



A MESSAGE FROM THE CHAIR

Philip E. Stieg, PhD, MD

These are curious times, to be sure. As we simultaneously rack up new cases of Covid-19 and roll up our sleeves to get vaccinated, I find myself feeling equal parts impatient and hopeful. Impatient because, like many of you, I am thoroughly tired of the pandemic and can't wait to see it end. Hopeful, because I truly do see the light at the end of the tunnel. We are almost there, and need to stay strong just a little longer.



I am so thankful for the many, many providers who pitched in to become vaccinators (including pharmacist Caroline Vizzi, shown here giving me my second dose), for the team members who cheerfully managed lines, and for the front-line workers and support staff who waited patiently on those lines to get their shots. We are all playing our parts in the massive public health effort that will get us through—history is unfolding before us. You can read my thoughts on getting vaccinated at weillcornellbrainandspine.org/blog

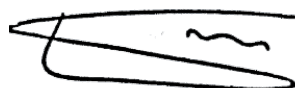


As the following pages show, however, we are not simply wading through the days awaiting better times. Each and every day we are caring for patients, innovating in the lab, and training the next generation of neuroscientists. We are launching clinical trials, writing grant applications, hosting CME events, and reaching out to patients and providers alike via webinars, emails, and my This Is Your Brain podcast.



Over the past two months we have co-hosted a first-of-its-kind online course in scoliosis treatment for African neurosurgeons, with faculty from New York to Verona to Dar es Salaam (more about that on page 2). On March 19 we celebrated Match Day, when our two new residents were announced. As much as we look forward to being "back," the truth is that we never left.

Yours in good health, and enjoy the read!



Better Brain Health After Covid-19

When the world turned upside down last March, we knew that we were being presented with not only a serious challenge but also a unique opportunity. With our surgical practice constrained for months, we ramped up our telemedicine capabilities, concentrated on academics, and started planning future clinical projects. In November, one of our most exciting programs got a boost when we recruited Dr. Heidi Bender to our faculty.

Dr. Bender heads up an integrated program that offers 360-degree care for our patients. She joins Dr. Amanda Sacks-Zimmerman and Dr. Jessica Spat-Lemus in providing pre-surgical evaluations for patients with epilepsy, brain tumors, cerebrovascular conditions, and movement disorders, along with post-surgical cognitive remediation for those who require it.



This interventional neuropsychological treatment—cognitive behavioral therapy combined with cognitive remediation—treats emotional and cognitive difficulties to optimize outcomes. The neuropsychologists also play key intra-operative roles monitoring patients during brain mapping and open craniotomies. This innovative program of neuropsychology within neurosurgery makes Weill Cornell Medicine stand out as a unique provider of comprehensive brain care.

The three neuropsychology faculty members recently began providing individual and group sessions for patients who have persistent cognitive and emotional symptoms after infection with the novel coronavirus. The lingering "Covid fog" can be addressed with many of the proven techniques used by patients after stroke, surgery, or traumatic injury. With so many people suffering the physical, emotional, and cognitive effects of the pandemic, this could not have come at a better time.



Dr. Amanda Sacks-Zimmerman, Dr. Jessica Spat-Lemus, and Dr. Heidi Bender

The team is also planning a robust new program for healthy individuals who would like to use these same techniques to enhance their brain health and achieve their full potential. This exciting new program promises to unlock the full academic potential of adolescents and enhance the cognitive skills of adults in search of optimal brain health.

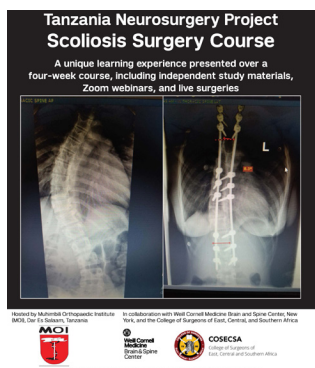
With so much suffering and stress visited on us during a difficult year, these efforts provide a welcome bright spot in our department.

