DEAN’S MESSAGE

We have made incredible progress through biomedical research in so many areas. For example, the number of deaths due to cardiovascular disease has declined by 50 percent because patients receive medical therapies based on results from research studies. Federally-funded research is responsible for hundreds of FDA-approved drugs to treat heart disease, metabolic disease, infectious diseases, and other diseases and conditions. For every $1 spent on research and care for type 2 diabetes, the health benefit is nearly doubled. Finally, the five-year survival rate of people with cancer has increased to over 70 percent due to discoveries made in cancer research laboratories.

The biomedical research enterprise is the best investment our country can make. The return on this investment accrues directly to the health and well-being of our citizens, and to the local and national economies. This is truly a bargain!

However, we are facing a time of fiscal uncertainty regarding our Nation’s support for research, especially for fundamental biomedical research. This lack of clarity and conflicting messages that the scientific community has received from the new federal administration has led a number of researchers to hold a March for Science in Washington, DC on April 22, 2017. The organizers have called upon scientists, and all those who support science, from across the United States to stand together to show our legislators and policy makers the critical need for public support for biomedical research.

The mission of the March for Science is to champion and celebrate “robustly funded and publicly communicated science as a pillar of human freedom and prosperity,” as well as an avenue to influence public policy regarding science, science education, diversity in science, and science that benefits the public good. A number of key professional societies have already received from the new federal administration has led a number of researchers to hold a March for Science in Washington, DC on April 22, 2017. The organizers have called upon scientists, and all those who support science, from across the United States to stand together to show our legislators and policy makers the critical need for public support for biomedical research.

As our Vision 2020 document outlined, challenging times call for innovative leaders to think strategically and opportunistically in order to not only sustain but to thrive in these moments. Indeed, the Accelerating Innovation and Discovery in Medicine (ACCEL-Med) Initiative called upon our entire community to ask the “Big Science” research questions, to collaborate broadly across the academic units, and to rapidly translate discoveries made in the laboratory into clinical practice.

This month, we feature the innovative work of our Department of Radiation Oncology, led by Dr. William Regine, the Isadore & Fannie Schneider Foxman Chairman and Professor. The biomedical researchers and physician-scientists in the Department of Radiation Oncology are making selective, strategic and bold choices to drive our work in radiobiology forward. They have integrated research across the continuum of biomedicine, from basic science, to animal work, to preclinical studies, to treatments for people.

In addition, faculty within the Department of Radiation Oncology oversee the Maryland Proton Treatment Center, one of only a handful of such centers in the United States. The Proton Center gives patients in our region access to the most advanced radiation technology and care available, rooted in rigorous scientific research. Our patients’ lives have already been profoundly changed by the treatment and care they’ve received from the Proton Center physicians and staff — and we are only within the first few years of the Center’s opening!

The School of Medicine’s Department of Radiation Oncology is unique in the breadth of medical countermeasure research our faculty and staff are conducting. We are unique because we have an entire division dedicated to translating basic research into preclinical work, and vice versa. Most importantly, we are unique because the people conducting this vital work are all located at the same institution, within walking distance of each other, which makes us very well-positioned to lead the fields of radiation oncology and radiation countermeasures research.

The medical advances that are used to save lives and improve patient health and well-being, not only at the Proton Center but across the entire University of Maryland Medical System, depend heavily on the research and discoveries made every day in School of Medicine laboratories. I applaud our entire academic community for its dedication and commitment to human health.

We have been making an indelible impact on science and medicine for the last 210 years — I am supremely confident that we will continue on this extraordinary trajectory for the next 210 years to come!

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

A Third Century Where Discovery Transforms Medicine
655 W. Baltimore Street • Baltimore, MD 21201

What’s on My Mind...

...is the countless lives that have been saved and will be saved, thanks to the tireless efforts of biomedical researchers and the extraordinary discoveries they make every day.
With wailing ambulances and ER dramas a common staple on prime-time TV, it’s hard to believe that just some fifty years ago, the concept of emergency medicine did not exist. Today, although recognized as the newest clinical discipline, emergency medicine (or “EM”) is a booming field of practice. According to recent data from the US Centers for Disease Control and Prevention, public demand for emergency services has jumped from 90.3 million emergency department visits in 1996 to 124 million in 2009 — a 35 percent increase. This rise is in part has been driven by America’s aging Boomer population, who accounted for over 60 visits per 100 persons over 75 years old.

