



Weill Cornell Medicine

Brain & Spine Center

News and Updates From Weill Cornell Medicine Neurological Surgery

Summer 2017

A MESSAGE FROM THE CHAIR

Philip E. Stieg, PhD, MD

Dear Friends and Colleagues,

Even after 30 years, I never get tired of the academic season of renewal. Every summer I am struck by the energy and potential of the incoming residents, and I feel so much pride in our resident graduates as they head out into the professional world.



This year is particularly energizing for me, and for the Brain and Spine Center as well, and I'm delighted to share with you some of our newest developments. This month we welcome three new faculty members (see page 4), including two of our own recent residents. You may have seen the online video about one of them, Dr. Babacar Cisse, on healthmatters.nyp.org—his is an extremely compelling story, and I couldn't be prouder to welcome him to the neurological surgery faculty. The other former resident, Dr. Michael Virk, is returning to us after a year of fellowship training at UCSF in spine surgery. Mike will be joining the interdisciplinary team at the 59th Street Center for Comprehensive Spine Care. Our third new faculty member is Dr. Srikanth Boddu, most recently a fellow in radiology, who is now headed out to NYP/Queens to help fill out our interventional neuroradiology team there. Across the board, our patients will be better served by having these three outstanding new faculty members available.

On the research side, the neurosurgical team has been publishing significant results from across the spectrum of neurosurgical subspecialties (see page 2). Our commitment to educating the neurosurgeons of the future was recently on display at the annual Junior Resident Neurosurgical Boot Camp (see page 3), in which residents completing their first post-graduate year receive intensive hands-on training before going into their second year. And I'm proud to say that the faculty continues to be recognized with an impressive array of awards and honors for their outstanding work and leadership in the field (see page 3).

I'm glad to share our good news with you, and I welcome your questions and comments. Feel free to call my office anytime at 212-746-4684 if you'd like more information about our offerings.

Yours in good health,

Phil Stieg

Interdisciplinary Programs Provide New Model for Comprehensive Health Care

We are committed to providing our patients with integrated, comprehensive care. To that end, we have initiated a number of new interdisciplinary programs that bring together providers from multiple departments to ensure the very best care for our patients.

Brain Mets Clinic

While surgery, radiation, and chemotherapy are important aspects of brain metastases treatment, we know our patients also benefit from access to holistic services that help treat the neurologic consequences of their disease. Our Brain Metastases Clinic, directed by **Dr. Rohan Ramakrishna**, was designed to promote physical, psychological, and social well-being. Services include nutritional counseling, clinical psychology, acupuncture, massage therapy, yoga, pain management, and meditation training. Group seminars serve patients and caregivers, and social workers can assist with some of the practical problems facing patients and families. Visit weillcornellbrainandspine.org/brain-mets for more information, or call NYP-METS (646-697-6387) to refer a patient.

Pediatric Epilepsy

For our youngest patients with seizure disorders, we now offer comprehensive care that integrates the services of child neurology and epileptology, pediatric neurosurgery, and pediatric neuropsychology. The offerings of the pediatric epilepsy team include a range of medical therapies as well as new minimally invasive surgical procedures. Advanced options, including laser surgery, may offer a cure for epilepsy with reduced risk and recovery time. For more information, call **Dr. Caitlin Hoffman** at 212-746-2363, or visit weillcornellbrainandspine.org/pediatric-epilepsy.

Neuroendocrine Program

Dr. Theodore Schwartz has long been a leader in advanced endoscopic surgery for pituitary tumors, offering minimally invasive endonasal approaches that require no incisions and leave no facial scarring. With the addition of **Dr. Georgiana Dobri** to our faculty last fall, we now offer a complete continuum of care for patients who need medical management or surgical intervention for a wide range of neuroendocrine disorders. For more information, visit weillcornellbrainandspine.org/neuroendocrine, or call Dr. Dobri at 646-962-3556 or Dr. Schwartz at 212-746-5620.

