



Local Impact | Global Reach

Powering the Economy • Transforming Health Care • Revolutionizing Science



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**Partners in clinical care, education, research and community service:
UMass Memorial Health Care and University of Massachusetts Medical School**

UMass Memorial Health Care is the largest not-for-profit health care system in Central New England with more than 13,000 employees and nearly 2,000 physicians, many of whom are members of UMass Memorial Medical Group. With our member hospitals and entities, our extensive primary care network and our Cancer, Diabetes, Heart and Vascular, and Musculoskeletal Centers of Excellence, we deliver seamless programs of quality and compassionate care for patients across our health care system.

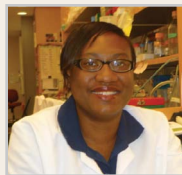
The University of Massachusetts Medical School, the state's first and only public academic health sciences center, educates physicians, scientists and advanced practice nurses to heal, discover, teach and care, with compassion. Our mission is to advance the health and well-being of the people of the Commonwealth and the world through pioneering advances in education, research and health care delivery.



Together, the University of Massachusetts Medical School and UMass Memorial Health Care, Inc.¹ are leaders in education, research and health care delivery in the Commonwealth. They also add significantly to the region by contributing billions to the local and state economies — an estimated \$5.17 billion in total economic activity across the Commonwealth, with more than \$4.19 billion generated in Worcester County alone.



► Boasting nearly 22,000 employees in 2010, UMass Medical School and UMass Memorial are major employers in both the region and the state.



► Nearly 95 percent of those employed by UMass Medical School and UMass Memorial live within the Commonwealth and 72 percent of those employees — or more than 15,800 — reside in Worcester County, with a quarter — or nearly 5,500 — residing in the City of Worcester alone.



► The local expenditures of these two economic anchors, along with the spending of almost 22,000 employees, supported nearly 12,800 additional jobs across the state — more than 7,900 of those just within Worcester County — for a total of nearly 34,700 jobs.

► Additionally, residents and businesses of the City of Worcester are benefitting from the day-to-day operations, employment and construction activities of UMass Medical School and UMass Memorial, totaling \$386.6 million in local spending.

UMass Medical School and
UMass Memorial Direct Spending
to City of Worcester Residents and
Businesses, FY 2010

UMass Medical
School

\$121.4M

UMass Memorial

\$265.2M

City of Worcester
Residents and Businesses

\$386.6M

Source: UMass Controller's Office, UMass Memorial



Combined, UMass Medical School and UMass Memorial generate more than \$5 billion in total economic activity in the state; more than \$4 billion of which remains in Worcester County.



■ Economic activity in Worcester County

Moreover, these community anchors directly employ nearly 22,000 people, with three-quarters residing in Worcester County.



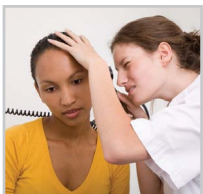
■ People living in Worcester County



Leaders in the economy, investing in the community

Through investments in education, public service, research and clinical work, UMass Medical School and UMass Memorial are investing in the economic and community health and well-being of the City of Worcester, the greater Central Massachusetts region, and the Commonwealth.

A \$5.17 billion catalyst



UMass Medical School and UMass Memorial contribute to the regional economy both directly and indirectly: through their day-to-day spending on goods and services, by making capital investments and construction expenditures, by employing thousands of people, and by attracting a diverse population of talented, service-oriented students.

Examining these key areas of spending and their broad economic effects clearly illustrates the value these institutions bring to the state and local region.

