



SOM *news*



Point of Pride

The UMSOM's Claude D. Pepper Older Americans Independence Center is one of only 15 such centers in the U.S. **dedicated to increasing scientific knowledge to support older adults maintain their independence.**

The Center, established in honor of the late Florida Senator, was initially funded in 1994.



What's New...

SOMnews has now expanded to eight pages, with more information and special sections on Research & Discovery, Clinical Care, Academic Innovations, and Community Impact.

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DEAN'S MESSAGE

Our School of Medicine 2017 Festival of Science will have the theme of **“Mobility and Disability in Aging: Causes, Consequences and Strategies for Restoration.”**

Now in our Third Century, the School is a burgeoning enterprise of nearly 1,300 students and 3,000 faculty. Soon we will occupy our 15th building, and the largest one on Campus, the new UMSOM Research Building, Health Sciences Facility III. Over the years, the School has evolved into one that has a tripartite mission of biomedical research, medical education, and clinical care.

As we have reflected back on our extraordinary 210-year history over this last year, and how adeptly the School has evolved to meet the challenges of each passing decade, we also recognize that not everything can move so nimbly with age, including ourselves. A June 2017 report from the U.S. Census Bureau showed that Americans aged 65 years and older account for over 15 percent of our nation's population, and estimates that the older population will continue to grow.



This trend is seen throughout the world — humans are living longer than ever before due, in large part, to the incredible advances in biomedicine.

For example:

- The five-year survival rate of people with cancer has increased to over 70 percent due to advances in cancer research and treatment.
- The number of deaths due to cardiovascular disease has declined dramatically because patients receive medical therapies based on results from research studies.
- Academic research is responsible for more than 150 FDA-approved drugs to treat an array of diseases and conditions, including heart disease, metabolic disease, and infectious diseases.

This list of advances could easily be 10 or 100 times longer, but the important thing to keep in mind is that discovery-based medicine, which is what our School of Medicine is known for conducting, has added many years to the lives of the world's population. However, dramatically improving the quality of life for older adults remains a considerable challenge. As we age, the flexibility of the physical body and the mind can begin to decrease, leading to concerns about mobility, independence, and cognitive awareness.

We are tremendously fortunate to have a dedicated cadre of UMSOM faculty who have devoted their careers to unraveling the causes and consequences of diseases and conditions often associated with aging, as well as

What's on My Mind...



...is the 2017 Festival of Science, which will be held on December 14th in the newly remodeled Leadership Hall.

developing innovative approaches to preventing, managing and treating patients. Many of these distinguished faculty will present their research during the Festival of Science, and are highlighted in this month's issue.

However, we all can play a role in research on aging. Indeed, we are all aging and may face the challenges of limited mobility, possible recovery from bone fractures, memory loss, or even the consequences of long-term chronic diseases. Even if we are not personally affected by these conditions, we will have loved ones — parents, spouses, friends — whose quality of life may be deeply changed as they get older.

The advances that our School has made over the last three centuries, and that medical science has made over the same period, prove to us that a high quality of life throughout the entirety of our lives is an attainable goal, but requires a continual commitment to the further advancement of biomedical research and science. I am confident that, given our current strengths in research on aging, we can become international leaders in this ever-growing and increasingly important field, but that this will require additional collaborations across our entire community to attain this achievable goal.

The annual Festival of Science is an opportunity for us to learn more about our colleagues' work, but it is also a chance to develop new ideas, change current perspectives, and develop unique research partnerships. As one of the key goals of both our ambitious Strategic Plan and Vision 2020 set forth, **we want to be known for conducting collaborative research, working across disciplines to answer the “big science” questions that biomedicine faces today, and will need to confront in the future.**

I strongly encourage you not just to attend this year's Festival but to be an active participant, and to identify ways in which you might form new research teams with the faculty presenters, not only providing a novel direction for your own research, but further strengthening our portfolio in research on aging. Only by working together, perhaps with colleagues you never envisioned, can we truly make a dramatic impact in the health and wellbeing of all.

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

Tackling the OPIOID CRISIS



Dr. Welsh and Dr. Weintraub



SINCE 1999, THE NUMBER OF OPIOID-RELATED DEATHS HAS QUADRUPLED IN THE U.S.

Much of this crisis has been brought on by an increase in opioid prescriptions, easy access to lower-cost heroin, and the increasing availability of high-potency synthetic opioids such as fentanyl.

The picture in Maryland is similar.

