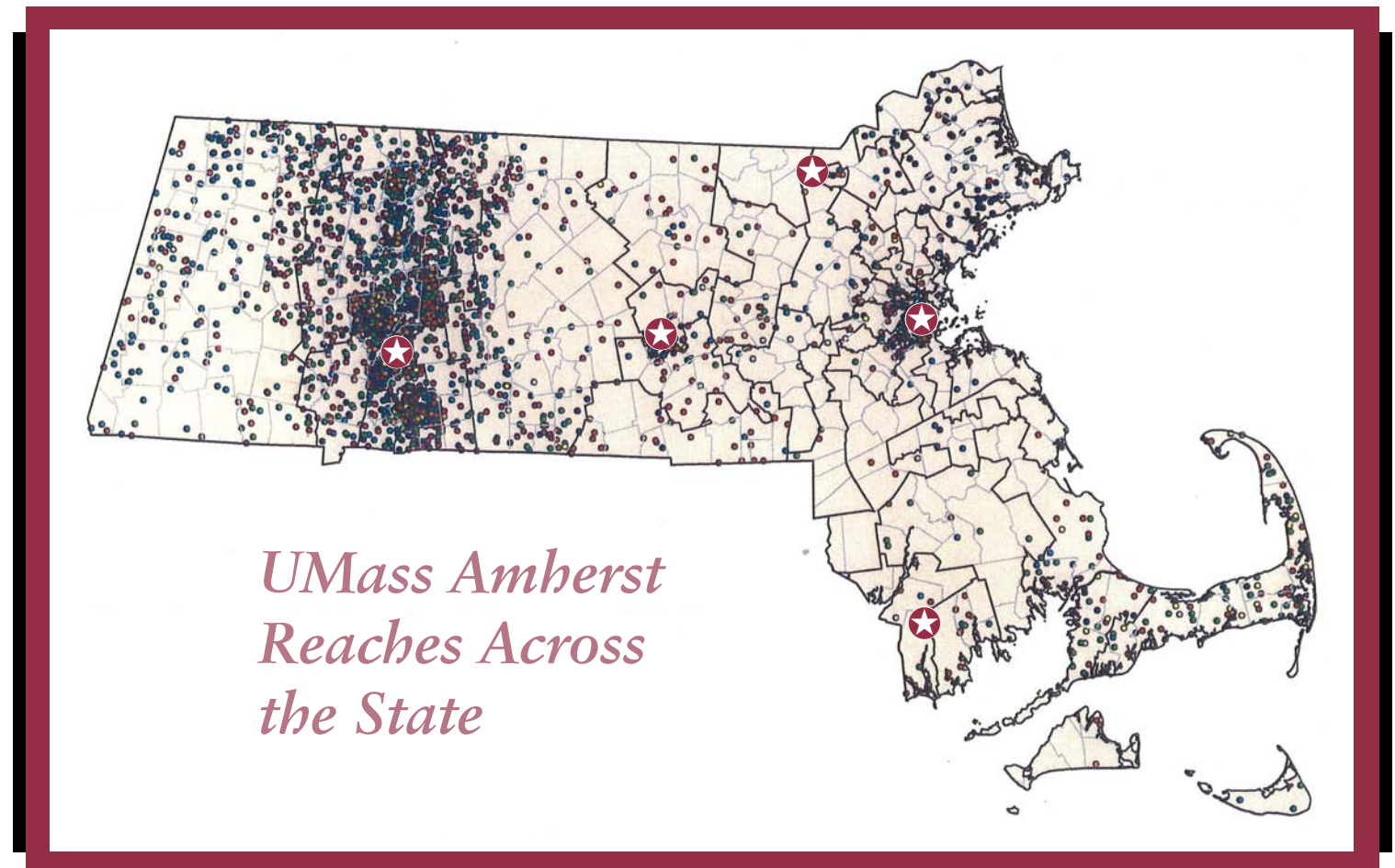




CROSS-CAMPUS COLLABORATIONS



COMMONWEALTH CONNECTIONS

For more information,
visit the campus at www.umass.edu

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CROSS-CAMPUS COLLABORATIONS

The University of Massachusetts Amherst has a long history of collaboration, reaching all corners of the Commonwealth and working side by side with their colleagues on the Boston, Dartmouth, Lowell and Worcester campuses. With partnerships ranging from one-on-one collaborations to multi-disciplinary initiatives, the faculty on the Amherst campus enjoy the benefits of collegial relationships with peers on the other campuses in the University system. While it is natural for researchers to seek out such collaborators, the successful partnerships around curriculum issues, instructional activities, and student recruitment are further evidence that collaboration is thriving in the University system.

