fall/winter 2002 vol. 25 no. 1

INSIDE:

Vitae:

The Magazine of the University of Massachusetts Medical School

Vitae: L., the plural of life

The name of this magazine encompasses the lives of those who make up the UMMS 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.

The University of Massachusetts Medical School

SCHOOL OF MEDICINE, opened in 1970
GRADUATE SCHOOL OF BIOMEDICAL SCIENCES, opened in 1979
GRADUATE SCHOOL OF NURSING, opened in 1986

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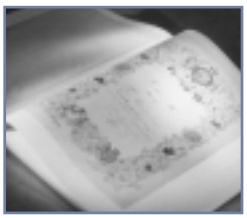


News & Notes:

Krishna Kandarpa, MD, PhD

KANDARPA HEADS DEPARTMENT OF RADIOLOGY

Krishna Kandarpa, MD, PhD, an expert in the diagnosis and percutaneous treatment of vascular diseases, joined UMMS in July as chair of the Department of Radiology. Dr. Kandarpa was formerly professor of radiology at Cornell University Medical College and chief of service and director of the Division of Cardiovascular and Interventional Radiology at New York Presbyterian Hospital's Cornell campus. "Dr. Kandarpa's training, background and experience are a superb match for the opportunities at UMass Medical School," said Chancellor and Dean Aaron Lazare. "His extensive and active clinical experience, administrative responsibilities at two large academic medical centers, and commitment to core academic activities of teaching, research and publishing make him an ideal leader for this important department."

Kandarpa is widely recognized for the management and treatment of arterial occlusions, especially in the lower extremities. In 1996 he was a contributor to the International Working Party's interim Consensus Report on "Thrombolysis in the Management of Limb Arterial Occlusions," which appeared that year in the *Journal of Internal Medicine*. He is co-author of *The Handbook of Cardiovascular and Interventional Radiologic Procedures*, the standard training reference for his specialty.

UMMS SCIENTISTS DISCOVER GENETIC KEY TO MUSCULAR DYSTROPHY

Researchers at UMMS reported in the August 9, 2002, issue of *Cell* on a newly identified genetic cause that underlies a neuromuscular disorder called facioscapulohumeral muscular dystrophy (FSHD), the third most common of the muscular dystrophies. People with FSHD have progressive muscle weakness that primarily affects the face, shoulder blades and upper arms,although other muscles also deteriorate. Despite intensive efforts, researchers have previously been unable to identify any genes that are altered in this disorder.

In their study, Rossella G. Tupler, MD, PhD, and colleagues of the UMMS Programs in Gene Function and Expression and Molecular Medicine and at the Universita degli Studi di Pavia in Pavia, Italy, showed that a genetic defect called "deletion" of certain repetitive DNA sequences in people with FSHD allows nearby genes that appear to play a role in the disorder to go into overdrive. This type of genetic problem—a deletion causing repetitive expression—has never before been identified in a human disease. The finding solves a decade-old riddle about the cause of this disorder and may ultimately lead to the first effective treatments.

"These findings have specific implications for the disease, and general implications for genetic research," said Dr. Tupler. For example, researchers might be able to find a way to mimic the effect of the protein complex that goes awry in this disorder, thereby reducing the activity of all the affected genes. If a specific gene that causes the disorder can be identified, researchers also might be able to slow or halt its activity with drugs or other treatments. The findings also suggest that repetitive DNA sequences play a previously unsuspected role in human disease by influencing gene activity, Tupler said, adding that studies of sequences like these could lead to a much better understanding of how gene activity is regulated.

Rossella Tupler, MD, PhD, (center) and colleagues Davide Gabellini and Alessandra Fusconi

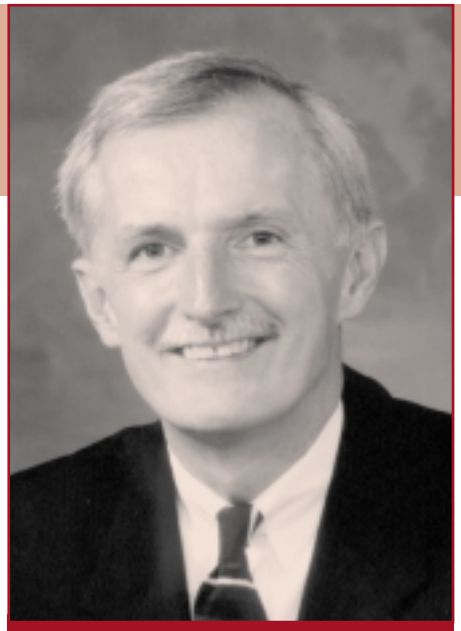
AARON LAZARE MEDICAL RESEARCH BUILDING OFFICIALLY NAMED

The June 13 ceremony to name UMMS' research laboratory building the Aaron Lazare Medical Research Building served as a fitting conclusion to three years of careful planning, inventive construction and unprecedented philanthropy. So named at the behest of Framingham benefactors Jack and Shelley Blais and made possible through their $21 million donation to the University, the building's designation is truly appropriate as recognition of Dr. Lazare's "successful efforts to elevate the reputation of the University to unparalleled heights," said President William M. Bulger. President Bulger also thanked the Blaises for their historic donation. "This gift will ensure that mankind's march against disease will continue unwavering at this University."

In his remarks, Jack Blais described the inspiration that led to the largest private donation in UMass history. "Dr. Lazare's vision to make the Medical School the best in the nation and his commitment to advancing critical medical research complemented our strong belief that we must make a difference in our lifetime." Clearly moved by the sentiments of Bulger and Blais, Lazare responded, "This is an honor I never imagined, not even in my dreams. It reflects the most selfless and humble human generosity on the part of Jack and Shelley Blais."

In a letter to the UMMS community regarding the naming, Lazare said: "I accept this honor…with the realization that [it] belongs to all of us, some of whom have been here for over 30 years. Our success belongs to thousands, both at the Medical School and UMass Memorial Health Care. We have accomplished much together, and there is much of which we can be proud."

Chancellor and Dean Aaron Lazare speaks after the unveiling.


John O' Brien

NEW PRESIDENT/CEO AT UMASS MEMORIAL

John G. O'Brien, former chief executive officer of Cambridge Health Alliance, began his new position as president and CEO of UMass Memorial Health Care, Inc., UMMS' clinical partner, in early September. He replaces Marianne E. Felice, MD, who served as interim CEO before returning to UMMS as chair of the Department of Pediatrics. (See page 8.) O'Brien brings to UMass Memorial more than 25 years of experience as a health care executive, and is highly respected in Massachusetts and nationally for guiding Cambridge Health Alliance to financial viability. "John O'Brien is the right person to lead our clinical partner during what is a challenging but exciting time to be in medicine and the delivery of health care," said Chancellor and Dean Aaron Lazare.

LOCAL EFFORT FUNDS TRAINING IN HONDURAS

A collaboration between the Westborough Rotary Club, the Tocoa Rotary Club in Honduras and UMMS is providing emergency medicine and disaster preparedness training and equipment to 100 doctors, nurses and first responders in Colon, an impoverished area of Honduras that is vulnerable to flooding. Awarded to Michael Godkin, PhD, associate professor of family medicine & community health and medicine, and Jorge Yarzebski, MD, MPH, research assistant professor of medicine, the Rotary International Matching Grant of $34,000 is funding two trips to Honduras, one which took place in May and another planned for February 2003. Under the direction of Richard V. Aghababian, MD, professor and chair of emergency medicine, six emergency medicine specialists from UMMS and three from other institutions are leading the training, which includes a flooding disaster drill. The Westborough Rotary Club, lead by Paul Gallagher, helped fund a similar project in Guatemala and is planning another in the Dominican Republic.

This summer, Matthew Logalbo, Tanya Shah and Jean Marcelin, three UMMS students in the Pathway on Multiculturalism, traveled to the same area of Honduras to assist with community-based health education efforts focused on malaria, dengue fever, diarrhea and tuberculosis prevention. *(See The Last Word, p. 32).* One-third of the School of Medicine class of 2005 was abroad through the Pathway program during the summer months, supported by the UMMS Office of Medical Education.

The Rotary Club's Paul Gallagher (left) with Jeff Cukor, MD, Richard Aghababian, MD, a Tocoa Hospital administrator and Jorge Yarzebski, MD, MPH

ZAMORE NAMED KECK YOUNG SCHOLAR

UMMS Assistant Professor of Biochemistry & Molecular Pharmacology Phillip D. Zamore, PhD, has been named to the newest class of grant recipients under the W. M. Keck Foundation's Distinguished Young Scholars in Medical Research Program. Five additional investigators will be chosen for the prestigious designation in the next year, for a final total of only 25 Keck Scholars nationwide.

Instituted in 1998, the Young Scholars Program is a five-year, $25 million initiative designed to support "groundbreaking research into the fundamental mechanisms of human disease by a select group of investigators who exhibit extraordinary promise early in their careers." Each grant recipient's institution receives an award of up to $1 million to support the scientist's research activities for up to five years, and enables the institution to purchase necessary equipment and resources.

Dr. Zamore was selected for his potential for making a significant impact in the field of biomedicine and capacity for future academic leadership. He is studying one of the newest and most puzzling phenomena in basic science today: RNA interference (RNAi). The concept itself is defined as the ability of double-stranded RNA, ribonucleic acid, to "degrade" its homologous message when injected into cells, effectively turning off a targeted gene. Zamore's research is focused on identifying the biochemical machinery that brings about RNAi, potentially forming the basis for a new class of drugs to treat some genetic disorders. He published his latest findings—that RNA molecules could use a cell's silencing methods to shut off other genes, possibly controlling vital parts of embryonic development—in a July 2002 issue of the prestigious journal *Science*.

Phillip Zamore, PhD

Synergy

BY ANDREA L. BADRIGIAN

UMMS recruits Dario Altieri, MD, to chair its new Department of Cancer Biology and direct the Cancer Center for optimum integration of research and treatment.

Dario C. Altieri, MD, has devoted his career to cancer research; his training in pathology provides the knowledge that allows him to get to the root causes of the disease. But he hasn't stopped there. At the other end of the cancer continuum, Dr. Altieri has also spent time discovering methods to ease the pain that people with cancer often experience as a side effect of treatment.

He is attuned to the uncomfortable follow-up procedures that take place even when a tenuous green flag has been raised for those who have completed treatment but still may be in danger of recurrence. Just as important, Altieri has been successful in creating more direct and seamless transitions between the research into cancer and its treatment and will undertake initiatives that encourage this ideal as chair of the new Department of Cancer Biology and director of the UMass Cancer Center.