In 2016, more than 2,000 people in Maryland died from overdose. So far this year, deaths are up another 40 percent, largely because of an increase in fentanyl use. The lion's share of opioid-related overdoses have taken place in the Baltimore area. The University of Maryland School of Medicine (UMSOM), in collaboration with the University of Maryland Medical System (UMMS), has been leading the way in fighting this problem.

"We've been working on heroin addiction in Baltimore for years," said **Eric Weintraub, MD**, Associate Professor of Psychiatry who is the Medical Director of the UMSOM's Methadone Clinic in the UMMC Outpatient Addiction Treatment Services. In Baltimore, doctors can provide medically assisted treatment (MAT) by treating addicts with methadone or prescribing buprenorphine.

While experts at UMSOM have been addressing for many years the heroin and addiction problems onsite that have plagued the Baltimore area, they also have made significant strides in addressing this problem in rural areas, where there has been a surge in opioid use.



Opioid-related deaths occurred last year in the state of Maryland.

UMSOM and UMMS doctors are prescribing buprenorphine via telemedicine to reach patients in rural areas.



A Growing Problem in Rural Areas

In rural areas, resources and treatments for opioid addiction often are not accessible. Medically assisted treatment with drugs such as methadone and buprenorphine — considered the evidence-based treatment of choice for managing addiction — is not always available to those in rural areas. For example, there are no methadone clinics in Maryland's most western region, and very few doctors in this region are allowed to prescribe buprenorphine.


Dr. Weintraub and **Christopher Welsh, MD**, Medical Director of the UMMC Substance Abuse Consultation Service and Medical Director of the UMMC Outpatient Addiction Treatment Service, came up with a way to address this issue. In 2015, they launched a new telemedicine initiative to increase access to treatment in rural areas in the state. As part of this project, they work with the Wells House Program in Hagerstown and the Gale and Olsen Houses in Frederick to extend buprenorphine treatment to patients in Washington County by way of videoconferencing calls. There is a shortage of doctors and practitioners in this area who have obtained the needed waiver from the Drug Enforcement Agency to prescribe buprenorphine. Dr. Weintraub and Dr. Welsh and other faculty can prescribe buprenorphine via their telemedicine program. It involves a video consultation and collaboration with counselors and others treating the patient locally.

Their program has since expanded from four hours per week at one site to 14 to 16 hours a week at three other sites including the Garrett County Health Department and the Caroline County Health Department. Dr. Welsh and Dr. Weintraub have seen more than 300 patients at Wells House alone, and preliminary data show that after the first few months, 60 percent of their patients were still in treatment and among those, nearly all were opioid-free.

"We are planning on expanding into Allegheny County," said Dr. Welsh. Dr. Weintraub and Dr. Welsh are not only treating addiction through telemedicine, but through the Maryland Addiction Consultation Service. They are a training physicians, nurse practitioners and physician's assistants in remote areas to treat patients with opioid disorders.

"I think we will be doing this more," said Dr. Welsh.

A Global Outreach

UMSOM doctors are also helping to train practitioners in Africa. Together with faculty from the Institute of Human Virology, Dr. Weintraub, Dr. Welsh, Jewell Benford, LCSW-C, and Denisha Pendleton, RN, work with the Center for Disease Control to develop opioid addiction treatment and training in Kenya. The team established the first methadone clinic in Nairobi, which has been operating for more than a year, and has treated more than 500 patients. 



To learn more about the UMSOM's addiction and treatment services, visit UMMC Outpatient Addiction Treatment Services at 701 W. Pratt Street, Baltimore, MD 21201 or call 410-328-6600.

The SOM FESTIVAL of SCIENCE

KEYNOTE SPEAKER



Luigi Ferrucci, MD, PhD
Scientific Director
National Institute on Aging
National Institutes of Health

Dr. Luigi Ferrucci is a geriatrician and an epidemiologist who conducts research on the causal pathways leading to progressive physical and cognitive decline in older persons. He has made major contributions in the design of many epidemiological studies conducted in the U.S. and in Europe. He received a Medical Degree and Board Certification in 1980, Board Certification in Geriatrics in 1982, and PhD in Biology and Pathophysiology of Aging in 1998 at the University of Florence, Italy.

