

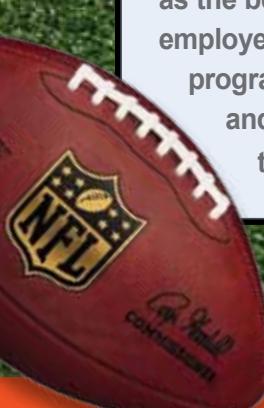


This makes us proud!

Point of Pride

Sports Medicine at SOM includes supporting the Ravens and the Orioles:

- **Andrew Pollak, MD,** Professor and Chair of the Department of Orthopaedics, served as the Associate Team Physician for the Ravens and continues to serve as a consulting orthopaedic surgeon for the team.
- **Donald Thompson, MD,** Clinical Assistant Professor in the Department of Psychiatry, served as the Ravens' team psychiatrist.
- **Howard Eisenberg, MD,** Professor and Chair in the Department of Neurosurgery, served as a consultant for the NFL at Ravens home games, evaluating players for concussions and other head injuries
- **David Jerrard, MD,** Associate Professor in the Department of Emergency Medicine, is a Stadium Physician at Camden Yards.
- **The Department of Psychiatry has functioned as the behavioral health employee assistance program for the Orioles and their minor league teams.**



DEAN'S MESSAGE: What's On My Mind

W

hat's on my mind this month is the importance of collaborative research, which is vital to advancing science and medicine aimed at improving human health and wellbeing.

The School of Medicine (SOM) has made a concerted effort to promote a culture of collaboration that transcends disciplines and departments, to bring our best investigators together to work toward solving the most complex medical problems today. We have devoted significant resources to foster these partnerships, and established a number of opportunities to increase team science across the SOM, University of Maryland, Baltimore (UMB) campus, and the University System of Maryland (USM). These initiatives include:

- The **Dean's Challenge Award**, with a goal of answering important questions underlying human health and disease by encouraging senior SOM scientists to catalyze the launch of major "Big Science" research programs within the school and across departments, centers, institutes and programs.
- The **School of Medicine Research Consortium Units (RCUs)**, such as the **Brain Science RCU**, interdisciplinary research groups that conduct large, multi-disciplinary, research studies by leveraging collaborations between senior physician-scientists, scientists, and other laboratory, translational, and clinical investigators throughout the SOM.
- The **Special Trans-Disciplinary Recruitment Award Program (STRAP) Initiative**, with the goal of expanding the SOM research portfolio and funding base by encouraging multiple academic units to jointly recruit well-funded scientists and/or physician-scientists who have an excellent track record of publishing, teaching, and a history of mentoring students and/or trainees.
- The **University of Maryland Research and Innovation Seed Grant Program** which supports new research foci, conducted by creative teams of USM investigators working across disciplinary boundaries and campuses, that could parlay into submission of innovative basic and translational science research proposals to federal, public or private funding agencies.

These programs, funded by start-up money that pales in comparison to million-dollar NIH grants, have made great achievements. Faculty conducting complementary research are now working together. Investigators who may never have crossed professional paths in the past are meeting regularly to talk about their science. Grant and patent applications have been submitted by new teams of researchers, and innovative approaches to medical problems are being explored. Companies have been formed, and our economic impact on the State has increased.

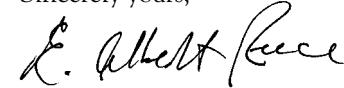
Most important to our goal of fostering inclusive research, we decided to take on the challenge of establishing a robust University of Maryland Clinical Translational Science Institute (UM CTSI). With partners from all the UMB schools, as well as the University of Maryland, College Park (UMCP), the overall objective of the UM CTSI is to rapidly transform basic discoveries and mechanistic understanding of pathophysiologic processes efficiently and safely into novel therapies and strategies to decrease morbidity and mortality, thereby dramatically impacting human health and wellbeing.

