

In Brief

Economic Development



MESSAGE FROM THE PRESIDENT

To Friends and Supporters of the University of Massachusetts:

On behalf of the faculty and staff of the University of Massachusetts, I am pleased to present to you the winter edition of UMass Economic Development *In Brief*. This is our quarterly publication highlighting University activities that seek to enhance the economic life of the Commonwealth.

I am pleased to report the results of a new statewide public opinion poll. It was undertaken by Lou DiNatale, director of the UMass Poll at the Donahue Institute and a senior fellow at the McCormack Institute of Public Affairs at UMass Boston.

The UMass Poll surveyed more than 400 Massachusetts residents in January about their views regarding the University's actions that impact the economy. The Poll found extraordinarily strong public support for the University's economic mission. Here are the key results:

- 88% of Massachusetts's citizens said that the presence of a public college or university campus is either "very important" or "somewhat important" to their local economy.

- 92% recognized that the University of Massachusetts is, in fact, an important contributor to the state's labor force.

Our citizens indicated a ready recognition of and strong support for the University's traditional role in undergraduate and graduate education. But, the Poll also showed a deep appreciation for the University's efforts to provide technical assistance to business, conduct research that promotes new business development, and offer programs of continuing education.

The magnitude of public support for the University's efforts in economic development is welcome news. We pledge to continue serving the Commonwealth to the full extent of our capabilities. This report provides some useful examples of just how we are doing this.

William M. Bulger
President

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Engineering in Mass Collaborative Secures Leadership and Seed Funding

This statewide initiative to attract more students into the field of engineering has moved forward under the leadership of UMass Lowell Engineering Dean Krishna Vedula. The collaboration among business, government and academia is designed to promote best practices and serve as a clearinghouse for information regarding teacher externships, scholar internships, and other forms of business/education partnerships in math, science, technology and engineering. Joseph Alviani, President of the Massachusetts Technology Collaborative, and Ray Stata, Chair of Analog Devices, are serving as co-chairs. The collaborative has secured seed funding from the MTC and the UMass President's Office. It will issue a report on teacher externships in February and host its next statewide meeting in April (see back page).

Contact: Christine Karavites or
Susan Bowles, UMass Donahue Institute
(617)287-7020/7054

UMass Amherst Initiates New Computer Science Degree by Distance Education

UMass Amherst's Computer Science Department, one of the top-ranked in the nation, has recently made its resources more available to Massachusetts workers interested in furthering their education. The department is offering a master's

degree in computer science, available by distance education. This 30-credit degree, designed for working professionals, is offered through the campus's Video Instructional Program (VIP).

Contact: Mary McCulloch,
UMass Amherst (413)545-0063,
<http://www.ecs.umass.edu/vip/>

NSF Sponsors New Engineering Curriculum at UMass Dartmouth

The Engineering College at UMass Dartmouth, as a member of the Foundation Coalition, will share with six other campuses across the nation a \$15 million NSF grant to develop a radical new approach for teaching engineering undergraduates. UMass Dartmouth's \$1.5 million share, along with a \$180,000 grant from the Davis Foundation, will fund the development of innovative curricula and pedagogies to help retain engineering students and meet the needs of industries in the state that employ engineers. The approach, currently being piloted in the freshman year, is called IMPULSE: Integrated Math, Physics, Undergraduate Laboratory Science, English and Engineering.

Contact: Dean Tom Curry,
UMass Dartmouth (508)999-9137

Software Council Fellowship Program, Inc., and UMass Lowell Team Up on Software Internship Program

Building on the success of its highly regarded fellowship program for mid-career professionals, the Software Council Fellowship Program, Inc. (an initiative of the Massachusetts Software Council) has created the Software Internship Program in partnership with the College of Management at UMass Lowell. This three-month program gives college seniors a complete introduction to the software industry, teamwork, and job skills at the council's member companies. Fourteen students participated in the program this past year.