He describes an example of this translational model from his experience at Yale, where he was most recently professor of pathology at the Boyer Center for Molecular Medicine. Altieri and colleagues there are noted for their discovery of survivin, a gene that inhibits cell death and allows cancerous cells to survive and replicate. (The Altieri lab identified two molecular-based methods by which the gene can be switched off to stop the progression of cancer.) Survivin is present in most common cancers, but not in normal tissues, therefore providing a reliable marker for the disease. For a particularly aggressive and insidious form of cancer—bladder cancer—survivin was detected in the urine of affected patients, providing a practical way for thousands of sufferers to avoid a painful procedure and serving as an example of the benefits of integrated research and treatment programs within a health sciences institution.

"Each year, 54,000 new cases of bladder cancer develop and 11,000 deaths occur," explained Altieri. "When lesions form in the bladder, 90 percent evolve into cancer. Once removed, 90 percent of the lesions return and some will eventually kill the patient." Follow-up with patients is critical, therefore, to detect the recurrence of lesions, yet the procedure is painful, invasive and costly. Armed with the knowledge that survivin is present in most cancers and speculating that it could be instrumental in the detection of bladder cancer, Altieri collaborated with the Yale Department of Surgery's Section of Urology by requesting two research fellows to work in his lab strictly on the survivin-bladder cancer connection. "The first fellow conducted a trial during which he surveyed bladder cancer patients and determined that 80 percent of them expressed the survivin gene. The research was published in the *New England Journal of Medicine*. The second fellow took it to the next step and developed a simple, inexpensive detection method that marked the presence of survivin in the urine of all the bladder cancer patients we studied. Her work was published in the *Journal of the American Medical Association*. It is my hope that the method will be explored in a clinical trial that will ensure its use for the prediction of bladder cancer." If all goes as hoped, a urine sample given at the doctor's office in the not too distant future may be tested for traces of a range of illnesses, including bladder cancer.

The survivin story is one Altieri will no doubt use frequently, as he builds the foundation for the work of the Department of Cancer Biology and the impact it will have on the Cancer Center. The approach he took at Yale, "borrowing" the urology fellows, so to speak, was as he put it "not complex or complicated. We can use the same philosophy, the same approach when we study colon cancer, gastric cancer or breast cancer. Then we can offer patients the opportunity to become involved in new trials, new tests, new drugs —thanks to developments here at UMass Medical School in synergy with all our centers and colleagues."

According to Altieri, the Department of Cancer Biology will conduct basic research only, with the goal to provide a research platform for the Cancer Center's clinical activities. "The department will be a point of aggregation, a point of reference for oncology, both for basic scientists in that realm and for clinicians." Housed in the Aaron Lazare Medical Research Building, the department is perfectly situated to allow for an "unlimited degree of exchange and interaction between researchers. I anticipate that in two years the fourth floor of the building will be filled with cancer biology investigators with the vision of crossing departmental boundaries."

In turn, an "integrative, dynamic, flexible Cancer Center" will translate research developments via "areas of medical excellence," explained Altieri. "Areas of excellence in gastrointestinal cancer and colon cancer, for example, that will be built upon the understanding of the molecular biology, the genetics of the diseases. When something exciting, important and relevant develops in the research laboratory that can be applicable for treatment, diagnosis or prevention, we'll have already established the most efficient avenue for that discovery to be translated by our clinicians." Altieri is certain of the feasibility of this framework because, as he immediately found during his recruitment visits, UMMS "doesn't suffer from

> **The Department of Cancer Biology is a tremendous step that supports scientific credibility [for NCI designation]. We don't have to think about ways to justify our interest in cancer. We have our foundation.**
>
> *— Dario Altieri, MD*

departmental rivalries. We are in fact very focused thanks to an institutional size that allows for a culture that encourages researchers, physicians, nurses, pathologists, biochemists and others critical to effective cancer care to come to the same table, to understand that they are all working, in fact, on the same thing." The institution's strong base in the community also promotes more direct communication. "We can hear what the wishes of our community are and respond to them."

Altieri translates those as wishes for a Cancer Center where "care continues to be given in the most rigorous, safe and compliant manner. Where clinical trials that spring from our research here are as immediate as possible but take place under strict regulatory guidelines." To that end, he is committed to seek National Cancer Institute designation for the UMass Cancer Center. "There are more than 40 NCI-designated cancer centers in the nation, receiving support that strengthens the integrative approach and the establishment of core facilities and joint programs. More than that, receiving NCI designation helps ensure that the activity of a cancer center runs the gamut, spanning all aspects of cancer diagnosis, therapy, prevention and control." Altieri understands that the prestigious designation is difficult to obtain and granted only after an extensive review process. "We will make certain that all of the components are in place before applying; however, the establishment of the Department of Cancer Biology is a tremendous step that supports scientific credibility. We don't have to think about ways to justify our interest in cancer. We have our foundation."

Altieri's own foundation is in his native Italy, where he received his medical degree in 1982 from the University of Milan; in 1985 he earned a postgraduate specialty degree in clinical and experimental hematology. After an internship in the departments of Pathology and Internal Medicine at St. Raffaele Hospital in Milan, he served his residency in the Division of Clinical and Experimental Hematology at the hospital. Though trained as a physician, an early experience engaged in a research trial kindled Altieri's interest in basic science, sending him on a new career path. "I realized that it would be difficult for me to effectively practice as a physician and conduct basic research at the same time." When he came to the U.S. in 1987, he chose a research fellowship in the Department of Immunology at the Scripps Clinic and Research Foundation in La Jolla, California, later becoming an assistant member of that department's Committee on Vascular Biology. He arrived at Yale in 1994, attracted by its hospital affiliations and the opportunity to translate his research findings to cancer treatment through an integrated approach. With the same determination, he'll lead cancer research and treatment efforts here with all of the attributes necessary, according to Chancellor and Dean Aaron Lazare, "to bring together the complex and varied components that will establish UMass Medical School as a nationally known cancer research center."

Thank You . . . . . .

> **Leading a 10,000-employee, $1.2 billion health care system [is like] raising an adolescent with a grumpy disposition.**
>
> *— Marianne Felice, MD*

BY MARK L. SHELTON

Marianne Felice, MD, leaves her indelible mark on UMass Memorial Health Care – one of candor, commitment, collaboration and compassion.

Her most famous remark, perhaps, was comparing the task of leading a 10,000-employee, $1.2 billion health care system to that of raising an adolescent with a grumpy disposition. (At a meeting a little later in her tenure as interim chief executive of UMass Memorial Health Care, she said the task was more like raising an adolescent gorilla with a grumpy disposition. Everyone in the room laughed, but no one disagreed.) Throughout her nearly year-long tenure as CEO, Marianne E. Felice, MD, more than once called upon the skills, the talents and the insights learned in a career as an academic physician to listen, to diagnose, to empathize and to direct an institution that is, by its size and importance, virtually its own industry.

Now, with the appointment of John G. O'Brien as chief executive officer for UMass Memorial Health Care, Dr. Felice will return to her position as chair of pediatrics and pediatrician-in-chief for UMass Memorial, having made an impact on health care in Central Massachusetts that few will ever have the opportunity to make, and having done so with vision, commitment and no small measure of style. With everyone watching and in most cases, second and third guessing every move, she implemented a key series of restructuring recommendations that brought UMass Memorial's finances into the black for the first time since the merger, oversaw a successful accreditation visit by the Joint Commission, recruited department chairs, division directors and medical staff that will help lead the institution for the next generation, all the while establishing that the qualities and values that would steer the institution were right there in front of everyone, and were codified for all to see: candor, commitment, compassion, collaboration, character. She had buttons made for people to wear to remind them of UMass Memorial's vision, and every month that UMass Memorial finished with more revenue than expenses, her department heads had muffins and bagels at their system leaders meeting.

It wasn't all muffins and buttons, of course. Health care, and in particular, health care financing, continues in only modestly modified financial crisis: not all of the decisions she made were popular, but all of them were based on her unwavering view that clarity of purpose and transparency of mission were key. She said frankly, and often, that the linked destiny of UMass Memorial and the Medical School was fundamental to the success of both, and she said it when she had some convincing to do. She also knew, and reminded those around her, that rewards were best when they were widely shared: she brought the purchase order for a long sought and challenging to obtain piece of diagnostic equipment to a system leaders meeting as well, to illustrate the tangible benefits for the system of their hard work.

Dr. Felice now delivers to the next generation of clinical system leadership an institution much different than the one she reluctantly agreed to lead in the fall of 2001, and for her candor, her commitment, her compassion, her collaboration—and her character—she deserves our thanks.

One Step Closer

BY LYNN C. BORELLA

The UMMS Division of Diabetes successfully transplants insulin-producing cells, moving toward a greater goal in the effort against the disease.

For the one million U.S. sufferers of Type 1 diabetes—a disease in which the patient's immune system attacks the insulin-producing islet cells in the pancreas—the use of islet cell transplantation by researchers at the University of Alberta in Edmonton, Canada to reverse the insulin dependence of 15 diabetics was akin to a miracle. To Aldo A. Rossini, MD, the William and Doris Krupp Professor of Medicine and chief of the Division of Diabetes at UMMS, whose team recently replicated the "Edmonton Protocol" clinical trial by transplanting islet cells into two Type 1 diabetics, the procedure opens the door to additional breakthroughs in the field of diabetes research.

"I like to use the metaphor of the Wright brothers flying the first plane," Dr. Rossini explained. "The first plane went very few feet, but it was a success. And, it was that beginning that opened up other areas of aviation. The Edmonton Protocol is also an auspicious beginning, that leads us to seek the definitive answer in the fight against diabetes."

UMMS is among 18 centers worldwide participating in the $5 million clinical trial funded by the National Institutes of Health with the Immune Tolerance Network. Over the next year, a total of 40 people will receive islet cell transplants following the study guidelines of the Edmonton Protocol; the UMMS trial has accepted four participants.

"The UMMS Islet Program assembled a multidisciplinary team of physicians, scientists and nurses with unique and complementary expertise," said Professor of Medicine Jeffrey S. Stoff, MD, chief of the Division of Renal Medicine and Transplantation Medicine, who helped develop the transplant program.

According to Rossini, UMMS was eager to conduct the internationally acclaimed clinical trial for three reasons: the protocol's promise; the presence of the Medical School's comprehensive diabetes program; and the wish to create an infrastructure to allow for more islet cell transplantation. In fact, plans are underway for a new Islet Cell Transplantation Program with the recent arrival of Giacomo P. Basadonna, MD, director of Organ Transplantation Services for UMass Memorial, UMMS' clinical partner.

