



A fourth-year neuropsychiatry resident, Jordan Eisenstock, MD

Vitae:

The Magazine of
The University of Massachusetts Medical School



Year in Review



A Graduate School of Nursing student, Sandra Leiby, RN, BSN



A Graduate School of Biomedical Sciences student, Destin Heilman



A second-year medical student, Trinh Tran

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, underserved and uninsured populations.

The Research Enterprise

The union of UMass Medical School's world-class investigators, fueling discoveries in basic science and clinical research through receipt of 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

UMass Memorial Health Care

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

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A photograph of Jordan Eisenstock, MD, a man with glasses and a white lab coat, smiling. The image is tinted with a reddish-orange color.

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A photograph of Sandra Leiby, RN, BSN, looking through a microscope. The image is tinted with a yellowish-brown color.

Sandra Leiby, RN, BSN 16

A photograph of Destin Heilman, a man with dark hair, looking down at a book or document. The image is tinted with a yellowish-brown color.

Destin Heilman 18

A photograph of Trinh Tran, a woman with dark hair, looking down. The image is tinted with a yellowish-brown color.

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Massachusetts Biologic Laboratories Opens Major New Facility



The striking lobby of the MBL's new facility in Mattapan

In October, UMass Medical School's Massachusetts Biologic Laboratories (MBL) opened its new \$100 million biologics manufacturing and vaccine filling facility in Mattapan. The opening marked the culmination of four years of planning and construction of the new building, which serves as an extension of the MBL's existing facilities on the nearby Jamaica Plain campus. With the staff brought on for the new facility, the MBL now employs 320 people, including scientists, engineers, manufacturing associates, laboratory technicians and an array of support staff, many of whom live in the surrounding neighborhoods.

"Through this new facility, we will significantly expand our unique public role in developing biologic products for both common and rare medical conditions, as well as increase our ability to partner with colleagues at the Medical School and scientists at other public and private institutions to tackle vital public health initiatives," said Donna Ambrosino, MD, director of the laboratories and a UMMS professor of pediatrics. The new facility features a state-of-the-art aseptic vaccine and therapeutics filling operation, as well as a major new monoclonal antibody manufacturing function; both aseptic filling and monoclonal antibody manufacturing are in short supply in the United States.


The MBL's history is marked by its responsiveness to state, national and international public health needs. Over the years, the MBL has 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 protected from the shortage because the MBL provides Td vaccine for all of its residents. During the crisis, the MBL increased production to alleviate the national shortage and now delivers millions of doses of Td vaccine, meeting 20 percent of the country's total needs.

In 1996 when the National Institutes of Health sought a biologics manufacturer to collaborate on products in its extramural research program, the MBL was awarded a five-year contract and since then has produced monoclonal antibodies for a number of infectious diseases. In 1999, the Department of Defense sought a manufacturer of Vaccinia Immune Globulin for its smallpox vaccine program, but no commercial manufacturer was interested; the MBL alone responded.

The 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 NIH partnered with the MBL to launch an aggressive effort to find a monoclonal antibody that could be effective against the SARS virus. That effort, in partnership with the MBL's collaborator Medarex, yielded results in just six months, producing a potential treatment for SARS currently in pre-clinical testing.

Looking toward the future, and with its new facility now poised for production, the MBL is working with public and private partners to develop monoclonal antibodies for a range of public health concerns. The most advanced of those efforts is a potential new therapy for a severe form of hospital-acquired diarrhea. In addition, the MBL and the Centers for Disease Control & Prevention have identified a monoclonal antibody for rabies, which affects nearly 10 million people each year worldwide, resulting in some 40,000 to 70,000 deaths.

"The interests of the people of Massachusetts, of the nation and indeed, of the world, are best served by having a public-sector facility like the MBL," said Dr. Ambrosino at the opening ceremony. "This new facility will ensure that for generations to come, monoclonal antibodies and other biologics that impact the health of our public will be available regardless of their commercial viability." 

Grant Promotes Care for Families Affected by Mental Illness



Associate Professor of Psychiatry Joanne Nicholson, PhD (right), with Bernice Fernandes, a research coordinator at the Center for Mental Health Services Research

Associate Professor of Psychiatry Joanne Nicholson, PhD, received a \$1 million grant in 2005 from the international biopharmaceutical company AstraZeneca to establish and evaluate a pilot family care management

intervention for parents with serious mental illness and their children.

The project will be conducted in partnership with Employment Options, Inc. of Marlborough, a private non-profit agency that utilizes the clubhouse

model of providing community-based services to help adults and families affected by severe mental illness overcome barriers and find support to maintain employment, housing and family wellness. “Over the past decade our unique and important partnership with Employment Options has helped us raise awareness and develop supports that ameliorate the ‘ripple effects’ on families with a mentally ill parent, focusing on how to help parents care for themselves and their children while maintaining as normal a family life as possible,” said Dr. Nicholson. ☉

First Graduate Entry Pathway Class ‘Pinned’

Capping off their first year of study, 38 students in the inaugural class of the Graduate Entry Pathway participated in the Graduate School of Nursing’s first Pinning Ceremony, held at the Hoagland-Pincus Conference Center in October.

A time-honored tradition of nursing programs throughout the United States and abroad, pinning has long been a rite of passage into the nursing profession;

the ceremony also symbolizes advanced knowledge and opportunity to develop further in one’s nursing role, especially appropriate for GEP students as they continue their studies. The students, who are recent college graduates or working adults with degrees in areas other than nursing, devote their first year to becoming registered nurses, and then two additional years to earning a master’s in nursing that will

further prepare them to become nurse practitioners, health care executives and nurse educators.

Following presentation of pins to each student, recipients recited an oath, adapted from the historic Florence Nightingale Oath penned in 1893. GSN Interim Dean Paulette Seymour Route, PhD, closed the formal ceremony with remarks welcoming the Class of 2007 to the nursing profession. ☉



Graduate Entry Pathway (GEP) students recite the Florence Nightingale Oath as their symbolic Pinning Ceremony draws to a close. The success of the first GEP class capped a milestone year for the Graduate School of Nursing, which marked 20 years of dramatic growth in enrollment, academic achievement and research, and the development of partnerships that have resulted in an enhanced experience for students.

Publication in Top Journals Reaches New Levels



In this image from the Doxsey lab, a human cell is about to divide. The area in green shows the emerging daughter cells; the blue is their nuclei. The short black line between the two is the mid-body ring, discovered to be of vital importance by the UMMS team and described in 2005.

UMass Medical School

researchers held an increasingly significant presence in journals in the last year. Over 1,025 articles describing research findings in a spectrum of journals—several of high impact in scientific circles—featured Medical School basic and clinical investigators as either principal or secondary authors in their fields of expertise.

The second-highest number of article publications for UMMS research faculty during the period of November 2004 to November 2005 was in *Molecular Biology of the Cell*, considered one of the premier journals in the field of cell biology because of its high-impact factor. The fifth highest number of publications was in *Circulation*, another journal of high impact, ranked at number 66 among 2,000 journals surveyed via Science Citation Index. Investigators also published in *Genes & Development*, which is the third most prestigious journal in the field of genetics and heredity and number 36 overall.

Several journals are more well-known to the lay public because of their frequent reference in the media, as well as the esteem in which they are held by members of the scientific world. These include *Science*, *Cell* and *Nature*. UMMS researchers publish in these journals as well, and summaries of their important research discoveries which appeared in 2005 follow.

Discovery redefines final moments of cell division

Professor of Molecular Medicine Stephen J. Doxsey, PhD, and his lab found that, in the final moments before a human cell divides, one of the two new “daughter” cells actually causes the separation by blasting away from the other through the activation of the midbody ring, a protein-packed structure that remains with the older cell. These findings, published in the October 7 issue of the journal *Cell*, have key relevance for the understanding of cell aging and cell death.

UMMS Brings Relief in a Year Marked by Disasters

Hurricane Katrina

In the wake of this storm that devastated the nation’s Gulf Coast and killed over 1,300 people, UMMS was ready to take in medical students and residents displaced from training in Louisiana schools and hospitals as a member of the Association of American Medical Colleges and related organizations. In addition, members of the UMMS and UMass Memorial community were deployed with the Disaster Medical Assistance Team to assist in relief efforts; vials of tetanus vaccine were

shipped from the Massachusetts Biologic Laboratories to treatment centers in the Gulf region; and UMMS students and faculty members volunteered their time and expertise at the disaster sites.