COMMONWEALTH CONNECTIONS

The map on the front cover is a powerful illustration of the impact of UMass Amherst on communities throughout Massachusetts. Developed through a study commissioned by the Office of University Outreach, it charts the more than one thousand UMass Amherst faculty-led projects impacting 280 communities across the Commonwealth. From Springfield to Woods Hole and all points in between, faculty at UMass Amherst are making a difference in Massachusetts communities. The collaborations with the Boston, Dartmouth, Lowell and Worcester campuses and the local communities have had impacts on such wide ranging issues as K-12 education, science & technology, and building stronger communities.

Research and teaching are at the core of UMass Amherst's mission. What follows is a sampling of the collaborative projects in which this campus is privileged to take a leadership role working with the other campuses and neighboring communities. By no means is it exhaustive. With 965 tenure system faculty on the Amherst campus, there is always someone here collaborating with someone else in the UMass system, in the Commonwealth, in the nation, and around the world.

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CROSS-CAMPUS COLLABORATIONS

Selected Research Collaborations

MASSACHUSETTS ONE OF TWO NATIONAL WINNERS OF A LARGE-SCALE WIND BLADE TEST FACILITY

UMass Amherst professors literally wrote the book on wind energy research and were proud to be a major contributor to the Commonwealth's \$9 million application for a National Renewable Energy Laboratory (NREL) Cooperative Research and Development Agreements (CRADA) for a wind-blade test facility along with the Massachusetts Technology Collaborative and several executive offices of the state's Administration. The Urban Harbors Institute on the Boston campus also played a role in the application. In late June, it was announced that Massachusetts was one of only two states to receive funding. The facility will be located in Charlestown.

THE NEXT NANO APPLICATION: NANOMEDICINE

The Amherst campus is leading a three campus initiative with the Lowell and Worcester campuses to establish the UMass NanoMedicine Institute. Recent advances in nanotechnology have enabled the synthesis of new materials that can revolutionize medical diagnostics and therapeutics, enable targeted personalized medicine and the development of new vaccine strategies, and the realization of portable miniaturized clinical diagnostic devices.

A NOT SO SUBTLE COLLABORATION

This University of Pennsylvania-led project, "SUBTLE: Situation Understanding Bot Through Language and Environment," partners with the Lowell campus and two of the Amherst campus's top ranked departments, Computer Science and Linguistics. Recommended for funding by the Army Research Office, this project will run through 2010 with a possible two-year extension.

WHEN PROTEINS MIS-FOLD, DISEASE OCCURS

An assortment of metabolic disorders are caused by the protein folding problem, namely how amino acid sequence determines the three-dimensional structure of a protein. Faculty on the Amherst campus have particular strength in understanding this phenomenon and use their ongoing collaborations with the Worcester campus, including a variety of research projects and an annual joint retreat for students and faculty, to further advances in the field.

RESEARCH PAPER COLLABORATIONS

Getting a paper published in a peer-reviewed journal is one of the major accomplishments a researcher can have. Below is a sampling of journal titles that have accepted articles co-authored by Amherst and their UMass colleagues.

American Journal of Botany • *American Journal of Epidemiology* • *American Journal of Sociology* • *Annals of Epidemiology* • *Archives of Internal Medicine* • *Cell* • *Diabetes Care* • *Ecology of Food and Nutrition* • *Evolution* • *Journal of Neuroscience* • *Medicine and Science in Sports and Exercise* • *Nature Structural Biology* • *Patient Educational Counseling* • *Statistics in Medicine*

Many UMass Amherst faculty have also co-authored books and book chapters, led presentations, and sat on panels with faculty colleagues on the Boston, Dartmouth, Lowell and Worcester campuses.

TRANSPORTATION CENTER TRAVELS THE STATE

Intelligent transportation systems, safety and workforce development are themes that have run throughout the programs of the Amherst campus's UMass Transportation Center since its inception in 1993. The Transportation Center regularly partners with colleagues on the Dartmouth and Lowell campuses.

