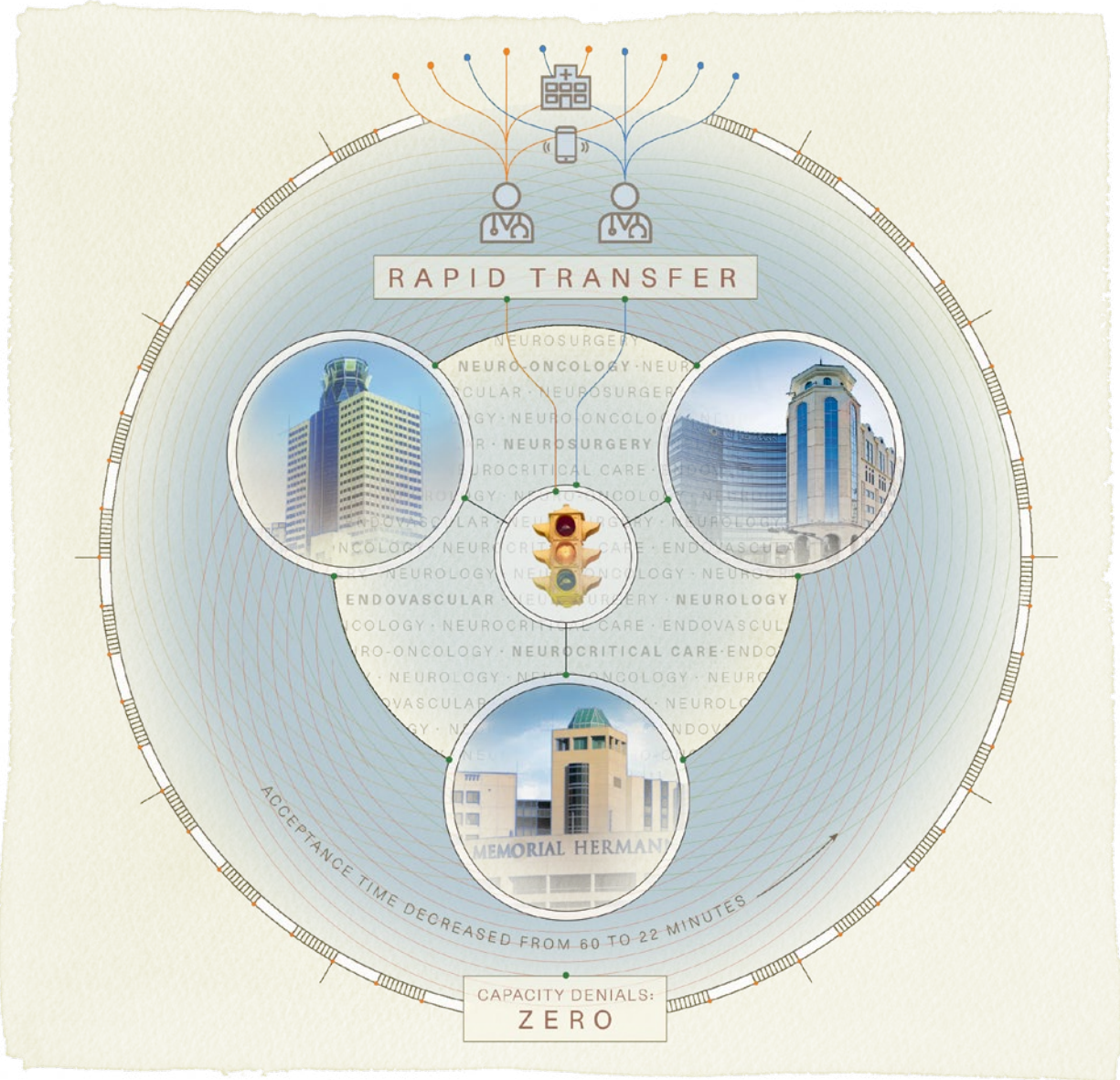


MEMORIAL HERMANN MISCHER NEUROSCIENCE INSTITUTE JOURNAL

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TOWARD *the* HIGHEST LEVEL of PERFORMANCE

At Mischer Neuroscience Institute, we view problems as opportunities. When faced with capacity denials at Memorial Hermann-Texas Medical Center, we implemented our Rapid Transfer process, first for neurosurgery patients in late summer 2016 and then for stroke patients in January 2017. By extending the Institute's specialized care to Memorial Hermann Memorial City Medical Center and Memorial Hermann Southwest Hospital, we reduced our neuroscience capacity denials at the Texas Medical Center to zero. We provide an overview of this successful program, which works in collaboration with both neurologists and neurosurgeons, and between faculty at McGovern Medical School at UTHealth and physicians affiliated with Memorial Hermann Health System.

We also highlight several areas of note: the new Walmart Spine Center of Excellence, an expansion of stroke research to sites outside the Texas Medical Center, and Dr. Nitin Tandon's research efforts involving neurocognition.

We'd like to take this opportunity to congratulate Dr. Jaroslaw Aronowski, who was recognized with the 2017 Thomas Willis Award from the American Heart Association for significant translational contributions to clinical stroke research, and Dr. Claudio Soto, who received a grant from the Michael J. Fox Foundation for Parkinson's Research to investigate the potential of a blood test to diagnose Parkinson's disease before debilitating symptoms manifest.

Our collaborative efforts have led to National Institutes of Health rankings that are now in the top 20 in the United States for both the departments of Neurosurgery (No. 13) and Neurology (No. 19), thanks to our incredible research teams. We welcome several new research faculty: Yuri A. Dabaghian, PhD; Joo Eun Jung, PhD; Balveen Kaur, PhD; Eunhee Kim, PhD; Tae Jin Lee, PhD; Sean Marrelli, PhD; Devin W. McBride, PhD; Yanning Rui, PhD; Zhen Xu, PhD; and Ji Young Yoo, PhD.

Finally, we welcome the many new members of our physician team: Joseph Amos, MD; Ashley Kay Amsbaugh, MD; Ritvij Bowry, MD; Kristin A. Brown, MD; Guy Burrows, MD; Danny Michael Chachere II, MD; Divya Chirumamilla, MD; Joseph A. Cochran, MD; Mimi Dang, MD; Megan Davis Frankhauser, MD; Edward Escobar, DO; Yoshua Esquenazi, MD; Brian Fernholz, MD, PhD; Shaila Gowda, MD; Hamid S. Hamdi, MD; David Hunter, MD; Haris Kamal, MD; Shariq Khwaja, MD, PhD; Christina Kim, MD; Stella H. Kim, PsyD; Leslie Kimpler, DO; Victor Lo, MD, MPH; Justin P. Morgan, MD; Nassim Naderi, MD; Hiral Patel, MD; Sandra Pritzkow, PhD; John C. Quinn, MD; M. Agustina Rossetti, PhD; Sunil Sheth, MD; and Shaun O. Smart, MD.

We are working together to provide the best in clinical care and to advance research. If you would like to learn more about our services, research and programs, please feel free to contact us directly.

With best wishes,



DONG H. KIM, MD

Director, Mischer Neuroscience Institute at Memorial Hermann-Texas Medical Center

*Professor and Chair, Vivian L. Smith Department of Neurosurgery
McGovern Medical School at UTHealth*



LOUISE D. McCULLOUGH, MD, PhD

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RAPID TRANSFER PROCESS ELIMINATES NEUROSCIENCE CAPACITY DENIALS *and* GETS PATIENTS *to the* RIGHT LEVEL *of* CARE QUICKLY

In the Greater Houston area, the first choice for transfer requests for neurological care is Memorial Hermann-Texas Medical Center, the teaching hospital for McGovern Medical School at UTHealth. Although the hospital houses a 38-bed Neuroscience ICU, it has frequently faced capacity constraints, causing denials. In 2016, more than 600 neuroscience transfer requests were denied due to capacity constraints.

In response, Dong Kim, MD, professor and chair of the Vivian L. Smith Department of Neurosurgery at UTHealth and director of Mischer Neuroscience Institute, leveraged the Memorial

“OUR GOAL WITH THE NEW PROCESS WAS TO BE ABLE TO SAY YES WITH ONE CALL TO ENSURE FASTER ACCESS TO CARE. FOR OUR REFERRAL SOURCES, THIS IS A HUGE PLUS.”

Hermann Health System’s extensive infrastructure. The System includes several tertiary hospitals staffed by one team of neurosurgeons and neurologists, all part of Mischer Neuroscience Associates. Dr. Kim worked with Amanda Spielman, president of Mischer Neuroscience Associates and vice president of neurosciences at Memorial Hermann, to implement the Rapid Transfer process. Today Memorial Hermann-TMC’s neuroscience capacity denials have dropped to zero.

Their plan was to develop a one-phone call, one-acceptance model in which a

transfer request can go to one of three hospitals outside the Texas Medical Center: Memorial Hermann Memorial City Medical Center, Memorial Hermann Southwest Hospital and Memorial Hermann The Woodlands Medical Center. All physicians on the neuroscience team, who work in partnership, agreed that one physician on call can accept transfers for any campus. “The physicians and hospitals agreed that acceptance will be based on a ‘just-say-yes’ approach and will occur automatically as long as there is capacity,” Dr. Kim says.

Rapid transfer for neuroscience patients was implemented in two waves – for neurosurgery patients in August 2016 and for neurology patients in January 2017. “Previously the time to accept a new patient through our Transfer Center could be 60 minutes or more. Now it averages 20 to 22 minutes,” Dr. Kim says. “Thanks to the expansion of the Institute’s expertise to suburban hospitals, physicians who want to transfer a high-acuity patient can now choose Memorial Hermann Memorial City Medical Center, Memorial Hermann The Woodlands Medical Center, or Memorial Hermann Southwest Hospital, where our physician colleagues, many of whom have trained with us, work in close collaboration with Mischer Neuroscience Institute to ensure the appropriate level of care. It’s a great benefit for physicians and for their patients, who often can be hospitalized closer to home and family.”

Under the direction of Louise McCullough, MD, chair of the department of Neurology at McGovern Medical School, and Sean Savitz, MD, director of stroke program development for the Memorial Hermann Health System and professor of neurology, stroke patients were added to the Rapid Transfer process. “Memorial Hermann-TMC is the dominant referral center for stroke in the southern half of Texas, thanks to our extensive relationship with hospital partners throughout the region,” Dr. Savitz says. “The process is a wonderful



opportunity to redirect carefully selected patients to other Memorial Hermann campuses, where we all work together as a team. I'm grateful to Dr. Kim and Amanda for providing leadership and for Memorial Hermann's investment in recruiting talented physicians, nurse coordinators and other staff members at our suburban hospitals."

The new process dramatically simplifies patient transfers for referring physicians. "If we get a call for neurosurgery, it goes to the neurosurgeon on call," says Cheryl Fleming, RN, MSN, system director for the Memorial Hermann Transfer Center. "If a call comes in about a stroke patient, it goes to a stroke physician. The attending physician on call for the Transfer Center is kept updated on capacity at all

three hospitals through text messages that let the doctor know whether each hospital's status is green, yellow or red. Green means the transfer is a go - we have beds at all facilities. Yellow is caution - we need to make sure we have a bed available. Red means we're full. Our Rapid Transfer process has replaced the old industry standard, which was cumbersome because it involved calls to multiple physicians and specialists. The team would speak with a neurologist or neurosurgeon, and then get the neurointensivist involved to admit. For one patient we might conference with three different doctors - calls that take time. Now we speak with one doctor who gets the patient to the right hospital the first time. Our goal with the new process was to be able to say yes with

The Rapid Transfer Program is supported by Memorial Hermann Life Flight®, the only hospital-based air ambulance service serving Houston and surrounding communities. Life Flight helps ensure that transferred patients receive the appropriate level of care quickly.

one call to ensure faster access to care. For our referral sources, this is a huge plus."

