LETTER FROM THE CHAIRS

We are excited to present this edition of “Clinical Neurosciences Update” from the Departments of Neurology and Neurosurgery. The current issue focuses on new developments and treatments for a broad range of movement disorders such as essential tremor and Parkinson’s disease (PD). Our interdisciplinary team includes neurologists who are movement disorder specialists, caring for PD, dystonia, tremor, and dyskinesia and functional neurosurgeons with expertise in neuro-modulation techniques such as deep brain stimulation. Our expanding collaboration with the Department of Diagnostic Radiology and Nuclear Medicine has created a unique and rich clinical research environment enabling our team to lead the way nationally in developing and implementing non-invasive, image-guided interventions for neurological diseases (e.g. focused ultrasound for the treatment of essential tremor).

This issue welcomes Graeme Woodworth MD, FACS, the new Interim Chair of Neurosurgery, and celebrates the tenure and accomplishments of the outgoing department chair, Howard M. Eisenberg MD. Dr. Woodworth (Professor of Neurosurgery, Anatomy and Neurobiology, and Diagnostic Radiology and Nuclear Medicine, and Director of the Brain Tumor Treatment and Research Center). Dr. Eisenberg will remain a full-time faculty member in the Department of Neurosurgery, facilitating a smooth leadership transition. We are deeply grateful to him for his many years of outstanding patient care and service to our school and medical center.

The close collaboration between Neurology and Neurosurgery helps us to have a major impact in many areas of Clinical Neuroscience such as stroke, epilepsy, and movement disorders. We continue to strive daily for the best patient outcomes and to implement and advance new technologies and treatments that will insure the health of our patients. Clinical Neurosciences at the University of Maryland Medical Center and School of Medicine continue to grow with enhanced research funding and education programs, new clinical trials, and expanded patient outreach— together improving our national reputation. It remains our privilege and focus to serve our communities by delivering exceptional patient care, discovering the treatments of tomorrow, and inspiring the next generation.

Peter B. Crino, MD, PhD
Professor and Chair
Department of Neurology

Graeme F. Woodworth MD, FACS
Interim Chair, Department of Neurosurgery
Director, the Brain Tumor Treatment & Research Center
It can start with the smallest of symptoms—a slight tremor in a finger, a growing stoop while standing, even a loss of smell. But for the 60,000 Americans diagnosed with Parkinson’s disease (PD) each year, the impact is sobering. Although nearly one million Americans will be living with Parkinson’s disease (PD) by 2020, this neurological ailment is just one in a much larger group of conditions collectively known as movement disorders. While some like progressive supranuclear palsy (PSP), which affects about 20,000 Americans, are quite rare, essential tremor is the most common, with an estimated 10 million afflicted in the US. It’s no wonder then that the University of Maryland Parkinson’s Disease and Movement Disorders Center, a division of the Department of Neurology, manages 4,000 office visits a year, providing comprehensive medical, surgical, and rehabilitative services as a comprehensive Diagnostic Center for Parkinson’s disease and for the complete spectrum of movement disorders.

“As academic neurologists, our mission has many components,” says Lisa M. Shulman, MD, Professor of Neurology and the Director of the Movement Disorders Center. “First and foremost, our mission is to provide an excellent quality of care to patients with not only PD, but also all types of movement disorders. These disorders can range from essential tremor to dystonia, tic disorders to various gait disorders. Many parkinsonian disorders are in the broader class of neurodegenerative disorders that are associated with diverse problems including changes of cognition and mental health.” Dr. Shulman adds that the Center offers patients an unrivaled array of treatment options, from botulinum toxin injections to deep brain stimulation (DBS) surgical procedures.

Dr. Shulman sees the Center’s present strengths and reputation as an evolution dating back to 2000 when she and her husband, the late William “Bill” Weiner, MD, joined the Department of Neurology, manages 4,000 office visits a year, providing comprehensive medical, surgical, and rehabilitative services as a comprehensive Diagnostic Center for Parkinson’s disease and for the complete spectrum of movement disorders.