The actual infusion of the islet cells is a relatively simple procedure. Once a donor pancreas has been received and the islet cells isolated from the organ (specialized work performed by the Joslin Diabetes Center), cells are transported to UMass Memorial Medical Center's University campus and the waiting patient. A catheter

is threaded into the patient's portal vein in the liver, through which the islet cells (approximately a tablespoon) are infused. According to Rossini, the total time needed to infuse some 300,000 - 500,000 islet cell equivalents is approximately five minutes, yet the effect on the patient's blood sugar levels is immediate and dramatic. Both patients who received the transplant this spring must return before the end of the year for a second transplant of islet cells, with the hope that the procedure will completely alleviate their need to inject insulin.

The burden of immunosuppression, however, makes islet cell transplantation a consideration for only the sickest Type 1 diabetics. In order to prevent rejection of the transplanted cells, patients must take powerful immunosuppressant medications that have the potential for serious side effects. "Consequently, the patients we felt were most appropriate for this study were those who were no longer able to use insulin to function normally in daily life, given the severity of their diabetes," Rossini explained.

"There are many heroes in these kinds of clinical trials. The first heroes are those patients who make plans to donate useful organs, like their pancreas upon death, or those families who make the difficult decision to donate their loved one's tissues; to me, this is one of the most unselfish things one human being can do for another. And the other heroes are the patients willing to participate in this study. Although their goal is to alleviate their need for insulin, they take the risk of living with the possible consequences of immunosuppressive therapy, such as serious infections and sometimes cancer in the future."

Rossini also stressed the "heroics" of every member of his team that led to the success of the first two procedures. Naming individuals and their critical role in the study (see page 13), he added, "It's not one person who can conduct such a trial; it takes the coordination and dedication of many talented people. Here at this academic health center, I not only have these wonderful faculty and staff, but also have access to a very strong infrastructure of nurses, technicians and others who give their support and expertise to this work."

About 80 percent of Edmonton Protocol participants remain insulin independent two years after receiving the transplant. However, Rossini believes that there is still a long road ahead. "People ask me if they can have an islet cell transplantation, but I discourage them because we are not there yet—we've got to develop better ways to rid people of their insulin dependence, without immunosuppressive therapy."

Rossini has spent much of his career striving to establish a state of "tolerance" in the body, helping it accept the foreign islet cells and function without immunosuppression therapy. He therefore maintains his firm

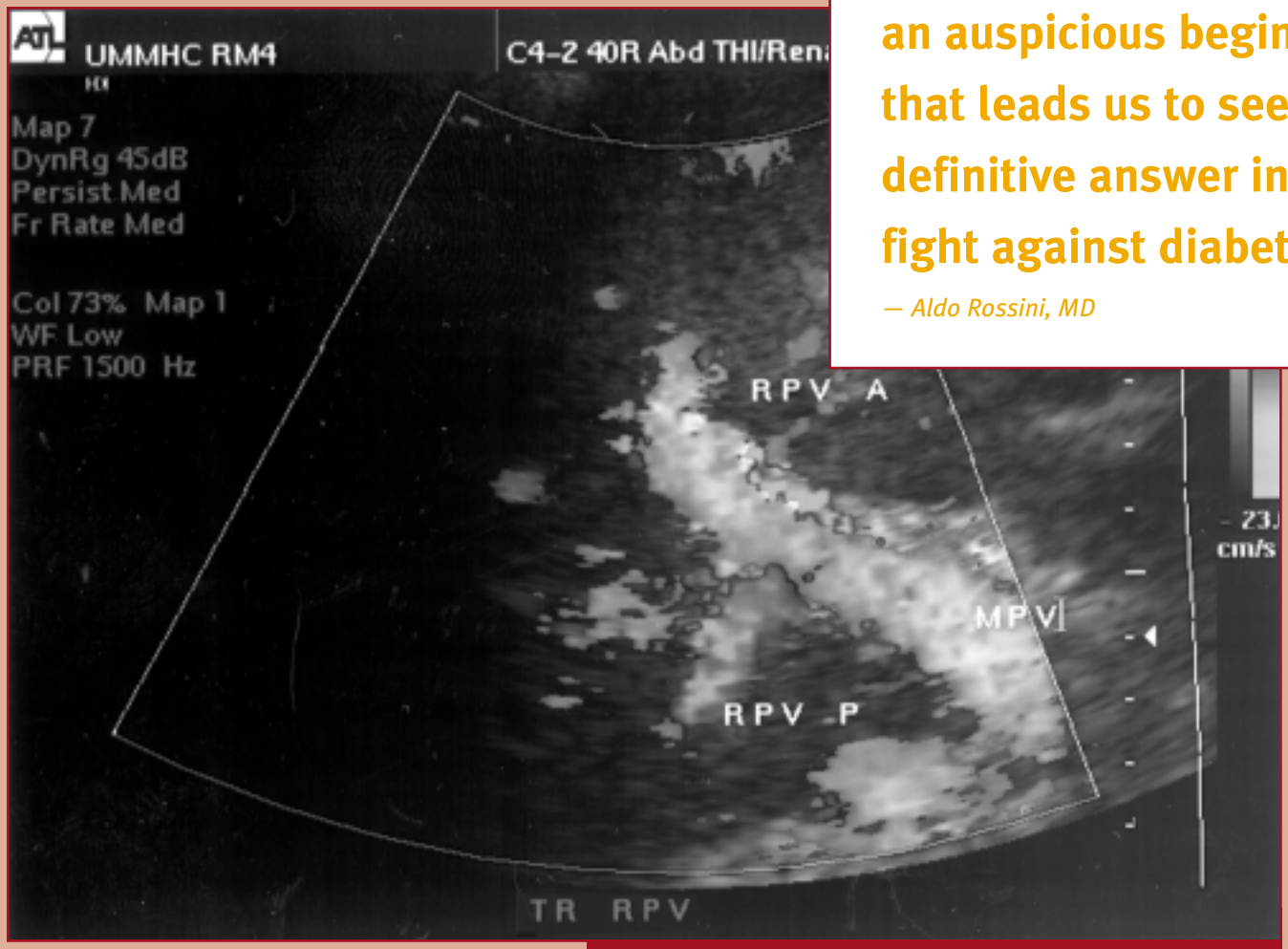
Aldo Rossini, MD and Celia Hartigan, RN, MPH

belief in the power of basic science. "We hope these clinical trials are a first step toward additional areas of research. We came from the bench, where we learned how to isolate these islet cells, to the bedside, where we are now able to effectively treat this disease. However, we must now go back to the bench and optimize methods of inducing tolerance in patients."

To do so, Rossini is collaborating with a number of UMMS basic scientists, including Professor and Chair of Molecular Medicine Michael P. Czech, PhD, who is studying the molecular basis of insulin action on glucose transport. Regarding the UMMS implementation of the Edmonton Protocol, Dr. Czech said, "The accomplishments of Dr. Rossini and colleagues on these first successful islet cell transplants in patients are exhilarating. Even more important, they fuel our steady resolve to uncover the basic molecular mechanisms of insulin-producing cell regeneration and immune tolerance so that this procedure can be extended to all diabetics."

Rossini, agreed, adding, "If I was to make a plea, it would be that people constantly support and embrace basic research—that is the answer to this. It goes beyond just flying another bi-wing plane; it's going to take incredible creativity and basic research to cure diabetes."

> **The Edmonton Protocol is an auspicious beginning, that leads us to seek *the* definitive answer in the fight against diabetes.**
>
> *— Aldo Rossini, MD*



Various perspectives of the portal vein, the site for islet cell transplantation.

l. to r., Celia Hartigan, RN, MPH, and John Mordes, MD

l. to r., David Phillips, MD, Michael Appel, PhD, and Jeffrey Stoff, MD

l. to r., Michael Thompson, MD, Dianne Carter, NP, CDE, Ruth Lundstrom, NP, CDE and Michael Appel, MD

Members of Dr. Rossini's team:

Professor of Medicine Dale L. Greiner, PhD, an immunologist, works in unison with the Rossini lab, adapting basic research to its clinical applicability.

Professor of Medicine John P. Mordes, MD, put together the specifics of the protocol, including all of the details necessary to satisfy UMMS Institutional Review Board and FDA regulations.

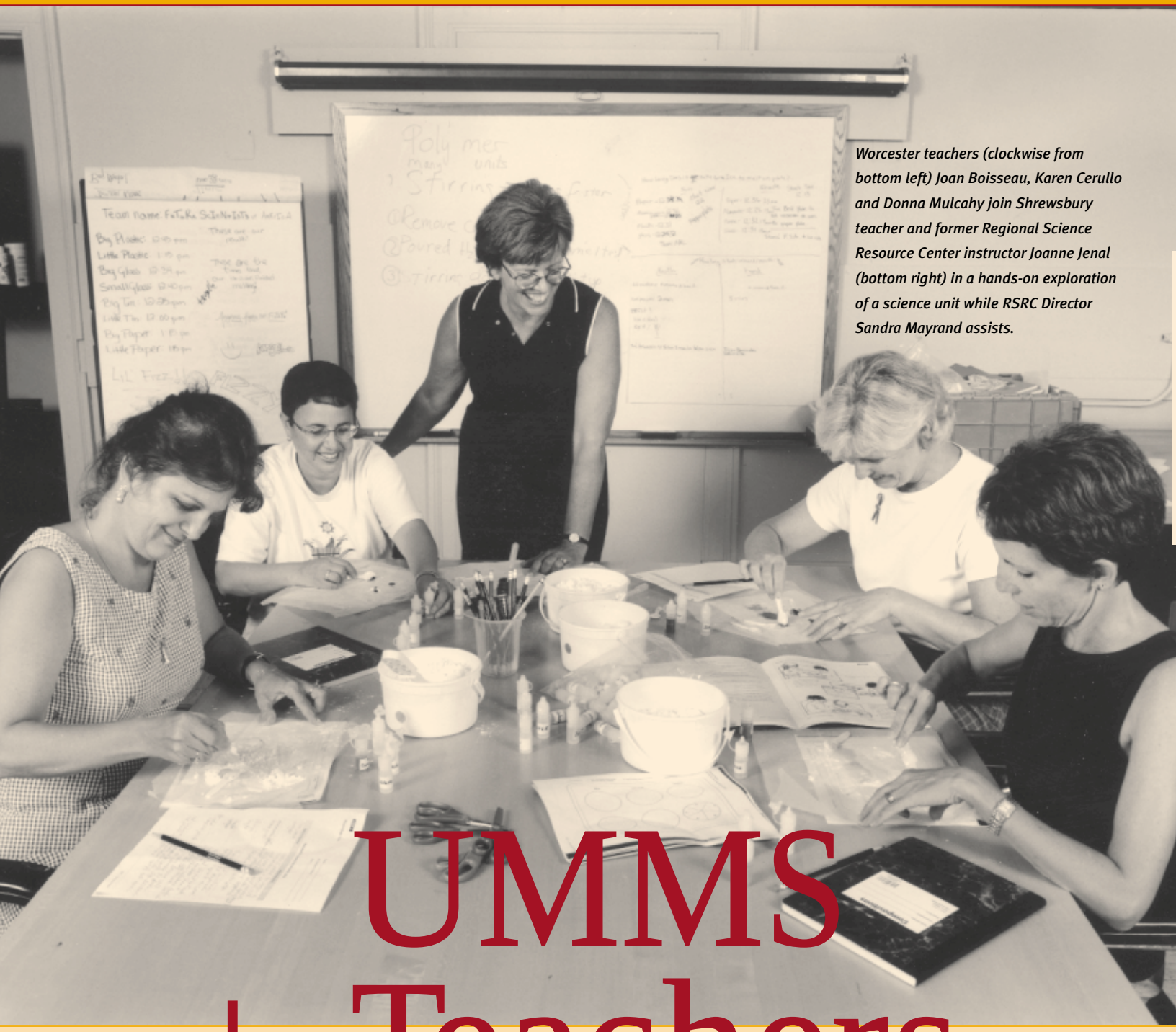
Associate Professor of Medicine Michael C. Appel, PhD, works as the liaison between UMMS and John J. O'Neil at the Islet Isolation Core, Joslin Diabetes Center, where the islet cells are prepared for transplantation.