The transfer is accomplished through one physician-to-physician conference to share information about the patient's clinical condition and make the decision about which hospital's Neuroscience ICU can provide care. "For example, if Memorial Hermann-TMC is on yellow and the clinical condition can be managed appropriately at Memorial Hermann Southwest, we tell the referring physician that our group of experts

works closely together to provide the level of care the patient needs,” says Fleming, whose staff at the Transfer Center includes 20 critical care/emergency medicine-trained nurses and three paramedics with five-plus years of experience. “The referring physicians and patient families agree with our decision 99 percent of the time.”

Memorial Hermann Southwest Hospital’s new state-of-the-art Neuroscience Intensive Care Unit is staffed 24/7 by physicians affiliated with Mischer Neuroscience Institute and UTHealth. Neurointensivist Wamda Ahmed, MD, is medical director of neuroscience for the hospital and director of the Neuroscience ICU. “Our neurointensivists are fellowship trained in neurocritical care and work hand in hand with neurosurgeons to provide superior care after neurological surgery,” she says. “As a Primary Stroke Center certified through The Joint Commission, Memorial Hermann Southwest is equipped for rapid diagnosis and treatment of stroke. For stroke patients and others with severe

neurological illness, fast access to a Neuroscience ICU means superior neurological outcomes and reduced risk of mortality and morbidity. Coordination between Southwest and the Texas Medical Center campuses means that transferring physicians can get their patients here easily for appropriate care. We’ve minimized the bureaucratic process and at the same time eliminated capacity denials.”

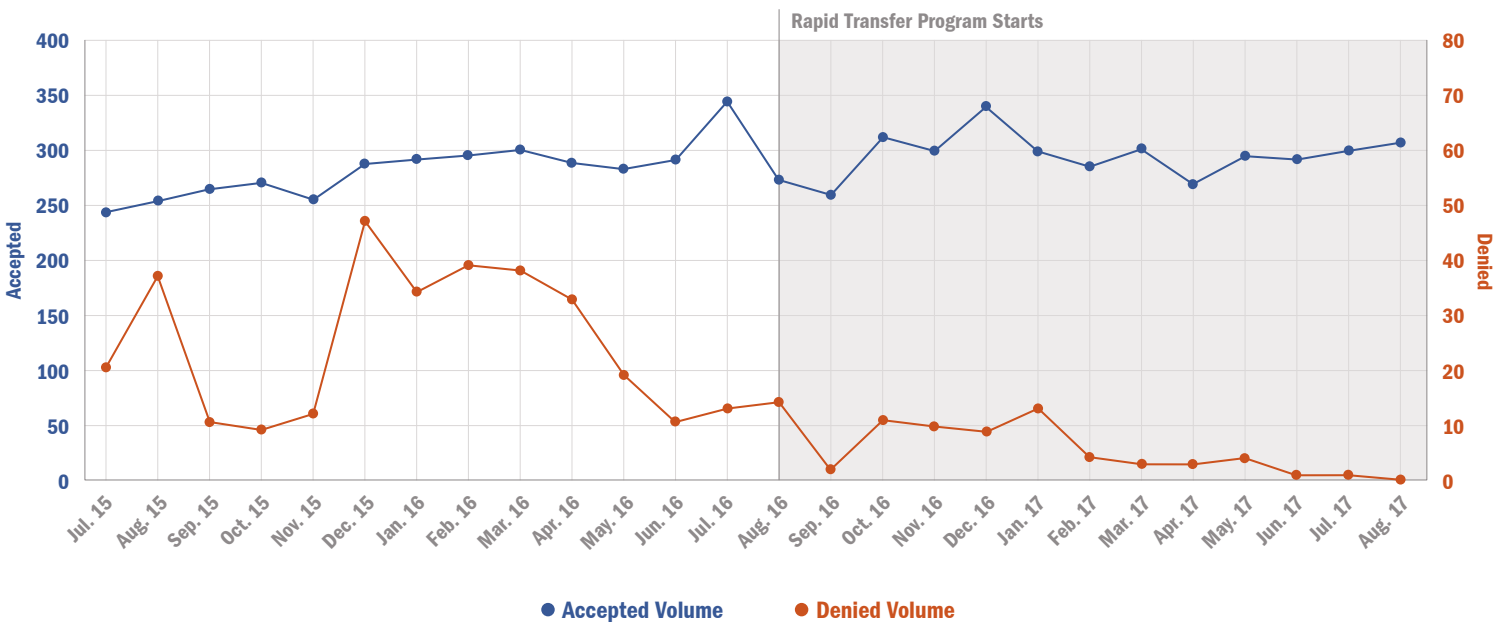
Memorial Hermann Memorial City is staffed to provide the same level of care. Neurologist Shirish Satpute, DO, points out that the Rapid Transfer process has simplified the system. “Knowing that a specialist at Memorial Hermann-TMC has triaged the case assures us that the patient being transferred is placed in the appropriate level of care. We have a large service area that includes patients from Angleton, Conroe and as far out as Eagle Lake, El Campo and Columbus. It’s much easier for the families of these patients to come to Memorial City than to travel to the Texas Medical Center.”

Tom Flanagan, chief operating officer at Memorial Hermann-TMC, reports

positive feedback from physicians who transfer patients from outlying hospitals. “One call is a win-win, both for the physicians who send patients and those who receive them. The physicians at Memorial Hermann-TMC have done an excellent job of triaging.”

The Rapid Transfer program has resulted in more than 1,000 transfers to Memorial Hermann Memorial City Medical Center and Memorial Hermann Southwest Hospital during the last 18 months, and will continue to expand across the city. “It’s an innovative structure that leverages the expertise of the Mischer Neuroscience Institute and its affiliated physicians,” says Ross Clements, regional director for the neuroscience service line. “It benefits Memorial Hermann-TMC by relieving capacity pressure and has increased volumes at its sister hospitals. It allows us to use our healthcare resources more efficiently and effectively. It puts the right patient in the right place to receive the right level of care at the right time, which benefits our overall community.”

Neuroscience Transfer Requests and Acceptances



WALMART PARTNERS *with* MEMORIAL HERMANN *to* PROVIDE HIGH-QUALITY SPINE CARE *to* ASSOCIATES *in the* SOUTHEAST REGION

In a recent expansion of its elite Centers of Excellence (COE) network, Walmart added Mischer Neuroscience Institute at Memorial Hermann-Texas Medical Center to its list of facilities offering spine surgery to the company's associates. The Institute, staffed by neurosurgeons from McGovern Medical School at UTHealth, will provide spine coverage for all Walmart associates in the southeastern United States.

**“THE CARE WE PROVIDE THROUGH THIS PROGRAM IS TRULY
END-TO-END. WE TAKE FULL RESPONSIBILITY AND ACCOUNTABILITY
FOR EVERY STEP OF THE CARE DELIVERY PROCESS, JUST AS IT SHOULD
BE AND JUST AS WE DO WITH ALL OF OUR PATIENTS.”**

Mischer Neuroscience Institute joins a handful of select facilities in Walmart's existing Centers of Excellence program for spine surgeries, including Mayo Clinic hospitals in Arizona, Minnesota and Florida; Mercy Hospital Springfield in Missouri; Virginia Mason Medical Center in Seattle, Washington; and Geisinger Medical Center in Danville, Pennsylvania.

“By selecting a small number of facilities that meet the criteria important to Walmart - quality care, exceptional service, a track record of appropriate patient selection for surgery versus conservative therapy - the company has found that outcomes are better and overall costs are lower, even when travel and hotel costs are included,” says Amanda Spielman, president of Mischer Neuroscience

Associates and vice president of neurosciences at the Memorial Hermann Health System. “For spine patients it's about much more than whether the surgeon did a good job in the OR. Equally important are preoperative and postoperative care that set the patient up for recovery and return to function. We provide a seamless transition from arrival in Houston to preoperative evaluation, surgical or therapeutic intervention, and postoperative care. Our focus is always on the patient. It's a good match.”

Hospitals undergo a thorough evaluation process, and fewer than 5 percent initially identified meet all the quality requirements for consideration. The process includes an extensive review of the system's quality, outcomes and patient satisfaction data. Candidate centers must provide detailed clinical protocols, surgical patient selection criteria, clinical registry participation, and information on multidisciplinary shared decision-making as well as institutional and physician performance metrics - length of stay, return to surgery, infection rates and procedure-specific outcomes. The Mischer Neuroscience Institute approach to patient care, developed by Dong Kim, MD, director of the Institute and professor and chair of the Vivian L. Smith Department of Neurosurgery at McGovern Medical School, and Spielman, fits the philosophy and approach of a center of excellence. After determining that the Institute met the criteria, Walmart officials made their official site visit on Jan. 13, 2017.

“When we saw the requirements listed in the request for applications for Walmart Centers of Excellence, we immediately felt that we already were meeting all of these requirements, and that we could become a COE without making any changes or enhancements in our spine program,” Dr. Kim says.

Today, if a Walmart associate requires spine surgery, Memorial Hermann coordinates the entire experience for the patient beginning with transport from



Neurosurgeon Daniel H. Kim, MD, (left) ensures the highest quality spine care if surgery is indicated.

the airport and including constant communication and joint decision-making throughout the process, which is coordinated by a designated clinical navigator.

The surgeries are performed by a team led by Daniel H. Kim, MD, FACS, FAANS, with support from Arthur L. Day, MD, and John Quinn, MD. Pain management is a critical part of the spine program, and neurosurgeons work closely with board-certified anesthesiologist and interventional pain management specialist Nadya M. Dhanani, MD, for patients who may benefit from more conservative treatment. The program is based at the Institute's Spine Center, located at Memorial Hermann-TMC.

"The care we provide through this program is truly end-to-end. We take full responsibility and accountability for every step of the care delivery process,

just as it should be and just as we do with all of our patients. But this is obviously different from the typical fee-for-service model. This is the future of health care, and we're excited to be at the forefront of the transition as the industry moves in this direction," Dr. Kim says. "It's a win-win-win for all parties involved, especially for the patients."

Mary Luscomb, 55, was doubtful at first. Luscomb lives in Gainesville, Texas, where she works as a logistics manager at the area Walmart distribution center. She's been employed by the company for 14 years.

"I had been suffering from severe neck and back pain for seven years due to multiple bulging disks. In the beginning, we tried to manage with injections, but the pain and numbness I was feeling was just getting worse and more frequent. A recent

trip to our local physician indicated it was time for surgery. I figured I would have the surgery with him, but then I learned about our Centers of Excellence program,” Luscomb says. “It was strange and a little nerve-wracking to think about. A doctor I’d never even met, more than 300 miles away from my home, was going to perform my surgery in a matter of days. Of course, I was skeptical.”

Within a week of being told she needed surgery, Luscomb was contacted by the team at Mischer Neuroscience Institute and informed of her scheduled surgery date. They carefully detailed her upcoming itinerary. She would fly down on Sunday, come to the clinic on Monday to meet her surgical team, have the procedure on Tuesday, spend that night at the hospital, then spend Wednesday and Thursday in a nearby hotel suite with her daughter – all of which would be prearranged for her convenience. Her follow-up clinic visit was scheduled for Friday, and she would be home by Saturday.

“We were picked up at the airport in a shiny new Lincoln town car. Every step of the way, we were treated like VIPs. I’ve never experienced anything like it before,” Luscomb says. “On Monday for our clinic visit, we were in an exam room within five minutes of our arrival. Dr. Kim spent time with me, walking me through what all he was going to do, quickly putting my mind at ease.”

Luscomb wasn’t just pleased with the service and care she received, she was also thrilled with her outcome. “No more numbness, no more pain. I could feel the difference immediately.”

Normal rehabilitation time for her procedure can range from one to three months. Luscomb was back at work within four weeks. “It’s been fantastic. The team at Mischer Neuroscience Institute has called and checked up on me since I’ve been home. Meanwhile, I get to see our local physician for my follow-ups. And most importantly, my neck is fixed and now I can go on with my life. It’s the best of all worlds.”