Together, UMass Medical School and UMass Memorial make an impressive economic contribution to the region. Total economic contributions take into account the influx of dollars to the local economy and the resulting support of local employment and local supply chains as those dollars flow among area businesses and households. In 2010, their everyday operations and construction projects, along with the household spending of their employees and students, contributed a total of \$5.17 billion in economic activity across the state, with more than 80 percent, \$4.19 billion, of contributions in Worcester County alone.ⁱⁱ

**Total economic contributions in Massachusetts
of UMass Medical School and UMass Memorial, FY 2010** ^{iii, iv}

	DIRECT EFFECT	INDIRECT & INDUCED	TOTAL ECONOMIC CONTRIBUTION
UMass Medical School	\$1.06B	\$693.0M	\$1.75B
UMass Memorial Health Care	\$2.29B	\$1.13B	\$3.42B
Total	\$3.35B	\$1.82B	\$5.17B

Source: UMass Controller's Office, UMass Memorial, UMDI IMPLAN Analysis

A shared public service mission

UMass Memorial is committed to improving the health status of all those it serves and to addressing the health problems of the poor and other medically underserved populations. In addition, UMass Memorial addresses the nonmedical conditions that negatively impact the health and wellness of the community.

UMass Medical School's mission is to advance the health and well-being of the people of the Commonwealth and the world through pioneering education, research, and health care delivery.

Building capacity for quality care and research

Worcester and the region benefit substantially from construction of new state-of-the-art facilities that provide integrated, patient-centered care and solidify Worcester and the region as a hub for life sciences research. The *Ambulatory Care Center*, a seven-story, 258,000-square-foot building that opened in July, 2010, houses a mix of UMass Memorial and UMass Medical School programs, including ambulatory clinical care centers, clinical and translational research programs, and research in quantitative health sciences. The 480,000-square-foot *Albert Sherman Center*, scheduled to open in late 2012, will double UMass Medical School's research capacity and support its new learner-centered curriculum. The Sherman Center already is attracting researchers, physicians, faculty, students and industry partners, enhancing Worcester's position as a leader in life sciences research.

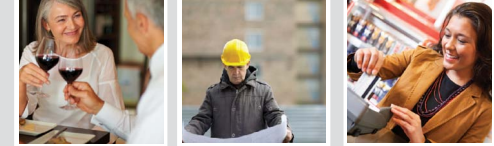
The Economic Effect of UMass Medical School and UMass Memorial on Massachusetts, FY2010



1 UMass Medical School and UMass Memorial had combined revenue of **\$3.35B**.

OTHER SPENDING

2 They spent **\$1.99B** throughout the Commonwealth.

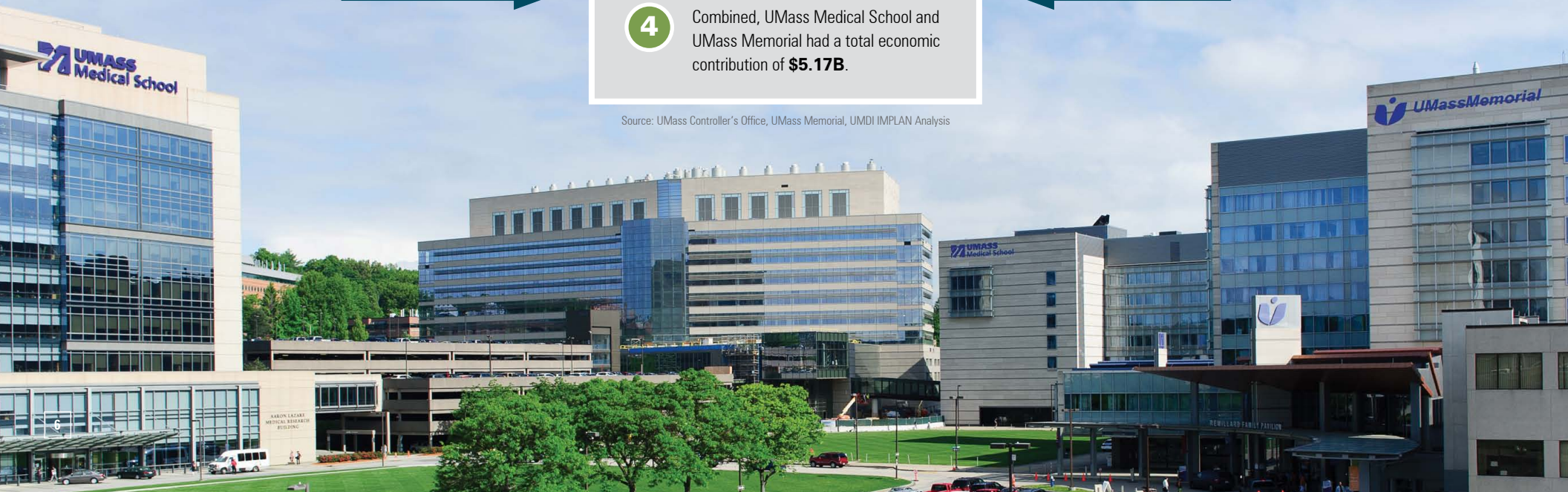


3 This spending on faculty and staff and local products and services, and the continued spending of these employees and businesses contributed an additional **\$1.82B** to the state's economy.



