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The University of Massachusetts Medical School Magazine

YEAR IN REVIEW 2010

BREAKING NEWS: A pitch for ALS research

The Sherman Center: Building the Future

First Seven Stem Cell Lines Ready For Action

Caret Named New President of UMass

Dean Flotte in Haiti

Vol. 1 No. 1

A NEW UMASS MEDICAL SCHOOL MAGAZINE

This is the debut issue of the new UMass Medical School magazine, *UMass Med,* which will be published three times per year. *UMass Med's* mission is to inform, engage and educate readers and, in doing so, connect our audience to UMass Medical School and one another. A colorful, dynamic and modern design reflects the exciting work of the many members of the UMMS community. Highlighted "pockets of Information" will lead you to multimedia features on UMassMedNow (www.umassmed.edu/news), the news website of UMass Medical School. We welcome your feedback. Email ummscommunications@umassmed.edu.

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.

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As you read about the dynamic UMass Medical School community, you'll frequently come across references to our partners and programs.

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 $255 million in funding annually.
www.umassmed.edu/research

UMass Medicine Development Office

The charitable entity 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/development

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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Alumni of the School of Medicine, Graduate School of Biomedical Sciences and the Graduate School of Nursing may send their latest news to alumni@umassmed.edu.

www.umassmed.edu

Chancellor's Message

Over the last year we have witnessed many exciting signs that our flourishing academic health sciences center is entering one of its most important periods of growth in size and reputation. With outstanding students and an internationally renowned faculty, we are educating the health care workforce of the future while standing at the forefront of innovation and scientific discovery.

This year's commencement ceremony capped another extraordinary year on our campus and was the most recent example of the dynamism of the commonwealth's public medical school. To observe our graduates proudly walk across the stage as the next generation of physicians, nurses and research scientists was a powerful reaffirmation of our mission. This remarkable group of professionals has accomplished so much and is poised for even greater success in the years ahead. They are our most important achievement and their successes foretell our school's continued excellence.

Michael F. Collins, MD
CHANCELLOR, UNIVERSITY OF MASSACHUSETTS MEDICAL SCHOOL
SENIOR VICE PRESIDENT FOR THE HEALTH SCIENCES, UNIVERSITY OF MASSACHUSETTS

"With outstanding students and an internationally renowned faculty, we are educating the health care workforce of the future while standing at the forefront of innovation and scientific discovery."

With its focus on our stellar graduates, commencement appropriately serves as a high point for the year. There were, however, a number of other notable highlights, all of which reinforced that this is indeed our "moment." Our School of Medicine was ranked 8th in the nation for primary care education by *U.S.News and World Report*. To continue to bolster our historic strength in medical education, we launched a new medical school curriculum and opened a state-of-the-art teaching facility, the integrated Teaching and Learning Center. Our burgeoning research enterprise received a highly coveted Clinical and Translational Science Award from the National Institutes of Health, which places us in an elite national consortium working to move laboratory discoveries into treatments for patients.

This year also saw substantial progress to our campus infrastructure enhancements. In conjunction with our clinical partner, UMass Memorial Health Care, we opened the Ambulatory Care Center, which houses our clinical centers of excellence and offers the citizens of Worcester and central Massachusetts a world-class clinical setting in which to receive patient care. Additionally, we reached important milestones associated with the construction of the Albert Sherman Center that will serve as the home for some of our most accomplished faculty members and innovative research programs, including the Advanced Therapeutics Cluster.

This 2010 Year in Review highlights these and many of our other notable accomplishments, here in Worcester, across the state, throughout the country and around the world.

Take special note of the exciting kick-off event held at Fenway Park for the new fundraising initiative led by former Gov. Paul Cellucci. Recently diagnosed with amyotrophic lateral sclerosis (ALS), Gov. Cellucci is stepping back into the spotlight to help raise money to support our Neurotherapeutics Institute and the research of Robert Brown, DPhil, MD, chair of the Department of Neurology and one of the world's most prominent ALS experts. The UMass/ALS Champion Fund will make it possible for researchers to pursue promising new leads in the fight against ALS and other neurodegenerative diseases.

This is truly a special time at UMass Medical School. I invite you to read on and see for yourself how we are seizing this extraordinary moment.

A pitch for

"I believe we are getting very close to some therapies that are going to help people like me."

-Former Gov. Paul Cellucci

ALS research

One of the most enduring images in sports history is the touching, brief speech given by Lou Gehrig on July 4, 1939, as he addressed a crowd of 65,000 fans in Yankee stadium. Confronting his devastating diagnosis of amyotrophic lateral sclerosis (ALS), the still untreatable disease that is now known by his name, Gehrig offered these optimistic words: "I may have had a bad break, but I have an awful lot to live for."

More than 70 years later, another man with the same devastating diagnosis took to a major league baseball field, and offered his own hopeful message: we are closer than ever to a cure. Former Gov. Paul Cellucci, who was diagnosed with ALS last year, feels so hopeful about the ALS research happening at UMass Medical School that he is using his formidable political connections to help raise millions for researchers to pursue all promising leads.

"I believe we are getting very close to some therapies that are going to help people like me," said Cellucci, as he unveiled the UMass ALS Champion Fund (www.UMassALS.com) at Fenway Park on May 19. "By raising this endowment, we're going to make sure when there's a spark in a laboratory that the money will be there to pursue that lead right away. I am very optimistic about the research that is taking place. I believe we are getting close. That gives me hope."

BY KRISTEN O'REILLY
UMass Medical School Communications

Former Gov. Paul Cellucci launched at Fenway Park an effort to raise $10 million to support ALS researchers at UMass Medical School, led by Robert H. Brown, DPhil, MD. Pictures from left to right, Gov. Cellucci, center, speaks at the press conference with Chancellor Michael F. Collins, left, and Dr. Brown; Dr. Brown and Chancellor Collins get a ride off the field after the first pitch was thrown out; top, Red Sox second baseman Dustin Pedroia greets Gov. Cellucci; bottom, Gov. Cellucci receives recognition at the pre-game ceremony.

A grateful Chancellor Michael F. Collins called Cellucci's effort a "selfless act" that will have an impact on the neurological diseases that are at the center of many of the Medical School's research efforts.

"We actually have the opportunity to change the course of history of this disease. We have scientists now who are unlocking the basic mechanism of this disease. When I have the opportunity to listen to our scientists and hear about the discoveries they are making, it makes real to me how essential it is to do this work," said Chancellor Collins.

Not long after receiving his diagnosis, Cellucci became the patient of Robert H. Brown Jr., DPhil, MD, chair and professor of neurology, and one of the leading ALS researchers in the country. More than 5,000 people a year are diagnosed with ALS, a progressive, neurodegenerative disorder affecting the motor neurons in the central nervous system. The disease causes the loss of voluntary muscle movement, paralysis and eventually death from respiratory failure. The average survival rate for patients with ALS is three to five years.

Rather than retreating in the face of these discouraging statistics, Cellucci chose to enter the public spotlight again. The former Massachusetts politician and U.S. ambassador to Canada found a new calling that fit with his long history of public service.

"We actually have the opportunity to change the course of history of this disease."

– Chancellor Michael F. Collins

"It was clear to me after the first couple of appointments with Dr. Brown that I was probably with the best person in the world to be treating ALS," said Cellucci. "He's just someone who will leave no stone unturned in trying to help his patients. I was very impressed with that and I told him early on I would like to help raise money for his research to continue."

"This is a very exciting for all of us. We have more ideas than ever before about factors that may trigger the disease, as well as new parallel approaches to devise therapies," said Brown.

Renowned for his groundbreaking basic and clinical research on the inherited and genetic basis of neurodegenerative and neuromuscular diseases, Brown has a record of significant discoveries in identifying gene defects that explain how ALS causes neurons to die. In 1993, a team of researchers led by Brown discovered the first gene linked to the inherited form of ALS, called SOD1.

Brown joined UMMS in May 2008, in part because of the work of its internationally known scientists illuminating the mechanisms that turn genes on and off. Brown believes RNAi, a gene-silencing mechanism that has revolutionized biomedical research, holds immense potential as a therapeutic for neurodegenerative diseases such as ALS.