Behind the Scenes: Why Walmart Chose Mischer Neuroscience Institute as a Spine Center of Excellence



Patients in need of spine care have many options for treatment. Depending on the evaluation, the neurosurgeon may recommend injections for pain management or therapy. If surgery is indicated, the highest quality spine care is available at Mischer Neuroscience Institute at Memorial Hermann-Texas Medical Center.

“Our team of clinicians determines the best plan of care for each patient,” says Rahil Tai, MD, manager of clinical quality review for the Memorial Hermann Health System. “When Walmart invited us to present a proposal, we provided our clinical quality data and volumes, and the guidelines and protocols we have in place to ensure evidence-based patient care. Our data showed our strong performance, which led to our program being selected as the only Center of Excellence in Texas.”

According to Walmart, the percentage of patients who have surgery is lower for patients who are evaluated at Centers of Excellence than in local markets. The company selects its COEs based on whether they foster a culture of following evidence-based guidelines, and as a result perform surgeries only when necessary; whether they structure surgeons’ compensation so that they are incentivized to provide care based what’s appropriate for each individual patient, considering surgery as a last option; and their geographic location. Research done by Walmart, as well as the company’s own internal data, shows that about 30 percent of spine procedures done today are unnecessary. Through the company’s Centers of Excellence program, associates are assessed by specialists who are incentivized to get to the root cause and prescribe appropriate treatment.

“Our model focuses on providing the highest quality care, allowing us to avoid unnecessary costs and unnecessary readmissions,” Tai says. “When patients get high-quality spine care, they recover and return to work faster, saving expenses associated with complications and loss of work time.

The service is 100 percent paid by Walmart, with no out-of-pocket expenses for employees, many of whom live in smaller towns without appropriate spine care close to home. “As a Walmart Center of Excellence for spine care, it’s incumbent on us to show that we’re using our resources efficiently,” Tai says. “If we continue to improve on what we’re already doing well, we can translate that improvement beyond Walmart employees to every patient population we serve.”

MOVING *the* NEEDLE FORWARD in STROKE RESEARCH *and* CLINICAL CARE

Two parallel efforts – the new UTHealth Institute for Stroke and Cerebrovascular Disease and Memorial Hermann’s Stroke Systems of Care – are extending stroke research and clinical expertise beyond the Texas Medical Center to Memorial Hermann hospitals across Houston. Both initiatives are led by Sean Savitz, MD, director of the Comprehensive Stroke Center at Memorial Hermann-Texas Medical Center and professor and Frank M. Yatsu Chair in Neurology at McGovern Medical School.



SEAN SAVITZ, MD

*Professor, Department of Neurology
McGovern Medical School at UTHealth
Director, Vascular Neurology Program
Mischer Neuroscience Institute at Memorial
Hermann-Texas Medical Center*

“WE SEEK TO HAVE AN IMPACT ACROSS THE ENTIRE CONTINUUM OF STROKE CARE, FROM INITIAL THERAPY IN THE AMBULANCE, TO TREATMENT IN THE ACUTE CARE SETTING, THROUGH INPATIENT AND OUTPATIENT REHABILITATION, AND RECOVERY WITH FOLLOW-UP AT UT PHYSICIANS, THE CLINICAL PRACTICE OF McGOVERN MEDICAL SCHOOL.”

“Stroke is the fifth leading cause of death in the United States and a major global health problem,” Dr. Savitz says. “At UTHealth and Mischer Neuroscience Institute we’re uniquely positioned to enlarge our research footprint, advance clinical stroke care internationally and expand training opportunities for new physicians interested in stroke and cerebrovascular disease.”

The Institute for Stroke and Cerebrovascular Disease merges the strength of five schools at UTHealth,

including McGovern Medical School, the School of Public Health, School of Nursing, School of Biomedical Informatics and MD Anderson UTHealth Graduate School. Established on Jan. 1, 2017, the Institute was formally announced at the Stroke Institute Inaugural Symposium, where Walter Koroshetz, MD, director of the National Institute of Neurological Disorders and Stroke (NINDS), was the keynote speaker.

“Neuroscience has exploded and to make real progress, we need teams,” said Dr. Koroshetz, who oversees 1,141 scientists, physician-scientists and research administrators at NINDS. “A collaborative institute like this can make an enormous difference in stroke care.”

In 2013, Dr. Koroshetz was instrumental in developing NINDS’ StrokeNet, a national clinical trial network for research in stroke treatment, prevention and recovery. UTHealth is one of 25 StrokeNet centers and directs the Gulf Coast Regional Area Stroke Program, a consortium that includes Tulane University in New Orleans and The University of Texas Health Science Center at San Antonio. The two University of Texas System health universities are the only StrokeNet members in the state.

With funding from UTHealth, the new Institute serves as a multidisciplinary hub for research and best practices in acute stroke treatment, stroke prevention, stroke recovery, population health and health services. Researchers will focus on the cognitive complications of stroke, including cognitive impairment, memory disorders, depression, anxiety and sleep changes.

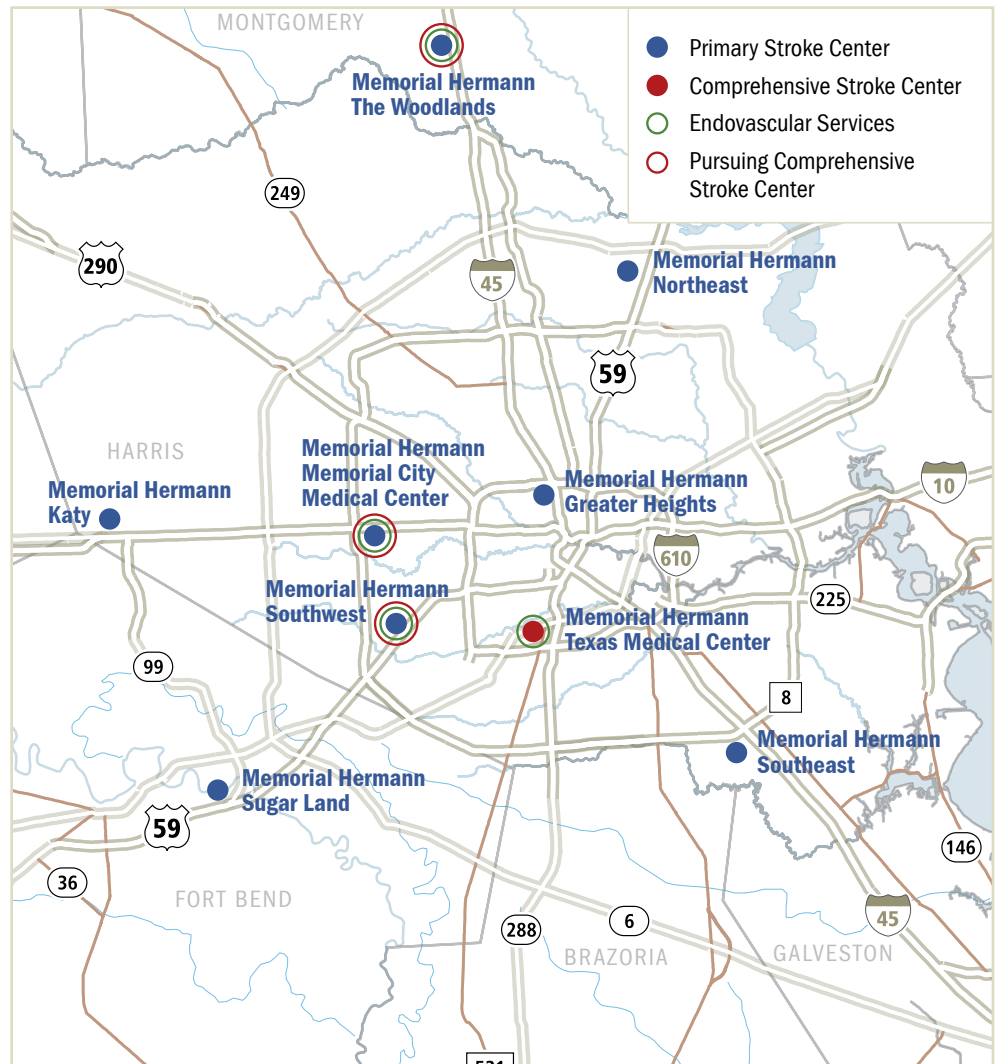
Financial support from UTHealth includes pilot funds for new studies, clinical trial design and new training opportunities in stroke and cerebrovascular disease. Core services include biology, data and statistics, clinical care and imaging.

“By working together with other schools at UTHealth, we can move the needle forward in preventing and treating

stroke,” Dr. Savitz says. “Our goal is to expand research in the areas of prevention and personalized medicine, such as pharmacogenetics and ethnic and gender disparities, as well as recovery and secondary prevention. We seek to have an impact across the entire continuum of stroke care from initial therapy in the ambulance, to treatment in the acute care setting, through inpatient and outpatient rehabilitation, and recovery with follow-up at UT Physicians, the clinical practice of McGovern Medical School.”

With Dr. Savitz leading both initiatives, the Institute for Stroke and Cerebrovascular Disease and Memorial Hermann Stroke Systems of Care will work synergistically. “As we expand our research infrastructure at the Texas Medical Center, over time we’ll extend the network for stroke research to Memorial Hermann’s other 11 acute care hospitals,” he says. “Along with that comes the opportunity to offer patients who qualify the choice of participating in research protocols. Clinical trials are usually conducted at academic medical centers. We’re looking beyond that for ways to make our resources and expertise available to people across the city and in outlying communities like The Woodlands, Sugar Land, Cypress, Pearland and other suburban locations. We’ve already begun to enroll patients in these areas into observational studies. Offering treatment trials will be the next step. Our long-term goal is to encourage and support efforts that provide suburban patients with opportunities usually only available in the Texas Medical Center.”

The UTHealth Stroke Program at McGovern Medical School, led by Dr. Savitz, is one of the most active research and clinical programs in the country. Opened in 1988 as one of the first dedicated stroke programs in the world, it is home to the 10-county Greater Houston area’s largest onsite stroke team. Affiliated neurologists and neurosurgeons use leading-edge technology



to diagnose and treat more than 2,000 stroke and aneurysm patients annually, ensuring that each patient gets the appropriate treatment as quickly as possible. By working closely with the Houston Fire Department and local EMS services, the stroke team has logged an impressive record of success in the administration of tPA - more than 10 times the national average of 2 to 3 percent.

The program was a lead site in the original NINDS tPA stroke studies, and one of eight centers in the country to conduct specialized translational research to develop novel acute stroke therapies and receive NINDS fellowship funding to train the next generation of academic leaders in cerebrovascular disease. Through its collaboration with Memorial Hermann-TMC, it was the first Comprehensive Stroke Center certified by The Joint Commission in the state of Texas.

As the stroke infrastructure expands at Memorial Hermann-Texas Medical Center, it will be extended to Memorial Hermann’s other 11 acute care hospitals.

CREATING *a* BRAIN ATLAS THROUGH *a* UNIFIED COGNITIVE NETWORK MODEL *of* LANGUAGE

The National Institutes of Health's BRAIN Initiative has awarded a \$3 million U01 grant to Nitin Tandon, MD, to study the processes involved in reading from an integrative and unified perspective. As part of this novel investigation, Dr. Tandon and his research team aim to remedy current limitations of research into cognitive processes by using intracranial electroencephalography (icEEG) in new ways. The study has the potential to help people who lose the ability to read following stroke and other brain injuries.

