The hands-on engagement of students in all of our research activities — including undergraduates — distinguishes our state’s public universities, and ensures our graduates are well-prepared to be leaders, problem-solvers and innovators in the Maine workforce and in our communities.

Given this incredible impact, it should come as no surprise that the private sector has consistently called for increasing Maine’s economic competitiveness by boldly increasing public investment in UMS R&D through MEIF, which in 2022 had a 6:1 rate of return and accelerated UMaine’s ascension to the top-tier of America’s research universities by achieving R1 Carnegie Classification.

Doing so, they say — and our track record shows — will create more value-added Maine jobs and products, grow wages, catalyze private sector innovation and investment, and retain talent in our campuses and your communities — all while sustaining the state’s abundant natural resources and special quality of life.

The University of Maine System is proud of what we have accomplished together with our students and business partners and your MEIF investment, including the success stories showcased in this year's reformatted annual report. We look forward to continuing to work with you to ensure we realize the full potential of public university R&D and of Maine’s economy.

Thank you for your support,

Dannel Malloy
Chancellor, University of Maine System

Our goals:

Generate co-investment

For every $1M MEIF funding, the University of Maine System leverages $5 in co-investment for projects in the seven sectors.

Establish and grow partnerships

University of Maine System R&D initiatives partner with Maine companies and communities to support the economy statewide.

Focus on workforce development

MEIF project funds support undergraduate and graduate students in hands-on, real-world problem-solving in career pathways.

For more information, contact Samantha Warren (samantha.warren@maine.edu) or visit umaine.edu/meif

R1 — Maine is in the top 16 of research universities nationwide

Maine spends 7% of GDP on R&D, compared to 3% nationwide and 4.8% in New England

Maine ranks 4th of the 50 states for R&D spending as percent of GDP

MDF Measures of Growth has set a goal of Maine tripling its R&D spending by 2030

“State government can double its investment in R&D annually without running out of viable projects.”

Making Maine Work (2022)

On the cover

The 75-foot single-span Grist Mill Bridge in Hampden, constructed in fall 2020, was the first in the nation to use fiber-reinforced polymer girders called GBeams™, designed at UMaine’s Advanced Structures and Composites Center, led by executive director Habib Dagher. The UMaine-patented technology is licensed to Advanced Infrastructure Technologies in Brewer, which ships girders for bridge replacement and construction projects nationwide. With U.S. Department of Transportation funding through the Transportation Infrastructure Durability Center at UMaine, undergraduate and graduate students — tomorrow’s workforce leaders — were involved in the research.

The University of Maine System is an equal opportunity/affirmative action institution.

Maine Economic Improvement Fund Report 2022
This symbiotic relationship between the lab and industry is a differentiator for Maine, and the perfect example of how industry, academia and the state can work together to create nationally leading industries.”

Sean Sullivan
Executive Director, Maine Brewers’ Guild

Innovative technologies in a heritage industry

Sappi North America and UMaine biomedical engineer Caitlin Howell and her research partners are collaborating to link Maine’s strength in biotechnology industry. The result is “a new set of tools” for the biotechnology sector and potential markets for a heritage industry. The paper-based innovations, which are lightweight and cost-effective, and can be rapidly mass produced, include a microfluidic water purification system, diagnostic microfluidic devices at the microdroplet scale, and surface contamination detection instruments.

Collaboration with UMaine on innovative, paper-based solutions brings fresh insight, providing critical technical validation and access to market-demanded applications that leverage the nanoscale texturing capability of Sappi’s Ultracast® paper manufacturing process.”

Mark Hittle
Sappi Director of Release Business Strategy

Harnessing collective strengths for statewide impact

The Quality Control Collaboratory (QC2) lab creates unique educational opportunities for University of Southern Maine science students through its quality control services to Maine’s growing craft beverage industry. QC2 supports this important economic sector while educating both students and the industry. With QC2, local brewers have a world-class lab to test their beers, but the lab is staffed by students who gain hands-on experience that yields real-world results. Coupled with an internship program, this helps Maine’s brewing industry develop a future workforce.

Sean Sullivan
Executive Director, Maine Brewers’ Guild

Our collaboration with UMaine over the last two years has allowed Tanbark to better understand the fiber processing we will need to meet our customer needs and produce prototypes to enable us to move more quickly to market.”

Melissa LaCasse
CEO, Tanbark Molded Fiber Products

Prototyping eco-friendly packaging

Tanbark Molded Fiber Products in North Yarmouth is a new company that is introducing packaging to replace plastic materials with innovative and custom solutions made from plant fiber, with a focus on Maine wood fiber. Tanbark reached out to UMaine and the Process Development Center (PDC) to access expertise and equipment for testing molded fiber recipes. In addition, PDC has helped support the growth of Portland’s LaCasse & Weston, a producer of molded fiber machinery.

Sustainably growing for gold

Downeast Institute in Beals, the marine science field station for the University of Maine at Machias, has worked with Blue Hill Bay Mussels to develop methods to supplement Maine mussel farms with hatchery seed to maximize production, making the farms more resilient. Ropes can be seeded either with traditional blue mussels or the distinctive gold-striped mussels that Downeast Institute selectively bred to create a unique Maine product. Investment in hatchery-based mussel seed has had major implications for farms, allowing them to provide more product for a growing market without depleting the wild fishery.

Evan Young
Owner, Blue Hill Bay Mussels LLC

MEIF Small Campus Initiative

The Small Campus Initiative (SCI) is an MEIF competitive grant program that helps to build capacity for research and development in the state at industry

Can’t wait to see the whole Maine mussel movement!”

Evan Young
Owner, Blue Hill Bay Mussels LLC

Having the hatchery seed is more way sustainable than wild seed, as well as the perks of selecting and introducing a new gold mussel to the markets. Can’t wait to see what’s next for the whole Maine mussel industry with hatchery seed”

Evan Young
Owner, Blue Hill Bay Mussels LLC

MEIF Small Campus Initiative

The Small Campus Initiative (SCI) is an MEIF competitive grant program that helps to build capacity for research and development in the state at the Universities of Maine at Augusta, Farmington, Fort Kent, Machias and Presque Isle, and Maine Maritime Academy.

Funded projects:
- • Statewide mapping of intertidal seaweeds using drones (MMA)
- • ME MADE: Makerspaces for Abilities Driving Entrepreneurship (UMF)
- • Using remote sensing data to assess forest health (UMH)
- • Applied R&D to promote shellfish aquaculture (UMaine Machias)
- • Distributed machine learning approaches for big data analysis (UMAP)
- • Modernization the medical laboratory technologist program (UMA)
- • Developing the “next-generation environmental scientist” through eDNA community-based biomonitoring (MMA)
- • Using high-frequency sensors to track water clarity and seasonal change in Maine lakes (UMF)
- • Cybersecurity range and scenario builder (UMA)