The UMass ALS Champion Fund aims to help Brown and his colleagues pursue ALS research leads and breakthroughs right now that might otherwise take years to attract funding from traditional sources. As a result, this fund will make researchers at UMMS better prepared to sieze the moment when highly promising ALS discoveries are made.

The fact that Brown is pursuing this research at the state's public medical school is significant in Cellucci's eyes.

"Probably one of the best things state government ever did was to establish UMass Medical School. It has become a research powerhouse," said Cellucci. "Any contribution large or small will get us to our goal. I'm going to be very active, making phone calls, working with my former political organization to make sure we reach the goal so this important research can go on."

Building the fu

ture

The low rumble always stopped a conversation, if only for a few seconds. Twice a day throughout the summer of 2010, the ground shook as controlled explosions at the Albert Sherman Center construction site bit deeper into the granite, clearing room for the foundation of what will soon become home to the core of UMass Medical School's assets—laboratories and learning facilities supporting the distinctive research and teaching that will shape the future of medicine.

BY KRISTEN O'REILLY
UMass Medical School Communications

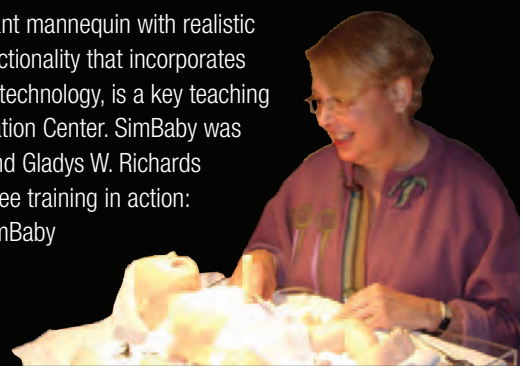
EDUCATION

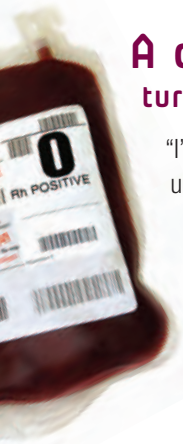
New tradition marks a beginning

First-year students formally received the mantle of the medical profession in the inaugural White Coat Ceremony during Convocation week activities in September. See video and read about the meaningful event: www.umassmed.edu/WhiteCoatCeremony

SimBaby trains for crises

SimBaby, a full-body infant mannequin with realistic anatomy and clinical functionality that incorporates software and interactive technology, is a key teaching tool of the UMMS Simulation Center. SimBaby was a gift from the Paul C. and Gladys W. Richards Charitable Foundation. See training in action: www.umassmed.edu/SimBaby





A call to arms: Donating blood turns into healthy competition

"I'm in medical school so I can one day help people. I have to wait until my clinical years to actually work with patients, but donating blood lets me help someone right now," said Medical School student Dan Carr '13, who encouraged fellow students to donate blood to the Blood Donor Center at UMass Memorial Health Care by arranging a House Cup competition among the learning community houses. See Carr in action: www.umassmed.edu/BloodDonationCompetition

Mr. Potato Head and patient safety?

Eric Dickson, MD '95, professor of emergency medicine, used 160 Mr. Potato Head toys in a patient safety interclerkship exercise. "Exercises like this are good illustrations of how teamwork, critical thinking and decision-making and process improvement should be parts of practicing good care," said Dr. Dickson. See the teams work: www.umassmed.edu/MrPotatoHead

Clockwise starting from above, Victor R. Ambros, PhD, the Silverman Chair in Natural Sciences *and professor of molecular medicine, is one of the co-directors of the RNA Therapeutics Institute, which will be housed in the Sherman Center; students in the integrated Teaching and Learning Center; the Sherman Center began to grow in earnest starting in the winter of 2010, despite challenging weather; Chancellor Michael F. Collins.*

While exciting in itself, the construction of the Sherman Center mirrors the state of UMass Medical School in general—growing, building, sometimes at a fantastic rate, with the promise of an exciting payoff in the near future. Both the Sherman Center and the Medical School are seizing the moment after years of successful foundation building.

You can see this in the educational mission, where a new School of Medicine curriculum has changed fundamentally the way medicine is taught. And in the research mission, reshaped forever by the Medical School's acceptance this year into a nationwide consortium of top research institutions working to turn lab discoveries into therapies to save and improve patients' lives. Or its public service mission, where the majority of fourth-year medical students continue to pursue primary care residencies, and the school's health consulting division, Commonwealth Medicine, is offering guidance to other states as the country moves toward realizing national health care reform.

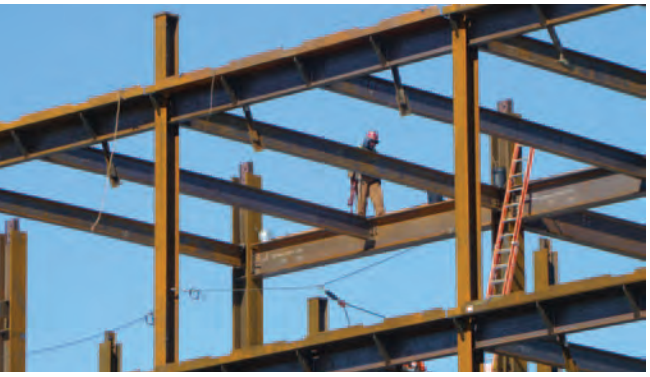
"At a time when others must put plans on hold, this dynamic campus boldly prepares for a future where the sparks of innovative research and teaching come together to create a fire of translational discoveries that could change the face of medicine," said Chancellor Michael F. Collins at Convocation in September. "It is our moment."

Reshaping campus and science

The $400-million project is one of the largest academic construction projects on the East Coast, and is employing hundreds of construction workers. UMMS capitalized on low interest rates, a construction industry eager for work and prudent planning by the state's Life Sciences Initiative, which provided a $90-million down payment on the game-changing work expected to grow from the new laboratories and classrooms.

The bold investment by UMMS in the Sherman Center project was outlined in the joint academic health sciences center strategic plan, which committed UMMS to changing how medicine is taught, how health care is delivered, how scientists are trained and how directly its research work would impact human health. The strategic plan mapped out the course of UMMS investments necessary to, as the plan concludes, "make a difference in the world."

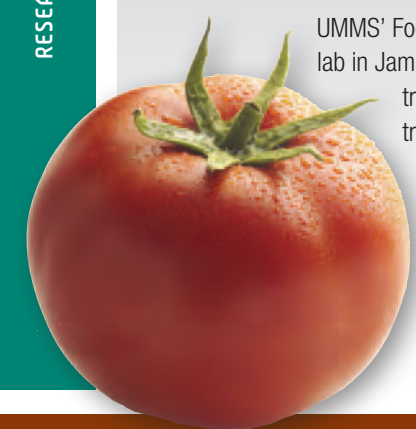
On schedule to open at the end of 2012, the Sherman Center is already an impressive structure, even in its airy erector-set state. Fitting into the northwest corner of campus, and connected to the Medical School building through an elevated walkway, the nine-story, 500,000-square-foot building will physically reshape the look of campus, while the groups brought together within its walls will continue to reshape fundamental scientific truths.



The Conquering Diseases Clinical Research Center recently opened on the first floor of the Ambulatory Care Center.

RESEARCH

FERN Lab keeps food safe



UMMS' Food Emergency Response Network (FERN) lab in Jamaica Plain is one of six national FERN training centers that provide need-based training to staff of other network public health and agriculture laboratories. The lab provides network scientists with training and technical instruction in food emergency responses. See a training session: www.umassmed.edu/FERNLab

First seven stem cell lines ready for action

The first seven stem cell lines grown and banked at UMass Medical School's Human Stem Cell Bank are ready for worldwide distribution to researchers working to discover new therapeutic treatment for diseases such as cancer, juvenile diabetes, Alzheimer's and Parkinson's.

www.umassmed.edu/StemCellLines

More than 100 investigators and their staff will call the Sherman Center home, and they will work in open, flexible lab spaces that encourage collaboration and interaction. The Advanced Therapeutics Cluster, which brings together RNA biology, stem cell biology and gene therapy, will become the Sherman Center's major tenant. And bringing them together into one space is important.