**“THROUGH OUR RESEARCH WE HOPE TO GAIN REAL
INSIGHT INTO HOW HUMANS PROCESS INFORMATION THROUGH
A DISTRIBUTED NETWORK IN ORDER TO READ.”**



NITIN TANDON, MD

*Director, Epilepsy Surgery, Mischer Neuroscience Institute at Memorial Hermann-Texas Medical Center
Professor, Vivian L. Smith Department of Neurosurgery
McGovern Medical School at UTHealth*

“How neural networks connect to enable reading is not well understood. We do know that reading relies on a distributed network that is disrupted in many people who suffer neurological disorders, including trauma, stroke, neurodegeneration and neoplasms,” says Dr. Tandon, a professor in the Vivian L. Smith Department of Neurosurgery at McGovern Medical School at UTHealth. “Most current research into the neural basis of the human language function and other cognitive processes is done using fMRI or MEG/EEG. These imaging modalities have limited spatial and temporal resolution, making it impossible to

capture relevant neural dynamics, which occur within milliseconds.”

For the three-year study, which began in September 2016, Dr. Tandon assembled a collaborative team of experts in intracranial EEG analysis, cognitive neurophysiology, computational neuroscience and the neural basis of reading. They include Nathan Crone, MD, professor of neurology at Johns Hopkins School of Medicine; Greg Hickok, PhD, professor and director of the Center for Cognitive Neuroscience at the University of California, Irvine; Stanislas Dehaene, PhD, chair of the department of Experimental Cognitive Psychology at the Collège de France in Paris; and Xaq Pitkow, PhD, an assistant professor who holds joint appointments in the department of Neuroscience at Baylor College of Medicine and the department of Electrical and Computer Engineering at Rice University in Houston.

The researchers chose reading because it is a complex task that involves visual pattern recognition; visual-auditory and visuo-motor integration; semantic, syntactic and phonological access; and in reading aloud, response selection and motor sequencing. They propose that understanding is achieved not by information passing through a sequence of discrete processing stages in individual modules but through a distributed network.

“Another limitation of current research is the generally fragmented approach to the study of cognitive processes,” Dr. Tandon says. “Although language is a seamless and fluent process, it is typically studied as a conglomeration of separate subsystems – perception, pattern recognition, categorization, response selection, cross-model integration, motor control and sensorimotor integration. Through our research we hope to gain real insight into how humans process information through a distributed network in order to read.”

As director of epilepsy surgery at Mischer Neuroscience Institute at

Memorial Hermann-Texas Medical Center, Dr. Tandon has performed hundreds of successful procedures to implant electrodes in patients with epilepsy to localize their seizures. “Invasive intracranial EEG offers a unique opportunity to study human cognitive networks at a speed and resolution unattainable using fMRI and other modalities,” he says. “We ask patients who are admitted for epilepsy studies if they would be willing to participate in a variety of reading experiments so we can study how various brain regions are engaged in the process.”

Until now, intracranial recordings have focused chiefly on the spatial and temporal characteristics of individual regions of the brain in isolation, with limited analysis of network behavior during reading. The researchers believe that a network-based understanding of the dynamics of language regions is crucial to understanding the neural basis of word comprehension.

Dr. Tandon and his colleagues will recruit 80 patients at Mischer

Neuroscience Institute and the Johns Hopkins Hospital in whom they will quantify local and inter-regional cortical dynamics during word reading – from early primary visual perception, through selection, to word output – using high spatial and temporal resolution direct cortical recording. With their combined expertise in language, reading, icEEG signal analysis, population level network modeling from intracranial recordings and neural networks, the team members believe the results of the study will dramatically improve scientific understanding of reading and language systems, as well as developing and testing a new way to model neural computation.

In addition to advanced medical technology, the digital age has provided the researchers with the means to collaborate remotely. “Some of our group had met each other, but nobody had met everyone, especially since Dr. Dehaene lives in France,” says Dr. Tandon, who engaged the researchers in his project via

Skype and email conversations. “After a year of working together, we had our first face-to-face meeting this past spring. We teleconference as a group every other month. Every other week I have a one-on-one conference with each of the other co-investigators.”

As of July 2017, the researchers had recruited 20 participants to the trial. Dr. Tandon presented a progress report at the World Stereotactic and Functional Neurosurgery meeting held in Berlin, Germany, in June, and the researchers will present an abstract at the Society for Neuroscience meeting in November in Washington, D.C.

“Studying the networks of language in the reading domain gives us more control than we have over studies of speech,” he says. “When we talk, we use words at varying rates and tend to group thoughts together. I might say many words before the listener actually puts it together. In this study, we flash single words on the screen for brief intervals of time, and the study participants read them. We can time-stamp these processes and look for the areas of the brain at work.

“People often ask, ‘What does this part of the brain do? What does that part do?’” he adds. “Nothing in the brain does anything in isolation. The areas that can transform an abstract concept into a word and then send a signal to your mouth to move are distributed throughout the brain. And they have to communicate with each other. What we’re doing is working to intercept and translate those signals. Each person we study can give us only a small sample of information, but if we enroll enough participants, we’ll be able to gather enough data from all parts of the brain to make a composite map – the first real atlas of brain function during reading.”

As director of epilepsy surgery at Mischer Neuroscience Institute, Nitin Tandon, MD, has performed hundreds of successful procedures to implant electrodes in patients with epilepsy to localize their seizures.



NEWS of NOTE

Moving Stronger: UTHealth, the National Multiple Sclerosis Society and the YMCA of Greater Houston Team Up to Promote Exercise for People with MS

A decade ago, conventional wisdom held that little to nothing could be done outside the realm of medication to improve the quality of life for patients with multiple sclerosis. Today, increasing awareness of the potential benefits of physical activity and goal-oriented exercise programs has changed the landscape for many people with MS. New opportunities include a 12-week exercise program developed with the expertise of faculty at McGovern Medical School at UTHealth in collaboration with the YMCA and the National MS Society.

The new program was initiated by Leorah Freeman, MD, PhD, a UTHealth multiple sclerosis clinician and researcher, who applied evidence-based research and best practices to develop the Moving Stronger exercise program, the first of its kind. Specifically tailored for

people with MS of different ability levels, the program was piloted in April 2017 at two Houston YMCAs: the Trotter Family YMCA in the Galleria area and the Monty Ballard YMCA in Katy. Admission is free. Moving Stronger has the potential to grow into a national program in collaboration with the YMCA and National MS Society.



LEORAH FREEMAN, MD, PhD

Assistant Professor, Department of Neurology
McGovern Medical School at UTHealth

“A year ago I embarked on this journey with the YMCA and National MS Society partners to develop innovative strategies to help people with MS become and stay active consistently,” says Dr. Freeman, who designed the new 12-week program specifically to deal with issues related to MS and also developed a training program to help fitness instructors understand the needs of people with MS. “Moving Stronger is a unique initiative dedicated to improving the lives of those with MS in our community.”

Dr. Freeman says there are currently 15 FDA-approved medications to treat MS, but not all patients respond with improved physical ability. “Exercise is

especially important for people who have fixed deficits and debilitating daily symptoms,” she says. “We’ve found that it improves balance and walking ability, and reduces fatigue. It also helps reduce the biological markers of inflammation and may induce the production of neuro-protective factors.”

Participants in the program attend structured classes twice a week that rotate yoga, aquatics, and strength and endurance training. They are assessed before they start the program and after they’ve completed the 12th week. The goal is to ensure a safe and comfortable environment that allows people with MS to improve their quality of life through exercise and social engagement. To that end, participants are eligible for a free three-month, citywide family membership to the YMCA.

“We’re hoping to teach participants skills that will allow them to continue to exercise over the long run,” says Dr. Freeman, an assistant professor of neurology in the Multiple Sclerosis Research Group and the Magnetic Resonance Image Analysis Center at McGovern Medical School at UTHealth. “We’ve received very positive feedback from our participants, who say that the program has improved their mobility and quality of life, helped them bond with people like themselves and that they felt less isolated and better understood. Many have gone through physical therapy but can’t continue because of insurance coverage restrictions. Others have said that they don’t feel comfortable at open gyms. This is a barrier we’re determined to remove.”

There are more than 400,000 people in the United States living with MS. Dr. Freeman says the goal is to reach them regardless of their level of ability, financial circumstances and location.

“The YMCA is an invaluable partner. It serves 22 million people in the



The 12-week Moving Stronger program promotes exercise for people with multiple sclerosis.

U.S. each year, which makes this collaboration important,” she says. “The response from the Houston community has been fantastic, and our goal is to take the Moving Stronger program nationwide to help everyone we can.”

For more information, please call the UTHHealth Multiple Sclerosis Research Group at 713.500.7029.

Transforming Neurosurgical Practices to Adapt to the Rapidly Changing Healthcare Industry

Neurosurgeons hoping to successfully navigate the rapidly changing healthcare industry must advance their strategies and adapt to new ways of thinking in order to continue to thrive in an evolving environment. That’s the key message in a supplement published in the April 2017 issue of *Neurosurgery*¹ by guest editor Dong H. Kim, MD, director of the Mischer Neuroscience Institute at Memorial Hermann-Texas Medical Center and chair of the Vivian L. Smith Department of Neurosurgery at McGovern Medical School at UTHealth.

DONG KIM, MD

Chief of Neurosurgery and Director, Mischer Neuroscience Institute at Memorial Hermann-Texas Medical Center
Professor and Chair, Vivian L. Smith Department of Neurosurgery
McGovern Medical School at UTHealth



“As healthcare reform sharpens the focus on reducing costs and improving efficiencies, neurosurgeons have found themselves faced with important decisions regarding the future of their practices,” Dr. Kim wrote in the supplement, “The Coming Changes in Neurosurgical Practice.”

The supplement was presented as a practical guide to help neurosurgeons thrive in the new landscape, and is especially targeted toward recent graduates interested in the practice of neurosurgery, and neurosurgeons who have been in private practice but are contemplating

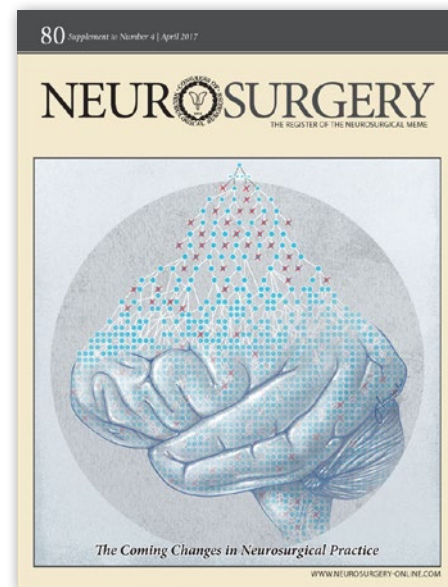
change. Examining the industry through the lens of his own experiences, Dr. Kim lays out a road map of the many options available to meet new federally mandated standards for patient care while achieving positive results and improving patient satisfaction.

“We aim to answer the questions that are critically important to our colleagues by highlighting the efforts of our team as well as the work of other successful practices across the nation to provide safe, high-quality care while addressing the rising costs of health care for patients,” Dr. Kim says. “What are different groups doing to enhance the quality of outcomes? How should we train the future generation to adapt easily to the transformation underway in our industry?”

“The advice outlined in the supplement serves as a useful tool for guiding neurosurgical practitioners through a new era of pay-for-performance financial incentives and the advent of population health,” says Nelson Oyesiku, MD, PhD, editor-in-chief of *Neurosurgery*, the official journal of the Congress of Neurological Surgeons.

Dr. Kim’s recommendations were developed after firsthand experience gained from guiding his own team of neurosurgeons through a successful quality improvement initiative. This initiative aimed to bolster patient outcomes and lower costs through measurable metrics involving all members of the practice, including advanced practice providers, trainee physicians, nurses and other staff. In the paper, “Quality Programs in Neurosurgery: The Memorial Hermann/University of Texas Experience,” Dr. Kim explores in detail how the neurosurgical team designed and implemented an effective quality improvement program and measured results to foster a culture of safety with higher patient satisfaction.

To achieve optimal outcomes, the program, which launched in 2007, involved physician input and engagement to develop new protocols, the



implementation of a new electronic medical record that interfaces across the inpatient and ambulatory settings and offers features tailored to neuroscience practice, as well as structured programmatic growth and recruitment around subspecialization.

