



## DEAN'S MESSAGE: What's On My Mind

**W**hat's on my mind this month is the State of the School address that I delivered on September 29th. "Working Together, Bringing Out the Best" was the theme of my 2010 address, and it featured highlights of the past year, which was filled with both challenges and extraordinary accomplishments.

To an audience of nearly 500 faculty, staff, students and university and hospital leaders, I reviewed the highlights of the past year, of which there were many. In my address, I compared the School of Medicine to a large machine with many moving gears, which works well only when all the gears are in sync. Like a gear, each of us has a specific identity and job to perform, but we are coupled together to obtain the best performance. We all actively worked together to maintain our trajectory of successes and accomplishments. We really are greater than the sum of our individual efforts.

On the education front, we continue to admit highly qualified, exemplary students to this medical school. The number of applications to medical schools across the country are fairly constant—a one percent increase over the last year—but we continue to see a disproportionately high increase in the number of applications to this medical school—an eight percent increase over last year. Eight percent of our entering class of medical students (14 percent overall)

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are underrepresented in medicine, a statistic of which we are very proud. The entering class' grade point average and MCAT scores continue to exceed the national average. I am very pleased to report that last year our students had 149 peer-reviewed publications.

Among the 76 public medical schools in the U.S., the School of Medicine held steady in sixth place in the Association of American Medical College's (AAMC) rankings of direct grants and contract expenditures. The School of Medicine also ranked 18th in this category when compared to all 133 medical schools in the country, the same ranking as last year. According to the AAMC, the School of Medicine is the fourth fastest growing research enterprise in the country—a new ranking that shows the growth and velocity of our research programs and of which we should all be very, very proud.

Faculty research efforts were especially successful this year, with grants and contracts increasing 12.5 percent in FY 2010. A total of \$479.1 million was awarded to the School of Medicine, including 145 American Recovery & Reinvestment Act grants worth \$60 million. Decades of hard work by you, our dedicated faculty and staff, have brought us to this point and your efforts have placed the University of Maryland School of Medicine among the top tier of medical schools in the nation and, indeed, the world.

The School of Medicine's total revenue, which includes grants, tuition, state funding, faculty practice and philanthropic gifts, was \$881.5 million,

up from \$808.3 million in 2009. A 13.8 percent increase in philanthropic funding had much to do with this success, with private gifts and endowments bringing in \$61.2 million. Revenue from the faculty practice plan also grew slightly, from \$210 million to \$212.7 million. Together, the economic impact of the School of Medicine and the University of Maryland Medical Center on the state of Maryland is estimated to be \$5.1 billion.

There were many, many more accomplishments that I highlighted in my address, and I'd like to include just a few of them here:

- We created the Office of Postdoctoral Scholars last year to support the research training, professional development and networking opportunities for postdoctoral fellows.
- More than \$13 million in research funding has been awarded to participants in the Research Career Development Program's Intensive Grant Writing Workshop.
- The University of Maryland Biotechnology Institute was restructured and two programs transitioned into the School of Medicine, becoming the Program in the Biology of Model Systems and the Center for Biomedical Engineering and Technology. Fifteen new faculty members brought with them \$6.1 million in funding.
- We opened an Immediate Care Clinical Practice on campus to enable faculty, staff and students to get quick, same-day access to non-emergency care during work hours.
- University of Maryland faculty and staff treated more than 1,000 patients in earthquake-ravaged Haiti, and they continue to maintain a presence there long after other help has returned to the States.
- Television coverage about the School of Medicine was up 44 percent, in large part due to the attention given to our work on the development and testing of the H1N1 vaccine, and the Vatican's support of an international stem cell consortium on stem cell research led by the School of Medicine.
- Mini-Med School celebrated its tenth anniversary, and we are proud of the fact that nearly 5,000 people have learned better health practices through a variety of Mini-Med sessions presented by the School of Medicine throughout the state of Maryland since 2001.