None of these stats has taken Brian Browne, MD, Professor and Chair of the Department of Emergency Medicine, by surprise. In fact, he’s been anticipating and promoting this growth in his profession since 1985, when he and two colleagues, Robert Barish, MD, and Elizabeth “Betty” Tso, MD (who is still a Clinical Associate Professor in the department), were tapped to launch a new emergency care section at the University of Maryland, developing both clinical services as well as educational programs for medical students and residents. By 1990, Emergency Medicine had gained division status, and in May 2006 it was designated as a full department within the University of Maryland School of Medicine, with Dr. Browne named Department Chair and Physician-in-Chief for Statewide Emergency Medicine Services.

Today, the department’s robust UM Emergency Medicine Network (UMEEN) operates at 14 clinical sites in Maryland — five in downtown Baltimore and nine in surrounding communities. The key to its success, according to Dr. Browne, is its “academic engine” — the School of Medicine itself. ”Thanks to the inspired direction of individuals like Amal Mattu, MD, Professor and Vice Chairman of Emergency Medicine, who oversees faculty development; George Willis, MD, Assistant Professor and Medical Student Education Director; and Michael Bond, MD, Associate Professor and Residency Program Director, our students are going into our specialty in record numbers, while most of our graduating residents are staying within the state,” he noted. “These are big wins from the perspective of Emergency Medicine and UMEEN, in bringing the UM SOM standard of quality to every corner of Maryland. As a result, our highly competent physicians are exporting this standard of clinical leadership to emergency departments throughout our network.”

Through Dr. Browne’s leadership, the network provides high-quality emergency medicine services delivered by 175 Board-certified or eligible providers, along with 55 residents. In 2016 alone, UMEEN treated more than half a million patients. “By design, we’ve created a network of high-quality emergency departments that provide greater access and a superior standard of emergency care to communities in Maryland, many of which are in historically underserved areas,” said Dr. Browne. “And that’s really important.”
UMEM Goes Global

For the past 12 years, Terrence Mulligan, DO, MPH, has pursued a singular mission — to promote the concept and practice of emergency care to the world. A Clinical Associate Professor in SOM’s Department of Emergency Medicine, Dr. Mulligan helped to found the department’s International Emergency Medicine program in 2005. Today, the program provides consultative, educational, and project-specific services to healthcare organizations and government agencies in countries as far afield as Botswana, China, Egypt, Netherlands, and South Africa. This international work is supported by a variety of funding sources, including the US National Institutes of Health and various non-governmental organizations (NGOs).

“Our focus is comprehensive acute care system development,” said Dr. Mulligan. And it’s a pressing issue—he notes that only a handful of countries have an emergency medicine system as sophisticated as that found in the US.

International Emergency Medicine offer special expertise by creating educational conferences and forums that address the complexities of developing an emergency medicine infrastructure—from administration, management, and training, to legislation, financial issues, and public health policy. To that end, Dr. Mulligan taps heavily into the talents of the Department of Emergency Medicine’s top professionals. “Terry has been a real champion for emergency medicine internationally,” said department Chair Brian Browne, MD. “Through his efforts, we are not only able to teach best practices in emergency medicine throughout the world; we teach leadership.”

More recently, the International Emergency Medicine program has gained the ears of top government leaders in a number of countries, including such notables as the President of Ireland and the Vice President of Romania. “Our department prides itself on being the global leader in emergency medicine education, given our SOM faculty of world-renowned, award-winning educators and researchers,” said Dr. Mulligan. “The rest of the world is in real need of emergency medicine development; until recently, they’ve had no go-to resource. The University of Maryland has become that beacon on the hill for them. There’s a huge potential there for us in building these relationships.”

With its successful metrics, UMEMN’s reputation, both nationally and internationally (see sidebar), continues to build, as a growing number of healthcare organizations reach out to the department for advice and insight. “We are consulting all of the time with various entities on what they can do to improve their emergency medicine departments and services,” said Dr. Browne. At the same time, he also is keeping a focused eye on what’s ahead. “I like acute, episodic emergency care, but we need to recognize that the scope of our role in emergency medicine is continuing to expand — telemedicine, paramedics making home visits, Uber docs, lots of new things on the horizon that bring care not through the ED but in different ways,” he said. “We need to recognize that and evolve with it.”