In addition, the team focused on controlling and reducing rising costs by working to reduce a patient’s length of stay. They also worked to reduce the cost of surgical implants through a partnership between physicians and Memorial Hermann Health System, limiting the number of surgical device vendors to achieve greater savings.

The initiative yielded impressive results. Patient satisfaction scores have remained at or above the 75th percentile, as compared nationally. Patient safety outcomes improved dramatically with neurosurgical mortality rates now ranking in the top 10 among peer institutions nationwide. In addition, the amount of time patients spend in the hospital has also declined, resulting in significant cost savings and improved patient flow.

The improvement initiative, which has now matured and become integrated into basic clinical processes, not only improved outcomes and lowered overall costs for patients, it also resulted in

significant growth in patient volumes. The program now includes a total of 22 neurosurgeons working across 25 locations and involves more than 100 neuroscience providers. The group performs approximately 7,000 surgeries every year.

“We believe that persistence and constant effort over a long period of time was required to achieve permanent changes and develop the desired culture,” Dr. Kim says. “The changes that have already occurred in the U.S. healthcare system, as well as those yet to come, will continue to place the focus on ensuring quality outcomes and performance efficiency. We believe that our efforts have helped our program meet the challenges of the future, and I hope that our experience can prove useful to others undertaking similar initiatives.”

¹Kim DH. The Coming Changes in Neurosurgical Practice: A Supplement to Neurosurgery. *Neurosurgery*. 2017 Apr 1;80(4S):S1-S3.

Mischer Neuroscience Institute and Mischer Neuroscience Associates Welcome New Physician Recruits

Thirty-three physicians have joined the medical staff of Mischer Neuroscience Institute at Memorial Hermann-Texas Medical Center, Mischer Neuroscience Associates and the faculty of McGovern Medical School at UTHealth.



JOSEPH AMOS, MD
Interventional Pain Management Specialist,
Mischer Neuroscience Associates
Clinical Assistant Professor, Vivian L. Smith
Department of Neurosurgery
McGovern Medical School at UTHealth

Joseph Amos, MD, is board certified in pain medicine and in physical medicine and rehabilitation by the American Board of Medical Specialties. He focuses his practice on interventional pain management and comprehensive pain management. Dr. Amos received his medical degree at The University of Texas Medical Branch at Galveston. He completed his residency in physical medicine

and rehabilitation at the Baylor College of Medicine/UTHealth Alliance for Physical Medicine and Rehabilitation, where he was chief resident. Subsequently, he completed a fellowship in pain medicine at the University of Washington in Seattle. Prior to joining Mischer Neuroscience Associates, he was in private practice serving the Houston community.



ASHLEY KAY AMSBAUGH, MD
Clinical Assistant Professor, Vivian L. Smith
Department of Neurosurgery
McGovern Medical School at UTHealth

Ashley Kay Amsbaugh, MD, is board eligible in anesthesiology and pain management, specializing in interventional pain medicine. Her clinical interests include all aspects of pain medicine, specifically neuraxial pain. Dr. Amsbaugh completed her medical degree at McGovern Medical School at UTHealth, followed by residency in anesthesiology at the University of Louisville School of Medicine in Louisville, Kentucky, where she was named Outstanding Resident in Pain Medicine. She completed fellowship training in pain medicine at the same institution.



RITVIJ BOWRY, MD
Assistant Professor, Department of
Neurology and
Vivian L. Smith Department of Neurosurgery,
McGovern Medical School at UTHealth

Ritvij Bowry, MD, is certified in vascular neurology and neurology by the American Board of Psychiatry and Neurology. He received his medical degree at Ross University School of Medicine in Dominica, West Indies, and North Brunswick, New Jersey, and completed his residency training in neurology at New York University Medical Center in New York City, where he was chief resident. After fellowship training in vascular neurology at McGovern Medical School at UTHealth, he completed a second fellowship in neurocritical care at the same institution.



KRISTIN A. BROWN, MD
Staff Physician, Department of Neurology
McGovern Medical School at UTHealth

Kristin A. Brown, MD, is a staff neurologist at UT Physicians Neurology Clinic in the Texas Medical Center. She received her medical degree at State University of New York at Downstate in Brooklyn and completed neurology training at McGovern Medical School at UTHealth. She completed a fellowship in neurophysiology at the same institution.



GUY BURROWS, MD
Neurologist, Mischer Neuroscience
Associates

Guy Burrows, MD, is a board-certified neurologist with fellowship training in sleep medicine and peripheral nerve disorders. Dr. Burrows received his medical degree at George Washington University School of Medicine and Health Sciences in Washington, D.C., and went on to complete his residency in neurology at Wilford Hall Medical Center, a United States Air Force medical treatment facility at Lackland Air Force Base in San Antonio, Texas. At Wilford Hall, he was president of the house staff, a member of the board of directors, and chief resident. He completed a fellowship in neurophysiology and peripheral nerve disorders at the same institution. Dr. Burrows has served as a general medical officer and flight surgeon at Fairford Air Force Base in Fairford, United Kingdom; as flight surgeon at Scott Air Force Base in St. Clair County, Illinois; and as wing surgeon general and chief flight surgeon in Oman during Operation Desert Storm, where he oversaw a 1,000-bed hospital and clinics that included two prisoner-of-war camps. He later served as chief of neurology at Scott Air Force Base. From 1997 to 2009, he was a member of the medical staff at Southern Illinois Neurologic Institute in Belleville. Prior to

joining Mischer Neuroscience Associates, Dr. Burrows was in private practice in Beverly Hills and Palm Springs, California.



DANNY MICHAEL CHACHERE II, MD
Neurologist, Neurology Consultants of Houston

Danny Michael Chachere II, MD, has joined Neurology Consultants of Houston, P.A., affiliated with Mischer Neuroscience Associates. Dr. Chachere received his medical degree at St. George's University School of Medicine in Newcastle, Grenada, where he was accepted into the Global Scholars program. He spent his first year of medical school in Newcastle, England, his second year in Grenada, and his final two years in New York City, where he completed his clinical rotations. He completed his internal medicine internship and neurology residency at Baylor College of Medicine, where he was chief resident, followed by a clinical neurophysiology fellowship at New York University in Manhattan. Dr. Chachere is trained in reading EEGs, performing EMGs and intra-operative monitoring of neurosurgical and orthopedic spine surgeries.



DIVYA CHIRUMAMILLA, MD
*Interventional Pain Management Specialist, Mischer Neuroscience Associates
Clinical Assistant Professor, Vivian L. Smith
Department of Neurosurgery
McGovern Medical School at UTHealth*

Divya Chirumamilla, MD, is a fellowship-trained pain medicine specialist with expertise in interventional pain medicine. She is a Diplomate of the American Board of Anesthesiology, with primary certification in anesthesiology and subspecialty certification in pain medicine. Dr. Chirumamilla received her medical degree at J.J.M. Medical College in Davangere, India. She completed her anesthesiology residency at Brookdale University Hospital and Medical Center in Brooklyn, New York, where she received the department of Anesthesiology's Outstanding Resident Award, and at

Massachusetts General Hospital/Harvard Medical School in Boston. Following residency, she completed a pain medicine fellowship at Beth Israel Deaconess Medical Center in Boston, where she received the Carol A. Warfield Award in Pain Management. Dr. Chirumamilla joined Mischer Neuroscience Associates from Harvard Medical School, where she was an instructor and served as clinical faculty in the department of Anesthesia, Critical Care and Pain Medicine.



JOSEPH A. COCHRAN, MD
*Neurosurgeon, Mischer Neuroscience Associates
Assistant Professor, Vivian L. Smith
Department of Neurosurgery
McGovern Medical School at UTHealth*

Joseph A. Cochran, MD, is a fellowship-trained neurosurgeon who specializes in endovascular surgery. After receiving his medical degree at Chicago Medical School, he completed his residency in neurological surgery at the Medical College of Wisconsin in Milwaukee. He subsequently completed a two-year fellowship in cerebrovascular/skull base/endovascular surgery at McGovern Medical School at UTHealth. His clinical and research interests include cerebral vasospasm, traumatic vascular injuries and cervical artificial disc replacement. In 2017, Dr. Cochran was named Physician of the Year at Memorial Hermann Southwest Hospital, where the award is given to doctors who exemplify Memorial Hermann's values, who continuously strive to improve services and who work as team members as part of the medical staff.



YURI DABAGHIAN, PhD
*Assistant Professor, Department of Neurology
McGovern Medical School at UTHealth*

Yuri Dabaghian, PhD, began his career as a theoretical physicist working in quantum chaos theory after receiving his master's degree at the Landau Institute for Theoretical Physics in Moscow, Russia. He completed his doctorate in theoretical and

mathematical physics at the University of Rhode Island, and was awarded a Sloan Swartz fellowship to study experimental and computational neuroscience at the University of California, San Francisco. As a research scientist, his current interests include spatial learning and memory, spatial cognition and using computational topology and geometry to model emergent cognitive representations and behavior.



MIMI DANG, MD
*Neurologist and Clinical Neurophysiologist, Mischer Neuroscience Associates
Clinical Assistant Professor, Vivian L. Smith
Department of Neurosurgery
McGovern Medical School at UTHealth*

Mimi Dang, MD, is dual fellowship trained and certified by the American Board of Psychiatry and Neurology with expertise in general neurology and electro-neurophysiology. Dr. Dang received her medical degree at the University of Arkansas for Medical Sciences College of Medicine, where she also completed a transitional internship. After completing her residency in neurology at The University of Texas Southwestern Medical School in Dallas, Dr. Dang moved to Houston, where she began the first of two fellowship programs. Her first fellowship included specialized training in Alzheimer's disease and dementia at Baylor College of Medicine Alzheimer's Disease and Memory Disorders Center, where she conducted extensive research in a number of clinical trials funded by the National Institutes of Health aimed at Alzheimer's prevention and treatment. Dr. Dang completed her second fellowship in clinical neurophysiology at McGovern Medical School at UTHealth.



MEGAN DAVIS FANKHAUSER, MD
Neurologist, Houston Neurological Institute

Megan Davis Fankhauser, MD, earned her medical degree at Creighton University School of Medicine in Omaha, Nebraska. She joined the Houston Neurological

Institute, affiliated with Mischer Neuroscience Associates, after completing her neurology residency training at the Mayo Clinic in Scottsdale, Arizona. Dr. Fankhauser provides general neurology services and has special interests in headaches and cerebrovascular neurology.



EDWARD ESCOBAR, DO

Neurologist, Mischer Neuroscience Associates
Clinical Assistant Professor, Vivian L. Smith Department of Neurosurgery
McGovern Medical School at UTHealth

Edward Escobar, DO, is certified by the American Osteopathic Board of Neurology and Psychiatry. He received his Doctor of Osteopathy degree at the University of North Texas Health Science Center in Fort Worth. He completed the first year of his neurology residency at Texas Tech University in Lubbock, and finished his last two years in neurology at the University of Kentucky/Chandler Medical Center in Lexington, where he was chief resident. Prior to joining Mischer Neuroscience Associates, Dr. Escobar was in private practice for 15 years in Lexington, Kentucky, and Corpus Christi and Houston, Texas.



YOSHUA ESQUENAZI, MD

Director of Neurosurgical Oncology, Mischer Neuroscience Institute
Assistant Professor, Vivian L. Smith Department of Neurosurgery
McGovern Medical School at UTHealth

Yoshua Esquenazi, MD, is a neurosurgeon with fellowship training in epilepsy surgery and surgical neuro-oncology. He focuses his practice on brain and spine tumors. Dr. Esquenazi received his medical degree at the Universidad Anahuac in Mexico City, graduating as valedictorian. During his studies he participated in student exchange rotations at Harvard Medical School and Massachusetts General Hospital and Brigham and Women's Hospital, as well as the William J. Harrington Medical Training Programs for Latin America at the University of Miami School of Medicine. He completed his neurosurgery residency training at the

McGovern Medical School at UTHealth, where he was neurosurgery chief resident and recipient of the Alpha Omega Alpha Honor Medical Society (Delta Chapter) Resident Award and the Standing Ovation Award from Memorial Hermann-Texas Medical Center. During residency, he worked in the medical school's Neuroimaging and Electrophysiology Lab and then went on to complete a fellowship in epilepsy surgery at the same institution. He subsequently completed a neurosurgery oncology fellowship at Memorial Sloan Kettering Cancer Center in New York City.