REMOVING NITROGEN FROM SEPTIC SYSTEM WASTEWATER... NATURALLY

Supported by the Cooperative Institute for Coastal and Estuarine Environmental Technology (CICEET) and the National Oceanographic and Atmospheric Administration (NOAA), this research project brings together a Dartmouth researcher with an Amherst researcher to study effective ways of purifying water.

POSITIONING MASSACHUSETTS ECONOMY

MassBenchmarks is the journal devoted to providing timely information about the Massachusetts economy. Contributing authors come from the Boston, Dartmouth, and Lowell campuses while an Amherst campus professor is the publication's executive editor.



DEVELOPING A CURE FOR BREAST CANCER AND IMPROVING SPERM FERTILITY KNOWLEDGE

Collaborations with the Worcester campus's Transgenic Knockout Animal Core Facility are critical for the efforts of the Amherst faculty who are working to define the molecular pathways that mediate susceptibility and resistance to breast cancer and to design targeted therapeutics to prevent breast cancer. The Facility also plays a role in basic research regarding sperm fertility. The Worcester campus's Proteomics Facility and Genomics Core Facility have also been beneficial to a variety of Amherst campus researchers.

MAKING SENSE OF THE NET IN CHALLENGED ENVIRONMENTS

The Massachusetts Center for Networked Sensing in Challenged Environments (NetSenCE) is a collaboration led by the Amherst campus and includes the Dartmouth and Lowell campuses as well as Woods Hole Oceanographic Institute. The core mission of this center will be to develop affordable, robust, easily deployable wireless networking technologies and sensor platforms for environmental sensing with a particular emphasis on water sensing.

ENHANCING THE ECONOMIC VIABILITY OF THE MASSACHUSETTS CRANBERRY INDUSTRY

Located in the heart of the cranberry growing region of Massachusetts, the Amherst campus-run Cranberry Station is a leader in the United States and worldwide for research and outreach programs on cranberry culture. Several collaborations with faculty from the Dartmouth campus have grown out of the Cranberry Station's activities.

USING TECHNOLOGY TO RESOLVE DISPUTES IN HEALTH CARE SYSTEMS

The UMass Amherst National Center for Technology Dispute Resolution and the Electronic Enterprise Institute are developing a relationship with the Center for Health Policy and Research based on the Worcester campus. As more and more health records go online, the number of disputes will also rise exponentially. This Center and Institute team is on the cutting edge of providing innovative solutions to the health care industry in Massachusetts and the nation.

DO SEASONS EFFECT BLOOD CHOLESTEROL LEVELS?

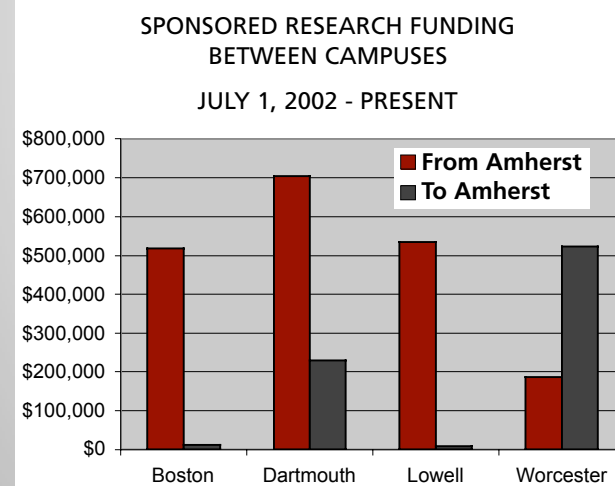
The Department of Kinesiology collaborated with the Worcester campus on a NIH funded grant to examine how seasons may impact blood cholesterol levels. This partnership resulted in three publications in peer reviewed journals.

