



SOM *news*



Point of Pride

Physicians from the School of Medicine created the **first anterior leg splint for fracture of the lower extremities in 1833.** Our faculty continue to be on the cutting edge of Orthopaedics treatment and research to this day.

DEAN'S MESSAGE

ACCEL-Med is the research portion of our **Shared Vision 2020 for UM Medicine.** Most notably, we've significantly advanced our objective to establish collaborative, multi-disciplinary teams of scientists and physician-scientists to answer the "big science questions" of the most complex and challenging medical conditions we face today.

Just as the School of Medicine is stronger for its collaboration with the University of Maryland 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. One of the key Strategic Plan goals of our Research Mission Area is to enhance research collaboration across all academic units. Our approach to accomplishing this goal is using a transactional collaboration model, which has been an effective way to ensure that there is a win/win benefit for all partners. These strategic partnerships have grown our federal funding, enhanced discoveries, improved diagnostics, and identified new therapeutics — all of which, ultimately, impacts human health and wellbeing.

Just within the last decade of our extraordinary 210-year history, we have demonstrated the impact and success of this form of collaboration. For example:

- The Center for Health-related Informatics and Bioimaging (CHIB) is a collaboration with the University of Maryland College Park (UMCP) Clark School of Engineering.
- The Center for Biomedical Engineering and Technology (BioMET) is a collaborative research center involving faculty from multiple departments at the SOM, UMB, and UMCP.
- The "collaborative public health program" is a partnership with UMCP.
- The Center for Pain Research brings together expertise from multiple UMB schools, and is supported, in part, by funding from the National Institutes of Health.
- There are multiple collaborative research projects and programs between investigators at the School of Medicine, the UMB, and the USM, which bring in multi-million dollar federal grant funding (e.g., cancer research, genomics, radiation countermeasures, etc.).
- The new Center for Sports Medicine Health and Human Performance is a shining example of what can happen when we work together. The vision and goals of this new Center cuts across all our mission areas. As a discovery-based care Center, its approach will rely on the latest injury-related research, including traumatic brain injury, concussion and biomechanics, among others. The Center also emphasizes an educational component, providing training and mentoring opportunities to our students, residents and fellows. As a clinically- and community outreach-focused effort, it will provide care for a wide range of patients, from

What's on My Mind...



...is the incredible progress we've made towards the ambitious goals of our Accelerating Innovation and Discovery in Medicine (ACCEL-Med) Initiative.

student athletes to recreational athletes, with the most cutting-edge care and treatment under the guidance of a team of experts in orthopaedics, sports medicine, physical therapy and rehabilitation science, trauma, anesthesiology and family medicine.

It is with this strong commitment to expanding collaborative research programs and extramural federal funding that we established the **Special Trans-disciplinary Recruitment Award Program (STRAP) Initiative** in June of 2015. The purpose of the STRAP Initiative is to accelerate our research enterprise, to answer important "big science" questions underlying human health and disease, and to encourage multiple academic units to jointly recruit well-funded scientists and/or physician-scientists. The STRAP Initiative is intended to expand our research portfolio and funding base by attracting well-funded senior investigators, or teams of investigators, actively working in an area that complements our already robust research portfolio with an excellent track record of publishing, teaching, and mentoring students and/or trainees.

I am delighted with our progress in terms of growing, not just the physical structure of this campus, but our community of scientists and physician-scientists. A number of our School of Medicine leaders re-examined their areas of research strengths, where the recruitment of well-funded investigators would help further their missions and goals, and took up the challenge issued by the STRAP Initiative.

Over the last two centuries, the SOM has made many remarkable advances which have been achieved as a result of a collective vision and strategy, purposeful action, and a relentless commitment to excellence and growth. This has been, first and foremost, a team effort of our entire community. Through the work of many of our academic leaders and the STRAP Initiative, our team is expanding, thereby positioning us for maximum and extraordinary success in the coming years.

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

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 Engagement.

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ORTHOPAEDICS



UM ORTHOPAEDICS AT CAMDEN YARDS



Making it Easier for Patients to Move — WITHOUT HAVING TO GO TOO FAR

Talk about medicine with muscle — University of Maryland Orthopaedic Associates has entered 2017 with a robust set of eight clinical practice sites across Maryland that are linked by a shared vision. **Andrew N. Pollak, MD**, the James Lawrence Kernan Professor and chair of the Department of Orthopaedics at the University of Maryland School of Medicine. “Every patient is assured of receiving outstanding, dependable and proven care from our highly skilled physicians and staff.”



Dr. Andrew Pollak

“At each of our locations, our goal is to ensure that every patient receives the highest quality of care as measured by our own exacting standards of safety, effectiveness, and reliability.”