4 Combined, UMass Medical School and UMass Memorial had a total economic contribution of **\$5.17B**.

Source: UMass Controller's Office, UMass Memorial, UMDI IMPLAN Analysis



Medicine on a mission: Leaders in community health and well-being



The programs and clinical care services of UMass Memorial and UMass Medical School reach far beyond Central Massachusetts, helping people across the region and country lead healthier lives. The physicians and other health care professionals who treat patients at UMass Memorial and teach and conduct research at UMass Medical School are blazing a path toward more effective and efficient health care. For example, the UMass Memorial Health Care Cancer, Diabetes, Heart and Vascular, and Musculoskeletal Centers of Excellence deliver seamless programs of quality and compassionate care for patients across the health care system. Developed to meet the needs of the community, the centers offer an experienced team approach to specialized treatment, advanced therapies and breakthrough clinical trials.



Improving patient care through clinical advancements

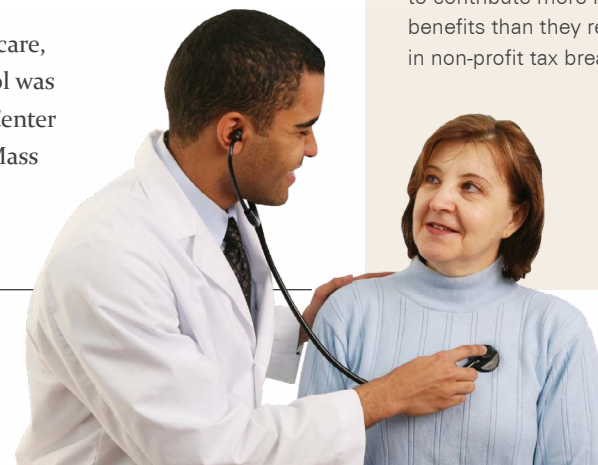
Dr. David Harlan, professor of medicine at UMass Medical School and co-director of the UMass Memorial Health Care Diabetes Center of Excellence, is leading an effort to transform diabetes care management for patients and their doctors. This new approach, the first in the nation of its kind, integrates a web-based diabetes management system with an electronic health record system used by UMass Memorial's physicians. • Read more: www.umassmed.edu/diabetesmanagement

Supporting access to primary care

UMass Memorial and UMass Medical School are committed to supporting access to primary care, through education, promotion and support for primary care providers. UMass Medical School was ranked eighth in the nation for primary care education by *U.S. News and World Report*. The Center for the Advancement of Primary Care (CAPC), jointly supported by UMass Memorial and UMass Medical School, is dedicated to improving the work environment and experience of primary care providers. • Read more: www.umassmemorial.org/capc

► As clinical partner to UMass Medical School, UMass Memorial has the distinction of being the largest, not-for-profit health care system in Central New England. Each year in its five hospitals, clinics, health centers and physician's offices, UMass Memorial serves 1 million patients – roughly 4,000 people per day. UMass Memorial is the only safety net provider for the uninsured in Central New England, the fourth largest in the Commonwealth, and is the largest provider to the uninsured outside of Boston.

► In 2009, the *Boston Globe* found that UMass Memorial is one of only three hospital systems in the Commonwealth to contribute more in community benefits than they receive in non-profit tax breaks.^v





A Local Commitment

UMass Medical School and UMass Memorial directly impact the region through local spending on products and services, by employing a talented local workforce, and continually growing and expanding opportunities for local students to become tomorrow's leaders in health care.

