

spring/summer 2007, Vol. 29 No. 3



The Right Fit

# Vita<sup>ae</sup>:

The Magazine of  
The University of Massachusetts Medical School



Attacking a Global Killer



Outcomes Matter

## Vital: 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.

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 initiative that assists state agencies to enhance the value and quality of expenditures and improve access and delivery of care for at-risk and uninsured populations.

### The Research Enterprise

UMass Medical School's world-class investigators, who make discoveries in basic science and clinical research and attract over \$175 million in funding annually.

### UMass Memorial Foundation

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/foundation](http://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](http://www.umassmemorial.org)



# Vita<sup>ae</sup>: Contents

News and Notes	2
Features	7
Grants and Research	21
Alumni Report	22
The Last Word	28

## The Right Fit 7

*New Dean and Executive Deputy Chancellor Terry Flotte, MD, has found his place.*



## Attacking a Global Killer 10

*Massachusetts Biologic Laboratories collaborates with partners in India to prevent death from rabies.*



## Outcomes Matter 16

*UMass Medical School's Orthopedics Department uses outcomes research to enhance clinical care, communication and quality of life.*



## Collins is Named UMass Medical School Interim Chancellor

*Will lead University's life science initiatives*

Michael F. Collins, MD, has been named University of Massachusetts senior vice president for health sciences and interim chancellor of the University of Massachusetts Medical School. Dr. Collins will direct university-wide health sciences efforts and advise UMass President Jack M. Wilson and the Board of Trustees on strategic initiatives to further the university's efforts in the Commonwealth's critical life sciences endeavors. As an extension of this important leadership role, Collins was named to the interim chancellor position, where he will provide direction to the campus' continuing efforts to distinguish itself as the Commonwealth's premier academic health sciences center. He officially joined UMMS on July 1.

"Dr. Collins is an accomplished leader and experienced manager who is primed to help UMass Worcester continue to realize its potential as a Massachusetts leader in research, medical, biomedical sciences and nursing education and public service," President Wilson said.

Collins will work closely with newly appointed UMMS Dean and Executive Deputy Chancellor Terry Flotte, MD. As dean, Dr. Flotte serves as the campus' chief administrator for the School of Medicine and as chief academic officer for the campus. (See the article on Dr. Flotte beginning on page 7.)


As interim chancellor, Collins will primarily direct the campus' external outreach, focusing on expanding and enhancing relationships with the



As interim chancellor, Collins will primarily direct the campus' external outreach, focusing on expanding and enhancing relationships with the community, the legislature and donors.

community, the legislature and donors. In addition, he will provide guidance for institutional advancement and fund-raising initiatives and administrative oversight and leadership for UMMS enterprise operations.

Prior to joining UMMS, Collins served as chancellor of UMass Boston for two years. He was president and chief executive officer of Caritas Christi Health Care System, which became the second-largest health care system in New England under his leadership. Collins also served as president of St. Elizabeth's Medical Center in Brighton, a university

academic medical center affiliated with Tufts University School of Medicine. He held faculty positions at Texas Tech University Health Sciences Center and at Tufts University School of Medicine. Collins is a 1977 graduate of the College of the Holy Cross and a 1981 graduate of Tufts University School of Medicine. 

## Researcher Receives ADA Innovation Award

Anthony Carruthers, PhD, and graduate students David Blodgett and Trista Robichaud; with Carruthers' guidance, Blodgett and Robichaud will work on a number of projects supported by the Patrick Award.




The American Diabetes Association (ADA) Research Foundation awarded Professor of Biochemistry & Molecular Pharmacology Anthony Carruthers, PhD, the Gail Patrick Innovation Award.

Dr. Carruthers, who is dean of the Graduate School of Biomedical Sciences, is a renowned researcher who specializes in the study of glucose transport across membranes. Essential for the metabolism of most cells, glucose is transported through biological membranes by specific proteins known as glucose transporters (GLUTs). The Carruthers lab is particularly interested in the structure of these proteins and in understanding how they are regulated throughout the body.

Named for the late Gail Patrick, a former motion picture actress and producer and the first national chairman of the American Diabetes Association Board of Directors, the \$100,000 grant award will support Carruthers' pursuit of a troubling issue

related to the inhibition of GLUT4—a particular class of insulin-regulated glucose transporter found in fat tissues and striated muscle—as a side effect of HIV protease inhibitor therapy. While greatly benefiting AIDS patients, HIV protease inhibitors can also lead to patients' development of insulin resistance and type 2 diabetes. Prior research has demonstrated that protease inhibitor therapies that block the replication of HIV also inhibit the activity of GLUT4, severely reducing insulin-dependent cellular uptake of glucose.

"You cannot make progress in clinical research without the pursuit of purely basic research. The two are truly linked," said Carruthers. "This award is very affirming, in that it demonstrates that basic research can be applied to current clinical issues in medicine. I am so grateful for this tremendous support that will allow me to continue these important studies." 


## UMMS Continues to Rank Among Top 10 Percent

UMass Medical School is again ranked in the top 10 percent of the nation's 125 accredited medical schools and 19 schools of osteopathic medicine in the category of primary care education in *U.S. News & World Report's* annual review, "America's Best Graduate Schools." UMMS has held a spot near the top of the category since the magazine began its rankings in 1994, and the institution is the only school in the top 50 that accepts no out-of-state students into its medical degree program.

"Our position in these rankings is a reflection of the passion our stellar faculty have for providing students with

a remarkable education and for instilling in them a sense of service to the people of the Commonwealth and the nation," said Michele P. Pugnaire, MD, vice dean for undergraduate medical education.

In addition to the Medical School's standing in primary care, the PhD program of the Graduate School of Biomedical Sciences was also ranked highly, at 58, by deans and department chairs. "We are delighted that our efforts continue to be recognized by our colleagues around the country," said Anthony Carruthers, PhD, dean of the Graduate School of Biomedical Sciences.

"This recognition acknowledges the quality of the students we recruit and the commitment of our research faculty to providing the most exciting and formative research opportunities to our students," he said. "I extend my most sincere congratulations to our students, faculty, staff and leadership." In its listing of top research schools, *U.S. News* ranked UMMS 49th. 



Congressman Jim McGovern, who represents the Massachusetts Third Congressional District, welcomes Nobel Laureate Craig Mello to Washington, D.C.

Photo: Kara Delahunt, courtesy of the Science Coalition

When Howard Hughes Medical Institute Investigator and Blais University Chair in Molecular Medicine Craig C. Mello, PhD, and his colleague Andrew Z. Fire, PhD, of Stanford University, received the 2006 Nobel Prize in Physiology or Medicine for their discovery of RNA interference

## A Voice for Basic Science Research

(RNAi), Dr. Mello made a commitment to become a voice for increasing awareness of and support for basic science research.

In May, Dr. Mello joined the other American 2006 Nobel Laureates in Washington, D.C. to discuss with policymakers the need to increase investments in scientific research. Before a Senate Commerce Committee hearing about federal funding for basic research, Mello said, “We live in uncertain times and we have great opportunities . . . those are the two reasons why we have to invest in science broadly in this country. We are capable now of tremendous advances in medicine. We have the blueprint for the human genome, we understand every single gene that makes a human, and we have the technology and approaches of RNAi to intervene in diseases at the basic level.” The Nobel Laureates also met

with members of the House Science and Technology Committee.

Later in May, Mello and University of Massachusetts President Jack M. Wilson joined Massachusetts Governor Deval Patrick as he announced a billion dollar commitment to the life sciences in Massachusetts. UMass Medical School is central to the governor’s strategy for making the Commonwealth a global leader in the life sciences, a strategy that includes creation of the Massachusetts Stem Cell Bank, to be housed at UMMS. The plan also calls for expanded financial support for life sciences research, including funding for development of an RNAi Therapeutics Institute to build on the work of the RNAi researchers at UMMS. (See related note on page 6.)

## Remembering Mary Soutter, Widow of UMMS Founding Dean



From the H. Brownell Wheeler collection of the Lamar Soutter Library

Mary Cleveland Bigelow Soutter, the widow of Lamar Soutter, MD, founding dean of the University of Massachusetts Medical School,

died on April 27, 2007.

At the memorial service for Dr. Soutter in 1996, H. Brownell Wheeler, MD, who was personally recruited to UMMS by Dr. Soutter and served as founding chair of the Department of Surgery, called Mary Soutter *the great woman behind a great man*, saying

that she not only supported Dr. Soutter but “contributed enormously herself to the early recruitment activities and to the overall spirit of the new school, much more than she knows or would ever acknowledge.”

Like her late husband, Mary Soutter was an adventurer and she shared with him a lifelong love of sailing. She served in the Navy during World War II and was also president of the Dedham Visiting Nurses Association and the Women’s Auxiliary of the Easter Seals Society. Mrs. Soutter was also a dedicated conservationist, and together with Dr. Soutter, donated nearly 80 acres along the Concord River to be held in conservation land trust by the

town of Concord. The land is today known as Soutter Fields and Bigelow Woods. The Soutters were also responsible for preserving a pristine island in Squam Lake in Maine.

Mrs. Soutter came from a family with a long history of dedication to scientific exploration and public service—her late father, Henry Bryant Bigelow, was a pioneering oceanographer and a long-time professor of zoology at Harvard. Mrs. Soutter was a graduate of Concord Academy; she also studied art history and literature at Radcliffe College. She leaves a son and two daughters and many grandchildren and great-grandchildren.






