DEPT. OF CHEMICAL AND ENVIRONMENTAL ENGINEERING
COLLEGE OF ENGINEERING AND APPLIED SCIENCE

APPLICATION DEADLINE: 03/01/2020

PROJECT TITLE: Reuse fats, oils and grease (FOGs) as alternative energy

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Project Description

Almost 3 million tons of fats oils and grease (FOG) is produced in the US each year. Much of this material ends up in waste water treatment plants (WWTPs). FOGs are the No. 1 cause for pipeline blockage around the world. The fatberg incident in the UK is one of such examples, which are very costly to the communities. FOGs are still mainly landfilled, which is a waste of resources. Dr Lu's group has developed a solvent-free lipid extraction process to separate FOGs, and make use each fraction. They have done customer discovery to verify a potential markets, and now they are currently developing a pilot scale device to be tested at the Municipal Sewage District of Cincinnati (MSDGC) an other WWTPs. They have been working with partners such as the MSDGC and biodiesel companies, as well as a commercial partner.

The WISE student will work with a graduate student, and an coop student for day to day activities. The team will design, test and implement a pilot scale reactor to process waste FOGs into yellow grease, a biodiesel feedstock, and find use for the solids left from the extraction. They may go to other WWTPs to test their FOGs. Knowledge of organic chemistry is highly desirable. If you like to get hands on in lab as well as in the field, come join us. We have a poster outside of ERC 791 and come talk to Dr. Lu if you are interested.