The Center provides comprehensive and expert diagnostic, medical, surgical, and rehabilitative services for patients with a diverse range of movement disorders, including:

- Parkinson’s disease
- Progressive supranuclear palsy
- Lewy body dementia
- Corticobasal syndrome
- Multiple System Atrophy
- Tremors
- Dystonia
- Gait disorders
- Tardive dyskinesia
- Chorea
- Tics

The Center also offers comprehensive and expert diagnostic, medical, surgical, and rehabilitative services for patients with a range of cognitive problems and dementias, including:

- Alzheimer’s disease
- Frontotemporal dementia
- Undiagnosed dementia
- Vascular dementia
- Parkinson’s disease with dementia
- Normal pressure hydrocephalus
- Huntington’s disease

patients with both dementia and movement disorders. Together, the three initially formed the PD and Movement Disorders Center, with Dr. Weiner serving as its first Director. “At that point, we started to significantly expand the research and patient services,” Dr. Shulman recalls. After Dr. Weiner’s untimely passing in December 2012, she took up the reins as the Center’s new director.

Today, the Center’s capacity has grown beyond that of exemplary patient care. The Center hosts a series of annual educational outreach events, including the Weiner Family Memorial Lecture (see page 7) and “Within Our Reach”, a one-day symposium for PD patients and their care partners (see page 6). And, given the Center’s academic setting, training the next
generation of movement disorder experts is a priority. "Over the years, we have trained many fellows who have gone into practice in locations where previously, there was no specialty care available for movement disorder patients," Dr. Shulman notes. "Our graduating fellows have established movement disorder practices in Western Maryland, Annapolis and the state of Delaware (see page 8). This year, one of our graduates began the first movement disorder neurology practice in the entire state of Montana!"

Notably, all of the Center’s neurologists are actively involved in research and clinical trials designed to reduce or delay the effects of PD and other movement disorders. "We strive to provide clinical research opportunities so that patients can participate in expanding the knowledge in these fields," says Dr. Shulman.

In one such study, Dr. Shulman is collaborating with Rainer von Coelln, Dr Med, Assistant Professor of Neurology, to improve the testing of patient mobility by using a wearable sensor device, the DynaPort triaxial accelerometer. This highly sensitive motion detector is worn by a patient while performing a set number of walks, turns, and standing postures. The DynaPort captures in minute detail, performance of gait and balance. "In the long term, we hope to identify so-called 'movement signatures or profiles' that correspond to specific types of symptoms or diagnoses," says Dr. Shulman. "We speculate that the extreme sensitivity of a sensor like this will be able to detect changes in movement associated with early Parkinson’s disease even before the experienced neurologist’s eyes can perceive it.” She points out that having such a diagnostic tool could be a huge breakthrough. “Detecting the diagnosis of neurodegenerative disorders like Parkinson’s disease earlier is the holy grail of our field. For example, in Parkinson’s disease, when PD symptoms become obvious, a large number of the dopamine producing neurons in the brain have already been injured,” she says. “However, if we were able to detect the onset of these brain changes earlier, we could act proactively, to forestall or even stop the disease’s progression.”

In another research study, Dr. Fishman is a co-investigator with principal investigator Howard M. Eisenberg, MD, Professor of Neurosurgery at UMSOM, in a phase 3 study to test the safety and efficacy of using MRI-guided focused ultrasound on the brain to treat Parkinson’s disease. The pivotal study is the final step before the U.S. Food and Drug Administration (FDA) will consider approving this new technology for widespread use as a nonsurgical treatment option to alleviate the key motor symptoms of this common neurological condition. The two physicians have collaborated closely for a number of years and were instrumental in the success of a collaborative study that showed that MRI-guided focused ultrasound can effectively treat patients with essential tremor (ET). This work led to the 2016 approval of this treatment by the FDA.