BRIAN FERNHOLZ, MD, PhD

Neurosurgeon, Mischer Neuroscience Associates
Clinical Assistant Professor, Vivian L. Smith Department of Neurosurgery
McGovern Medical School at UTHealth

Brian Fernholz, MD, PhD, is fellowship trained in spine surgery with special interests in the cervical spine and minimally invasive lumbar spine surgery. After graduating cum laude from Rutgers University in New Brunswick, New Jersey, Dr. Fernholz earned his PhD at the Sackler Institute of Biomedical Sciences at New York University School of Medicine. He subsequently received his medical degree at the University of Medicine and Dentistry of New Jersey in Newark, where he was inducted into Alpha Omega Alpha Honor Medical Society. During his residency training in neurological surgery at Rutgers University, he completed an infolded fellowship in spine surgery at the Hospital for Special Surgery and Weill Cornell Department of Orthopedic Surgery in New York City. He was chief resident at Rutgers University.



SHAILA GOWDA, MD

Assistant Professor, Department of Neurology
McGovern Medical School at UTHealth

Shaila Gowda, MD, is board certified in neurology, clinical neurophysiology and epilepsy. She graduated from

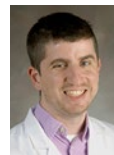
Kasturba Medical College at Mangalore University in Mangalore, India. Dr. Gowda completed her neurology residency training at University Medical Center in Jackson, Mississippi, followed by fellowship training in clinical neurophysiology and epilepsy at the Cleveland Clinic Foundation in Cleveland, Ohio. Her areas of interest are surgical evaluation of intractable epilepsy, post-traumatic epilepsy and women's issues in epilepsy.



HAMID S. HAMD, MD

Neurologist and Neurorehabilitation Specialist, Mischer Neuroscience Associates
Clinical Assistant Professor, Vivian L. Smith Department of Neurosurgery
McGovern Medical School at UTHealth

Hamid S. Hamdi, MD, is board certified in neurology and fellowship trained in neurorehabilitation. He has special interests in multiple sclerosis and spasticity. Dr. Hamdi earned his medical degree at Dow Medical College in Karachi, Pakistan. He completed his neurology residency at Nassau County Medical Center, the clinical campus for the State University of New York at Stony Brook, where he was chief resident. He subsequently completed a fellowship in neurorehabilitation at the Hospital for Joint Diseases at New York University School of Medicine in New York City. He joins Mischer Neuroscience Associates from New York University, where he held a faculty appointment as clinical assistant professor.



DAVID HUNTER, MD

Staff Physician, Department of Neurology
McGovern Medical School at UTHealth

David Hunter, MD, is a staff physician in the department of Neurology whose practice is focused on neurocognitive disorders. He received his medical degree at McGovern Medical School at UTHealth, where he also completed residency training in neurology and a fellowship in neuropsychiatry.

**JOO EUN JUNG, PHD***Assistant Professor, Department of Neurology
McGovern Medical School at UTHealth*

Joo Eun Jung, PhD, received her doctorate at Seoul National University in South Korea and was later trained by Dr. Pak Chan in the department of Neurosurgery at Stanford University from 2007 to 2011. After completing her postdoctoral training, she joined the Neuroprotection Research Laboratory at Massachusetts General Hospital and Harvard Medical School, where she was promoted to instructor. Her research at McGovern Medical School at UTHealth focuses on stroke.

**HARIS KAMAL, MD***Assistant Professor, Department of Neurology
McGovern Medical School at UTHealth
Stroke Director and Chief of Neurology at
Lyndon B. Johnson General Hospital and
Smith Clinic*

Haris Kamal, MD, received his medical degree with honors at Yerevan State Medical University in Armenia. After completing residency training in neurology at the State University of New York at Buffalo, Dr. Kamal pursued a fellowship in vascular neurology at McGovern Medical School at UTHealth. He practices at Lyndon B. Johnson General Hospital, where his clinical interests are ischemic stroke, intracranial hemorrhage, endovascular treatments for stroke, advanced vascular neuroimaging in acute stroke, cerebral ultrasonography in acute stroke, and hypothermia for malignant infarcts.

**SHARIQ KHWAJA, MD, PhD***Radiation Oncologist, Mischer Neuroscience
Associates
Clinical Assistant Professor, Vivian L. Smith
Department of Neurosurgery
McGovern Medical School at UTHealth*

Shariq Khwaja, MD, PhD, practices radiation oncology with clinical interests in intensity-modulated radiation therapy, image-guided and adaptive radiation therapy, advanced localization systems,

partial breast irradiation, Gamma Knife® and Linac-based radiosurgery, prostate low-dose rate brachytherapy and high-dose rate brachytherapy for prostate, gynecological and breast cancers, as well as pediatric malignancies. Dr. Khwaja earned his MD and PhD at the Mayo Clinic in Rochester, Minnesota, through the Mayo Clinic Medical Scientist Training Program. After his internship in internal medicine at Parkland Memorial Hospital/The University of Texas Southwestern Medical Center in Dallas, he went on to complete his radiation oncology residency at Barnes Jewish Hospital/Washington University School of Medicine in St. Louis, Missouri. He was the recipient of an Integrated Clinical and Translational Science Research Award in 2014. His project on human papillomavirus-related head and neck cancer biomarkers was awarded the American Society of Radiation Oncology Clinical Research Award in 2015. The following year, he was the recipient of the Radiological Society of North America's Roentgen Resident/Fellow Research Award.

**CHRISTINA KIM, MD***Assistant Professor, Department of Neurology
McGovern Medical School at UTHealth*

Christina Kim, MD, received her medical degree at Virginia Commonwealth University School of Medicine in Richmond and completed residency training at Rhode Island Hospital/Brown University in Providence. She also completed a vascular neurology fellowship at the University of Virginia School of Medicine in Charlottesville. She is certified by the American Board of Psychiatry and Neurology. Dr. Kim's clinical interests include stroke prevention and long-term management of stroke. She is also interested in other aspects of cerebrovascular disease, including headaches and dementia. Her research is focused on acute stroke treatment and stroke management.

**STELLA H. KIM, PsyD***Assistant Professor, Department of Neurology
McGovern Medical School at UTHealth*

Stella H. Kim, PsyD, received her doctorate in clinical psychology at Indiana University of Pennsylvania in Indiana, completed her internship in clinical neuropsychology at the VA Connecticut Healthcare System in West Haven, and went on to pursue her fellowship in clinical neuropsychology at Baylor College of Medicine in Houston. Her clinical interests include dementia, movement disorders, autoimmune disorders and cerebrovascular disease. Her research is focused on movement disorders, dementia and cross-cultural neuropsychology.

**LESLIE KIMPLER, DO***Assistant Professor, Vivian L. Smith
Department of Neurosurgery
McGovern Medical School at UTHealth*

Leslie Kimpler, DO, specializes in neurocritical care. She received her Doctor of Osteopathic Medicine at Kansas City University of Medicine and Biosciences in Missouri, and completed residency training in neurology at the University of Kansas School of Medicine, where she was chief resident. She completed a fellowship in neurocritical care in the Vivian L. Smith Department of Neurosurgery at McGovern Medical School at UTHealth. Dr. Kimpler is also a captain in the Kansas Army National Guard.

**VICTOR LO, MD, MPH***Neurosurgeon, Mischer Neuroscience
Associates
Clinical Assistant Professor, Vivian L. Smith
Department of Neurosurgery
McGovern Medical School at UTHealth*

Victor Lo, MD, MPH, is a fellowship-trained neurosurgeon who has subspecialized training in complex reconstructive spine and adult deformity surgery. Dr. Lo earned his medical degree at the Royal College of Surgeons

in Dublin, Ireland, and his master's degree in public health at The University of Texas School of Public Health in Houston. He completed his neurosurgery residency at McGovern Medical School at UTHealth, where he was chief resident. He completed a fellowship in complex reconstructive spine and peripheral nerve surgery at McGovern Medical School at UTHealth and later, a combined orthopedic and neurosurgery spine fellowship at Cedars-Sinai Medical Center in Los Angeles, California.



SEAN P. MARRELLI, PhD

*Professor, Department of Neurology
McGovern Medical School at UTHealth*

Sean P. Marrelli, PhD, received his doctorate in cardiovascular sciences at Baylor College of Medicine in Houston. He directs a laboratory funded through the National Institutes of Health and the American Heart Association/American Stroke Association to study multiple aspects of cerebral blood flow in normal and post-stroke conditions. His research focuses on regulation of cerebral blood flow, therapeutic targeting of post-stroke thrombosis and novel methods of promoting therapeutic hypothermia following stroke.



JUSTIN P. MORGAN, MD

Neurologist, Mischer Neuroscience Associates

Justin P. Morgan, MD, practices general neurology. He earned his medical degree at McGovern Medical School. After completing a preliminary year of internal medicine at The University of Texas Southwestern's Austin program, he returned to Houston to complete a neurology residency at McGovern Medical School, where he was chief resident. Following residency, he trained as a clinical neurophysiology fellow at the same institution.



NASSIM NADERI, MD

*Assistant Professor, Department of Neurology
McGovern Medical School at UTHealth*

Nassim Naderi, MD, an affiliated neurohospitalist at Memorial Hermann-TMC, received her medical degree at Tehran University of Medical Sciences in Iran, followed by residency training in neurology at the University of California-Irvine. She completed a fellowship in clinical neurophysiology at the University of California-Los Angeles. Dr. Naderi's clinical interests include diagnostic neurology, intra-operative monitoring, clinical neurophysiology and epilepsy. Her research interests focus on epilepsy.



HIRAL PATEL, MD

*Interventional Pain Management Specialist,
Mischer Neuroscience Associates
Clinical Assistant Professor, Vivian L. Smith
Department of Neurosurgery
McGovern Medical School at UTHealth*

Hiral Patel, MD, is fellowship trained in chronic pain management and board eligible in anesthesiology. Her areas of specialty include management of both cancer and non-cancer pain and all aspects of interventional pain management. A native Houstonian, Dr. Patel received her medical degree at Texas A&M Health Science Center College of Medicine and completed residency training in anesthesiology at McGovern Medical School at UTHealth, where she was Clinic Resident of the Year. Subsequently she completed a fellowship in chronic pain management at The University of Texas MD Anderson Cancer Center. She has been recognized with numerous academic and research awards and is an active community volunteer.



JOHN C. QUINN, MD

*Assistant Professor, Vivian L. Smith
Department of Neurosurgery*

John C. Quinn, MD, is fellowship trained in spine surgery. He has special interests

in complex reconstructive surgery in children and adults for the treatment of spinal deformities such as scoliosis, kyphosis and flatback syndrome. Dr. Quinn earned his medical degree at the University of Medicine and Dentistry of New Jersey in Newark, where he was inducted into Alpha Omega Alpha Honor Medical Society. He completed his neurosurgery residency in the department of Neurological Surgery at Rutgers University Hospital and Robert Wood Johnson Medical Center in Newark, where he was chief resident. During his residency training, he completed an infolded fellowship in spine and scoliosis surgery at the Hospital for Special Surgery and Weill Cornell Department of Orthopedic Surgery in New York City. Following his residency training he completed an additional fellowship in spine deformity surgery in the department of Neurological Surgery at the University of Virginia Medical School in Charlottesville.



