

CATEGORIES: Business and Economics; Education; Environment

Research at Public Universities Advances Technology, Improves the Environment, Creates Jobs and Income

April 26, 2010

University research is the source for much of the innovation that makes America competitive in the global marketplace. Basic research creates knowledge that advances health and technology for future generations, while research focused on today's needs saves lives, improves the environment and boosts the economy. Students in research universities are inspired by teachers working on the front lines of discovery; some undergraduates even make their own discoveries as members of research teams. University achievements often bear fruit in the schools' home towns and states in the form of income from technology licensing and business opportunities that create jobs.

Following are examples of university research applied to real-world needs that are advancing technology, improving the environment and creating jobs and income.

Rutgers' 'Lumber' from Recycled Plastic

A Rutgers-developed "lumber" made from recycled plastic is replacing wood in bridges, railroad ties, marine piers and boardwalk decking. The material – made from milk and detergent bottles and other plastics –



provides a double dose of environmental benefit: It puts plastic waste to productive use and it replaces wood that leaches harmful preservatives into streams and groundwater. While initially more expensive than wood, the plastic lumber is more economical because it lasts longer and cuts maintenance costs. The lumber has proven its strength in two recent U.S. Army installations: at Ft. Bragg in North Carolina where three plastic bridges carry 70-ton M1 Abrams tanks and at Ft. Eustis in Virginia, where a newly completed bridge holds a 120-ton railroad locomotive. Rutgers licenses its plastic lumber technology to two companies, one based in New Jersey, which are pursuing new business opportunities that will provide increased revenue to Rutgers.

New Early Ripening, High Yield Cranberry Hybrid

Rutgers' Marucci Blueberry-Cranberry Research Center has developed a cranberry plant that delivers higher yields, ripens earlier in the season and has vines that grow faster and resist weeds and disease better than previous varieties. Previously, growers cultivated selections from wild bogs or relied on first-generation hybrids from the 1940s and 1950s that provided little genetic improvement. The higher yields from the new hybrid, named Crimson Queen, mean that fewer new acres of environmentally sensitive wetlands have to be developed to meet increased demand. The earlier ripening helps growers get their product to market in time for the annual Thanksgiving feast. Rutgers has licensed the hybrid and two companion varieties to more than 40 grower-members of the Ocean Spray cooperative. Crimson Queen plants are now grown in Wisconsin, Massachusetts and New Jersey – the first, second and third leading cranberry producing states in the United States. Rutgers now receives royalties on its patent.



Massachusetts Microbe to Bolster Biofuels

When gasoline hit \$3.00 per gallon a few years ago, a University of Massachusetts-Amherst microbiologist and her research associate put a microbe they had discovered at the nearby Quabbin Reservoir that



digested plant material and excreted ethanol to good use. The result is [Qteros](#), a young Massachusetts-based start-up biofuels company. Qteros used the "Q Microbe" (Q for Quabbin) as a technology platform to offer industry a true consolidated bioprocessing solution expected to accelerate and optimize the commercial build-out of cellulosic ethanol production throughout the world market. The company has been part of a movement to grow Massachusetts as a clean energy leader that started several years ago with landmark legislation including the Green Communities Act, the Oceans Act, the Clean Energy Biofuels Act, the Global Warming Solutions Act, the Green Jobs Act, the

Decoupling Act and the creation of Commonwealth Solar.

Pioneer Valley Project to Re-energize Precision Manufacturing

The Pioneer Valley in Western Massachusetts used to be known for its abundance of precision manufacturing companies. Outsourcing of this work in recent decades led to the demise of many of those machining shops, a number of which were family owned with fewer than 50 employees. That industry is set for a renaissance because of a novel partnership that's been created involving the western Massachusetts chapter of the National Tooling & Machining Association, the Hampden County Regional Employment Board and the University of Massachusetts-Amherst. PMRAP – Precision Manufacturing Regional Alliance Project – works to enable the adoption of new technology from the university to the companies through a process of discovery, communication and grant writing. It also works to support the development of the future precision manufacturing workforce. The goal of the partnership is business growth and expansion for the companies into new markets and a workforce which will take them will into this millennium.



Hot New Green Building Product from UVM Lab



The University of Vermont's Nutrition and Food Science Department was instrumental in developing and perfecting the technology behind an environmentally friendly wood finish that is gaining a significant national market. The product uses whey, a dairy waste product, rather than toxic volatile organics compounds (VOCs) as its main binding ingredient. The product was further developed in the UVM lab, modifying its formula to enable mass production. The U.S. license for the product is held by Vermont Natural Coatings, a growing business based in the economically depressed Hardwick, Vermont, area, which has added a number of new jobs as the company's sales have increased. Since it opened its doors the years ago, the company is now selling its products in more than 135 hardware stores around the county. These include large chains, such as Ace Hardware, True Value and Ecohaus, as well as in smaller family-owned stores.

New Spout That Significantly Increases Maple Production

An innovative maple spout developed by the University of Vermont's Proctor Maple Research Center with will have a dramatic impact on maple syrup production, while boosting job creation and economic development in the state. The new spout increases sap yields by 50 to 90 percent per tree. It



employs a valve – a small ball that rolls back and forth in a chamber within the spout – to block the flow back into the tree of sap containing bacteria. Bacterial backflow causes a tree's natural defense system to wall off the contaminated area. Such walling off occurs in all trees and ends the sugaring season. By allowing the tree's sap to continue to flow, the new spout will extend the sugar-making season, typically four weeks long, by one-and-a-half to two-and-a-half weeks. The check valve is having an impact on Vermont's maple syrup producers as well as those elsewhere. It is also creating jobs throughout the state.



Media contacts:

Rutgers University

Carl Blesch, cblesch@ur.rutgers.edu, 732-932-7084, ext. 616

University of Massachusetts Amherst

Marla Michel, marla@admin.umass.edu, 413-577-0092

University of Vermont

Jeff Wakefield, jrwakefi@uvm.edu, 802-656-5799

RUTGERSTODAY

Your Source for University News