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NOTABLE PUBLICATIONS

Making Progress on DIPG

Dr. Mark Souweidane, who recently completed a Phase I clinical trial testing the safety of convection-enhanced delivery (CED) in children with diffuse intrinsic pontine glioma (DIPG), presented the results of that trial at the annual meeting of the American Society of Clinical Oncology (ASCO) as well as at the pediatrics conference of the Society for Neuro-oncology (SNO). He will publish the results of that trial later this year, but the trial has already generated many other findings that help advance understanding of this fatal pediatric tumor, including:

Biomarker-Based PET Imaging of Diffuse Intrinsic Pontine Glioma in Mouse Models (*Cancer Research*, April 15, 2017)

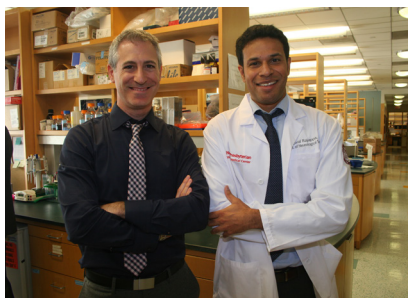
Advances in Molecular Imaging of Locally Delivered Targeted Therapeutics for Central Nervous System Tumors (*International Journal of Molecular Science*, February 8, 2017)

A Novel Methodology for Applying Multivoxel MR Spectroscopy to Evaluate Convection-Enhanced Drug Delivery in Diffuse Intrinsic Pontine Gliomas (*American Journal of Neuroradiology*, July 2016)

Dual Inhibition of PI3K/AKT and MEK/ERK Pathways Induces Synergistic Antitumor Effects in Diffuse Intrinsic Pontine Glioma Cells (*Translational Oncology*, April 2017)

Stopping Gliomas in Their Tracks

A paper from the laboratory of Dr. Jeffrey Greenfield details how it may be possible to stop the progression of a low-grade glioma into a fatal malignancy. The paper details how a specific population of cells that are made in the bone marrow are recruited to the brain to facilitate brain tumor progression; more importantly it shows that inhibiting this process may act as a remote control to stop tumor progression.



Dr. Jeffrey Greenfield and Dr. Prajwal Rajappa

Dr. Prajwal Rajappa is the lead author on the study, which demonstrated that key cells could be detected within the blood of glioma patients, confirming data uncovered in the animal models of brain tumors. These CD11b+ myeloid cells are found in significantly increased levels in patients with Stage IV glioblastoma multiforme when compared with levels taken from patients with low-grade (Stage II) glioma.

Using a JAK 1/2 inhibitor in mouse models, levels of CD11b+ myeloid cells were reduced in the bone marrow and bloodstream of these animals, which correlated with impaired tumor progression and significantly extended the overall survival in treated animals by preventing the low-grade tumor from transforming into a higher-grade malignancy.

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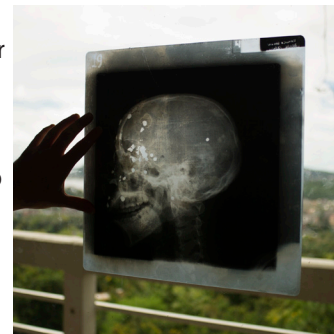
The data from this paper suggest that specific cells within the body's bone marrow, far from a tumor site, support the tumor's progression. Interrupting this process has the potential to arrest progression of the tumor, stopping it before it becomes incurable—which is what occurs in high-grade gliomas like glioblastoma multiforme (GBM).

In addition to Dr. Greenfield and Dr. Rajappa, the paper's authors include Dr. David Lyden, professor of Pediatrics and Cell and Developmental Biology at Weill Cornell Medicine and pediatric neuro-oncologist at Memorial Sloan Kettering Cancer Center, and Dr. Jacqueline Bromberg, medical oncologist and researcher at Memorial Sloan Kettering Cancer Center.

Malignant astrocytic tumor progression potentiated by JAK-mediated recruitment of myeloid cells (*Clinical Cancer Research*, June 2017)

Evidence-Based Medicine in Tanzania

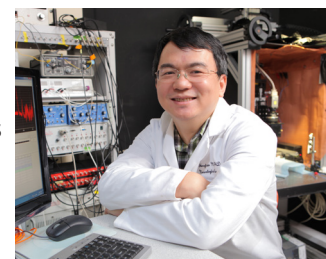
Dr. Roger Härtl has been leading the Neurosurgical Mission in Tanzania for nearly a decade. A new study from his team examines the epidemiology and explores management of severe TBI patients and adherence to the Brain Trauma Foundation (BTF) Guidelines at a tertiary care referral hospital in this sub-Saharan nation, where data have previously been sparse.