**FACULTY & STAFF**

**Movement Disorders Faculty:**
- Paul S. Fishman, MD, PhD
  Professor of Neurology
  Chief, Neurology Service, Maryland VA Health Care System
- Stephen G. Reich, MD
  Frederick Henry Prince Distinguished Professor in Neurology
- Joseph M. Savitt, MD, PhD
  Associate Professor of Neurology

**Lisa M. Shulman, MD**
Professor of Neurology
Eugenia Brin Professor in Parkinson’s Disease and Movement Disorders
The Rosalyn Newman Distinguished Scholar in Parkinson’s Disease
Director, University of Maryland Parkinson’s Disease and Movement Disorders Center

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Assistant Professor of Neurology

**Movement Disorders Staff:**
Clinical Division Manager:
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**Research Staff:**
Kimberly Bambarger
Veronica Fallon
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**Nurse:**
Sharon Powel

**Administrative Staff:**
Cherika Jones
Erica Miles
I'M NOT GOING TO LET THIS BEAT ME

Over the past 45 years, Len Patras has built a successful career as a pharmacist in Baltimore County. But for even longer, 61 years to be precise, he’s been a diehard fan of the Baltimore Orioles. “I’ve been following the team since I was seven years old,” he smiles. But then in 2004, the unexpected struck. “I was beating eggs one morning, and my hand wouldn’t go any faster,” he recalls. “The next day, I couldn’t write my name while paying bills. I knew something was wrong.”

After an initial consultation with his family doctor and a neurologist who confirmed that he had Parkinson’s Disease, Patras was referred by a friend to Stephen Reich, MD, Frederick Henry Prince Distinguished Professor in UMSOM’s Department of Neurology and a specialist in movement disorders. A close doctor-patient relationship grew between the two men over the subsequent decade, culminating in a decision to undergo a deep brain stimulation (DBS) procedure in 2014 to treat certain symptoms of Parkinson’s disease, including tremor and slowed movements.

Patras considers the DBS procedure a success. “I can work, and I have very little dyskinesia (involuntary movement),” he says. “It helps me very much with daily living.” As importantly, the procedure has allowed Patras to pursue his passion for following his hometown Orioles—and to attend Orioles Fantasy Camp in Sarasota, FL in 2017 and 2018 with his son Nick. “It was on my bucket list,” Patras smiles. His future plans include attending Spring Training games and being a proud grandfather to his seven granddaughters. “I’m not going to let this beat me,” says Patras. “I want to see my granddaughters grow up, get married, and have kids.”

While he primarily sees himself as a clinician, Joseph M. Savitt, MD, PhD, Associate Professor in Neurology, is engaged in several research efforts. He is the UMSOM site investigator in a multicenter trial looking into improving the efficacy of levodopa (the most potent medication for PD) by administering the drug with a needle inserted just under the skin and delivered by an external portable pump, rather than oral administration. In another Center-wide effort, Dr. Savitt is working with Dr. Shulman on an ongoing genetic study of Parkinson’s disease funded by a $1 million grant in 2013 from Eugenia and Michael Brin, the parents of Google co-founder Sergey Brin. The gift has enabled researchers to perform genetic testing and enter that data in the Center’s burgeoning Parkinson’s disease database, which currently contains data on over 3,000 PD patients and 25,000 office visits, with information on gait, balance, dexterity, tremor, depression, anxiety, sleep and fatigue. “By mining this data, we have gathered over the last 20 years, we hope to better understand the mechanism and treatment of Parkinson’s disease and other and related movement disorders,” says Dr. Shulman.


Now in its seventh successful year, the 2019 “Within Our Reach” Parkinson’s Disease Symposium took a star turn by having noted director, actor and singer Don Most on hand as the event’s keynote speaker. The popular daylong event, held in April at the BWI Hilton, is sponsored by the University of Maryland Parkinson’s Disease (PD) and Movement Disorders Center in the UMSOM Department of Neurology.

The symposium is a unique patient educational program that focuses the importance of engaging patients, caregivers, and family members in actively learning the new skills necessary to manage their chronic medical condition. Educational talks, self-care workshops, and movement activities all play a role in educating symposium participants on novel and effective ways to manage PD while living their lives to the fullest. "The Within Our Reach symposium is a way for us to reach out to patients and caregivers to let them know that they are not alone..." said Lisa Baldino, the Symposium’s Steering Committee Chair. "This event is a networking opportunity, a motivation source, and hopefully, an inspiration to anyone struggling with the disease."

