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Vitae:

The Magazine of
The University of Massachusetts Medical School



Expanding our Reach



University of
Massachusetts
Medical School

Vitae: L., the plural of life

The name of this magazine encompasses the lives of those who make up the University of Massachusetts Medical School community, for which it is published. They are students, faculty, staff, alumni, volunteers, benefactors and others who aspire to help this campus achieve national distinction in education, research and public service.

UMass Medical School's mission is to advance the health and well-being of the people in the commonwealth and the world through pioneering advances in education, research, and health care delivery. As you read about this dynamic community, you'll frequently come across references to partners and programs of UMass Medical School (UMMS), the Commonwealth of Massachusetts' only public medical school, educating physicians, scientists and advanced practice nurses to heal, discover, teach and care, compassionately.

Commonwealth Medicine

UMass Medical School's innovative public service division that assists state agencies and health care organizations to enhance the value and quality of expenditures and improve access and delivery of care for at-risk and uninsured populations.

www.umassmed.edu/commed

The Research Enterprise

UMass Medical School's world-class investigators, who make discoveries in basic science and clinical research and attract more than \$242 million in funding annually.

UMass Medical School/UMass Memorial Development Office

The department that supports the academic and research enterprises of UMass Medical School and the clinical initiatives of UMass Memorial Health Care by forming vital partnerships between contributors and health care professionals, educators and researchers.

www.umassmed.edu/foundation

UMass Memorial Health Care

The clinical partner of UMass Medical School and the Central New England region's top health care provider and employer.

www.umassmemorial.org

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In Service: Expanding Our Reach

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The people of the University of Massachusetts Medical School are expanding the school's impact through service to ever-broadening communities. Read about the region's only gene therapy trials to fight a rare eye disease; the school's influence in many countries of the world, supported by the new Office of Global Health; and an effort to put people with disabilities to work that is being hailed as a national model.

Vitae: Year in Review

Ceremony marks Sherman Center beginning

New building will unify campus, complement learning communities

The ceremonial groundbreaking for the Albert Sherman Center, held in conjunction with Convocation in September, marked the beginning of a \$400-million commitment to expand and unify the UMass Medical School campus, double its research capacity and support learning communities that will complement the school's new curriculum.



Construction of the 480,000-square-foot Sherman Center will begin in earnest in April and continue through 2012, when the building is scheduled to open. The nine-story building will anchor the northwest corner of the University campus, creating a new “front door” to the Medical School.

The new facility, named for Albert “Albie” Sherman, longtime vice chancellor for University Relations at the Medical School, will be home to the Advanced Therapeutics Cluster (ATC), which includes the RNA Therapeutics Institute, the Center for Stem Cell Biology and Regenerative Medicine, and the Gene Therapy Center, and contain research space for more than 100 investigators. Translational scientists in the ATC will pursue novel bench-to-bedside research in these emerging scientific fields with the goal of developing new innovative therapies for diseases.

The Sherman Center will also integrate quantitative research methods, such as bioinformatics, biostatistics, interactive health outcome assessments and electronic health care data

“The Albert Sherman Center will further enhance the Medical School’s ability to attract researchers, physicians, faculty, students and industry partners who will together bring forward the research and medical breakthroughs to conquer disease.”

—Chancellor Michael F. Collins

systems, with the work of biologists and chemists in the building’s laboratories. As part of the funding plan, the Medical School will receive \$90 million from the



Below at the Sherman Center groundbreaking ceremony, from left: Dean Terence R. Flotte; David J. MacKenzie, executive director, UMass Building Authority; Susan Windham-Bannister, president, Massachusetts Life Sciences Center; Chancellor Michael F. Collins; Massachusetts Lt. Gov. Tim Murray; Albert Sherman; State Senate President Therese Murray; UMass President Jack M. Wilson; Trustee Kerry Osterhaus-Houle, MD; Worcester City Manager Michael O'Brien.



The Albert Sherman Center AT UMASS MEDICAL SCHOOL

**The Life Sciences Evolution is Here*



Massachusetts Life Sciences Center, the agency tasked with implementing the Massachusetts Life Sciences Act, a 10-year, \$1 billion initiative that was signed into law in June 2008.

"At a time when other institutions are scaling back or putting off plans to expand, the Medical School is making this bold move to maintain the momentum we have generated over the last decade as we have created a life sciences powerhouse

here in Worcester," said Chancellor Michael F. Collins. "When completed, the Albert Sherman Center will further enhance the Medical School's ability to attract researchers, physicians, faculty, students and industry partners who will together bring forward the research and medical breakthroughs to conquer disease."

The building will include significant space to complement the School of Medicine's new learner-centered curriculum. Consistent with the goal of creating a more integrated, competency-based curriculum, courses are characterized by shared, multidisciplinary leadership and more integrated basic and clinical science content. The building will also include simulation laboratories where students will participate in hands-on learning in virtual situations.

To learn more about the Albert Sherman Center and to follow its progress, visit www.umassmed.edu/shermancenter

Vitae: Year in Review

Biorepository Core collects extra blood samples to advance research

The newly created Conquering Diseases Biorepository Core will soon make available a substantial amount of clinical information linked to patient-derived samples that will further the understanding of the disease process. Patients who consent to give “a little bit extra” when giving routine blood samples can provide a huge benefit to biomedical research, according Joanne Meisner, project manager of the Biorepository Core.

Working with nurses in UMass Memorial Medical Center’s five intensive care units, Meisner enrolls patients from whom a small amount of extra blood will be drawn during their usual care—blood that will be sent to the Medical Center’s laboratory at Biotech One for processing, storage and, ultimately, for use in biomedical research.

The Biorepository Core is a collaborative effort led by Craig Lilly, MD, professor of medicine, anesthesiology and surgery and director of the UMass Memorial eICU program; Ralph Zottola, PhD, instructor in biochemistry & molecular pharmacology and associate chief information officer

of Academic & Research Computing Services; Gary Schneider, PhD, professor of molecular medicine and associate vice provost for research administration; and Paul Ranauro, senior application database developer; and overseen by the UMMS Institutional Review Board. It will store plasma, DNA and RNA, and will provide researchers with a pool of de-identified samples to work with.

While many biorepositories bank DNA and protein products, few bank RNA. Given the Medical School’s strength in RNA research, the Biorepository Core will seek to meet research needs by isolating both high molecular weight DNA and total RNA (including small RNA and microRNA). Additionally—and equally important—researchers will be able to obtain de-identified information about patients’ age, gender, diagnoses and medications at the time of the sample draw, allowing for comparison of one sample to the next.

“To conquer common diseases, we need to identify the factors responsible for differences in how they manifest and

“We are documenting how diseases present and respond to treatment every day. The biorepository is about using this information ... to better guide patient care for the best outcomes.”

—Craig Lilly, MD



Leading the Conquering Diseases Biorepository Core are, from left: Thomas Mayer, PhD, director of the biorepository laboratory; Craig M. Lilly, MD, program director; and Joanne Meisner, project manager.

respond to treatment,” said Dr. Lilly, director of the Biorepository Core. “In partnership with health care providers at UMass Memorial, we are documenting how diseases present and respond to treatment every day. The biorepository is about using this information to not only understand what those variations are and why, but also, eventually, to better guide patient care for the best outcomes.”

As of September 2009, researchers were able to search two million records—that included 122 million clinical facts. ☐



Catarina I. Kiefe, MD, PhD



Job Dekker, PhD

Research on the 3-D structure of the human genome could explain how a cell stores some three billion base pairs of DNA while maintaining access to functionally crucial segments. In late 2009, a team of scientists, including Job Dekker, PhD, associate professor of biochemistry & molecular pharmacology and molecular medicine, reported two striking findings.

First, the human genome is organized into two separate compartments, keeping active genes separate and

UMMS scientist helps decipher the 3-D structure of the human genome

accessible while sequestering unused DNA in a denser storage compartment. Chromosomes snake in and out of the two compartments repeatedly as their DNA alternates between active, gene-rich and inactive, gene-poor stretches.

“Cells cleverly separate the most active genes into their own special neighborhood, to make it easier for proteins and other regulators to reach them,” said Dr. Dekker, who is part of the team of researchers that also includes scientists from Harvard University, the Broad Institute of Harvard and MIT and the Massachusetts Institute of Technology.

Second, at a finer scale, the genome adopts an unusual organization known in mathematics as a “fractal.” The specific architecture the scientists found, called a “fractal globule,” enables the cell to pack DNA incredibly tightly—the information density in the nucleus is trillions of times higher than on a computer chip—while

avoiding the knots and tangles that might interfere with the cell’s ability to read its own genome. Moreover, the DNA can easily unfold and refold during gene activation, gene repression and cell replication.

“Nature has devised a stunningly elegant solution to storing information—a super-dense, knot-free structure,” said senior author Eric Lander, PhD, director of the Broad Institute, who is also professor of biology at MIT and professor of systems biology at Harvard Medical School.

Key to the current work was the development of the Hi-C technique. The scientists first used formaldehyde to link together DNA strands that are nearby in the cell’s nucleus. They then determined the identity of the neighboring segments by shredding the DNA into many tiny pieces, attaching the linked DNA into small loops, and performing massively parallel DNA sequencing. ☐

Ambulatory Care Center receives first occupants

Members of the newly established Department of Quantitative Health Sciences (QHS) became the first occupants of the 258,000-square-foot Ambulatory Care Center (ACC) when they moved into their seventh-floor space this summer. QHS faculty collect and analyze data generated by Medical School population research projects to improve delivery of health care services and patient outcomes.