- 8:00-8:10am** **WELCOME**
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
- 8:15-8:45am** **KEYNOTE ADDRESS**
Luigi Ferrucci, MD, PhD
*Scientific Director, National Institute on Aging
National Institutes of Health*
- 8:50-9:05am** **HISTORY AND PRESENT STATE OF RESEARCH ON AGING IN THE UMSOM**
Jay Magaziner, PhD, MSHyg
*Professor and Chair, Department of Epidemiology & Public Health
Director, Center for Research on Aging*
- 9:10-11:55am** **SESSION ONE: Bones, Muscles, Joints, Energetics, and Mobility**
Moderator: Curt Civin, MD
*Professor, Department of Pediatrics
Director, Center for Stem Cell Biology & Regenerative Medicine
Associate Dean for Research*
- 9:10-9:30am** **Bone, Muscle and Function After Hip Fracture**
Denise L. Orwig, PhD
Associate Professor, Department of Epidemiology & Public Health
- 9:35-9:55am** **Bringing Osteoarthritis Into the 21st Century: A Disease of the Whole Joint**
Marc C. Hochberg, MD, MPH
*Professor, Department of Medicine
Division Head, Rheumatology and Clinical Immunology*
- 10:00-10:20am** **Exercise, Nutrition, Metabolism and Muscle Recovery**
Alice S. Ryan, PhD
Professor, Department of Medicine
- 10:25-10:35AM** **BREAK**

MOBILITY DISABILITY *in* AGING

**Causes, Consequences and
Strategies for Restoration**



10:40-11:20am	Aging Dependent Alterations in Cellular Mechanotransduction: Common Themes in Heart, Skeletal Muscle and Bone
10:40-10:50am	• Heart Muscle W. Jonathan Lederer, MD, PhD <i>Professor, Department of Physiology Director, Center for Biomedical Engineering & Technology</i>
10:55-11:05am	• Skeletal Muscle Christopher W. Ward, PhD <i>Associate Professor, Department of Organizational Systems and Adult Health, University of Maryland School of Nursing Associate Professor, Department of Orthopaedics, University of Maryland School of Medicine</i>
11:10-11:20am	• Bone Joseph P. Stains, PhD <i>Associate Professor, Department of Orthopaedics Interim Director of Musculoskeletal Research</i>
11:25-11:55am	SESSION ONE Q&A
NOON-12:55pm	LUNCH Atrium of Leadership Hall
1:00-3:30pm	SESSION TWO: Brain, Balance, Disease and Mobility
Moderator:	James B. Kaper, PhD <i>Senior Associate Dean for Academic Affairs Professor and Chair, Department of Microbiology & Immunology</i>
1:00-1:15pm	SESSION OVERVIEW Mark Rogers, PT, PhD <i>Professor and Chair, Department Physical Therapy and Rehabilitation Science</i>
1:20-1:40pm	Parkinson's Disease Lisa M. Shulman, MD <i>Eugenia Brin Professorship in Parkinson's Disease and Movement Disorders The Rosalyn Newman Distinguished Scholar in Parkinson's Disease Professor, Department of Neurology and Director of the Division of Movement Disorders Director, University of Maryland Parkinson's Disease and Movement Disorders Center</i>
1:45-2:05pm	Robotics and Improving Balance in Older Persons Li-Qun Zhang, PhD <i>Professor, Department of Physical Therapy & Rehabilitation Science</i>
2:10-2:30pm	Balance Control, Neurocognitive Testing and fMRI Kelly P. Westlake, PhD, MSc, PT <i>Assistant Professor, Department of Physical Therapy & Rehabilitation Science</i>
2:35-2:55pm	Vascular Disease, Mobility and Cognition Brajesh K. Lal, MBBS <i>Professor, Department of Surgery</i>
3:00-3:30pm	SESSION TWO Q&A
3:35pm	CLOSING REMARKS E. Albert Reece, MD, PhD, MBA
	RECEPTION

Accreditation Statement The UMSOM is accredited by the Accreditation Council for Continuing Medical Education to provide continuing medical education for physicians.

Credit Designation Statement The UMSOM designates this Live activity for a maximum of 6.50 AMA PRA Category 1 Credits.™ Physicians should claim only the credit commensurate with the extent of their participation in the activity.

65+ = 15% of the POPULATION




Now in its Third Century, the School of Medicine has made an indelible impact on the health and well-being of people all over the world, as was highlighted during last month's State of the School Address. However, not everything can move so nimbly with age, including us. This year, the annual Festival of Science will focus on the excellent research in aging conducted by our faculty across multiple departments, programs, institutes and centers.

