

ALGAE AND BIOMASS

Professor: George Philippidis, MFA

The Patel College of Global Sustainability conducts cutting edge applied research in biofuels and bioproducts, from algae and biomass, both of which are renewable resources. The college operates state-of-the-art labs and outdoor facilities at USF, in partnership with industry leaders.

Algae, a promising source of aviation and diesel fuels, grow well in Florida's warm and sunny environment. In addition, Florida is the top producer of biomass in the country. These are perfect conditions for establishing a biofuels and bioproducts industry. Biofuels, plastics, fertilizers, and animal feed manufactured from such renewable, domestic, and plentiful raw materials can help the United States eliminate oil imports, achieve energy security and economic growth, create jobs, and fight climate change.

In the algae arena, we design and develop innovative systems to make algae cultivation cost effective and highly productive for the entire algae industry. To accomplish that goal, we combine engineering practices with biology and biochemistry tools. We then scale up the systems to commercial size.

In the biomass arena, we develop technologies to sustainably convert agricultural and other residues to sugars that supply a variety of applications, from ethanol and green hydrocarbons all the way to plastics, resins, and many other consumer products.

In both areas, we work closely with the private sector to close the gaps between lab research and the marketplace. Our research programs provide graduate and undergraduate students with great opportunities for hands-on experience, and industry internships, and prepare them well for promising careers.