“There is a tremendous amount of groundbreaking research being done at UMass Medical School,” said

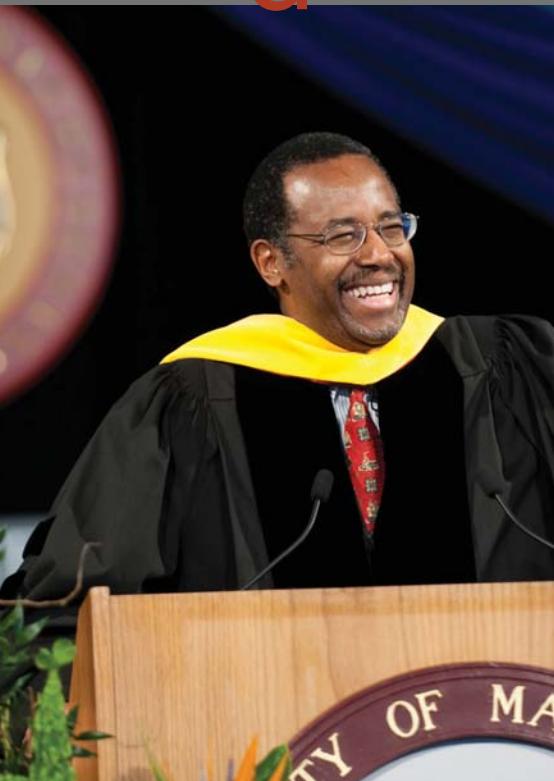
Catarina I. Kiefe, MD, PhD, chair and professor of quantitative health sciences and professor of medicine, and a highly regarded scientist in the fields of health care quality measurement and outcomes research. “QHS will play a unique role in linking this innovative research to state-of-the-art clinical care.”

QHS is the academic home for four divisions: biostatistics and health services research; epidemiology of chronic diseases and vulnerable populations; health informatics and implementation science;

and outcomes measurement science. Researchers in the department will develop their own population health-oriented research programs, as well as provide methodological support and medical informatics expertise to projects across the Medical School.

In addition to QHS, ACC will house UMass Memorial Heart and Vascular, Musculoskeletal, Cancer and Diabetes and Endocrinology patient care Centers of Excellence, as well as diagnostic imaging and radiology services. ☐

Vitae: Year in Review



New Commencement tradition all about community

The University of Massachusetts Worcester began a new tradition by holding its 36th Commencement exercises under a 3,000-seat tent erected on the new Campus Green. Students, families, faculty and staff embraced the move out of Mechanic's Hall in downtown Worcester, saying the campus ceremony fostered a new sense of community and institutional identity.

"Even the days leading up to Commencement created a buzz on campus, as people saw the tent going up and the preparations being made," said

Lanny Hilgar, special events coordinator. "We didn't have to limit guest tickets for graduates, and other members of the campus community—those who might not have participated if it were off campus—were able to stop by and witness this important event in the life of the Medical School."

Chancellor Michael F. Collins presented 100 doctor of medicine degrees and 49 doctor of philosophy degrees (including MD/PhDs to three graduates); and, in nursing, 53 master of science degrees and six doctor of philosophy degrees.

Benjamin S. Carson, MD, an internationally renowned physician, delivered the keynote address at Commencement (above). At right, the University community gathered for the first time on the Campus Green to celebrate Commencement, creating a new sense of community and institutional identity.



Benefactors meet professors at Investiture ceremony

Robert and Shirley Siff (left) formally bestowed the *Robert M. and Shirley S. Siff Chair in Autism* on Jean A. Frazier, MD, during the Investiture ceremony on Sept. 17. Donors who create endowments to fund named professorships enrich the institution's academic and scientific environment. UMass Worcester currently has 31 named professorships—precious and essential resources for the institution. Also honored at the ceremony were the *Gladys Smith Martin Chair in Oncology* Alan G. Rosmarin, MD; the *Silverman Chair in Natural Sciences* Victor R. Ambros, PhD; and the *Joy McCann Professor for Women in Medicine* Patricia Franklin, MD, MBA, MPH.

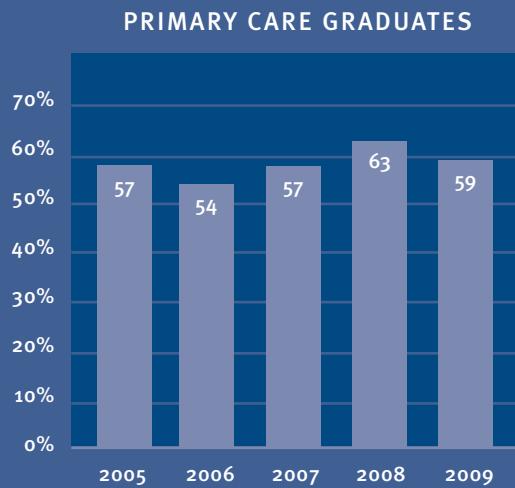


Benjamin S. Carson, MD, an internationally renowned physician, delivered the keynote address, saying, "Even when things don't go the way they're supposed to, if [patients] know your heart is with them, that is the most important thing, other than making sure you have the knowledge that is necessary."

In addition to Dr. Carson, John P. Howe III, MD, and Ruth W. Lubic, CNM, EdD, received honorary degrees. Dr. Howe is president and CEO of Project HOPE, an international health foundation with offices and programs in 24 countries on five continents. Dr. Lubic is a birthing center pioneer and women's health advocate. 



Majority of graduates match with primary care residencies



On Match Day 2009, fourth-year medical students learned where they will begin their careers as physicians. Pictured above, Samuel Ayala (left) and Miguel Concepcion display the letters telling them which hospital residency programs they will enter after graduation. Ayala matched with the Albert Einstein College of Medicine emergency medicine residency program at Jacobi Medical Center in the Bronx, while Concepcion landed a Tufts University family medicine residency at Cambridge Health Alliance. Approximately half of 2009's fourth-year UMMS School of Medicine students chose primary care residencies (see chart). Out of 48 pursuing residencies in Massachusetts, 19 stayed at UMMS.

James Patterson discusses medical mystery at Convocation

Convocation, on Sept. 18, marked the ceremonial beginning of the new academic year. Highlights included an address by Chancellor Michael F. Collins, in which he summarized recent accomplishments and announced bold plans for the future, including the establishment of the UMass Worcester Institute for Health Policy. The event also featured authors James Patterson and Hal Friedman, who spoke about their collaborative non-fiction book, *Against Medical Advice: One Family's Struggle with an Agonizing Medical Mystery*. The book chronicles the struggle Friedman's son, Cory, had with Tourette syndrome, and how he overcame the affliction, thanks to the support of his family,



teachers and medical professionals. Also honored at the event were new faculty, newly tenured faculty and those who had been promoted to full professor. 

Authors James Patterson (left) and Hal Friedman (center) discuss their collaborative book *Against Medical Advice: One Family's Struggle with an Agonizing Medical Mystery* with Chancellor Michael F. Collins during Convocation activities.

Vitae: Year in Review

Honors and Recognition



Fellowships focus on women as leaders

Deborah M. DeMarco, MD (left), professor of medicine, and **Gyongyi Szabo**, MD, PhD, professor of medicine, have been named fellows of the Hedwig van Ameringen Executive Leadership in Academic Medicine (ELAM) Program for Women at the Drexel University College of Medicine in Philadelphia. The nation's only in-depth program focused on preparing senior women faculty at schools of medicine and dentistry to affect positive change, ELAM is a core program of Drexel's Institute for Women's Health and Leadership. Former ELAM fellows include Julia V. Johnson, MD, chair and professor of obstetrics & gynecology and Michele P. Pugnaire, MD, professor of family medicine & community health, senior associate dean for educational affairs.



Pediatrician honored for community work

Linda D. Sagor, MD, MPH, clinical associate professor of pediatrics, received two prestigious awards for her work in the community: She was named the UMass Medical School recipient of the 2009 UMass President's Public Service Award and she was named 2009 Community Clinician of the Year by the Worcester District Medical Society. Dr. Sagor is regarded as one of the region's leading pediatricians because of her dedication to the welfare of children on multiple levels, from encouraging proper nutrition to promoting continuity of care. She created and directs the Foster Children Evaluation Services program, which provides health screenings, comprehensive evaluations and a unique medical information system containing all health data for foster children.



Hughes Institute supports young investigators

Marc R. Freeman, PhD (top), associate professor of neurobiology, and **Christopher M. Sassetti**, PhD, assistant professor of molecular genetics & microbiology, are two of only 50 young investigators chosen from 2,000 applicants to be named Early Career Scientists by the Howard Hughes Medical Institute (HHMI). HHMI backing frees young investigators from the burden of having to pursue federal research grants, and gives them the flexibility and resources to pursue new and creative ideas that might not fall under the scope of a traditional research grant. Dr. Freeman's research investigates the mechanisms of neuronal and glial cell fate and the function of glial cells in sculpting synaptic connectivity. Dr. Sassetti's research focus is on the pathogenesis of tuberculosis.