The UM CTSI has had some successes, such as the establishment of the **University of Maryland Center for Health-Related Informatics and Bioimaging (CHIB)** and the creation of the **Research HARBOR (Helping Advance Research By Organizing Resources)**. However, we can—and should—do more to increase the collaboration between research programs across our campuses. We have some incredible colleagues doing amazing science and should capitalize upon this fact.

For example, the **UM Center for Sports Medicine, Health & Human Performance**, featured in this issue of the SOMnews, is a shining example of what can happen when UMCP and the SOM work together. The strength of our programs comes from the partnerships we have formed with our colleagues. Just as the UM School of Medicine is stronger for its collaboration with the UM Medical System, so, too, is our research portfolio buoyed by the breadth, depth and diversity of the faculty experts within our School, Campus and University System. I commend those who have already reached across disciplines to expand their research perspectives, and I strongly encourage you to seek out new members for your research teams who can bring a unique perspective to the scientific questions you are working to answer. Only by working cooperatively can we hope to achieve our ultimate goal of improving the health of all humankind.

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

FOCUS ON SERVICE EXCELLENCE



Putting Some "PEP" in Patient Communication

AS PART OF THE INITIATIVE "Making a Top Priority: Patient Care and Service Excellence," the Service Excellence/Patient Experience Team, led by David Schwartz, MD, Director, Clinical Affairs Special Programs; Joyce Phillip, MA, SPHR, SHRM-SCP, Chief of Human Resources at FPI; and Rukiya Wongus, MHA, CMPE, PMP, Service Excellence Project Manager with FPI, have launched the **Program for Excellence in Patient-Centered Communication** (known as PEP). The PEP course is an interactive workshop that utilizes instruction and participant practice of specific communication skills that ensure patient engagement and a more effective patient-clinician partnership. PEP workshop registrations are completely filled for March and April, but more will be added throughout the year. Registration is available online at <http://intranet.fpi.umaryland.edu/pep.htm>.

New Center for Sports Medicine &

Center Will Leverage Research, Education and Clinical Strengths at UMB and UMCP Campuses to Study and Treat Sports-Related Injury

In 2018, when the University of Maryland, College Park (UMCP) opens its renovated Cole Field House, the \$155 million expanded complex will feature the Center for Sports Medicine, Health & Human Performance. Created in collaboration with UMCP and the University of Maryland School of Medicine (UM SOM) Departments of Orthopaedics, Neurology, Medicine, Diagnostic Radiology & Nuclear Medicine, Emergency Medicine, Family & Community Medicine, and Physical Therapy & Rehabilitation Science, the new Center will feature a state-of-the-art sports medicine outpatient practice facility that will provide innovative diagnostics and advanced orthopaedic clinical care for Maryland's student-athletes, students, and the general public, to address a broad spectrum of athletic injuries.

The center, which began construction in December, has been designated as an MPowering the State Initiative, as it brings together leading research, education, and clinical strengths of the two campuses to study athletic performance and health. Formed in 2012, MPowering the State is a special working relationship between the University of Maryland, Baltimore (UMB) and UMCP that promotes innovation and impact through collaboration.

In particular, the Department of Orthopaedics, under the leadership of **Andrew Pollak, MD**, the James Lawrence Kernan Professor and Chair, will collaborate with other research centers within UM SOM as well

as with the UMCP School of Public Health's Department of Kinesiology and the A. James Clark School of Engineering's Fischell Department of Bioengineering, on projects to prevent and treat athletic injuries of all types.

"This Center ensures that we will have the necessary facilities and personnel in place to deliver the highest quality of care possible to our intercollegiate athletes at College Park," said Dr. Pollak. "But the only way we can accomplish that is to have a facility in place that actively provides care to everyone. We need to deliver world-class sports medicine care that's safe, effective and reliable to a broad spectrum of patients, including all of the students and staff at College Park and the community beyond, including Prince George's County and the surrounding area."



