction Team (FInE). Our goals for this semester are to finish fabrication and installation of the extraction unit as designed by the Spring 2015 Team and conduct testing to ensure that this prototype works as expected. This extraction unit is meant to replace the remaining slotted pipes in the sand filters. Additionally, this semester I will be leading the Enclosed Stacked Rapid Sand Filter Team (EStaRS).

### Spring 2015 Contributions

This semester I will be working again on the Enclosed Stacked Rapid Sand Filter Team (EStaRS). Our goals for the semester are to conduct multiple filtration and backwash runs, to modify the cap design, and to design a new backwash siphon. Towards the end of the semester, a new inlet system was developed and designed to be implemented into our filter. We worked to design and fabricate this system and introduce it into our filter. This system was designed with the intention of removing the need for slotted pipes, which are seen as expensive to fabricate and maybe sources of error in the filtration process.

### Fall 2014 Contributions

This semester I will be working on the Enclosed Stacked Rapid Sand Filter Team (EStaRS). Our goals for the semester are to ensure that the model functions properly and that it is built in the most efficient way possible.

### Spring 2014 End of Semester Contributions

In the end, we were able to create a functioning web-based guide. We were able to incorporate PHP code into the HTML form in order to generate a results page. One of the problems we ran into was that the AguaClara web-server was not PHP enabled. We were able to combat this by operating an offline test server called MAMP. This provided us with a means to test out the mechanisms of the guide. The Water Treatment Technology Selection Guide we have developed only involves the surface water case to date. Some alterations the guide moving forward would be to expand the guide to include the ground water case, further research the decentralized water treatment options, and the integrate it with the Plant Cost Calculator and the AguaClara design engine.

### Spring 2014 Mid-Semester Contributions

At this mid-semester stage, I have accomplished many of the goals outlined at the beginning of the year. The development of the Water Treatment Technology Selection Guide is currently underway. Up to this point, I have managed to create a flow diagram outlining the decisions the guide will make based on user inputs. This diagram was created solely on the basis of surface water treatment and shows the logic of the program. After the completion of the surface water case of the guide, it will be expanded to include all other cases (i.e. - groundwater). In addition, the team has also decided to use HTML /PHP/mysql as the technology platform to create the guide. We decided to use this rather than LabVIEW as it effectively creates dynamic webpages as well as provides a user-friendly interface. Now that we have made several of our important decisions, we will move on to the programming side of guide and begin to develop the back-end interface that runs according to the flow diagram. By the end of this semester, we should have coded the flow diagram and integrate it with the Plant Cost Calculator.

### Spring 2014 Contributions

I am currently working on the Water Treatment Technology Selection Guide and Plant Cost Calculator research group. I am reviewing the guide made by previous AguaClara members and revising it to integrate with the web design. My role on the team is to research various water treatment options and to develop an accurate means to compare them.