## Celebrating Achievement in Leadership, Science and Education

The first weekend in June was a time of celebration at the University of Massachusetts Medical School. The festivities kicked off with a recognition dinner for Aaron Lazare, MD, upon his retirement as Chancellor and Dean of UMMS. The program featured warm and insightful remarks by Vice Dean for Undergraduate Medical Education Michele P. Pugnaire, MD, former University of Massachusetts Trustee Grace Fey and UMass President Jack M. Wilson. More than 150 family and friends of Dr. Lazare attended the event at Worcester's Tuckerman Hall.

At the UMMS campus later that evening, faculty, students and parents of this year's graduates gathered to celebrate Howard Hughes Medical Institute Investigator and Blais University Chair in Molecular Medicine Craig C. Mello, PhD, who received the 2006 Nobel Prize in Physiology or Medicine with collaborator Andrew Z. Fire of Stanford University for their discovery of RNA interference (RNAi).

On Sunday, June 3, more than 170 students graduated from the School of Medicine, Graduate School of Biomedical Sciences and Graduate School of Nursing at the 34th Commencement Exercises. Dr. Mello delivered the Commencement address, telling the graduates, "If you want to make discoveries and solve problems, start by talking; talk about ideas and ways to test them, talk about problems and ways to solve them. During the course of those discussions new ideas and solutions will materialize. They won't come from either person necessarily but rather they will come from the discussion itself."

UMMS also awarded honorary degrees to two UMass Memorial Foundation benefactors who made completion of the Lakeside Wing of UMass Memorial Medical Center—University Campus a reality—David "Duddie" G. Massad, a renowned entrepreneur and businessman in Central Massachusetts, and Arthur J. Remillard Jr., founder and retired CEO and chairman of The Commerce Group. 



Top, Aaron Lazare, MD, delivers his address at Commencement while Honorary Degree Recipient Arthur Remillard and UMass Boston Chancellor Keith Motley listen. Above, UMass President Jack Wilson and Dr. Lazare bestow an honorary degree upon David "Duddie" G. Massad (left) in recognition of his generosity to UMMS clinical partner, UMass Memorial Health Care. Right, on stage are Dr. Wilson, Keynote Speaker Craig Mello, PhD, Board of Trustees Chair Stephen Tocco, Interim Chancellor Michael Collins, MD, and School of Medicine Dean Terry Flotte, MD.



## RNAi Therapeutics Institute to be Established at UMMS

To capitalize on its expertise in RNA interference-based gene silencing, UMass Medical School is establishing an RNAi Therapeutics Institute, to be directed by Nobel Laureate Craig C. Mello, PhD, Howard Hughes Medical Institute Investigator and the Blais University Chair in Molecular Medicine.

RNAi screening is a powerful approach to unlocking how genes function in specific cellular processes. To date, several UMMS laboratories have realized major success with RNAi screening in the discovery of novel proteins that function in cancer cell metastasis and cell signaling pathways. The Institute will serve as a repository for RNA libraries that can be applied by investigators to diverse systems in target discovery programs.

UMMS scientists have also discovered exciting new ways of prolonging the lifetime of RNAi in serum and in tissues—thus extending the time and extent of gene silencing. The Institute will build on this novel technology to further improve RNAi stability. Similarly, scientists have invented ways of using nanotechnology to enhance the delivery of RNAi to tumors and organs. Recently Tariq M. Rana, PhD, professor of biochemistry & molecular pharmacology, and colleagues reported on an RNAi therapeutics breakthrough—the development of new systemic agents that are able to silence disease-related genes in clinically acceptable and therapeutically affordable doses without causing undesirable toxic and immunogenic effects. Their report, “Design and Creation

of New Nanomaterials for Therapeutic RNAi,” was published in *ACS Chemical Biology*. Such breakthroughs will pave the way for the therapeutic use of RNAi in humans.

Scientists at UMMS are at the forefront of RNAi-related research, and they represent expertise vital to developing RNAi technologies. Reflecting the significance of that expertise, Massachusetts Governor Deval Patrick recently announced the Commonwealth’s commitment to life sciences research, including funding the RNAi Therapeutics Institute. 




## School of Medicine Student Recognized for Patient Advocacy

The American Medical Student Association (AMSA) recognized Jessica Wang, SOM '09, with the Ninth Annual Lesbian, Gay, Bisexual and Transgender (LGBT) Health Achievement Award for her contributions as an advocate for introducing issues that affect LGBT patients into the School of Medicine curriculum as well as her involvement as a student leader of QMass, the institution’s student organization dedicated to supporting and promoting LGBT issues.

“This award helps to affirm that we are moving in the right direction with our projects and goals in LGBT health care

awareness at UMass Medical School,” said Ms. Wang. “It is great to know that I can make a difference as an ally and that what I do is considered legitimate and important.”

Established by the AMSA and the Gay and Lesbian Medical Association, the Health Achievement Award is given to a medical school, student organization or an individual who has demonstrated exemplary achievement in advancing the inclusion of LGBT health issues or concerns within a medical school. 





# The Right Fit

*New Dean and Executive Deputy Chancellor Terry Flotte, MD, has found his place.*

**By Alison M. Duffy**

**Terry Flotte, MD, had his eye on the University** of Massachusetts Medical School even before Craig Mello, PhD, got the call from Stockholm, Sweden about winning the 2006 Nobel Prize in October 2006. The chair of pediatrics at the University of Florida, as well as a pioneer in human gene therapy and a pediatric pulmonologist specializing in cystic fibrosis (CF), Dr. Flotte was aware of several UMMS programs that paralleled his interests in translational science and medicine, and he had heard good things about the clinical enterprise and quality of care from colleague Marianne E. Felice, MD, chair of pediatrics at UMMS. “It was obvious to me that, not only is the institution characterized by quality, it is on a steep upward slope in terms of gaining national stature through accomplishments,” he said.

Flotte began developing a closer understanding of and a serious interest in UMMS last fall and was particularly impressed with the school’s track record in primary care education—given his own roots in a primary care specialty—its phenomenal buildup of research in the past decade and the caliber of its faculty. “UMass Medical School impressed me as an institution in a very dynamic phase.”

And then, of course, “the Nobel Prize happened, and suddenly everyone was talking about the school,” he laughed. What struck him first, however, was not just the prestige and excitement of the Prize, but the possibilities of RNAi. “The immediate thought I had, given my own area of academic interest, was, ‘Wow, wouldn’t it be great to see if they’d be interested in translating that into clinical trials?’ Of course that’s exactly what people here were thinking. So the light went off that this was indeed a great fit.”

Flotte, 45, appointed Dean and Executive Deputy Chancellor of UMMS in March replacing Aaron Lazare, MD, who served as Chancellor/Dean from 1991 to 2007, has a reputation as an insightful researcher whose work has profoundly influenced the field of human gene therapy. His research has been continuously funded since 1993, and he was the first to use adeno-associated virus vectors in human trials for CF. He is currently investigating the possible interface between gene therapy and RNAi in treating another genetic disease, alpha-1 antitrypsin deficiency, using gene vectors to deliver RNAi such that it can be continually produced at the site of disease. He'll bring this project to Worcester this summer when he relocates his laboratory, accompanied by several of his University of Florida research colleagues who are moving north to continue working with him. Coming to UMMS, he said, affords him a unique opportunity to work with a core of remarkable scientists.

"Many people who make the most profound discoveries in science make them purely because of the wonder and awe of what nature is about and how things work," Flotte said. "Those are the innovative, brilliant minds that populate the sciences and have a creative approach that is absolutely necessary for the discovery phase."

Flotte is keenly interested in stewarding discoveries into therapies, driven in part by his experiences with CF patients, whose average life expectancy is only 37. When current medicine runs short of options, Flotte invariably faces the point when he can offer nothing but the comfort and support borne of patient-physician relationships. "I don't think anyone with a bent toward research ever really accepts the limitations of medical knowledge; the frustration stays with them, and they stay a little bit angry at it. That can be motivating."

Flotte believes UMMS is well positioned to be one of roughly 60 medical schools in the United States that the National

Institutes of Health plans to link through the Clinical and Translational Science Awards (CTSA) Consortium, part of the NIH Roadmap for Medical Research. The Roadmap, an aggressive plan set forth to optimize biomedical research and bring the understanding of disease processes to bear directly on human health, has set clinical and translational science as a national priority and seeks to funnel a considerable portion of funding to selected institutions that not only are poised to move laboratory findings into patient care through phase I and II clinical trials, but also have the ability to measure and track clinical outcomes, provide clinical research training, and foster clinical research policy setting and analysis coordination.

Flotte also sees a great benefit for medical schools to prepare the next generation of physicians for the coming age of molecular medicine. "We need to constantly realign our curriculum to match it to the current state of medical knowledge which, more and more, is based upon an active understanding of genetic predisposition for disease and detailed knowledge of the pathophysiology of disease," he said. Throughout his own career, Flotte has drawn extensively on both basic science models and detailed clinical observations and sees great value in the role of physician-scientists, arguing that PhD training provides a sophisticated knowledge of the molecular mechanisms of disease while clinical exposure fosters a functional insight into the disease process in the human being. UMMS, he feels, has the opportunity, by virtue of its diverse faculty, to inject bench science into the later stages of medical students' clinical training through mentoring and direct laboratory experience, thus building bridges between the basic science and clinical orientations.