The Festival of Science is the cornerstone of the School of Medicine's, **Accelerating Innovation and Discovery in Medicine (ACCEL-Med)** Initiative. ACCEL-Med embodies the research component of Shared Vision 2020, the key elements of which include:

- Maximizing our expertise and resources;
- Fostering a culture of high intensity, multi-disciplinary science collaboration;
- Adopting a new teaching philosophy in how we train the next generation of outstanding physician, scientists, and allied health professionals;
- Enhancing our acclaimed excellence in high-quality, patient-centered care.

As the research component of Vision 2020, the ACCEL-Med Initiative is aimed at significantly and measurably increasing the pace and scope of discovery and innovation, with the ultimate goal of dramatically improving human health and well-being.

Register today to attend the 2017 Festival of Science on "Mobility Disability in Aging: Causes, Consequences and Strategies for Restoration." 

Questions? Call Kevin Enright, Executive Director for Administration at 410-706-6866.

Thursday, December 14, 2017
8:00am - 3:30pm • Leadership Hall

REGISTER TODAY ONLINE @
medschool.umaryland.edu/festival/

COLLABORATIONS Between Investigators and UMSOM Cores

ARE LEADING TO SCIENTIFIC ACHIEVEMENT AND HELPING PI'S TO GET THE MOST FROM THEIR RESEARCH FUNDS



In today's scientific funding climate, effective management of grant funds is vital to the success of every research program. Simply put, researchers need to get more bang from fewer bucks. Increasingly, investigators at the UMSOM, as well as nationally, are leveraging shared core facilities not only to get the most out of their research dollars, but also to take advantage of the cutting-edge instrumentation, services, and expertise of Core Facility Directors and staff of the UMSOM's **Center for Innovative Biomedical Resources (CIBR)**. Researchers report that utilizing these core resources is a critical component of publishing in top-tier journals, submitting successful grant applications, and well-designed clinical trials.

CIBR's portfolio is significant, approximately 30 cores which include Animal Models, Bioinformatics & Statistics, Clinical Resources, Cytometrics & Bioassays, Drug Development, Imaging, Nucleic Acids & Genomics, and Structural Biology. Most UMSOM investigators are aware of the state-of-the-art instrumentation and services available to support their research. However, it is access to the specialized knowledge and problem-solving skills of experienced staff scientists, whose primary mission is serving as able extensions of each investigators' lab, that is perhaps the greatest advantage that the Cores provide. CIBR Core experts provide critical input into experimental design, selection of methods and techniques, and often assist with post-experiment analysis. CIBR also offers training for graduate and medical students, postdoctoral fellows, medical fellows, and faculty, so they can use equipment at discounted rates and expand their scientific "toolbox" with new techniques.

"I never look at CIBR as just a core resource," said **Ashkan Emadi, MD, PhD**, Associate Professor of Medicine and Associate Director for

Clinical Research, Program Director of the Hematology-Medical Oncology Fellowship Program. "They are, in every sense of the word, authors, collaborators, and colleagues."

In particular, researchers point to the senior-level experience and intellectual input they receive from Core Directors.

"You get a certain cross-fertilization from Core Directors," said **Soren Bentzen, PhD**, Professor of Epidemiology & Public Health and Director of CIBR's Biostatistics Shared Service. "We can provide access to a network of people who have a lot of experience with various assays and tumor models. For example, when you come to us with a project, we have the depth of experience to work with you to determine the best approach."

One result of these partnerships is a growing list of investigators who point to the Cores associated with CIBR as key contributors to their success.

Each year, CIBR contributes to studies published in top journals. A recent example comes from the lab of **Feyruz Rassool, PhD**, Associate Professor of Radiation Oncology. Rassool tapped **Rena Lapidus, PhD**, Associate Professor of Medicine and Director of the Translational Laboratory Shared Service (TLSS), to design and perform a series of animal experiments that recently helped Rassool publish the results of a study of a new combination therapy for acute myeloid leukemia (AML) in *Cancer Cell*. The article also relied on statistical analyses performed by Dr. Bentzen and the Biostatistics and Informatics Core. The combination therapy is currently being evaluated in a Phase I clinical trial. "Rena and the Translational Laboratory Core have been absolutely vital in the grants we've received over the last year, as well as the *Cancer Cell* paper and the clinical trial," said Dr. Rassool. "And Soren's statistical analysis was critical to getting the clinical trial off the ground."



Dr. Lapidus says that her goal is “to try to make each of the investigators who use the TLSS to feel that they are my top priority, because in truth, supporting their research is my top priority.”