Associate Professor of Radiology David A. Phillips, MD, uses a minimally invasive technique to provide direct access to the portal venous system for infusion of the islet cells.

Professor of Medicine Jeffrey S. Stoff, MD, chief of the Division of Renal Medicine and Transplantation Medicine, helped develop the transplant program and continues to provide quality care to the transplant patients, including adjustments to their immunosuppression therapy.

Assistant Professor of Medicine Michael J. Thompson, MD, provides direct clinical care to the patients before and after treatment, and serves as an advocate for those who undergo the procedure.

Research Coordinator Celia Hartigan, RN, MPH, manages all procedural aspects of the research study, including physician/patient interaction. She also keeps in close contact with all patients to monitor their progress.



Worcester teachers (clockwise from bottom left) Joan Boisseau, Karen Cerullo and Donna Mulcahy join Shrewsbury teacher and former Regional Science Resource Center instructor Joanne Jenal (bottom right) in a hands-on exploration of a science unit while RSRC Director Sandra Mayrand assists.

UMMS + Teachers

Class Acts

BY KELLY A. BISHOP

UMass Medical School is a classroom collaborator with its innovative professional development and curriculum programs for public school educators statewide.

Teaching. It is among the highest of professional callings and unquestionably one of the most challenging. The responsibility of the modern teacher extends far beyond the traditional scope of reading, writing and arithmetic. Today's teachers are mentors and role models, continually faced with change. From state-mandated educational assessments and evolving curriculums to scores of children with individualized learning styles, the teachers of Massachusetts must quickly adapt to ensure the success of their students.

Fortunately for these dedicated professionals, there is an enthusiastic partner in the ongoing effort to improve the quality of math and science education in the commonwealth. The University of Massachusetts Medical School's Regional Science Resource Center (RSRC) is a vital source of support for school districts across the state, providing professional development for teachers and administrators as well as technical assistance in the creation of curriculums.

Established at the Worcester Foundation for Biomedical Research in 1994, the RSRC became a valued component of the Medical School's educational outreach efforts in 1997, upon the merger of the Foundation with UMMS. With the RSRC since its inception, Director Sandra Mayrand has spent nearly a decade cultivating partnerships with various educational institutions and school districts to identify the most critical areas of need. With initiatives originally focused almost exclusively on science, in recent years the programs have expanded to include mathematics and technology education.

According to Mayrand, who was recently awarded the 2002 Bruce Alberts Award for Distinguished Contributions in Science Education by the American Society for Cell Biology, the RSRC mission "to improve K-12 science, mathematics and technology education through systemic reform so that all students will reach their full potential" is guided by the diverse needs of educational professionals. "In Worcester and across the region, teachers and administrators experience significant demands on their time. Recognizing these demands, districts enlist our help in selecting and aligning math and science curriculums that reflect what they want and need to teach."

In an atmosphere characterized by a multitude of learning styles, the most successful teachers are challenged to continually re-evaluate their methods. Mayrand is enthusiastic about the RSRC's active professional development programs and their role in assisting teachers with such reassessment. She is especially excited about a course that examines a new trend in education known as "action research," a process that blends traditional research models with hands-on connections between students and teachers in the classroom. Beginning with the identification of a certain hypothesis—for example, that single-sex groups work together more effectively than groups of mixed gender—action research then focuses on those questions that need to be answered to address the premise. Data is collected and analyzed to determine the necessary steps for improvement. "What's intriguing about action research is that if you look at it from a scientific point of view, the teacher is conducting basic research in the classroom," noted Mayrand. "We help educators actually apply basic research techniques to develop new teaching strategies for implementation and evaluation. This kind of professional development—ongoing, focused on the practice of teaching and intentionally centered on the classroom—is what we aim to provide."

Another RSRC affiliation aimed at systemically improving the way mathematics and science are taught in K-12 classrooms throughout the state, the Partnerships Advancing

Learning of Mathematics and Science (PALMS) was initiated in 1992 by the Massachusetts Department of Education in conjunction with the National Science Foundation. A widely successful program in which the RSRC was a regional partner, PALMS was influential in the development of a statewide standards-based assessment program (MCAS) and fostered important relationships among schools, colleges, businesses, cultural organizations and parents. However, funding for PALMS ceased in 2001. Mayrand and her colleagues were unwilling to give up the strength of those partnerships, and forged the PALMS Alliance. "After eight years, we knew that we had to continue. With multiple sites, we had developed a well-established network that led to strong relationships with the districts."

Now, as the Alliance's director, Mayrand has guided the effort by bringing in additional providers to expand coverage throughout the state. With new funding from the Noyce and Intel foundations, the PALMS Alliance is moving forward aggressively to develop statewide math learning communities that concentrate on sustained, classroom-centered professional development, enabling teachers to use student work to analyze strengths and limitations.

In that it depends so heavily on what students bring to the classroom, the teaching of mathematics can present a special set of obstacles. According to Mayrand, "You can have a classroom of 30 students yet each needs to be taught in a slightly different way, based on their set of skills. The math learning communities will comprise a number of teachers who will work together to diagnosis the issues surrounding those skill sets, devise strategies to address those issues, return to the classroom to test that strategy, and then as a group evaluate the outcomes."

Although the RSRC has continued to expand its programs throughout Massachusetts, there are a number of projects specific to the Worcester Public Schools. The North Quadrant Initiative is a multi-year partnership between the RSRC and the 10 elementary schools of Worcester's

North Quadrant. Funded by the Howard Hughes Medical Institute, PALMS and the National Science Foundation, the Initiative is committed to raising the level of student-centered, inquiry-based science education for all pupils through the development of a comprehensive science program. Mayrand explained the challenge in such a program: "I wish people knew of the effort it takes to align a new framework in even a small district, let alone a huge one like Worcester. Teachers from K-12 have

> **Districts enlist our help in selecting and aligning math and science curricu-lums that reflect what they want and need to teach.**
>
> *— Sandra Mayrand, director, RSRC*

By purchasing materials in bulk locally and pre-packing them for classroom use, Science to Go saves Worcester and other districts significant time and money.

to work as a team, although historically that has been a challenge. So, we've been assisting multiple schools to get them on the same page when it comes to the chosen science framework. Our goal is to have every teacher trained and feeling comfortable about the coursework while managing the abundance of materials that go along with it."

Complementing the North Quadrant Initiative is "Science to Go," an RSRC program that replenishes the consumable materials in the National Science Foundation-developed science curricular modules. Because the materials required to teach the modules are sometimes expensive and quickly consumed, the RSRC provides a cost-effective and efficient material replenishment service. By purchasing materials in bulk locally and pre-packing them for classroom use, Science to Go saves Worcester and other districts significant time and money.

Dot Shea, science teacher at City View Elementary School in Worcester, is an active user of Science to Go and praises its effectiveness. While teachers in each grade level use the prepared science units and accompanying lesson plans in the classroom, as the only science teacher at her school, Shea meets with each class of students every two weeks to supplement their class lessons with additional hands-on experiments. For example, one of the two kits used in the third grade explores the properties of liquids. "I get to do the messy stuff," she said. "The students come to the lab and are given three different liquids—oil, syrup and water—and encouraged to experiment with them to determine their characteristics. It's not only inquiry-based science, it also promotes vocabulary development and the use of scientific language."

Ms. Shea acknowledges that the science units, with their extensive materials and detailed lesson plans, can be intimidating for teachers but notes that the RSRC professional development courses allow teachers the opportunity to fully explore the units before presenting them to students. "The courses are truly positive because teachers are exposed to the background of the scientific lessons and the greater concepts of each kit. We can actually do the experiments and think about the kinds of questions that we will need to ask the children to get them thinking about science in new ways."

Reflecting on the RSRC's impact on Shea and her fellow teachers, Mayrand noted that, while at times overwhelmed by the challenges inherent in improving the quality of education, she is affirmed daily by her interactions with educators. "I thought I had a great respect for teachers to begin with, but it has just gone through the roof. I believe that teaching is the toughest job to do well, and the benefits can be slow in coming. But most teachers never question that it is the right thing to do," said Mayrand, adding, "The educational system has problems that cannot be fixed overnight. But with the tremendous support of UMass Medical School, we take one piece of the system and work collaboratively with as many organizations as we can to make a difference. Our partners are smart, dedicated people who are working hard towards the same goal—something good always comes of that."

Newton, Darwin...Davis

BY LYNN C. BORELLA

UMMS Professor Roger Davis, PhD, is elected to a scientific hall of fame — Britain's prestigious Royal Society.

With quill pen in hand, Roger J. Davis, PhD, the H. Arthur Smith Chair in Cancer Research, recently signed his name into the annals of scientific history. In addition to his prestigious affiliations with the Howard Hughes Medical Institute and the Institute for Scientific Information, Dr. Davis is now a fellow of the Royal Society of Great Britain, joining the ranks of such esteemed scientific thinkers as Sir Isaac Newton, Charles Darwin and Albert Einstein. During ceremonies held in London in July, Davis also shared the honor with Scottish embryologist Ian Wilmut, noted for creating Dolly, a cloned sheep.