"The exponential growth in our molecular understanding of what causes disease has yet to be matched by a growth in the number of advanced therapies based on that science," said Terence R. Flotte, MD, the *Celia and Isaac Haidak Professor in Medicine,* dean, provost and executive deputy chancellor. "Our vision for the Advanced Therapeutics Cluster is to gather together basic scientists with those focused on devising cures for specific diseases. Only in that way can we conceivably speed the advance of knowledge from the theoretical realm into actual benefit for peoples suffering from previously unmet medical needs."

Research means hope

But the complex roots of diseases are not always on the minds of the general public, who just want to know why so many of the world's most devastating illnesses are still untreatable despite billions of public dollars going to researchers. Incremental progress and laboratory breakthroughs that offer promise for future investigations are exciting, but hard to fully understand for the lay person.

Focusing attention on the inspiring work taking place at UMass was the impetus behind two visits from U.S. Sen. John Kerry in 2010. The first was an information-seeking mission in January. Already a champion of UMMS and the work that is advancing science and improving lives, he closed the meeting by saying, "I will go back to Washington reinvigorated with a much better sense of what we can fight for."

When Kerry returned 10 months later with U.S. Reps. James McGovern and James Langevin as part of the Association of American Medical Colleges national *Research Means Hope* campaign, he emphasized the importance of better connecting the general public to the importance of research, asking, "How can you translate science into a language that people can really understand and get the cause and effect of the investment out there?"

Making that case and keeping funding flowing to the many promising research projects on campus is essential to keeping that hope alive.

> "Our vision for the Advanced Therapeutics Cluster is to gather together basic scientists with those focused on devising cures for specific diseases."

Eighty-five percent of the research funded at the Medical School comes from federal sources. The National Institutes of Health (NIH) invested $164 million in grants for researchers here in 2010, plus another $40 million in American Recovery and Reinvestment Act funding. Yet in April 2011, NIH funding was cut nationally by one percent.

Which is why the University's acceptance into a national consortium of institutions charged by the NIH with accelerating the process of turning laboratory discoveries into health benefits for real people could be one of the most significant milestones in the Medical School's relatively short history. Years of planning and refocusing the research enterprise factored into the Clinical and Translational Science Award (CTSA), which was announced in July 2010.

A new department, Quantitative Health Sciences, led by Catarina Keife, MD, PhD, collects and analyzes data to enhance the delivery of health care services and develop best practices to improve patient outcomes. The Ambulatory Care Center (ACC), which opened in the summer of 2010 and houses the Clinical Centers of Excellence, combines patient care clinics with translational research programs under the same roof. And the first floor of the ACC contains the Conquering Diseases Biorepository and the Clinical Research Center, resources for collecting and storing critical data that will influence future clinical trials.

The CTSA's focus on translating science quickly into therapies for patients has also led to new perspectives by research scientists, especially those whose work intersects with diseases that have no current treatments or cures, including many neurological diseases, such as amyotrophic lateral sclerosis (ALS). In fact, one factor instrumental in attracting Robert Brown Jr., DPhil, MD, chair and professor of neurology and one of the leading ALS researchers in the country, to UMMS was the tantalizing prospect of working with some of the nation's top RNA biologists, including the co-directors of the RNA Therapeutics Institute: Nobel Laureate Craig C. Mello, PhD, *Blais University Chair in Molecular*

Outcomes the focus of joint replacement registry

UMass Medical School will establish a nationwide registry of 33,000 total joint replacement patients, develop tools with which to assess the success and failure of the surgery, and conduct research to guide both clinical care and health care policy, thanks to a $12 million grant from the Agency for Healthcare Research and Quality.

www.umassmed.edu/TJRRegistry

Translating knowledge into clinical practice

A $20 million Clinical and Translational Science Award from the National Institutes of Health places UMMS in an elite consortium of 55 nationally prominent institutions moving laboratory discoveries into treatments for patients.

www.umassmed.edu/ctsa

Medicine, Howard Hughes Medical Institute (HHMI) Investigator and professor of molecular medicine and cell biology; Melissa J. Moore, PhD, HHMI Investigator and professor of biochemistry & molecular pharmacology; Phillip D. Zamore, PhD, HHMI Investigator, *Gretchen Stone Cook Chair in Biomedical Sciences* and professor of biochemistry & molecular pharmacology; and Victor Ambros, PhD, *Silverman Chair in Natural Sciences* and professor of molecular medicine.

Likewise, it was the opportunity to work closely on a human disease—Huntington's—that drove a new research collaboration between Dr. Zamore and endocrinologist Neil Aronin, MD, professor of medicine, cell biology and microbiology and physiological systems, a faculty member with a long interest in the clinical course of Huntington's and the pressing need for new research into treatments.

Since a key component of the CTSA is to foster research that has the potential for human impact, pilot grant programs supported by the new UMass Center for Clinical and Translational Science are funding research initiatives in areas such as social networking tools to encourage exercise, the impact of diet on postpartum weight gain and whether changes in brain chemistry cause postpartum depression. When the Sherman Center opens, it promises to be the nucleus of this new approach to translational research.

Integrated, high-tech learning

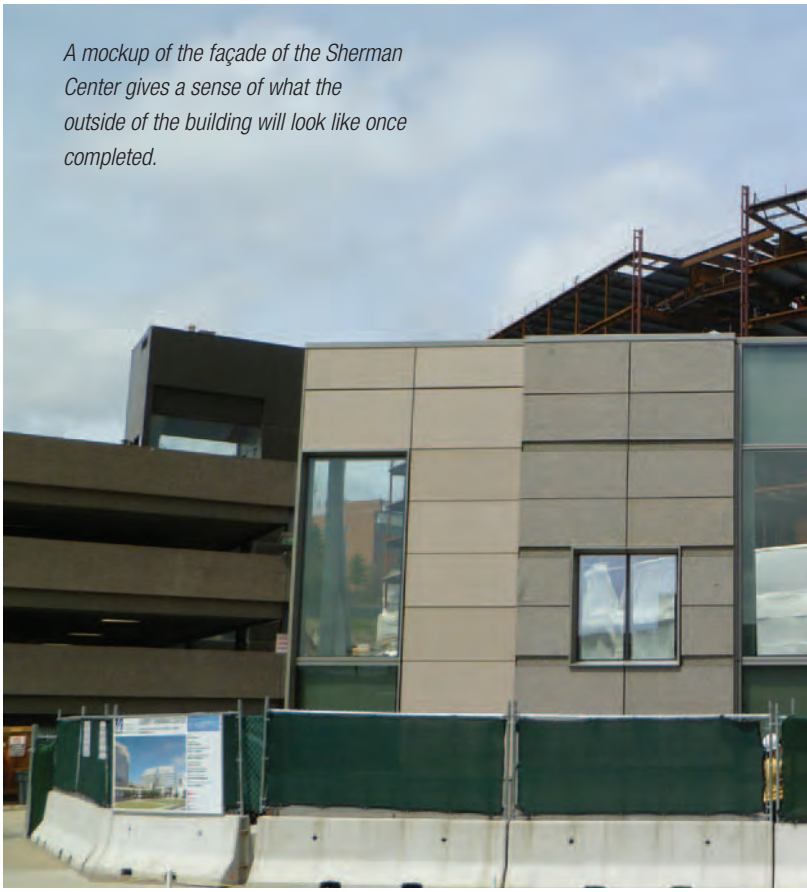
While the laboratories will take up the bulk of the Sherman Center's square footage, the creative learning spaces planned for the educational wing of the building are a highly anticipated complement to the new Learner-center Integrated Curriculum (LInC) that first-year medical students jumped into last fall.

LInC is fundamentally changing the way medicine is taught at UMMS by joining basic and clinical faculty as course leaders to create organ-system-based teaching. Medical students are seeing patients in their first year, and learning from faculty mentors and each other in new learning communities—five groups of 100 medical students from all four years led by senior faculty who advise, teach and guide their students from the minute they step onto campus until they leave with their degrees.