Underscoring this assertion is the “jewel in the crown” of the Orthopaedics network — University of Maryland Orthopaedics at Camden Yards (351 West Camden Street, Suite 501 Baltimore, MD 21201). This 10,000-square foot, state-of-the-art outpatient practice, designed specifically to enhance patient care, opened in the B&O Warehouse at Camden Yards in 2016. Operated by University of Maryland Faculty Physicians, Inc. (FPI), the site offers 12 exam rooms, a physical therapy studio, e-lounge, and diagnostic imaging services, staffed by orthopaedic surgeons, emergency medicine physicians, neurosurgeons and sports medicine experts who specialize in treating injuries to the spine, hands, knees and joints, and other musculoskeletal problems.

Just a few blocks north at the University of Maryland Medical Center campus, orthopaedic trauma specialists deliver lifesaving care every day at the University of Maryland R Adams Cowley Shock Trauma Center (22 South Greene Street, Baltimore, MD 21201). Here, severely injured patients receive expert treatment for critical musculoskeletal injuries and related complications. In addition, specialists from the Orthopaedics’ Bone Cancer and Soft Tissue Sarcoma Service treat patients at the adjacent University of Maryland Greenebaum Comprehensive Cancer Center.

Patients visiting the University of Maryland Medical Center Midtown Campus (827 Linden Avenue, Baltimore, MD 21201) can take advantage of a broad spectrum of orthopaedic care, from treatment for osteoarthritis to total joint replacements. Leading-edge techniques include a joint


arthroscopic mosaicplasty (minimally invasive surgery to repair damaged joint cartilage) and arthro resurfacing surgery for hips, knees and shoulders, all designed to speed patient recovery.

In Baltimore County, the University of Maryland Rehabilitation & Orthopaedic Institute (2200 Kernan Drive, Baltimore, Maryland 21207) continues to serve as Baltimore’s original orthopaedic and rehabilitation hospital. Now in its second century of operation, UM Rehab & Ortho is the largest rehabilitation facility in the region, offering such orthopaedic services as total joint surgery, non-operative management of back pain, the latest minimally invasive techniques for shoulder surgery, and leadership in sports medicine and pediatric orthopaedics. (Read more about UM Rehab & Ortho on page 3)

To the north in Timonium, MD, the University of Maryland Orthopaedics at Texas Station (One Texas Station Court, Timonium, MD 21093) has provided central Baltimore County residents with convenient access to a multispecialty, state-of-the-art facility for the past 15 years, complete with 12 examination rooms and diagnostic imaging services. Also onsite are physicians from Orthopaedics’ Sports Medicine service, who treat patients young and old for a range of sports-related injuries. In addition, a rheumatologist from the Department of Medicine is on hand to treat ailments such as inflammatory arthritis and vasculitis.

In Harford County, University of Maryland Faculty Physicians at Upper Chesapeake (Physicians’ Pavilion II, 500 Upper Chesapeake Drive, Bel Air, MD 21014) brings sophisticated orthopaedic care to this growing suburban community. This FPI practice site provides orthopaedic services that address pediatric care, hand injuries, and musculoskeletal tumors.

South of Baltimore, University of Maryland Orthopaedics at Columbia (5500 Knoll North Drive, Columbia, MD 21045) was the first FPI practice group to serve Howard County residents when it opened its doors five years ago. Today, this active multispecialty location provides skilled care for a variety of orthopaedic needs, with 12 examination rooms and individual pods for onsite providers.

In 2019, University of Maryland Orthopaedics at College Park (4321 Hartwick Road, College Park, MD 20740) will move to its new location on the University of Maryland at College Park (UMCP) campus, as part of the Center for Sports Medicine, Health & Human Performance in the newly renovated Cole Field House. The new state-of-the-art clinical space will serve as a premier sports medicine facility for patients in the Prince George’s County and Washington, DC metropolitan region, providing innovative diagnostics and advanced orthopaedic clinical care for Maryland’s student-athletes, the greater campus community, and the general public to address a broad spectrum of athletic injuries. 

It's Not Kernan Any Longer!

There's Much More Going on at The University of Maryland Rehabilitation Institute (UM Rehab & Ortho) Than a Different Name

It is Maryland's largest and most comprehensive physical rehabilitation hospital. Nestled in an oasis of grass and trees in Woodlawn, the facility was created 120 years ago as an orthopaedic facility to treat children. It later expanded services to adults, and was known for more than 100 years as Kernan Hospital. An integral component of the University of Maryland Medical System (UMMS), the highly specialized staff at UM Rehab & Ortho provides interdisciplinary care to people recovering from stroke and neurological diseases, as well as those with spinal cord injuries, traumatic brain injuries, other traumatic injuries, and a variety of other complex medical conditions. All of the attending physicians at the facility are faculty members at the UM School of Medicine.

UM Rehab & Ortho is also a key part of the University of Maryland Rehabilitation Network (UMRN), a coordinated system of inpatient and outpatient rehabilitation providers working together to help people recover from illness or injury. They offer a full range of physical rehabilitation services, bringing together expert teams of committed care providers from facilities all across the state, ranging from community hospitals to large academic medical centers (this includes all UMMS hospitals). They also have more than 20 outpatient rehabilitation site locations across Maryland, including several on the Eastern Shore.