Dr. Pollak notes that while the Department of Orthopaedics has been the official medical provider for Maryland athletics for several years, this expanded presence will provide even greater opportunities for outreach. "Currently, we're providing excellent sports performance and sports medicine care at College Park to some of the most premier student athletes in the country," he said. "Now imagine if that elite level of advice and care was available to high school athletes and weekend sports enthusiasts in the surrounding community. Our goal is to create a magnet facility for sports medicine that is the premier facility in the DC metropolitan area."

SOM Office of Research Affairs TRANSFORMED INTO NEW



Dean E. Albert Reece, MD, PhD, MBA, and Assistant Dean for Research Affairs **Terry Rogers, PhD**, have refocused the efforts of the Office of Research Affairs (ORA) to provide a dynamic, research-experienced team to support the research enterprise during a difficult funding climate. The enhanced mission of the ORA is to assist faculty in expanding collaborative, innovative research that will lead to an increased number of novel competitive grant applications to a variety of funding agencies.

Dr. Rogers has recruited two talented, senior staff members Drs. Joni Prasad and Marey Shriner, who bring extensive research experience at both the doctoral and postdoctoral levels, to the ORA team.

Joni Prasad, PhD, is a former SOM postdoctoral fellow in Dr. Dudley Strickland's laboratory in the Center for Vascular and Inflammatory Diseases. There she characterized the binding mechanism of the lipoprotein receptor LRP1 to its inhibitor, RAP, and used this information to develop a more potent inhibitor for LRP1, which has been licensed commercially. From her graduate and postdoctoral work, Dr. Prasad has four publications, two of which are first author publications, with two additional first author publications still in progress. She graduated from Ohio State University with a BS degree in Biochemistry before going on to pursue her PhD degree in Immunobiology from the University of Cincinnati. There, her thesis research explored the crosstalk between the hemostatic and inflammatory systems, focusing on the role of fibrinogen and other hemostatic proteins in *Staphylococcus aureus* bacterial infection.



Health and Human Performance



Craig Bennett, MD, Assistant Professor, who is the senior orthopaedic surgeon on the UM Sports Medicine team, agrees that sports medicine is not just for athletes. “That’s a popular misconception, but it’s definitely not true,” he said. “Sports medicine has evolved to a broader view over the past few decades,” he added. “We want everyone to be active in our society, so sports medicine involves management for almost everyone, including our professional, collegiate, and high school competitors.”

Sports medicine isn’t only about medicine, either. “Our School of Public Health is pleased to join our colleagues in the A. James Clark School of Engineering and the University of Maryland School of Medicine in promoting health across the lifespan through physical activity, exercise training, and sport, in conjunction with state-of-the-art healthcare and assistive ‘smart’ technologies for the

prevention and rehabilitation of injury,” said **Jane Clark, PhD**, Professor and Dean of UMCP’s School of Public Health. “Our Kinesiology department’s expertise in exercise science, biomechanics and motor neuroscience will contribute unique and innovative approaches to achieve our collaborative goals.”

Added **Darryll Pines, MS, PhD**, the Farvardin Professor and Dean of the School of Engineering; “This is a unique partnership between two major research campuses in the State of Maryland to accelerate our understanding of sports science and medicine, human performance, nutrition and rehabilitation to help our student athletes and society. The Clark School is delighted to develop and create engineering solutions that might enhance human performance and speed recovery.”

Bradley Hatfield, PhD, FACSM, FNAK, who is Professor and Chair of the Department of Kinesiology, as well as Associate Dean for Faculty

Affairs in the UMCP School of Public Health, is very excited about the multi-disciplinary work that will take place across UM campuses. “This a perfect example of how the University of Maryland is a leader in implementing ‘Team Science’ to address critical issues that are at the intersection of medicine, engineering and public health,” he said. “The applications of this research agenda around health and human performance have tremendous implications for a broad range of audiences—including patients, athletes, the military and first responders.”

Within UM SOM, the Department of Orthopaedics will bring together a range of research areas to collaborate with the center, including shock, trauma and anesthesiology; physical therapy & rehabilitations science; and cardiovascular health.