Researcher recognized with diabetes prize

Michael P. Czech, PhD, professor and chair of molecular medicine and professor of biochemistry & molecular pharmacology, received the 2009 H.C. Jacobaeus Prize for his pioneering research into the underlying mechanisms of insulin resistance in type-2 diabetes. The prize is given by the Novo Nordisk Foundation of Denmark for outstanding research linked to diabetes.



Ambros receives two honors for RNA work

Victor Ambros, PhD, the *Silverman Chair in Natural Sciences* and professor of molecular medicine, won two prestigious prizes for his pivotal role in the discovery of microRNAs, small snippets of RNA that play a critical part in the regulation of gene functions: The 2009 Meira and Shaul G. Massry Prize and the 2009 Louisa Gross Horwitz Prize. He shared both honors with fellow molecular biologist and long-time collaborator Gary Ruvkun, PhD, of Harvard University and Massachusetts General Hospital.



Clive honored for educational contributions

David M. Clive, MD, professor of medicine, has been honored by the Massachusetts Medical Society as the 2009 recipient of its Grant V. Rodkey Award, an honor recognizing a Massachusetts physician for outstanding contributions to medical education and medical students.



Fourth-year student uses technology in service

Peter J. Townsend, a fourth-year student, won the Massachusetts Medical Society's 2009 Information Technology Award in the medical student category. The honor recognizes the development of an information technology tool that helps physicians practice medicine, teach medicine or pursue clinical research. Townsend has participated in medical missions to India, Guatemala and the Dominican Republic. In the summer of 2009, he pursued an independent public health project in Zambia, where he designed, created and implemented two technology-based programs to improve the quality of care. Closer to home, he helped start a program in Worcester that tutors African refugee children.

High school science students win with UMMS help

Three high school students won science fair awards working with UMMS researchers. Christine Lai and Diyang Tang worked with **David Lambright**, PhD, professor of cell biology, and Meng-tse Lee, a graduate student in Dr. Lambright's lab. They each won a \$30,000 scholarship for being team finalists for the 2008 Siemens Competition in Math, Science and Technology. Courtney Onofrio was named a first-place finisher in the Worcester Regional Science and Engineering Fair. Her project was conducted in the laboratory of **Scott Waddell**, PhD, associate professor of neurobiology, under the supervision of Graduate School of Biomedical Sciences student Paola Perrat.

Vitae:

Today's ever flattening and interconnected world has compelled our institution to reenergize, reorient and even restructure our interactions within this new global paradigm. What were once obstacles to active and sustained engagement—communication, travel and the availability of information—now are the foundations upon which interaction, engagement and partnership flourish.

CHANCELLOR'S MESSAGE

With this as context, our Medical School, in a clear and coordinated fashion, has had to address how we envision our institution at home and, increasingly, abroad. The strategic planning process undertaken last year provided us with a formal structure to do just that—to assess our mission and define our aspirations.

Through the planning process, we reaffirmed our commitment to the founding mission of this tremendous institution: to impact positively the health and well-being of the citizens of the commonwealth while coalescing our efforts around the notion of extending that commitment outward.

There are two overarching reasons for our actions. First, we believe that our rich tradition of leveraging our expertise in research, patient care and public health to improve the commonwealth's environs can be further leveraged to address more far-reaching global health issues. Second, it has become evident that successful institutions in the 21st century will be those that seek out local, regional and international partnerships that work toward a common purpose.

While affirming our local commitments, our strategic plan reflects this more aggressive global positioning. Indeed, our new mission in part reads: "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." This theme is the foundation for our six strategic goals.

By developing strategic partnerships with targeted entities from Massachusetts to Mumbai, we are ensuring that the reach of our Medical School extends to an even greater number of places and people for whom we can make a positive contribution.

In the following pages, you will see our strategy at work.



Among the many examples included in this report, you will learn how our scientists and physicians associated with the Gene Therapy Center are reaching out to a special population of individuals blinded by a rare disease and enlisting them in a pioneering clinical trial that shows early evidence of improving their vision. You will be introduced to a local community engagement undertaking, the Special Olympics Healthy Athletes Initiative, a partnership with Special Olympics Massachusetts, to improve health care access and quality for individuals with intellectual disabilities. Further, you will learn about the new Office of Global Health, which is bringing essential focus—and support—to the school's numerous and diverse global initiatives, such as the effort by MassBiologics to develop and produce a safe, effective and inexpensive drug that will give thousands of people a second chance after encounters with rabid animals in India.

Woven throughout these specific stories, and the others that fill these pages, is a common thread: engagement. Only through engagement, resting on the pillars of cooperation, collaboration and commitment, can we extend our reach to where it is needed most.

Be assured, the University of Massachusetts Medical School is now, and will always be, a local institution with a global reach.

Michael F. Collins, MD
*Chancellor, University of Massachusetts Medical School
Senior Vice President for the Health Sciences,
University of Massachusetts*



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Trials move scientists closer to the potential of gene therapy



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Extending global reach, achieving global impact



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Initiative helps remove barriers for workers with disabilities



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Stimulus money creates jobs while advancing research



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Medical School makes a difference in the health of special athletes



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Improving K-8 math teaching and learning



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UMass Medical School responds to call from City of Worcester

Policy analysts and data experts return money to states



CLINICAL TRIALS MOVE SCIENTISTS CLOSER TO THE POTENTIAL OF GENE THERAPY

David Schwarte has a dream. He wants to see again. After a lifetime of progressively deteriorating vision caused by a rare, inherited eye disease, he's now putting his hope in the hands of researchers at UMass Medical School. In July, Schwarte traveled 1,000 miles from his home in Indiana to Worcester to take part in a groundbreaking clinical trial testing the safety of a gene therapy treatment.

The trial represents a critical step forward for scientists and clinicians at the UMMS Gene Therapy Center. They're hoping to someday treat Schwarte's disease—type 2 Leber congenital amaurosis (LCA)—and countless other conditions by going into a cell and replacing a defective gene with one that works properly. But Schwarte knows that's no simple task. To succeed, clinicians need to insert new genetic material into a specific cell type, of which there are hundreds, and into a single gene, of which there are tens of thousands.

Guangping Gao, PhD, professor of molecular genetics & microbiology and director of the Gene Therapy Center, is working with a team of scientists and clinicians to overcome those hurdles. Dr. Gao and his colleagues are conducting basic and pre-clinical research aimed at developing a safe and effective molecular delivery vehicle—known as vectors—to insert the therapeutic genes. The process relies on introducing a virus already known to occur in humans, recombinant adeno-associated virus (AAV), which causes only a mild immune reaction in its

host. The virus has the ability to leave its properly working genome in the targeted cells of patients, offering the real possibility for progress in fighting some of the most debilitating genetic disorders, such as cystic fibrosis.

Scientists at UMMS are moving discoveries like this to the clinical realm. "Researchers at the Gene Therapy Center combine an understanding of the basic biological processes involved in gene therapy with the clinical skills necessary to move these discoveries from the bench to the bedside," said Gao. "Our goal is to shepherd discoveries made at the Center to the translational stage of development where patients suffering from hereditary and genetic diseases can benefit."

UMMS researchers have shown initial clinical trial success in using AAV as a delivery vehicle. Terence R. Flotte, MD, professor of pediatrics, dean of the School of Medicine and provost and executive deputy chancellor, has demonstrated in clinical trials targeting alpha-1 antitrypsin deficiency, a hereditary defect that can lead to fatal lung and liver disease, that genetic

material can be safely introduced into a patient's cells using an AAV vector. Dr. Flotte was the first investigator to ever use AAV in humans in clinical trials in cystic fibrosis patients between 1995 and 2003.

"The field of gene therapy holds tremendous promise for a great many diseases," said Flotte. "If a safe and effective vector for gene therapy is discovered, it could have a profound impact on a great number of people. And the University of Massachusetts Medical School, with the extensive biomedical and clinical research acumen of our physician-scientists, is positioned to make a significant contribution to the realization of that promise."

As the next step in the quest to find a cure, later this year, Flotte and his colleagues will begin a Phase II clinical trial to test the safety and efficacy of delivering the alpha-1 antitrypsin gene to patients using the AAV vector. In a Phase II trial, the dose is increased dramatically over previous trials—in this case 50-fold—although the dose is still at the lower threshold of the level needed for treatment.

In addition to LCA and alpha-1 antitrypsin deficiency, scientists at the Gene Therapy Center are exploring the use of gene therapy against cystic fibrosis, lysosomal storage diseases (such as Tay-Sachs disease), Canavan disease (a degenerative disorder that attacks nerve cells in the



brain), and retinal and macular degeneration.

Shalesh Kaushal, MD, PhD, chair and associate professor of ophthalmology and cell biology, is one of the first researchers in the United States to use gene therapy to treat LCA—and the reason Schwarte traveled from Indiana. This trial is the first of several gene therapy techniques targeting retinal diseases planned by Dr. Kaushal.

Since the initial operation in July, Schwarte has returned to UMMS for periodic checkups. Tests conducted during these appointments by Kaushal indicate that Schwarte's field of vision, which was almost completely gone a year ago, has improved since the surgery.