Broad Array of Services

UM Rehab & Ortho is also an acute care hospital, able to provide 24-hour hospitalist coverage. It has a med-surg unit for patients with urgent needs (PCU not ICU), so patients do not need to be transported to outside hospitals for care. There is also a Pain Management Center on campus, available for both inpatient and outpatient treatment; onsite labs, imaging and a pharmacy; a pool for aquatic therapy; programs offering neuropsychological and psychiatric support, as well as several support groups for patients and caregivers; a dedicated wound care team; an Adapted Sports Program for individuals with physical disabilities; and even a hotel-like facility, the Hackerman-Patz House, which offers lodging at affordable rates for families of patients. Patient Navigators are available to assist vulnerable patients with accessing additional services throughout the system and in the community to help assure a safe and successful transition upon returning home.



Better Outcomes

Acute inpatient rehabilitation such as that offered at UM Rehab & Ortho providing orthopaedic surgeries and much better outcomes than rehabilitation in a nursing home or other sub-acute care facility. Patients have lower readmission rates than with sub-acute care (9.4% vs. 22%), as well as shorter lengths of stay (an average of 12-14 days vs. 21-30 days). Acute inpatient rehab offers physical therapy three hours a day rather than one or two. Physicians visit a minimum of three times a week, as opposed to the once-a-month visits require in sub-acute care.

Diagnosis-Specific Teams

UM Rehab & Ortho accepts admissions from any setting. Most patients referred there are recovering from stroke and neurological disease, spinal cord injury, brain injury, multi-trauma, and comprehensive medical rehabilitation (including rehab for orthopaedic surgery, amputation, cardiopulmonary illness, transplant and cancer). Units and teams are structured to be diagnosis-specific, specializing in rehabilitation and care for each type of condition or disease. All units are accredited by the Commission on Accreditation of Rehabilitation Facilities. The hospital is also accredited by The Joint Commission.

State-of-the-Art Technology

The field of medical rehabilitation is benefitting from new technology designed to enhance patients' quality of life and aid in their recovery. At UM Rehab & Ortho, state-of-the-art technology, combined with expert hands-on therapy, helps to maximize function and increase independence in patients. Some modalities, when combined with traditional therapy, can greatly enhance overall patient outcomes and improve patients' quality of life. These include The Bioness H200 electrical stimulation hand unit, which helps patients improve hand function and voluntary movement; bodyweight-supported treadmill devices to assist patients who meet the criteria for use; the L300 Electrical Stimulation Leg Brace, a non-invasive foot and ankle orthosis that sends electrical pulses through electrodes attached to patients' legs; robotic therapy using groundbreaking devices such as the InMotion 2.0 Shoulder-elbow robot and the Anklebot; the RT300 Electrical Stimulation Bike; and VitalStim® Therapy, an innovative procedure that facilitates the retraining of throat muscles affected by dysphasia or difficulty swallowing. UM Rehab & Ortho was also the first facility in Maryland to offer the ReWalk system, which works like a high-tech body suit allowing patients with spinal cord injury to stand and walk for the first time in years. 🏥



Physicians looking to refer patients can often get them access to care in as little as 24 hours. For more information on the Institute you can visit their website at UMRehabOrtho.org or call them at (410) 448-2500.

Teams of Top Scientists Recruited to UM SOM



INITIATIVE TARGETS LEADING PHYSICIANS AND SCIENTISTS STUDYING MOST SERIOUS DISEASES

The UM SOM announced in February the successful recruitment of a broad slate of top scientists, as the first part of the school's bold new recruitment initiative called "STRAP" (Special Trans-Disciplinary Recruitment Award Program).

The new teams of scientists will bring federal funding of nearly \$30 million (more than \$11 million annually) in total grants and contracts to the UM SOM, **which surpassed \$400M in total research funding** in 2016.

"We are off to a tremendous start with the STRAP Initiative, and are very excited to be able to attract these first teams of outstanding individuals who are nationally- and internationally recognized in their respective fields," said Dean Reece, Vice President for Medical Affairs, University of Maryland and the John Z. and Akiko K. Bowers Distinguished Professor. *"The University of Maryland School of Medicine is being recognized as a magnet institution for individuals interested in pursuing possible cures and treatments for the most critical and complex diseases that we face around the world."*

The program is the most significant and ambitious effort to recruit scientists in the school's 210-year old history. Learn about our new recruits.