Flotte's yen for building bridges is evident. During his evolution from faculty to chair and now to dean, Flotte has developed a knack for identifying the needs of his constituents and recognizing where and how he can be most effective to




Flotte introduced Interim Chancellor Michael Collins, MD, to students, faculty and staff at a recent discussion on campus. He said he and Dr. Collins will lead the "academic health center to align education, research and public service as one synchronous unit." Flotte also commented about the Medical School's place in the wider community: "This campus is central to Worcester's identity, and in terms of contributing to the region, in addition to research and health care, my vision is to change the face of this academic health sciences center so that it is even more reflective of the community it serves."



ensure the best outcomes. This is evident in his work at UF. After serving as associate director of UF's Powell Gene Therapy Center and founding director of the UF Genetics Institute, a cross-campus multidisciplinary unit encompassing gene therapy, human genetics, agricultural genetics and comparative genomics, Flotte accepted the position of chair of the Department of Pediatrics in order to have a broader impact. As chair, he then established a Division of Cellular and Molecular Therapy that has garnered more than \$2 million per year in extramural funding from the National Institutes of Health.

Not a fan of "silos" in academic medicine, Flotte led a successful initiative at UF to overcome traditional divisions and combine clinical care from pediatric cardiac surgery and cardiology in a unique single-line-of-business entity. By maintaining a standard of transparency throughout the process, he encouraged support from key stakeholders. "The result

while also placing an emphasis on clinical and translational research. "We can position this school to recruit promising young faculty by providing them with resources to establish themselves in an enriching environment where they can really take off," he said.

"We have some great momentum going at this university, and we don't want to lose any opportunities." 

Flotte is a graduate of the University of New Orleans, with a degree in biomedical sciences; he received his medical degree from Louisiana State University School of Medicine. A resident in pediatrics at Johns Hopkins University, Flotte also completed a pediatric pulmonary fellowship and post-doctoral training in molecular virology there.

"We need to constantly realign our curriculum to match it to the current state of medical knowledge which, more and more, is based upon an active understanding of genetic predisposition for disease and detailed knowledge of the pathophysiology of disease."

— Terry Flotte, MD

was far more satisfying for both staff and patients, something everyone could be proud of."

Flotte aims to apply a similar philosophy of emphasizing pride as a way to garner community support for UMMS and its programs. Not content with the task of "simply carving up our existing pie of resources," Flotte has set as an early priority the expansion and sweetening of the pie through philanthropy. "Scores of institutions are shrinking and circling the wagons in response to a challenging period in the NIH funding cycle," he said. Flotte, in contrast, seeks a dramatic increase in endowments for recruiting, rewarding and retaining faculty so UMMS can stay at the front line of brilliant basic science











# Attacking a Global Killer

*Massachusetts Biologic Laboratories collaborates with partners in India to prevent death from rabies.*

By Michael I. Cohen



The MBL's Susan Sloan, PhD, prepares samples at the labs in Jamaica Plain. She was part of the UMMS research team that developed the monoclonal antibody—her colleagues, Teresa Broering, PhD, and Gregory Babcock, PhD, are pictured with her on pages 10 and 11.

**It may have been a wolf, or a dog,** the authorities aren't sure. What they do know is that at a school for Tibetan refugee children in Northern India, a rabid animal got into the dormitory and went on a rampage.

The panic and the screams alerted school staff who drove off the animal, but by then 15 young girls had been bitten. The children were rushed to a hospital in Delhi, in plenty of time for treatment that could have saved all their lives—but there wasn't enough medicine on hand.

"The pediatrician on call that night, who is an expert in infectious disease, was a friend—we trained together at Children's Hospital in Boston," said Donna M. Ambrosino, MD, director of the University of Massachusetts Medical School's Massachusetts Biologic Laboratories (MBL) and a professor of pediatrics at UMMS. "My colleague was heartbroken—he had vaccine, but no immune globulin, and you need both to prevent rabies in all cases. He did what he could, but he knew it wasn't enough. Three of the children didn't survive."

Dr. Ambrosino sat in silence for several moments after hearing the account directly from her colleague last September, imagining herself in the awful position of knowing that a life-saving treatment exists, but being unable to administer it.

It is precisely this shortage of rabies immune globulin, not only in India but throughout much of Asia and the developing world, that prompted the team at MBL to look for a new therapeutic to replace the expensive and scarce immune globulin. Years of research and testing culminated in a trip to India last fall, when Dr. Ambrosino and a delegation from the MBL and the Medical School campus formalized an international collaboration with

the Serum Institute of India aimed at preventing deaths from rabies in the developing world. The institutions will collaborate to test and manufacture a new monoclonal antibody (MAB) developed by scientists at the MBL, in conjunction with the U.S. Centers for Disease Control and Prevention (CDC), which can neutralize multiple strains of the rabies virus.

"We don't worry too much about rabies in the United States, but it is a major global public health problem," explained Ambrosino. "We were at a clinic in Delhi that sees 150 people a day bitten by rabid animals. Worldwide, 16 million people a year are exposed to rabid animals and some 60,000 die. Most of the problem is in India and Asia, so the Serum Institute is the best partner for us in this vital initiative."

Based in Pune, India, the Serum Institute is the largest manufacturer of vaccines in the world. It exports vaccines and other medicines to 138 countries. Nearly half of all children inoculated in the world receive vaccines from the Serum Institute. "The underprivileged should have an equal opportunity to utilize modern science," said Cyrus S. Poonawalla, PhD, chairman of the Serum Institute, who last year was honored with the prestigious Sabin Vaccine Institute Award in recognition of his institute's efforts over the past 35 years to improve and protect people's health, particularly children. "This new partnership, I believe, will eventually bring relief to many people around the world."

Infection by the rabies virus causes acute encephalitis, which is fatal once symptoms appear; however, infection is preventable by prompt treatment following exposure. If people receive a course of rabies vaccine and human rabies immune globulin



(hRIG) during treatment, the fatal disease is prevented. The hRIG, which is derived from human blood, is an expensive product and is often not available in developing countries. To compensate, equine immune globulin derived from horse serum is used in many parts of the world, but it also can be in short supply, and it can carry significant side effects.

Using a monoclonal antibody to take the place of the immune globulin seemed like an ideal approach, given the solid understanding of the rabies disease process. Furthermore, monoclonal antibodies can be produced in large quantities at much lower costs than blood products and can be stockpiled in liquid form or freeze-dried, so they are easier to distribute to remote sites. In addition, because MABs are not derived from serum, they have none of the safety issues associated with human blood products.

“There is very robust biology on rabies. We knew a lot about the virus and the disease, and we believed developing a monoclonal was achievable,” said William D. Thomas, PhD, assistant professor of pathology at UMMS and senior director of monoclonal antibody manufacturing and process development at MBL. “It hadn’t been done before because the economics aren’t there for it, even though the public health need is.”

Taking on public health projects that aren’t attractive to the private sector is one of the missions of the MBL. As the only non-profit, public FDA-licensed manufacturer of vaccines and other biologic products in the United States, MBL’s unique mission allows it to take on public health threats.

The MBL was originally established in 1894 by the state Board of Health to produce diphtheria antitoxin. MBL formally became part of UMMS in 1997. Over the years, MBL has



“We don’t worry too much about rabies in the United States, but it is a major global public health problem. We were at a clinic in Delhi that sees 150 people a day bitten by rabid animals. Worldwide, 16 million people a year are exposed to rabid animals and some 60,000 die. Most of the problem is in India and Asia, so the Serum Institute is the best partner for us in this vital initiative.”

– Donna M. Ambrosino, MD

introduced into general use vaccines to prevent pertussis, tetanus, diphtheria and other diseases. The labs' scientists also pioneered plasma products to protect infants and toddlers from serious infectious diseases.

In recent years, during a serious national shortage of tetanus/diphtheria (Td) vaccine, Massachusetts was the only state in the country protected from the shortage as MBL provides Td vaccine for all of its residents. Furthermore, MBL increased production to alleviate the national shortage and now delivers millions of doses of Td vaccine, meeting a significant portion of the nation's total needs.

Their work used, in part, mice from Princeton, New Jersey's Medarex, Inc. to produce human antibodies. Researchers at MBL vaccinated these mice with the rabies virus and then studied the animals' immune responses, searching for antibodies that would recognize and bind to the rabies virus coat, or glycoprotein.

The MBL team isolated a series of those antibodies and tested them against live rabies virus strains in culture. They found one MAB in particular, now called HuMAB 17 C7, which worked dramatically and broadly. It was tested by the CDC against 25 different rabies viruses representing the major types known to affect animals, and, in each case, neutralized the rabies viruses



MBL's unique capacity also figured on the international scene in 2003 in response to the outbreak of Severe Acute Respiratory Syndrome (SARS). Soon after the virus causing the quick-spreading and deadly disease was identified, the National Institutes of Health partnered with the MBL to launch an aggressive effort to find a monoclonal antibody that could be effective against the SARS virus. That effort yielded results in just six months, producing a potential treatment for SARS.

It is that global view—that the health of all people is crucial in an inter-related world—that prompted the CDC and MBL to take aim at rabies and launch an effort to find a MAB that could be used in place of immune globulin. The UMMS research team included Gregory J. Babcock, PhD, assistant professor of pathology and director of product discovery at the MBL, Teresa J. Broering, PhD, assistant professor of medicine and associate director of product discovery at MBL, and Susan Sloan, PhD, assistant professor of medicine.

in culture. The antibody was then tested in a rodent model of the disease. Rabies vaccine and the HuMAB 17 C7 were given to infected animals, and the combination protected all the animals from developing the fatal disease.