These learning communities will have dedicated suites in the Sherman Center, giving medical students an educational home base. The high-tech mannequins of the Simulation Center and the Standardized Patient program staffed by skilled actors will be housed in the Sherman Center in large, modern facilities.

The human element of the new curriculum structure may be the most significant difference, and the learning community mentors are key to implementing this new way of learning. At the School of Medicine's first White Coat ceremony in September, mentors from each of the five learning communities presented their house students with the mantle of the medical profession, the white coat. Mentors said they were honored to represent that first step in the educational process.

The Learning Communities are creating a stronger social connection among students of all years, rather than just among one class. A friendly competition of sorts, the House Cup, has emerged, where students earn points for their house based on community service activities and contests.



A mockup of the façade of the Sherman Center gives a sense of what the outside of the building will look like once completed.

The building's educational spaces will only encourage the growing sense of community for medical students. "The Sherman Center will be the hub, the heart and soul of the medical school community," said Michele P. Pugnaire, MD, senior associate dean for educational affairs and professor of family medicine & community health.

Scheduled to be weather-tight by this winter, the Sherman Center will continue growing for another year, even after the exterior walls hide progress from passersby.

"The Sherman Center represents all that is exciting about the future of UMass Medical School and the impact its scientists, faculty and students will have on the medicine and medical care of tomorrow," said Chancellor Collins.

> "The Sherman Center represents all that is exciting about the future of UMass Medical School and the impact its scientists, faculty and students will have on the medicine and medical care of tomorrow."
>
> – Chancellor Michael F. Collins

COMMUNITY

Facing a rare cancer and grim statistics, Corrie Painter decided to fight

www.umassmed.edu/CorriePainter

Summer adventure turns into life-or-death rescue

Medical student Keith Azevedo used his extensive wilderness survival training to rescue an Austrian climber in Peru's Cordillera Blanca during a Multicultural Pathways Program summer adventure. Hear Azevedo describe the harrowing life-or-death rescue.

www.umassmed.edu/MountainRescue

Learn and Serve grant helps students make a difference

Through support provided from a single, small grant, UMass Medical School students are expanding current learning opportunities to make a difference in the lives of some of the most vulnerable members of their local community. They are helping foreign refugees assimilate to life in Worcester, teaching at-risk kids healthy lifestyle habits and tutoring immigrant students so they don't fall behind in school.

www.umassmed.edu/LearnAndServe

Jet turbine lands on campus

The jet turbine that will nearly double the generating capacity of UMass Medical School's power plant arrived on campus Feb. 9 after a cross-country journey from its California manufacturing plant.

www.umassmed.edu/JetTurbine

Caret named new president of UMass

The Board of Trustees of the University of Massachusetts unanimously elected Robert L. Caret, PhD, president of the five-campus university system. Dr. Caret, the president of Towson University in Towson, Md., will succeed retiring UMass President Jack M. Wilson, who steps down on June 30.

"We are pleased to announce that Robert L. Caret will become the next president of the University of Massachusetts," said James J. Karam, head of the search committee and acting chair of the UMass Board of Trustees. "After conducting an exhaustive search, we selected a president with the qualifications, the character and the vision to lead our university system forward and to build upon the strengths of our world-class university system."

"It is an honor to have been asked to lead this world-class and world-renowned university system," President-elect Caret said. "The University of Massachusetts is one of the nation's premiere public research universities and provides a beacon of hope and opportunity for so many. I look forward to building upon its tradition of excellence in academics, research and public service."

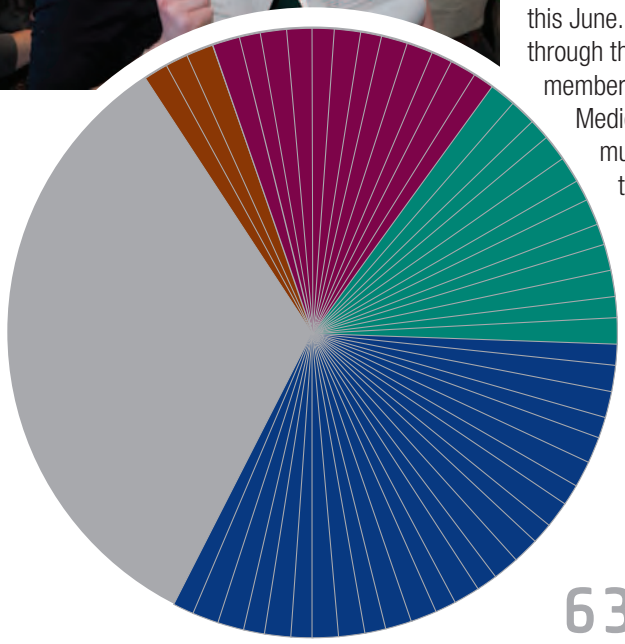
Finally, the answer to the Match Day question

The palpable excitement that filled the Faculty Conference Room as the clock struck noon became a loud roar of voices as Mai-Lan Rogoff, MD, associate dean for student affairs, began calling the names of all 85 fourth-year School of Medicine students set to graduate this June. One by one, students squeezed through the crowd of fellow students, family members, friends and other members of the Medical School community to receive a much-anticipated envelope that would tell them where the next step in their medical education journey would take them.

And after the final name was called, together as a group, the fourth-years opened their Match Day envelopes and learned where they will be going to do their residencies.

While each student has a unique story, Dr. Rogoff gave a snapshot of a class that is not unlike others that have graduated from UMass Medical School. Sixty-three percent will enter primary care: 25 in internal medicine, 12 in family medicine, 12 in pediatrics and three in medicine/pediatrics.

"You are doing the things we want you to do," said Rogoff just before distributing the envelopes. She added that half of the class will be completing all their training in Massachusetts, including 16 who will be staying at UMMS to do their residencies at UMass Memorial Health Care.



63% of UMMS medical students will enter primary care:

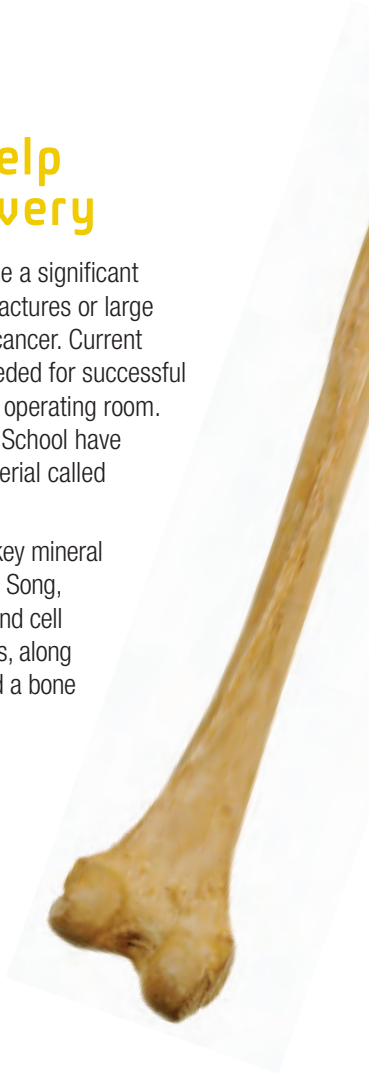
family medicine | internal medicine | pediatrics | medicine/pediatrics

Synthetic FlexBone could help speed bone transplant recovery

"Functionally sophisticated synthetic materials don't have to be complicated to manufacture or difficult to reproduce," said Dr. Song. "Our idea was to create an inexpensive, off-the-shelf product that can be easily manipulated in the operating room to fill large bone voids and facilitate tissue repair."

With a failure rate as high as 50 percent, bone tissue grafts pose a significant obstacle to orthopedic surgeons attempting to repair complex fractures or large areas of bone loss, such as those often caused by trauma and cancer. Current synthetic substitutes rarely possess the bone-like properties needed for successful grafting and are often difficult for surgeons to manipulate in the operating room. In response to these challenges, researchers at UMass Medical School have developed an easy-to-produce, inexpensive, synthetic bone material called FlexBone.

