GREAT LAKES BIOENERGY RESEARCH CENTER

July 2025

Great Lakes Bioenergy

Who We Are

The Great Lakes Bioenergy Research Center (GLBRC) is a cross-disciplinary research center led by the University of Wisconsin–Madison and headquartered at the Wisconsin Energy Institute. With Michigan State University and other collaborators, GLBRC draws on the expertise of more than 400 scientists, engineers, students, and staff to develop sustainable biofuels and bioproducts.

Our Vision

Producing sustainable biofuels and bioproducts from all usable portions of dedicated energy crops grown on non-agricultural lands.

Created in 2007 by the U.S. Department of Energy, GLBRC focuses on three areas of research: bioenergy cropping systems, biomass conversion, and field-to-product optimization. Together, we are helping to replace petroleum-derived fuels and products and enable a resilient bioeconomy.

Our mission is simple: creating biofuels and bioproducts that are economically viable and environmentally sustainable.

A record of success

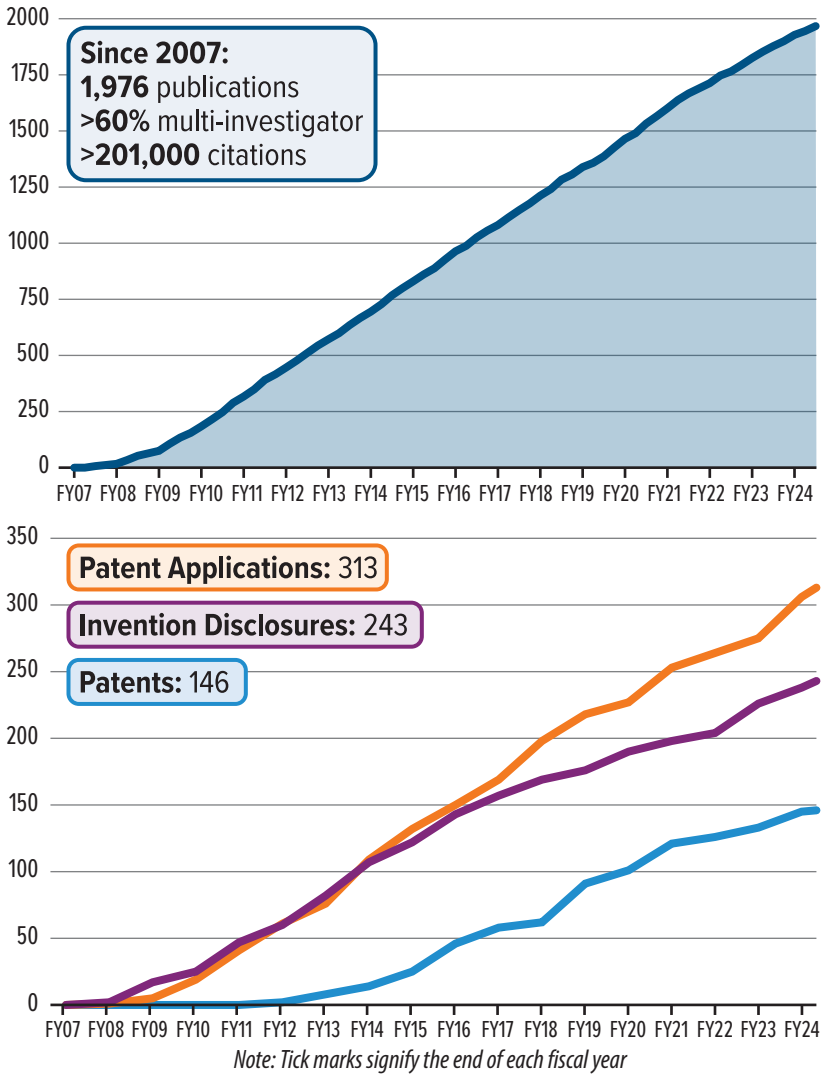
Since 2007, GLBRC has conducted foundational research on biofuels. Our scientists and engineers have produced more than 1,900 scientific publications, 313 patent applications, 121 licenses or options, six start-up companies, and trained over 1,500 scientists.