On campus, students turned planned evenings of entertainment into fundraisers for the American Red Cross and Habitat for Humanity. And at the evacuee center at Otis Air Force Base, the UMMS Commonwealth Medicine Information Technology group worked around the clock to ensure that com-

puter and telecommunications support was in place for some 250 Katrina evacuees welcomed by medical, mental health and human services teams. The IT group created a database for entering information on each evacuee and established an Internet café where they could go to contact or search for relatives online.

Pakistan Earthquake

The Medical School community felt the anguishing ripple effect of the October 8 earthquake that wreaked havoc on

It was previously believed that after a cell had gone through mitosis, with its chromosomes replicated and separated, new cell membranes formed around what would become the daughter cells and contracted, pulling the daughters apart and leaving two identical cells. Dr. Doxsey's discovery reveals instead that the midbody ring (previously termed the residual body and thought to have little, if any, functional role in cell division) is in fact a vital and active element in the process.

Cell biology team uncovers key muscle structure finding

Using special electron-microscopy techniques perfected in their lab, a team of UMMS researchers not only discovered the molecular structure of the protein motors that make muscles contract, but also that this structure appears to be the same across most of the animal kingdom in both smooth and striated muscles—previously suspected to

operate differently. The team's conclusions were detailed in a paper published in the August 25 issue of the journal *Nature*.

Striated muscles control the movement of the skeletal system and cardiac function, whereas smooth muscles line blood vessels, the digestive track and other hollow organs to control the movement of material through the body. For years, Roger W. Craig, PhD, professor of cell biology, and John L. Woodhead, PhD, research assistant professor of cell biology, have studied striated muscles, but getting to the molecular level of analysis had proven difficult. With this new technique, and a specialized image analysis algorithm developed by a colleague at the University of Virginia Health Sciences Center, the team deciphered how the motors switch off so the muscles relax, a process never fully understood before.

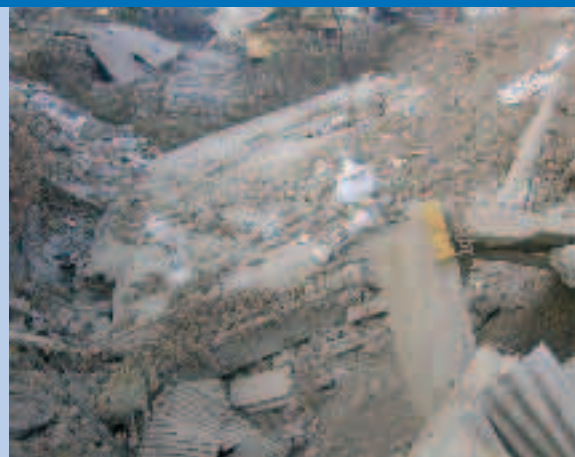
Nerve cell connections may lead to changes in gene expression

A receptor of a well-studied signaling molecule in the fruit fly, *Drosophila*—crucial to embryonic development, cancer prevention and formation of synaptic connections in the fly brain—has been found to use a novel pathway that crosses directly into the cell nucleus, where it may regulate gene expression. The findings, published in the November 25 edition of *Science*, were authored by UMMS Graduate School of Biomedical Sciences students Dennis Mathew and Bulent Ataman in collaboration with Professor of Neurobiology Vivian L. Budnick, PhD.

The study is significant in two ways; first, it demonstrates that a signaling molecule, essential to embryonic development, can be used in the brain in unique ways. Second, it provides a mechanism by which synaptic connections between nerve cells may lead to changes in gene expression. ©

mountainous regions of Pakistan, killing over 80,000 people and leaving 3.5 million homeless. Associate Professor of Clinical Pediatrics G. Naheed Usmani, MD, was instrumental as president of the Association of Pakistani Physicians in New England in mobilizing the regional group to raise awareness about the scope of the disaster, as well as garner funds, medical supplies and medical/surgical equipment for the communities, hospital and relief agencies affected.

In addition to leading such efforts and making herself available to numerous local, national and international media outlets in the week following the earthquake, Dr. Usmani—whose birthplace is just 80 miles from the quake's epicenter—visited the region in mid-December to assist in caring for the thousands of children who continue to suffer from infection and malnutrition in the aftermath of the quake. ©

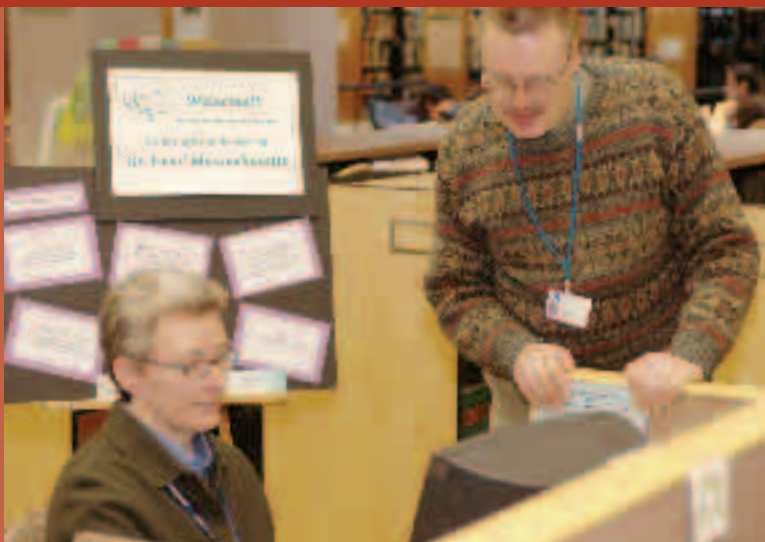


The minaret and the mosque in Balakot, Pakistan, which “basically was swallowed up whole,” according to UMMS Associate Professor Naheed Usmani, MD.

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Go Local Connects Consumers with Health Information

Amidst *Go Local Massachusetts* posters promoting the new Web-based resource, Lamar Soutter Staff Librarian Sally Gore searches for health care information with Len Levin, assistant director of the library's HealthNet.




Massachusetts residents

have a valuable new tool in the search for health-related information with the launch in 2005 of *Go Local Massachusetts*. Developed through a collaboration of the United States National Library of Medicine (NLM) and the Lamar Soutter Library at UMass Medical School, *Go Local Massachusetts* (<http://medlineplus.gov/massachusetts>) is a Web-based resource designed to help the public identify local health services,

Clinical Research Efforts Surge

A year after opening its Clinical Trials Unit—one of the more visible components of a concentrated, multi-year effort by the Office of Clinical Research (OCR) to expand the clinical research enterprise at UMMS in conjunction with its partner, UMass Memorial Health Care—the OCR reports growth and expansion of clinical studies across many departments. According to OCR Director Sheila B. Noone, PhD, the number of open research studies monitored by the Institutional Review Board (IRB) has grown to 1,033 in fiscal year 2005, up from 850 in fiscal year 2004. “Included in this number are the full breadth of human studies,” said Dr. Noone, “together with clinical trials, registries and outcomes research, among others. A record 353 new studies were reviewed by the IRB in fiscal year 2005.” (Under FDA regulations, an IRB is a group that has been formally designated to review and monitor biomedical research involving human subjects.)

The OCR offers regulatory support to clinical investigators by writing first drafts of IRB submissions, organizing regulatory documents for study start-up and assisting with FDA communications. In fiscal year 2005, 21 studies received such support, said Noone. “In addition, education and training in Good Clinical Practice research standards continues to grow, with over 55 research managers, coordinators and ancillary staff attending sessions in 2005; the educational focus in 2006 will feature expanded workshops, including topics such as medical device studies and the dual responsibilities of investigator-initiated research.”

Meanwhile, the Clinical Trials Unit has assisted 11 investigators with 13 studies since opening in November 2004. Departments and divisions supported include Neurology, Diabetes/Endocrinology, Pediatrics/Pediatric Endocrinology, Pulmonary Medicine, Renal Medicine, Dermatology and Digestive Diseases. 



“Both UMass Medical School and our clinical partner, UMass Memorial, aspire to be among the top ten academic health centers and research medical schools in the country,” said John Sullivan, MD, Vice Chancellor for Research, above with Sheila Noone, PhD. “Our clinical research enterprise simply has to be robust.”


health care providers and health-related programs across the Commonwealth.