The UM SOM Shock Trauma and Anesthesiology Research Center, (STAR), directed by neurologist **Alan Faden, MD**, the David S. Brown Professor in Trauma in the Department of Anesthesiology, will also play a key role in the new collaboration. His research has made significant breakthroughs on how chronic brain damage and neuropsychiatric problems after trauma are to a large degree caused by long-term inflammation in the brain. Research has shown that inflammation is a key culprit behind the many symptoms that have been linked with traumatic brain injury and mild traumatic brain injury, including brain atrophy, depression and cognitive decline.



Also within UM SOM, physical therapy research will be led by **Mark Rogers, PT, PhD**, Chair of the Department of Physical Therapy & Rehabilitation Science (PTRS). “PTRS is excited about the opportunities for forging new initiatives in clinical practice and research focused on health, sports medicine, and human performance with our colleagues within UM SOM and at UMCP.

Our department’s expertise in preventive and restorative physical therapy and movement rehabilitation science research in neural control, biomechanics, and motor behavior directed at function, will contribute uniquely to the clinical, health, and research missions of the center.”

Dr. Pollak notes that UM SOM has been working with the UMCP Department of Mechanical Engineering for several years on better ways to treat broken bones with innovative implants. This work has already attracted funding from the biotech industry. The Department of Orthopaedics and the Department of Kinesiology are also working together to better understand muscle function. “This project will facilitate these types of collaboration and allow the two campuses to bridge the geographic gap that divides them,” Dr. Pollak said. “Through these types of partnerships, we can work synergistically to improve our competitiveness.”

“This partnership promises to deliver benefits for everyone involved, including researchers, clinicians, athletes, students and patients at large,” said UM SOM Dean **E. Albert Reece, MD, PhD, MBA**, who is also Vice president for Medical Affairs, University of Maryland, and the John Z. and Akiko K. Bowers Distinguished Professor. “Bridging the gap between our campuses will allow researchers in both locations to accomplish more.”



The enhanced mission of the ORA is to assist faculty in expanding collaborative, innovative research that will lead to an increased number of novel competitive grant applications to a variety of funding agencies.



Marey Shriver, PhD, completed a postdoctoral fellowship in the Oncology Department of the Johns Hopkins Medical campus, where she analyzed how adipocytes in the breast alter the tumor microenvironment. Dr. Shriver received her doctoral degree in Molecular Medicine here at the UM SOM, where she focused her studies on cancer biology in the laboratory of Dr. Katia Kontogianni-Konstantopoulos. During her thesis work, Dr. Shriver examined the role of giant obscurins in

suppressing the motility, invasion, and metastasis of breast cancer cells. During her graduate work, she had two first author publications and a second author publication. Earlier, she obtained a B.S. degree in Biochemistry from the University of North Texas where she worked with zebrafish in identifying G-protein-coupled receptors associated with thrombocyte function.

This team of PhD scientists will work with **Sue Hobbs**, Director of Research & Compliance, who contributes more than 20 years of experience in research

administration at the SOM. In order to support SOM research, the new ORA team will provide a wide range of services to SOM faculty, including:

- Fostering collaborations and the development of interdisciplinary teams;
- Supporting the assembly and submission of large, multi-investigator, multidisciplinary grant applications;
- Interfacing with departmental research administrators, university compliance staff, and program officers.

Together these new services will help SOM achieve its ACCEL-Med priorities, increase its number of large grant submissions, and encourage broad collaborations within and outside the University.

“This is a significant step forward in helping to achieve the School’s Vision 2020 research goals,” said Dr. Rogers. “We are fortunate to attract this high level of talent and faculty support as we continue our rapid growth as one of the top biomedical research institutions in the country.”



The Most Advanced, Precise

THE MARYLAND PROTON TREATMENT CENTER



(MPTC) announced February 23 that it had treated its first cancer patients with proton therapy at the new \$200 million facility in the University of Maryland BioPark in West Baltimore.