Following the keynote and a break where participants could visit the Resource Fair, Vendor Fair, Photo Booth and Relaxation Room, the popular Moving Forward Together Movement Health Fair was opened to all. Both PD patients and their caregivers could choose to take part in two of the five featured movement skill centers, including Tai Chi, boxing, pickle ball, rhythm drums or the Parkinsonics singing group. Movement experts were on hand to provide instruction and strategic tips.

After lunch, notable University of Maryland neurology specialists held a Q&A-format panel discussion on the latest surgical updates, drugs, studies, and genetic research results. The balance of the afternoon was devoted to Moving Forward Together Workshops, which covered a range of topics, including "Get Off the Care Partner Treadmill" and "A Look at PD in the Year 2030."

As in the past, participants left this year’s “Within Our Reach” Symposium filled with enthusiasm, hope, and sense of broader community. "The creativity and commitment of the entire committee is what brings the event to life," said Baldino. "If we have been able to touch even one person with useful information or inspire one patient to get up and get moving, then we have succeeded."
Joshua M. Shulman, MD, PhD believes he may have tracked one potential cause for Parkinson’s disease (PD)—the debilitating neurodegenerative disorder that affects nearly one million Americans—to its lair inside the human neuron (brain cell). He described these research findings to a large audience as the featured speaker at the 2019 Weiner Family Memorial Lecture, held at the University of Maryland School of Medicine on April 3, 2019.

For Dr. Shulman, Associate Professor of Neurology, Neuroscience, and Molecular & Human Genetics at Baylor College of Medicine, as well as Principal Investigator in the Jan and Dan Duncan Neurological Research Institute at Texas Children’s Hospital, the occasion also marked a kind of homecoming. His mother, Lisa M. Shulman, MD, Professor of Neurology, is the Director of the University of Maryland Parkinson Disease and Movement Disorders Center. His stepfather, the late William J. Weiner, MD, was a professor and chair of UMSOM’s Department of Neurology, as well as an internationally recognized clinical investigator, neurologic educator, and prolific author on Parkinson’s disease and other movement disorders. The Weiner Family Memorial Lecture was originally established by Dr. Lisa Shulman and her husband to honor Dr. Weiner’s parents; it now memorializes Dr. Weiner as well.

“Like my mother and Bill Weiner, I’m also a movement disorders neurologist, but my focus is mainly on Parkinson’s disease within movement disorders,” says Dr. Shulman. “I spend 90% of my time doing research in a laboratory setting, studying the genetics of both Parkinson’s and Alzheimer’s disease.”

In his lecture, “Functional Genomic Dissection of the Lysosome in Parkinson’s Disease,” he described how in exploring the genetic architecture of Parkinson’s disease he and his colleagues made genetic discoveries relevant to PD that implicate a certain biological process within the neuron—a process that involves a part of the cell called the lysosome, which is important in controlling the levels of many proteins in the neuron.

“When the lysosome is dysfunctional, it can lead to the accumulation of proteins, which creates a stress on the cell,” he explains. “In PD, a certain protein called Alpha-synuclein is known to accumulate, which is toxic to neurons. And that’s the defining pathology of Parkinson’s disease.” Dr. Shulman’s lab has been conducting studies on what genetic risks figure in Parkinson’s disease. “We and others have found a number of genetic risk factors that strongly point to the lysosome,” he says. “When these particular genetic variants are inherited, they disrupt the function of the lysosome and may lead to the accumulation of proteins like Alpha-synuclein, which in turn may be why they cause PD.”

Dr. Shulman’s lecture also focused on how studies of human populations, in terms of human genetic discovery, can be combined with functional experimental studies in model organisms, in order to better understand how genes actually work to affect disease risks.

“We’re still trying to do a variety of experiments to confirm and solidify our understanding of what we think is going on in this regard,” says Dr. Shulman. “We’ve done human genetic analyses that have looked at 54 different genes that are related to lysosomal dysfunction. Our analyses strongly suggest that among those 54 genes, there are new Parkinson’s disease risk factors, but we don’t yet know which of these genes are responsible.” His investigation is currently experimenting with fruit flies to determine which of the 54 identified genes are causal for disease risks. “But as PD is a complex genetic disease, it’s unlikely that a single gene is responsible,” he notes, “so we’re really interested in understanding how many genes can interact with one another to affect the risk of disease.”