The NLM developed the *Go Local* concept in 2003 as an extension of its MedlinePlus product, a resource that covers more than 700 health topics. While it is consistently ranked as one of the leading consumer health sites in the country and is one of the most visited Web sites maintained by the federal government, the NLM sought to link the information found on MedlinePlus

with regional resources addressing local health care needs related to these topics through Web-based *Go Local* portals. The Lamar Soutter Library—one of eight medical libraries nationwide to be designated by the NLM as a Regional Medical Library in the National Network of Libraries of Medicine—was selected to oversee this project for the state.

“As medical librarians, we play an important role in assuring that consumers have access to accurate, high-quality

health information,” said Lamar Soutter Library Director Elaine Martin, DA.

“With *Go Local Massachusetts*, our library and UMass Medical School continue our tradition of valued public service initiatives that aim to inform the public about important issues in medicine and to improve the health of the people of the Commonwealth.” 

Novel Vaccine Generates T-cells and Antibodies to HIV


Preliminary results from a phase 1 clinical trial of a new vaccine for HIV, developed by scientists at UMass Medical School and Advanced BioScience Laboratories, Inc. and funded by the National Institute of Allergy and Infectious Diseases, show the vaccine’s ability to generate antibody and T-cell responses in otherwise healthy people not infected with HIV.

The preliminary results were presented in September at the AIDS Vaccine 2005 International Conference in Montréal, Canada, by Jeff Kennedy, MD, assistant professor of medicine and member of the UMMS Center for Infectious Disease and Vaccine Research, who leads the clinical trial. “We’re still a long way from having

a vaccine against HIV, but the results of this trial are scientifically important and encouraging,” Dr. Kennedy said. “To my knowledge, this is the first report of an HIV vaccine generating antibodies in healthy people that can neutralize several strains of the virus.”

The HIV vaccine tested at UMMS attempts to overcome the virus’ ability to mutate by incorporating DNA elements from multiple strains of HIV collected directly from infected people living in five locations worldwide. The approach uses elements of HIV’s DNA that code for the envelope protein (Env), which forms the outer coat of the virus. The vaccine’s DNA elements enter the subjects’ cells and express Env antigens, which make

the body think those cells are infected with the AIDS virus. The subjects then receive doses of viral proteins that are designed to enhance the host’s immune response to the Env antigens.

“I am very encouraged by these results. It is proof-of-principle data that the concept of a DNA prime and protein boost approach can induce strong antibody responses,” said Shan Lu, MD, PhD, associate professor of medicine and head of the HIV vaccine development efforts at UMMS. “We must now continue our work to analyze the data from this trial and to plan our next steps to refine and improve this HIV vaccine’s formulation.” 



Four years ago, UMass Medical School began a series of complex construction and renovation initiatives that have changed the face of the Lake Avenue campus. In the fall of 2005, signage of special significance was applied to the interior wall of the new Medical School entrance and lobby, spelling out the names of each of the three schools comprising UMMS and beginning a new chapter in the story of a 21st century health sciences campus—beautifully apparent to all who teach, study, work and visit here.

Vitae: Year in Review

Recognizing UMass Medical School Service and Expertise



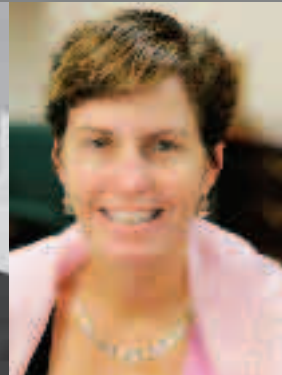
Peter Schneider, MD



Matilde Castiel, MD



George Abraham, MD, MPH



Donna Ambrosino, MD

For the third time in four years, UMass Medical School faculty were honored by the Worcester District Medical Society (WDMS) with its top awards. The A. Jane Fitzpatrick Community Service Award was presented to Assistant Professor of Medicine **George Abraham, MD, MPH**, for his long-time volunteer work. Instructor of Medicine **Matilde Castiel, MD**, received the Career Achievement Award for delivering care through the UMass Memorial Elderly Outreach Program. And, Professor of Medicine **Peter B. Schneider, MD**, was recipient of the President's Award for his development of a database of WDMS Annual Orations dating back to 1795.

Donna Ambrosino, MD, director of the Massachusetts Biologic Laboratories and professor of pediatrics, was named one of 10 state employees to receive the Manuel Carballo Governor's Award for Excellence in Public Service. Dr. Ambrosino was recognized for her role in the growth and success of the MBL, the only publicly owned, non-profit FDA-licensed manufacturer of vaccines and other biologic products in the United States.

Kenneth L. Appelbaum, MD, professor of clinical psychiatry, received a

University of Massachusetts President's Public Service Award for the "unparalleled mix of integrity, intelligence, commitment and compassion he exhibits" in his role as director of mental health services for the UMMS Correctional Health Program, which administers care to incarcerated men and women through the Massachusetts Department of Correction.

Professor of Medicine **Jeffrey D. Bernhard, MD**, was elected a fellow of the Royal College of Physicians of Edinburgh, one of the foremost international providers of medical education and information. The Royal College administers the Member of the Royal College of Physicians examination, the nationally (UK) and internationally recognized standard of excellence allowing practice as a specialist.

The Fellows of the American Academy of Nurse Practitioners selected Graduate School of Nursing Instructor **Alice Bonner, MS, APRN, BC**, to join their ranks in 2005 because of her outstanding contributions to health care through clinical practice, research, education and health policy.

Alan P. Brown, MD, interim chair of the Department of Psychiatry and clinical associate professor, was named

an "Outstanding Psychiatrist of the Year" by the Massachusetts Psychiatric Society. Dr. Brown explores the issues of informed consent in mental health care, alcohol problems in patients with psychiatric disorders and the value of hospital-based treatment for the homeless who are mentally ill.

The National Committee for Quality Assurance and the American Diabetes Association honored **Lucy M. Candib, MD**, professor of family medicine & community health, for her program of medical care, patient education, group support, nutrition and exercise for diabetic patients at the Family Health Center of Worcester. Dr. Candib has taught and practiced family medicine at the center for over 25 years.

Lois B. Green, MPA, instructor in family medicine & community health, and **Shirley S. Siff, EdD**, affiliate in psychiatry, were recipients of a YWCA of Central Massachusetts Katharine F. Erskine Award in two of the four categories of accomplishment—Green for achievement in Community/Social Services & Government and Dr. Siff for excellence in Medicine and Science.

The Isaac Ray Award—the highest honor of the American Psychiatric Association—was presented to



Kenneth Appelbaum, MD



Jeffrey Bernhard, MD



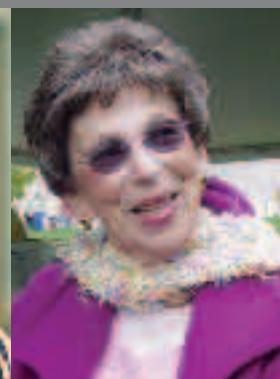
Alice Bonner, MS, APRN, BC



Alan Brown, MD



Lucy Candib, MD



Lois Green, MPA

Thomas Grisso, PhD, professor of psychiatry and coordinator of the Law & Psychiatry Program, for his “outstanding contributions to forensic psychiatry and the psychiatric aspects of jurisprudence.”

The American Academy of Microbiology elected **Martin G. Marinus**, PhD, professor of biochemistry & molecular pharmacology, a fellow in 2005. The Academy is the honorific leadership group within the American Society for Microbiology, the world's oldest life science organization.

Craig C. Mello, PhD, an Investigator of the Howard Hughes Medical Institute and the Blais University Chair in Molecular Medicine, was awarded several prestigious honors in 2005 for his research, including election to the National Academy of Sciences, one of

the highest honors accorded a U.S. scientist or engineer. In October Dr. Mello received the Massry Prize for his pivotal role as the co-discoverer of RNA interference (RNAi), the powerful research tool for understanding and controlling the activity of genes. Dr. Mello's colleague in the RNAi breakthrough, Andrew Z. Fire, PhD, also received the honor as did David C. Baulcombe, PhD, who contributed to the discovery through his research of plants. Mello also shared with Dr. Fire the Lewis S. Rosenstiel Award for Distinguished Work in Medical Research from Brandeis University and the Gairdner International Award of the Canadian Institutes of Health Research.