I do want to acknowledge that these accomplishments were achieved during a difficult year filled with major challenges on multiple fronts. Some challenges were long-standing, and others were new and unexpected, such as the blizzard that closed the campus for nearly a week. Nevertheless, we were able to generate a successful year in spite of the many challenges we faced, and this demonstrates that when we maintain our vision and our resolve to achieve our goals, not only do we achieve these goals, but we also bring out the best in all of us.

In the relentless pursuit of excellence, I am  
Sincerely yours,

E. Albert Reece, MD, PhD, MBA  
Vice President for Medical Affairs, University of Maryland  
John Z. and Akiko K. Bowers Distinguished Professor and  
Dean, University of Maryland School of Medicine

### 👉 Mark Your Calendars! 👈

## Founders Week Schedule of Events November 9–12, 2010

Date	Time	Event
Tuesday, November 9	■ 9:00 am	Academic Procession Lineup, Hippodrome Theater
	■ 10:00 am	The Inauguration Ceremony of <b>Jay A. Perman, MD</b> , as the 6th President of UMB, Hippodrome Theatre Reception immediately following ceremony
Wednesday, November 10	■ 6:30 pm	Inaugural/Founders Week Gala, Hilton Baltimore
	■ 4:00 pm	Researcher of the Year Lecture, Davidge Hall – <b>Bartley Griffith, MD</b> , Professor of Surgery Reception to follow in the National Museum of Dentistry
Thursday, November 11	■ Noon – 1:30 pm	Student Cookout, SMC Campus Center/School of Nursing Lawn
	■ 4:00 pm	Entrepreneur of the Year Presentation and Reception, BioPark Building II – <b>Cedric Yu, DSc</b> , Professor of Radiation Oncology
Friday, November 12	■ 11:30 am – 1:00 pm	Staff Lunch, Westminster Hall (2 time slots available)

\*PLEASE NOTE: Tickets are required for all events and can be ordered on the UMB Founders Week and Inauguration Web sites @ <http://founders.umaryland.edu/2010/index.htm>. For more information, please email [events@umaryland.edu](mailto:events@umaryland.edu).

# NEW HOPE FOR Ichthyosis Patients



Richard L. Eckert, PhD

A new study from the Department of Biochemistry & Molecular Biology has identified a disease mechanism that seems to be critical for development of the debilitating inherited skin disorder called autosomal recessive congenital ichthyosis, or ARCI. The researchers hope the discovery could lead to new treatments for the devastating condition, according to the paper published recently in the *Journal of Biological Chemistry*, with senior author Richard L. Eckert, PhD, the John F.B. Weaver Distinguished Professor and Chair, Department of Biochemistry & Molecular Biology.

Ichthyosis, as the disease is commonly known, affects one in every 200,000 to 300,000 people. There are many types of ich-

thyosis, including Lamellar Ichthyosis, in which the skin is covered with large, hard, dark-colored, fish-like scales. Another type is Congenital Ichthyosiform Erythroderma, characterized by fine, light-colored scales and intense redness of the skin. The disease usually presents in newborn babies or in the first year of life, and affects 16,000 babies every year. The disease is disfiguring and devastating to patients, and there is no cure.

These studies were spearheaded by Haibing Jiang, PhD, a senior researcher on Dr. Eckert's team in the Department of Biochemistry & Molecular Biology, who examined the cellular distribution of a particular protein known as type I transglutaminase (TG1), which is mutated in half of ichthyosis patients.

"TG1 protein is required for skin maturation, and mutation of the gene results in deficiencies in epidermal cornification, the process by which cells form an epidermal barrier," explained Dr. Eckert. "Mutation of TG1 is found in a significant percentage of ichthyosis patients. It leads to the abnormal

skin surface we see in these patients, in which they are covered with plate-like fish scales. In fact, the disease takes its name from these fish scales, from the prefix 'ichthy' as the Greek root for the word fish."