As manager of the Assistive Technology Center at Purdue University, Schwarte works with people with disabilities every

day. He understands the implications of perfecting a treatment that could affect thousands of people, and that participating in a clinical trial isn't as much about the possibility of regaining his sight as it is a step in a process. "What Dr. Kaushal and others learn from this clinical trial will help bring them closer to a cure for this disease and to helping others afflicted with LCA," Schwarte said.

Pictured at far left, the team at the UMMS Gene Therapy Center is testing the safety of a gene therapy treatment to combat a disease that causes blindness. From left, Margaret Humphries, research nurse; clinical trial patient David Schwarte; Elena Filippova, MD, research associate; Shalesh Kaushal, MD, PhD, chair and associate professor of ophthalmology and cell biology; and George R. Asdourian, MD, professor of surgery. Center picture, Terence Flotte, MD, dean of the School of Medicine and professor of pediatrics, has shown initial success in delivering therapeutic genes using AAV as a vector.

"The field of gene therapy holds tremendous promise for a great many diseases. If a safe and effective vector for gene therapy is discovered, it could have a profound impact on a great number of people. And the University of Massachusetts Medical School, with the extensive biomedical and clinical research acumen of our physician-scientists, is positioned to make a significant contribution to the realization of that promise."

-Terence R. Flotte, MD



EXTENDING GLOBAL REACH, ACHIEVING GLOBAL IMPACT

Going beyond our borders to enhance medical education, advance biomedical research and improve clinical care and public health is a defining tradition at UMass Medical School. Now, the newly established Office of Global Health (OGH) is bringing sharpened focus—and essential support—to the school’s numerous and diverse global initiatives.

“Our academic health sciences center, which includes UMass Medical School and its clinical partner, UMass Memorial Health Care, has collective expertise that can be harnessed to improve health and the delivery of health care in our global community,” said Associate Provost for Global Health Katherine Luzuriaga, MD, professor of pediatrics and medicine.

In its first year, OGH has become an active and visible presence at UMMS. Its Web site, www.umassmed.edu/globalhealth, is a centralized resource for information about projects, learning opportunities, funding sources and institutional requirements for travel to other countries. The office has established a grant program that provides seed money for innovative international research and education projects, and hosts a well-attended seminar series addressing a range of global health issues and initiatives.

“We work with anyone doing anything having to do with international activity,” explained OGH Co-director Donna Gallagher, MSN, instructor in family medicine & community health. “We want the international community to see us as a multifaceted system that can provide many

different skill sets required for capacity building and workforce development.”

Following are highlights of activities in just a few of the countries where UMMS is making an impact.

LIBERIA: Building medical infrastructure in post-conflict Africa

In the wake of a decades-long civil war, UMass Medical School is helping Liberia rebuild its basic health care infrastructure.

UMMS faculty are opening an HIV/AIDS clinical laboratory at JFK, Liberia’s major teaching hospital. With partners from Yale, Brown and Mount Sinai medical schools, pediatrics resident and attending physicians are on site, leading, mentoring and developing curricula for Liberian medical trainees. Emergency medicine physicians and nurses are doing the same.

UMMS nurses are playing a critical role in workforce development in a country with fewer than 100 doctors for 300 million people. “In limited-resource settings like Liberia, it is more effective to train nurses, physician assistants and community health workers than physicians, who often leave to practice elsewhere,” said Gallagher.

CHINA: Joining forces with the world’s largest country

Bringing together faculty, scientists and students on two continents, the UMass Medical School China Program is working hand-in-hand with medical schools at all four compass points on China’s vast mainland.

Last summer UMMS hosted its first cohort of Chinese exchange students. Simultaneously, a UMMS resident and a second-year medical student visited medical schools and hospitals across China. Both the UMMS and Chinese students shared their experience at an OGH-sponsored forum.

In addition to educational exchange, the UMMS China program is focused on translational research collaborations, and disseminating intellectual property in the world’s largest health care market.

INDIA: Tackling a worldwide scourge

Rabies results in some 55,000 deaths per year worldwide, many of them in India.

In conjunction with the U.S. Centers for Disease Control and Prevention, the UMMS MassBiologics has partnered with the Serum Institute of India to develop, test and manufacture a monoclonal antibody (MAB) that could be used in place of the standard immune globulin to treat rabies. MABs can be produced inexpensively in large



quantities, and can be stockpiled for easier distribution to remote sites.

Four School of Medicine students traveled to Mumbai last spring to assist at King Edward Memorial Hospital, where clinical trials of the rabies MAB are underway.

IRELAND: A meeting of minds across the Atlantic

Improving global health isn't limited to underserved populations in developing countries. With the 2008 signing of a Memorandum of Understanding with the Royal College of Surgeons in Ireland (RCSI), UMass Medical School is embracing opportunities to improve health in industrialized as well as developing countries.

RCSI is particularly interested in joining forces with UMMS investigators who are pioneering development of RNAi-based treatments for diseases including rheumatoid arthritis, Huntington's disease and amyotrophic lateral sclerosis (Lou Gehrig's Disease). The partnership benefits from each institution's access to large patient populations to participate in clinical trials that will help translate RNAi therapies from the laboratory to patients.

Office of Global Health team members Kiger Lau, Donna Gallagher and Katherine Luzuriaga, MD, (from left in far left photo) support UMMS global health efforts worldwide, including (photos, second from left to right) health care workforce development in Liberia; cross-cultural medical student exchanges in the UMMS China Program; and well-attended monthly seminars.

UMass Medical School is also collaborating on training, research and care in other countries, including:

Armenia	Jamaica
Bolivia	Jordan
Brazil	Lebanon
Democratic Republic of the Congo	Kenya
Dominican Republic	Korea
Ecuador	Mexico
El Salvador	Nicaragua
Ghana	Nigeria
Guatemala	Peru
Guyana	Romania
Haiti	South Africa
Honduras	Sri Lanka
Hungary	Sweden
Iraq	Tanzania
	Uganda
	Ukraine



UMMS and UMass Memorial care givers conducted clinics at four tent camps in Haiti after the earthquake in January. Instructor in Emergency Medicine John Broach, MD, MPH, right, assesses a patient with assistance from a Haitian interpreter.

Disaster Relief in Haiti

In the days following the devastating earthquake in Haiti, UMass Medical School's commitment to public service at home and around the world was unmistakable, as evidenced by its active role in disaster relief efforts. In response to a call for help from a hospital in the neighboring Dominican Republic, with which the Medical School has long been affiliated, a team of 15 physicians and nurses from UMMS and UMass Memorial spent a week in Haiti caring for more than 1,000 earthquake victims in the hardest-hit areas of Port-au-Prince. They treated young and old alike at four tent camps that had been awaiting medical relief for more than two weeks after the earthquake struck.



INITIATIVE REMOVES BARRIERS FOR WORKERS WITH DISABILITIES

In helping Massachusetts to increase job opportunities for people with disabilities, UMass Medical School and its partners have become leaders in the national policy debate. In 2009, the Medical School piloted the federal-grant-funded “Work Without Limits: A Massachusetts Disability Employment Initiative,” which served as a catalyst for change in two ways: prompting the state to create a strategic plan for hiring more people with disabilities; and funding regional employment collaboratives to encourage private businesses to tap into this population.

“People are looking to us as a major technical assistance provider to understand what works and what doesn’t,” said Jay Himmelstein, MD, MPH, professor of family medicine & community health and principal investigator for the grant that funds Work Without Limits. “We’re delighted to play a role in helping Massachusetts’ programs improve employment opportunities for people with disabilities and in helping other states understand how to do the same.”

The need for this assistance is great. People with disabilities often face many barriers to employment. In fact, in 2008, the employment rate for working-age adults with disabilities in Massachusetts (39.5 percent) was significantly lower than for those without (80.2 percent).

Work Without Limits offers solutions to people with disabilities through improved access to health care and service coordination and enhanced engagement

with employers, and by addressing issues such as inadequate transportation and economic disincentives to work.

Developed by the Center for Health Policy and Research in the Medical School’s Commonwealth Medicine division, in partnership with UMass Boston’s Institute for Community Inclusion and the Massachusetts Executive Office of Health and Human Services (EOHHS), Work Without Limits is raising awareness in public and private sectors in a variety of ways.

- Employer summits held in 2009 highlighted initiatives and best practices already in place to build a more inclusive and diverse workforce.
- Future summits will include content customized for small businesses and Webinars to reach more employers, as well as how-to guides that will enable agencies across the state to host similar events for their local business communities.
- A comprehensive Web site (www.workwithoutlimits.org) was developed to provide the information, resources and technical assistance necessary to hire, train, manage, accommodate and promote people with disabilities in the workplace.

“We’re delighted to play a role in helping Massachusetts improve employment opportunities for people with disabilities and in helping other states understand how to do the same.”

-Jay Himmelstein, MD, MPH

The “Strategic Plan to Make Massachusetts a Model Employer for People with Disabilities” was introduced by



Massachusetts Gov. Deval Patrick's administration in June 2009. The plan envisions changes in the practices of the state's Human Resource Division regarding the outreach, recruitment, hiring, retention and promotion of people with disabilities. It also puts in place a centralized process and fund for supporting reasonable accommodations people may need.

Additionally, in collaboration with EOHHS and the Executive Office of Labor and Workforce Development, UMMS made available \$2.5 million of the federal grant funding Work Without Limits for five regional employment collaboratives intended to support more private sector employment of people with disabilities. Since then, strategic plans from collaboratives that have been reviewed by Work Without Limits are being implemented.