While gratified that his talk was well-received, Dr. Shulman also acknowledged that the occasion was “poignant” for him. “Bill Weiner was a real teacher for me. His mentorship was a major driver of my interest in neurology and for my career trajectory. While I’m interested in genetics, I’m still staying in the ‘family business,’” he smiles.
COVERING THE FIRST STATE

Graduate of UMSOM Movement Disorders Fellowship Is Delaware’s Sole Specialist

Justin Martello, MD had no idea just how special his specialization would turn out to be. But even as a high school student, he knew that he wanted to be a neurologist. After earning his MD and completing his neurology residency at the University of Maryland School of Medicine (UMSOM), Dr. Martello was accepted into the school’s Movement Disorders Fellowship program in 2015.

The UMSOM Department of Neurology’s Movement Disorders program typically accepts only two Fellows each year, who then engage in an intensive one to two-year experience involving both hands-on clinical and research activities. Our Fellows get broad training and clinical management of Parkinson’s and related disorders,” says Stephen Reich, MD, Frederick Henry Prince Distinguished Professor in Neurology and Fellowship Director. “We cover a complete spectrum of clinical treatments, from the use of deep brain stimulation to administering botulinum toxin. And in terms of their research projects, in almost all cases our fellows have presented their research at either a national or international meeting.”

Dr. Martello notes that his fellowship experience provided him with the springboard for his future practice. “I gained a great deal of firsthand experience in practice by being able to go into the operating room to observe different surgeries by our neurosurgeons,” he says. “We were also connected to community physicians if we wanted to do electives, which I did to see what private practice was like in the movement disorder world.”

Right after he completed his UMSOM fellowship, Dr. Martello was offered a position at Christiana Care Health System in Wilmington, Delaware, where he found to his surprise that he was the first (and continues to be the only) practicing movement disorders specialist in the entire state. While he admits that the role appeared challenging at the outset, he knew that he was prepared. “From the knowledge I gained at Maryland, I felt there was nothing that I couldn’t do when I started,” he says. “And that’s especially true now. Even so, we are still learning every day.”

Dr. Reich is gratified by the dedication and career success of former fellows like Dr. Martello. “We are proud of the fact that our fellows have had excellent clinical training and input,” he says. “Now they are putting it to good use in caring for people with movement disorders in areas that were previously underserved.” Graduates of the University of Maryland Movement Disorders fellowship are currently delivering subspecialty care throughout the mid-Atlantic region, including Frederick, Annapolis, and Washington DC.

“Although I had a lot of great choices between Hopkins and Georgetown to do my movement disorders fellowship, Maryland really has probably the strongest program in the area with the broadest coverage of movement disorders and their treatments.”
"It’s another great tool to have in our neurosurgical toolbox," says Graeme F. Woodworth, MD, FACS, Professor of Neurosurgery at the UMSOM. Dr. Woodworth is referring to the new NeuroBlate® System from Monteris® Medical, which was recently put into operation through a collaboration between the Departments of Diagnostic Radiology and Nuclear Medicine and Neurosurgery at the University of Maryland Medical Center (UMMMC). Currently, the system is the first and only one of its type available to patients in Maryland.

Dr. Graeme Woodworth reviews patient data on the new NeuroBlate system.

As the Director of The Brain Tumor Treatment & Research Center at the University of Maryland Marlene and Stewart Greenebaum Comprehensive Cancer Center, Dr. Woodworth is clearly excited about offering another effective and minimally invasive treatment option that can preserve quality of life for his patients. "The NeuroBlate® System is a next-generation technology for treating patients with brain tumors who would otherwise not be candidates for surgery, either because of high surgical risks or because the tumor’s location deep within the brain is not amenable to surgery," he says. It is particularly effective in treating metastatic tumors in the brain that have not responded or partially responded to radiation.