The 110,000-square-foot center, which houses a 90-ton cyclotron, is the first in the Eastern U.S. to offer ProBeam® image guided intensity-modulated proton therapy

(IMPT)—the most advanced and precise form of radiation therapy.

Unlike traditional radiation therapy, the radiation dose in proton therapy stops at the tumor site, reducing radiation dose exposure to surrounding healthy tissue, thereby reducing side effects and preventing damage to critical organs such as the heart, lungs, brain, spinal cord, liver, intestine, bladder or rectum. MPTC delivers the most precise form of proton therapy using a highly advanced technology called pencil beam scanning. With this technology, a proton beam precisely paints a tumor with radiation, using a pencil point beam that deposits dose layer by layer as it scans back and forth across the target area.

Proton therapy has been shown to be effective in treating a wide range of localized tumors in the brain, base of the skull, head and neck area, eye, esophagus, lung, liver, breast, spinal cord and gastrointestinal tract. It is also an important treatment option for children with cancer. Nearly 60 percent of cancer patients receive a course of radiation as part of their treatment plan, and traditional radiation is still an excellent option for most. However, of those patients, as many as 30 percent may benefit from proton therapy, according to **William Regine, MD, FACR, FACRO**, the center's executive director and the Isadore & Fannie Foxman Schneider Endowed Chairman and Professor of Radiation Oncology at the UM SOM.

"We are very pleased and excited to be able to make this form of radiation therapy available to cancer patients in the Baltimore-Washington region and beyond," says Dr. Regine. "Proton therapy enables us to deliver a targeted dose of

...a proton beam precisely paints a tumor with radiation, using a pencil point beam that deposits dose layer by layer as it scans back and forth across the target area.

lifesaving radiation therapy directly to the tumor while minimizing radiation to healthy tissue. It can result in a more effective treatment for patients with fewer side effects. This technology is a powerful tool in our toolbox for fighting cancer."

The University of Maryland School of Medicine (UM SOM) and its Department of Radiation Oncology are operating and managing the new proton treatment center, which was developed in partnership with Advanced Particle Therapy, LLC, based in San Diego, Calif., and Varian Medical Systems (NYSE:VAR), of Palo Alto, Calif., the world's leading supplier of radiation therapy equipment. UM SOM faculty physicians will treat patients at the new center, which is affiliated with the University of Maryland Marlene and Stewart Greenebaum Cancer Center (GCC), a National Cancer Institute-designated cancer center. "We look forward to advancing cutting-edge clinical research for our patients at the MPTC," said **Kevin J. Cullen, MD**, Professor of Medicine and GCC Director. "Our goal will be to define which patients can most benefit from this technology."

The first adult and pediatric patients undergoing treatment at

MPTC have various types of cancer and will come from both Maryland and around the world. Treatment can take anywhere from one session up to eight weeks, depending on the tumor. Each appointment lasts less than an hour but the actual time it takes to deliver the proton beam is only minutes. Patients can receive proton therapy in conjunction with other cancer treatment modalities such as surgery or chemotherapy.

"Our objective at MPTC is to provide patients with the most advanced medical care, tailored to the precise needs of each individual patient," says **Zeljko Vujaskovic, MD, PhD**, Professor and head of the Division of Translational Radiation Sciences in the Department of Radiation Oncology, and Director of the Maryland Proton Alliance, a new UM SOM-led organizational framework for proton therapy. "We have developed every aspect of the center with two key elements in mind: accessibility and affordability. That's what is most important to our patients."

Clinical research will also be a key priority of the new center, which will offer a robust clinical trial program to all its patients to further evidence-based medicine. "This is an extraordinary opportunity," says Dr. Vujaskovic. "As the only proton treatment center in the Baltimore-Washington region, we are in a unique position to partner with a wide range of public and private researchers, many of whom are only beginning to assess the potential value of this technology and are eager to work with a premier academic institution in these efforts."

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