“When we got the results from the CDC, where they had tested our MAB and found that it neutralized every strain they had, that was an incredible moment,” said Dr. Sloan, who led most of the bench work on the rabies project. “Working on something that is actually going to be used to treat people and that will have a major impact all over the world is a dream come true for me. I am so pleased to have this opportunity to work with the team here at MBL. It's incredibly satisfying.”

While it is a state-of-the-art vaccine producer, the Serum Institute had not developed its own internal capacity to manufacture and test MABs. So a significant part of the collaboration with the MBL is to facilitate a technology transfer, helping the Serum Institute build-out a MAB capability.





At left, the Serum Institute in Pune, India. Since the MBL's visit in September 2006, the Institute has brought its first monoclonal antibody bioreactors on-line, and the team there has successfully grown the cell lines MBL provided. They are preparing to produce quantities of the rabies vaccine for use in clinical trials. Above, at MBL's vaccine filling facility in Mattapan, Guangping Wang of the Cell Culture Group monitors the state-of-the-art equipment that has served as a model for MBL's Serum Institute colleagues.

*Photos at left: Courtesy of the Serum Institute*


**The MBL and Serum Institute are planning for a Phase 1 clinical trial in India later this year to assess the safety and tolerability of the MAB in people, with hopes of having the new, lower-cost treatment available within two years for people exposed to rabies.**

"We provided them with cell lines and procedures for manufacturing and testing," said Dr. Thomas, who traveled to India last fall and keeps in regular contact with the Serum Institute's scientific team via phone and e-mail. "The Serum Institute's facilities and standards were as good as any I've ever seen. They know how to make proteins from cultured cells and they are already making the rabies vaccine, so it's a natural fit for our program."

Since the India trip in September, the Serum Institute team is now bringing its first MAB bioreactors on-line, and the team there has successfully grown the cell lines MBL provided. They are now in the ramp-up phase, preparing to produce sufficient quantities of the HuMAB 17 C7 for eventual use in clinical trials. "The program is going extremely well, but it's just at the beginning. They are working with coffee cup-size batches of cell culture, and they need to scale that up to 300 liter batches," Dr. Thomas said.

The MBL and Serum Institute are planning for a Phase 1 clinical trial in India later this year to assess the safety and tolerability of the MAB in people, with hopes of having the new, lower-cost treatment available within two years for people exposed to rabies.

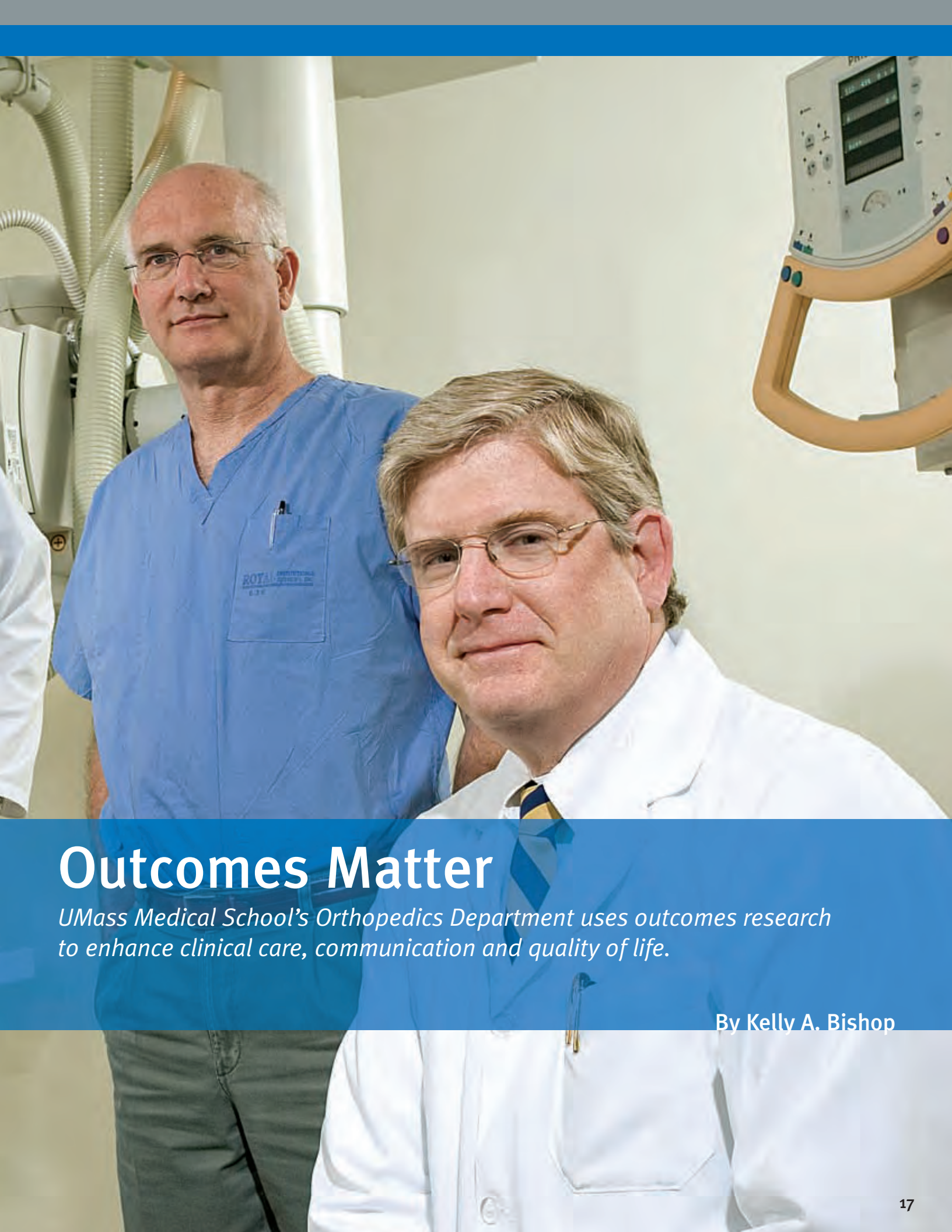
The development and testing of the MAB is being conducted jointly under regulations of the U.S. Food and Drug Administration and its Indian government counterpart, so if all goes as hoped, the new rabies treatment will eventually be approved for world-wide distribution. "The Serum Institute feels this is a unique opportunity to use cutting-edge technology for saving lives across the globe," Dr. Poonawalla said.

Another trip to India by MBL scientists is planned for this fall. A team from the Serum Institute is expected to travel to Boston to work at the MBL over the summer. "This collaboration is going very well and it is our hope that it will be the first of many joint initiatives with the Serum Institute," Dr. Ambrosino said. 









# Outcomes Matter

*UMass Medical School's Orthopedics Department uses outcomes research to enhance clinical care, communication and quality of life.*

By Kelly A. Bishop

## The practice of medicine has never stopped

evolving, ever since doctors first experimented with the most rudimentary of procedures and remedies. As a result, progress in both knowledge and technology has dramatically improved the ability to prevent and treat disease, injury and infection. Yet, for all of medicine's sophisticated life-saving tools and techniques, evaluation of the health, well-being and quality of life benefits to the patient has not kept pace.

It was only two decades ago that scientists and clinicians began to develop outcomes research to focus on end results of health care practices. Now, outcomes research is vital to understanding and improving the quality of medical care by making connections between the treatment a patient receives and the results they experience.

Orthopedics is a particularly ripe field for outcomes research. While mortality—the ultimate outcome—can be measured for a wide range of diseases and disorders, that's not necessarily true for individuals with chronic conditions. A treatment's impact on such things as pain and function is a vital measure of not only its effectiveness, but also its influence on a patient's quality of life. Outcomes research also can provide crucial information about the benefit of a procedure, allowing investigators and clinicians to compare interventions.

At the University of Massachusetts Medical School, the Department of Orthopedics & Physical Rehabilitation has been at the forefront of outcomes research. Under the leadership of David C. Ayers, MD, the Arthur M. Pappas, MD, Chair in Orthopedics and professor and chair of orthopedics & physical rehabilitation, who joined the Medical School in 2003, the department has become a national leader in the pursuit of outcomes research for the betterment of musculoskeletal clinical practice.

As Dr. Ayers sees it, outcomes research provides useful information for an objective measure of patient progress and can be applied to any surgical or medical intervention. "Over the last decade, it became clear that an objective measure of evaluating how patients function after orthopedic surgery, or any type of intervention, is important. It is also clear that having the surgeon or physician who performed the intervention grade its outcome is not without bias," Ayers explained. "Orthopedists have enthusiastically embraced the idea of having patients grade the amount of pain relief and the amount of functional improvement they experience after total joint replacement."

Researchers like Patricia Franklin, MD, MBA, MPH, associate professor of orthopedics & physical rehabilitation and clinical and population health research, believe that patients can better determine the outcome of their surgeries. "Patients can tell us quite specifically how an operation may have changed their quality of life," said Dr. Franklin. "As a result, outcomes researchers have developed validated patient self-administered tools to facilitate the collection of this vital information."