That approach is paying off in big ways. Dr. Emadi referenced a study where CIBR’s Bentzen essentially served as a co-investigator. “For the first time, we were able to report that a drug can deplete the serum glutamine level to an undetectable level. This collaboration resulted in a \$600,000 grant.”

“Before working with Dr. Bentzen, I went to a few statisticians outside,” he continued. “They told me that calculating the probability of what I wanted would require six months of calculation. He did this right away!”

Dr. Emadi added that he never thinks of Dr. Bentzen or Dr. Lapidus as “merely a core service.” “Rena and I have published many papers and have two patents together. It is a true partnership. We are all members of the same institution, so we are invested in each other’s success. It’s not just a fee-for-service; they are really an extension of your lab.”

Others related their experience working with outside vendors.

“If you go to an outside company, they will give you exactly what you ask for, and if they don’t have it on the shelf, they will try to convince you that you need what they have on the shelf,” said Dr. Bentzen. “Our Cores are not interested in selling you something. We are 100 percent invested in every investigator’s success. We consider ourselves a part of every UMSOM investigator’s team.”

Dr. Emadi pointed out how they work with CIBR’s cores to train fellows, post-docs, and students as well.


“With one of our projects, I took two of the fellows in the Hematology-Medical Oncology Fellowship Program to the experts at CIBR and this was a

tremendous benefit to them,” he said. “Our young investigators are able to learn how to interact with scientists and biostatisticians, how to write a manuscript, and how to develop high-quality experimental designs. This is a real advantage for them in landing an academic job.”

In one study, Dr. Emadi described being able to conduct a clinical trial that would not have been possible without CIBR. “We started the first cohort with giving patients a very low dose of a drug to see if they could tolerate it,” he said. “We have now advanced the drug dose in the second and third cohorts and tomorrow we will be on to cohort number four. And I am just thrilled, thrilled, thrilled to have CIBR to work with me on this.”

“The CIBR cores are absolutely central to UMSOM’s research mission,” said **Dean E. Albert Reece**. “The counsel they provide to our investigators and the valuable contributions they make to our research — at every level and across departments and centers — is an essential part of our growth as one of the top biomedical research institutions in the nation.”

Dr. Bentzen summarized it well: “I think what we CIBR Core Directors are really most proud of is taking the time to work with the investigator to understand what the research question is, whether it is a clinical trial, a data analysis or help with a study design, and we try to be flexible and work together to provide the best possible solution.”

“And,” he added, “it is actually a lot of fun for us both!” 

CLASS OF 2021



First-Year UMSOM Students Receive Their White Coats


The University of Maryland School of Medicine (UMSOM) held its annual White Coat Ceremony on November 2, 2017, at the Hippodrome Theatre in downtown Baltimore. During this event, first-year UMSOM medical students were presented their first white coats as a welcome into the field of medicine.

"Today when putting on your white coat, you will be taking one small step, but symbolically it will be a giant step," said **Dean E. Albert Reece, MD, PhD, MBA**. *"Wear this white coat with pride and humility,"* he told the Class of 2021.

The White Coat Ceremony, which was sponsored by the Whiting-Turner Contracting Company, is also intended to serve as an opportunity for families of first-year medical students to celebrate medical education at UMSOM and get a glimpse of what medical school is really like.

The event features the presentation of traditional white coats, which have long been the symbol of physicians and scientists, to first-year medical students.

David Mallott, MD, Associate Dean for Medical Education, discussed the rigors of medical school, addressing family members attending the ceremony.

The coats were put on first-year medical students by School of Medicine house leadership faculty to welcome their new colleagues to the profession of medicine. After being "coated," students recited a Code of Honor acknowledging their acceptance of the obligations of the medical profession. 



"Some people say it's like running a marathon. Right now, your folks are at about a mile and a half."

— David Mallott, MD



The White Coat Ceremony has been an annual tradition at the School of Medicine since 1997.

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VisitUs...



Online to watch the historic 2017 State of the School Address at: medschool.umaryland.edu/SOTS



The accomplishments of faculty, staff, and students were highlighted in a series of videos marking the School's 210th anniversary. The first video showed the rich history of the School and recognized the amazing men and women who helped to forge a path to current successes. The second video reviewed the past year, acknowledging key highlights across all mission areas: Research, Patient Care, Education, and Community Impact. The final video included testaments to the School.



"Practices"

New UMSOM policy requires all patient care facilities to be called "practices."

SOMnews is produced by the University of Maryland School of Medicine Office of Public Affairs

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