Powering the region's economy



As important economic engines powering the local economy, UMass Medical School and UMass Memorial account for \$1.99 billion in spending directly to their employees and businesses in the Commonwealth, \$386.6 million of which was spent inside the City of Worcester alone. In FY 2010, UMass Medical School spent \$459.3 million, or nearly seventy percent of its total spending, throughout the Commonwealth, on its research and public service activities, including its work through UMass Biologics Laboratories and Commonwealth Medicine.

Jobs creating jobs

In 2010, UMass Medical School and UMass Memorial employed nearly 22,000 people in their facilities across the Commonwealth. Spending by UMass Medical School and UMass Memorial, including the household spending of their employees and students, supported nearly 12,800 additional jobs in other industries throughout the state, including more than 7,900 in Worcester County.

UMass Medical School and UMass Memorial Spending to Massachusetts Businesses and Employees, FY 2010

UMASS MEDICAL SCHOOL

Payroll & Operations

• Research & Public Service	\$459.3M
• Instruction	\$93.4M
• Auxiliary Services	\$25.0M

Construction \$61.7M

Students' Spending \$25.4M

Total **\$664.8M**

UMASS MEMORIAL

Payroll \$1.15B

Operations \$133.5M

Construction \$36.3M

Total **\$1.32B**

TOTAL SPENDING IN MASSACHUSETTS

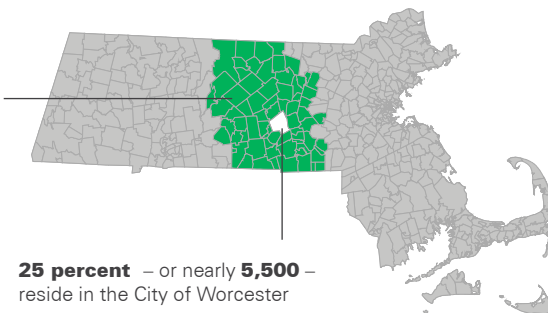
\$1.99B

Source: UMass Controller's Office, UMass Memorial

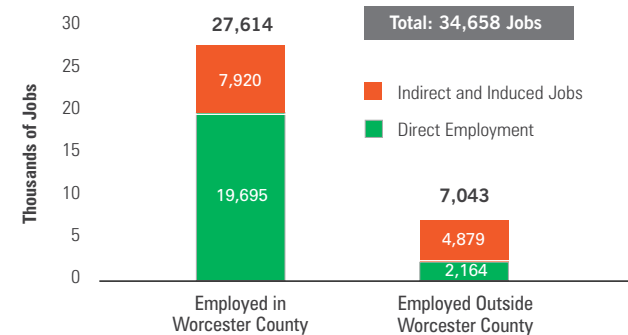
Living and working in the community

Nearly **95 percent** of UMass Medical School and UMass Memorial employees live within the Commonwealth.

72 percent of those employees – or more than **15,800** – reside in Worcester County



Total employment contributions of UMass Medical School and UMass Memorial, FY 2010



Source: UMass Controller's Office, UMass Memorial, UMDI IMPLAN analysis
Note: Totals may not add due to rounding.

Seeing the possibility, seizing the potential: Preparing local students to become future leaders

With a commitment to ensure students from K-12 through college become the next generation of health care leaders for the region and the Commonwealth, UMass Medical School and UMass Memorial are continuously investing in growing a workforce that reflects the diversity of the communities they serve.



Enabling academic and career success

For more than 15 years, UMass Memorial, as an underwriter for the Worcester Youth Center, has provided a place for thousands of the city's at-risk young people, ages 14-24, to participate in work readiness programs, GED programs, and other leadership, entrepreneurial and violence prevention programs. • Read more:

www.worcesteryouthcenter.org

Building 21st century skills

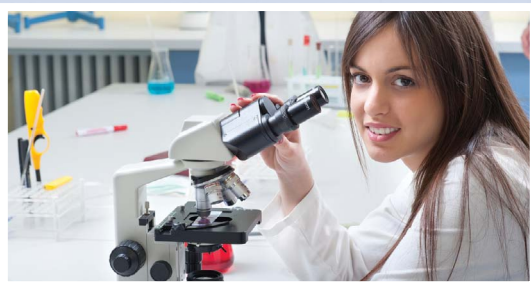
UMass Medical School is preparing local K-12 students for the innovation economy of the 21st century by leading STEM (science, technology, engineering and math) initiatives. For example, the Worcester Pipeline Collaborative, a partnership between UMass Medical School and numerous education, community and business affiliates, provides students in the North High Quadrant with access to tutoring, mentoring, internships, laboratory experiences and summer research opportunities.