Contact: Dean Kathryn Verreault, UMass Lowell (978)934-2741

NYPRO and UMass Lowell Develop Training Initiative for the Plastics Industry

NYPRO, Inc., of Clinton, MA, one of the country's leading plastics manufacturers, and UMass Lowell, a leader in on-line course development, have collaborated to create a "cyberschool," offering seminars and courses for plastics professionals around the world via the Internet. The program is designed to keep workers in the industry current with the latest developments in plastics technology. Through this "electronic classroom," students can access course materials, interact with their professors, and collaborate

with classmates on-line. The courses, jointly developed by NYPRO representatives and UMass Lowell faculty, allow students to attend classes on-line from any Internet-accessible computer. For more information, visit the NYPRO Websites at <http://cybered.uml.edu> and <http://www.nyproinstitute.com>.

Contact: Dirk Messelaer, UMass Lowell (978)934-2490

Fidelity and UMass Launch Technology Exploration Program

The UMass-Fidelity partnership realized its first tangible outcome in January when 25 students from four campuses completed a week-long shadowing program at various Fidelity Operations Centers. The Fidelity Technology Exploration Program provided students with the opportunity to shadow managers in the company's three key technology areas: development, operations and telecommunications. Participating students will now be considered for paying internships at Fidelity. UMass faculty served as facilitators in identifying students interested in pursuing technology careers with the company. Additionally, Fidelity named relationship managers with each of the four UMass campuses to facilitate further linkages between the company and the University.

Contact: Karin McCarthy, UMass Donahue Institute (617)287-7054

"Fidelity is impressed with the high caliber of students who participated in the Technology Exploration Program, and we're committed to this partnership with President Bulger and UMass."

DAVID WEINSTEIN
Chief of Administration and Government Affairs, Fidelity Investments

HELPING MASSACHUSETTS FIRMS STAY COMPETITIVE

Envirotech Companies Report Benefits from STEP

STEP (the Massachusetts Strategic Enviro-technology Partnership) is a collaborative effort of the Executive Office of Environmental Affairs, the Massachusetts Office of Business Development and UMass. Through technical and business services, STEP assists Massachusetts companies with commercialization of environmental technology. A recent program review, conducted by the UMass Donahue Institute, found that seventy-three percent of participating companies had made substantial progress in moving their technology toward commercialization. Ninety-four percent said they would recommend STEP to other companies in need of similar services.

Contact: Bill Brah, UMass Boston
(617)287-7723

UMass Amherst Organizes E-Commerce Center

UMass Amherst's Isenberg School of Management and the Computer Science Department have launched a new research initiative focused on many of the infrastructure and operational issues associated with selling information over the Internet. The Interdisciplinary Center for Electronic Commerce (ICEC) will promote public/private collaboration among academic and business researchers on such issues as information systems management, information retrieval, security and privacy, networks, and collaboration technology. IBM has contributed hardware

and software resources to help the ICEC get started.

Contact: Les Ball, UMass Amherst
(413)545-5654 or Lee Osterweil,
UMass Amherst (413)545-2186

UMass Dartmouth Researchers Support Fishing Industry

UMass Dartmouth has been using satellite data and surveys of commercial fishermen in conjunction with numbers from dock landings and measurements by government boats to develop more accurate surveys of the abundance of different types of fish in waters off the coast of Massachusetts. Such research has provided more reliable data that can be used to help inform government decisions about restricting commercial fishing and fisheries management. This research effort, led by the Center for Marine Science and Technology (CMAST) in New Bedford, was recently bolstered by a \$100,000 grant from the state's Seaport Advisory Council.

Contact: Brian Rothschild,
UMass Dartmouth (508)999-8193

NSF Funds Materials Research Center at UMass Amherst

The National Science Foundation recently awarded a \$6 million grant to the Materials Research Science and Engineering Center at UMass Amherst, re-affirming the scientific stature of the polymers program and its importance as a technological resource to Massachusetts industry. This center,

along with the Polymer Science and Engineering Department and the Center for UMass-Industry Research on Polymers (CUMIRP), has developed exceptionally strong research and educational ties with the polymers industry in the state and across the nation.