Experts in Lung Injury

Stephen N. Davis MBBS, the Dr. Theodore E. Woodward Professor and Chair of the Department of Medicine; Jeffrey D. Hasday, MD, the Dr. Herbert Berger Endowed Professor of Medicine and Division Head, Pulmonary & Critical Care Medicine; and Peter Rock, MD, MBA, the Dr. Martin A. Helrich Professor and Chair of Anesthesiology; with collaboration from Thomas M. Scalea, MD, the Francis X. Kelly Professor in Trauma Surgery, Director of the Program in Trauma and Physician-in-Chief at the University of Maryland R Adams Cowley Shock Trauma Center; and Scott M. Thompson, PhD, Professor and Chair, Department of Physiology, announced the addition of two top pulmonary scientists:

1 Konstantin Birukov, MD, PhD, comes to UM SOM from the University of Chicago School of Medicine, where he was an Associate Professor of

Medicine in the Section of Pulmonary and Critical Care. He is a leading expert on the molecular mechanisms regulating lung vascular permeability, the role of mechanical forces and oxidized phospholipidome in development and recovery of lung function, and innovative strategies to prevent acute lung injury. Prior to the University of Chicago, he was a research associate at the Johns Hopkins University School of Medicine. He has authored or co-authored more than 120 peer-reviewed papers and reviews, as well as two book chapters, and has four patents. Dr. Birukov will have his primary appointment in the UM SOM Department of Anesthesiology, and a secondary appointment in the Department of Medicine, and serve as Director of the University of Maryland School of Medicine Lung Biology Research Program.

2 Anna Birukova, MD, is a widely-published investigator in several areas, including the regulation of lung vascular permeability and inflammation by microtubules, microtubule-associated signaling molecules, and new ways to protect the lungs from acute injury. Prior to coming to UM SOM, she was also an Associate Professor of Medicine in the Section for Pulmonary and Critical Care at the University of Chicago. Prior to that, she was a research associate at Johns Hopkins University School of Medicine. She has authored or co-authored more than 100 peer-reviewed papers and reviews and has written three book chapters. Dr. Birukova will have her primary appointment in the UM SOM Department of Medicine and a secondary appointment in the Department of Anesthesiology, and serve as Associate Director of the UM SOM Lung Biology Research Program.

The team brings UM SOM \$4.35 million in total research funding from the National Institutes of Health (NIH), (more than \$2 million annually).

Top Investigators in Muscle and Tendon Formation

In the Department of Orthopaedics, Andrew N. Pollak, MD, the James Lawrence Kernan Professor and Chair, has led the effort to recruit a team of leading orthopaedics researchers:

3 Masahiro Iwamoto, DDS, PhD, is an acclaimed scientist who has focused on the development of articular cartilage, the regulation of bone growth, and the repair of muscle, cartilage and other connective tissue. Prior to coming to UM SOM, he was a Research Associate Professor of Orthopaedic Surgery at the University of Pennsylvania School of Medicine. Prior to that, he was an Associate Professor of Orthopaedic Surgery at Thomas Jefferson University in Philadelphia. Dr. Iwamoto has earned four patents, and has authored or co-authored more than 90 peer-reviewed papers.

4 Motomi Enomoto-Iwamoto, DDS, PhD, comes from the Children's Hospital of Philadelphia (CHOP), where she was a Research Associate Professor in Orthopaedic Surgery. She is an accomplished investigator who studies the cellular and signaling mechanisms that regulate skeletal development and function; the cellular pathways that lead to cartilage tumors and osteoarthritis; and the role of local progenitor cells in articular cartilage and tendon repair. Prior to CHOP, she was an Associate Professor of Orthopaedic Surgery at Thomas Jefferson University. Dr. Iwamoto has earned four patents, and has authored or co-authored more than 70 peer-reviewed papers.

The team joins the UM SOM faculty with more than \$2.7 million in total research funding from the NIH (\$675K annually).

Leading Neuroscientist in Brain Development

In the Department of Pharmacology, Margaret M. McCarthy, PhD, Professor and Chair, and Bankole A. Johnson, DSc, MD, MB, ChB, MPhil, the Dr. Irving J. Taylor Professor and Chair, Department of Psychiatry, have announced the addition of a nationally-recognized neuroscientist:

5 Tracy L. Bale, PhD, is a leading expert on the links between stress and subsequent risk for neurodevelopmental disorders including autism and schizophrenia in offspring. Her innovative studies use molecular techniques to determine the mechanisms by which this may occur. Her studies on the placenta have revealed novel sex differences that may predict increased prenatal risk for disease in males. Prior to coming to UM SOM, she was a Professor of Neuroscience at the University of Pennsylvania School of Medicine, and the School of Veterinary Medicine. She is the Co-Director of the Specialized Center for Research on Women's Health and Penn PROMOTES, and the Scientific Director for the BIRCWH K12. She serves as Chair of a NIH study section, is a Reviewing Editor for the Journal of Neuroscience, and serves on the Congressional Committee on Gulf War Veterans Health. She has authored or co-authored more than 90 peer-reviewed papers.

Dr. Bale brings nearly \$4.5 million in total research funding from the NIH (\$1.9 million annually).