Global Spine Education Thrives

Hundreds of junior neurosurgeons from low- and middle-income countries around the world had a unique opportunity in November to attend the annual Neurotrauma course we typically host in person in Tanzania. Unable to travel, our faculty converted the usually hands-on course to a fully remote virtual learning experience with no geographical barriers to attendance. Top international faculty from leading institutions delivered lectures, led Q&A sessions, and presented challenging cases for review.

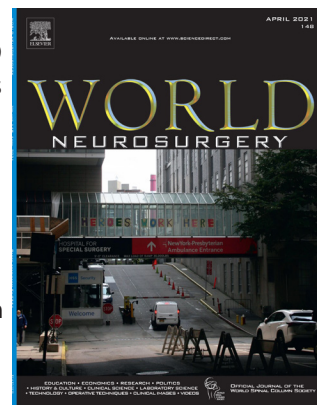
Inspired by the success of the Neurotrauma course, we partnered with the Muhimbili Orthopedic Institute (MOI) and the College of Surgeons of East, Central and Southern Africa (COSECSA) to develop a blended learning course devoted to scoliosis and other spinal deformities. Personally invited delegates from a dozen African nations participated in the course, which combined independent study with small-group sessions over Zoom and guest lectures from internationally renowned experts in spinal deformity.

Both of these global initiatives were spearheaded by **Dr. Roger Härtl**, who founded the Tanzania Neurosurgery Project more than a decade ago. The project is committed to education and training, not charity, and has grown to include the permanent placement of a Global Health Fellow in Tanzania, rotating placements of African neurosurgeons as fellows at Weill Cornell Medicine, and weekly virtual meetings to stay connected. Visit weillcornellbrainandspine.org/tanzania for more on the project.



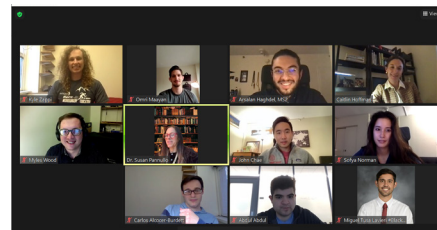
Covid on the Cover

It would be impossible to overstate the impact of the Covid-19 pandemic, which shattered norms and upended lives around the globe. It certainly created shock waves within neurosurgical departments, perhaps nowhere more than here in New York City, which was struck early and hard by the first surge of cases in March and April 2020.



The story of that first surge, and its devastating fallout, is chronicled in our April 2021 cover package in the journal *World Neurosurgery*. In three articles, part of the ongoing Annals of Weill Cornell Neurosurgery series, authors share the clinical and business effects of the surge along with the very human side. Personal reflections from redeployed residents and medical students share pages with analyses of the lightning-fast changes required to the practice. The papers cover the immediate shift from in-person visits to telemedicine, the triage of urgent cases during the pause in elective surgery, and the overnight transformation of all support services to a remote workforce.

The articles were spearheaded by Dr. Susan Pannullo, who leads the Medical Student Publishing Group within the department of neuro-logical surgery. The group meets regularly by Zoom, with Dr. Pannullo and guest speakers providing mentorship and career guidance to aspiring neuroscientists. The Annals of Neurosurgery project is led by Dr. Michael Apuzzo; department chair Philip Stieg; and Dr. Paolo Cappabianca, Professor and Chairman of Neurosurgery at Università degli Studi di Napoli Federico II in Italy.



Meet Our Newest Residents

Match Day 2021 brought historic news: For the first time ever, both of our matched candidates are women. Nalini Tata and Natasha Kharas, both native New Yorkers, will begin the seven-year-long neurosurgical residency program at Weill Cornell Medicine and NewYork-Presbyterian this summer.