A Laser Interstitial Thermal Therapy (LITT) system, NeuroBlate® employs minimally invasive, robotically controlled laser thermotherapy that uses an MRI-guided laser energy source to ablate (destroy) diseased brain tissues, such as a brain tumors or radiation necrosis. Unlike traditional brain surgery, a procedure with the NeuroBlate® System does not require a large opening in the skull. Instead, the neurosurgeon creates a small hole about the diameter of a pencil. While the patient is in the MRI machine, the neurosurgeon uses an MRI-compatible robot to precisely guide the laser probe into the affected area of the patient’s brain. The probe then delivers a measured charge of laser light energy that heats and destroys the affected tissue. Because the NeuroBlate® System is MRI guided, the neurosurgeon is able to visualize and continuously monitor the specific area of the brain to be ablated in real time. Post-surgery, patients undergoing this procedure have a short recovery time and are able to return home with only one or two stitches in their scalp.

Dr. Woodworth points out that the NeuroBlate® System has an even greater treatment potential beyond that of ablating brain tumors. "This tool is broadly approved for the controlled application and monitoring of thermal energy in the brain, which can be applied in a safe way to treat malfunctioning regions related to epilepsy," he says.

What’s more, the system directly compliments therapies already in use by UMSOM neurosurgeons, from radiation and Gamma Knife radiosurgery to focused ultrasound (FUS) and deep brain stimulation (DBS). “There have been decades of studies looking at the combination of thermal energy and radiation energy to treat tumors,” says Dr. Woodworth. “There is substantial evidence that these treatments synergize well together.”

In the future, neurosurgeons will likely pre-treat brain tumors with thermal energy to sensitize the tumor to the radiation effect. "NeuroBlate® has even been used for spine surgery, by feeding the laser probe into the bone where the tumor is located to ablate the tumor," says Dr. Woodworth, "all without having to perform more invasive approaches.”

While he is currently the only UMSOM neurosurgeon presently employing NeuroBlate® to treat patients, Dr. Woodworth anticipates a much wider use of the new system to address intercranial and other cases. “We are very excited to have this new technology to help our patients,” he notes.
CELEBRATING AN EXTRAORDINARY CAREER
Colleagues Gather to Honor Howard Eisenberg, MD with New Professorship in His Name

The April 29 event was billed as a “surprise milestone birthday celebration” to celebrate the birthday of Howard M. Eisenberg, MD, Raymond K. Thompson, MD, Chair in the Department of Neurosurgery at the University of Maryland School of Medicine (UMSOM)—and to mark the occasion of his stepping down as that department’s chair after 23 years of outstanding service.

More than 150 guests gathered at Baltimore City’s Center Club for the party. According to Emily Green, Director of Development for UMSOM’s Departments of Neurology and Neurosurgery, “We invited all of the past residents that he trained throughout his entire career from both University of Maryland and from his prior position at the University of Texas Medical Branch at Galveston. Guests traveled from as far as Sweden, Hawaii, Washington State, California, and Texas, including former trainees, colleagues, friends, and family.”

However, an even greater surprise awaiting the assembled guests and the guest of honor as the evening unfolded. Following remarks by Jay Perman, MD, president of the University of Maryland, Baltimore, Mohan Suntha, MD, MBA, President and Chief Executive Officer of the University of Maryland Medical Center, and Graeme F. Woodworth, MD, B.S., Professor of Neurosurgery and Interim Chair, as well as by longtime colleagues E. Francois Aldrich, MB, ChB, Professor of Neurosurgery, and J. Marc Simard, MD, PhD, Professor of Neurosurgery, a framed medal was unveiled, revealing the establishment of the new Howard M. Eisenberg, MD Distinguished Professorship in Neurosurgery. Created through an anonymous lead gift of $1,000,000 that was matched by a grant from the Maryland E-Nnovation Initiative Fund (MEIF), and supported by other donors, the new Eisenberg Professorship will be used to further the research and academic efforts of an outstanding neurosurgery faculty member with exceptional clinical and research expertise. “The Neurosurgery faculty member holding this professorship will carry forward Dr. Eisenberg’s legacy of innovative research, inspired teaching, and exceptional patient care,” notes Green.