SANDRA PRITZKOW, PhD

*Assistant Professor, Department of Neurology
McGovern Medical School at UTHealth*

Sandra Pritzkow, PhD, obtained her research doctorate in biochemistry at the Freie University of Berlin in Germany. She developed in vitro replication systems to study the characteristics of prion replication and to evaluate the efficacy of therapeutic compounds and prion decontamination procedures. In 2011, she joined the UTHealth group of Claudio Soto, PhD, as a postdoctoral fellow to study the role of the environment in prion transmission. Currently, Dr. Pritzkow is leading a project to obtain regulatory approval to commercialize PMCA for detection of prions in blood of humans infected with variant Creutzfeldt-Jakob disease prions. She is also participating in research to expand the principles of PMCA to detect misfolded aggregated proteins implicated in some of the most prevalent neurodegenerative diseases, including Alzheimer's and Parkinson's disease.

**M. AGUSTINA ROSSETTI, PhD**

Assistant Professor, Department of Neurology
McGovern Medical School at UTHealth

M. Agustina Rossetti, PhD, is a clinical neuropsychologist who conducts comprehensive neuropsychological evaluations in both English and Spanish with clinical populations requiring treatment for dementias, movement disorders, epilepsy, demyelinating disorders, neurological injury, psychopathology, toxic-metabolic disorders and other neurological conditions. She also conducts capacity evaluations and assessments related to memory complaints associated with normal cognitive aging.

**SUNIL SHETH, MD**

Assistant Professor, Department of Neurology
McGovern Medical School at UTHealth

Sunil Sheth, MD, received his medical degree at Harvard Medical School and Massachusetts Institute of Technology, where he was enrolled in the Health Sciences and Technology Program. He graduated magna cum laude and was awarded a Howard Hughes Medical Institute Research Fellowship. He completed his residency in neurology at the University of California, San Francisco, where he served as chief resident, followed by fellowships in vascular neurology and interventional neuroradiology at the University of California, Los Angeles. His clinical interests are ischemic stroke, intracranial hemorrhage, subarachnoid hemorrhage, endovascular treatments for stroke and cerebral aneurysms, cerebral vascular malformations, spinal vascular malformations and tumor embolization. His research focuses on neuroimaging, biomarkers of cerebral injury, endovascular device development and traumatic brain injury.

**SHAUN O. SMART, MD**

Assistant Professor, Department of Neurology
McGovern Medical School at UTHealth

Shaun O. Smart, MD, received his medical degree at the University of Michigan Medical School in Ann Arbor and completed neurology residency training at the University of South Florida in Tampa. He completed a fellowship in neurophysiology and epilepsy at Duke University in Durham, North Carolina. He is a neurohospitalist with clinical and research interests in epilepsy and convulsive and non-convulsive status epilepticus.

ACCOLADES

Dr. Jaroslaw Aronowski Receives International Stroke Science Award in Research

The 2017 Thomas Willis Award for significant translational contributions to clinical stroke research from the American Heart Association has been awarded to Jaroslaw Aronowski, MD, PhD, professor, vice chair and the Roy M. and Phyllis Gough Huffington Chair in Neurology at McGovern Medical School at UTHealth.

**JAROSLAW ARONOWSKI, MD, PhD**

Professor, Department of Neurology
Vice Chair for Research, Department of Neurology
McGovern Medical School at UTHealth
Roy M. and Phyllis Gough Huffington Chair in Neurology

Dr. Aronowski delivered the Thomas Willis Lecture, “Brain Damage and Repair after Intracerebral Hemorrhage,” to thousands of stroke experts from around the world at the AHA/American Stroke Association International Stroke Conference 2017, held for the first time in Houston last February.

The Willis Award recognizes an American Heart Association Stroke

Council Fellow who has “actively engaged in and has made significant contributions to basic science research in stroke.” The AHA stroke conference bestows this award only once a year to one senior scientist for sustained long-term achievements and advancing innovative concepts in the basic science of stroke. The award is given in honor of Thomas Willis (1621-1675), a pioneer physician who provided the first detailed descriptions of the brain stem, cerebellum and ventricles along with hypotheses on their function and a system of arteries at the base of the brain, today known as the Circle of Willis.

“This award is the most flattering thing that has happened to me in my professional life,” says Dr. Aronowski, who has spent most of his career at McGovern Medical School at UTHealth. Discoveries in his laboratory have resulted in clinical trials for ischemic stroke and intracerebral hemorrhage. He is an international research leader in understanding the cellular and molecular mechanisms underlying the pathology of acute cerebral ischemia, reperfusion injury and secondary injury after intracerebral hemorrhage with an emphasis on the role of transcription factors, neuroinflammation (including the role of microglia, neutrophil, and oligodendroglia), stem cell therapy and the use of ultrasound in tPA-mediated thrombolysis.

“This distinguished American Heart Association award is a testament to Dr. Aronowski’s outstanding work,” says Louise McCullough, MD, PhD, professor and chair of neurology at McGovern Medical School, Roy M. and Phyllis Gough Huffington Distinguished Chair of Neurology, co-director of the Mischer Neuroscience Institute at Memorial Hermann-Texas Medical Center, and chief of neurology at Memorial Hermann-Texas Medical Center. “Dr. Aronowski is a leader in the field of stroke research and has been an incredible asset to the neurology department and McGovern Medical School at UTHealth for more than three decades.”

In the field of experimental research, Dr. Aronowski has trained dozens of clinical stroke fellows, research fellows and scientists who today play instrumental roles in leading clinical stroke research around the world. His research has been sponsored continuously for two decades with grants from the National Institutes of Health (NIH) and the AHA. He has published more than 100 papers, and given more than 100 plenary lectures and invited presentations around the world. Dr. Aronowski has served on more than 100 NIH and AHA study sections and acted as a member of the Planning Group to Establish NIH Future Goals/Priorities in Stroke Research - National Institute of Neurological Disorders and Stroke (NINDS). He is a basic science editor for *Stroke*, the world's leading journal in the field of cerebrovascular diseases.

Dr. Louise McCullough Honored with Javits Neuroscience Investigator Award



LOUISE McCULLOUGH, MD, PhD
Co-director, Mischer Neuroscience Institute at Memorial Hermann-Texas Medical Center
Professor and Chair, Department of Neurology
Roy M. and Phyllis Gough Huffington
Distinguished Chair, McGovern Medical School at UTHealth

Louise D. McCullough, MD, PhD, FAHA, Roy M. and Phyllis Gough Huffington Distinguished Chair of Neurology at McGovern Medical School at UTHealth and chief of neurology at Memorial Hermann-Texas Medical Center, has been awarded the prestigious Javits Neuroscience Investigator Award from the National Institute of Neurological Disorders and Stroke. The Javits Award is a seven-year research grant awarded by NINDS to scientists for their superior competence and outstanding productivity. Recipients are nominated by researchers at the institute.

Javits awards provide long-term support to investigators with a history of exceptional talent, imagination and preeminent scientific achievement. The award will

support Dr. McCullough's ongoing work on the detrimental effects of social isolation on stroke damage and recovery.

The research project selected for funding, originally written as an R01 grant, examines how social isolation is associated with increased mortality and morbidity in patients with established vascular disease, including stroke. "Emerging evidence from experimental and clinical studies show that social isolation is not only a risk factor for stroke, but also contributes to increased stroke severity and delayed functional recovery," says Dr. McCullough, who is co-director of the Mischer Neuroscience Institute at Memorial Hermann-Texas Medical Center. "The award provides more stable funding and additional flexibility to expand on the original research project."

Dr. McCullough's research will investigate miRNAs, molecules that assist in gene expression, which are differentially expressed after being isolated following stroke. The molecules determine a common gene target to attempt to block or mimic their effects in aged male and female mice. "Hopefully this work will lead to the development of therapeutic targets that will improve functional recovery after ischemic injury," she says. "Parallel studies are validating these targets in stroke patients."

The Javits award totals approximately \$4.6 million over seven years. Dr. McCullough has also received funding for her work in sex differences in stroke and age differences in inflammation. She has been recognized among America's "Top Doctors" for the past nine years.

Dr. Claudio Soto Receives Grant to Develop a Noninvasive Biochemical Test for Early Diagnosis of Parkinson's Disease

One of the greatest obstacles to developing a disease-modifying therapy for Parkinson's disease (PD) is early and accurate diagnosis. With a \$342,000 grant from the Michael J. Fox Foundation for Parkinson's Research, Claudio

Soto, PhD, and his laboratory team are investigating the potential of a blood test to diagnose PD before the disease's debilitating symptoms manifest.

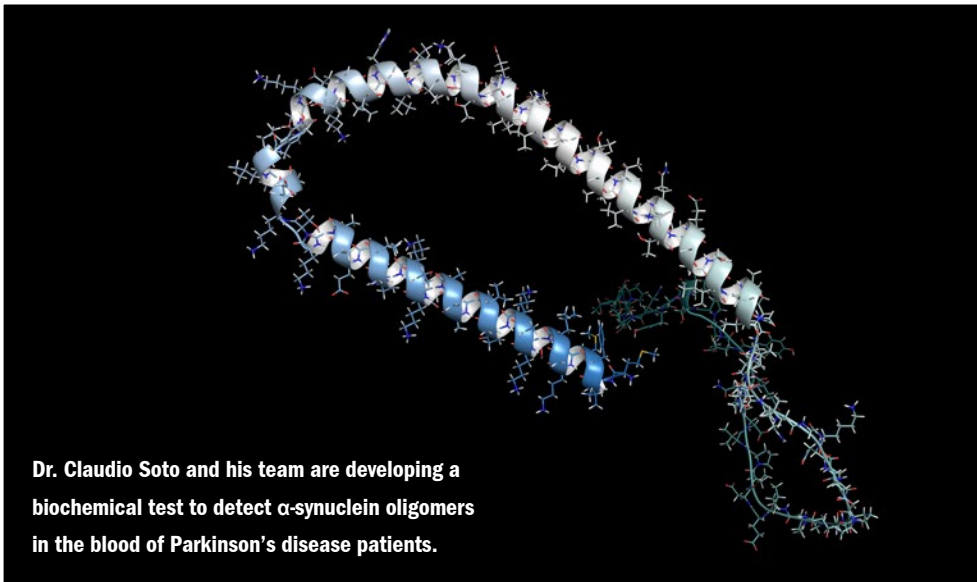


CLAUDIO SOTO, PhD
Director, The George and Cynthia W Mitchell Center for Alzheimer's Disease and Other Brain Related Illnesses
Professor, Department of Neurology
McGovern Medical School at UTHealth

"By the time the motor symptoms of Parkinson's disease emerge, up to 70 percent of dopaminergic neurons in the substantia nigra, which plays an important role in movement, are already lost," says Dr. Soto, professor of neurology and director of the George and Cynthia W. Mitchell Center for Alzheimer's Disease and Other Brain Related Illnesses at McGovern Medical School at UTHealth. "We hope this one-year project will lay the foundation for the development of a sensitive, noninvasive, objective laboratory test to detect α -synuclein oligomers in the blood plasma of people affected by PD and related diseases. The technology has the potential to have a tremendous impact, enabling the biochemical diagnosis of PD, possibly pre-symptomatically, to allow for the early initiation of appropriate therapy that could reduce the effects of the disease. It may also be very useful for tracking disease progression and developing new clinical trials for PD."

The newly funded study, entitled "Development of a biochemical test to detect α -synuclein (α Syn) oligomers in blood and validation of CSF assay in Parkinson's disease patients," is a continuation of a previous award Dr. Soto received from the Michael J. Fox Foundation to initiate a study on PD. Grants personnel at the foundation approached Dr. Soto to write the original grant - a rare occurrence in the funding arena - based on novel work done in his lab related to Alzheimer's disease.