• Read more: www.umassmed.edu/pipeline



Exploring health care careers

Collaborating with the City of Worcester and its Advisory Council on Youth, UMass Memorial (including its Building Brighter Futures with Youth Employment program) employs more than 250 youth each summer, many of whom continue their work during the school year. Other programs, including Wing Memorial Hospital's summer internship partnership with the River East School-to-Career Program, offer local students the opportunity to learn, in an actual hospital setting, about future careers in health care.



Offering tuition-free summer hands-on learning

The UMass Medical School's High School Health Careers and College Summer Enrichment Programs are tuition-free, residential summer programs that offer Massachusetts high school and college students hands-on learning about careers in health. By providing meaningful job experiences to diverse students interested in careers in health care, the Medical School and UMass Memorial are helping to build a solid foundation for these students' future job prospects. • Read more: www.umassmed.edu/hshealthcareers and www.umassmed.edu/collegesummerenrichment

A shining example

UMass Medical School alumnus Dr. Imo Aisiku participated in the College Summer Enrichment Program while an undergraduate at Worcester State University. He is currently the vice-chair and chief of critical care in the neurosurgery department of the University of Texas Medical School at Memorial-Hermann Hospital in Houston, Texas, and is a member of the renowned neurosurgical team leading the care for former Congresswoman Gabrielle Giffords.





Innovating for the Future

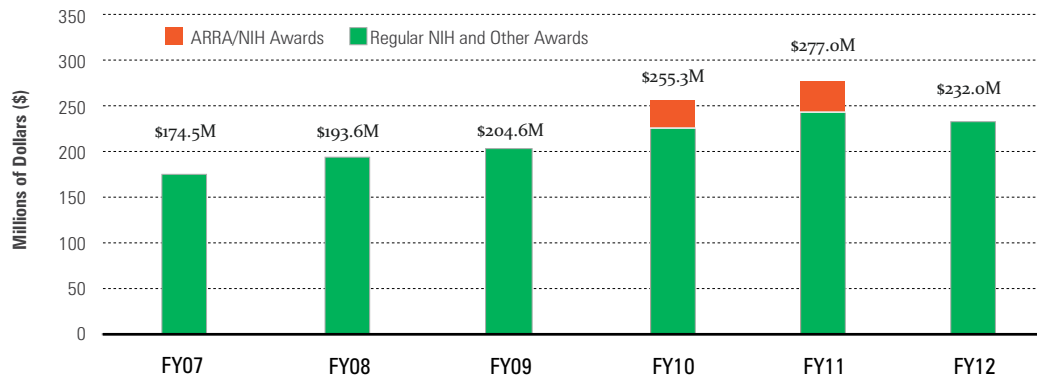
UMass Medical School and UMass Memorial are making Central Massachusetts a center for world-class research, ensuring that medical breakthroughs reach local and global communities alike.

A center for world-class research in Central Massachusetts



Despite an increasingly competitive national grant process, over the last five years, UMass Medical School has received substantial increases in research funding. Between FY07 and FY12, annual awards increased nearly 33 percent, from \$174.5 million to \$232.0 million, an impressive rate of growth in annual research awards. Along with the region's local talent, awarded research is contributing to the growth of new global partnerships and medical breakthroughs with worldwide impact. Further, this research has helped establish Massachusetts as a center for world renowned know-how in biomedical innovation and is placing Central Massachusetts at the forefront of entrepreneurial biotechnology expertise.

Growth in Total Research Funding, UMass Medical School, FY07 through FY12



Source: UMass Medical School, Annual Report of Grants and Contracts

Note: These figures include all sources including federal research awards such as NIH, as well as private research awards, and American Recovery and Reinvestment Act (ARRA) related NIH awards. The decrease from FY 11 to FY12 is primarily due to the end of the ARRA related awards.