The Patient Decision Center is one such tool, created by Ayers and Franklin at UMMS for the Arthritis and Joint Replacement Center at UMass Memorial Medical Center—Memorial Campus. Designed as an education resource for patients considering a range of orthopedic procedures, and the only one of its kind in central New England, the Center also functions as a data collection center. Prior to each visit with a physician, pre- and post-operative patients fill out personalized, interactive questionnaires at computer terminals. The data gleaned from these self-evaluations—on pain, function and emotional well-being—has informed Ayers, Franklin and colleagues' outcomes research projects and served to improve patient-physician communication in the clinic.

At right are models of a normal knee showing bones, cartilage and ligaments. Pictured on pages 16 and 17 are four clinicians and researchers who will be tracking outcomes in the new system: Patricia Franklin, MD, MBA, MPH, associate professor of orthopedics & physical rehabilitation and clinical and population health research; James Nairus, MD, associate professor of orthopedics & physical rehabilitation; Jeff Metzmaker, MD, associate professor of orthopedics & physical rehabilitation; and David Ayers, MD, the Arthur M. Pappas, MD, Chair in Orthopedics and professor of orthopedics & physical rehabilitation. Drs. Nairus and Metzmaker, like Dr. Ayers, are joint replacement surgeons.





“Many professionals see the Patient Decision Center and the related data as a research tool, and it certainly can be; but it is also an important part of my everyday clinical practice,” said Ayers. “Because each patient completes a questionnaire, I am able to get objective measures of that patient’s status each time they come to the office. This helps me to determine if a patient should be offered surgery and if so, the timing of that surgery. We can ask, ‘Is this arthritis severe enough and are the physical limitations curtailing the patient’s activities enough to warrant joint replacement surgery?’ Many patients struggle with these questions and here at UMMS, we are able to offer them validated, objective national data regarding how their pain and function compares to other patients who have had their hip or knee replaced. This additional information is invaluable to their decision making.”

A particular type of decision facing many orthopedic patients is whether to undergo total joint replacement. Total knee replacement and total hip replacement for the treatment of arthritis are considered to be two of the most successful operations performed in surgery today, associated with a nearly universal relief of pain among recipients. But what about improvements in function? Ayers and Franklin delved into the national patient data surrounding total joint replacement and were surprised to find that there was a particular subset of patients who underwent total knee replacement and did not achieve the same level of enhancement in physical function.

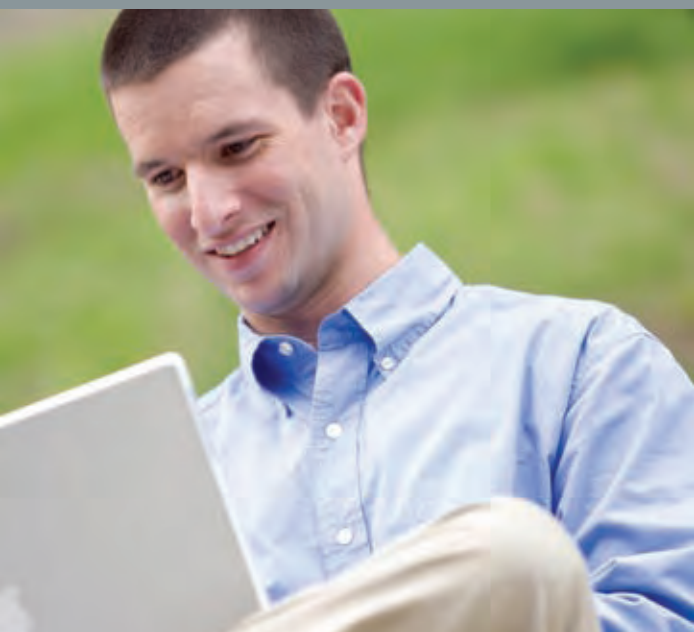
“We became interested in a patient’s ‘emotional health score’ before surgery,” said Franklin. “We know that pain relief seems to be uniform, but have ascertained that functional improvement is more variable. In fact, we found that poorer, pre-operative emotional health had been correlated with poorer function after surgery.”

When Ayers, Franklin and colleagues looked more closely to determine what a poorer emotional health score meant, they found no easy answer. Their recently completed clinical protocol found that many of these patients had significantly higher anxiety (so-called trait anxiety related to how a person reacts to threatening or new situations); mild depression and poor social supports—all factors that were complicated by the difficulty of living with chronic pain. These findings were recently published in the *Journal of Arthroplasty*.

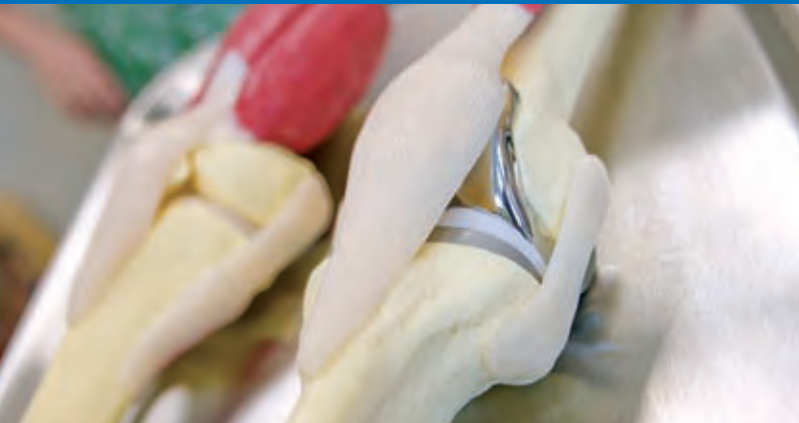
The investigators are currently using the findings from these studies and new information from the Patient Decision Center database to establish experimental interventions that may improve post-surgical function. Working with faculty from the Division of Preventive and Behavioral Medicine in the Department of Medicine, Ayers and Franklin are designing a protocol whereby patients would be supported post-operatively through telephone followup, encouraged by health care professionals on the other end to use relaxation and behavioral skills to self-manage their pain and function during recovery.

Simultaneously, the researchers are also looking at the patient’s physical activity after knee replacement. “In addition to poorer emotional health, we made the clinical observation that many of these patients—most likely due to their higher personal anxiety—seemed to be less active and less compliant with their home exercise and physical therapy after knee replacement,” Ayers said.

To more accurately assess physical function, these patients are asked to wear a step activity monitor called an accelerometer, a small device worn on the ankle that records the number of steps they take, offering the clinician and researcher detailed information on how much of the day the patient is at rest and how much time they are in light, moderate or heavy activity, as prescribed by their orthopedic surgeon.



Jacob Drew, MD '07, will soon begin his six-year residency in orthopedics. He collaborated with Ayers and Franklin as part of the UMMS Senior Scholars Program. “In the best of circumstances, research can change the way that doctors practice and the way that care is delivered,” said Dr. Drew.



## UMass Memorial Offers ‘Gender-Specific’ Knee Replacement

*One of the first in Massachusetts to offer total knee replacement customized for women*

On the right is a model of a knee after joint replacement, as viewed from the front. Metal inserts are at the top of the lower bone and the bottom of the upper bone with replacement for cartilage between in white. On the left is the back of the same replacement knee model.

“We are very enthusiastic about these projects because we have data to support that we can make a difference in the patient’s recovery. If we can support patients in their efforts to adopt a new physical activity or exercise regimen, we believe that we can influence improved physical function,” Franklin said.

For UMMS graduate Jacob Drew, MD, who collaborated with Ayers and Franklin as part of the Medical School’s Senior Scholars Program in 2007, the importance of pursuing research, particularly studies that impact clinical practice, cannot be overstated. “I think it is our responsibility as medical professionals, be it as students, researchers or clinicians, to make an effort to advance our chosen field,” he said. “In the best of circumstances, research can change the way that doctors practice and the way that care is delivered.”

Dr. Drew will pursue a six-year residency in Orthopedics, including a dedicated year to research, and hopes that the department’s findings will have real and practical implications for patients. “For a long time, orthopedics has been one of the most technologically advanced fields, with much research devoted to improving that technology. The next frontier, I think, in addition to continuing technological advancement, is to focus on what these outcomes mean and how we can influence them to improve quality of life.”

“This is a relatively new scientific area that has revolutionized the way the medical community is looking at how patients respond to treatment and demonstrates that clinical research is not separate from routine clinical care,” Ayers said. “There are many ways that this research benefits our patients. In the Musculoskeletal Center of Excellence at UMMS, we are developing the infrastructure to provide our patients with the most sophisticated information currently available to assist them in their decision making about elective surgery and, ultimately, to improve the amount of function they can achieve after knee or hip replacement surgery.”

Beyond innovations in research, the Department of Orthopedics & Physical Rehabilitation remains at the cutting-edge of technology, regularly integrating new medical devices. In late 2006, UMass Memorial Medical Center became one of the first hospitals in Massachusetts to implant a “gender-specific” artificial knee designed specifically for women. The Gender Solutions™ Total Knee Replacement is just the latest example of priorities set by the UMass Memorial Musculoskeletal Center for Excellence to meet its patients’ quality of life concerns.

The Gender Solutions knee is the first artificial replacement shaped to fit the unique anatomy of the female knee. The U.S. Food and Drug Administration approved it for use in May 2006.