Top Team in Imaging and Spectroscopy

In the Department of Diagnostic Radiology & Nuclear Medicine, Elias Melhem, MD, the Dean John M. Dennis Chair in Radiology, has announced a team of top investigators from Hawaii:

6 Linda Chang, MD, MS, FAAN, FANA, is a highly-acclaimed physician-scientist coming to the UM SOM from the University of Hawaii, where she

was a Professor of Medicine at the John A. Burns School of Medicine in Honolulu, as well as director of the school's Neuroscience and Magnetic Resonance Research Program. After graduating with an MD degree from Georgetown University, she became an Assistant Professor, and then an Associate Professor of Neurology at the UCLA School of Medicine in Los Angeles. Dr. Chang has done research on a range of topics, including how methamphetamine and other drugs affect the brain and cognition, the neurological effects of HIV/AIDS and how the aging affects the brain. Over her career, she has authored or co-authored 200 peer-reviewed papers, and has written nearly 30 book chapters and monographs. She has also delivered 175 lectures, grand rounds, workshops & symposia.

7 Thomas Ernst, PhD, was also a Professor of Medicine at the John A. Burns School of Medicine at the University of Hawaii. Dr. Ernst earned a PhD degree in physics from the University of Freiburg in Germany. He has focused on several areas of research, including the development of strategies to minimize motion sensitivity of magnetic resonance and other imaging techniques, and to improve the overall precision of these techniques; the use of imaging to study HIV-related brain disease, the neurotoxic effects of methamphetamine and other illicit drugs, and overall brain development. He has authored or co-authored more than 200 peer-reviewed papers, more than 10 book chapters, and has given dozens of lectures and seminars.

The team brings \$9.2 million in total research funding from the NIH (nearly \$3 million annually).

Leader in Bioengineering and Artificial Organs

In the Department of Surgery, Stephen T. Bartlett, MD, the Peter Angelos Distinguished Professor and Chair in Surgery, and Bartley Griffith, MD, the Thomas E. and Alice Marie Hales Distinguished Professor in Transplant Surgery, announced that a top bioengineering scientist is returning to the UM SOM faculty:

8 Zhongjun Jon Wu, PhD, was recruited back to UM SOM in collaboration with faculty from the A. James Clark School of Engineering at the University of Maryland, College Park (UMCP). Dr. Wu will have a joint appointment between UM SOM and the School of Engineering. He is an internationally recognized authority on the development of artificial organs, ventricular assist devices, blood pumps, artificial lungs and respiratory assist devices. He was an Assistant and Associate Professor at UM SOM from 2003 to 2014, when he became a Professor of Cardiovascular and Thoracic Surgery at the University of Louisville School of Medicine. His primary areas of research are in blood flow, flow visualization, blood damage, cell mechanics, cardiac biomechanics, hemodynamics; biological responses to artificial organs in human and animals; and stem cell therapies for heart and lung diseases. He has earned or applied for 10 patents, and has authored or co-authored more than 90 peer-reviewed papers.

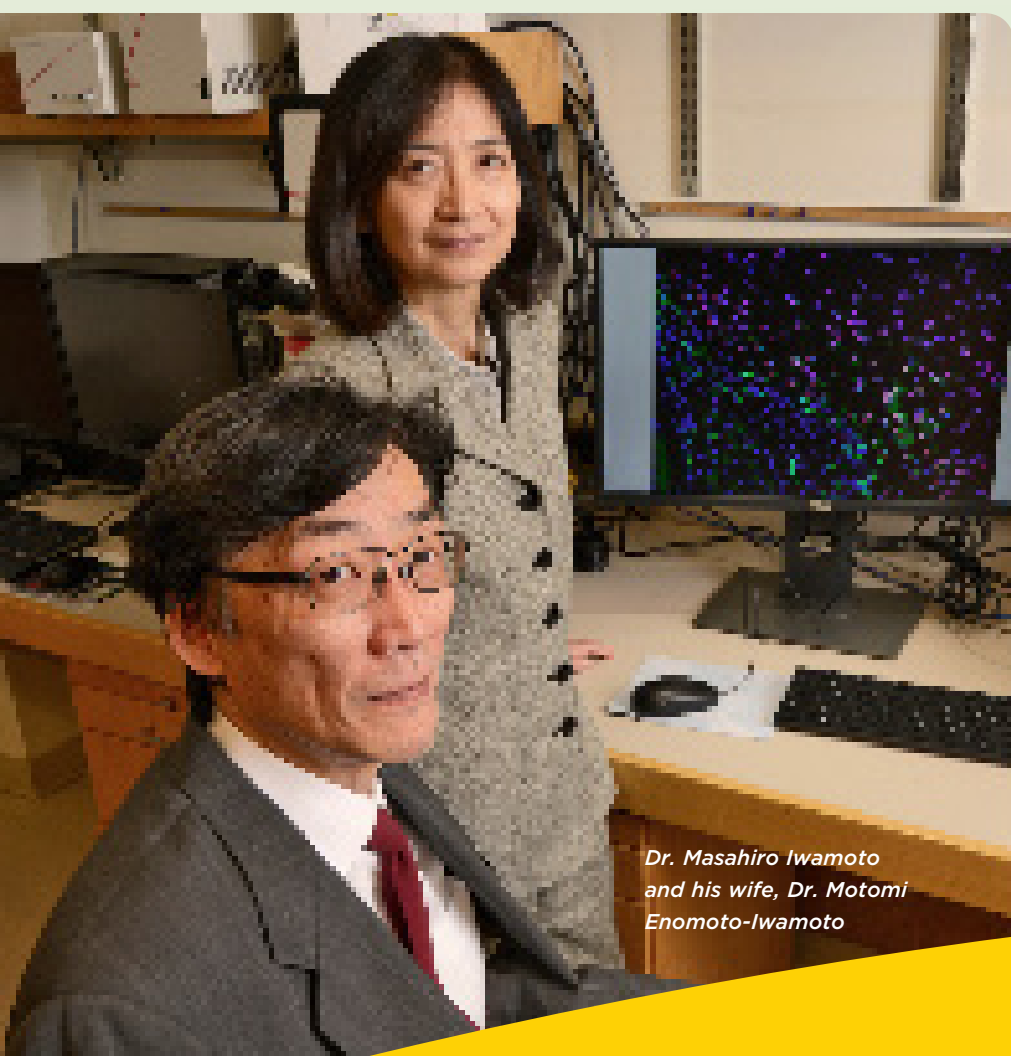
Dr. Wu brings nearly \$1.6 million in total research funding from the NIH (more than \$660K annually).