Natasha Kharas will receive her MD and PhD this year from McGovern Medical School at the University of Texas Health Science Center at Houston. Natasha earned her undergraduate degree in neural science (with highest honors) from NYU before enrolling in the MD/PhD program at McGovern. Natasha has been working with Dr. Casey Halpern's lab at Stanford University to examine the role of intracranial stimulation in epilepsy, and with Dr. David Sandberg at McGovern on a translational research



project examining the safety and pharmacokinetics of injecting the chemotherapy drug panobinostat directly into the fourth ventricle to treat posterior fossa tumors in children.

Nalini Tata will receive her MD from Northwestern University's Feinberg School of Medicine in Chicago with a concurrent Master of Public Policy (MPP) degree from the Harvard Kennedy School of Government in Cambridge, Massachusetts. Nalini received her undergraduate degree in neurobiology from Brown University, then earned a Master of Philosophy degree from the University of Cambridge in England before enrolling in medical school. As a student researcher, she has written about ethics and philosophy of neurosurgical practice during and beyond the time of the Covid-19 pandemic with Dr. Nader Dahdaleh at Northwestern Memorial Hospital.



Innovations in Patient Care

The pandemic may have caused some patients to defer or delay their surgery, but the neurosurgeons of the Weill Cornell Medicine Brain and Spine Center have not slowed in their commitment to innovation. Even as we rescheduled procedures to free up much-needed space for Covid-19 patients, we continued our work to advance our field.

FOCUSED ULTRASOUND

Dr. Michael Kaplitt is conducting a clinical trial using image-guided focused ultrasound (FUS) on the second side of the brain in patients previously treated with FUS for essential tremor. Originally approved for use on only one side of the brain, FUS has shown great success in reducing or eliminating debilitating tremors. Patients who regained control of one side of their body are thrilled with the results of the new trial, which holds the promise of restoration of control to both sides.



Katina Ansen shows off her two steady hands after her second treatment in Dr. Kaplitt's clinical trial using focused ultrasound for essential tremor. Katina's story can be found on weillcornellbrainandspine.org

Clinical trials are also underway testing the use of FUS to control the tremors characteristic of Parkinson's disease, which are caused by a malfunction in a different area of the brain. The trial is ongoing, but focused ultrasound holds the potential for relieving one of the most disabling symptoms of Parkinson's

disease. In an exciting development, 2021 should bring a new FUS installation that will significantly increase our capacity to treat many more patients.

GLIOBLASTOMA GAME CHANGER

Dr. Theodore Schwartz is the first neurosurgeon in the United States to use this new 5-ALA fluorescent headlamp and loupes in the operating room. Custom made for individual neurosurgeons by Design for Vision, the headlamp is designed to work with Gleolan, or 5-Aminolevulinic Acid (5-ALA), also known as "the pink drink." When given to patients before surgery, Gleolan passes through the blood-brain barrier and penetrates the tumor; when viewed under blue light during surgery it fluoresces as a hot pink indicator distinguishing tumor cells from healthy brain tissue around it. The new headlamp provides improved visualization of the intraoperative fluorescence, thereby maximizing the degree of brain tumor removal. The device is not yet commercially available; Dr. Schwartz was chosen to use it first due to his pioneering use of 5-ALA.



Top: Dr. Schwartz was individually fitted for the new headlamp and loupes; bottom, the view through the loupes clearly distinguishes glowing pink tumor tissue from healthy brain tissue surrounding it.

New Funding to Support Research on Brain Cancers, Alzheimer's Disease

Babacar Cisse, MD, PhD, has been awarded a Department of Defense grant to investigate how transcription factors regulate the development, function, and maintenance of microglia in glioma. The highly competitive Career Development Award is intended to support early-career cancer investigators as they conduct innovative studies under the mentorship of an experienced researcher. The three-year, \$400,000 award will support Dr. Cisse's novel work as he first investigates the normal development and function of microglia from embryonic to adult stages, followed by the use of mouse models to investigate the disruptions in their function known to exist in gliomas.