A Remarkable Career
Dr. Eisenberg is recognized as one of the nation’s top neurosurgeons and pre-eminent experts on traumatic brain injury and the blood brain barrier. As Chair of Neurosurgery, he has led a group of neurosurgeons and scientists in providing innovative programs that result in safer, less intrusive and more effective treatments, particularly for traumatic central nervous system injury, and more recently, for Parkinson’s disease. The research interests of the Department have extended from the mechanisms of traumatic central nervous system injury and stroke, to the biology of brain tumors. Most recently, he has been the principal investigator for a pivotal study of Parkinson’s disease. This work has resulted in ground breaking research and a clinical trial on focused ultrasound to treat essential tremor and Parkinson’s disease, which has received extensive national and international attention. Dr. Eisenberg’s remarkable career also has been underscored by key leadership and professional appointments in his field. He served as Chairman of the American Board of Neurosurgery; Vice Chairman of the Accreditation Council for Graduate Medical Education Residency Review Committee for Neurosurgery; Chairman of NIH Study
Section (Neuro A); Chairman of the Editorial Board of the Journal of Neurosurgery; and President of the American Society for Neurosurgery (the Senior Society). His expertise in the field is evidenced by numerous listings in Castle Connolly America’s Top Doctors (2002-2008, 2010-2016). His publications have been cited over 18,000 times. Since 2013, Dr. Eisenberg has served as a consultant to the National Football League.

**A World-Class Program**

When Dr. Eisenberg arrived at the University of Maryland in 1992, he set about to create a world-class neurosurgery program focused around a mission of exceptional patient care, research, and education. At that time, neurosurgery was a division of the Department of Surgery and there was no federally funded research.

Under his leadership, the Neurosurgery Department has reached numerous milestones and achieved noteworthy success. This has included FDA approval for new neurosurgical devices and clinical translation of research from the laboratory. Ongoing efforts in the department offer great promise to improve the care of patients with many neurological diseases including Alzheimer’s disease, Parkinson’s disease, brain tumors, stroke, and traumatic brain injury.

Today, the Department of Neurosurgery is fulfilling its tripartite mission related to patient care, research, and education. The department has eight full-time clinical faculty and seven part-time faculty, together conducting over 3,500 surgeries per year and making it one of the larger clinical departments in the country. In addition, it trains neurosurgery residents (2 per year; 14 total in the program) and numerous medical students, graduate students, and fellows each year.

Overall, the Department has grown into a regionally and nationally recognized program that has consistently been ranked as one of the top 15 such programs in the United States for NIH funding—a testament to the quality of research as well as ongoing innovation and discovery. In addition, it has a proven track record of translating research discoveries from the laboratory to the clinic with successful paths to product commercialization. These efforts have consistently brought new intellectual capital and resources to the state of Maryland. This has included FDA approval for new neurosurgical devices and has taken a multi-center clinical trial to the point of major pharmaceutical investment. A specific example includes MRI-guidedFocused Ultrasound. The University of Maryland, Baltimore has been named as one of only seven programs in the world, a Focused Ultrasound Center of Excellence, for advancing research on the brain disorders and leading the efforts for FDA approval of FUS to treat patients with essential tremor. Numerous other studies led by the University of Maryland team related to the neurological diseases are also currently underway.

“I have been fortunate to be surrounded by a wonderful and talented group of faculty members, residents and staff,” says Dr. Eisenberg. “The Department has come a long way from when my colleagues, Marc Simard and Francois Aldrich, and I first arrived, thanks to the strong advocacy and support from the School of Medicine and the Medical Center.”

Well-wishers surround Dr. Eisenberg (center) at the Center Club in April, including Dr. Woodworth (right).
The Comprehensive Stroke Center (CSC) at the University of Maryland Medical Center (UMMC) has received the American Heart Association/American Stroke Association’s Get With The Guidelines® (GWTG) Target: Stroke Honor Roll Elite Plus Gold Plus Quality Achievement Award. The award recognizes the Center’s commitment to ensuring stroke patients receive the most appropriate treatment according to nationally recognized, research-based guidelines based on the latest scientific evidence. The center is staffed by faculty from the Department of Neurology’s Stroke Division at the University of Maryland School of Medicine (UMSOM).