Bringing laboratory breakthroughs to patient care

In 2010, UMass Medical School was awarded a prestigious \$20 million Clinical and Translational Science Award (CTSA) from the National Institutes of Health (NIH) to create an academic home for clinical and translational science across all five UMass campuses and in partnership with UMass Memorial. The UMass Center for Clinical and Translational Science (UMCCTS) places UMass Medical School and UMass Memorial among an elite consortium of 60 nationally prominent academic medical centers working to more efficiently move laboratory discoveries into treatments for patients, to engage communities in clinical research, and to train a new generation of researchers. • Read more: www.umassmed.edu/CCTS





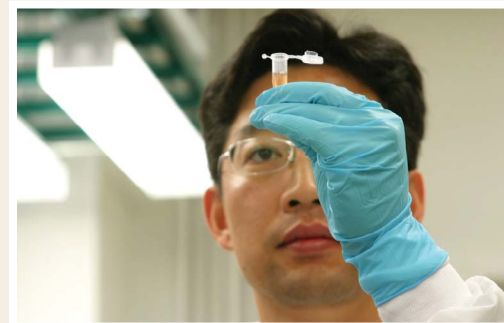
Filling a public health need

UMass Memorial contributed more than \$925,000 over the past three years on programs supporting the City of Worcester, including educational programs, clinical services and direct support to the Commissioner of Public Health. Over the past two years, UMass Medical School personnel and students committed more than 52,000 hours toward community service efforts in the City of Worcester and tens of thousands of hours more across the Commonwealth. The Medical School's community programs in education and health, in particular, harness the skills and expertise of the institution to address pressing local needs. For example, recognizing the challenges municipalities such as Worcester are facing as a result of declining resources, UMass Medical School's Graduate School of Nursing assists the City of Worcester each year to inoculate thousands of seniors and others at risk for seasonal flu.

Extending the reach of the Commonwealth's life sciences cluster

Massachusetts consistently ranks as one of the top states in the nation for National Institutes of Health (NIH) funding. In FY11, the Medical School was second only to Harvard in NIH funding awards to higher education institutions and fourth among all institutions in the state, helping to further extend the Commonwealth's fertile life sciences cluster beyond Greater Boston and into Central Massachusetts.

Diverse local companies, including spin-offs from UMass Medical School or companies founded by its faculty – such as, Biomedical Research Models, Inc., GL Synthesis, Microbiotix, RXi Pharmaceuticals, Alnylam Pharmaceuticals, Targeted Cell Therapies and Reflectance Medical, as well as a slew of other private firms that benefit from the presence of an NIH-funded research powerhouse – are helping to support an important biomedical cluster in the region. A 2008 study cites Worcester County as home to 162 biomedical companies with an estimated 16,000 employees.^{vi} Additionally, UMass Medical School boasts 194 licenses with 110 companies, a significant number of them local.

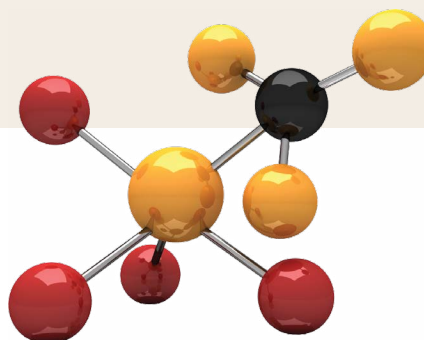


NIH Awards FY 2011 Massachusetts Higher Education Institutions

Harvard University (Medical School)	\$200,413,466
UMass Medical School	\$153,534,616
Boston University Medical School Campus	\$132,434,111
Harvard University (School of Public Health)	\$120,611,357
Massachusetts Institute of Technology	\$106,816,552

Source: NIH Grant Database, 2011

Note: These NIH awards are a subset of all other research awards indicated in the previous bar chart on page 13. The fiscal year for these awards is the federal fiscal year (starting October 1), not the UMass Medical School fiscal year (starting July 1). These data do not include ARRA awards.