Severe Traumatic Brain Injury at a Tertiary Referral Center in Tanzania: Epidemiology and Adherence to Brain Trauma Foundation Guidelines (*World Neurosurgery*, May 2017)

New Findings on Epilepsy

Dr. Theodore Schwartz's research team, which is dedicated to unraveling the complexities of epilepsy, has published a new paper that describes a novel wave of glial calcium activity triggered by seizures and examines its role and significance. Although researchers had earlier believed that glial cells play a role in ictogenesis, this investigation shows that they are not critical to the process.



Dr. Hongtao Ma of the Epilepsy Laboratory is the lead author of the new paper on glial waves.

"This is a novel finding," says Dr. Hongtao Ma, the lead author. "The paper sheds light on a previously undescribed phenomenon of a glial response to ictal events and calls into question the role of the glial network in the complex process of seizure initiation, propagation, and termination."

Glial Calcium Waves Are Triggered by Seizure Activity and Not Essential for Initiating Ictal Onset or Neurovascular Coupling (*Cerebral Cortex*, June 2017)

Training the Neurosurgeons of the Future: SNS Junior Resident Boot Camp

For the fifth year in a row, Weill Cornell Medicine was chosen as the venue for the Society of Neurological Surgeons' (SNS) two-day surgical "boot camp." For two days, 63 neurosurgical residents who were completing their first year of post-graduate training received hands-on instruction in drilling, microsurgical techniques, shunts, use of the Gamma Knife, repairing sagittal sinus injury, and performing laser ablations. This year for the first time, the hands-on sessions were conducted completely with 3-D printed models and advanced simulation devices, and not on actual cadavers.

The course took place in three high-tech locations at Weill Cornell Medical College: The Gross Anatomy Lab, the Surgical Innovations Lab for Skull Base Microneurosurgery, and the Skills Acquisition and Innovation Laboratory (SAIL). Dr. Michael Kaplitt, director of the Weill Cornell Medicine neurosurgery residency program, oversaw the program in collaboration with the SNS. The faculty included Weill Cornell Medicine clinical faculty, invited faculty from other teaching hospitals, and our own chief residents and senior residents, some of whom attended this same boot camp at the end of their own PG-1 year.



Awards and Honors

The 2017 list of "Best Doctors in New York," published by *New York* magazine, included eight of our neurosurgeons. This year's list includes **Dr. Philip E. Stieg**, **Dr. Eric Elowitz**, **Dr. Roger Härtl**, **Dr. Theodore Schwartz**, and **Dr. Mark Souweidane**. Three of the faculty we share with Memorial Sloan Kettering Cancer Center were also named to the list: **Dr. Mark Bilsky**, **Dr. Philip Gutin**, and **Dr. Viviane Tabar**.

Dr. Rohan Ramakrishna has been awarded a Healthcare Leadership Fellowship by Weill Cornell Medicine and the Weill Cornell Physician Organization. He is one of seven young physicians selected for the program, which fosters professional development and leadership. Dr. Ramakrishna, who was recently named Weill Cornell Medicine neurosurgical lead on the new William Rhodes and Louise Tilzer-Rhodes Center for Glioblastoma, and who directs the new Brain Metastases Program, will develop a project related to brain tumors.

A newly published study by **Dr. Roger Härtl** and his team, "Lumbar Spinal Stenosis Associated with Degenerative Lumbar Spondylolisthesis: A Systematic Review and Meta-analysis of Secondary Fusion Rates Following Open vs Minimally Invasive Decompression," has been selected by the Congress of Neurological Surgeons as the 2017 Neurosurgery Top Spine & Peripheral Nerve Paper of the Year. The paper was written by Dr. Karsten Schöller, and Dr. Härtl will present



the results at the annual 2017 CNS meeting in Boston in October.

Dr. Antonio Bernardo, director of the Surgical Innovations Laboratory for Skull Base Microneurosurgery, was awarded the Order of Merit of the Italian Republic for his achievements in the field of neurosurgery and the neurosciences. This knighthood is the highest-ranking honor in Italy, awarded for merit in the fields of literature, the arts, economy, or public service, or social, philanthropic, and humanitarian activities.

Dr. Michael Kaplitt was honored with an invitation to speak in the Nobel Forum at the Karolinska Institute in Stockholm at a symposium entitled "Recognizing 200 Years of Studies on Parkinson's Disease." Dr. Kaplitt spoke first on "Gene Therapy and Neuromodulation for Parkinson's Disease" on World Parkinson's Day; the following day he delivered an update on his current research projects.