Nadia Dahmane, PhD, has been awarded an R01 research grant from the National Institute of Health (NIH)/National Institute for Neurological Disorders and Stroke (NINDS) to study the role of the transcription factor RP58 in brain development. As a PI with the Children's Brain Tumor Project here, Dr. Dahmane studies fetal brain development and how that process sometimes goes awry, leading to the growth of brain tumors in children. The \$2.6

million, five-year grant will support her work with Dr. Benjamin Garcia at the University of Pennsylvania and Dr. Christopher Mason of Weill Cornell Medicine, using high-throughput proteomic and epigenomic approaches to uncover the mechanisms controlling cellular identity in the developing brain.

Roberta Marongiu, PhD, has been awarded a two-year, \$275,000 NIH-NIA R21 grant to study the effects of menopause on the development of Alzheimer's disease. The pathological hallmarks of Alzheimer's disease (amyloid β , neurofibrillary tangles, synaptic and neuronal loss, and chronic gliosis) are laid down starting 20 years before clinical symptoms appear, at about the time of perimenopause in women. Yet very little is known about the influence of menopause transition on the susceptibility to Alzheimer's and its progression. Dr. Marongiu's research will use mouse models to measure the effect of the fluctuating estrogen levels of perimenopause on Alzheimer's pathology and cognitive decline.



NEWYORK-PRESBYTERIAN WEILL CORNELL MEDICINE

Cerebrovascular Surgery

Aneurysms, AVMs, carotid occlusive disease

Dr. Philip E. Stieg 212-746-4684
Dr. Jared Knopman 212-746-5149

Brain Tumor Surgery

Benign and malignant tumors in adults and children

Dr. Philip E. Stieg 212-746-4684
Dr. Theodore H. Schwartz 212-746-5620
Dr. Babacar Cisse 646-962-3389
Dr. Mark Souweidane 212-746-2363 (pediatric)
Dr. Jeffrey Greenfield 212-746-2363 (pediatric)
Dr. Caitlin Hoffman 212-746-2363 (pediatric)

Epilepsy Surgery

Curative and palliative surgical approaches to epilepsy

Dr. Theodore H. Schwartz 212-746-5620
Dr. Caitlin Hoffman 212-746-2363 (pediatric)

Interventional Neuroradiology

Minimally invasive image-guided diagnosis and treatment

Dr. Y. Pierre Gobin 212-746-4998
Dr. Srikanth Boddu 212-746-2821
Dr. Jared Knopman 212-746-5149

Stereotactic and Functional Neurosurgery

Parkinson's disease, essential tremor, and pain

Dr. Michael Kaplitt 212-746-4966

Neuro-oncology

Comprehensive treatment options for cancers of the brain and spine

Dr. Howard Fine 212-746-2596
Dr. Susan Pannullo 212-746-2438
Dr. Rajiv Magge 646-962-2185
Dr. Babacar Cisse 646-962-3389

Neuropsychology

Testing, imaging, psychotherapy, and cognitive remediation

Heidi Bender, PhD 212-746-2197
Amanda Sacks-Zimmerman, PhD 212-746-3356
Jessica Spat-Lemus, PhD 646-962-3336 (pediatric)

Pediatric Neurosurgery

Treatment of the full spectrum of CNS conditions in children

Dr. Mark Souweidane 212-746-2363
Dr. Jeffrey Greenfield 212-746-2363
Dr. Caitlin Hoffman 212-746-2363

Pituitary Tumors/Neuroendocrinology

Endoscopic approaches to anterior skull base surgery

Dr. Theodore H. Schwartz 212-746-5620
Dr. Babacar Cisse 646-962-3389
Dr. Jeffrey Greenfield 212-746-2363 (pediatric)
Dr. Georgiana Dobri 646-962-3556 (neuroendocrinology)