Integrated research

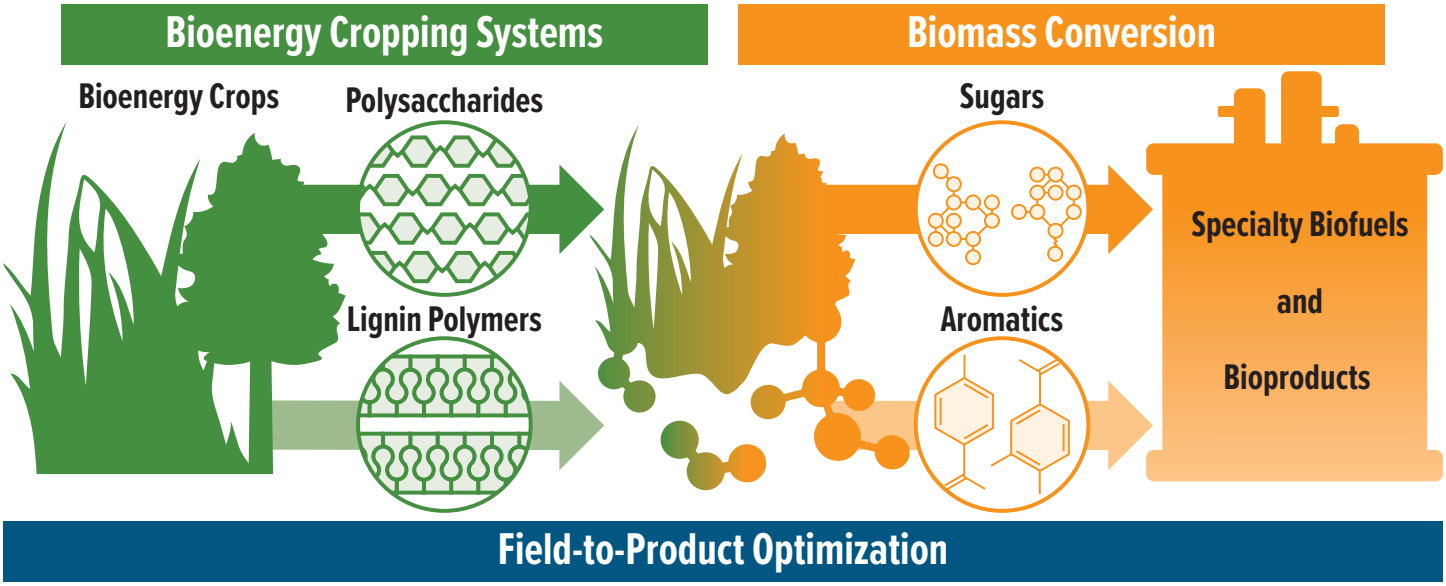
GLBRC researchers work collaboratively in partnership with industry to overcome barriers to producing sustainable biofuels and products.

Technology transfer

At GLBRC, we work with companies and with licensing experts at the Wisconsin Alumni Research Foundation (WARF) and MSU Technologies to ensure that our research anticipates and enables commercialization and creates new economic opportunities for industry, farmers, and rural communities.



Note: Tick marks signify the end of each fiscal year



Our Research

Bioenergy cropping systems

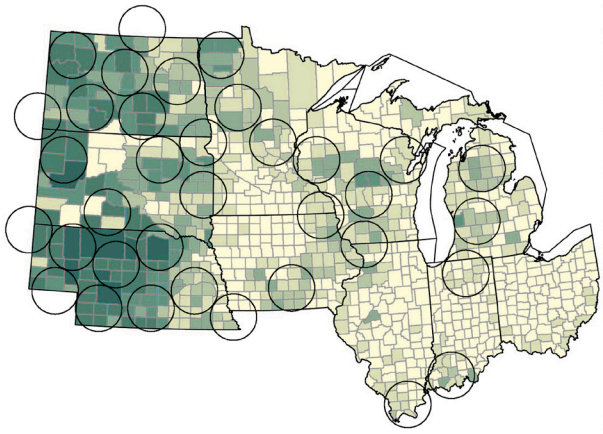
Engineering bioenergy crops to enhance their environmental and economic value

GLBRC's research focuses on dedicated bioenergy crops grown on non-agricultural, land. Planting non-food crops such as switchgrass, energy sorghum, or poplar on marginal land reserves farmland for food production and has the potential to provide a range of agronomic and industrial benefits. Our goal is to engineer cropping systems with both environmental and economic value. This means finding ways to produce dedicated energy crops with high yields that can be easily converted into fuel, as well as determining how and where these energy crops should be produced.

Biomass conversion

Generating multiple products from plant biomass

GLBRC is focused on enabling a new and different bioeconomy, one that is both economically viable and environmentally resilient. Realizing this goal will mean increasing the efficiency of biomass conversion and generating a mix of specialty fuels and products from as much of a plant's biomass as possible. Our research seeks to boost industry economics by finding new ways of processing biomass at low cost, producing a variety of fuels for use in multiple engine types, and converting as much material as possible into valuable products.



Understanding how to produce high yields of dedicated energy crops on marginal lands could provide new income to farmers and abundant feedstocks for industry, while offering major ecosystem benefits and reserving farmland for food production.

Field-to-product optimization

Understanding and optimizing the field-to-product pipeline

GLBRC research is integrated across many disciplines and areas of focus. We understand our work as part of the field-to-product pipeline and coordinate our efforts to overcome the barriers to producing sustainable biofuels and bioproducts. The field-to-product pipeline for biofuels and bioproducts consists of several interdependent phases, including crop production, biomass deconstruction, and conversion into products. Our multi-disciplinary research projects are focused on improving these individual steps as well as integrating them into an optimized field-to-product pipeline.

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