To better understand the role of TG1 in ichthyosis, the scientists delivered mutated TG1 to normal human skin cells. They found that the mutant proteins accumulate at an abnormal location inside the cell, in the endoplasmic reticulum (ER). The ER is a processing and quality control center for new proteins being synthesized in the cell. When mutant proteins are not properly synthesized or folded—a process in which they become active, three-dimensional structures—they remain inactive and accumulate within the ER for removal from the cell. When inactive proteins accumulate here and cannot be successfully removed, they result in cell death.

"We know that proper folding is required for TG1 function, and when we see mutant TG1 accumulated in the ER, we assume it is not properly folded,"

said Dr. Jiang. "This accumulation leads to reduced TG1 function in these patients. It alters skin cell maturation and may also cause cell death. The good news is that this discovery may mean new hope for ichthyosis patients."

The scientists

believe that using chemicals to restore normal folding of mutant TG1 could alleviate some of the disease processes and symptoms. In fact, their research found that treatment with chemicals to enhance protein folding reduces accumulation of mutant TG1 in the ER. "Though additional research is necessary, we believe that indentifying this novel mechanism is a significant step forward in our understanding of ichthyosis," said Dr. Eckert. "We hope this may lead to new therapies to restore the function of this mutated gene and alleviate these terrible symptoms." 🏛️

“There are many types of ichthyosis, including Lamellar Ichthyosis, in which the skin is covered with large, hard, dark-colored, fish-like scales. Another type is Congenital Ichthyosiform Erythroderma, characterized by fine, light-colored scales and intense redness of the skin.”



## Griffith, Rooks and Yu Receive UMB Founders Week Awards

Three of four UMB Founders Week Award winners are School of Medicine faculty

### RESEARCHER OF THE YEAR

#### Bartley Griffith, MD

Professor, Department of Surgery  
Chief, Division of Cardiac Surgery

Dr. Griffith's many individual and collaborative contributions to research have moved the School of Medicine to international stature in his field. He has established a productive collaboration with bioengineers at the University of Maryland, College Park to develop a National Institutes of Health-funded artificial lung research program. At the School of Medicine, he works with colleagues in the areas of physiology, molecular biology and cardiology to understand the molecular consequences of myocardial strain. His work on the artificial lung may be responsible for the first human use of an ambulatory, portable at-home device for artificial respiration.

Dr. Griffith is the principal investigator for the Maryland arm of a \$5.4 million, four-year National Heart, Lung and Blood Institute grant called Pumps for Kids, Infants and Neonates, or PumpKIN—research that represents a crucial step toward saving the lives of young children. The miniaturization necessary for heart pumps for children presents enormous technical challenges that require radical new designs but will make all the difference in the world for infants with serious cardiac problems, particularly babies who have not responded to surgical or other measures to correct their heart defects. This work on pediatric heart pumps has significant implications for currently underserved children with heart failure and will enable the development of micro-blood pumps for adults with end-stage heart failure. Current research also involves heart repair using stem cells. In addition to research, Dr. Griffith also enjoys mentoring future surgeons.

Dr. Griffith will deliver his Founders Week lecture on Wednesday, November 10 at 4:00 p.m. in Davidge Hall. The title of his presentation is "What If You Can't Breathe?"

### PUBLIC SERVANT OF THE YEAR

#### Yvette Rooks, MD

Assistant Professor and Vice Chair, Department of Family & Community Medicine

Since joining the School of Medicine faculty more than 12 years ago, Dr. Rooks has been recognized as a gifted physician and a tireless public servant.

Her commitment to medicine and public health go beyond the School of Medicine's walls into disadvantaged communities that need her knowledge and candor. She spends countless hours volunteering at city schools and community centers to educate both old and young citizens of Baltimore about the importance of nutrition and exercise. Additionally, she has participated in Mini-Med School, the National Youth Forum and the Morgan State University summer camp program. She is the immediate past-president of the Maryland Academy of Family Physicians and is the head primary care team physician for the University of Maryland, College Park.