Contact: Tom Russell, UMass Amherst
(413)545-2680

Amherst Develops Research Initiative with Food Industry

UMass Amherst's Department of Food Science has initiated the Food Science Strategic Research Alliance. The Alliance is a new vehicle that provides Massachusetts firms in the food industry—such as Gortons, Medical Foods, Inc., Ocean Spray, Opta, Sensitech and Welch's—with an opportunity to join other industry leaders from around the country in collaborative education and research programs. These programs focus on such topics as food biotechnology, food biopolymers, food safety and regulation, functional foods, production process development, physical properties of foods and seafood processing.

Contact: Fergus Clydesdale,
UMass Amherst (413)545-2275

Commercializing University Technology

National Rankings for Licensing Income and Patents at CVIP

After only three years in operation, the University's Office of Commercial Ventures and Intellectual Property (CVIP) has landed UMass among the nation's leaders in licensing income. A new report by the Association of University Technology Managers (AUTM) indicates that in FY97, UMass generated over \$800,000 in licensing income, ranking 59th among the nation's leading research universities. Another AUTM report ranked UMass 33rd in the nation in terms of patents generated per research dollar. While the average institution generates one patent for every \$6.6 million of research, UMass generates one patent for every \$3.7 million.

Contact: Joe McGuirl, CVIP
(508)856-1626

University Reports Record-Setting Number of Invention Disclosures in First Quarter of FY99

The University's Office of Commercial Ventures and Intellectual Property (CVIP), which completed a record-breaking year in FY98, released impressive results for the first quarter of FY99. There were 39 faculty invention disclosures, nine patent applications, seven patents issued, six license agreements and \$629,000 of licensing income. The 39 faculty invention disclosures were the most ever for a single quarter at the University.

Contact: Joe McGuirl, CVIP
(508)856-1626

First-Ever High Tech Start-Up at UMass Dartmouth

The first-ever technology licensing agreement and faculty spin-off company—SimCalc Technologies—have recently been achieved at UMass Dartmouth. The company is organized around the software technology of Professor James Kaput, who has developed new software tools to help students learn complex forms of mathematics. The company will be based in Southeastern Massachusetts, and the University will have an equity position in the company and receive royalties on product sales. The transaction was negotiated by CVIP.

Contact: Dave Sheehan, CVIP
(508)856-1626

Expanding Venture Center at UMass Lowell Houses Six Companies

UMass Lowell's Commercial Development Center, a recently initiated high-tech incubator, is expanding rapidly and now occupies 10,000 sq. ft. of space. Managed under contract by a private venture development firm, Crossroads, Inc., the center now houses six companies with varying kinds of R&D, faculty consulting and student links to the Lowell campus. Companies include AirExpert (environmental technology); CVD Systems (chip manufacturing); Cynaptic (Internet software); Delos Corp. (wireless telecommunications); Mongo Engineering (consulting); and 1 COM (telecommunication services).

Contact: Lou Petrovic, UMass Lowell
(978)934-2577

Flourishing R&D Partnership Between UMass Worcester and Smith & Nephew

More than two years ago, President William Bulger announced an innovative R&D partnership between UMass Worcester and Smith & Nephew Endoscopy, an Andover-based medical technology company. The partnership, facilitated by CVIP, has resulted in S&N's investment of \$3 million in research at the University, 24 invention disclosures submitted by faculty, 21 patent applications filed, six technologies identified for commercialization, and four license agreements signed with S&N. In 1998, the company launched its first new product, the Handport (a device for minimally invasive surgery), based on this collaboration; the University will receive royalties on the product. These results suggest that the partnership may be one of the most productive of its type in the country.