Building upon earlier development of a material that combines a key mineral found in bone with a gel similar to that used in contact lenses, Jie Song, PhD, assistant professor of orthopedics & physical rehabilitation and cell biology, and a team of graduate students and orthopedic surgeons, along with their collaborators at the University of Michigan, have created a bone substitute that can be press-fit into a bony lesion.



UMass Medical School ranks 8th in primary care education

> "This achievement is particularly important now, because as we enter an era of unparalleled health reform, there is a growing emphasis on the importance of primary care. This makes our institution's role even more essential."
>
> – Chancellor Michael F. Collins

UMass Medical School jumped up a spot to eighth in primary care education in the highly anticipated *U.S.News & World Report* rankings of the nation's 126 medical schools and 20 schools of osteopathic medicine. The 2012 edition of the "Best Graduate Schools" also ranked UMMS 16th among family medicine programs, 53rd among research schools, 79th in nursing and 46th in the biological sciences. UMMS has been listed near the top in primary care education since 1994 when the magazine began publishing the rankings. UMMS is the only school in the top 50 that accepts only in-state students into its medical degree program.

"UMass Medical School's consistently high ranking is a reflection of our dedication to our mission and the faculty's unwavering commitment to providing an outstanding education to our students," said Chancellor Michael F. Collins. "This achievement is particularly important now, because as we enter an era of unparalleled health reform, there is a growing emphasis on the importance of primary care. This makes our institution's role even more essential."

Traditionally, more than 50 percent of each graduating class enters a primary care residency program. In addition, more than half of each class stays in the state for residency, adding 260 new residents in the last five years alone.

Quick!

What's the name of the seahorse-shaped structure that's key to learning, memory and emotion?

If you said hippocampus, you would have done well at the Fifth Annual Central Massachusetts Regional Brain Bee on Feb. 12. As in prior years, Amphitheatre II was buzzing with nearly 100 teens showing off their knowledge of the human brain.

Hosted by the Brudnick Neuropsychiatric Research Institute, a division of the Department of Psychiatry, participating in the Central Massachusetts Brain Bee is part of the Medical School's ongoing outreach mission to educate teens in Worcester and the surrounding communities. It is one of more than 30 regional competitions that lead up to the annual National Brain Bee, a program of the Society for Neuroscience and the Dana Foundation designed to educate teens about neuroscience and to encourage them to consider a career in a scientific field.

Teens in grades nine through 12 from a dozen area high schools participated in this year's Brain Bee, which was won by Raashika Goyal, a junior from the Advanced Math and Science Academy Charter School in Marlborough.

Chancellor Collins' travels in China cementing strong partnerships

Chancellor Michael F. Collins received a warm welcome in Chengdu, China, as he met with President Xie Heping of Sichuan University on Oct. 13, to share lessons learned from U.S. health care reform and discuss building on an already established strategic partnership.

Chancellor Collins gave the keynote address at the Sichuan-UMass Forum on 21st Century Health Care Challenges, titled "UMass Medical School: Transforming Medical Education, Research, Care and Policy in the Era of Health Care Reform." More than 70 people, including faculty members, physicians and graduate students from Sichuan University's School of Public Health, School of Medicine and affiliated hospitals, heard about the role of a public medical school in the reform of the U.S. health care system.

The visit to Chengdu was part of a week-long trip to China, which included stops at Tsinghua University in Beijing and at Tongji University, one of the Medical School's most active partners.

Gene connection extends possible treatments to more ALS patients

Researchers at UMass Medical School have uncovered new evidence suggesting that a gene, SOD1, which is implicated in 20 percent of inherited cases of amyotrophic lateral sclerosis (ALS, or Lou Gehrig's disease), also plays a part in the more common non-inherited form of the disease. Discovery of this connection may mean that current treatments under development could be extended to a much larger population of ALS patients.

Only 10 percent of ALS cases are familial, while roughly 90 percent are sporadic in nature—meaning there is no identifiable familial risk or family history. While the SOD1 gene has long been understood to play a role in familial ALS, scientists suspected a connection to the more common sporadic form, for which there is no known cause, and sought to establish a shared pathological pathway.

"This common ALS pathology between sporadic and familial ALS means that current gene silencing and immunotherapeutic treatments being developed in academic and commercial labs that target the mutant SOD1 gene may be extended to target non-mutant SOD1 protein found in sporadic ALS cases," said Daryl Bosco, PhD, (left) assistant professor of neurology and lead author of the study.

UMass Biologics' rabies treatment could save thousands of lives

With the potential to save tens of thousands of lives each year, a new cost-effective rabies therapy developed by UMass Biologics at the UMass Medical School and the Serum Institute of India took an important step forward with positive results from a Phase 1 study. The recently completed study showed that treatment with a new monoclonal antibody, which can be produced cheaply and in large quantities, was equally effective as the current standard of treatment, which is often not available in the areas of the world hit hardest by rabies.

Subhash Kapre, PhD, of the Serum Institute of India, said, "The next step for clinical studies is already in the planning, and we are hopeful that this new therapy will have a major impact on rabies across the globe in the not-too-distant future."

New research suggests you are what your father ate

Scientists at UMass Medical School have uncovered evidence that environmental influences experienced by a father, such as what he ate, can affect how genes function in his offspring. A new study shows that environmental cues influence genes in mammals from one generation to the next. These insights, coupled with previous human epidemiological studies, suggest that a father's environment may play a more important role in complex diseases, such as diabetes and heart disease, than previously believed.

"Knowing what your parents were doing before you were conceived is turning out to be important in determining what disease risk factors you may be carrying," said Oliver J. Rando, MD, PhD, associate professor of biochemistry & molecular pharmacology and principal investigator for the study, which details how paternal diet can increase production of cholesterol synthesis genes in first-generation offspring.

Storytelling may help control blood pressure

Controlling blood pressure is not only a medical challenge, but a behavioral one as well. Because patients are required to strictly adhere to a treatment plan that may include medication, dietary restrictions and regular doctor visits, the ideas of wellness and health are also powerful parts of the social reinforcement needed for behavioral change.

A new study suggests that a storytelling approach—in which recognizable members of a vulnerable community provide positive messages aimed at controlling hypertension through diet and medication adherence—may offer a unique opportunity to communicate positive disease management choices in a culturally appropriate context.

Researchers at UMass Medical School, working with colleagues at Cooper Green Mercy Hospital and the University of Alabama at Birmingham, have identified one promising approach. They identified "exceptionally eloquent and persuasive" patients with hypertension from focus groups of a vulnerable population as they discussed blood pressure control and the benefits of intervention; these volunteers were then videotaped, and DVDs, edited from 80 hours of taping, were created. Among patients who had uncontrolled hypertension, those assigned to view the stories had better blood pressure control than those assigned to usual treatments.

Nursing pioneers recall 'How far we've come'

Twenty-five years is a short time in the life of an academic institution, but the Graduate School of Nursing has accomplished more in its first quarter century than many schools accomplish in twice that time. On Oct. 19, former and current deans were joined by other key contributors to mark the 25th anniversary with a panel discussion attended by 150 members of the UMass Worcester/UMass Memorial community.

The event, "Look How Far We've Come (and How We Got Started)," held in recognition of American Archives Month and coordinated by the Lamar Soutter Library's Office of Medical History and Archives with the Office of Alumni Relations, brought together the GSN's first dean, Kathleen Dirschel, PhD; its second dean, Lillian Goodman, EdD; former UMass Medical Center COO and president Gail Frieswick, EdD; pioneering GSN faculty members Mary K. Alexander, EdD; Anne Bourgeois, EdD; and Sue Roberts, DNS; and inaugural class alum Karen Coteleso, MS, APRN. Current dean Paulette Seymour-Route, PhD, also an alum, moderated the panel, introducing each speaker with humor and thoughtful questions to launch their discussion.

Together, the panel presented an oral history of the school's founding, reflecting on the challenges and the accomplishments and sharing their own unique perspectives in helping to shape what has become a resource in nursing excellence for all of Massachusetts.

umass medNOW

Learn something new every day

The Office of Communications has launched a news website, UMassMedNow, that offers fresh content every day, telling the stories of the many exciting things happening at UMass Medical School in a variety of formats. To learn more about the stories highlighted in this section, or to keep up to date with the daily news from UMMS, visit www.umassmed.edu/news.