Dr. Soto's team focuses primarily on understanding the molecular basis of neurodegenerative diseases associated with the misfolding and brain accumulation



Dr. Claudio Soto and his team are developing a biochemical test to detect α -synuclein oligomers in the blood of Parkinson's disease patients.

of proteins, particularly focusing on Alzheimer's disease, Parkinson's disease and prion-related disorders. The vision of his group is to perform high-risk, high-impact research with the potential to revolutionize understanding of brain diseases, and to translate the scientific knowledge gained into the discovery and development of novel strategies for diagnosis and therapeutic intervention. Dr. Soto invented and pioneered an innovative technology for high-sensitivity detection of misfolded proteins in biological fluids, which is currently being used in many countries as a non-invasive and high-sensitivity diagnostic test for various brain diseases. The novel therapies emerging from his work are currently being tested in patients affected by Alzheimer's disease.

Dr. Soto has published more than 160 peer-reviewed scientific publications and contributed to more than 20 books, including one of which he is the sole author. Many of his studies have been published in prestigious scientific journals, including *Cell*, *Nature*, *Science*, *New England Journal of Medicine*, *Nature Medicine*, *PNAS*, *Neuron* and *The Lancet*, among others. His publications have been cited more than 12,000 times, and articles written by scientific and lay journalists have highlighted his work. He has received numerous awards and has been an invited speaker at more than

200 international scientific meetings. Dr. Soto is the recipient of many grants from the federal government and private foundations for a cumulative funding total of more than \$30 million.

"This one-year project will lay the foundation for the development of a sensitive, noninvasive lab test for Parkinson's disease," he says. "In our first study on PD, we worked invasively with cerebrospinal fluid collected through lumbar puncture. Our goal is to advance the technology so that we can work with blood samples to predict Parkinson's disease. Moving forward, we hope to gather sufficient data to show that our new techniques work with a good level of sensitivity and specificity. Our aim is to complete the studies in the next few years, and our final step will be to seek regulatory approval of the test."

Dr. Louise McCullough Receives AHA's Outstanding Stroke Research Mentor Award

The annual American Heart Association/American Stroke Association Stroke Research Mentor Award recognizes outstanding achievements in mentoring future generations of researchers in the field of cerebrovascular disease. This year's recipient of the lifetime achievement award is Louise McCullough, MD, PhD, FAHA, a respected educator who is passionate about mentoring students

and nurturing junior scientists. Dr. McCullough is the Roy M. and Phyllis Gough Huffington Distinguished Chair of Neurology at McGovern Medical School at UTHealth, chief of neurology at Memorial Hermann-Texas Medical Center and co-director of the Mischer Neuroscience Institute at Memorial Hermann-Texas Medical Center.



LOUISE McCULLOUGH, MD, PhD
Co-director, Mischer Neuroscience Institute at Memorial Hermann-Texas Medical Center
Professor and Chair, Department of Neurology
Roy M. and Phyllis Gough Huffington Distinguished Chair, McGovern Medical School at UTHealth

Dr. McCullough is well recognized for her work in cerebral vascular disease and is known for her research identifying sex differences in cell death pathways during stroke, which are now recognized as major factors in the response to an ischemic insult. Her laboratory also studies aging and inflammation and how these factors influence recovery after stroke.

Researchers studying cerebrovascular disease in laboratories at UTHealth include Sean Savitz, MD, director of the Comprehensive Stroke Center at Memorial Hermann-TMC and professor and Frank M. Yatsu Chair in Neurology; Jaroslaw Aronowski, MD, PhD, professor, vice chair and the Roy M. and Phyllis Gough Huffington Chair in Neurology; Fudong Liu, MD, assistant professor; Jun Li, PhD, associate professor; Venugopal Venna, PhD, assistant professor; Akihiko Urayama, PhD, assistant professor; and Sean Marrelli, PhD, professor.

Dr. McCullough's research has been funded by the National Institutes of Health and the AHA, among other granting agencies, and she has published more than 150 peer-reviewed papers. She is the recipient of many honors and awards, and has given numerous presentations both nationally and internationally. She is also an active clinician and has been recognized among America's Top Doctors for the past nine years.

EVENTS *at the* INSTITUTE

Mischer Neuroscience Institute and UTHealth Host the Society of Neurological Surgeons Annual Meeting

In May 2017 more than 300 members of the Society of Neurological Surgeons (SNS) attended the organization's 2017 annual meeting, hosted by McGovern Medical School at UTHealth and Mischer Neuroscience Institute at Memorial Hermann-Texas Medical Center and held at the Four Seasons in Houston. The Society, comprised of neurosurgical department chairs, residency program directors and other senior educational leaders, is the oldest neurosurgical professional organization in the world.

"Our annual meeting rotates to a new location each year, and we were honored to be chosen to host this year's event," says Arthur Day, MD, vice chair, program director and director of clinical education in neurosurgery at Mischer Neuroscience

McGovern Medical School at UTHealth and Mischer Neuroscience Institute hosted the prestigious Society of Neurological Surgeons' 2017 annual meeting.

Institute, professor in the Vivian L. Smith Department of Neurosurgery at UTHealth, and a long-time active member and former president of the SNS.



ARTHUR DAY, MD

Director of Clinical Education and Cerebrovascular Programs, Mischer Neuroscience Institute
Vice Chair, Professor and Program Director, Vivian L. Smith Department of Neurosurgery
McGovern Medical School at UTHealth

Keynote speakers were Capt. Mark E. Kelly, retired U.S. Navy captain and NASA astronaut, who delivered an address entitled "The Sky Is Not the Limit," and Kenneth M. Ludmerer, MD, professor in medicine, professor in history and the Mabel Dorn Reeder Distinguished Professor of the History of Medicine at Washington University in St. Louis, who spoke about his book *Let Me Heal: The History of GME and Residency Training*. Other invited speakers included Henry Marsh, CBE, FRCS, retired senior consultant neurosurgeon at Atkinson Morley Hospital and St. George's Hospital in London; John P. Hagan, PhD, assistant professor of neurosurgery at McGovern Medical School; Michelle Mello, JD, PhD, professor of law, Stanford Law School and Stanford University School of Medicine; Pamela L. Derstine, PhD, MHPE, executive director of the Review

Committee for Neurological Surgery at ACGME; R. Loch MacDonald, MD, co-founder and chief scientific officer at Edge Therapeutics; Stanley Hamstra, vice president, Milestone Research and Education, ACGME; Walter Koroshetz, MD, director of the National Institute of Neurological Disorders and Stroke; and Wayne Sotile, PhD, founder of the Center for Physician Resilience.

A reception and barbecue were held at The Grove, and to add a touch of Texas, attendees were given bandannas and invited to have their photos taken with two Longhorn cows.

Mischer Neuroscience Institute Sponsors UTHealth Stomp Out Stroke Festival

The UTHealth Stroke Team hosted the fifth annual Stomp Out Stroke Festival to raise stroke awareness last May at Discovery Green in Houston. More than 1,500 people attended this year's event, which provided lifesaving information about stroke prevention and treatment and free health screenings.

Mischer Neuroscience Institute at Memorial Hermann-Texas Medical Center, the leading stroke center in the region, was the title sponsor. Screenings and risk assessments offered included carotid ultrasound, blood pressure, cholesterol, glucose, body mass index, body fat percentage, abdominal aortic aneurysm, obstructive sleep apnea and stroke risk. Adult and child-friendly education sessions and interactive activities were facilitated by physicians, pharmacists, nurses and fitness experts.

"We strive to motivate families to make positive health behavior changes to reduce their stroke risk through good self-care practices," says Elizabeth Noser, MD, clinical assistant professor of neurology and the James C. Grotta, MD Chair in Neurological Recovery and Stroke. "We want to inspire children to be owners of their own health and become the health leaders of tomorrow."



Children with Neurological and Neurosurgical Conditions: An Update for Pediatricians



Leaders in the fields of pediatric neurology and pediatric neurosurgery at Children's Memorial Hermann Hospital and Mischer Neuroscience Institute at Memorial Hermann-Texas Medical Center provided an update on advances in the treatment and management of pediatric neurological conditions at the 2017 Pediatric Neuroscience Symposium. Held last May at Children's Memorial Hermann Hospital, the annual daylong event attracted more than 50 pediatricians, general and family practitioners, and pediatric neurologists.

Faculty speakers from McGovern Medical School at UHealth were Matthew R. Grieves, MD, assistant professor of pediatric surgery, division of Pediatric Plastic Surgery; Pauline A. Filipek, MD, FAAP, professor of pediatrics, division of Child and Adolescent Neurology; Stephen Fletcher, DO, associate professor of pediatric surgery, division of Pediatric Neurosurgery; Mary Kay Koenig, MD, associate professor of pediatrics, division of Child and Adolescent Neurology; Jeremy E. Lankford, MD,

assistant professor of pediatric neurology, division of Child and Adolescent Neurology; David Sandberg, MD, FAANS, FACS, FAAP, director of pediatric neurosurgery, professor of pediatric surgery and neurosurgery, division of Pediatric Neurosurgery; Pedro Mancias, MD, professor of pediatric neurology, division of Child and Adolescent Neurology; Manish N. Shah, MD, director of pediatric spasticity and epilepsy surgery, assistant professor of pediatric surgery, division of Pediatric Neurosurgery; Nivedita Thakur, MD, assistant professor of pediatrics, division of Child and Adolescent Neurology; and Michael Watkins, MD, assistant professor of pediatrics, division of Child and Adolescent Neurology.

This year's event will be held on May 5, 2018, at the TMC Innovation Institute.

For more information, visit childrens.memorialhermann.org/neurocme.

Fifth Annual Neuro ICU Symposium Draws More Than 300 Healthcare Professionals

Over the past five years, Mischer Neuroscience Institute's Neuro ICU Symposium has attracted hundreds of physicians and other healthcare providers from multiple states and countries, making it one of the most popular neurocritical care conferences in the U.S. At the 2017 symposium, held last March, more than 330 attendees earned continuing education credits by participating in two parallel programs: a neurocritical care board review course and a critical care nursing symposium. Entitled "The Future of Neurotrauma and Neurocritical Care," the program highlighted the latest Brain Trauma Foundation guidelines and pertinent medical evidence. A strong emphasis was placed on pre-hospital care as well as ultra-early brain resuscitation beginning in the emergency room.

Each year the symposium is designed for general and consult neurologists, stroke neurologists and neurointensivists;

general, vascular, spine and trauma neurosurgeons; pulmonary critical care medicine physicians; surgical critical care and general/trauma surgeons; anesthesiology critical care medicine physicians; emergency medicine physicians; critical care registered nurses, neurological nurses, acute care nurse practitioners and physician assistants; EMTs and paramedics; pharmacists; and physicians and surgeons in training.

Special lecturers at the 2017 Neuro ICU Symposium included Matthew A. Koenig, MD, FNCS, medical director of Telehealth at The Queen's Health Systems, associate medical director of neurocritical care at The Queen's Medical Center and associate professor of medicine at the University of Hawaii John A. Burns School of Medicine in Honolulu; Stephan A. Mayer, MD, FCCM, professor of neurology and neurological surgery, director of neurocritical care at Mount Sinai School of Medicine, New York City, and former president of the Neurocritical Care Society; Kees Polderman, MD, PhD, professor of critical care medicine, University of Pittsburgh Medical Center, Pittsburgh, Pennsylvania; Andrés M. Rubiano, MD, PhD, FACS, professor of neurosciences and neurosurgery, El Bosque University, Bogotá, Colombia, president, Neurotrauma and Critical Care Chapter of the Latin American Federation of Neurosurgical Societies, and chair of the International Committee, Neurotrauma and Critical Care Section of the American Association of Neurological Surgeons; Jose I. Suarez, MD, professor of neurology-vascular care and head of the Section of Vascular Neurology and Neurocritical Care at Baylor College of Medicine in Houston; and Kiwon Lee, MD, FACP, FAHA, FCCM, former vice chair for critical care, departments of neurosurgery and neurology and former director of neurocritical care at McGovern Medical School.

This year's event will be held on April 18-20, 2018, at the Westin Oaks Galleria. For more information, visit neuroicusymposium.org.

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