Assistant Professor of Molecular Medicine **Lambertus van den Berg**,

PhD, was named a Pew Scholar in Biomedical Sciences, one of 15 scholars chosen from a national pool of candidates. The program provides crucial support to investigators in the early-to mid-stages of their careers who show outstanding promise in the basic and clinical sciences.

H. Brownell Wheeler, MD, the Harry M. Haidak Professor of Surgery *Emeritus*, was awarded the 2005 Lifetime Achievement Award by the Massachusetts Medical Society. The award recognized Dr. Wheeler as a “compassionate and dedicated physician who inspires all with his wisdom, grace, wit, and personal and professional integrity.”



Shirley Siff, EdD



Thomas Grisso, PhD



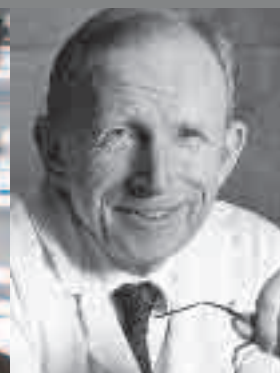
Martin Marinus, PhD



Craig Mello, PhD



Lambertus van den Berg, PhD



H. Brownell Wheeler, MD


LaChance Endowment Announced at Investiture Ceremony

The exemplary achievements

of faculty and the generosity of the benefactors who support their efforts were celebrated at the sixth annual Investiture ceremony in June. In addition to the investment of Professor of Medicine Azra Raza, MD, as the Gladys Smith Martin Chair in Oncology, Professor of Pediatrics Peter E. Newburger, MD, as the Ali and John Pierce Chair in Pediatric Hematology/Oncology and Professor of Family Medicine & Community Health Linda F. Weinreb, MD, as the first incumbent of the Joy McCann Professorship for Women in Medicine, Gardner residents Leo and Teresa LaChance announced

their commitment to endow the Leo P. and Teresa M. LaChance Chair in Mental Retardation and Behavioral Health.

The LaChance Chair will be held by a member of the UMMS Department of Psychiatry and will support research into the causes and treatment of mental retardation. Leo and Teresa LaChance were impressed with the reputation of the Medical School's programs in this area, including those undertaken at its Eunice Kennedy Shriver Center in Waltham. In 2005, the Shriver

Center, an international presence in the field of developmental disabilities and one of the first Mental Retardation and Developmental Disabilities Research Centers (MRDDRC) in the country, received a four-year, \$4 million program project grant from the National Institute of Child Health and Human Development to support a reconfigured MRDDRC. 



Teresa and Leo LaChance (seated) are joined by Shriver Center Director William McIlvane at the Investiture ceremony. The LaChances are supporting the UMMS Department of Psychiatry's research efforts in neurodevelopmental disabilities and behavioral disorders.



The Aaron Lazare Medical Research Building and the main Medical School building basked in a hot pink glow on September 30 as part of Estée Lauder Companies' Global Landmarks Illumination Initiative. The UMMS Pink Illumination attracted 300 guests of the UMass Memorial Foundation, who joined researchers, clinicians and representatives from The Estée Lauder Companies to increase awareness of the efforts to cure breast cancer. The \$18,000 raised from votive candles sold at the event will benefit breast cancer research at UMass Memorial Cancer Center and patient care at UMass Memorial Medical Center.



A record 10,000 individuals "walked for a cure" on September 25 and raised over \$800,000 to support cancer research at UMass Medical School. The Walk to Cure Cancer is the largest single-day fund-raising event held in Central Massachusetts; \$2.7 million has been raised since 1999. The 2006 event will take place Sunday, September 10. Visit www.walktocurecancer.com for information.

Vitae:

Although we are often proud to describe our groundbreaking accomplishments in the realms of research and public service, we focus in this annual report on the core component of UMass Medical School's mission—*education*. The training of physicians, advanced practice nurses, researchers and educators is at the heart of all that we are and all that we do. And, in 2005, we witnessed much innovation and achievement in this area.

MESSAGE FROM THE CHANCELLOR/DEAN

I was pleased to join over one hundred School of Medicine faculty, students, residents and administrators who gathered at an educational retreat to review the undergraduate medical curriculum and the integration of the Six Competencies for Medical Education, introduced in 2003. The enthusiasm and creativity of all participants was fully evident as first steps were taken in the process that will weave the competencies of “Physician as Scientist, Communicator, Advocate, Professional, Clinical Problem Solver and Person” into the curriculum.

This year's incorporation of cutting-edge simulation technology, which provides a diverse array of electronic patient mannequins specifically designed to support clinical skills training, will prove to be another exciting initiative for the School of Medicine. For faculty, simulation provides an interactive, reproducible and realistic model for teaching clinical skills and patient care beyond the bedside, in the classroom setting. For students, it offers a unique opportunity to learn actively and interactively through hands-on experience and will complement our existing expertise in the doctor–patient relationship.

The Graduate School of Biomedical Sciences also expanded its vision of the outstanding graduate student experience by performing its own comprehensive reevaluation of its core curriculum this year. This process encompassed surveying students, faculty and outside experts to confirm that GSBS educational goals, scope and delivery are consistent with the skills necessary for success in biomedical research; it also reviewed GSBS faculty in the areas of research and scholarly activity and addressed the knowledge and experience necessary for incoming students and faculty to meet the challenges of biomedical research and extend its impact on society.

The Graduate School of Nursing celebrated 20 years of fruitful collaborations, ongoing achievement and growing alumni ranks



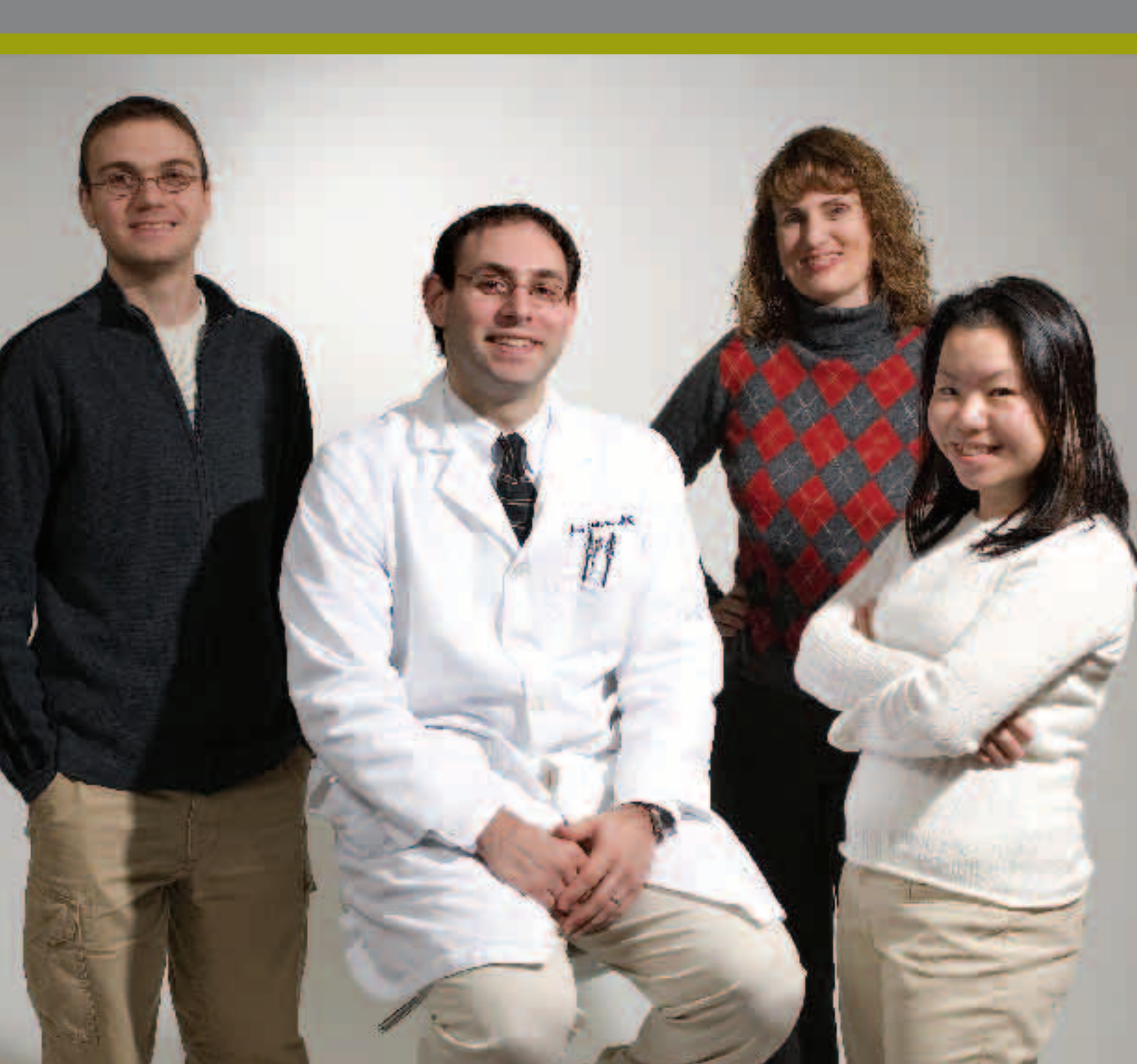
in 2005. The first class of the GSN's innovative response to the nursing shortage—the Graduate Entry Pathway—took part in a memorable pinning ceremony. And, all of the Community Medicine Clerkships offered through the School of Medicine were opened to GSN students, enriching the educational experience by emphasizing interdisciplinary learning among the medical and nursing students.