While at the Royal Society event, held at its residence on the Royal Mile near Buckingham Palace, Davis signed the leather-bound, vellum pages of the Royal Society's original Charter Book, which—in addition to including the organization's rules and regulations—has been signed by every elected member to the Society since its inception. "The Charter Book was really incredible, to think it is almost 350 years old," Davis noted. "And, before signing the book, we were allowed to look through it and it was amazing to see the original signatures of virtually every famous scientist from Europe over the last four centuries."

An independent academy promoting the natural and applied sciences, the Royal Society was founded in Great Britain in 1660, and recognizes excellence in science, supporting leading-edge research and its applications to further the role of science, engineering and technology in society. A maximum of 42 new fellows and six foreign members are elected annually for their scientific contributions, both in fundamental research resulting in greater understanding, and also in leading and directing scientific and technological progress in industry and research establishments.

To be named a fellow of the Royal Society, individuals are nominated by its members, who circulate synopses of the scientist's work for signatures of support. If not named a fellow in the first year of nomination, eligible candidates may be considered for election for up to seven years hence. A Royal Society committee annually evaluates all new nominees and a vote is cast as to who is eligible for election. Another committee then ranks those eligible members among all other current and prior candidates and, from this group, the year's fellows are chosen. Davis was not only one of the youngest fellows named in 2002, he was also elected within one year of his nomination, evidence of the importance of his work to the scientific community.

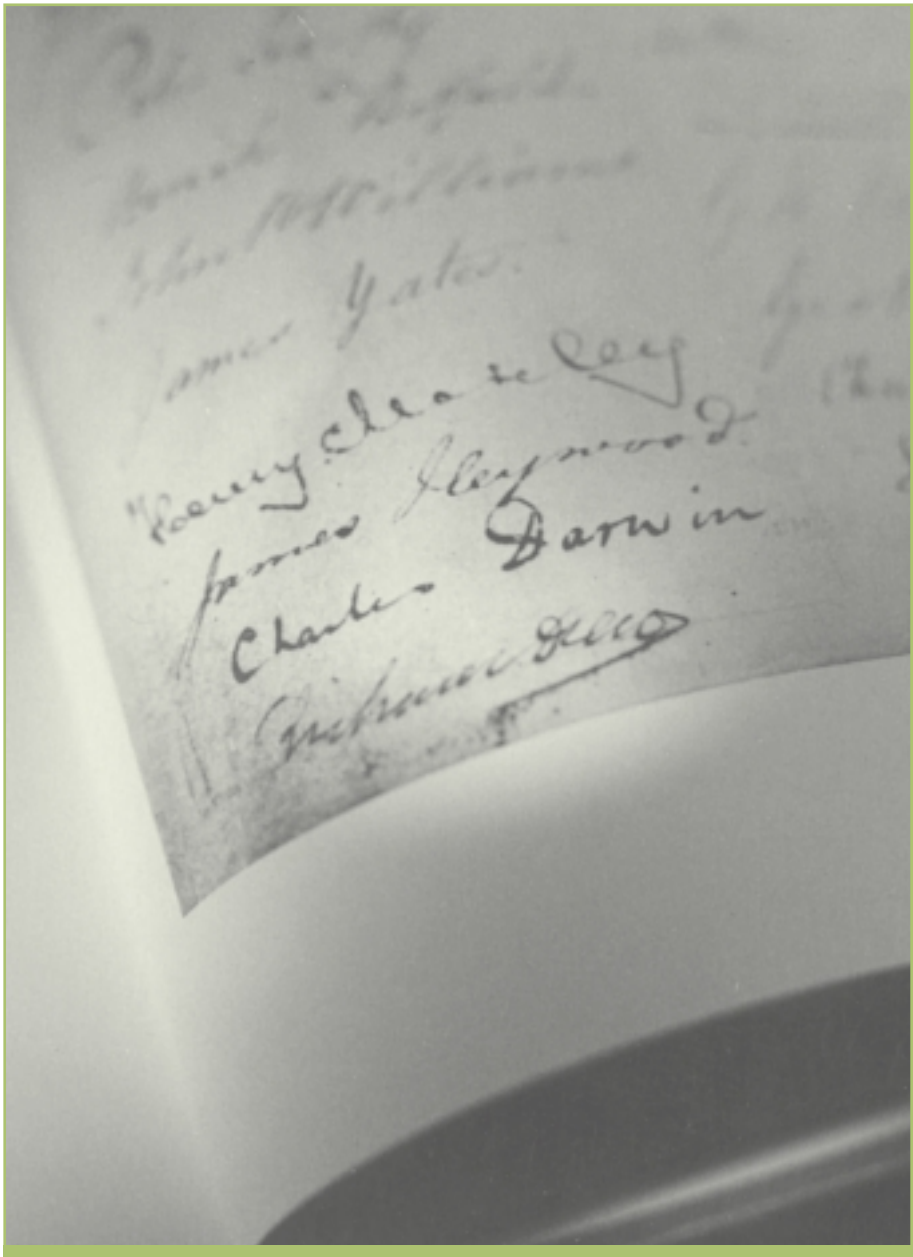
As a fellow of the Royal Society —a designation he will hold for life—Davis will be asked to serve on several committees that elect new members and administer

Davis has been recognized as one of the world's most highly cited scientists.

grant funding. Given the role of the Society in producing scientific reports for public policy and education, he also believes he will be invited to serve on committees that choose the topics of inquiry.

Davis has been recognized, three times, by another prominent organization, the Institute for Scientific Information, as one of the world's most highly cited scientists as he conducts research into the body's responses to changes in the environment at the cellular level, and the implications of those responses on a wide array of diseases. He and his colleagues were the first to identify and molecularly clone a particular set of genes, the JNK signal transduction pathway, that plays an integral role in apoptosis, or "cell suicide."

Of the Royal Society membership, Davis quipped that the first request the Society made of him was to supply a copy of his obituary: "Age usually is one of the major requirements for election"; the second was his first installment of dues to the Society for educational purposes, the payment of which will seem to cover his entire life. He smiled, adding, "They do stop collecting once you're older than 85."



A page from the Royal Society's Charter Book

Grants & Research:

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

BIOCHEMISTRY & MOLECULAR PHARMACOLOGY

National Institutes of Health

Reid Gilmore, PhD, professor: Protein Translation Across the Endoplasmic Reticulum, one year, $217,398; recommended for three more years, $652,000.

Martin G. Marinus, PhD, professor: DNA Mismatch and Double-Strand Break Repair, one year, $265,787; recommended for three more years, $810,900.

CELL BIOLOGY

National Institutes of Health

Jane B. Lian, PhD, professor: Synthesis of Osteocalcin in Bone, one year, $397,084; recommended for four more years, $1.6 million.

Sandy C. Marks, DDS, PhD, professor: Bone Matrix and Bone Resorption, one year $489,342; recommended for four more years, $1.5 million.

United States Army Medical Research Acquisition Activity

Stephen Lambert, PhD, assistant professor: Characterization of Cytoplasmic Merlin and Molecular Mechanisms Underlying its Translocation to the Plasma Membrane, one year, $158,625; recommended for two more years, $317,250.

EMERGENCY MEDICINE

National Institutes of Health

Eric W. Dickson, MD, assistant professor: Hormonal Opioids in Ischemic Preconditioning, one year, $119,831; recommended for three more years, $371,542.

Karin Przyklenk, PhD, professor: Role of Inositol Triphosphate in Preconditioning, one year, $260,767; recommended for two more years, $556,500.

FAMILY MEDICINE & COMMUNITY HEALTH

Department of Health and Human Services

Beth Kurtz, MD, assistant professor: Residency Training in Primary Care, one year, $152,609; recommended for two more years, $283,891.

Robert Wood Johnson Foundation

Joseph R. DiFranza, MD, professor: Evaluation of Synar Regulation Implementation and Alternative State Policies to Prohibit Tobacco Sales to Minors, two years, $121,754.

MEDICINE

Department of Health and Human Services

Doreen B. Brettler, MD, professor: Region Comprehensive Hemophilia Program, one year, $347,790; recommended for two more years, $675,000.

Juvenile Diabetes Research Foundation

Rita Bortell, PhD, associate professor: Dysregulation of Immune Responses in the Gut Leads to Autoimmune Diabetes in the BB Rat, one year, $141,520; recommended for two more years, $270,000.

Thomas G. Markees, PhD, instructor: The Primed Mouse as a Model for the Study of Autoimmunity and Allograft Tolerance Induction, one year, $147,117; recommended for two more years, $280,000.

National Institutes of Health

Robert W. Finberg, MD, the Richard M. Haidack Professor of Medicine and chair: TLRs in Innate Immunity to Bacterial and Viral Infection, one year, $356,626; recommended for four more years, $1.4 million.

Chung-Cheng Hsieh, ScD, professor: Stem Cells and Perinatal Factors for Breast Cancer Risk, one year, $523,937; recommended for three more years, $1.2 million.

Wellcome Trust

Katherine A. Fitzgerald, PhD, instructor and postdoctoral fellow in the laboratory of Douglas T. Golenbock, MD, professor: MyD88-adapter-like (MAL), a Target for Specific Intervention in Infectious Disease, three years, $292,980.

MOLECULAR GENETICS & MICROBIOLOGY

National Institutes of Health

Kenan C. Murphy, PhD, assistant professor: Recombinogenic Engineering of Pathogenic Bacteria, one year, $118,876; recommended for one more year, $119,250.

MOLECULAR MEDICINE

National Institutes of Health

Craig L. Peterson, PhD, professor: Analysis of SWI1, SWI2 and SWI3 Proteins, one year, $392,333; recommended for three more years, $1.1 million.

NEUROLOGY

National Institutes of Health

Lawrence J. Hayward, MD, PhD, assistant professor of neurology: Role of SOD Instability in ALS Motor Neuron Toxicity, one year, $334,594; recommended for four more years, $1.3 million.

NURSING

Department of Health and Human Services

Kathleen H. Miller, EdD, RN, ACNP, associate professor: Advanced Education Nursing, one year, $225,336; recommended for two more years, $419,717.

PATHOLOGY

National Institutes of Health

Joonsoo Kang, PhD, assistant professor: Determination of Mechanism of T Cell Lineage Commitment, one year, $317,730; recommended for four more years, $1.3 million.

Kenneth L. Rock, MD, professor and chair: Immunobiology of Antigen Presenting Cells *In Vivo*, one year, $357,376; recommended for four more years, $1.4 million.

Raymond M. Welsh Jr., PhD, professor: Training in Immunology, one year, $259,810; recommended for four more years, $1 million.

PEDIATRICS

National Institutes of Health

Thomas C. Greenough, MD, assistant professor: HIV-1 Gene Polumorphisms Associated with Non-Progression, one year, $317,000.