Academic Leader in Physical Therapy

In the Department of Physical Therapy and Rehabilitation Science, Mark Rogers, PhD, PT, Professor and Chair, along with Department of Orthopaedics Chair Andrew Pollak, MD, announced the addition of a top research scientist in physical medicine and rehabilitation science:

9 Li-Qun Zhang, PhD, who was also recruited with collaboration from faculty in UMCP's Clark School of Engineering, is a Senior Research Scientist who joins the SOM faculty as a Professor in the Department of Physical Therapy & Rehabilitation Science (PTRS), with a secondary appointment in the Department of Orthopaedics. He will also have a joint appointment in the School of Engineering. Dr. Zhang was previously a Professor in the Departments of Physical Medicine & Rehabilitation, Orthopaedic Surgery and Biomedical Engineering at Northwestern University. He also served as Director of Ortho Biomech Research at Northshore University Health System and Senior Research Scientist at the Rehabilitation Institute of Chicago. He is widely published and speaks internationally on his research related to biomechanics and biomedical engineering.

Dr. Zhang has consistently received annual NIH funding and currently holds \$2.7 million total in grants (\$833K annually) from the National Institute of Disability and Rehabilitation Research.



Dr. Masahiro Iwamoto
and his wife, Dr. Motomi
Enomoto-Iwamoto

Young Scientists Emerge as RISING NEW STARS

As the University of Maryland School of Medicine (UM SOM) continues to attract top scientists through its new recruitment initiative (STRAP), some of its young scientists are receiving major awards as “rising stars” in the biomedical research community. In particular, two scientists in the UM SOM Department of Anatomy & Neurobiology, under the leadership of Michael Shipley, PhD, the Donald E. Wilson, MD, MACP, Distinguished Professor and Chair, have recently been awarded prestigious honors for their outstanding scientific leadership.

Outstanding Scientist Donna Calu, PhD

Assistant Professor, Department of Anatomy & Neurobiology

Dr. Calu was selected by the Maryland Science Center as the 2016 recipient of the award for Outstanding Young Scientist, Academic Track. The award was presented at the Science Center in November 2016. She is only the second SOM faculty member to receive the award (Andrea Meredith, PhD, Associate Professor, Department of Physiology, received the award in 2008.)

Dr. Calu was awarded for her cutting-edge neurobiological approaches to investigate behaviors relevant to reward learning, stress and addiction, and her design of an implantable, drivable optical fiber, allowing recording of brain activity during optical stimulation and inhibition in laboratory animals.

The Outstanding Young Scientist (OYS) award program, sponsored by the Maryland Science Center, was established in 1959 to recognize and celebrate extraordinary contributions of young Maryland scientists. The award was endowed in 2011 by a generous gift to the Maryland Academy of Sciences by Reverend Frank R. Haig, SJ, PhD, past chairman of our Scientific Council, from the estate of his brother,




Dr. Donna Calu

...was awarded for her cutting-edge neurobiological approaches to investigate behaviors relevant to reward learning, stress and addiction.

Alexander M. Haig, Jr. Haig was a West Point graduate and four-star general, with a keen interest in applied science. The award is given in General Haig's name.

A graduate in Biology from the University of Maryland, College Park, Dr. Calu completed her PhD degree at the SOM, studying the role of amygdala neural activity in attention and associative learning processes. As an Early Independent Scientist at the National Institute on Drug Abuse at the NIH, she examined the validity of the food relapse model and established a research program aimed at exploring the neural correlates and brain reward mechanisms underlying individual differences in addiction vulnerability. Dr. Calu was recruited to her current faculty position in 2015.

She was also recently awarded a prestigious grant from the McKnight Foundation, the first ever McKnight Memory and Cognitive Disorders award bestowed upon a SOM faculty member. These awards support innovative efforts to solve the problems of neurological and psychiatric diseases, especially those related to memory and cognition. 