Finally, the Office of Graduate Medical Education (GME), which manages the entire resident physician training process, as well as ensures the annual licensure and credentialing for approximately 520 residents and fellows, experienced a banner year. The GME not only retooled its own curriculum to address the six defined areas of competence our trainees are expected to achieve, but also completed an Accreditation Council for Graduate Medical Education site visit and was awarded full accreditation for five years—the longest cycle length possible. GME also implemented a one-year, post-doctoral dental residency program that allows dental school graduates to further develop their clinical skills and patient management techniques while providing a vital service to the Worcester community.

As you turn the next several pages, you will see these educational successes demonstrated by four outstanding and unique individuals. They are, at once, contributing to and benefiting from the excellence of the institution, and their lives are as extraordinary and diverse as this published diary of their days at UMMS.

A handwritten signature in dark ink that reads "Aaron Lazare".

Aaron Lazare, MD



In the Moments

A photo essay illuminating the lives of four students who find their time at UMass Medical School engaging, challenging—and never boring.



Jordan Eisenstock, MD, a UMass Medical School graduate in his fourth year of residency training, began formulating his career plans as a high school athlete hospitalized with a life-threatening blood clot. “At that uncertain time in my life, the rhetoric of ‘helping people’ became real,” he recalls. UMMS was his first choice for medical school after graduating from Georgetown University. Interested in both mental and physical health, Dr. Eisenstock chose the rigorous, six-year combined neuropsychiatry residency, a joint undertaking of the departments of Psychiatry and Neurology. He hopes to remain at UMMS to practice and teach this rapidly developing subspecialty at the juncture of two fields that deal with a single organ, the brain. A Worcester native, Eisenstock shares the hectic but rewarding life of a physician-in-training with his wife, also a UMMS graduate and a hospitalist, and their infant daughter, along with a supportive network of family and friends. His “typical” day begins on page 14. - *Sandra L. Gray*

Sandra Leiby, RN, BSN, also experienced a hospitalization that profoundly shaped her idea of “care giving.” As she was tended to around the clock, she realized that she had discovered her life’s vocation—nursing. Despite some reservations, given she was 20 years out of school, Leiby applied to Massachusetts Bay Community College and received her RN and associate’s degree in 2001. Shortly before her graduation, however, another experience informed her decision to extend her education. Leiby traveled to Cambodia as a volunteer nurse for HOPE *world-wide* to help establish a health clinic and training program, and realized that she could make an even greater impact teaching others to be caregivers in a nursing world stymied by staff shortages.

Thus began her next educational journey—obtaining her master’s degree as a nurse educator. Leiby is today preparing to leave the Graduate School of Nursing with her subspecialty training in this critical field. See how she’s wrapping up her experience on pages 16–17. - *Lynn C. Borella*



After receiving his undergraduate degree in microbiology with a minor in biochemistry and molecular biology at Penn State, Destin Heilman came to the Graduate School of Biomedical Sciences initially interested in immunology but landed instead in the laboratory of Howard Hughes Medical Institute Investigator Michael R. Green, MD, PhD. Now nearing the end of his studies in the Interdisciplinary Graduate Program in Gene Function and Expression, Heilman can be found until late in the evening methodically shepherding a research experiment begun earlier in the day. He is also finalizing a journal submission and preparing to defend his dissertation, the culmination of five years of lab and course work. While nearly a third of GSBS graduates go into academic research, Heilman plans to teach at the undergraduate level; his 2004 Dean’s Award for Excellence in Student Mentorship illustrates his affinity for connecting with students. Pages 18–19 reveal how Destin is working toward his goal. - *Alison M. Duffy*

Trinh Tran has known since junior high school that she wanted to become a doctor, even though the desire remained deep-seated for a time. She was inspired by a physician whose compassion and skill helped her family cope during a medical crisis. Tran majored in biology at UMass Amherst and after graduating worked in a lab and published five journal articles to strengthen her medical school application. But then she seized an irresistible opportunity to start up a high-tech business and after two years, she and her partners were thrilled with their entrepreneurial success. Still, Tran felt the tug of a career in medicine. Building a small business had taught her that she was capable of accomplishing anything if she was committed enough. Tran decided that medical school was the dream she *had* to pursue. When she graduates from UMMS, she will become the first doctor in her family, surpassing her achievement of being the first in her family to attend college. Her moments here are captured on pages 20–21. - *Ellie Castano*





Jordan Eisenstock, MD, fourth-year neuropsychiatry resident

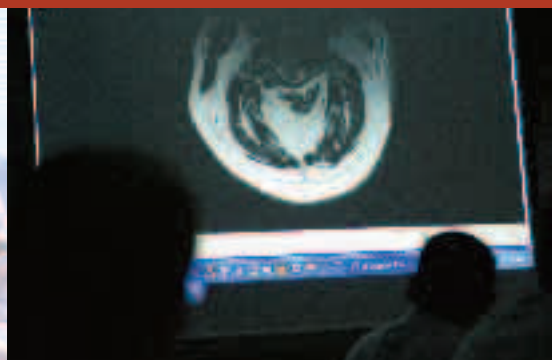
The UMMS combined six-year neuropsychiatry residency is one of only eight nationwide; Dr. Eisenstock is now in the first year of the two-year neurology component. Even a single specialty residency is a multi-tasking enterprise: At left, Eisenstock answers pages between teaching a class of medical students, attending Grand Rounds and seeing patients.



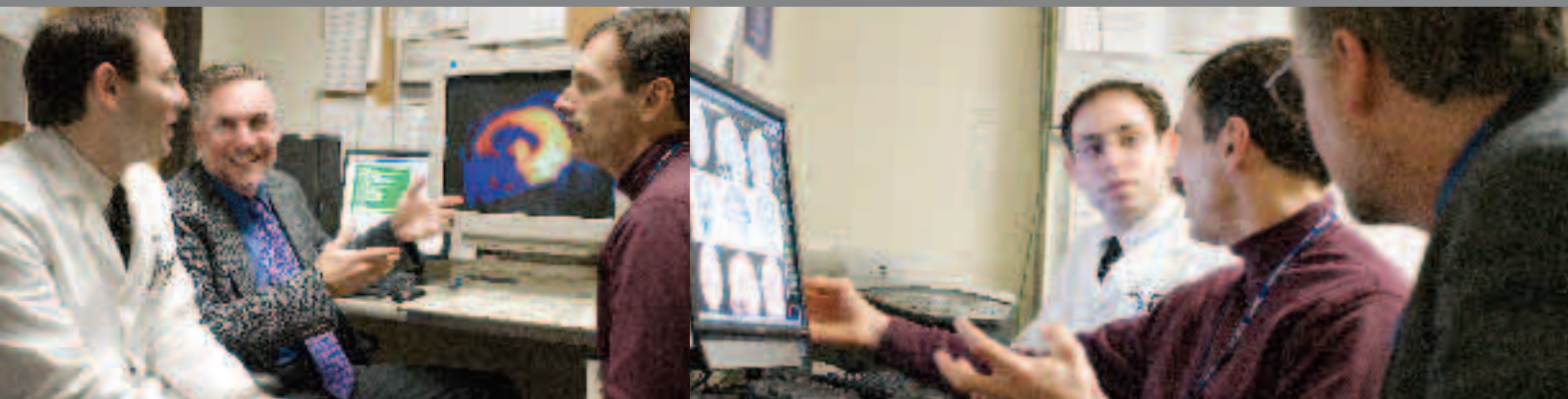
Fellow residents join Eisenstock for Neurology Grand Rounds, led by Professor David Drachman, MD (left).