Katherine F. Ruiz de Luzuriaga, MD, professor: Pediatric AIDS Clinical Trial Unit, one year, $989,191; recommended for four more years, $4.2 million.

PHYSIOLOGY

National Institutes of Health

Michael J. Sanderson, PhD, professor: The Regulation of Airway Ciliary Activity, one year, $362,690; recommended for three more years, $954,000.

PSYCHIATRY

National Alliance for Autism Research

Schahram Akbarian, MD, PhD, assistant professor: Chromatin-Remodeling in Developing Prefrontal Cortex, two years, $120,000.

National Institutes of Health

William V. Dube, PhD, associate professor: Behavioral Momentum and Flexibility in Mental Retardation, one year, $186,465; recommended for two more years, $320,000.

Jean A. King, PhD, associate professor: NMR Imaging of Prostate Cancer Using Ligands, one year, $157,632; recommended for one more year, $158,000.

SURGERY

National Institutes of Health

Shuk-mei Ho, PhD, professor: CYP1A1, Estrogen Metabolism and Ovarian Carcinogenesis, one year, $305,270; recommended for two more years, $566,040.

Upon further study: Emergency Medicine

Professor Karin Przyklenk, PhD, joined the Department of Emergency Medicine in June of this year as part of an effort to expand its research base. As co-director of the emergency medicine research laboratories, Dr. Przyklenk looks forward to mentoring residents and fellows interested in basic science research as well as offering her expertise to physicians who perform clinical studies.

Przyklenk's investigations have future implications for the large number of patients who are rushed to the emergency room with chest pain. She has found that individuals who experience chest pain or angina prior to heart attack (that is, brief periods when the blood supply is cut off to the heart muscle, termed ischemia), may have less permanent damage to their heart than those who experience a heart attack without warning. She and her lab are studying the role of inositol trisphosphate in this protective phenomenon called "preconditioning," in hopes that the cellular mediator and the receptors to which it binds can someday contribute to the design of new treatments for those at risk of heart attack or those preparing for cardiac surgery.

Prior to joining UMMS, Przyklenk served for 14 years as assistant director of research and director of cardiac function at the Heart Institute, Good Samaritan Hospital in Los Angeles.

Alumni Report:

a message from the chancellor/dean

As we embrace the challenges and potential of a new academic year,

I take great pleasure in reflecting on our mission of education. Over the years, it has been gratifying to watch our alumni achieve great distinction as physicians, nurses and researchers, employing the skills and expertise gained in our classrooms and laboratories in promising, fulfilling careers. And, I am most heartened to discover the great numbers of our past students who have embraced our mission of distinction in education, choosing to teach future generations of health care providers, scientists and educators.

Characterized by a commitment to excellence, advocacy, compassion and collaboration, our alumni are defining the future of medical education in America. With superior communication skills and a keen interest in public health, our alumni can be found as clinical, basic science and community-based faculty at academic institutions across the country and, of course, at UMMS. (Over 170 graduates pass on their expertise and stories of experience to our current students.) On the following pages, you will read of three educators we are honored to call our graduates:

As a professor of nutritional biochemistry at the Harvard School of Public Health, Marianne Wessling-Resnick, PhD '87, cites her role as mentor as the most fulfilling component of her career.

Marc C. Restuccia, MD '84, UMMS assistant professor of emergency medicine, strives to increase the training standards of emergency medical personnel.

And GSN Assistant Professor Jean Boucher, PhD '02, RNCS, ANP, ACNP, is a Worcester native who is thrilled with the multifaceted nature of her work as an oncological nurse, researcher and teacher.

Aaron Lazare, MD

Class Notes:

To submit a class note, send your news to:

Alumni and Parents Relations Office
University of Massachusetts Medical School
Worcester, MA 01655

e-mail — charlene.nemeth@umassmed.edu
call — 508.856.8300
fax — 508.856.5490

IN MEMORIAM

Steven K. Baker, MD '82, of Frankfort, Illinois died on June 1, 2002. He leaves his wife Ginny and their three daughters, Maggie, Sarah and Mary. Dr. Baker practiced pulmonary medicine at Northwestern Memorial Hospital in Chicago, Illinois.

Susan M. Campo Weiss MD '88, of Hull, Mass. died on August 16 after an illness. A pediatrician at South Shore Medical Center, Dr. Weiss leaves her husband Robert, mother, grandmother and sister.

1980

Richard Grazer, MD, practices emergency medicine at the Portland (Oregon) Veterans Administration Medical Center. He lives in Portland.

Paul T. Wesley, MD, is associate chief of Emergency Services at Kaiser Permanente in Hayward, Calif. He and his wife Sabrina live in Fremont with their children, Aaron, Rhonda and Jennifer.

1982

Ellen M. Michaelson, MD, co-founded Portland, Oregon's new Pearl Clinic, which provides an innovative, integrated approach to total wellness. The clinic is dedicated to the convergence of medically proven and clinically effective conventional and complementary medicine. Dr. Michaelson practices internal medicine at the clinic.

Paul F. Racicot, MD, practices emergency medicine at Franklin Regional Hospital and Lakes Region General Hospital in New Hampshire. He assists with physician recruitment at the institutions, which recently merged operations.

1990

Nanci D. Tucker, MD, practices pediatric medicine and resides in San Francisco.

1996

Monica Gomez, MD, recently joined the internal medicine staff at Emerson Hospital of Concord, Mass. Her interests include women's health and preventive medicine.

1998

Jonathan S. Emens, MD, is an assistant professor at Oregon Health Sciences University, where he conducts research in circadian rhythms. He resides in Portland.

Stephen K. Lane, MD, is a board certified family physician practicing at Jordan Primary Care in Marshfield, Mass. A faculty member at UMMS and Tufts University School of Medicine, Dr. Lane writes a bi-weekly column on family health for a Plymouth newspaper.

1999/2000

Todd O'Brien, MD '99, and Brittany Liam Boulanger, MD '00, married in September 2001. Dr. Boulanger is a pediatric resident at the University of Rochester, Strong Memorial Hospital in Rochester, New York. Dr. O'Brien is an orthopedic surgery resident at Strong Memorial Hospital. They reside in Rochester.

2002

George Anis Azar, MD, and Azul S. Jaffer, MD, were each awarded $10,000 by the Massachusetts Medical Society as recipients of the organization's 2002 Scholars Award, granted annually based on academic achievement, community involvement and leadership qualities. Dr. Azar was acknowledged for his assistance in designing new orthopedic laparoscopic tools to improve patient outcomes and developing computer programs for clinical research. He also volunteered as a medical aid in his native Lebanon, evaluated epidemiological programs to help homeless women in Boston and worked as a project coordinator for a childhood asthma management program. Dr. Jaffer was praised for advocating for sanitary conditions to prevent the spread of disease in his native Tanzania and for his work in Ecuador, where he assisted physicians in over 100 surgeries during a span of seven days.

Margaret Barocas, MD, married Caleb McOsker Rounds at the Log Cabin in Holyoke in June 2002. They live in Hadley, Mass.

Meg Chiavaras, MD, married Demetrios Sahlas in June 2002. She is a resident in the diagnostic radiology program at the University of Toronto, Canada.

Robert Matthew Plovnick, MD, and Lucy Holmes were married in Flowery Branch, Georgia in June 2002. Dr. Plovnick is pursuing a specialty in medical informatics.

Alumni Profile:

Marianne Wessling-Resnick, PhD '87

Just a child when Neil Armstrong took his momentous first step on the moon, Marianne Wessling-Resnick, PhD '87, was awestruck by the unprecedented advances that made such a feat possible. With an appreciation for the potential of technology, her enthusiasm for science was born. Today, as professor of nutritional biochemistry at the Harvard School of Public Health, Dr. Wessling-Resnick's fervor for scientific achievement continues.

Encouraged by supportive high school teachers, the Boxborough native continued her education at Worcester Polytechnic Institute with the intention to study biomedical engineering. Soon she discovered a new joy. "At WPI, I was able to perform a research project in Dr. William Hobey's laboratory, and realized that I enjoyed being at the laboratory bench most of all." Shifting her concentration to the basic sciences, she received her bachelor's degree in chemistry from WPI in 1980, and a master's degree in biophysics/theoretical biology from the University of Chicago in 1982. In 1984, Wessling-Resnick enrolled in the GSBS. "The graduate program was relatively young then and offered the flexibility that I was seeking."

She pursued her postdoctoral training at Harvard Medical School, where her research interests moved toward transferrin, the major pathway for iron acquisition by cells. Intrigued by the physiology of iron transport, Wessling-Resnick joined the faculty of the Harvard School of Public Health in 1990 to pursue her investigations. "Iron deficiency is the largest public health nutrition problem worldwide," she said about the significance of her work. "Too little iron produces anemia and iron-deficiency in children is associated with irreversible developmental problems." Recognizing also that an excess of iron has negative physiological effects, Wessling-Resnick's laboratory is interested in understanding the mechanism and regulation of iron transport at the molecular level. "We want to understand how the body responds to the anemic versus overloaded state to modulate intake of iron."

One of the lab's current approaches involves the screening of chemical libraries to identify small compounds that can potentially modify the cellular uptake of iron; Wessling-Resnick credits UMMS for the ease with which she has used advanced technology. "My graduate training gave me the tools to confront new challenges and employ new techniques — for example, using robotics to perform the chemical library screen is something I feel fully prepared to carry out."

Every bit as enthusiastic for science as she was in her youth, Wessling-Resnick attains the most fulfillment from her role as mentor. "The most satisfying accomplishment of my career has been the success of graduate students and postdoctoral fellows who have trained with me. I feel a great sense of achievement as these trainees make their own scientific discoveries and get as excited about research as I am." —KAB

Marc C. Restuccia, MD '84

A seasoned veteran of every aspect of the rapidly evolving field of emergency medicine, Marc C. Restuccia, MD '84, has been instrumental in bringing UMMS to its current leadership status in training and practice. Summing up his many contributions, Dr. Restuccia explained that, simply, he "loves emergency medicine."

Restuccia admits that serendipity came into play in his choice of this specialty. Upon completing his internal medicine residency at Saint Vincent Hospital in Worcester, the director of emergency medicine there urged him to undertake a second residency in the field. Restuccia returned to UMMS, getting in on the ground floor of its newly created emergency medicine graduate program. Now a teacher and advisor to the program's subsequent classes, Restuccia noted that the program is one of the most competitive in the country—"We accept only 12 out of 300 applicants."