Goods for Guns buyback breaks 2,000 mark

Since it was established in 2002 as an Injury-Free Coalition for Kids program, the Goods for Guns buyback has taken hundreds of unwanted and potentially dangerous handguns and rifles—including scores of semi-automatics, assault rifles and even a machine gun—off the streets of Worcester and surrounding towns. This year, the program broke the 2,000 gun mark. The 195 guns collected on Dec. 11 and Dec. 18 brought the eight-year total to 2,056 guns that have been exchanged for gift cards; in addition, hundreds of gun safety locks have been distributed at no charge.

Michael Hirsh, MD, professor of surgery and pediatrics, brought the Goods for Guns buyback to the city. As the program has taken root, Dr. Hirsh and colleagues have sought to create a public monument to community efforts to overcome gun violence. Working with several area organizations, they are planning a Guns for Art public art exhibit that they hope will incorporate some of the firearms—disassembled but still recognizable as guns—in an arch to be placed in one of the city's parks.

Work Without Limits asks the question: "What Can YOU Do?"

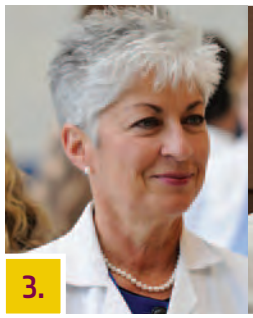
Everyone working to enhance employment opportunities for people with disabilities agrees that raising public awareness is necessary to advance these efforts. The Massachusetts Work Without Limits initiative, led by UMass Medical School, answered that call with the state's first-of-its-kind disability employment information outreach campaign. Through an agreement with the U.S. Department of Labor's Office of Disability Employment Policy (ODEP), Work Without Limits launched "What Can YOU Do? The Campaign for Disability Employment in Massachusetts" on April 1.

With funding from the Department of Labor and in collaboration with disability and business organizations, ODEP developed communication vehicles for a national campaign, including billboards and posters and television and radio public service announcements, that promotes the benefits of employing individuals with disabilities. In its first collaboration with an individual state, ODEP has allowed Work Without Limits to customize these materials for use in Massachusetts. Also integral to the public awareness campaign will be the Massachusetts "What Can YOU Do?" website, which will direct visitors to local and state resources for disability employment. Visit www.whatcanyoudoma.org for more information.

Creating a model for health care shopping

UMass Medical School will partner with the Massachusetts Executive Office of Health and Human Services and the Massachusetts Health Insurance Connector Authority to develop an online "health care exchange," a resource through which consumers and small business owners can efficiently shop for health insurance plans. Creation of the exchange is supported by a $35.6 million grant from the U.S. Department of Health and Human Services.

Massachusetts is one of seven "Early Innovator" states to receive grants from HHS as the nation prepares for implementation of federal health care reform. Starting in 2014, all states will be required to set up online health care exchanges to help individuals and small employers shop for, select and enroll in high-quality, affordable private health plans that fit their individual needs at competitive prices.



1. Van Berkum wins silver medal in invention competition

Nynke L. van Berkum, PhD, a post-doctoral researcher in the lab of Job Dekker, PhD, won the silver medal in a national collegiate invention competition for the Hi-C technique, which allows scientists to study how a six-foot-long strand of human DNA can fold into a tiny nucleus of a cell in an efficient and functional way. Dr. Van Berkum shares the $10,000 award with her collaborator, Erez Lieberman-Aiden, a graduate student in the Harvard-MIT Division of Health Science and Technology.

The award was one of six honors given to 10 finalists—both graduate and undergraduate, individuals and teams—by Invent Now, Inc., in its 2010 Collegiate Inventors Competition.

2. Schiffer appointed director AIDS research center

Celia A. Schiffer, PhD, professor of biochemistry and molecular pharmacology, has been appointed director of the National Institutes of Health-funded Center for AIDS Research (CFAR) at UMass Medical School, one of 20 CFARs in the United States that form an important network of core facilities providing expertise, resources and services not readily obtained through more traditional funding mechanisms. She will lead CFAR with a team of co-directors and core directors.

3. DeMarco, Dickson cement connections

Two senior associate deans have been named as part of an ongoing initiative to strengthen the connections between UMass Medical School and UMass Memorial Health Care. Deborah DeMarco, MD, professor of medicine, has been named senior associate dean for clinical affairs, and Eric Dickson, MD '95, professor of emergency medicine, has been named senior associate dean for the UMass Memorial Medical Group.

In her new role, Dr. DeMarco will participate on executive level committees including the UMass Memorial Transformation Implementation Group (TIG). The TIG will be the primary vehicle for developing the UMass Memorial approach to new health care systems, such as accountable care organizations, and evaluating and researching their impact. She will also participate in the new UMass Memorial Medical Group Board meetings as a non-voting executive representative of the school.

DeMarco will continue to be the designated institutional official for Graduate Medical Education, and will continue to oversee all aspects of GME including chairing the GME Committee. She will also work closely with Dr. Dickson in his role as president and senior associate dean of the medical group.

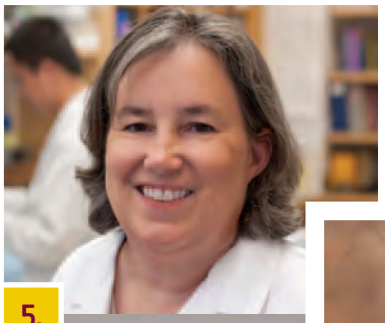
4. Zamore receives 5-year extension from NIH

Phillip D. Zamore, PhD, Howard Hughes Medical Institute Investigator, the Gretchen Stone Cook Chair of Biomedical Sciences and professor of biochemistry & molecular pharmacology, has been awarded a five-year extension of his research funding from the National Institutes of Health through the competitive Method to Extend Research in Time (MERIT) Award program. Presented to investigators who are highly regarded in their field and have excellent records of scientific productivity, the MERIT Award will provide nearly $3 million over five years in support of Dr. Zamore's research into understanding the mechanism of RNA interference.

Zamore is an international leader in the science of RNA interference, or RNAi, a naturally occurring mechanism that cells use to protect their DNA from a variety of parasitic agents that want to exploit them. The concept itself is defined as the ability of double-stranded RNA to "degrade" its homologous message when injected into cells, effectively turning off a targeted gene. A pioneer in the study of RNA silencing in eukaryotes, Zamore and his lab colleagues have played a role in many of the major breakthroughs in the study of RNAi.

5. Moore and Dekker honored for outstanding research

Two UMMS scientists were recognized by their peers at the prestigious American Society for Biochemistry and Molecular Biology (ASBMB) for outstanding research contributions and commitment to colleagues. Melissa J. Moore, PhD, Howard Hughes Medical Institute Investigator and professor of biochemistry & molecular pharmacology, received the 2011 William C. Rose Award,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and Job Dekker, PhD, associate professor of biochemistry & molecular pharmacology and molecular medicine, received the 2011 Young Investigator Award; both presented featured lectures at the 2011 ASBMB annual meeting.

6. Bonner to direct national Division of Nursing Homes

Alice Bonner, PhD, RN, assistant professor of nursing, was tapped to direct the Division of Nursing Homes at the Centers for Medicare and Medicaid Services (CMS), joining the Survey & Certification Group that is responsible for ensuring the country's 16,000 nursing homes and skilled nursing facilities comply with strict CMS standards. She described the appointment as a chance to influence national policies and regulations and make a positive difference in nursing home quality for the entire country.

only meet the current standards for nursing home care but to develop and apply optimal standards and best practices for our nation's elderly."

Dr. Bonner was recruited by CMS, where officials were aware of her work as the bureau director of health care safety and quality in the Massachusetts Department of Public Health, overseeing the survey, certification and licensure of more than 6,000 health care facilities in the commonwealth, including nursing homes, home health agencies, hospitals and clinical laboratories.

7. Magee appointed Worcester DPH commissioner

UMass Memorial Health Care community physician B. Dale Magee, MD, MS, clinical assistant professor of obstetrics & gynecology, has been named the new commissioner of the Worcester Department of Public Health (DPH). His appointment by City Manager Michael O'Brien continues the longstanding collaboration between the integrated academic health sciences center and the DPH, with Dr. Magee assuming the position from retiring commissioner Leonard Morse, MD.

