

What is UR Biodiesel?

The Process

When waste vegetable comes into the lab, it is first filtered into large storage containers. The filtered waste oil is then pumped into the processor, where it is dewatered and reacted with methanol and catalyst to form biodiesel. Glycerin, a byproduct of the reaction, drains from the bottom of the processor, and the biodiesel is sent to the settling tank to settle overnight. The biodiesel is then washed multiple times to remove soaps, another byproduct, and finally sent to dry. It is then ready to be used in any diesel engine. Undergraduate students work in the lab five days a week, running every step from filtering waste vegetable oil to drying it to produce finished biodiesel.

Sources of Waste Vegetable Oil

On the River Campus, the Biodiesel Lab sources waste vegetable oil from The Pit, Danforth Dining Center, and Fraternity Houses. The Medical Center provides additional oil, and new sources of oil are surfacing frequently as members of the University community hear about the project and want to help.

Uses for the Biodiesel

The biodiesel made in our lab is used to fuel the UR Biodiesel bus (It's that big green bus seen all over campus!). The bus typically operates on a B20 blend (20% biodiesel, 80% petrodiesel). Additionally, biodiesel is used in some on-campus construction equipment, including equipment owned by one of the University's contractors, AEY.

How You Can Help

UR Biodiesel relies on the help and support of the University community. We are actively seeking monetary and in-kind donations and there are a number of advertising opportunities available. If you are interested or would like more information, please visit our Web site:

www.urbiodiesel.com

We appreciate your help!



University President Joel Seligman steps onto the UR Biodiesel Bus for its inaugural run.

Sponsors

UR Biodiesel would like to thank all of our sponsors for their continued support:

- Advantage Federal Credit Union
- American Fleet
- Alliance Door
- AEY Construction
- Emisstar
- UR Facilities and Services
- UR Parking and Transportation
- UR Dining Services
- Hajim School of Engineering
- College of Arts and Sciences
- Department of Chemical Engineering



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Brief History

In the fall of 2006, a team of four undergraduate students developed a business plan for the creation of UR Biodiesel at the Forbes Entrepreneurial Competition. Winning 2nd place overall, these four students garnered the necessary support from campus administrators and key academic departments during the 2007-2008 academic year. By the summer of 2008, the project was approved, funded, and a site for the lab was chosen. The facility was constructed in the fall of 2008, and students constructed the lab itself in 2009. UR Biodiesel officially kicked off on Earth Day: April 22, 2009.



Role of Students

Students are the core of the UR Biodiesel project. Students founded the project, built the processor, secured funding from on- and off-campus sources, pick up the waste vegetable oil, manage advertising contracts, operate the processor and more. As the project continues to expand, more students are getting involved from other academic disciplines and schools at the University.

Focus on Sustainability

A primary goal of the UR Biodiesel project is to model a materials and energy efficient process. Much of the equipment used in the Biodiesel Lab is repurposed equipment from other locations around campus, from an old water heater converted to the processor to a repurposed sink. The lab itself, once an unused garage, is heated by the University's Cogeneration facility. This adaptive reuse of materials and space has also proven to be economically favorable, helping to debunk the myth that "green" choices are necessarily more expensive than their alternatives.

Academic Enrichment

UR Biodiesel is interdisciplinary: students of Chemical, Mechanical, and Biomedical Engineering work alongside Political Science majors and Business minors to cover each aspect of running the project. Some students volunteer their time, while others receive academic credit, either through a related course such as Alternative Energy Lab or by developing their own independent study objectives. There are currently over 20 potential projects available to students to study tangential aspects of biodiesel production, including making soap from glycerin, a byproduct of the process, and replacing toxic chemicals used in the lab with more benign alternatives. These projects involve significant research and implementation, all by UR undergraduates.