“Although knee replacements are available in many sizes, these sizes don’t necessarily accommodate the precise, anatomical differences in women’s knees,” said Orthopedics & Physical Rehabilitation Chair David C. Ayers, MD, who performed the first procedure. “We are pleased to offer our female patients this advanced replacement technology, which better conforms to the well-documented, shape-related differences of a woman’s knee.”

Historically, knee replacements have been available in many sizes for men and women; however, the Gender Solutions replacement is designed to respond to the other differences in female anatomy, incorporating a narrower and thinner shape and more natural tracking. Tracking, or the movement of the kneecap as the knee performs range of motion, is influenced by the angle between the pelvis and the knee. Due to a woman’s typical contour, her angle is different than a man’s and the traditional artificial knee may tend to track in such a way that her knee feels “unnatural” as it moves. The Gender Solutions knee accommodates this different tracking angle and functions more like a woman’s natural knee.

In addition, the higher level of flexibility of the implant safely accommodates the range of motion necessary for many activities, such as climbing stairs, gardening, kneeling and golfing. The new female implant can be placed using well-established, minimally invasive techniques that typically result in smaller scars, shorter hospitalization and quicker rehabilitation and recovery.



# Vitae: Grants and Research

New and competitive renewal grants of \$100,000 or more are listed here according to department and funding sources.

## BIOCHEMISTRY & MOLECULAR PHARMACOLOGY

### National Institutes of Health

**Celia A. Schiffer, PhD**, associate professor: *Targeting Drug Resistance in HIV-1 Protease*, one year, \$344,403; recommended for three more years, \$1.06 million

*HIV-1 Vif: Targeting Its Molecular Interactions*, one year, \$243,563; recommended for one more year, \$203,125

**Scot A. Wolfe, PhD**, assistant professor: *A Bacterial One-Hybrid System for Analyzing DNA-binding Specificities*, one year, \$162,375; recommended for one more year, \$162,500

## CANCER BIOLOGY

### National Institutes of Health

**Dario C. Altieri, MD**, the Eleanor Eustis Farrington Chair in Cancer Research and professor and chair: *Molecular Targeting of the Survivin Pathway in Cancer*, one year, \$297,399; recommended for four more years, \$1.2 million

## MEDICINE

### National Institutes of Health

**Elliot J. Androphy, MD**, the Barbara and Nathan Greenberg Chair in Biomedical Research and professor: *High Throughput Screen for Compounds to Treat Papillomavirus-Induced Cancers*, one year, \$123,405; recommended for one more year, \$123,500

**Robert J. Goldberg, PhD**, professor: *Worcester Heart Attack Study*, one year, \$486,606; recommended for three more years, \$1.54 million

**Hardy Kornfeld, MD**, professor: *Impact of Diabetes and Hyperlipidemia on Host*

*Defense*, one year, \$405,938; recommended for four more years, \$1.6 million

**Sherry L. Pagoto, PhD**, assistant professor: *Investigation of a Behavioral Substitute for Sunbathing*, one year, \$182,074; recommended for one more year, \$154,375

**Lori Pbert, PhD**, associate professor: *School Nurse-Delivered Smoking Cessation Intervention*, one year, \$578,893; recommended for three more years, \$1.7 million

**Ravindra N. Singh, PhD**, assistant professor: *Targeting a Novel Silencer to Correct SMN2 Splicing in Spinal Muscular Atrophy*, one year, \$182,672; recommended for one more year, \$219,375

**Alberto Visintin, PhD**, assistant professor: *Antipathogen Immuno-adhesins*, one year, \$243,625; recommended for one more year, \$203,125

## MOLECULAR GENETICS & MICROBIOLOGY

### National Institutes of Health

**Ronald M. Iorio, PhD**, associate professor: *Glycoprotein Interactions in Paramyxovirus Fusion*, one year, \$401,673

## MOLECULAR MEDICINE

### National Institutes of Health

**Roger J. Davis, PhD**, the H. Arthur Smith Chair in Cancer Research, Howard Hughes Medical Institute Investigator and professor: *Chemical Genetics Analysis Targeted to the Prostate Epithelium*, one year, \$162,333; recommended for one more year, \$162,500

**Stephen J. Doxsey, PhD**, professor: *Shared Spinning Disk Confocal Microscope System*, one year, \$354,467

**Michael R. Green, MD, PhD**, the Lambi and Sarah Adams Chair in Genetic Research, Howard Hughes Medical Institute Investigator and professor: *Role of Lipocalin 24p3 in Apoptosis and Leukemia*, one year, \$259,395; recommended for four more years, \$1 million

**Gregory J. Pazour, PhD**, assistant professor: *Intraflagellar Transport Proteins in Mice*, one year, \$349,286; recommended for three more years, \$1.1 million

**Joel D. Richter, PhD**, professor: *Cell Biology of Development*, one year, \$205,383; recommended for four more years, \$852,808

**Maria L. Zapp, PhD**, assistant professor: *Molecular Interactions Between Rev and Cellular Factors*, National Institute of Allergy and Infectious Diseases, one year, \$318,353; recommended for four more years, \$1.3 million

## PATHOLOGY

### National Institutes of Health

**Leslie J. Berg, PhD**, professor: *Tec Kinases Itk and Rlk in Mast Cell Signaling*, one year, \$405,833; recommended for three more years, \$1.2 million

## PEDIATRICS

### National Institutes of Health

**Merav Socolovsky, MBBS, PhD**, assistant professor: *Molecular Analysis of the Erythropoietic Stress Response in vivo*, one year, \$395,909; recommended for three more years, \$1.2 million

# Vita: Alumni Report



## Heather Van Epps, PhD, GSBS '01

"This job is the best of both worlds. I get to learn about so many areas of scientific inquiry," said GSBS alumna Heather Van Epps, PhD, of her nontraditional career. Responsible for publishing cutting-edge research papers and reporting on the latest scientific inroads as executive editor of the *Journal of Experimental Medicine (JEM)*, Dr. Van Epps puts both her love of writing and her research education to use.

Van Epps completed her PhD research into human T-cell responses to hantaviruses in the UMass Medical School lab of Francis A. Ennis, MD, and

was almost finished with her post-doctoral fellowship when, she said, "I realized that starting my own laboratory and spending years working on one organism wasn't what I really wanted to do. I had always loved writing." In 2004 she landed a job as *JEM*'s inaugural news editor, charged with adding a science news section to the peer-reviewed papers *JEM* has published since 1896. "It was a brand new opportunity, a 100 percent writing job, which is rare for scientists," said Van Epps. She was appointed executive editor in fall 2006.

Editing a scientific journal is different from, but in many ways as rigorous as, the demands of lab investigations. "We receive 50 to 60 new manuscripts each week and send about 35 percent of those to review. Every single one crosses my desk." Collaborating with 11 senior principal investigators at various

institutions who serve as *JEM*'s primary board of editors, and more than 100 advisory editors, Van Epps assigns two to three editors per paper and evaluates manuscripts herself. For those papers that receive peer-review, she reads every review and consults further with colleagues to select the 10 to 15 percent of submissions that *JEM* publishes.

Van Epps credits the flexible, interdisciplinary PhD program at the Graduate School of Biomedical Sciences with preparing her for the scope of her current work. "One of the most important things the immunology program did was train us to talk about science," she reflected. Above all, Van Epps appreciates the collegiality and support from faculty that encouraged her to develop her strengths and pursue her personal goals and interests. —SLG



Photo: Courtesy of Berkshire Medical Center

## Timothy C. Counihan, MD '90

Medical Center's (BMC) Department of Surgery Chair and Director of its General Surgery Residency Program. "This combined position allows me to continue to develop my strong interest in education," Dr. Counihan said of his January 2007 appointment. Echoes of his Outstanding Medical Educator Awards won in 1995 and 1996 from UMass Medical School and his Resident Teacher of the Year Award for 1996 from the Department of Surgery are coupled with his memories of mentor Wayne Silva, MD,

professor of surgery, whom Counihan describes as "the perfect role model; next to the word 'mentor' in the dictionary, you'll find Wayne Silva. He set high standards, yet was approachable. He had enormous enthusiasm for taking care of patients and for bringing students into that realm. He was tireless."

Counihan will draw upon his mentor's example as he crafts the general surgery residency program for BMC, one that, like its counterparts at academic medical centers around the country, still finds

Timothy Counihan, MD, has a gift for teaching and an appreciation for mentorship. He practices both as Berkshire



## Dawn Carpenter, MS, BSN, Post-Master's Certificate '03, and Margaret Emmons, MS, ACNP-BC, GSN '05



Our clinical and academic work is complementary,” said Dawn Carpenter, MS, BSN (right), of her partnership with fellow Graduate School of Nursing alumna Margaret Emmons, MS, ACNP-BC. Together Carpenter and Emmons co-coordinate and teach in the GSN Master of Science program’s Adult Acute/Critical Care track (ACNP). They share this job in addition to holding full-time clinical positions; Carpenter in the surgical intensive care unit and Emmons in the medical intensive care unit at UMass

Memorial Medical Center—University Campus. “We think along the same lines and make decisions well together,” said Carpenter.

Carpenter and Emmons are responsible for managing course content, interviewing prospective students, mentoring current students and facilitating hands-on aspects of the curriculum, including the use of Standardized Patients and the UMMS Simulation Center. “A big part of our job is identifying experts to bring in as lecturers. We respond to what students have asked for,” noted Emmons. Examples of requests that have been implemented include a lecture on reading X-rays and more case studies for analysis.