Beyond the lab: Saving lives throughout the world

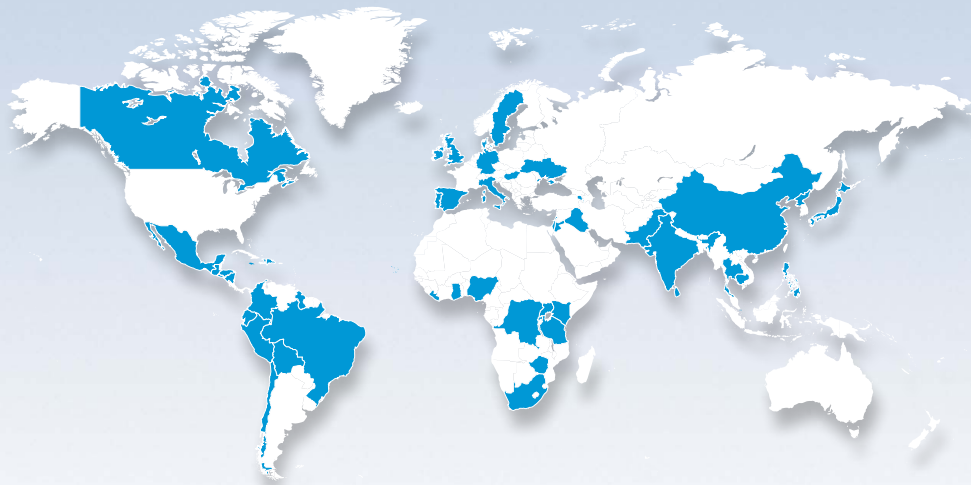


Partnering for a healthier world

A discovery by UMass Biologics Laboratories researchers has the potential to save tens of thousands of lives each year with a new cost-effective medication to prevent rabies. UMass Biologics Laboratories, the only non-profit FDA-licensed manufacturer of vaccines in the United States, is working with the Serum Institute of India to study a monoclonal antibody to the rabies virus.

- Read more: www.umassmed.edu/rabiesvaccine

The Global Presence of UMass Medical School and UMass Memorial



Improving community health at home and abroad

When the Worcester Infant Mortality Reduction Task Force discovered that Ghanaian immigrant mothers in the city had significantly higher rates of premature births, a team led by Marianne E. Felice, MD, chair and professor of pediatrics, and Julia V. Johnson, MD, chair and professor of obstetrics & gynecology, traveled to Ghana in search of answers for this perplexing issue. The team returned to Worcester with fresh avenues to explore that may not only help women in Ghana, but should also have a positive impact on Worcester's immigrant communities and their children.