Early Career Leader

Mary Kay Lobo, PhD

Assistant Professor, Department of Anatomy & Neurobiology

Dr. Lobo was honored at the White House by President Obama, as a recipient of the Presidential Early Career Awards for Scientists and Engineers (PECASE), the highest honor bestowed by the U.S. government on science and engineering professionals in the early stages of their independent research careers.

Dr. Lobo was recognized for her research examining transcriptional mechanisms occurring in specific neuron subtypes in the brain in cocaine abuse. This research will determine the neural circuit and molecular signaling mechanisms that underlie these transcriptional alterations and further probe these transcriptional mechanisms in animal models of addiction. Ultimately this research can uncover novel molecular mechanisms occurring in precise cell subtypes in psychostimulant abuse and potentially lead to novel therapeutic targeting for effective treatment of addiction.

Established in 1996 and awarded each year, the Presidential Early Career Award for Scientists and Engineers is intended to recognize some of the finest scientists and engineers who, while early in their research careers, show exceptional potential for leadership at the frontiers of scientific knowledge during the twenty-first century. The Awards foster innovative and far-reaching developments in science and technology, increase awareness of careers in science and engineering, give recognition to the scientific missions of participating agencies, enhance connections between fundamental research and national goals, and highlight the importance of science and technology for the nation’s future.

Dr. Lobo was also recently awarded a One Mind Institute/Janssen Rising Star Translational Research Award for her work examining novel molecular therapeutic targeting in vulnerable neuron populations in depression. This award funds research toward novel therapies for psychiatric ill-



Dr. Mary Kay Lobo

...was recognized by President Obama for her research examining transcriptional mechanisms occurring in specific neuron subtypes in the brain in cocaine abuse.



ness with the objective to advance the translation of scientific knowledge of underlying psychiatric disease mechanisms.

Dr. Lobo obtained her PhD Degree in Neuroscience from the University of California, Los Angeles (UCLA). Her doctoral work involved pioneering a new methodology to isolate the two main striatal projection neuron subtypes for gene expression profiling and uncovered many new genes enriched in these two neuron subtypes. Her Postdoctoral studies were performed at University of Texas Southwestern in Dallas, TX and Icahn School of Medicine at Mount Sinai in New York, NY. She built upon her scientific foundations in striatal circuit genetics and function to continue studying these circuits in drug addiction. Her work demonstrated distinct molecular and functional roles in the two ventral striatal (nucleus accumbens- NAc) projection neurons in the rewarding effects of cocaine and morphine. Her lab continues to study these neuron subtypes and their circuitry in addiction, depression, and stereotypy disorders. 🏛️

UM SOM: A Major Global Research Enterprise

With more than **\$400M** in total extramural research funding last year, the School of Medicine now ranks among the top research intensive institutions nationally. Key advances since the UM SOM celebrated its bicentennial in 2007 include:

- Establishment of new individual research centers and institutes focused on the study of genomic sciences; human virology; stem cell biology and regenerative medicine; shock trauma and anesthesiology; biomolecular therapeutics, and global health;
- Extensive research in transplantation leading to breakthroughs in face, kidney and lung transplants;
- Breakthrough development of major vaccines for Ebola, malaria, MERS and cholera, and the start of clinical trials for a new HIV vaccine;
- Creation of new Center for Health and Bioinformatics in collaboration with the University of Maryland, College Park to manage “big data” associated with clinical databases;

- Roll-out of Shared Vision 2020 with the University of Maryland Medical System, establishing benchmark goals for education, research, clinical care and public outreach;
- Launch of SOM annual research symposium, “Festival of Science,” and formation of UM SOM Scientific Advisory Council, made up of Nobel Laureates and world-renown National Academy scientists;
- Formation of the Brain Science Research Consortium Unit — the first SOM multidisciplinary consortium unit focusing on “big science” investigation;
- Establishment of new centralized core laboratories to assist departments in conducting broad range of basic science and clinical studies: Center for Innovative Biomedical/Imaging Resources (CIBR);

- Completion of Maryland Proton Treatment Center, the most advanced form of cancer treatment and the first in the Baltimore-Washington, DC region;
- The National Cancer Institute’s designation of the UM Greenebaum Cancer Center as a “Comprehensive Cancer Center.”
- Construction of new, state-of-the-art SOM Research Building, the largest building and research facility on the University of Maryland, Baltimore campus.



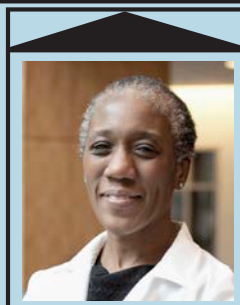
Student Four House Advisory System Initiative

Four houses named for prominent SOM alumni: Lois Young-Thomas House, Julius Friedenwald House, Eva Dodge House, and Mario Garcia-Palmieri House.

A senior faculty educator serves as the head of each house. Thirty-two core faculty (eight per house) are each assigned five incoming students per year, for a total cohort per faculty member of 20 students. Core faculty meet with their group regularly. House meetings enable the Head of House to meet with core faculty and students, as well. There is also a welcome event at the start of each year for all incoming students.