In particular, Dr. Browne points to the emerging concept of the freestanding Emergency Department — that is, an ED that is independent of a medical inpatient facility. For smaller regional hospitals that lack the financial means to maintain a full-service infrastructure, a freestanding ED provides the perfect solution by ensuring high quality, accessible emergency care to a community. Statistically, 85 percent of patients who come into an ED are treated and sent home; if more intensive care is required, patients can be transferred to a nearby “hub hospital,” where patient volume and clinical experience usually lead to better outcomes. UMEMN has been a pioneer in developing the freestanding ED model successfully, both at its Bowie Health Center, the longest running freestanding emergency center in the state, and at the UM Shore Emergency Center at Queenstown, which opened in October 2010.

UMEMN treated 500,000 patients in 2016

“We’re in yet another transformation in the evolution of healthcare,” said Dr. Browne. “So where do we fit into that transformation? At UM Emergency Medicine, we are pivotal to that change in adopting new approaches and making them work to everyone’s benefit. In doing so, we are redefining what we mean by ‘admission’ to be more of a portal to the best patient care, wherever that care resides.”
On the cutting edge

Radiation Oncology

The Division of Translational Radiation Sciences (DTRS) resides within the Department of Radiation Oncology and is directed by Zeljko Vujaskovic, MD, PhD, a Professor in the department who established DTRS upon his arrival at the UM SOM in 2012. The division grew 164 percent in the first two quarters of FY 2017 and is experiencing unprecedented growth, with more than $25 million in federal- and industry-sponsored research dollars.

Its focus is translating novel therapeutic interventions and treatment modalities into clinical radiation therapy to improve tumor response and reduce treatment-related side effects in patients undergoing radiation therapy. In addition, the division has a large research program focused on the development of radiation countermeasures to improve the likelihood of survival in a nuclear and/or radiological accident or attack.

Funding for the work being done in the division comes from a variety of sources. “Research is supported by industry sponsors, National Institutes of Health research grants and cooperative agreements, as well as federal contracts through the National Institutes of Allergy and Infectious Diseases (NIAID/NIH) and the Biomedical Advanced Research and Development Authority (BARDA),” says Lauren Jackson, PhD, an Assistant Professor in the Department of Radiation Oncology, and Deputy Director of DTRS. These investments have enabled faculty researchers to successfully translate multiple drugs from the bench to safety studies in healthy human volunteers and to Phase I/II clinical trials in cancer patients. Faculty in the division have also generated supporting data.
leading to the development of the first two drugs ever approved as radiation countermeasures for acute radiation syndrome.

“Our division is world-renowned for bridging radiation oncology, biology, and physics to drive new treatment strategies from the bench to bedside,” says Dr. Jackson. “It is capable of conducting basic science research to identify new therapeutic targets and understand the pathogenesis of tumor and normal tissue radiobiology, as well as perform contract research for the federal government and industry sponsors.”

While basic science is conducted using robust practices to ensure data quality and integrity, advanced R&D within the division is performed within the Medical Countermeasure (MCM) program, whose laboratories are compliant with the U.S. Food and Drug Administration’s Good Laboratory Practice regulations. The MCM program at UM SOM, one of the largest such programs in the world, serves as a contract research organization for the federal government and industry sponsors.

Research and education are sustained and enhanced by broad multidisciplinary collaborations within the University of Maryland School of Medicine and with outside partners. Faculty members are supported by a well-organized team of administrators, quality assurance and regulatory personnel, and data and document management groups who plan, monitor, and track project objectives and deliverables, ensuring that milestone deliveries meet budget, time, and scope targets.

The division receives full-time radiation physics support from four Board-certified medical physicists in the Department of Radiation Oncology, as well as additional support from project-dedicated dosimetrists. Statistical support is managed by an experienced radiation scientist/statistician who directs the School of Medicine’s Division of Biostatistics and Bioinformatics and through collaboration with the University of Maryland School of Pharmacy Center for Translational Medicine.

For additional information on the division’s technical capabilities or to discuss research collaborations, please contact Dr. Vujaskovic or Dr. Jackson.
The Theodore E. Woodward Endowed Chair and the Professor and Chairman of the Department of Medicine at the University of Maryland School of Medicine (UM SOM); Director of the General Clinical Research Center and the Clinical Translational Science Institute; and Vice-President of Clinical Translational Science for the University of Maryland, Baltimore campus, has been awarded Mastership in the American College of Physicians (ACP), the national organization of internists. Dr. Davis was honored at the Convocation for new Masters, held during Internal Medicine Meeting 2017, ACP’s annual scientific conference, which took place March 30-April 1 in San Diego.

Dr. Davis is widely considered one of the country’s leading diabetes experts. His laboratory has found areas of the brain that act to blunt the body’s ability to protect against hypoglycemia, one of the most alarming complications of diabetes. Dr. Davis has also identified promising new treatments and interventions that counteract these mechanisms and stimulate the body’s ability to defend against hypoglycemia.