Supporting the state to work with private industry in such a way aligns with the initiative's well-rounded strategic goals, which center on promoting the potential of people with disabilities as successful employees, while keeping in mind the needs of businesses and employers.

Success over 10 years fuels partnership

Work Without Limits is funded by a Massachusetts Medicaid Infrastructure and Comprehensive Employment Opportunities (MI-CEO) grant awarded to UMMS in 2008—the third round of funding for this partnership between UMass Medical School and the Massachusetts Executive Office of Health and Human Services. UMMS has been awarded these grants—totaling more than \$25 million over 10 years—based on the commonwealth's commitment to such significant programs and prior successes as the CommonHealth buy-in program, which enables employees with severe disabilities to maintain their Medicaid benefits.

“CommonHealth was the first program of its kind in the country and is what made the federal funds first available to Massachusetts,” said Jay Himmelstein, MD, MPH, professor of family medicine & community health and the grant’s principal investigator. “When we first started with the grant program in 2000, there were two Medicaid buy-in programs in the country. As of July 2008, 33 states are covering 82,488 individuals in the Medicaid buy-in program,” said Dr. Himmelstein.

Jay Himmelstein, MD, MPH, far left, is the principal investigator on a grant that funded Work Without Limits, an initiative that increases job opportunities for people with disabilities.



STIMULUS MONEY CREATES JOBS WHILE ADVANCING RESEARCH

The \$40 million in American Recovery and Reinvestment Act (ARRA) grants awarded to UMass Medical School has created jobs that support innovative basic research and the application of that research to improve health care. These grants funded 98 clinical, translational and basic science projects ranging in scope from identification of genes responsible for amyotrophic lateral sclerosis (ALS), to improving mental health treatment retention for young adults.

U.S. Sen. John Kerry came to UMass Medical School in January 2010 to collect evidence that stimulus money was making an impact on the country. He heard from Chancellor Michael F. Collins and UMass President Jack M. Wilson, along with a group of researchers, faculty, administrators and local officials, that the ARRA money distributed through the National Institutes of Health (NIH) is affecting the economic vitality and health of the region.

"Our hope is that members of Congress will recognize the economic stimulus effect of research grants. Every time a principal investigator gets an NIH grant, the result is new jobs. Not just jobs, but very good jobs. The health and wealth of the nation depends on this type of investment," said Collins.

The NIH's ARRA-backed programs are designed to help stimulate the U.S. economy through the support and advancement of scientific research. In funding projects with ARRA resources, the NIH has sought to follow the spirit of

the Recovery Act legislation by supporting efforts that will stimulate the economy, create or retain jobs and have the potential for making scientific progress in two years.

"Because these grants are awarded through a peer review process, the large number of awards received by UMass Medical School illustrates the quality of research being pursued," said Collins.

Studies conducted by the University of Massachusetts Donahue Institute on UMass Medical School's local economic impact found that every dollar invested

in medical research yielded at least twice that amount in growth of payrolls, supply purchases and support staff.

"I will go back to Washington reinvigorated with a much better sense of what we can fight for," said Sen. Kerry at the January roundtable.

More than 12,000 ARRA grants have been awarded nationally, with Massachusetts capturing 1,225 grants. To receive funds, scientists needed to demonstrate that their research would focus on specific knowledge gaps, scientific opportunities, new technologies, data generation or research methods. Researchers also needed to show that an influx of funds for their projects would quickly advance the scientific area in significant ways and demonstrate the existence of a potential impact on biomedical or behavioral science and/or public health.

Studies conducted by the University of Massachusetts Donahue Institute on UMass Medical School's local economic impact found that every dollar invested in medical research yielded at least twice that amount in growth of payrolls, supply purchases and support staff.



A sampling of UMMS projects that received ARRA funding from the NIH:

Victor Ambros, PhD, the *Silverman Chair in Natural Sciences* and professor of molecular medicine, was awarded \$771,000 to explore the genetic and molecular mechanisms underlying the developmental regulation of microRNA expression in *C. elegans*.

Edward Boyer, MD, PhD, professor of emergency medicine, received \$1 million to use innovative mobile technology and biosensors to detect stressors and deliver effective and timely cognitive behavioral interventions for patients suffering post-traumatic stress or substance abuse.

Robert Brown, DPhil, MD, chair and professor of neurology, received \$3.6 million to develop a platform for the full genome sequencing that will identify rare genetic variants that underlie both sporadic and familial forms of ALS.

Maryann Davis, PhD, associate professor of psychiatry, received \$800,000 to develop prevention interventions and service delivery models for young adults experiencing severe mental illnesses, leading to increased treatment retention.

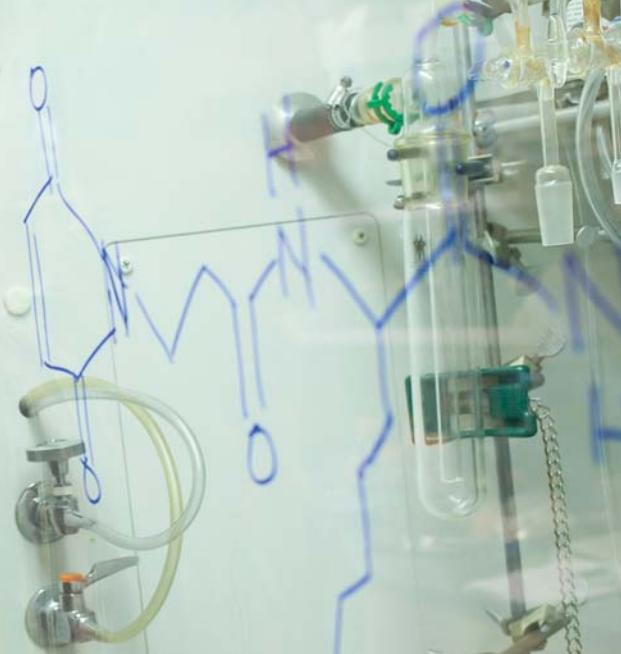
Robert Finberg, MD, the *Richard M. Haidack Professor of Medicine* and chair and professor of medicine and professor of molecular genetics & microbiology, received \$3.6 million to study innate immune responses associated with the herpes simplex virus.

William Kobertz, PhD, associate professor of biochemistry & molecular pharmacology, received \$500,000 to develop a way to probe the structure, function and cellular localization of ion channel complexes, which are vital for proper cellular function.

Stephenie Lemon, PhD, assistant professor of medicine, received \$1.3 million to determine the effectiveness of a worksite intervention program, called Step Ahead, aimed at reducing weight gain.

Marian Walhout, PhD, associate professor of molecular medicine, received \$500,000 to identify transcription factors that regulate the expression of genes to gain insight into both normal development and disease, and to design effective treatments.

For a full list of projects, visit
<http://report.nih.gov/recovery/arragrants.cfm>





MEDICAL SCHOOL MAKES A DIFFERENCE IN THE HEALTH OF SPECIAL ATHLETES

Hundreds of UMass Medical School students, faculty and staff volunteered their time and expertise during the action-packed 2009 and 2010 Special Olympics Winter Games held in and around Worcester. Members of the UMMS community kept score, recorded times and cheered on some of the 1,400 athletes who competed in basketball, alpine skiing, snowboarding, floor hockey and bowling.

At both the 2009 and 2010 Winter Games, UMMS students, staff and faculty played a major part in the Special Olympics Healthy Athletes initiative, a program dedicated to improving health care access and quality for individuals with intellectual disabilities. UMMS helped run a free health care screening program to educate athletes on healthy lifestyle choices and identify problems that may need follow-up. In 2010, the Graduate School of Nursing participated in the program, which took place alongside screenings for hearing, podiatry issues and physical fitness.

The interaction went both ways as medical students also learned from athletes throughout the year. A Special Olympian gave a presentation to UMMS students participating in the Health Care Access for People with Disabilities Clerkship. These students also conducted patient interviews with Special Olympics Senior Sports Classic athletes as they checked in for screenings by physical therapists.

As part of an affiliation agreement signed in 2008, UMMS also provided the Special

Olympics Massachusetts (SOMA) staff with three online training modules for coaches developed by Commonwealth Medicine. These programs help volunteer coaches understand SOMA's history and programs, give a general orientation and offer training and information on the Healthy Athletes program.

Another important connection includes the newly constructed Yawkey Training Center in Marlborough, the new headquarters for SOMA, which opened in December. It features a full-size gym, soccer field, computer training facilities, videoconferencing capabilities and five multipurpose conference rooms. Aside from the obvious benefits to athletes, this facility will create further opportunities for UMMS to learn about, research and address the unique health care needs of individuals with intellectual disabilities.

"Whether through education, research or direct clinical care, UMass Medical School is uniquely positioned to assist the Special Olympics in fulfilling its goals, while at the same time advancing the missions of the

Medical School students, staff and faculty not only volunteered during both the 2009 and 2010 Winter Special Olympics, some played a part in the Special Olympics Healthy Athletes Initiative during the event. Above, right, a student helps during a fitness screening.

University and the Medical School," said Joyce A. Murphy, MPA, vice chancellor and chief operating officer for Commonwealth Medicine.