### ENTREPRENEUR OF THE YEAR

#### Cedric Yu, DSc

Carl M. Mansfield, MD, Professor in Radiation Oncology, Department of Radiation Oncology

Dr. Yu's work and leadership have contributed to the international recognition of the University of Maryland School of Medicine's Department of Radiation Oncology. His pioneering developments in radiation treatment technology have improved the quality and efficiency of cancer treatments using radiation throughout the world. In 2006, Dr. Yu patented a dedicated breast radiation therapy method, now called the GammaPod System, which was developed with the help of a \$3.5 million Small Business Innovation Research grant from the National Institutes of Health. He founded Xcision Medical Systems, LLC, to pursue the development of the high-precision, noninvasive system of treating early-stage breast cancer. Xcision, which is based in Maryland, plans to submit the application to the Food and Drug Administration for clearance before the end of 2010.

Dr. Yu will deliver a presentation on his novel technology and the treatment of early-stage breast cancer on Thursday, November 11 at 4:00 p.m. in the BioPark II Building. 🏛️





# SOM Teams with Nevada Company to Bring Proton Therapy to Baltimore

\$200 Million Maryland Proton Treatment Center Expected to Break Ground in 2011, Open in 2014



William F. Regine, MD, discusses proton therapy treatment for cancer patients at the October 13 press conference announcing the Maryland Proton Treatment Center.

The University of Maryland School of Medicine, through its affiliated clinical faculty practice group, is playing a key role in plans for an estimated \$200 million project to bring the most advanced radiation technology in cancer treatment—proton therapy. The School of Medicine's radiation oncology practice plan has signed a letter of intent with Advanced Particle Therapy, LLC, of Minden, Nevada, thus entering into a final exploratory phase for the development of the Maryland Proton Treatment Center, anticipated to be located in a 100,000 square-foot facility in the University of Maryland BioPark.

The center will be the first in the Baltimore-Washington region to offer proton therapy. The radiation oncology faculty experts, who are members of the University of Maryland Marlene and Stewart Greenebaum Cancer Center team, could begin providing treatments at the center as soon as 2014.

"This is the next-generation improvement in radiation oncology," said William F. Regine, MD, professor and Isadore & Fannie Schneider Foxman Endowed Chair in Radiation Oncology and interim chair of the Department of Diagnostic Radiology & Nuclear Medicine. "It allows us the unprecedented ability to deliver a targeted dose of lifesaving radiation therapy directly to the tumor while minimizing radiation to the healthy tissue. It can result in more effective treatment for patients and fewer side effects. This technology is a powerful new addition to our tool box for fighting cancer."

According to the letter of intent signed by University of Maryland Radiation Oncology Associates and Maryland Proton Treatment Center, LLC, the entity set up by Advanced Particle Therapy to handle this project, School of Medicine faculty will provide clinical management and therapeutic services to the Maryland Proton Treatment Center, including physician services and medical direction. Maryland Proton Treatment Center, LLC will design, build, equip, own and operate the center.

"Governor O'Malley and I are proud of Maryland's innovative economy and we applaud the University of Maryland School of Medicine for creating this public-private partnership to create the Maryland Proton Treatment Center," said Maryland Lieutenant Governor Anthony G. Brown. "This center will serve 2,000 patients every year, saving lives and helping the state of Maryland build on its legacy as the nation's medical leader. During tough times, the center will create 325 construction jobs and 110 permanent jobs in our state's growing life science industry. It will also continue the state's and Baltimore City's investment in the communities of West Baltimore." The center, preliminarily scheduled to break ground in August 2011, is projected to generate \$50 million in construction, according to Advanced Particle Therapy. The permanent jobs the center will add to the local economy include radiation oncologists, medical physicists, radiation technologists, other medical support personnel and administrative staff.

Advanced Particle Therapy has taken on the same role in the development of a similar center in San Diego, teaming with Scripps Health and Scripps Clinic Medical Group. It is anticipated that the Maryland center will use technology developed by Varian Medical Systems of Palo Alto, California, a world leader in radiation oncology equipment. "We're honored to team with the University of Maryland School of Medicine's nationally recognized radiation oncology faculty to bring this proton therapy center to the Baltimore-Washington region," said Jeff Bordok, president and CEO of Advanced Particle Therapy.