Magee is a respected obstetrician/gynecologist who has been practicing in his hometown of Shrewsbury for more than 30 years.

8. Sloutsky receives a TB Hero Award

Alexander Sloutsky, PhD, director of the Massachusetts Supranational TB Reference Laboratory (MSRL) and assistant professor of medicine, received a TB Hero Award from the New England Tuberculosis Consortium on Sept. 24 for his leadership in tuberculosis diagnostics. TB Hero award winners, who are selected from nominees from each New England state, are chosen for their extraordinary contributions to the care or management of patients with TB or for an activity that greatly enhances TB prevention and control efforts.

Dr. Sloutsky has led international collaborations that now enable some countries with the highest level of TB rates to detect drug-resistant TB on the local level. Because TB is stubbornly resistant to treatment, quality diagnostic testing and surveillance are key weapons in the fight against one of the most pervasive and deadly diseases in the world.

> "The heart, soul and mind of a great university lie within its faculty."
>
> – Chancellor Michael F. Collins at Convocation 2010

"Health policy is created through careful analysis, literature review, review of evidence and comparative effectiveness research, and the application of sound principles," she said, noting that those are the very skills she honed through her doctoral work at UMass Worcester and precisely what she'll be doing in her new position. "There is more we can do, to not

Reunion 2011

From left, Elizabeth Gittinger, MD '01, Kerri Batra, MD '01, Ajay Batra, MD, Jennifer Aucoin, MD '01, and Joe Peppe, MD '01, joined classmates for Reunion activities in May.
View Reunion photographs at www.NetworkUMass.com/Medical

From left, Deborah Hartley, MD '76, Frances Hinteregger, MD '76, Bruce Karlin, MD '76, and Evelyn Love, MD '77, joined classmates for Reunion activities in May.

1979

Anthony Alario, MD, has joined UMass Memorial Children's Medical Center as chief of rheumatology.

Eric Leskowitz, MD, is the author of a new book on the healing benefits of group energies, with a specific application to baseball (and the Red Sox). His book is called *The Joy of Sox: Weird Science and the Power of Intention*, and it describes the scientific basis for the study and application of intangible energies.

1981

Diane E. Bennett, MD, has returned to the Center for Disease Control in Atlanta after three years in Geneva, Switzerland, working at the World Health Organization.

Poul M. LaPlante, MD, has recently joined the staff at Winchester Hospital in Winchester, Mass. Dr. LaPlante is also medical director at the Addiction Treatment Center of New England in Brighton, Mass.

Lester Mietkiewicz, MD, has recently joined UMass Memorial Medical Group. He is practicing in North Grafton, Mass.

1982

Judith Haran, MD, recently joined the department of psychiatry at UMass Memorial Medical Center.

1983

William Corbett, MD, was recently appointed to a two-year term on the Certification Commission for Health Information Technology's Board of Commissioners.

Gerard R. Cox, MD, MHA, is currently stationed with his wife and kids in the Kingdom of Bahrain, where he is the 5th Fleet/Force surgeon in the U.S. Navy.

1987

Steven Devine, MD, director of the Blood and Marrow Transplant program at the Ohio State University Comprehensive Cancer Center – Arthur G. James Cancer Hospital and Richard J. Solove Research Institute, is the new chair of the Cancer and Leukemia Group B (CALGB) transplant modality committee.

1989

Robert M. Cuddihy, MD, was recently appointed vice president/ medical diabetes head for Sanofi-Aventis U.S.

Naomi Gauthier, MD, was recently named to the American Heart Association's National Congenital Cardiac Defects Committee.

Pamela Alix Lindor, MD, and her husband, Seraphin, have moved to an underserved area of Southeastern Georgia to join a startup pediatric practice.

1992

Bonnie F. Ryan, MD, was recently named chairman of emergency medicine and president of Wachusett Emergency Physicians in Leominster, Mass.

1993

Michael J. Tolentino, MD, has joined the Macular Degeneration Association as scientific director.

1995

Eric W. Dickson, MD, was recently appointed president of UMass Memorial Medical Group.

1998

Stephen Silberman, MD, ran the 2011 Boston Marathon as part of the Dana-Farber Marathon Challenge team in honor of his youngest niece, Catrina Herman, who is now in remission and doing well.

2000

Brett M. Carswell, MD, has co-written a book, *100 Questions & Answers About Bladder Cancer*, now in its second edition. The book offers clinical advice and psychological support for patients, survivors, friends and families dealing with bladder cancer.

2001

Annemarie Armani, MD, has joined Milton Hospital as a primary care physician working with the practice of South Shore Internal Medicine.

M. Richard Pavao, MD, has joined the department of anesthesiology at UMass Memorial Medical Center.

Joseph Peppe, MD, has recently joined Manet Community Health Center in Quincy, Mass., as the chief medical director.

2003

Joseph DeAngelis, MD, has recently joined Milton Hospital through the hospital's clinical affiliation with Beth Israel Deaconess Medical Center.

David Kane, MD, has joined the department of pediatrics at UMass Memorial Children's Medical Center.

Jacqueline Wu, MD, recently joined the Berkshire Medical Center (BMC) medical staff and the physician staff of Surgical Professional Services of BMC.

2004

Lauren McClure, MD, has joined the medical staff at Brattleboro Memorial Hospital in Brattleboro, Vt.

2005

Erin Barlow, MD, has joined the department of obstetrics and gynecology at UMass Memorial Medical Center as the director of pediatric and adolescent gynecology services.

John Harris, MD, PhD, recently joined the division of dermatology at UMass Memorial Medical Center.

Theofilos Matheos, MD, has joined the department of anesthesiology at UMass Memorial Medical Center.

2006

Brittany Webber, MD, has joined Harrington Hospital as a member of Harrington Physician Services.

2007

Patricia Seymour, MS, MD, has recently joined the division of hospital medicine at UMass Memorial Medical Center.

Heather Smith, MD, has been selected by the Robert Wood Johnson Foundation as a Clinical Scholar at Yale—a two-year fellowship that supports future leaders in the improvement and transformation of health care.

H. Claire Taylor, MD, has joined Harvard Vanguard Medical Associates in Medford, Mass.

Susan Voute, MD, has joined UMass Memorial Children's Medical Center. She is practicing at South County Pediatrics in Webster, Mass.

Graduate School of Nursing

1991

Donna Williams, RN, recently received the Excellence in Nursing Leadership award at Beth Israel Deaconess Medical Center. Donna is also a paragon coach with the Society of Critical Care Medicine, and the past president of the American Association of Critical-Care Nurses, Greater Boston Chapter.

1997, MS and 2007, PhD

Jill Terrien, PhD, was awarded the GSN Dean's Award and the GSN Distinguished Faculty Award/Master's Program at the 12th annual UMass Medical School Educational Recognition Awards Ceremony.

2010

Cheryl Killoran, MS, RNC, was appointed nurse education specialist for the newborn intensive care unit on the UMass Memorial Medical Center, Memorial Campus.

Alumnus on Rep. Giffords' medical team

Imoigele P. Aisiku, MD '97, is one of several doctors working with U.S. Rep. Gabrielle Giffords of Arizona, who was shot in the head on Jan. 8 by a gunman who killed six other people. Giffords received treatment at the Institute for Rehabilitation and Research Memorial Hermann in Houston. Dr. Aisiku is the director of neurocritical care at Mischer Neuroscience Institute at Memorial Hermann, one of the country's largest neurosurgical intensive care units.

> **"We work very hard to push patients to continue to work hard. Not everyone is as motivated as she is."**

Aisiku came to Worcester to speak at his undergraduate alma mater, Worcester State University, and to present two research awards he established for biology majors there. "We work very hard to push patients to continue to work hard," he said, according to the Worcester Telegram and Gazette. "Not everyone is as motivated as she is."

Audience members included people he knew from UMass Medical School, as well as his father, Joshua "Oje" Aisiku, a retired education professor *emeritus* at Worcester State who is creating a new university in Nigeria, and Aisiku's mother, Brenda B. Aisiku, a retired special education teacher who was a Worcester Teacher of the Year.