Eisenstock presents a challenging case he covered while on-call in the ED at UMass Memorial.



The group views and discusses this patient's MRI to determine possible nerve damage.



Advances in brain imaging technology have made diagnosis and treatment in neuropsychiatry extremely accurate; Eisenstock will evaluate such images in his sixth residency year. Now during his neuroradiology elective, he views both SPECT and PET-CT scans of one patient with mentor Sheldon Benjamin, MD, professor of psychiatry and neurology and a pioneer in neuropsychiatry curriculum development (center in photo at left), and Robert Licho, MD, associate professor of radiology. The definitive diagnosis for this patient: frontotemporal dementia rather than Alzheimer's disease as was originally suspected.



Eisenstock conducts a routine follow-up exam in the Neurology Outpatient Clinic. The 29-year-old man above could be considered a classic neuropsychiatry patient, suffering from various neurological deficits and behavioral abnormalities resulting from traumatic brain injury sustained in a car crash.



After the exam, Eisenstock reviews his findings with attending physician William Schwartz, MD, professor of neurology, who asks the question residents perhaps hear most frequently: "What's your decision and why?"



Then, Dr. Drachman shows a tissue technique to measure reaction to stimulation in this type of case.



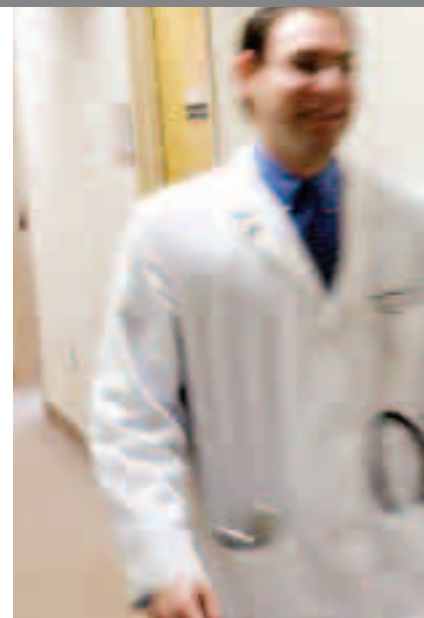
Eisenstock observes as Drachman uses the technique while examining the patient.



The teaching session concludes in the hospital corridor as the residents are asked about next steps.



Whatever the activity,
information flows two
ways during residency.
"Teaching is as much
a part of being a
resident as is learning,"
says Eisenstock.





Sandra Leiby, RN, BSN, Graduate School of Nursing student

In a presentation to classmates (left), Leiby describes her experience as a nurse volunteer following Hurricane Katrina. Although she visited the Gulf weeks after the storm, she told her fellow nurses that she was struck by the devastation and emphasized how critical nurses were to the relief effort.



Leiby at her clinical rotation at the Harvard Vanguard Clinic in Wellesley.



She may examine patients with minor ailments or in need of their annual exam.



With Lynne Markinac, MS, RN, ANP, a GSN instructor/practitioner.



Markinac's guidance—based on 23 years of nursing—are invaluable to Leiby.





In the hospital setting (above), Leiby taps her developing skills as a teacher; she stands amidst her latest group of Massachusetts Bay Community College nursing students, whom she mentors at Milford Regional Medical Center, a major teaching affiliate of UMass Medical School and where Leiby works as a per diem cardiac nurse. This is the last school-required clinical rotation for the group before graduation. Leiby finds the teaching experience gratifying, given her ultimate aspirations. “Instructing other health care professionals as a nurse educator has a great impact on the overall health care system.” During a 12-hour shift with her students (below, left to right), Leiby explains what “blips” might indicate trouble for a cardiac patient on the floor monitors. She also helps students decipher doctors’ orders, prepare injections and complete paperwork. During a lunch break, teacher and students discuss how their day is progressing.



At right, Leiby confers
with resident Bradley
Switzer, MD—nurses
partnering with
physicians ensures
the best care.





Destin Heilman, Graduate School of Biomedical Sciences student

Heilman begins a day-long experiment to identify the cellular pathways through which a particular protein found in chicken anemia virus can target and kill cancer cells. He separates proteins into gels and identifies them using different antibodies, a lengthy process that requires repetition, steady hands and patience.



Heilman carefully injects proteins into wells created in a gel.



“One slip and you can puncture the gel with the pipette and ruin it,” he says.



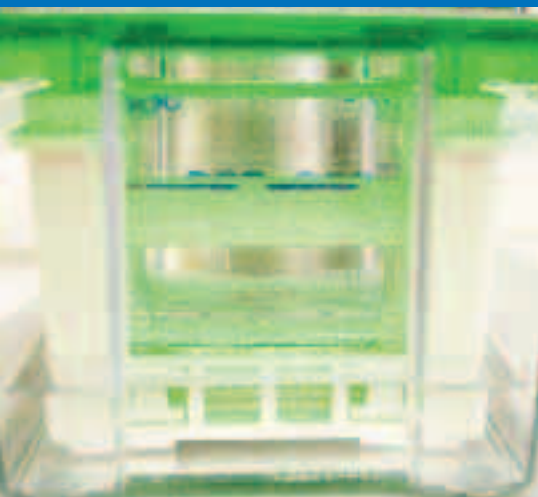
Heilman jokes that he prefers to handle gels in the morning before he's shaky from too much coffee.



Heilman refers to his green protocol book (left), full of lab “recipes” that have evolved over the years through trial and error, to give him clean, reliable results.



Clockwise from top, Heilman finds he can best avoid error by following the same steps in the same order each time he “runs a gel.” In the tissue culture room, he monitors a flask full of cancer cells. “They’re easy to culture: they just never stop growing.” Later, he and Dr. Michael Green, the Lambi and Sarah Adams Chair in Genetic Research, review figures to include in a revised draft submission to the *Journal of Virology*.

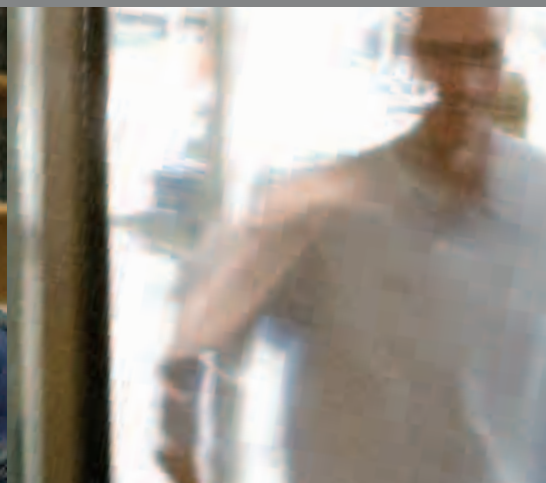


Proteins are drawn through the gel matrix by electrolysis, and he removes the gel sheet carefully.



Heilman switches gears and compiles films of blots that support his research dissertation.

HHMI Research Specialist Julie Zhu (below left) uses fluorescent microscopy to help Heilman create a triple-color label of proteins detected by different antibodies for his journal submission. Below right, Heilman and colleagues review current lab work, suggest solutions and report small successes at a weekly meeting.





Trinh Tran, second-year medical student

“The program offered me the chance to show that I could survive medical school and that this is where I belong,” says Tran, referring to the UMMS Post-Baccalaureate Program that prepares promising or under-represented applicants for enrollment in graduate study.



Beyond books: Tran and classmates prepare treats for Arts Night II to benefit hurricane rebuilding programs.



Tran labels one of the 100-plus pieces of art donated by faculty, students and staff.



Once the event is under way, Tran takes a minute to chat with guests. Both Arts Nights raised \$5,000.