According to the Student Affairs website, the advantages of the House system are class cohesiveness, vertical mentoring from students in other classes, closer associations with faculty, and the opportunity for faculty to work as a group on scholarly activities.

EVA DODGE, MD • Dr. Dodge, a 1925 graduate of the School of Medicine, was a pioneer in the field of Obstetrics & Gynecology and a strong advocate for maternal health care and sex education. She was the first woman intern at the University Hospital of Baltimore and the first woman resident physician in Obstetrics at the same hospital. She later served as the acting head of the Department of Obstetrics at the Women's Medical School in Shanghai, China and the acting head of the Department of Obstetrics and Gynecology at the University of Arkansas Medical School. Dr. Dodge was a leader in the American Medical Women's Association (AMWA) and served as president in 1938. **Mary Njoku, MD**, Associate Professor and Vice Chair for Education in the Department of Anesthesiology, is the Head of Dodge House.



Dodge House
Dr. Mary Njoku



Friedenwald House
Dr. Scott Strome



Garcia-Palmieri House
Dr. Mimi Blitzer



Young-Thomas House
Dr. Bennie Jeng

JULIUS FRIEDENWALD, MD • Dr. Julius Friedenwald came from a family which for more than 80 years in Baltimore was associated with the best in medicine. He attended the College of Physicians and Surgeons which later merged with Maryland, graduating in 1890. He studied medicine, and gastroenterology, in Berlin, Paris, Vienna and London before returning to Baltimore to establish what became a very large medical practice. His devotion to patients did not prevent him from authoring or co-authoring several books and more than 200 journal articles. From 1909 to 1935 he was Professor of Gastroenterology at the University of Maryland and a member of the school's medical council. As such, he was heavily invested in student education and advancement. He was a champion of equality on medical education. He was described by all who knew him as kind, affable, optimistic and generous, able to maintain his gentleness of disposition and character throughout his long career. He held office in numerous regional and national medical societies. Each year the Julius Friedenwald medal is awarded by the American Gastroenterological Association for distinguished service in that branch of medicine. It is the highest honor bestowed by that association. **Scott Strome, MD**, Professor and Chair, Department of Otorhinolaryngology-Head and Neck Surgery, is the Head of Friedenwald House.

MARIO GARCIA-PALMIERI, MD • Dr. Garcia-Palmieri, a 1951 graduate of the School of Medicine, was a cardiologist and the first Hispanic to receive the distinguished title of "Master" by the American College of Cardiology. After medical school, he returned to his native Puerto Rico and became the first cardiologist trained in Puerto Rico. He later served as Chair of Internal Medicine and Director of Cardiology at the School of Medicine of the

University of Puerto Rico. He also became Secretary of Health for Puerto Rico. He served on two Presidential Medical Commissions (Nixon and Carter). Dr. Garcia Palmieri is the only person to twice be elected president of the International Society of Cardiology. The main bi-annual lecture of the Interamerican Congress of Cardiology bears his name. **Mimi Blitzer, PhD**, Professor, Department of Pediatrics, is Head of Garcia-Palmieri House.

LOIS YOUNG-THOMAS, MD • Dr. Young-Thomas was valedictorian of Dunbar High School and later graduated magna cum laude from Howard University. As a student at the University of Maryland School of Medicine she was elected to Alpha Omega Alpha, the national medical honor society. In 1960, she was our school's first black female graduate. Following a rotating internship at the University of Maryland Hospital she returned to Howard University to complete her residency in ophthalmology, and then went on to a fellowship at the Wilmer Institute. She returned to Maryland fulltime in 1969, achieving the rank of Professor in 1980. Dr. Young-Thomas was said to have possessed an immense social conscience and sense of social responsibility. She served on numerous boards and committees, many aimed at serving the disadvantaged. She also worked diligently to foster medical education, and had a particular interest in undergraduate preparation for medical school. Dr. Young-Thomas received numerous teaching awards including, in 1986, Tuskegee University's Award for Medical Education. She was viewed by all of her students as a devoted teacher and mentor. **Bennie Jeng, MD**, Professor and Chair, Department of Ophthalmology & Visual Sciences, is the Head of Young-Thomas House.



AcademicInnovations

In 2016, the School of Medicine launched a House Advisory System Initiative.

Incoming medical students are assigned to one of four houses named for prominent SOM alumni: Lois Young-Thomas House, Julius Friedenwald House, Eva Dodge House, and Mario Garcia-Palmieri House.

The program goals are:

- To promote advising and mentoring for medical students across all four years of medical school
- To allow students to more easily develop nurturing professional relationships with faculty members
- To encourage students to serve as peer advisors and role models for other students following in their footsteps
- To assist students with career development through advising, mentoring, peer relationships and professional connections
- To encourage professionalism, humanism, and personal wellness
- To develop a community of support and mentorship for those faculty interested in and dedicated to education.



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