Contact: Mike Henry, UMass Worcester
(508)856-1626

Please find the full list of CVIP contacts for the UMass System and all five campuses on page 7.

Benchmarking the State of the Economy

Landmark Study of the State of Housing in the Commonwealth Released

A group of UMass faculty from the Boston and Amherst campuses, coordinated by the UMass Donahue Institute, produced the first major analysis of the state of housing in Massachusetts in over a decade. The report was commissioned by the Citizens' Housing and Planning Association of Massachusetts (CHAPA) and supported by several different state-wide housing organizations. *A Profile of Housing in Massachusetts* focuses on the demographics of housing demand, production and supply, credit markets, affordability, housing for populations with special needs, discrimination, and the economic impact of housing in the state.

Contact: Steven Landau, UMass Donahue Institute (617)287-7040

University Begins Analysis of State's Pharmaceutical Industry

The University is undertaking a study to measure the impacts of the pharmaceutical industry on the Massachusetts economy. The study, lead by Professor Anurag Sharma of the UMass Amherst School of Management, with assistance from Professor Craig Moore, is expected to be completed in the spring. It is sponsored by the Pharmaceutical Researchers and Manufacturers Association of America.

Contact: Steven Landau, UMass Donahue Institute (617)287-7040

UMass Boston Joins in City-to-City Program

UMass Boston Chancellor Sherry Penney and Special Assistant to the Chancellor Hubie Jones collaborated with Mayor Tom Menino and Paul Guzzi of the Greater Boston Chamber of Commerce to organize a visit to Seattle by a group of Boston's business, education, non-profit and government leaders. The visit focused on learning about Seattle's best practices in economic development, particularly their successful experience in seaport, airport and waterfront development. In 1997, the University, Mayor Menino and the Chamber organized a similar trip to Atlanta.

Contact: Hubie Jones, UMass Boston (617)287-6800

Winter Issue of Benchmarks Journal Released

Massachusetts Benchmarks released its winter issue in January. Feature articles include an analysis of a new index of leading economic indicators for Massachusetts by Professor Alan Clayton-Matthews of UMass Boston; a summary of a study on older workers by Professor Andrew Sum of Northeastern University; a review of the Berkshires economy by UMass Professor Craig Moore, and a look at a newly released *Index of the Massachusetts Innovation Economy* by Dean Patricia Flynn at Bentley College and Joseph Alviani, president of the Massachusetts Technology Collaborative.

Contact: Steven Landau, UMass Donahue Institute (617)287-7040

ECONOMIC DEVELOPMENT

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Upcoming Events

April

15

10 am to 2 pm

Engineering in Massachusetts Collaborative: Planting the Seeds of Tomorrow's Workforce

The third statewide meeting of the Engineering in Massachusetts Collaborative will be held at the Newton Marriott. The purpose of the Collaborative is to bring together business, government and education leaders focused on the Commonwealth's need for a skilled workforce in the areas of science, engineering and technology.

The focus of this meeting will be on the sharing of "best practices" from around Massachusetts for encouraging K-12 students to pursue studies and careers in science and engineering. The event will be convened by the Collaborative's co-chairs, Ray Stata of Analog Devices and Joe Alviani of the Massachusetts Technology Collaborative, and organized by its founder, Dean Krishna Vedula of UMass Lowell. For more information, contact: Pamela Provencal, UMass Lowell (978)934-2572.

June

(date and time to be announced)

Manufacturing in Metropolitan Boston: Promoting Sustainable Economic Development

UMass Boston, along with Boston Edison and the City of Boston, will be hosting a conference on issues of sustainable economic development in the Greater Boston region. The program will feature research by Professor David Terkla on the status of manufacturing in the eleven communities comprising Metropolitan Boston. There will be four panels addressing issues of manufacturing, environmental business, entrepreneurship and workforce development. Contact: John Ciccarelli, UMass Boston (617)287-7893.