Restuccia especially enjoyed his duties as a Life Flight helicopter physician during his own training, and was quickly tapped to serve as medical director of UMass Memorial's Life Flight and Emergency Medical Services. With responsibilities for training, equipment, advocacy, and quality improvement and assurance for the life-saving transport and treatment services, Restuccia said, "I am most proud of increasing training and practice standards for our paramedics. We are one of only six ambulance services statewide authorized to use medications in transit to facilitate the intubation of critically ill and injured patients." Restuccia also conducts research vital to establish benchmarks for emergency medical service providers. "The legacy I would like to leave is the recognition that what we do in emergency medical services has scientific validity."

Ever since the September 2001 terrorist attacks put emergency medicine in the spotlight, Restuccia and his colleagues have been in demand to share their expertise in emergency medical responses to terrorism—bioterrorism, in particular. As a result, they created a packet of information that condenses the existing body of knowledge and resources, such as Web-based textbooks, and introduced it to the Massachusetts Medical Society, affiliate hospitals and medical students. "Because emergency and primary care physicians will be at the front lines in the case of a bioterrorism attack, they need to know where to quickly find this pertinent information." Speaking of information, Restuccia has contributed extensively to

the literature, including chapters in the seminal text, *The Clinical Practice of Emergency Medicine, 3rd Edition.* He is also co-author, along with Emergency Medicine Chair Richard V. Aghababian, MD '74, of *Cardiovascular Disorders in Emergency Medicine: The Core Curriculum.*

Far from a one-man show when it comes to improving the quality of emergency care in Central Massachusetts, Restuccia defers homage to the other, often unsung professionals whose work he oversees—emergency medical technicians, paramedics, nurses and helicopter pilots. "The better we are, the better our patients' outcomes. EMS professionals really make a difference." —SLG

Jean Boucher, PhD '02

Graduate School of Nursing Assistant Professor Jean Boucher, PhD '02, RNCS, ANP, ACNP, is a Worcester native who is happy to be in a position that enables her to give back to her community. Happily for her patients, colleagues and students, she has much to offer, as a scholar continually in pursuit of new knowledge, a warm but rigorous educator, a highly skilled clinician and, most of all, an advocate and purveyor of compassionate patient care.

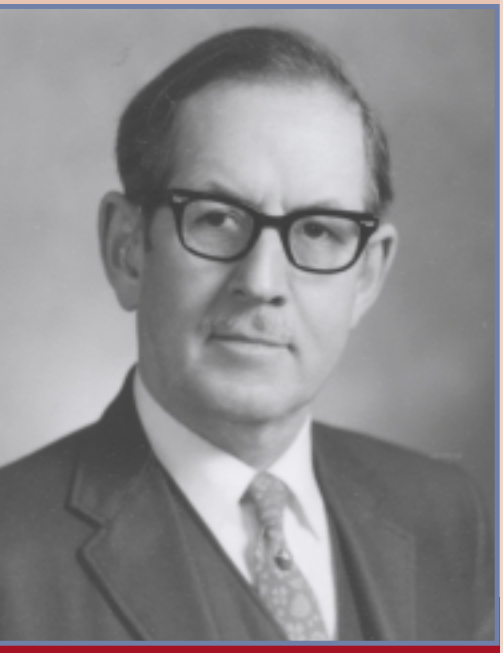
Upon earning her BS in nursing from Fitchburg State College, Dr. Boucher's accomplishments began with one of her first nursing jobs at the former UMass Medical Center. While continuing to work as a staff nurse at UMMC, she pursued her master's degree at Boston College, but soon returned as an enterostomal therapy clinical nurse specialist (CNS). "I loved it!" she said, but noted that a CNS focuses more on patient education and staff development. Wanting to provide more direct patient care and management, she took a position as an adult hematology/oncology nurse practitioner at the UMass Cancer Center. There, she discovered working with cancer patients to be enormously rewarding. "They are people with needs you can fill. I love providing that kind of support and continuity of care. You get to make a real difference," she explained.

It was through her work at the Cancer Center that Boucher became especially interested in the role of hope in a cancer patient's quality of life. Specifically, she is interested in how to "operationalize" hope in patients. "Nurses have always followed up informally with clinic patients via phone, but no one had ever measured the efficacy of such an intervention." Boucher decided to design a randomized study that became her dissertation, *Telephone Intervention: Hope for Cancer Patients.* "While we didn't find much difference between the formal and informal interventions, I learned about how to design, implement and measure the results of such a study."

For one year beginning this fall, Boucher will continue honing her research skills in the University of Pennsylvania's postdoctoral fellowship program, Nursing Research: Psychosocial Oncology. With institutional support from the Graduate School of Nursing, she will split her time between teaching duties in Worcester and study and research in Philadelphia. "The benefit of postdoctoral work is being mentored and funded to continue my research in oncology nursing, which is very important to me," she explained. Boucher has already been awarded another grant in her specialty of adult oncology, this one from the American Cancer Society to study, with co-principal investigator and UMMS Professor of Medicine Jane Zapka, ScD, the factors that influence the quality of life, hope and symptom distress in breast and colorectal cancer patients.

Boucher embraces her multiple roles and her nursing profession with energy and enthusiasm, grateful for the opportunity to pursue her interests at an integrated, multidisciplinary health sciences center. "I am still learning and being challenged. My work with patients, graduate nursing students and research at the GSN gives me all the worlds I want."—SLG

Development Update:



Joseph Lundy, MD

Maude Lundy

Photos courtesy of the Lundy Estate

UMMS Library is Recipient of Lundy Planned Giving Generosity

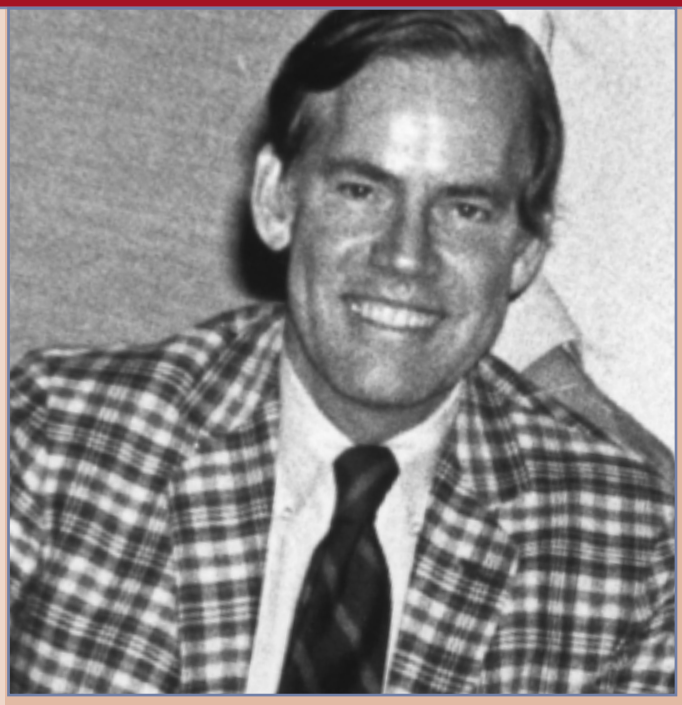
In his eight decades serving the people of Central Massachusetts, the late physician Joseph A. Lundy witnessed dramatic changes in the health care and culture of Worcester County. Together with his wife Maude, Dr. Lundy was an enthusiastic supporter of medical progress and a vocal advocate for the establishment of the University of Massachusetts Medical School. And, while both Dr. and Mrs. Lundy have since passed away, their dedication to the institution continues with a major financial bequest from their estate to the Medical School's Lamar Soutter Library.

Joseph A. Lundy was born and raised in Lawrence. An avid student with a passion for reading, he received his medical degree from Tufts University Medical School in 1932. After completing an internship at Worcester City Hospital, Dr. Lundy settled into his career as a general practitioner in the town of Oxford. As a general practice physician in the late 1930s, Dr. Lundy's days were spent primarily on home visits, traveling to the sick and attending to the injured. Assisting Dr. Lundy with his demanding schedule, Oxford public health nurse Maude McKewen proved to be the ideal partner, both professionally and personally, and the couple married in 1940. In 1941, the attack on Pearl Harbor deeply affected the couple and Dr. Lundy enlisted in the United States Army, serving with the medical corps in North Africa and France until 1945.

Upon returning from duty, Dr. Lundy continued his role as community physician, serving as chief of medicine at Worcester City Hospital and senior physician at St. Vincent and Hahnemann hospitals. Through leadership roles with the Worcester District Medical Society and the Massachusetts Medical Society, he actively campaigned for the Medical School's creation in Worcester and was involved in the incorporation of the Worcester District Medical Society Library into the new school's own collection. Upon Dr. Lundy's retirement from medical practice in 1982, then UMMS Chancellor Robert E. Tranquada, MD, thanked him for his exceptional contributions to the training of health care professionals, appointing him to the position of associate professor of medicine.

With the death of Dr. Lundy in 1992, Maude continued his legacy with the creation of the Joseph A. and Maude M. Lundy Fund, intended to expand and maintain the Lamar Soutter Library. And, upon her passing in 2001, Mrs. Lundy bequeathed a significant portion of her estate to greatly enhance that fund. According to Library Services Director Elaine Martin, gifts such as the one from the Lundy estate are crucial to the growth of the library as it serves a wide range of students, physicians and community members from across the region. (In 2001, the Lamar Soutter Library was designated the New England Regional Medical Library by the National Library of Medicine.) "We are so grateful to Mrs. Lundy for her foresight in providing this additional gift to assist in the education of our students," said Martin. "She recognized that the library is an incredibly valuable resource and is ensuring continued and broadened access to the latest information that will enable our students to become better physicians for their patients."

For information about planned giving opportunities, contact the UMass Memorial Foundation at 508-856-5520.



Benefactor Profile: Blair O. Rogers, MD

From the age of 18, Blair O. Rogers, MD, has not only lived in the world of medicine, he has shaped it. A pioneer in the field of transplantation, the retired plastic and reconstructive surgeon has influenced medical practices and procedures, continuing to make an impact today, in his 70s, through his involvement in organizations at the forefront of his field. Throughout his career, he has collaborated with world leaders and scientists to improve the lives of thousands, and in doing so, developed a keen sense of who the movers and shakers are in research and treatment. He supports the University of Massachusetts Medical School because, in his words, "I give to research institutions that save people. Simple as that." In this case, again, he speaks from experience.