This year saw the publication of two important books by members of UMSOM’s Department of Neurology. In Before and After Loss: A Neurologist’s Perspective on Loss, Grief, and Our Brain (Johns Hopkins University Press; December 2018), Lisa Shulman, MD, Eugenia Brin Professor in Parkinson’s Disease and Movement Disorders and Director of the University of Maryland Parkinson Disease and Movement Disorders Center, describes her personal story of loss and her quest to understand the science behind the mind-altering experience of grief. Part memoir, part scientific discovery, this moving book combines Shulman’s perspectives as an expert in brain science and behavior, with her experience as a clinician, a caregiver, and a widow. Drawing on recent studies of emotional trauma, she explains how the mind, brain and body respond and heal following traumatic loss. She also traces the interface between the experience of profound loss and the search for emotional restoration. Dr. Shulman lost her husband, the renowned neurologist William J. Weiner, MD, professor and chairman of neurology and director of the UM Parkinson and Movement Disorder Center, to cancer in 2012.

Stephen Reich, MD, Frederick Henry Prince Distinguished Professor in Neurology, is the co-author and editor (along with Stewart Factor, DO, Professor of Neurology at Emory University) of Therapy of Movement Disorders: A Case-Based Approach (Humana Press, 2019). This case-based text provides treatment approaches to common and uncommon movement disorders. The first two parts of the book are devoted to the wide spectrum of motor and non-motor problems encountered in caring for people with Parkinson’s disease, as well as parkinsonian syndromes. Later sections of the text address essential tremor and other tremor disorders followed by management of the various dystonic syndromes and other hyperkinetic disorders including chorea, tics, and myoclonus. Authored by global experts, this practical guide is designed to help physicians, other healthcare professionals and trainees care for patients with a wide spectrum of movement disorder related problems.

OF NOTE

The Department of Neurology will host the 4th Annual Stephen K. Myers Memorial Symposium on Multiple System Atrophy and Other Parkinsonian Disorders for Patients and Caregivers on Tuesday, October 15 at the Sheraton in Columbia. J. Eric Ahlskog, MD, PhD from Mayo Clinic will be this year’s keynote speaker. The event is focused on parkinsonian disorders such as multiple system atrophy, Lewy body dementia, corticobasal degeneration, and progressive supranuclear palsy. For more information, contact egreene@som.umaryland.edu.

At an April 1, 2019 investiture ceremony, J. Marc Simard, MD, PhD, Professor of Neurosurgery, Pathology and Physiology, was formally installed as the first Bizhan Aarabi, MD Professor in Neurotrauma. Dr. Simard is one of the 82 distinguished University of Maryland School of Medicine (UMSOM) faculty who have now received endowed professorships. The Professorship in Neurotrauma was made possible by a gift from Bizhan Aarabi, MD, Professor of Neurosurgery and Director of Neurotrauma at the R Adams Cowley Shock Trauma Center (STC). Dr. Aarabi, who has been on the UMSOM faculty for 19 years, decided to help fund an endowed chair as the most impactful long-term investment for the STC. “I could not be happier to make this investment for the UMSOM, the Shock Trauma Center, and for the faculty member who is most deserving of it: Marc Simard,” Dr. Aarabi said.

Before and After Loss: A Neurologist’s Perspective on Loss, Grief, and Our Brain (Johns Hopkins University Press; December 2018), Lisa Shulman, MD, Eugenia Brin Professor in Parkinson’s Disease and Movement Disorders and Director of the University of Maryland Parkinson Disease and Movement Disorders Center, describes her personal story of loss and her quest to understand the science behind the mind-altering experience of grief. Part memoir, part scientific discovery, this moving book combines Shulman’s perspectives as an expert in brain science and behavior, with her experience as a clinician, a caregiver, and a widow. Drawing on recent studies of emotional trauma, she explains how the mind, brain and body respond and heal following traumatic loss. She also traces the interface between the experience of profound loss and the search for emotional restoration. Dr. Shulman lost her husband, the renowned neurologist William J. Weiner, MD, professor and chairman of neurology and director of the UM Parkinson and Movement Disorder Center, to cancer in 2012.