Calendar

GSN Pinning Ceremony
Tuesday, Sept. 13, 2011
6 p.m.
UMass Medical School

Convocation/Investiture
Thursday, Sept. 15, 2011
UMass Medical School

White Coat Ceremony and Reception
Friday, Sept. 16, 2011
3:30 p.m.
UMass Medical School

13th Annual UMass Medicine Cancer Walk
Sunday, Sept. 25, 2011
10 a.m.
UMass Medical School

UMass Medicine Winter Ball
Friday, Dec. 9, 2011
Mechanics Hall, Worcester

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

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Alumni support is critical to enhancing the student experience, which leads directly to exceptional patient care and research. Your support funds advancements to our curriculum and training programs, including the latest in simulation technology and lab equipment. Students also benefit from additional educational and professional development opportunities, such as guest lecture series, that are funded by gifts from alumni. And through various scholarship programs, you provide financial support for future doctors, nurses and research scientists.

Please make your gift to the Annual Fund today. Join with your fellow alumni and help us offer the next generation of UMass Medical School graduates an education with endless possibilities. Email giving@umassmed.edu or call 508-856-8300.

Graduate School of Biomedical Sciences
- GSBS Annual Fund

Graduate School of Nursing
- GSN Annual Fund
- Scholarship Fund
- Lillian R. Goodman Endowment Fund

School of Medicine
- Medical Education Fund
- Alumni Scholarship Fund

2010 Year in Review Financials

Education

3,046 Number of faculty (including voluntary)
308 Basic science full- and part-time faculty
2,559 Clinical full- and part-time faculty
179 Nursing faculty

School of Medicine

457 MD students
30 MD/PhD students
3,290 Alumni

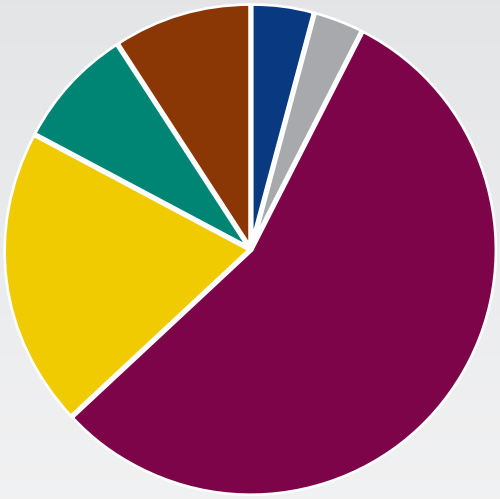
Graduate School of Biomedical Sciences

381 PhD students
29 MD/PhD students
2 Biomedical Engineering & Medical Physics students (joint program with WPI)
19 Clinical & Population Health Research students
8 Master of Science in Clinical Investigation students
638 Alumni

Graduate School of Nursing

43 MS students
88 Graduate Entry Pathway students
26 PhD students
9 Doctor of Nursing Practice students
861 Alumni

FY '10 Funding and Revenue



$1069.1 million Total

$47.1 million		State appropriation
$33.9 million		State contracts*
$593.8 million		Public service**
$212.8 million		Research (sponsored activity)
$85.4 million		Sales and services***
$96.1 million		Other revenue

*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, UMass Biologics and New England Newborn Screening Program.

Total Research Funding – Fiscal Year Ending:

June 30, 2008	$193,645,273
June 20, 2009	$204,634,908
June 30, 2010	$255,314,898

Technology Management – ($ in thousands)

For Fiscal Year:	2008	2009	2010
Invention disclosures	60	66	68
U.S. patent applications	58	55	64
Licensing agreements	19	11	4
Sponsored research agreements	$2,595	$1,029	$1,337
Licensing revenue	$36,484	$71,480	$38,377

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Chancellor Michael F. Collins at Convocation 2010

> **"I am continually inspired by the people and the work at UMMS and our academic health sciences center, and that is part of what makes my job as good as it gets."**
>
> – Chancellor Michael F. Collins

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The Albert Sherman Center's topping off ceremony took place on June 16. Members of the UMMS community signed a ceremonial beam that was then lifted to the highest point of the building.


CAVES STEEL

By Terence R. Flotte, MD

Aslyn was 15 years old. She came to the children's hospital area (now four wood huts instead of four tents), breathing with great difficulty and with a very high fever. Her mother pled for help. Her oxygen supply had to be split with another much younger baby. At least there were two oxygen tanks working now in the combined ICU/emergency room, after volunteers had brought a second one.

Still, Aslyn needed much more. An X-ray revealed pneumonia, a bacterial infection progressing through both lungs. Along with it, a collection of fluid caused by the inflammation of the chest-wall lining had filled most of the right half of her chest. Brave young Haitian pediatric residents had just drained 9 ounces of the fluid from her chest when I arrived, but she was barely any better. She was started on strong antibiotics, but why had she developed such a bad pneumonia? HIV infection? TB? Sickle cell anemia? Or just chronic poor nutrition with vitamin deficiencies?

As a pulmonary specialist, I was supposed to have the answers. She was severely anemic, but unlikely to be sickle cell with no prior history at age 15. We still asked that she be rapidly transfused, which in the State University Hospital (Hospital Universite d'Estat d'Haiti, or HUEH), meant the next morning. We added anti-TB drugs, also taking more than 12 hours to arrive. In the United States, we would have put her on a mechanical ventilator, but they had lost the tubing for the one ventilator that was now gathering dust in a near-by building. We supported her with blood transfusion (she started with a hemoglobin level of 6, about half the normal), with nebulizer treatments, and physiotherapy and just hoped the antibiotics would kick in before she spiraled down too far. By noon the next day, Aslyn was dead.

On this visit, we averaged one child lost each day. Not from famous maladies like cholera and HIV, although those were ever-present in the hospital, but mostly from severe pneumonias and bacterial infections that could have been prevented by better nutrition, better air quality, and the new class of immunizations that target bacteria that cause invasive infections, such as the pneumococcus and Haemophilus influenza. Premature newborns were suffering from dehydration, apnea and jaundice, routinely handled by skilled nurses in the United States, but the number of prematures was staggering. Again, the prevention that could have been afforded by prenatal care was sorely lacking.

One extreme case showing the lack of prenatal care and immunizations was an advanced case of neonatal tetanus we saw the second-to-last day of our stay. There was no treatment for the baby; the disease is uniformly fatal once it reaches that stage.

Our mission was to teach and support the residents. We did all that. Classroom lecturing, bedside teaching, demonstration of specialized aspects of the physical exam, were all part of the program. We donated books, scrub attire and supplies. But observing the conditions under which these 25 Haitian pediatric residents and half-dozen Haitian pediatric faculty work made it hard to believe that their spirits could endure under such circumstances. And yet they seem to.

We continue to believe in our mission, training the next generation of Haitian physicians to care for the children of Haiti. But the health problems we are seeing are just the tip of the iceberg. They are a symptom of the failing society. Clean water and adequate nutrition can be paid for with the amount of aid money available. Immunizations can be given for both the old-style vaccine-preventable diseases (tetanus, pertussis, diphtheria and measles) and for the much more prevalent new ones (bacteria that cause meningitis, pneumonia, blood infections and hepatitis). This is the responsibility of the government and of the governments of the world. They are not meeting it yet. U

DEAN OF THE SCHOOL OF MEDICINE, PROVOST AND EXECUTIVE DEPUTY CHANCELLOR
OF UMASS MEDICAL SCHOOL, PROFESSOR OF PEDIATRICS

Dean Terence R. Flotte recently visited Haiti for the third time since the devastating earthquake in January 2010 to teach and support Haitian medical students and residents as they rebuild their country's health care infrastructure. Here he reflects on some of his strongest memories from the trip.

Dean Terence R. Flotte, provost and executive deputy chancellor and the Celia and Isaac Haidak Professor in Medicine, has visited Haiti three times since the earthquake in January 2010. He reports that while there is still much work to be done in rebuilding the country's health care system, the spirit of the Haitian people continues to be inspiring.

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