



Research for Your World

Building on a Tradition of Excellence
Part III

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■ A world of discovery

Research at the UW-Madison is pointing the way toward a better life.



Scholarly research is one of the University of Wisconsin-Madison's proudest traditions. Research discoveries have improved our lives by affecting the environment in which we live, the food we eat, the technology we count on and the good health we pursue.

A look into nearly 150 years of UW's history shows how research solved major problems of the time, leading to progress we often take for granted today. In 1890, for example, agricultural economist Stephen Babcock developed a butterfat test that gave the dairy industry its first standard for testing and controlling the quality of milk — a development that has been the bedrock of the last century of dairy farming.

Research has the ability to improve our understanding of fundamental processes, setting us on a course to solve an array of problems. Consider the work of the late UW cancer researcher Howard Temin, who in 1974 was awarded a Nobel Prize in Medicine for work that revolutionized modern biology. Temin's discoveries laid the groundwork for understanding the virus that causes AIDS and for the modern biotechnology industry. His work was crucial to the development of life-saving drugs such as human insulin and clot-dissolving agents. Temin died in 1994, but his influence is felt in laboratories and homes around the world.

Temin's work is the essence of basic research: By exploring fundamental mysteries of the natural world, the research makes possible useful and important applications. The vast majority of UW-Madison research — which currently generates more than \$370 million in federal, state and private grants — is basic research. The practical applications may be one, 10 or even 50 years down the road, but basic research provides the maps for the journey.

This report highlights current examples of how the intellectual products of university research are woven into the fabric of our everyday lives. In a very tangible way, the projects described here are an outgrowth of our commitment to basic

research. This report highlights only a small fraction of the more than 9,000 active UW research projects that offer solutions, push our intellectual boundaries, and provide personal benefits for the citizens of Wisconsin and beyond.

Federal funding makes the majority of this work possible, but funding from the state of Wisconsin provides core support that keeps the university viable. State funding is the wise investment in our talented faculty and staff that enables the university to successfully compete for federal and private research funding. For every dollar the state invests in faculty and staff salaries, an additional three dollars is generated from other sources. This support from the people of Wisconsin helps us consistently rank among the top five U.S. universities in research revenue.

In describing the public benefits of research, we must acknowledge perhaps the greatest beneficiaries, our students. The original insights of our research faculty enliven the classroom, where discoveries can be shared between faculty and students directly, rather than through textbooks. All of our graduate students and literally thousands of our undergraduates are also participants in research, working side by side with our best faculty. These experiences provide invaluable training and a source of financial support for students. Many of our biggest federal grants, in fact, provide funding for undergraduate student involvement. Our future depends on strengthening those links between the laboratory and the classroom to share the endless possibilities brought alive by research.

Our private-sector partnerships are also critical to our future. They challenge us to take a broader approach to solving problems by nurturing collaborations with industry. In the College of Engineering, for example, we have more than a dozen industry consortia that promote this kind of intellectual crossover. By 1999, the WISTAR program, an innovative partnership for funding research facilities, will have generated more than \$213 million for research and technology facilities on the campus; about \$123 million of that total will have come from non-state sources. It is exactly these strategies that have attracted the most private support for UW-Madison research, a development we greatly appreciate.

As you read this report, I hope you will find connections between our research and your life, and that you, too, will experience the thrill of discovery.