Roberta Marongiu, PhD, was selected for the prestigious Interstellar Initiative career development program. This program, co-sponsored by the New York Academy of Sciences and the Japan Agency for Medical Research and Development, mentors promising young investigators in the fields of cancer, regenerative medicine, and neuroscience. Dr. Marongiu was one of only 16 young scientists worldwide accepted into the program.

**NEWYORK-PRESBYTERIAN/WEILL CORNELL MEDICINE
BRAIN AND SPINE CENTER**

Cerebrovascular Surgery

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

Brain Tumor Surgery

Dr. Philip E. Stieg 212-746-4684
Dr. Rohan Ramakrishna 212-746-1996
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

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

Interventional Neuroradiology

Dr. Y. Pierre Gobin 212-746-4998
Dr. Athos Patsalides 212-746-2821
Dr. Jared Knopman 212-746-5149
Dr. Srikanth Boddu 718-303-3739

Movement Disorders

Dr. Michael Kaplitt 212-746-4966

Neuro-oncology

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

Kenneth Perrine, PhD 212-746-2197
Amanda Sacks, PhD 212-746-3356
Jessica Spat-Lemus, PhD 646-962-3336 (pediatric)

Pediatric Neurosurgery

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

Pituitary Tumors/Neuroendocrinology

Dr. Theodore H. Schwartz 212-746-5620
Dr. Rohan Ramakrishna 212-746-1996
Dr. Jeffrey Greenfield 212-746-2363 (pediatric)
Dr. Georgiana Dobri 646-962-3556 (neuroendocrinology)

Spinal Surgery

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

Stereotactic Radiosurgery

Dr. Susan Pannullo 212-746-2438
Dr. Rohan Ramakrishna 212-746-1996

NEWYORK-PRESBYTERIAN/LOWER MANHATTAN

Dr. Samuel Kim 646-962-5115

NEWYORK-PRESBYTERIAN/QUEENS

Dr. Ning Lin 212-670-1837
Dr. Louis Cornacchia 212-670-1837
Dr. Srikanth Boddu 718-303-3739

New Faculty



Babacar Cisse, MD/PhD

Dr. Cisse is an award-winning neurosurgeon who performs a wide range of surgical procedures for brain and spine conditions, with special expertise in primary and metastatic brain and spinal tumors. He recently completed his residency in neurological surgery at NewYork-Presbyterian/Weill Cornell Medicine and Memorial Sloan Kettering Cancer Center.



Michael Virk, MD/PhD

Dr. Virk is a highly respected and widely published neurosurgeon with specialty training in minimally invasive and complex surgery for a wide variety of spine conditions. He recently completed a fellowship in minimally invasive and complex spine surgery at UCSF, and will be seeing patients at the Weill Cornell Medicine Center for Comprehensive Spine Care on 59th Street.



Srikanth Boddu, MD, MSc

Dr. Boddu joins the INR team to provide clinical care at our growing practice at NewYork-Presbyterian/Queens. His areas of expertise include mechanical thrombectomy for acute stroke, endovascular embolization of brain and spine vascular abnormalities, chemoembolization of brain and spine tumors, angioplasty and stenting for arterial and venous stenosis, and kyphoplasty/vertebroplasty for vertebral compression fractures.

CME Courses, Seminars, and Workshops

October 27, 2017 Pituitary Tumors: Diagnostic and Treatment Dilemmas

This conference, comprising lectures, case-based talks, and Q&A panel sessions, will address the evaluation and management of as well as medical, surgical, and radiation treatments for pituitary tumors.

November 4, 2017 Endoscopic and Open Surgical Approaches for Craniosynostosis: A Hands-On Practical Course

Classroom instruction plus hands-on practice using state-of-the-art 3-D models created from scans of actual patients

December 14-17, 2017 11th New York City Minimally Invasive Spine, Spinal Endoscopy, Robotics & 3-D Navigation Symposium: Case-Based and Hands-On

This course offers idactic sessions plus hands-on cadaveric dissections covering new and less invasive techniques with and without stereotactic navigation. This year's course will include endoscopic approaches.

December 14-17, 2017 Advanced Endoscopic Skull Base and Pituitary Surgery

A hands-on cadaver workshop with 3-D virtual reality workstations in our state-of-the-art Surgical Innovations Laboratory for Microneurosurgery

May 3, 2018 Common Neurosurgical Conditions in the Pediatric Practice

A new course on recognizing common pediatric conditions that warrant a neurosurgical referral

For more information about courses, visit weillcornellbrainandspine.org



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