- Read more: www.umassmed.edu/ghana

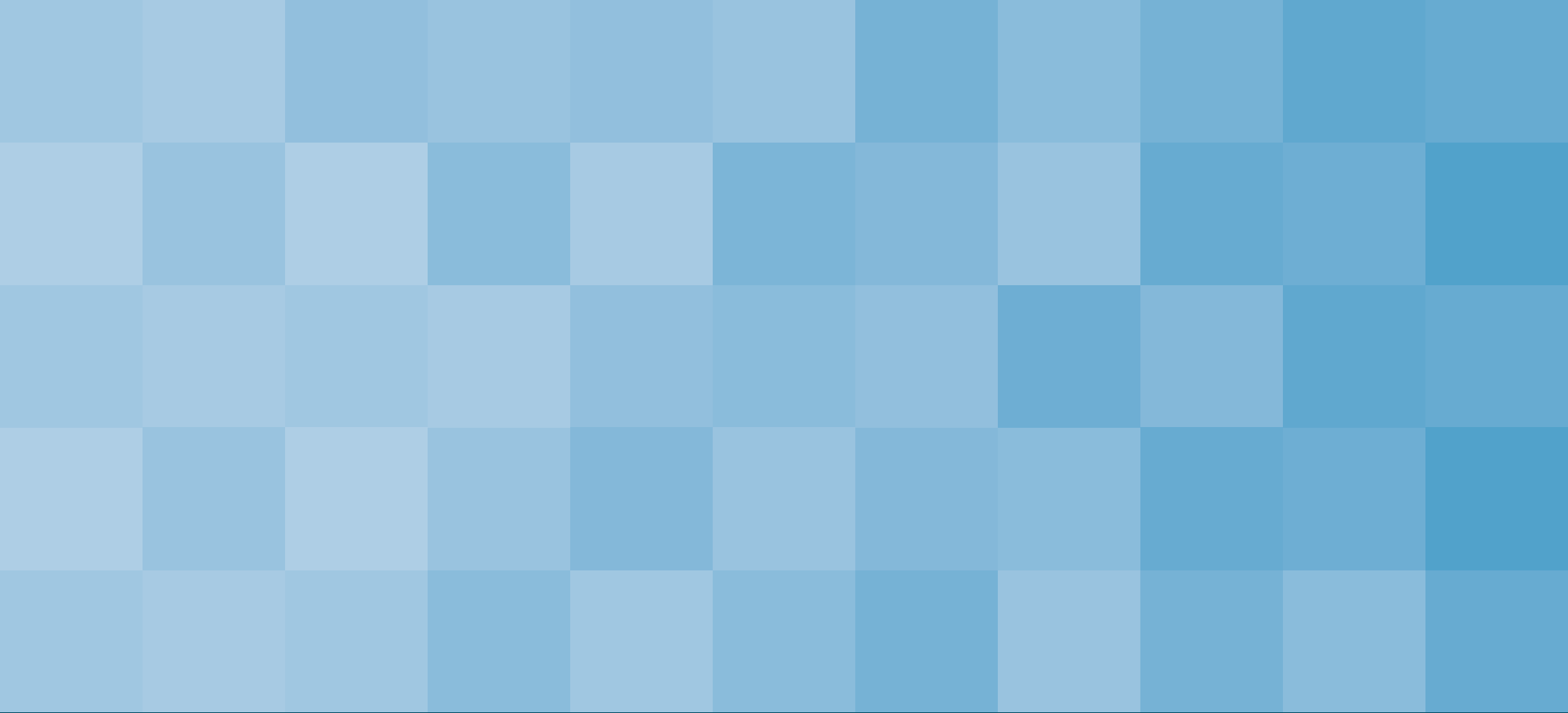


ENDNOTES

- i) UMass Memorial Health Care, Inc. is referred to as UMass Memorial in this document. UMass Memorial Health Care, Inc. includes the following: Clinton Hospital, HealthAlliance Hospital, Marlborough Hospital, UMass Memorial Medical Center, Wing Memorial Hospital and Medical Centers and Community Healthlink, the UMass Memorial behavioral health agency. UMass Memorial is also affiliated with Fairlawn Rehabilitation Hospital and that affiliation is included in the economic contribution analysis. UMass Medical School includes the following: Commonwealth Medicine, UMass Biologics Laboratories, and other related financial entities.
- ii) Economic contributions to Worcester County do not include UMass Biologics Laboratories, Marlborough Hospital or Wing Memorial Hospital, as these entities are located outside of Worcester County. While these entities have some economic effect on Worcester County, those cannot be quantified using the existing model.
- iii) In keeping with economic contribution analysis best practice, the FY2010 State Appropriation of \$47,123,000 for UMass Medical School has been subtracted from the total direct effect to derive the net direct effect for the Medical School presented here.
- iv) This analysis used fiscal year data. UMass Medical School and UMass Memorial run on slightly offset fiscal years (June-July versus October-September). This has likely had only a modest effect on the analysis.
- v) Allen, Scott and Marcella Bombardieri. 2009. Much is given by hospitals, more is asked: Nonprofits reaping more in tax breaks than they report in charity work; some say that must change. Boston Globe, May 31.
- vi) *Analysis of the Central Massachusetts Biomedical Industry and Emerging Biomedical Corridor Between Worcester and Boston*, 2008 MA Biomedical Initiatives, <http://www.massbiomed.org/wp-content/uploads/2010/10/Analysis-of-the-Central-Massachusetts-Biomedical-Industry1.pdf>



This report was produced by the
UMass Donahue Institute
Economic and Public Policy Research Unit.



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