The daughter of his cousin was diagnosed with breast cancer in 1992. After a recurrence, she underwent a bone marrow transplant in 1998 at the UMass Cancer Center. The transplant involved the use of adult stem cells, a technique discovered through research that relies on the stem cells' ability to grow and develop into any type of cells in the body, thereby replacing diseased, or cancerous cells. "Four years later, her cancer is still gone and she is doing well," said Dr. Rogers. "This saved her, and I was overwhelmed." Grateful to the physician who treated his cousin, Dr. Rogers learned more about the cancer research initiatives at UMMS and made his first contribution. "I want to be intimately involved with a major center that proves people's lives can be saved. Frankly, I'm not going to throw away money unnecessarily. I see UMass Medical School as having gained a reputation throughout the country much like the one that has characterized Harvard and other centers of that stature. I hope for—and expect—further imagination and brilliance here."

Such qualities have marked the life and career of Dr. Rogers. In 1941, he was attending Cornell University as an art student. With the devastation of Pearl Harbor in December of that year, however, he was moved to embark on a new course of study. "It's interesting, my college roommate at the time said to me, 'Your mother always wanted you to be a surgeon.' I didn't recall her ever speaking to me about her wish, but well, it just seemed right." Dr. Rogers studied in the College of Physicians and Surgeons at Columbia University and during the war, assisted Dr. Darrel Shaw, the plastic surgeon at the Halloran Hospital Center on Staten Island, where they spent 18-hour days treating soldiers injured in the Normandy invasion. After this initial exposure to the techniques of skin grafting, Dr. Rogers was encouraged during his studies at Columbia to "learn everything in the medical literature—French, Italian, German, others—about homotransplantation, the transplantation of tissue from one person to another. At the time, skin homografts were used only as a temporary covering of wounds." Specialists in the field were anxious to improve this transplantation by preventing the risk of rejection of the donor tissue by the recipient. In 1949, following his internship at the University of Minnesota, Dr. Rogers was asked to speak about his five-year study and findings before the prestigious American College of Surgeons. "I had read 439 articles on homotransplantation and later prepared a compilation which I published in 1951."

(continued, next page)

Rogers, continued

One year later, in 1952, the first major transplantation conference took place at the Arden House along the Hudson River in New York, that according to Dr. Rogers, "shook the world" of tissue transplantation. Thirty-five of the world's leading scientists and surgeons, including Dr. Rogers, convened for what was considered the launching of the field of homotransplantation. Its first medical journal, *Transplantation Bulletin*, was founded in 1953, with Dr. Rogers as its associate editor. Subsequent conferences organized by Dr. Rogers were held at the New York Academy of Sciences and additional breakthroughs ensued. "One of the greatest was by Dr. Joseph Murray, a trustee of the Worcester Foundation for Biomedical Research at UMass Medical School, who performed the first kidney transplant between identical twins," said Dr. Rogers. "He received the Nobel Prize in 1990 for his pioneering work in organ transplantation." Dr. Rogers' own work in skin grafting between identical and non-identical twins helped lay the foundation for Murray's accomplishment.

A sought-after expert, Dr. Rogers was asked by his personal friend, Mrs. Eleanor Roosevelt, to travel in 1959 to the Soviet Union as a lecturer under the Lacey-Zaroubin Agreement. "There I met the Russian surgeon, Anastasy Lapchinski, who was conducting experiments in limb transplantation. I realized he needed to meet an American scientist, Clifford Snyder, doing the same type of study here." Their collaboration and techniques brought new information to the field, with a consequence being the first operation in Boston to restore a severed limb to a young accident victim in 1962.

In his later career, Dr. Rogers continued to edit two leading journals in the fields of reconstructive and aesthetic plastic surgery, prepared an exhibition for the Smithsonian Institution in 1971 on plastic and reconstructive surgery, and traveled to China to learn more about plastic surgery procedures, some of which were performed under acupuncture anesthesia. "And now I come to Worcester frequently to learn of the latest endeavors that may just change the world."

For information about giving opportunities at UMass Medical School and UMass Memorial Health Care, contact the UMass Memorial Foundation at 508-856-5520.

Walk to Cure Cancer 2002

In its fourth year, the annual Walk to Cure Cancer on Sept. 2 saw over 6,000 walkers participate, contributing approximately $700,000 to the effort to support the research programs of the Massachusetts AFL-CIO Cancer Research Center located within UMass Medical School's Aaron Lazare Medical Research Building. Pictured is the Walk team honoring Kim Brooks, daughter of UMass Memorial oncology nurse Lucille Talbot. Brooks battled Hodgkins Disease for 16 months, undergoing two bone marrow transplants performed at UMass Memorial Medical Center. She passed away in March at age 29. Members of the Kim Brooks team are (left): Maura Haverty and Erin Gray, daughter and niece, respectively, of UMass Cancer Center oncology nurse Mary Haverty (far right), and her collegues Jane Baker, RN, and Terri Reilly Dowd, RN (back row, left to right).

Lee Iacocca and Aldo Rossini, MD

Iacocca Foundation Continues Generous Support of Diabetes Research

The trustees of the Iacocca Foundation have provided two-year support in the amount of $104,622 to postdoctoral fellow Philip J. diIorio, PhD, a member of the laboratory of Aldo A. Rossini, MD, the William and Doris Krupp Professor of Medicine and director of the Division of Diabetes at UMMS. Using the model system, zebrafish, Dr. diIorio is working to identify the precursor, or stem cells, that have the potential to develop into pancreas cells.

In a manuscript recently accepted for publication by the journal *Developmental Biology*, diIorio outlines the research he and his colleagues conducted that demonstrates the gene Sonic hedgehog (shh) is required for development of the insulin-producing islet cells of the pancreas. Support from the Iacocca Foundation will enable diIorio to continue his work in two major areas: identifying differentially expressed genes that cause dramatic, specific effects on the developing islet, which would be a major advance in understanding how insulin-producing cells develop; and, determining if new pancreas cells made from bone marrow stem cells are capable of making insulin.

In 2000, the Iacocca Foundation awarded a $250,000 grant to Dr. Rossini and his team to help fund human clinical trials in islet transplantation research. (See related story on page 10 for details on the latest breakthrough in this area.) This work builds upon the results of successful preliminary studies also funded, in part, by a grant of $95,000 from the Iacocca Foundation. A related $207,000 Iacocca grant also funds a career development award and the Iacocca Postdoctoral Fellowship.

Ned Hentz and Kathryn Iacocca Hentz (background and left) hosted a reception at their home on Nantucket Island on July 30, 2002, in honor of Aldo A. Rossini, MD, the William and Doris Krupp Professor of Medicine and Director of the Division of Diabetes at UMMS. Prior to the reception, Dr. Rossini gave a public lecture titled "Diabetes Research: Steps Toward a Cure" as part of Nantucket Cottage Hospital's Summer Lecture Series. With Kathryn Hentz are Ellen Plunkett of the Iacocca Foundation and Susan Dymant of Nantucket.

The Mission of the UMass Memorial Foundation

The UMass Memorial Foundation serves as the advocate for the University of Massachusetts Medical School and UMass Memorial Health Care by working with donors to facilitate advancements in medical research and patient care and to educate tomorrow's medical professionals.

Contact the Foundation at 508-856-5520 or at giving@umassmed.edu.

The Last Word

BY JEAN MARCELIN
UMASS MEDICAL SCHOOL CLASS OF 2005

The International Medical Education Program sponsored by the Office of Medical Education and the Department of Family Medicine & Community Health at UMMS includes a component called the "Pathway on Multiculturalism." Each year, 18 students take part in this Pathway, as a way of developing their linguistic and cultural competence as physicians. Cultural competence—the process that requires individuals to develop and expand their ability to know about, be sensitive to, and have respect for cultural diversity—is a hallmark of the UMMS experience. Jean Marcelin came to Massachusetts in ?? and grew up in Rutland. The following journal passages reveal his "Pathway experience" this summer.

I made no expectations for my trip to Honduras; however, I did set some goals. I wanted to speak and understand the Spanish language; work in different health facilities to get a sense of how health care is administered in the country; focus my cultural immersion in the Afro-Honduran communities of the Garifuna people and learn their way of life; and, after a challenging year of school, rejuvenate my motivation and remind myself of the reasons why I should continue to work hard.

My nervousness regarding the language was not nearly as strong as my having to live in a "Third World" setting again. I once lived in Haiti, but many years have passed since I had to live in parallel conditions. Was I up for this task personally? Would I discover that I had lost the ability to live in such humble surroundings? Am I capable of picking up (in Honduras) where I left off in Haiti?

I had seven hours on a bus to sit and become familiar with the feel of the country, which in fact, reminded me of Haiti. Every aspect of the ride was a wake up call to the lifestyles that exist within Honduras. In Haiti, the poverty and lack of jobs is so steep; I assumed it was the same for Honduras, and this was verified during our bus trip.

I had received the following sets of suggestions: Don't drink the water; don't brush your teeth with the water; bathroom is locked at night, remember your key; watch out for stinging ants when walking at night; don't pet the dogs, they bite.

I was hosted by the Gonzalez family. They were ten living in roughly 600 square feet of space, which included a living room, bathroom, all bedrooms and the kitchen/dining room. However, everyone carried a smile that seemed to say, "it's not much, but we call it home," and I was determined to do the same. I could tell that somehow, I was able to touch their lives much like they had touched mine, and we all are better because of our interactions with one another.

Next to these interactions with my "host" family, no other experience in Honduras moved me as much as working in the local hospital. I worked with Dr. Pierre, Dr. Guevarra and Dr. Arzu in the outpatient clinic. They were more than kind to me, and made certain that my experiences were fully enriched. Dr. Guevarra allowed me the opportunity to deliver a child, assist with the episiotomy and suture. Dr. Pierre was the first to walk me through the placement of a urinary catheter and the casting of a broken limb. As for Dr. Arzu, we spent our time understanding disease management and learning Spanish medical terms. It's amazing that my interaction with them was so rewarding considering the conditions we worked in.

The hospital is not big. The narrow hallways were always overfilled with patients, who seemed to have spent their last coin to get there. The sanitary conditions gave the feeling that one might leave there a bit sicker than when one arrived. The emergency department functioned on six beds, shared between two rooms. Somehow the doctors were able to administer care to their patients and resolve their ailing conditions as best they could. Eventually, I learned to acknowledge that medicine in these settings had to be administered differently, not out of lack of compassion, but in fact, because of it.

I've learned a lot about myself through the eyes and plight of others. I am excited to have achieved my goals regardless of my fears as a stranger. I am a better person because of this trip, and this will undoubtedly influence my becoming a better husband, father and future doctor.

Vitæ: the magazine of the University of Massachusetts Medical School, one of five campuses in the UMass system. The magazine is distributed twice yearly to members and friends of the UMMS community. Published by the Office of Public Affairs & Publications, it is paid for out of non-state funds.

Readers are invited to comment on the contents of the magazine, via letters to the editor.
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