The relationship between the Special Olympics and UMMS was also deepened by the appointment of Arthur Pappas, MD, to the Special Olympics honorary board, one seat of which is to be held by a UMMS representative. Dr. Pappas, professor of orthopedics & physical rehabilitation and pediatrics and former chair of the Department of Orthopedics & Physical Rehabilitation, is the first recipient of this honor. A pioneer in the field of sports medicine focusing on the orthopedic care of handicapped children and professional and amateur athletes, Pappas was a founder of the Massachusetts Hospital School for severely handicapped children.



IMPROVING K-8 MATH TEACHING AND LEARNING

UMass Medical School's Regional Science Resource Center (RSRC) is helping teachers from around the state discover the best ways to teach math to elementary school students. Using formal learning communities pioneered by RSRC, teachers are learning from each other about *how* students think and learn about specific mathematical concepts, which can be just as important as *what* they are taught.

Research has shown that creating collaborative teams is an effective way to help math teachers connect their teaching methods to curriculum content. A Mathematics Learning Community (MLC) brings a group of teachers together to brainstorm and compare various instructional approaches.

"A learning community is an exciting form of job-embedded, ongoing professional development through which teachers increase student learning by working together," said Wendy Cleaves, MME, MED, math coordinator for RSRC. Cleaves and RSRC Math Consultant Dona Apple are co-developers of the MLC facilitator training program that is being implemented across the state on behalf of the Massachusetts Department of Elementary and Secondary Education. The premise of the program is that both teachers and students have insights that can be revealed and built upon to improve teaching and learning.

At a recent facilitator training session, math teachers and administrators from Worcester and New Bedford created and

shared diagrams that might help children visually and verbally understand and solve word problems involving multiplication and division of fractions.

"It is gratifying to conduct this work with dedicated teachers who want to continually delve deeper to help their students do better," said participant Jeanne Bonneau, EdD, principal of the Normandin Middle School in New Bedford.

The RSRC developed the program as a component of its professional development offerings for math and science teachers. School administrators who want to establish a formal MLC at their schools send one or more of their lead math teachers or coaches to regularly scheduled train-the-trainer sessions held at the RSRC in Shrewsbury; in turn, the trained facilitators bring their newly acquired knowledge back to their colleagues. Initially piloted in Worcester, Springfield, New Bedford and Lawrence, the program is now available to any Massachusetts school district upon request.

As an alternative to the daylong facilitator training sessions, MLC training materials

Math teachers from Worcester and New Bedford public schools at a Mathematics Learning Community facilitator training session led by Dona Apple and Wendy Cleaves (fourth and fifth from left). At right, Cleaves discusses different ways to illustrate math problems with the group.

can be downloaded from www.doe.mass.edu/omste/instructional.html to help schools and districts implement MLCs on their own. Further expanding the program's reach, last fall the RSRC presented the Webinar "Building Mathematics Learning Communities: A Focus on Looking at Student Work," which drew participants from 11 states (www.umassmed.edu/Math_Learning_Community).

"The MLC program has exceeded expectations," said Life LeGeros, director of the Massachusetts Department of Elementary and Secondary Education Targeted Assistance in Mathematics. "We are thrilled to continue working with the RSRC to promote and disseminate the program, and are also looking at this as a model for supporting context-based professional learning in other areas."



UMASS MEDICAL SCHOOL RESPONDS TO CALL FROM CITY OF WORCESTER

Faced with dramatic budget cuts in one of the oldest local public health departments in the nation, Worcester City Manager Michael V. O'Brien turned to UMass Medical School and other community health partners for help. The crisis turned into an opportunity to help revitalize the city's public health services using the valuable resources located in the city's own backyard.

As part of the Worcester Public Health Task Force, UMMS, along with its clinical partner UMass Memorial Health Care and other local health care organizations, was charged with developing a focused mission for the DPH based on national best practices, and reflective of a sustainable financial model. Coordinating and supporting the efforts of the task force were employees from the Office of Program Development and Enterprise Project Management Office in the Medical School's Commonwealth Medicine division.

"Our participation on the task force, combined with the project management support provided by Commonwealth Medicine, is a great example of how the expertise and resources of the Medical School can be applied to meet the critical needs of our community," said James Leary, associate vice chancellor for community affairs, who contributed to the task force.

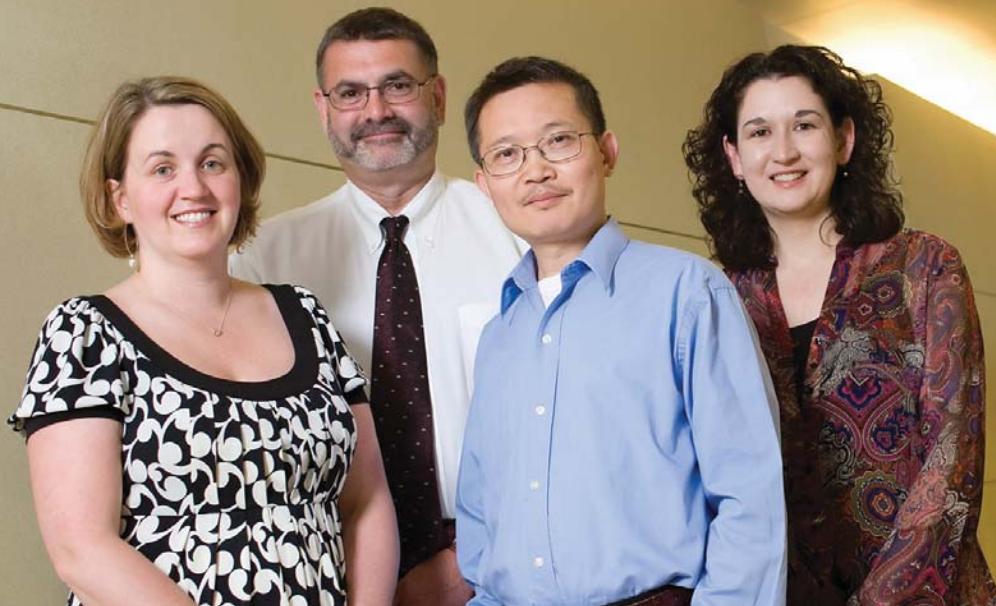
In November the results of the extensive research and collaborations were presented to the city manager in a detailed report that outlined four strategic recommendations:

- Reconstitute the Board of Health;
- Reorganize administration of the DPH;
- Utilize data in identifying community health priorities; and
- Formalize a cooperative working relationship with existing community health services.

UMass Medical School is committed to supporting these recommendations, which were submitted to the Worcester City Council by O'Brien in January 2010, by designating an adjunct faculty position for the city's Commissioner of Public Health, and by conducting a community-wide public health needs assessment on behalf of the city in 2010. The Health Status Indicators Report will enable the DPH to better define priorities and work within city government and with the larger community to meet Worcester's public health needs.

Representatives from UMass Medical School turned a crisis into an opportunity to reevaluate Worcester's Division of Public Health.

The task force comprised a 22-member committee co-chaired by John O'Brien, president and CEO of UMass Memorial, and Dennis Irish, vice president of Vanguard Health System. UMMS Chancellor Michael F. Collins served on the executive committee. Four subcommittees worked simultaneously over several months to develop the recommendations, which were based on national standards, research studies and other cities' approaches. Task force members met with the Worcester DPH commissioner, director and other city staff, and consulted with state and national public health experts. The National Association of County and City Health Officials provided guidance, reports and a national perspective.



POLICY ANALYSTS AND DATA EXPERTS RETURN MONEY TO STATES

A team within UMass Medical School's Center for Health Care Financing (CHCF) used its specialized data analysis expertise and a deep understanding of federal policy to discover a significant error in a Medicaid reimbursement process, prompting the Social Security Administration (SSA) to return almost \$10 million to Massachusetts and \$215 million to 45 other states and the District of Columbia.

"The result is that state Medicaid dollars are now used appropriately and wisely for purchasing federal Medicare coverage, allowing remaining dollars to go toward coordinated care for people," said Kristin Lightbody, senior associate for CHCF, which is part of Commonwealth Medicine, the Medical School's health care consulting division. "The focus of all of our projects is ensuring that people who should have benefits do have them, and that our state and others are not taking on unnecessary liabilities."

Every month, the commonwealth pays approximately 20,000 Medicare Part A premiums on behalf of eligible individuals—the one percent of Medicare beneficiaries who do not qualify for free coverage based on work history. The Centers for Medicare and Medicaid Services (CMS) bills Massachusetts for those individuals based on income level.

"In the past, we have reviewed the bill on a case-by-case basis and found errors," explained Benefit Coordination Associate Jenifer Hartman. "This time we wanted

to conduct a thorough, systematic review, look at the work history on our own and see if we could find anyone who should be getting free Part A or be paying reduced Part A premiums."

"We knew that there was some potential for finding errors. SSA is a complicated organization, and this involves a lot of complex data," said Managing Director and Principal Associate Al Fuoroli. The team created its own application to review the data, a project led by Associate Yuping Su. "We understand SSA rules and policies and we knew where to look for any inaccuracies," Su said.

But what the team found after running the numbers was astonishing, according to Hartman. "Quite a number of individuals were eligible for free or reduced Part A coverage, but the state was getting charged the full premium each month for a very long time. At first we questioned if we had made a mistake and went back over the data, but we couldn't come up with any other answer."