Election to Mastership recognizes outstanding and extraordinary career accomplishments. Masters must have made a notable contribution to medicine. This includes, but is not limited to, teaching, outstanding work in clinical medicine (research or practice), contributions to preventive medicine, improvements in the delivery of health care, and/or contributions to the medical literature.

“Dr. Davis is quite deserving of this national recognition,” said E. Albert Reece, MD, PhD, MBA, Vice President for Medical Affairs, University of Maryland, and the John Z. and Akiko K. Bowers Distinguished Professor and Dean at the UM SOM. “He is a long-standing and highly-respected leader in Internal Medicine, as well as one of the top translational research scientists in his field. We are privileged to have someone of his stature leading our Department of Medicine, the largest academic department at the University of Maryland School of Medicine.”

ACP Masters are elected “on account of personal character, positions of honor, contributions toward furthering the purposes of the ACP, eminence in practice or in medical research, or other attainments in science or in the art of medicine.” ACP activities are also taken into consideration for all candidates. This includes service to the ACP in an official capacity, participation in chapter activities, and involvement in the development of College products and educational programs. Volunteer and community service is also taken into consideration.

ACP is a national organization of internists, the largest medical-specialty organization, and the second-largest physician group in the United States. It consists of 148,000 members, who include internists, internal medicine subspecialists, medical students, residents, and fellows.
When the Ebola epidemic struck in West Africa in 2014, Dr. Sow and his team were prepared. As the epidemic spread, he responded. When most health physicians was formed at CVD-Mali; this team was uniquely capable of responding to the Ebola epidemic under Dr. Sow’s leadership.

Dr. Sow has other significant accomplishments, as well: He helped lead clinical trials that resulted in the introduction of a vaccine that has played a major role in reducing Meningitis A in areas of Africa where the deadly disease was once common. More than 220 million people have received this vaccine in 26 countries. In Mali, he has also been active in implementing Gardasil, a vaccine against cervical cancer, as well as vaccines against meningitis, pneumonia, and diarrheal diseases.

Dr. Sow received his MD degree from the Ecole Nationale de Medicine et Pharmacie du Mali, and his MSc degree from the London School of Hygiene and Tropical Medicine. Throughout his career, he has conducted research on vaccines, infectious diseases, and public health in Mali and Africa, and has been crucial in the country’s fight against leprosy. He has authored or co-authored more than 90 scientific articles and chapters and serves on high impact international committees overseeing the use of vaccines in developing countries.

“Dr. Sow has devoted his career to saving lives, especially the lives of those who are most in need of help. Ebola has been a major public health threat in Africa and elsewhere. His work has significantly decreased this threat,” said Dean Reece. “His tireless and heroic work has succeeded in doing just that, many times over. I am very happy for him — he fully deserves this impressive honor.”
It was a day filled with anxiety and excitement at Baltimore’s famed Hippodrome Theater on March 17, when the Class of 2017 received its matches, an event known as Match Day. At exactly noon, medical students here and around the country received an envelope telling them where they will do their residency training. This year’s students include Jessica Chaffkin. As a medical student, she has been very active fighting for social and racial justice in Baltimore and around the country, and was also active in the group White Coats for Black Lives. She plans to go into forensic psychiatry, working with newborns born addicted to opioids. She will specialize in pediatrics and wants to continue working in child and public health. She matched to St. Louis Children’s Hospital in pediatrics.

Some members of the class have already traveled far and wide for their career. After her second year of medical school, Crystal Bae took a year off to work in Africa. She spent a year in South Africa, Rwanda, Uganda and Botswana, helping doctors there improve emergency medicine training. She plans to specialize in emergency medicine, and may decide to work in global health too. She was matched to Temple University Hospital in Philadelphia, in emergency medicine. Sheila Razdan has also traveled. Born and raised in Baltimore County, she took a year off from medical school to get a Master’s degree in public health from the Johns Hopkins School of Public Health. She visited Ecuador, and focused on child health in Baltimore, working with newborns born addicted to opioids. She will specialize in pediatrics and wants to continue working in child and public health. She matched to St. Louis Children’s Hospital in pediatrics.

Carlos Salgado emigrated from Ecuador 10 years ago to go to college in the US. He now shares an apartment with his brother, who is a first-year medical student at Maryland. He matched at Johns Hopkins Hospital in pediatrics.

Excitement at the Hippodrome

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