Each woman took a different path to the same destination: Carpenter came to the GSN soon after earning her master’s at Syracuse University, while Emmons enrolled in the GSN after years working in critical care management. Common to both women’s career development is

how they benefited from, and in turn are continuing the tradition of, mentorship and support from GSN faculty. Each was recruited to teach in and then coordinate the Acute Care track by Kathleen Miller, EdD, associate professor of nursing and director of the Master of Science program.

Both were attracted to the forward-thinking clinical as well as academic environment in Worcester, commuting from afar because hospitals in their areas don’t employ nurse practitioners in ICUs, and citing UMass Memorial’s new virtual ICU as an example of its cutting-edge approaches to care. While both give lectures in their respective areas of clinical expertise, “Our clinical work introduces us to experts in many fields we can employ not only as classroom presenters but also as clinical preceptors, giving us many more resources to tap for our students,” said Carpenter. –SLG

itself adapting to changes implemented in July 2003 by the Accreditation Council for Graduate Medical Education to ease resident workloads and thus improve patient care. “The reduction in resident work hours was the most obvious change,” noted Counihan. “But there are changes to core competencies and a progression toward modernization to initiate as well.”

Meanwhile, as Chair of Surgery and BMC’s first colorectal surgeon, he’ll strive to balance the tendency toward expansion through faculty recruitment to meet patient

demand for surgical sub-specialists with his concern for loyal faculty who have dedicated years to BMC. “The size of our community is just big enough, and there is a fine line between growing too fast and outstripping patient demand.”

Challenges that come with leadership are nothing new to Counihan, a decorated member of the US Army Reserves for over 17 years, most recently as a lieutenant colonel and commander of the 912th Forward Surgical Team. Sometimes set up less than a half mile from battle, Counihan

and his team have treated victims of land mines in Kosovo, rifle fire in Afghanistan and IEDs in Iraq.

Back home at BMC, Counihan believes his current position may just be the culmination of 20 years of learning and practicing in Worcester “in some capacity or another,” at both UMMS and Saint Vincent Hospital. “If this is my last job, great! I see no reason why this can’t run for the next 20 years.” –ALB

# Vitae: Class Notes



On November 30, 2006, a Decades Dinner Reunion was held on the UMass Medical School campus for the School of Medicine classes of 1976, 1986 and 1996. From left are returning Class of '76 members Salvatore Basta, Bruce Karlin, Evelyn Love '77, Anne Foley (spouse), Michael Foley, Susanna Lee '78. See alumni from '86 and '96 on pages 25 and 26.

## 1979

**Ralph L. Wade, MD**, has been named coordinator of Northern Essex Community College's new Paramedic Technology Program. He brings more than 20 years of emergency medical care experience to the position, having worked in emergency services at several area health facilities, including the former Hale Hospital in Haverhill, Mass. (now Merrimack Valley Hospital).

## 1982

**Bruce D. Minsky, MD**, is associate dean and professor of Radiation and Cellular Oncology at the Biological Sciences Division, Pritzker School of Medicine, University of Chicago. He is also chief quality officer for the University of Chicago Medical Center.

**Joren C. Madsen, MD, PhD**, is surgical director of the Cardiac Transplant Service, Massachusetts General Hospital and is associate professor of surgery at Harvard Medical School. He is a recipient of the Fujisawa Basic Science Award from the American Society of Transplantation for his contributions to the field.

## 1983

**Jerry H. Gurwitz, MD**, the Dr. John Meyers Professor of Primary Care Medicine at UMMS, is the 2006 recipient of the John M. Eisenberg Patient Safety and Quality Award for research from the National Quality Forum and the Joint Commission on Accreditation of Healthcare Organizations. His most recent research efforts relate to developing and testing interventions to reduce the risk of medication errors that lead to adverse drug events in the elderly.

## 1985

The UMass Memorial Weight Center was recently awarded full accreditation as a Bariatric Surgery Center by the American

College of Surgeons (ACS) Bariatric Surgery Center Network Program. **Mitchell J. Gitkind, MD**, is the center's medical director and **John J. Kelly, MD '92**, serves as its surgical director.

## 1987

**Assaad J. Sayah, MD**, was recently appointed chief of Emergency Medicine at Cambridge Health Alliance. Dr. Sayah serves as medical director for the American Response Network (Northeast) and is president-elect of the Massachusetts College of Emergency Physicians.

## 1988

**Nathaniel G. Clark, MD**, is senior medical advisor for the U.S. diabetes division of Novo Nordisk. In this newly created position, Dr. Clark provides medical leadership for Novo Nordisk programs designed to improve patient outcomes. He most recently served as vice president for Clinical Affairs for the American Diabetes Association (ADA) and was associate director of Diabetes Services and director of Pediatric Services at the Joslin Diabetes Satellite Clinic on Cape Cod.

**Damian E. Dupuy, MD**, is a professor of radiology at Brown Medical School and director of the Tumor Ablation Service at Rhode Island Hospital in Providence. He lives in Millis with his wife, Cathy, and their three children, Shane, Alexandra and Caroline.

## 1991

**Eric H. Awtry, MD**, is medical director of Jordan Hospital's new cardiac catheterization lab and assistant professor of medicine at Boston University School of Medicine.

**Shan Lu, MD, PhD**, a professor of medicine at UMMS, has been appointed to the scientific advisory board of CytoDyn, Inc. Dr. Lu is the lead inventor of the DNA-based pre-flu vaccine being





On March 28, 2007, parents of current medical students visited campus for dinner and tours of the UMMS Simulation Center during its Open House. Here, Debra Heitmann, MD, assistant professor of emergency medicine and an instructor at the Center, demonstrates techniques for James Dildine, Carol Dildine and Eric Chen, MD.

developed by Advanced Influenza Technologies, Inc., a wholly owned subsidiary of CytoDyn, Inc.

**Bryan S. Vartabedian, MD**, has published his second book, *Colic Solved—The Essential Guide to Infant Reflux and the Care of Your Crying, Difficult-to-Soothe Baby* (Ballantine/Random House 2007). He is currently conducting a national seminar tour with retailer Babies R Us to “spread the word on why babies actually cry.” His first book, *First Foods*, was published in 2001.

**Susan M. Young, MD**, recently joined Family Medical and Maternity Care and UMass Memorial Medical Center—HealthAlliance Hospital. Dr. Young had practiced at Fallon Clinic for more than 12 years.

## 1992

**Deborah A. Learson, MD**, and **Paul J. Davis, MD**, practice at Court Street Family Practice in Auburn, Maine. They both completed their residencies at the Family Practice Residency Program at Central Maine Medical Center and for the past five years owned and operated Lakeside Family Practice in Bridgton.

**Bonnie Ryan, MD**, is on the emergency medicine staff at UMass Memorial Health Care—HealthAlliance Hospital.

## 1993

**Michael D. Thompson, MD**, has joined the medical staff of Sturdy Memorial Hospital in Attleboro, Mass. as a plastic and reconstructive surgeon.

## 1996

**James A. Cheverie, MD**, practices at Hallmark Health’s Malden (Mass.) Family Health Center.

## 1997

**Peter J. Mason, MD, MPH**, has joined Memorial Hospital of Lafayette County in Darlington, Wisconsin as a cardiologist.

## 1998

**Cyrus L. Bryant, MD**, recently completed service with the U.S. Air Force and now works for the State Department. He is heading to Abu Dhabi, the capital of the United Arab Emirates, for two years as the medical officer for the Persian Gulf region.

**Loree Griffin Burns, PhD**, has published *Tracking Trash: Flotsam, Jetsam, and the Science of Ocean Motion*, part of Houghton Mifflin’s “Scientists in the Field” series for children ages 10-14. In this, her first book, Dr. Burns follows oceanographer Curt Ebbesmeyer and his colleagues as they comb seas and shorelines



Class of '86, from left: Mary Jane Zimarowski, Leigh Firn, Anne Cushing-Brescia, Thomas Synan '87, Mary McGowan '87, Caroline Marten-Ellis, Susan Upton Lynch, Donna Staton

# Vitae: Class Notes



Class of '96 at the Decades Dinner, from left: David Lubelczyk (spouse), Rebecca Lubelczyk, Kerry McCabe, Jessica Wieselquist, David Judge, Laura Hu, John Gunning (spouse), Kristen Gunning

for trash to better understand ocean currents and how they affect life on earth. Dr. Burns lives in West Boylston, Mass. with her husband and three children.

## 1999

**James Harding, MD**, recently joined the Berkshire Medical Center surgical staff and Berkshire Orthopaedic Associates. Dr. Harding is a major in the U.S. Army Reserves Medical Corps, in which he has served since 1999.

**Dena Niedzwiecki, MD**, married Diego A. Mechoso, MD, on September 2, 2006, in Newport Beach, Calif. Dr. Niedzwiecki is a pediatrician at Methodist Hospital in Arcadia and Huntington Memorial Hospital in Pasadena.

## 2000

**Steven W. Farraher, MD**, is a radiologist practicing in Portland, Maine at Spectrum Medical Group and Maine Medical Center. As a resident at Boston University Medical Center, Dr. Farraher received the Joseph T. Ferrucci Jr. Radiology Award. He lives with his wife, Laura, and their daughter, Reese, in Falmouth.

**Sherry A. Graham, MD**, has been named medical director of Merrimack Valley Hospice in Lawrence, Mass. She most recently practiced at the Greater Lawrence Family Health Center.

