

# Iz94

## Luke's Individual Contribution Page

### Fall 2013 Contributions

- Aided in the construction and testing of the five new reactors
- Developed a model of particle and biofilm growth in the reactor and its effect on fluidization and settling velocities
- Gained knowledge in measurement techniques such as gas chromatography and COD array
- Collected daily samples of liquid influent and effluent streams and biogas.
- Inoculated and helped in the upkeep of 6 reactors
- Tested the the reactors for liquid and gas leaks
- Collected and analyzed methane sampling data

### Spring 2014 Contributions

- Investigated the issues with the current reactor design associated with flow blockage, gas leakage, and low overall COD removal rates
  - In hopes of alleviating some of these issues, we are scaling up our reactors by constructing one with a larger inner diameter.
- Designed and constructed new larger reactor with a larger diameter
- Investigated the value of adding a heating element to reactors to achieve higher microbial activity

### Summer 2014 Contributions

- Aided the design efforts of the laminar tube flocculator and the turbulent tube flocculator