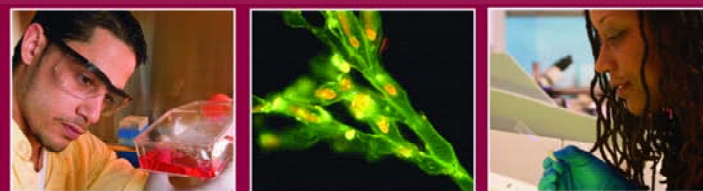
LATINO COMMUNITIES BENEFIT FROM UMass COMMUNITY-BASED HEALTH PROGRAMS

Continuing a long term relationship with the Gaston Institute for Latino Community Development and Public Policy on the Boston campus, members of the Amherst campus's Department of Public Health have been collaborating to introduce public health programs in inner cities. This is in addition to decades of research and outreach involving Springfield communities.

CROSS-CAMPUS RESEARCH FUNDING

UMass Amherst has sub-contracted almost \$2 million of sponsored research funding to the other four campuses in the system in the past five years. Conversely, the campus was the recipient of awards from the other UMass campuses in the amount of just over \$776,000 for the same five years. This figure excludes \$551,000 from the President's Office, funds which were predominantly from the Massachusetts Board of Higher Education for the Commonwealth IT Initiative.





A PRESS FOR ALL CAMPUSES

The University of Massachusetts Press, based on the Amherst campus, publishes 30 to 40 new books annually and has more than 900 titles in print. Like all university presses, it publishes books by scholars from many different colleges and universities, but a significant share are by UMass faculty, including those on campuses other than Amherst. Many faculty members on the Boston campus have published books with the Press, and for eighteen years (1988-2006) the Press maintained an editor on that campus. At the moment, one book series is edited by a faculty member from Boston, and a new series will be edited by a faculty member from Lowell.

Selected Research Collaborations continued

AMHERST LEADS SYSTEM-WIDE CLEAN ENERGY WORKING GROUP

More than 100 faculty members in the UMass System are involved in some aspect of clean energy research including solar, fuel cells, biofuels, wind/ocean, efficiency, and policy. With two thirds of that figure coming from the Amherst campus alone – building on strengths in wind energy, nanotechnology, materials science, chemical catalysis, microbial biotechnology, plant biology, and process design and engineering – Amherst was the logical campus to lead this timely endeavor for the Commonwealth. One recent success story is the Department of Energy grant awarded to a Mechanical and Industrial Engineering professor to fund her research collaboration with a colleague on the Boston campus. Together, these faculty members will untangle the pros and cons of alternative energies and explore the effect of various alternative energy policies on both emissions and the economy. Their findings could serve as a tool for policymakers as they determine future energy-related investments.

AIDS RESEARCH BENEFITS FROM COLLABORATION

Faculty members on the Amherst campus are principal investigators in one of the national Centers For AIDS Research on the Worcester campus. This collaboration enables joint grant applications and awards.

ANNUAL SOILS CONFERENCE PROVES TO BE FERTILE GROUND

For the past 23 years, the Amherst campus has been the host of the annual “UMass Amherst Soils, Sediments and Water” conference, the premier academic environmental conference in the country with over 12,000 attendees from 40 different countries and all U.S. states. Faculty members from the Boston, Dartmouth, and Lowell campuses have been invited to and participated in the conference for the past ten years and several have served as co-directors of the conference since 2000.

STEM CELL RESEARCH - NOT FROM HUMAN EMBRYOS

Faculty members in the Veterinary & Animal Science Department were the first to clone genetically altered livestock. New companies resulted (e.g., ACT, Hematech, and Cyagra) and the Amherst campus has continued to be on the cutting edge of animal-based stem cell research. Now, in partnership with the Worcester campus, a proposed Animal Core facility, in addition to major support for facilities and matching grant funds, is included in the Governor’s \$1 billion Life Sciences Initiative.

WATER RESOURCE RESEARCH CENTER ENABLES SYSTEM TO SERVE COMMONWEALTH

The Water Resources Research Center on the Amherst campus supports research, education, and outreach on issues of state, regional, and national importance as part of the national system of institutes authorized under the Water Resources Research Act of 1964. The Center operates a statewide competitive grants program open to all academic institutions in Massachusetts. The WRRC has funded research projects at the Boston, Dartmouth and Lowell campuses for at least the past five years.