Spinal Surgery

Comprehensive care for spine conditions and injuries

Dr. Roger Härtl 212-746-2152
Dr. Eric Elowitz 212-746-2870
Dr. Kai-Ming Fu 212-746-2260
Dr. Daniel Riew 212-746-1164
Dr. Michael Virk 646-962-3388

Stereotactic Radiosurgery

Noninvasive treatments for brain tumors and other conditions

Dr. Susan Pannullo 212-746-2438

NEWYORK-PRESBYTERIAN LOWER MANHATTAN

Minimally invasive and complex spine: 646-962-5115

Dr. Kai-Ming Fu, Chief of Neurosurgery
Dr. Michael Virk

NEWYORK-PRESBYTERIAN QUEENS

718-670-1837

Dr. John Park, Chief of Neurosurgery
Brain tumors, neuro-oncology, spine surgery
Dr. Ning Lin, cerebrovascular surgery
Dr. Srikanth Boddu, interventional neuroradiology
Dr. Rupa Gopalan Juthani, brain and spine tumors
Dr. Caitlin Hoffman (pediatric) 212-746-2363

NEWYORK-PRESBYTERIAN BROOKLYN METHODIST

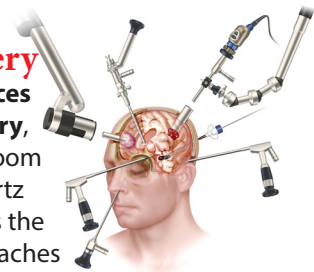
718-780-3070

Dr. Rohan Ramakrishna, Chief of Neurosurgery
Brain tumors, neuro-oncology, stereotactic neurosurgery
Dr. Martin Zonenshayn, movement disorders and peripheral nerve
Dr. Michael Ayad, cerebrovascular surgery
Dr. Louis Chang, minimally invasive and complex spine
Dr. Caitlin Hoffman (pediatric) 212-746-2363

Virtual CME:

Minimally Invasive Neurosurgery

Registration is now open for **Recent Advances in Minimally Invasive Cranial Neurosurgery**, a full-day CME course to be presented via Zoom on May 21. Directed by Dr. Theodore Schwartz and Dr. Mark Souweidane, the course covers the latest in advanced minimally invasive approaches for cranial surgery. **Register at cranialneurosurgery.org**



NEUROSURGERY TEAM MEMBERS GO THE EXTRA MILE

The Neurosurgery Outstanding Service Award spotlights members of the department who go above and beyond their assigned duties. The quarterly award recognizes those who exemplify the core values of the department.

The most recent winner is senior patient coordinator Jeannie Nguyen, who received multiple nominations from her colleagues. Jeannie won praise in several categories, including Collegiality/Teamwork ("she's always in good spirits" and "takes initiative and is a critical information resource for staff") and Perseverance/Commitment ("equally proficient whether working at the Access Center or supporting individual provider practices" and "performs over and beyond to meet the needs of patients and the department daily"). Congratulations and thank you to Jeannie!



Jeannie Nguyen and Dr. Stieg removed their masks only briefly for this photo!

HONORABLE MENTIONS

We also received nominations for other department members that we think deserve special shout-outs:

Christian Avila (Senior Patient Coordinator)

"Christian is a team player and coordinates patient care with surgical coordinators and the APPs. He possesses a great attitude, and continually receives positive feedback from patients regarding his compassionate care on the phone."

Camlenee Ramsaran (Administrative Assistant, Neuropsychology)

"Camie is known to many as one of the nicest people you will ever meet. She is always pleasant and possesses a genuine demeanor. Camie is also known to go above and beyond to help someone."

Janica Goulbourne (Dedicated Medical Assistant)

"Janica demonstrates a selfless, proactive approach to patient care. She is sensitive to patient needs, often picking up on subtle cues crucial to optimal patient care. She has been a key resource to assist patients with the conversion from phone visits to video visits."



Follow the Weill Cornell Brain and Spine Center on Facebook