David Hatem, MD (right), associate professor of medicine, leads Tran and her classmates through a critique of a fellow student's communication with a standardized patient. In this Small Group section of Physician, Patient and Society II, pre-clinical students develop communication skills in preparation for clinical training and future practice. Tran and her classmates also count on each other outside of class, in this case (left) as study partners preparing for exams in a marathon session that mixes drills and mnemonics with food and caffeine.



The foundation course Microbiology (above) covers a lot of science—everything from the biology of bacteria to the strategies of pathogens—and stretches across a year and half. To keep it dynamic and engaging and to ensure that each topic gets its due, a team of lecturers illuminate their individual areas of expertise. Tran listens closely to Richard Glew, MD, professor of medicine and molecular genetics & microbiology, as he reviews for the pathogenic organisms exam. As counterpoint to class time, Tran, like all first- and second-year students, has a preceptor—a physician whom she shadows in the clinic and under whose supervision she can practice her new skills.

Students worked hard to promote the event; Tran is interviewed for “Worcester News Tonight.”



Where do they go from here?



The old joke about graduate students continuing their studies in order to put off getting a real job doesn't apply to UMass Worcester grads: Their education and skills are in high demand, providing them numerous and varied career and educational choices.

Medical student Trinh Tran will proceed to further years of study as a resident, characterized by hands-on learning during employment as a physician. To get there, Tran should expect to gather in March 2008 with her classmates for Match Day, as they and graduating medical students nationwide will simultaneously discover where they'll begin their residency training according to a computer match coordinated by the National Residency Matching Program in Washington, D.C. Though she still has plenty of time to decide, Tran is already considering residency in obstetrics and gynecology or cardiology. Consistent with the UMMS emphasis on training primary care physicians, two-thirds of 2005 graduates chose primary care residencies such as family practice, internal medicine, pediatrics, OB-GYN and emergency medicine, with one-half remaining in Massachusetts—a third of whom matched with UMMS or one of its teaching affiliates. Other specialties popular with UMMS grads in recent years have included psychiatry, anesthesiology and surgery.

Dr. Jordan Eisenstock and others completing their residencies must consider where and what type of practice

to enter—private or group, hospital- or community-based, at a large urban teaching center or rural community hospital; whether to pursue an academic as well as clinical career; whether or not to focus on research. Eisenstock's future goals are well-defined: He hopes to stay right where he is, practicing and teaching neuropsychiatry as a hospital-based physician at UMass Memorial Medical Center with a faculty appointment at the Medical School. While his six-year combined specialty residency already incorporates a fellowship year, others completing residencies will choose to continue their specialty training with post-doctoral fellowships at UMMS and elsewhere. With 526 residents and fellows enrolled in 43 graduate medical education programs that have earned the highest approval rating from their accrediting body, the sought-after residencies and fellowships at UMMS include psychiatry, cardiology, emergency medicine and the combined medicine/pediatrics residency.

The Graduate School of Nursing's Sandra Leiby has already decided to put her master's to much-needed use as a nurse educator. Other GSN graduates will pursue opportunities in clinical care as nurse practitioners, choosing from virtually unlimited opportunities wherever health care is delivered, from hospitals to community clinics to long-term care facilities and nursing homes; many will choose to provide home-based care, especially in the burgeoning geriatrics specialty. Academia, government and private industry also beckon as

nursing knowledge is applied to health care research and policy development to improve patient care. GSN master's and doctoral alumni will assume roles as future deans, and directors of nursing programs, nurse scientists, faculty, advanced practice nurses and chief nursing executives. Many will find these opportunities in Massachusetts, which, like the rest of the nation, is experiencing a severe nursing workforce shortage.

Pathways to scientific discoveries for the students of the Graduate School of Biomedical Sciences are likewise vast and varied. Upon earning their PhDs many, like Destin Heilman, will have already published in leading peer-reviewed scientific journals; conducted NIH-funded research in state-of-the-art laboratories; and collaborated with mentoring faculty who are leaders in their fields. For Heilman, the next step is teaching at the undergraduate level in academia. For his classmates with training in such areas as neuroscience, genetics, cancer biology, chemical biology and bioinformatics, career paths will include research in leading-edge laboratories in academia, government and private industry. GSBS graduates may also initiate careers as educators in schools of the health professions or in the biotechnology industry. And in a time when scientists must be responsive to public interests, opportunities for biomedical PhDs to apply their expertise to public policy research and decision-making in related arenas are expanding. ●

Vitae: Nota Bene

Timeline 2005—News Briefs from UMMS and UMass Memorial Health Care



January

Community Health Connections Family Health Center of Fitchburg, a long-standing UMass Medical School education site and federally qualified community health center, establishes a satellite health center in downtown Gardner. Funded by a \$2 million, three-year grant from the federal Department of Health & Human Services Health Resources and Services Administration, the new center offers medical, dental and mental health care to approximately 14,500 underinsured or uninsured residents of Gardner, Winchendon and Templeton.

February

Ushering in a new era of cardiac care in the region, electrophysiologists at UMass Memorial Medical Center are among the first in the nation to begin implanting in patients the new FDA approved InSync Sentry™ cardiac resynchronization therapy defibrillator system; this device automatically monitors fluid levels in the thoracic cavity, a primary indicator of worsening heart failure that often results in patient hospitalization.



March

The annual Frontiers in Science Conference introduces over 120 middle and high school science teachers from across the state to laboratory techniques in molecular biology and current research projects in the basic sciences at UMass Medical School. In collaboration with the Massachusetts Area Health Education Centers, this UMMS Office of Science Education program stimulates innovative science curricula in the Commonwealth's schools.

April

The Educational Recognition Awards celebrate the excellence of the three schools that comprise UMMS. Each school has unique reasons to celebrate in 2005—the School of Medicine's fourth-place ranking in primary care education among the nation's medical schools in *U.S. News & World Report*; the Graduate School of Nursing's resounding success with its innovative Graduate Entry Pathway for non-traditional nursing students; and the Graduate School of Biomedical Sciences' 25th anniversary, marked by dramatic enrollment growth and scientific advancement.





May

One-fifth of the School of Medicine Class of 2005 participate in the Senior Scholars Program, which addresses the critical shortage of physician-scientists by exposing medical students to clinical, epidemiologic or basic science research in order to enhance the quality and quantity of patient-oriented studies. The students devote several months of their fourth year pursuing a challenging research project—from an analysis of a Paleolithic-age diet and its appropriateness for modern humans to a study of the association between emotional and physical health following knee replacement surgery. Senior Scholars have presented their work at national and international meetings and have published in respected journals—a testament to the research quality.

June

UMass Memorial Health Care introduces a ground-breaking program for Central Massachusetts that offers free, partial or discounted care, when medically necessary, to all uninsured residents within stated income guidelines. UMass Memorial is the largest provider of care to the uninsured outside of Greater Boston. The program helps “wrap-around” the state’s Uncompensated Care Pool by targeting certain services and populations not currently covered by the pool.



July

To spark revitalization of a neighborhood and help local employees buy homes near their jobs, UMass Memorial Health Care and the City of Worcester team with the state to create an employer-assisted homeownership program aimed at the Bell Hill-East Side neighborhood. The program will provide more than \$1 million in private and public support to boost homeownership levels in areas in and around what’s known as Bell Hill. Currently, less than two in 10 residents in this area own their home compared to more than four in 10 citywide.

August

Sixteen high-school students from public and private schools in Boston, Brockton, Clinton, Dorchester, Fitchburg, Holyoke, Leominster, Medford, Reading, Shrewsbury and Worcester are recognized with a Certificate of Achievement for their academic accomplishments at the Closing Ceremony of UMass Medical School’s High School Health Careers Program. Held each summer, the tuition-free program administered by the Office of Outreach Programs provides under-represented students unique opportunities to learn about the broad spectrum of health careers available to them.





September

For the first time in Massachusetts, local photographers volunteer their time to create the Heart Gallery at UMass Medical School, a striking collection of photographs of some of the state's foster care children that is intended to raise awareness about adoption. Made possible by the Massachusetts Adoption Resource Exchange, in partnership with UMMS, the Center for Adoption Research and a number of arts, education and community advocacy groups, the Heart Gallery features foster care children of all ages; currently, more than 600 of these children wait for a family to call their own.