The Center for Health Care Financing team that identified a payment inaccuracy through a Medicare buy-in billing audit comprises (from left): Senior Associate Kristin Lightbody, Managing Director and Principal Associate Al Fuoroli, Associate Yuping Su and Benefit Coordination Associate Jenifer Hartman.

The team was concerned it had missed an archaic SSA rule, so it submitted just five cases to SSA for review. Fuoroli said the agency quickly confirmed the error and fixed those cases, refunding money to the state. "But then we sent them an additional 100 cases, and SSA started to realize how big a problem this was," he said. Once the correction was made for Massachusetts, other states received millions of dollars in refunds as well.

"It's rewarding to talk to people in other states who recognize that you have helped return money to them. We have instant credibility as a result of our Medicare Buy-In Quality Review project," said Fuoroli.

Vitae: Class Notes



On June 28, 2009, alumni gathered with their families on the UMass Medical School campus for an alumni celebration for underrepresented groups. Back, from left: Debra Cyrus, MD '00; Miguel Rodriguez, MD '01; Ainex Baez, MD '04; Jay Sorgman, MD '87; Anthony Wilson, MD '90; Jamileh Jemison, MD '04; Caroline Marten-Ellis, MD '86; Maria Ellis, MD '90; Lanu Stoddart-Williams, MD '92; Peter Barratt, MD '90. Front, from left: Pius Fovie Ogagan, MD '02; Dhanesh Dookhru, MD '99; Yvonne Smikle, MD '99; Rodrick Williams, MD '99; Soukaina Adolphe, MD '03; Eric Wallace, MD '03; Nicolette Fontaine, MD '98.

1974

Richard Aghababian, MD, was recently re-elected secretary-treasurer of the Massachusetts Medical Society.

1977

Robert Klugman, MD, coauthored an article about understanding quality measures before comparing hospitals, which was featured in the April issue of the *American Journal of Medical Quality*.

1979

Carolyn Clancy, MD, was selected as the 2009 recipient of the William B. Graham Prize for Health Services Research. This award recognizes her contributions to the field of health services research and her lifelong achievements. She received the prize on June 29, 2009, at the AUPHA Annual Meeting in Chicago.

1981

Federico Gonzalez, MD, was elected chairman of the board of directors of the Heartland Spine and Specialty Hospital in Overland Park, Kansas.

1982

Joren Madsen, MD, DPhil, director of Massachusetts General Hospital's Transplant Center, section chief of cardiac surgery at MGH and professor of surgery at Harvard Medical School, was inducted as president of the American Society of Transplantation

(AST) during the 2009 American Transplant Congress held in Boston from May 30 to June 3. He is the first surgeon to serve as president of the AST, a professional association founded in 1982 to address the needs of medical specialists in the field of solid organ transplant.

1983

Mark Pettus, MD, has rejoined Berkshire Health Systems, hoping to bring his holistic approach to medicine into the mainstream. He is a primary care doctor with Hillcrest Family Health.

1984

William Kassler, MD, has been appointed president and chair of the American Medical Student Association Board of Directors.

1988

Damian Dupuy, MD, has been inducted as a fellow in the American College of Radiology (ACR). The induction took place at a formal convocation ceremony during the recent 86th ACR Annual Meeting and Chapter Leadership conference in Washington, D.C.

1999

Timothy Gibson, MD, chief of pediatric hospital medicine at UMass Memorial Children's Medical Center, wrote an article for *Bay State Parent* magazine called "Parents of Toddlers: An

Important Three-second Elbow Procedure You Need To Know." The article educates parents on how to fix a common elbow injury themselves, what causes the injury and how to prevent it.

2002

David McManus, MD, has joined the division of cardiovascular medicine at UMass Memorial Medical Center. He is also an assistant professor of medicine at UMass Medical School. He completed his residency at the University of California at San Francisco, and fellowships in cardiovascular medicine at the University of California, and cardiovascular medicine and electrophysiology at UMass Memorial/UMass Medical School. He also completed a fellowship in cardiovascular epidemiology at the Framingham Heart Study.

2003

Joseph Bouchard, MD, joined the division of cardiovascular medicine at UMass Memorial Medical Center. He is also an assistant professor of medicine at UMass Medical School. He completed his residency and fellowship in cardiovascular medicine at UMass Memorial/UMass Medical School.

Graduate School of Nursing

1996

Robin Sommers, MS, ANP-BC, is working as a nurse practitioner at the Dana Farber Cancer Institute. She was honored with the 2009 Presidents Award for Excellence in Nursing at the ninth annual award and recognition ceremony held at Dana-Farber on April 15, 2009.

2001

Paulette Seymour-Route, PhD, RN, was named president of the Massachusetts Organization of Nurse Executives at its annual meeting held in Newport in June 2009.

Graduate School of Biomedical Sciences

2009

Sonya Fonseca, PhD, has been awarded a Presidential Postdoctoral Fellowship at the Novartis Institutes for Biomedical Research in Cambridge. The prestigious program allows innovative scientists to collaborate with leading pharmaceutical discovery scientists pursuing multidisciplinary research projects.

CALENDAR

Be Well Lecture Series

Straight Talk about Skin Cancer

Tuesday, April 27, 2010

6–7 p.m.

Aaron Lazare Medical Research Building, UMass Medical School

Washington, D.C. Alumni Breakfast

Wednesday, April 28, 2010

7:30–8:30 a.m.

Old Ebbitt Grill

Washington, D.C.

Join us for breakfast and conversation with Chancellor Michael F. Collins and fellow Medical School alumni.

School of Medicine Alumni Reunion

Celebrating the classes of 1975, 1980, 1985, 1990, 1995, 2000, 2005

Saturday, May 1, 2010

UMass Medical School

Be Well Lecture Series

Optimizing Women's Health in the Prime of Life

Thursday, May 20, 2010

6–7 p.m.

Aaron Lazare Medical Research Building, UMass Medical School

UMass Worcester Graduate School of Nursing Alumni Association Graduation Breakfast

Friday, June 4, 2010

Blais Pavilion, Aaron Lazare Medical Research Building,
UMass Medical School

University of Massachusetts Worcester Commencement

Sunday, June 6, 2010

Campus Green, UMass Medical School

Be Well Lecture Series

Cutting-Edge Joint Replacement Technologies and Advancements in Post-Surgical Outcomes for Patients

Wednesday, June 16, 2010

6–7 p.m.

Aaron Lazare Medical Research Building, UMass Medical School

For more information about any of these events, visit www.NetworkUMass.com/Medical or contact the Office of Alumni Relations at alumni@umassmed.edu or 508-856-1593.

Vitae: Class Notes

You have
the power
to transform
the future.



**Make your mark on medicine,
research and clinical care
by leaving a legacy to
UMass Medical School.**

Please let us know if you would like information on leaving UMass Medical School in your estate plan. If you have already made provisions in your estate plan for UMass Medical School, please let us know! We would like to welcome you as a member of the Heritage Society and thank you for your support. Through the Heritage Society, UMass Medical School gratefully recognizes those who have included UMass Medical School in their estate plans.

For more information, please contact:

Carolyn Flynn
Office of Gift Planning
ogp@umassmed.edu
1-877-775-1992
www.umassmed.edu/foundation/giving

**Gift Annuities • Bequests • Charitable Remainder Trusts
Real Estate • Retirement Plans • Life Insurance**



Caroline Marten-Ellis, MD

Annual Fund chair recognizes the need to give back

Throughout her journey from childhood in a politically unstable Dominican Republic to her fulfilled dream of becoming an ophthalmologist, Caroline Marten-Ellis, MD '86, has lived the values of perseverance, tolerance and gratitude. As UMass Medical School's recently appointed Alumni Fund chair,

Dr. Marten-Ellis brings her deeply held beliefs to the annual appeal.

"This is America, where we can follow our dreams," she says. "I could not have followed my dreams without UMass Medical School because I got a top-notch education for a very reasonable price."

"When I started my internship at Beth Israel, I found out quickly that I didn't have to be intimidated by the interns who came from Ivy League medical schools. Sure, they were smart, but when we started our internship, I was better prepared than they were to work with patients. UMass Medical School pioneered training methods [using standardized patients], providing us with an amazing experience that was invaluable in preparing us to examine patients correctly and effectively," Marten-Ellis said.

Now the director of the New England Eye Center in Brookline, Mass., and assistant professor of ophthalmology at Tufts University School of Medicine, Marten-Ellis focuses on alumni giving as an obligation for physicians who have benefited from their world-class education. She emphasizes the continuing significance and purpose of sustaining UMass Medical School as a top-ranked institution. "We owe it to the school—it's our responsibility to keep it going strong," she explains. "I feel that we need to be grateful for the opportunities we get in life and to provide opportunities to other people so they can follow their own dreams."