CROSS-COLLABORATION BENEFITS STUDENTS

- Undergraduate and graduate students have increased opportunities to work in labs, gaining valuable research experience
- Faculty members on the Amherst campus serve on the dissertation committees of students at other campuses
- A pipeline of future faculty has developed, as graduate students trained on the Amherst campus are hired as faculty on the other campuses



CROSS-CAMPUS COLLABORATIONS

Selected Teaching Collaborations

PREPARING FOR CHANGE: THE MASSACHUSETTS MODEL FOR COMPREHENSIVE SCHOOL COUNSELING PROGRAM

Working together to ensure that K-12 professionals are properly trained, faculty in the UMass Amherst department of Student Development and Pupil Personnel Services and on the Boston campus have teamed up on a project funded by the Massachusetts Department of Education. As the Commonwealth institutes the new Massachusetts Model for Comprehensive School Counseling Program, school counselors are receiving training and guidance from faculty members in career planning skills to make them more effective counselors to students across the Commonwealth.

INCORPORATING TECHNOLOGY AND THE FINE ARTS

The Art History program, in concert with faculty on the Boston campus, has developed an online module on Buddhist art for introductory students in Art History on both campuses. Led by faculty in the Art History program, the module was successfully integrated into the art history curriculum on both campuses and has been received enthusiastically by the students.

PREPARING FUTURE STEM SCIENTISTS

The Science, Technology, Engineering and Mathematics (STEM) Summit began in 2004 as a collaboration between faculty in the College of Engineering on the Amherst and Lowell campuses. Drawing hundreds of K-12 administrators and educators each year, the STEM Summit aims to raise awareness and shape policy on the crisis in K-12 schools, which are graduating far too few students interested in or prepared to study for careers in science and engineering. Funded through the Center for Collaborative Adaptive Sensing of the Atmosphere (CASA) by the National Science Foundation, the STEM Summit has expanded to include partners statewide.

THE NEW ENGLAND GREEN CHEMISTRY CONSORTIUM DRAWS ITS CORE FROM AMHERST

In 2002, the New England Green Chemistry Consortium (NEGCC) was established, with UMass Amherst as the lead campus, to build strategic partnerships and alliances in the New England area among the six land-grant universities, small and large businesses and state and federal government. The mission of the NEGCC is to

UMASS AMHERST IS ONLINE WITH UMASSONLINE

Between Fall of 2006 and the upcoming summer 2007 sessions, UMass Amherst has contributed 547 courses to the UMassOnline program.

educate, discover, develop, apply, and promote green chemistry in all its forms and thereby reduce the intrinsic hazards of the Chemical Enterprise. Several research and teaching collaborations with Lowell have emerged, such as preliminary discussions now underway to establish a network of faculty focused on Green Chemistry education and the involvement of graduate students in K-12 outreach and community education.

USING THE WEB TO HELP OUR TEACHERS

With a \$1.2 million grant from the National Science Foundation, UMass Amherst faculty members in the department of Teacher Education and Curriculum Studies and on the Lowell campus have developed a Science Education Online (SEO) graduate program. As a leading model, SEO is a web-based licensure program for the preparation and training of elementary and middle school teachers.

SHARING IDEAS AND INTERESTS

Since 2002, the Interdisciplinary Seminar in the Humanities and Fine Arts (ISHA) on the Amherst campus, a forum for faculty to engage with one another in a spirit of intellectual and creative adventure, has engaged with faculty on the Boston campus. In addition, faculty from the Boston campus have given talks to students in Commonwealth College, in conjunction with Amherst ISHA seminars. An outgrowth of this successful, long-term relationship has been the development of a similar program now based on the Boston campus.

IT FOR THE GREATER GOOD

The Commonwealth Information Technology Initiative (CITI), a public-private partnership to improve information technology (IT) education across all levels of public education in the Commonwealth, has collaborated with the Boston, Dartmouth and Lowell campuses. Spearheaded by faculty in the Computer Science department, CITI has built an alliance of educators from across the Commonwealth who seek to increase the participation of women and minorities in careers in information technology and computing.



COMMONWEALTH CONNECTIONS

Whether focused on its neighboring towns, Springfield and Holyoke and the rest of the Pioneer Valley, or the broader Knowledge Corridor that includes Hartford, CT and Brattleboro, VT, UMass Amherst is a primary resource for workforce, expertise, and technology. The involvement of its faculty ensure that the Amherst campus is knowledgeable of and contributing to initiatives that can enhance these regional economies.