There are currently nine proton therapy treatment centers in the United States, with several more in development, and the technology is used in more than 30 cancer centers worldwide. The closest proton therapy center to the Baltimore-Washington area opened in 2009 in Philadelphia. "This center certainly will offer our patients a unique approach to treatment in a convenient location close to I-95 and many amenities in downtown Baltimore," said Bill Tucker, assistant dean for Practice Plan Affairs and chief corporate officer of University Physicians, Inc., the faculty practice plan. "Location is key to this project, since patients who need proton therapy must come for daily treatments for weeks at a time."

"Varian Medical Systems is pleased to participate in this exciting venture," said Lester Boeh, Varian's vice president for emerging businesses. "Our mission at Varian is to focus energy on saving lives. To that end, we have devoted considerable resources toward developing a fully integrated proton therapy system capable of intensity modulated proton therapy. We also have a long-standing and highly valued relationship with the University of Maryland Marlene and Stewart Greenebaum Cancer Center, and this project will enable us to take another step together toward achieving Varian's goal of helping to save another 100,000 lives per year."

Proton therapy is an advanced technology approved by the U.S. Food and Drug Administration and reimbursed by both Medicare and private insurance. The therapy has been used to treat nearly 70,000 patients worldwide since its inception in the 1950s, according to Advanced Particle Therapy. The technology for this therapy continues to evolve and will allow for its expanded use in treating cancer patients worldwide. The non-invasive, outpatient therapy requires patients to receive about 30 treatments over a four to five week period. Treatments last about 25 minutes each day for five to six days a week. After each 25-minute appointment, patients are free to leave the center and resume normal activities.

The technology uses a proton beam to deliver radiation more precisely to the tumor site than with standard x-ray radiation. "Proton therapy is more controlled, more precise and therefore produces more effective outcomes for

**Proton beam therapy provides treatment for many common and some rare cancers. This treatment option dramatically reduces the radiation exposure to the areas of the body in the path of the radiation beam.**

certain cancer types," said Dr. Regine. "We send the proton beam directly to the tumor and instruct it to release its energy only when it reaches the tumor. We calibrate the proton radiation to the precise size and shape of the tumor, while minimizing radiation exposure to healthy tissue." Proton beam therapy provides treatment for many common and some rare cancers. This treatment option dramatically reduces the radiation exposure to the areas of the body in the path of the radiation beam. Children are a prime example of this issue, as they are particularly at-risk for the traditional side effects commonly expected from conventional radiation. 

## {MINI-MED SCHOOL}



This year's 10th anniversary of Mini-Med School ended with a graduation ceremony on October 6, which included special recognition of the 38 Mini-Med School students who have attended the program every year, for all 10 years, since 2001. Over 220 members from the community attended this year's Mini-Med School to gain insight into medical issues that may affect their health. Dean Reece presented graduation certificates, first to the 10-year graduates, and then to the rest of the participants, while congratulating them on completing the program and taking steps to empower their overall health and well-being.

Over the past 10 years, the original program has expanded to Western Maryland, Southern Maryland, the Eastern Shore and even to a Spanish-speaking series of classes in Montgomery County. The program has extended free health screenings and medical education to nearly 5,000 Marylanders of all ages, from elementary school students to their grandparents.

Thank you to the following faculty members whose participation in and contributions to the 2010 session of Mini-Med School helped to make it a great success!

