



# ESW BIOFUELS

# Newsletter

## Fall 2018



Engineers for a Sustainable World



Develop Promote Innovate Cooperate

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# ESW Biofuels

After a very successful recruitment, Engineers for a Sustainable World welcomed 17 new members this Fall, with 3 joining the Biofuels sub-team (pictures in the next page).

## New Members: Research & Development

Jasmine (left) is a Biological Engineering major from Connecticut. Outside of ESW, she's involved with the Running Club and Science Olympiad. She likes cooking and baking, reading comics, and playing frisbee with her dogs. She's looking forward to learning more about Hydrothermal Processing and the bioreactor.

Justin (middle) is from South Korea, and is majoring in Earth and Atmospheric Sciences and minoring in Chemical or Environmental Engineering. He loves soccer and is excited to research biodiesel efficiency (especially hydrothermal processing). world.





# ESW Biofuels

## Blue Heron Farm

Earlier this fall, Blue Heron Farm in Lodi, NY was hit by heavy rainfall and flooding. Four members of Biofuels visited in late October to help the farm recover from these setbacks. The team spent an afternoon breaking apart and sorting garlic for replanting.

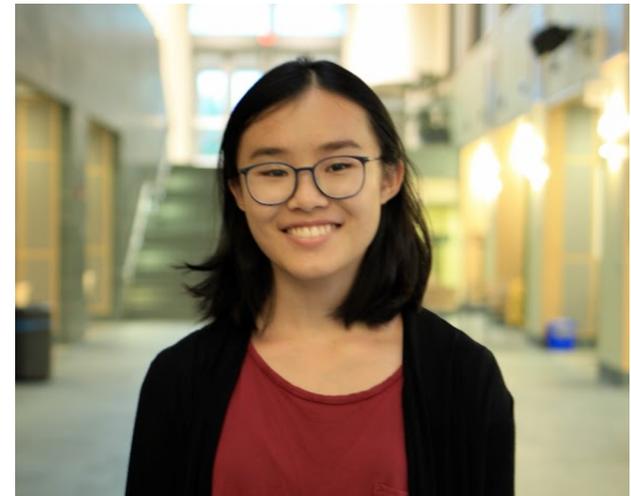




# ESW Biofuels

## New Members: Bioenergy Implementation

Maple (right) is from Poughkeepsie NY, and is majoring in Biomedical Engineering. She's part of the Cornell Symphony Orchestra and Project Hope. She likes cats and watching Netflix. Maple looks forward to learning how the research and implementation processes are carried through, and more about bioenergy alternatives and their role in the real world.



Pictured (left to right): Jasmine, Justin and Maple





# Research & Development

## Biodiesel Reactor

R&D has been focused on two projects this semester. The first is a continuation of the waste vegetable oil biodiesel reactor project from last semester. The team is looking to finalize the design, build the reactor, and begin producing fuel this semester. Waste Vegetable Oil will be collected from Greek Houses and co-ops on campus, and the fuel product will be used by the Agricultural Research Station in mowers and tractors.

## Hydrothermal Processing

R&D's second project is more research focused, specifically exploring the possibilities of hydrothermal processing (HTP). HTP involves introducing waste to high pressures and temperatures in order to convert it into crude oil, a usable fuel. The team plans to work with the Ithaca Area Wastewater Treatment Facility to process post-anaerobic digestion waste.





# Bioenergy Implementation

## Leaders in Visioning Environmental Solutions

This semester, the BioEnergy Implementation subteam has been working on the L.I.V.E.S. high school challenge, which launched in September. Any updates from the challenge have been put into their own [L.I.V.E.S. Challenge Newsletters](#). In the coming weeks, the BioEnergy Implementation subteam will also meet with participants in a skype session to address any questions or concerns they may have.

## Hollenbeck Cider Mill

The sub-team also met with the Hollenbeck Cider Mill for a collaboration. The team is conducting a feasibility study of the implementation of a small scale anaerobic digester on the property that uses waste from the mill.





# Business & Outreach

## Energy Warriors

This semester, B&O has been focusing on two major projects. In collaboration with the Energy Warriors, members of the team had the chance to visit the Finger Lakes Residential Center to teach practical skills concerning sustainability to the youth there. More recently, the team had the opportunity to give a tour of Cornell's campus to a resident who was scheduled to be released that week.

## FOG Collection Station

The Fats, Oils and Greases Collection Station in collaboration with the Tompkins County Department of Recycling and Materials Management has been revisited as well. Members of B&O visited the site at the Solid Waste and Recycling Center to get measurements of the setup and submitted a heating proposal such that waste fats, oils and greases may continue to be converted to biodiesel without freezing up during the winter.