WORKING TOGETHER FOR HOLYOKE

The Community Outreach Partnership Center (COPC), administered by UMass Amherst and the Holyoke Planners Network as a result of a significant federal grant, targets Holyoke's low income neighborhoods with a variety of research and outreach activities in four major focus areas: education, economic development and community planning, capacity building, and fair housing and lending.

HELPING TO HEAL THE WOUNDS OF CIVIL WAR

About 100 refugee families from Somalia have been resettled in and around Springfield in recent years having fled the civil war in their home country. The members of this new community, uprooted from familiar ways of life and resettled in an alien culture, are striving to survive and thrive while preserving their cultural identity. Through the Somali Women's Project – a collaborative, arts-based economic development process led by New WORLD Theater, a program of the UMass Fine Arts Center – they are now developing marketable skills and adaptive strategies for living and thriving in their adopted city.

LIFE SCIENCES IN THE PIONEER VALLEY

The Pioneer Valley Life Sciences Institute (PVLISI), located in Springfield, is dedicated to improving human health by developing creative new approaches for the diagnosis and treatment of disease. A partnership between UMass Amherst and Baystate Health Systems – one of the largest teaching hospitals in New England – has proven to be a fertile environment for research, innovation and economic development. To date, the partners have invested millions of dollars into this endeavor. The PVLISI is also home to the Center of Excellence for Apoptosis Research (CEAR), a \$3 million investment by the MTC John Adams Innovation Institute, which will pursue new clinical treatments for diseases by studying and regulating apoptosis, the process of natural cell death.



The PVLISI, based in Springfield, is a joint collaboration between UMass Amherst and Baystate Health Systems.



PARTNERSHIPS FOR THE FUTURE

Working with the regional employment boards and companies in the Knowledge Corridor, the Workforce Innovation in Regional Economic Development (WIRED) program gives hope that a \$5 million proposal to the US Department of Labor will leverage existing organizations and resources to further the region's innovation economy.

ENHANCING LANGUAGE EDUCATION

The Asian Arts & Culture Program (AACP) has maintained and fostered an 11 year partnership with the Springfield Schools Foreign Language Program providing enrichment and enhancement to the Chinese language curriculum offered in schools (elementary through high school) for students and teachers.

SUMMER SCHOOL FOR TEACHERS

Working in partnership with the Springfield and Holyoke public school districts, the Western Massachusetts Writing Program (WMWP) has offered several National Writing Project-funded summer institutes for teachers in the greater Springfield area. These have included a nationally recognized English Language Literacy Leadership Institute and a writing-across-the-curriculum program entitled "Revitalizing Writing." WMWP has just submitted a contract proposal to the Massachusetts Department of Education to present an institute on writing to learn in Springfield this summer.

EXPANDING STEM EDUCATION

The Science, Technology, Engineering and Mathematics Education Institute (StemEd) is an outgrowth of the Science After School program launched by, among others, faculty of the Physics, Chemistry and Biology Departments and the School of Education. The goal of the Institute is to enhance and foster the university's teaching, research, and academic outreach in Science, Mathematics, Engineering and Technology education working with colleges and school districts in and around the state.



UMass Amherst Nursing students practice their skills.

REVERSING THE NURSING TREND

The Collaborating for the Advancement of Nursing: Developing Opportunities (CAN DO) program uniquely addresses the Western Massachusetts nursing workforce shortage by developing a unique collaboration between academic institutions, healthcare service providers, workforce development agencies and local foundations to collectively redesign the region's nursing education system. This special project, one in ten nationally, is funded in part by the R.W. Johnson Foundation.

THE COMMONWEALTH'S RESOURCE

UMass Extension, addressing public concerns of high priority for the Commonwealth and based on the Amherst campus, has 13 offices across the state. Programs include Agriculture & Landscape, Natural Resources & Environmental Conservation, Nutrition Education, and the Massachusetts 4-H Program.

LEADING THE WAY TO ECONOMIC DEVELOPMENT

Regional organizations that campus leaders are actively engaged in include the Economic Development Council of Western Massachusetts, Hartford-Springfield Economic Partnership, Pioneer Valley Life Sciences Institute, Pioneer Valley Planning Commission, Regional Technology Corporation, and WestMass.



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Chancellor

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Provost and Senior Vice Chancellor for Academic Affairs

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Vice Chancellor for Student Affairs and Campus Life

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