School of Medicine Alumni Reunion

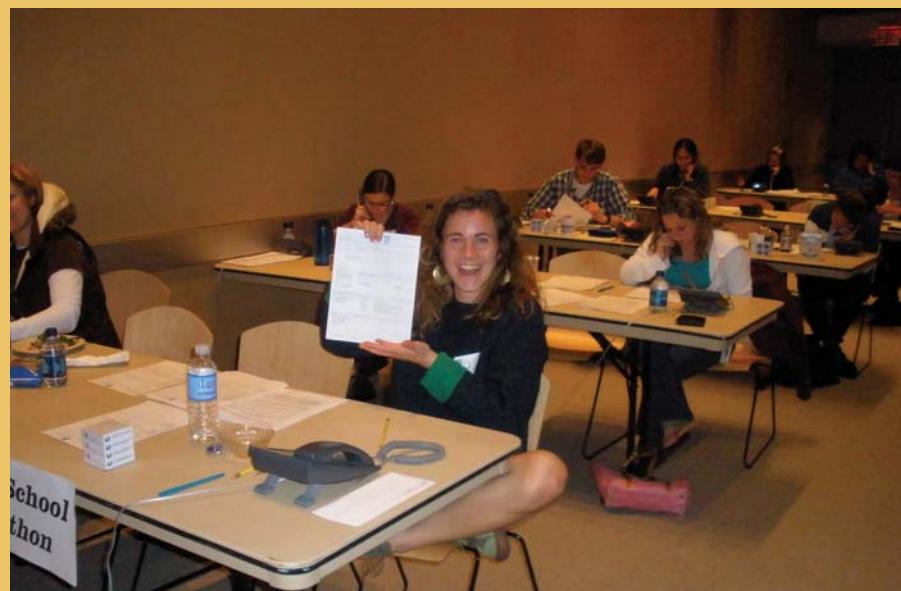
Saturday, May 1, 2010

Celebrating the Classes of '75, '80, '85, '90, '95, '00, '05

Renew friendships, share stories and reconnect. We invite you to celebrate your reunion with us, reconnect with classmates and friends and see the exciting growth and change happening at UMMS. Visit the alumni online community at www.NetworkUMass.com/Medical for additional reunion information and to register for the event.

A night for celebration at the Winter Ball

In celebration of the partnership between the University of Massachusetts Medical School and UMass Memorial Health Care, the first Winter Ball was held on Dec. 11, 2009. Celebrating with the nearly 400 guests in attendance are (top right) Eric Alper, MD '93, and Caroline Alper, MD '93, and Jane and Robert Klugman, MD '77. This premier fundraising gala for Central Massachusetts was the first joint, volunteer-driven, philanthropic event of this magnitude for our academic health sciences center.



Enthusiastic School of Medicine, Graduate School of Nursing and Graduate School of Biomedical Sciences students worked the telephones during the fall Alumni Phonathon. Thank you to all who generously donated.

Vitae:

2009 Facts & Figures

FY '09 Funding and Revenue

State Appropriation	\$42.7 million
State Contracts*	\$42.6 million
Public Service**	\$507.1 million
Research (sponsored activity)	\$182.3 million
Sales and Services***	\$135.1 million
Other Revenue	\$68.6 million
Total	\$978.4 million

*Provide mental health and pediatric services for those who cannot afford private care.

**Public Service revenue of \$507.1 million includes \$125.5 million of PSP/MHP revenue for the first time in FY09.

***Examples include Continuing Education, MassBiologics and New England Newborn Screening Program.

Total Research Funding – Fiscal Year Ending:

June 30, 2004	\$167,200,007
June 30, 2005	\$174,181,453
June 30, 2006	\$175,085,967
June 30, 2007	\$174,505,488
June 30, 2008	\$193,645,273
June 30, 2009	\$204,634,908

Education

<i>Number of Faculty (including voluntary)</i>	2,996
Basic science full- and part-time faculty	320
Clinical full- and part-time faculty	2,513
Nursing faculty	163
<i>School of Medicine</i>	
MD students	439
MD/PhD students	30
Alumni	3,215
<i>Graduate School of Biomedical Sciences</i>	
PhD students	351
MD/PhD students	24
Biomedical Engineering & Medical Physics students (joint program with WPI)	3
Clinical & Population Health Research students	19
Master of Science in Clinical Investigation students	10
Alumni	484
<i>Graduate School of Nursing</i>	
MS students	38
Graduate Entry Pathway students	84
PhD students	23
Doctor of Nursing Practice students	12
Alumni	853

Technology Management

For Fiscal Year:	2005	2006	2007	2008	2009
Invention Disclosures	66	74	79	60	66
U.S. Patent Applications	93	66	58	58	55
Licensing Agreements	28	32	67	19	11
Sponsored Research Agreements	\$993	\$1,238	\$3,097	\$2,595	\$1,029
Licensing Revenue (\$ in thousands)	\$27,694	\$25,545	\$40,684	\$36,484	\$71,480

Newest teaching affiliate happy to be on the team

UMass Medical School students and residents learn at hundreds of hospitals, health centers, clinics and volunteer practices across the commonwealth. One of the newest locations is Marlborough Hospital in Marlborough, Mass.

"Marlborough Hospital is very excited to be a new teaching site for UMass Medical School," said Marlborough Hospital President John Polanowicz. "Hospitals with teaching programs are inherently focused on the latest guidelines, procedures and technology to create effective learning environments for the students. There is a direct link to quality, effective and safe care for our patients."

The association benefits the hospital staff as well, Polanowicz said. "Our staff and physicians benefit through reviewing and improving their knowledge and clinical skills and having the opportunity to give something back to their profession."

Besides learning on-the-job skills, students are exposed to different care settings. "Many of the students find they enjoy practicing in a high-quality, caring community hospital and will return to the community after their formal medical education ends, creating the next generation of quality providers," he said.

Vitae: Leadership

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Foundation board transitions to UMass Medical School/ UMass Memorial Development Council

For the past 10 years, the UMass Memorial Foundation (UMMF) has acted as the fundraising arm of both the Medical School and UMass Memorial Health Care. In discussions this past year about how best to chart a course for future fundraising efforts and to respond to the increasing demands of one of the country's fastest growing academic health sciences centers, the UMMF Board of Directors voted to replace the board with a larger group representing a wider constituency: The UMass Medical School/UMass Memorial Development Council.

The Development Council's role is outreach to the wider community—representing the institution and sharing its successes and accomplishments with pride. Members of the council will gain both a deeper knowledge of UMass Medical School and UMass Memorial and an opportunity to interact as a team with the common goals of supporting our development efforts.

The following is a list of Development Council members:

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Vitae: The Last Word



By James Leary

Associate Vice Chancellor for Community Affairs

Worcester is uniquely fortunate to be home to colleges and universities that have a tremendous impact on the city's economy, culture and reputation. Our collective economic and social impact—from employing local residents in high-caliber jobs, to purchasing goods and services from local vendors, to creating community service partnerships—help make Worcester the vibrant city it is.

and lasting impact on literally thousands of area school children. For example:

- Tens of thousands of Worcester Public Schools students have gained meaningful exposure to health and science careers through the Worcester Pipeline Collaborative (WPC), a partnership among the Worcester Public Schools, the Medical School and several other city institutions. WPC encourages, educates and challenges educationally and economically disadvantaged students to be successful in the biotechnology, biomedical research and health care professions, where they are historically underrepresented.
- The Regional Science Resource Center (RSRC) serves 133 school districts across the commonwealth through programs for students, teachers and administrators to improve K–12 science, technology, engineering and mathematics (STEM) education. RSRC offers teacher development and training programs, helps school districts develop high-quality math and science programs, allows teachers to access its state-of-the-art lab, and works with community and parent groups to increase access of underrepresented groups to STEM education and careers (see story, page 21).
- Each year, dozens of Advanced Placement (AP) Biology students from Worcester's public high schools participate in UMass Labs for Worcester Area High Schools, conducting hands-on projects in the labs of 16 respected

faculty members and whetting their appetites for the science, health and biotechnology industry that is an important part of the city's economy.

- The Medical School partners with the Building Brighter Futures Program—a six-week internship to introduce high school juniors and seniors to a professional work environment and teach basic work skills such as punctuality and responsibility.

There may be no better example of the Medical School's value to the community than our active participation in the Public Health Task Force convened last year by Worcester City Manager Michael O'Brien when budgetary shortfalls threatened Worcester's ability to manage the public health needs of its residents (see story, page 22). Few cities in America could afford to compile a panel of experts of such breadth and depth, but Worcester has this critical mass of expertise in its own back yard. Final action by the City Council is still pending, but one thing remains clear: UMass Medical School stands ready to continue to apply our skills and expertise in a conscious and purposeful effort to improve lives in our host community.

What do we get in return? Pride of ownership in the work we do. A real-world experience for our students who are seeking careers in public health. And, a vibrant city from which we in turn can draw students and employees to help us further our mission. ☐

UMass Medical School has a proud history of community engagement and encourages students, faculty and staff to give their time and talents as actively in the community as they do in the lecture hall, clinic and laboratory. Members of the Medical School community log thousands of hours volunteering with local organizations that span the spectrum of community need, from health care and education to hunger initiatives, youth development and the environment.

The Medical School has an important role in the life of the city not only because of our incidental impact as a major employer, but because of our purposeful impact—the way in which we actively strive to apply our expertise as an academic medical center to the needs of our host community. Our mission—excellence in research, education and public service—overlaps with Worcester's needs in critical ways that foster our shared goals: to enhance health and science education, build a diverse workforce, ensure community health and enrich lives.

The Medical School's expertise in health and science education has had a direct

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