Welcome and Emcee – **Claudia Baquet, MD, MPH**, Associate Dean for Policy & Planning, Department of Medicine

Advances in Pediatric Asthma – **Keyvan Rafei, MD, MBA**, Department of Pediatrics

Seasonal and H1N1 Flu – **Debbie-Ann Shirley, MBBS**, Center for Vaccine Development

Foot Health – **John Shapiro, DPM**, Department of Orthopaedics

Understanding Clinical Studies 101 – **Claudia Baquet, MD, MPH**

Losing a Limb & Living with Protheseses – **Melita Theyagaraj, MBBS**, Department of Neurology

Plastic Surgery as a Medical Necessity – **Sheri Slezak, MD**, Department of Surgery

Geriatrics – **Steven Gambert, MD, AGSF, MACP**, Department of Medicine

How Family Issues Affect Your Health & Grandparents as Parents – **Fred Strieder, PhD**, School of Social Work

Breast Cancer – **Susan Kesmodel, MD, FACS**, Department of Surgery

Graduation – **Dean E. Albert Reece, MD, PhD, MBA** 



# International Youth Leadership Summit on HIV


IN COLLABORATION with Catholic Relief Services, the School of Medicine held a special event in September to give young people affected by HIV the chance to help define policy and outreach strategies for themselves and their peers. The International Youth Leadership Summit, held on the School of Medicine campus on September 16, was organized by Ligia Peralta, MD, associate professor, Department of Pediatrics, and the staff of the Special Teens at Risk, Together Reaching Access, Care and Knowledge (STAR TRACK) program at the School of Medicine. For the event, Catholic Relief Services (CRS) brought a delegation of HIV-affected and infected young people from Africa to meet with HIV-affected and infected youth from Baltimore and across the country. The young people exchanged ideas and developed recommendations for how HIV can best be prevented and managed in young people throughout the world.

Catholic Relief Services brought to Baltimore four HIV-positive young people from Africa, beneficiaries of the Orphans and Vulnerable Children (OVC) Program. OVC is an outreach program of the President's Emergency Fund for AIDS Relief (PEPFAR), which CRS administers in Africa. The four youths met with about 15 Americans ages 18 to 24. The American youth are members of a national Community Advisory Board set up as part of the Adolescent Trials Network, a network of centers established by the National Institutes of Health to study HIV in youth. The advisory boards, comprised of local youth, provide advice and consultation on research topics, protocols and more. The young people who gathered in Baltimore for the summit included seven members of the advisory board from the STAR TRACK

program at the School of Medicine. The rest came from advisory boards in Washington, Philadelphia, New York, Tampa, New Orleans and Chicago.

Four medical students from the University of Maryland mediated the summit, dividing the young people into groups to share ideas about leadership in HIV prevention, research and program development, psychosocial interventions for HIV-positive youth, how to employ social media and email between youth and their providers, and how and when to transition patients from adolescent to adult care for HIV. They considered critical issues such as how to convince teens to adhere to their medication regimens, and discussed techniques used in Africa and the U.S. In the afternoon, the youth presented their recommendations to a group of 20 national leaders in the fields of adolescent health, policy and HIV, including doctors, nurses, policymakers and advocates.

"Youth represent the highest percentage of new HIV infection of any age group in the United States," said Dr. Peralta. "This burden underscores the need to provide them with a forum to express their ideas, which are critical in the development of appropriate prevention, clinical and research programs for adolescents and young adults. This summit is a critical venue to foster young people to become future leaders in the fight against HIV."

"The assumption is that we here in developed countries know what's best, but the truth is that we can actually learn from Africa about what works there," said Mychelle Farmer, MD, HIV technical advisor with CRS, who helped organize the summit. "I think we have a lot to learn from other countries and I hope this is a dialogue that is going to grow." 



Youth from the United States and Africa gather to discuss their ideas for prevention and management of HIV infection in young people throughout the world.

## SOMnews

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### {PHOTO OF THE MONTH}



*Butterfly on Sunflower.* Taken at the sunflower fields in Fallston, Maryland  
 Photo by: **Gloria Smedley, MBA**, research administrator, Center for Vaccine Development

### Call for Photos!

Congratulations to Gloria Smedley! Her photo submission was selected during the "Favorite Fall Activities" Call for Photos campaign. Send in photos of your favorite winter activities for the next Call for Photos. To participate, submit your photograph(s) to [photos@som.umaryland.edu](mailto:photos@som.umaryland.edu) by January 1, 2011, for the February issue of SOMnews.