**Cara Kaupp, MD**, is a member at large on the executive committee of the New Hampshire Pediatric Society, the state chapter of the American Academy of Pediatrics, for 2006-07. Dr. Kaupp practices at Foundation Medical Partners in Nashua.

**Laura Silk, MD**, has joined Montachusett Women's Health at UMass Memorial Health Care—HealthAlliance Hospital, Leominster Campus as an Ob/Gyn. She most recently practiced at Hartford Hospital in West Hartford, Conn.

**Suzanne T. Sullivan, MS, RN**, is a nurse practitioner for Fallon Community Health Plan's Summit ElderCare, a Program of All-Inclusive Care for the Elderly (PACE), one of six PACE programs in Massachusetts and more than 40 programs nationwide. Sullivan will provide primary care and other geriatric support

services at Summit ElderCare sites in Worcester, Charlton and Leominster, Mass. Sullivan was most recently a nursing instructor at Quinsigamond Community College and a gerontological nurse practitioner at EverCare in Auburndale, Mass.

## 2001

**Linda Gifford DeGeus, MD**, recently joined Franklin Pediatric and Adolescent Care and is on staff at Milford Regional Medical Center.

## 2002

**Maria I. Sannella, MD**, is a member of the medical staff at Brockton Hospital's Children and Youth Program, which serves as the health care provider for the Brockton Public School System.

**Rebecca Symmes Lee, MD**, is a physician with Harbor Medical Group in Danvers, Mass., an affiliate of North Shore Medical Center.

**Sarah B. Zifcak, MD**, is on the medical staff of Emerson Hospital and practices at Concord (Mass.) Hillside Medical Associates.

## 2003

**Matthew J. Bean, MD**, has joined the Southboro Medical Group in Southboro, Mass.

**Andrew Popelka Jr., MD**, is a hospitalist at Milford Regional Medical Center.

**Margaret Werner, MD**, practices pediatrics at Acton (Mass.) Medical Associates.

**Teresa S. Wright, MD**, is pursuing a dermatology fellowship at University of Kansas Medical Center and presented an abstract at the annual International Society for the Study of Vascular Anomalies held in Milan, Italy in June.

[Alumni of the School of Medicine, Graduate School of Biomedical Sciences and the Graduate School of Nursing may send their latest news to \[alumni@umassmed.edu\]\(mailto:alumni@umassmed.edu\)](#)



# Bringing It Home

## *The Barre Family Health Center Campaign*

Like most fund-raising campaigns, it started with a whisper, but ended with a bang, ahead of goal and ahead of schedule. The \$2 million Barre Family Health Center *Close to Home Care* Campaign has emerged as an example of philanthropy at its best.

Cause, connection, capacity and commitment—all elements of a successful campaign—were achieved through grass roots strategy and peer-to-peer contact, leading to the new \$6.7 million Barre Family Health Center. Opened in July 2007, the center is more than twice the size of the original facility, with new technology, expanded services and the capacity for 45,000 patient visits annually. The original facility, opened in 1973, was built for 15,000 visits but until recently was seeing 30,000. Serving as the primary source of health care for ten Central Massachusetts towns, the center is the Commonwealth's only rural residency training site; forty-one percent of its graduates are in rural practices.

"We are grateful to everyone who joined in this philanthropic journey," said Stephen T. Earls, MD, assistant professor of family medicine & community health and medical director of the Barre Family Health Center. "Whether it was a few dollars or many thousand, people gave because they understood the importance of the health center to our community and wished to play their part in assuring its future." All of the health center's physicians and over 85 percent of faculty in the Department of Family Medicine & Community Health participated. UMMS alumni contributed \$183,400, responding to the leadership of Donald Miller, MD '84.

"The Barre Health Center is an important component of UMass Memorial Health Care and the Barre community," said John O'Brien, president and CEO of UMass Memorial, the Medical School's clinical partner. "We were always confident that with the community's ongoing support, we would be able to complete this important project."

During the two-year quiet phase, 72 percent of the campaign's goal was reached. The public phase of the campaign was announced at



On June 27, many of those involved in the campaign, as well as patients and clinicians, experienced the event they had all been waiting for—the ceremonial cutting of the ribbon to open the new facility.

a ceremonial groundbreaking in May 2006, with \$600,000 needed to reach its goal. As a result of the generosity of individuals and businesses throughout the region, \$2.3 million was raised by the end of 2006—118 percent of the goal. In addition, Congressman John Olver helped encourage more than \$440,000 in federal grants.

The campaign committee, made up of citizens of Barre and surrounding communities, business leaders, and UMMS residency alumni and faculty, mobilized support for the new center because of its implications for the future of health care in the region. Hundreds of gifts were made, capped with a bequest totaling \$1.1 million from the estates of Max H. and Eloise A. Kuhner, longtime residents of Oakham who wished to support health care services in the region.

"The real success of this campaign is measured not just in the magnitude of generosity from a community that stretched itself to meet the goal, but also by our sense of communal obligation," said campaign chair David Gale, president of Barre Savings Bank. "We have distinguished ourselves as supporters of an asset of great significance to all of us."

Among the lead gifts from businesses and individuals were \$100,000 from Barre Savings Bank, with another \$100,000-plus pledged by bank trustees, and \$100,000 from Angelo Salvatore and family of Barre. Mr. Salvatore is president of Salvatore Auto Group in Gardner.

Plans for the new health center are unveiled, below. At left, clockwise from bottom row are Campaign Committee Member Samuel Pickens, MD, Daniel Lasser, MD, Congressman John Olver, Walter Ettinger, MD, and Stephen Earls, MD, as well as Richard Brey, Campaign Chair David Gale and Andrew Sussman, MD. At right, Campaign Committee members are, from left, David Gale, Marie Oldakowski, Elizabeth Reilly, John Brewer, Peter Trifilo, Lionel Lajoie, Richard McDonald and Stephen Earls, MD. Not pictured: Daniel Kirkpatrick and James Vaida.



# Vitae: The Last Word



**By Ellen More, PhD, Professor of Psychiatry, Medical Historian, and Head of the Office of Medical History and Archives of the Lamar Soutter Library, UMass Medical School**

*People may wonder why UMass Medical School decided that now was the time to start building a historical archive—we seem like such a young institution. We are relatively young, but a lot has happened over the 37 years since we opened our doors, and it's a history that's worth preserving.*


Most of the pioneers who were instrumental in founding this institution have begun to retire after their long and successful careers here. From a school with only sixteen students operating in a converted warehouse, we have become a world-class institution. UMMS is no longer in its infancy. It's a young adult and can afford to take stock of its beginnings. We grew concerned that if we didn't capture firsthand the idealism, determination and, of course, political drama that characterized the institution's early years, this primary source material would be lost forever. And that led to the realization that future generations at UMMS would feel this way, too. We needed to find a way to preserve our history systematically and into the future.

Established in 2006, the Office of Medical History and Archives (OMHA), which is part of the Lamar Soutter Library, has two missions: 1) to collect and securely maintain materials relevant to the history of UMMS; and 2) to make the materials available for scholarly research in a timely and appropriate

manner. The archives—everything from correspondence, departmental reports and meeting agendas to scientific reports, photographs, news clippings and oral histories—will also help document important institutional celebrations and anniversaries and foster history of medicine activities, publications and exhibits. The Library has proposed that materials be housed in the Rare Book Room by renovating the space to incorporate suitable, temperature-controlled archival storage and processing space, in addition to administrative and meeting areas. The OMHA has already received rich collections from founding Chair of Surgery H. Brownell Wheeler, MD, from the former Worcester Foundation for Experimental Biology, the Department of Family Medicine & Community Health and others. As part of its collection strategy, OMHA staff also plan to attend future alumni reunions in the hope of capturing valuable oral histories. We will also work with the Records Retention Program to ensure an orderly transfer of selected items (official records that are no longer required by law to be held) to the archives, as well as seeking donations of papers from individuals.

In some ways, the best part of this work is the opportunity to learn how our history can illuminate the broader history of American medical education and health care. For example, early in the process

of collecting materials, a colleague and I attended the 30-year reunion of the Family Medicine residency. While recording oral histories, I learned from one early resident about their labor concerns in the 1970s at Worcester City Hospital, a struggle to be treated fairly as employees and to improve patient care. After an additional donation of relevant supporting documents—including a newsletter called “The Blunt Probe”—I now can add an important chapter to the story of family medicine's emergence as a specialty in the 1970s, the evolution of residency in American medical education and the importance of primary care to our own institutional mission. In sharing his own story, this alumnus helped illuminate an area of medical history much larger than himself.

Our archive, like the archives of other rising institutions, is a project without perceivable end. As a historian of medicine, I am excited about the opportunity to help build the foundation for capturing and preserving the history of UMass Medical School. I hope that members of the institutional community will grow as excited about the archives as we are and will find their way to our door with donations of papers, photographs, lab records—anything that reflects the history of the institution. 





Vitae:



University of  
Massachusetts  
Medical School

UMass Medical School  
55 Lake Avenue North  
Worcester, MA 01655-0002

Non-Profit Org.  
U.S. Postage  
PAID  
Worcester, MA  
Permit No. 176

Current resident or:

Readers, because our mailing lists are supplied by several University departments, some of you may receive duplicate copies of this magazine. Thank you for passing them along to others who are interested in the Medical School.