

USU Opens New Facility for Algae and Bioproducts Research | College of Engineering

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News Release — Aug 3, 2021 — Crews are putting the final touches on a new 3,000-square-foot facility that will cement Utah State University's role as a leader in the bioproducts revolution.



The new Algae Processing and Products facility will help USU researchers develop innovative solutions to complex wastewater challenges

The new Algae Processing and Products Facility serves as a bridge between laboratory-scale concepts and pilot-scale projects involving industry partners. The new complex — known as the APP — features a 1,000-square-foot greenhouse and 2,000 square feet of lab and office space. The purpose of the APP is to enable robust research in sustainable engineering and bio-based manufacturing with a focus on cultivating algae. Project leader and professor of biological engineering Ron Sims says the new space also makes USU more competitive.

"Not many universities can do this level of scaled-up work," said Sims. "This helps us attract future funding from organizations like the Department of Energy."



The purpose of the APP is to enable robust research in bio-based manufacturing with a focus on algae cultivation.

Sims has spent years pioneering methods to harvest algae for bio-based products such as plastic, fuel, fertilizer, and therapeutics. A key piece of technology to come from Sims' research is the Rotating Algal Biofilm Reactor, or RABR. A RABR's rotating drum exposes growing algae to a mix of municipal wastewater and sunlight. Growing algae on a RABR is a cost-effective method for extracting unwanted nutrients from wastewater — a problem that plagues treatment plants across the country.

The APP will also facilitate new industry-sponsored student projects. There are currently five industry partners supporting research at the APP, including Logan City, Utah-based WesTech Engineering, Mississippi-based Algix, the Pacific Northwest National Laboratory, and Central Valley Water Reclamation Facility, the largest wastewater treatment facility in the state.

Another important goal of APP research is to determine which species of algae provide the greatest return on investment. Determining which organisms to cultivate — and how to grow them — will require new thinking and collaboration with industry partners.

"We want to grow as much algae as possible and as quickly as possible," said Sims. "This facility helps us scale up our operation to make these concepts in sustainable engineering more feasible, which is what this is all about."

The APP is not a new idea for USU. Sims founded a predecessor facility that operated for 10 years under the same name. The original APP property, however, was reallocated for an expansion of the Space Dynamics Laboratory. The new APP is located northwest of the USU Challenge Course in Logan's Island area. The total cost of the facility was approximately \$1 million.

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