October

UMass Memorial Health Care officials and community leaders kick-off a fund-raising campaign to support a new \$6.5 million, 19,000-square-foot building to provide additional clinic space for the Barre Family Health Center, a vital community outpatient practice and training site for UMMS students and residents. This major project, to be undertaken in 2006, will allow the center's staff to provide the highest quality comprehensive health care close to home for residents of the Central Quabbin region.



November

Graduate School of Biomedical Sciences students resurrect BAGGS, a symposium that serves as a vital opportunity for students to network with one another and learn about premiere student research initiatives taking place on campuses throughout the region. The entirely student-run Boston Area Graduate Student Symposium in Biomedical Sciences had been defunct since 2000. GSBS students gain corporate sponsorship and expand the scope of the symposium in 2005. It showcases top student researchers with diverse interests from eight different universities throughout Massachusetts and Rhode Island and brings over 200 participants to UMMS. A keynote address is delivered by John Carlson, PhD, of Yale University, a renowned leader in neurobiology research.

December

UMass Memorial Medical Center is awarded the Betsy Lehman Patient Safety Recognition Award for its focus on reducing errors related to medications. The Medication Reconciliation Initiative ensures that upon a patient's admission to, transfer within and discharge from the Medical Center, all caregivers are made aware of any prescription and over-the-counter medicines, as well as herbal and other alternative medications, taken by the patient prior to admission. Since developing the initiative, UMass Memorial has shared it with hospitals across the country; subsequently, medication reconciliation was adopted as a National Patient Safety Goal of the Joint Commission on Accreditation of Healthcare Organizations and the Institute for Healthcare Improvement's "100,000 Lives" campaign.



2005 Facts & Figures for UMMS

FY '05 Funding and Revenue

State appropriation	\$37.9 million
State contracts*	\$28.5 million
Public Service	\$400.0 million
Research (sponsored activity)	\$166.2 million
Sales and services**	\$97.8 million
Other revenue	\$39.4 million
Total	\$769.8 million

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

**Examples include Continuing Education, Massachusetts Biologic Laboratories and New England Newborn Screening Program.

Total Research Funding – Fiscal Year Ending:

June 30, 2001	\$123,632,685
June 30, 2002	\$134,373,326
June 30, 2003	\$151,288,571
June 30, 2004	\$167,200,007
June 30, 2005	\$174,181,453

Education

<i>Number of Faculty (including voluntary)</i>	2,488
Basic science full- and part-time faculty	323
Clinical full- and part-time faculty	2,165

School of Medicine

MD students	399
MD/PhD students	13
Alumni	2,649
Residents and Fellows	526

Graduate School of Biomedical Sciences

PhD students	333
MD/PhD Students	21
Students in Biomedical Engineering w/WPI	9
Clinical & Population Health Research students	5
Alumni	278

Graduate School of Nursing

MS students	64
Graduate Entry Pathway students	82
Post-master's students	5
PhD students	24
Alumni	601

Continuing Medical Education Certificates	34,500
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Allied Health Program students	1,411
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Technology Management

For Fiscal Year:	2001	2002	2003	2004	2005
Invention Disclosures	49	48	139	112	66
U.S. Patent Applications	50	44	92	151	93
Licensing Agreements	15	17	32	9	28
Sponsored Research Agreements	\$2,450	\$442	\$3,760	\$3,019	\$993
Licensing Revenue	\$11,678	\$14,516	\$19,161	\$26,212	\$27,694

(\$ in thousands)

Teaching Affiliates

UMass Memorial Health Care, Teaching Partner

UMass Memorial Medical Center
(Hahnemann, Memorial and University campuses)

Member Hospitals

UMass Memorial—Clinton Hospital
UMass Memorial—HealthAlliance Hospitals
(Fitchburg and Leominster campuses)
UMass Memorial—Marlborough Hospital
UMass Memorial—Wing Memorial Hospital and Medical Centers

Member Health Centers

Barre Family Health Center
Hahnemann Family Health Center
South County Pediatrics
Tri-River Family Health Center

Major Teaching Hospital Affiliates

Berkshire Medical Center
Caritas St. Elizabeth's Medical Center
Milford Regional Medical Center
Saint Vincent Hospital

Other Teaching Hospital Affiliates

Day Kimball Hospital
Harrington Memorial Hospital
Heywood Hospital
Holyoke Hospital
Hubbard Regional Hospital
Noble Hospital
Westborough State Hospital
Worcester State Hospital

Other Health Centers

Community Health Connections/Fitchburg
Community HealthLink
Fallon Clinic
Family Health Center of Worcester
Great Brook Valley Health Center
Greater Lawrence Family Health Center
Holyoke Health Center
Metrowest Medical Center

Volunteer Private Practices Across the Commonwealth

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Vitae: The Last Word

By Tanya Shah, School of Medicine Class of 2005

Enroll in medical school—see the world! UMass Medical School gives its students the chance to do so, with health service projects that touch almost every corner of the globe. It helps to really love to travel, and Tanya Shah really does. She's recently wrapped up trips to hospitals throughout the country to determine where she might start her residency in emergency medicine (she graduates in June, but is officially a member of the Class of 2005; she extended her education to take advantage of more international clinical rotations and service opportunities). But over the past five years, she's logged many a mile to Central America, India, Brazil and most recently, to the Gulf Coast. A guidebook of her comings and goings could be illustrated with: the mountainous Himachal Pradesh region of India, where Tanya joined a United Nations vaccination team; the Amazon, where she and a Brazilian research group investigated the relationship between construction of hydroelectric plants and malaria infection rates; and the Garifuna villages of Honduras, where Tanya responded to the immediate health care crisis resulting from damaging hurricanes and where UMMS medical relief assistance continues.

Fluent in Spanish and Gujarati (the language of Mahatma Ghandi) and conversational in Portuguese, Tanya's internal voice is telling her that she'll soon be traveling a crowded road—characterized by long residency hours, and beyond that, establishment of a practice and perhaps a family. She wonders if she will still be able to find time to serve—an ambition developed to polished form at UMass Medical School.



Tanya Shah has plans for the future—but what will it bring?

As I look toward residency, I see my time allotment for civic responsibility starting to shrink. And in 20 years, will I be able to write an alumni “Class Note” that reports I’ve just returned from some obscure location? I do hope so, because I would hate to lose the joy of service abroad I came to cherish while a student.


It can be done, and I have several role models in UMMS faculty. They have been able to balance practice, family and service successfully. But I think female physicians face more of a challenge to juggle, and so I’m examining each residency program to determine if it could facilitate my three-pronged plan.

The residency interviewing process brings all my service experiences to the

forefront, and therefore, continues to keep them in focus for me. I recall my summer between first and second year, when in Honduras, I saw my first patient die. I couldn’t believe I was unable to help him. He died of pneumonia, and the treatment leading up to his death included his sons’ use of a bicycle pump to keep his airways open. The sound of that pump still lingers in my memory four years later.

Then there was my time in the Gulf Coast just last year. I was a volunteer for the Red Cross and my duties included helping Katrina evacuees look through medication books and point out the pills they had been taking but were forced to leave behind. When I wasn’t doing that, I was cooking meals for the masses or supervising kids while their parents attended informational workshops on rebuilding their lives. For the first time, it struck me that all the work that needs to be done in public health doesn’t necessarily need to be done in the “developing” world. The tsunami forced its victims to need food, shelter and water, too, but their expectations for a certain level of relief were lower. Katrina victims expected more, but even in the best of conditions, their expectations could never be met.

Both these trips, and the many others I took, reinforced for me that health care only becomes real when it becomes sustainable. “Global tourism” medicine, a new trend that allows physicians a combination vacation and service opportunity, is admirable, but in the long-term, doesn’t necessarily bring change. Real change comes from developing projects that will continue to succeed based on partnerships with local people. It’s health care that will go on without you. For example, one UMMS faculty member facilitated a partnership with a Western Massachusetts town that pays to ship medical equipment overseas. Next, a team will follow up to train local health care givers in using the equipment properly and independently. That’s knowledge transfer at its best.

If I manage to include service in my life—as I’m determined to do—I see it in the form of small agency work where efficiency is a priority and the establishment of sustainable systems of care is the driving force. In emergency care, which I love for its acuity and variety, I see being deployed to bring relief, organize equipment and teams and then set up programs where the local health care system learns how to respond next time. 

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