Weill Cornell Medicine
Brain & Spine Center

News and Updates From Weill Cornell Medicine Neurological Surgery Fall 2019

A MESSAGE FROM THE CHAIR

Philip E. Stieg, PhD, MD

Dear Friends and Colleagues,

Medical conferences provide invaluable opportunities to keep current in our fast-changing field. Our faculty members are sought-after speakers who bring international colleagues up to date on developments in neurosurgery. Here are recent highlights:

Dr. Roger Härtl directed the American Austrian Foundation's Salzburg-Weill Cornell Seminar, and will soon make his annual trip to Tanzania.

Dr. Theodore Schwartz presented at the 3rd Annual Meeting of the Korean Society of Endoscopic Neurosurgery and delivered the 2019 Alfred Washington Adson Distinguished Lecture at the Mayo Clinic.

Dr. Jeffrey Greenfield presented at the 3rd Gliomatosis Cerebri Conference in Barcelona. This meeting brings together investigators searching for treatments and bereaved families who fund the research.

Dr. Mark Souweidane chaired a symposium for the Pediatric Brain Tumor Consortium, in addition to speaking in Portugal, Qatar, and Saudi Arabia.

Dr. Rohan Ramakrishna presented at the Society for Neuro-Oncology Sub-Saharan Africa (SNOSSA) conference in Capetown, South Africa.

Dr. Caitlin Hoffman was a speaker and panelist at the first Pediatric Neuroscience Conference at Sidra Medicine in Qatar (see page 3).

Dr. Michael Ayad of our team at NewYork-Presbyterian Brooklyn Methodist gave a presentation in Yokohama, Japan, for the International Conference on Spreading Depolarizations.

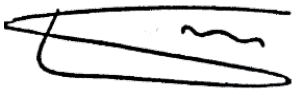
Dr. Ali Baaj was invited to Kuwait as a visiting neurosurgeon to share experience and discuss complex spine surgery for tumors and deformity.

Dr. Ning Lin gave a talk about the TRAP technique for acute ischemic stroke treatment at the Chinese Stroke Society conference in Beijing.

Here at home, **Dr. Amanda Sacks-Zimmerman** spoke about concussion at the seventh TBI Summit of the Big Ten-Ivy League Traumatic Brain Injury Research Collaboration. **Dr. Michael Virk** presented at the annual AANS and CNS meetings this year. **Dr. Georgiana Dobri** presented at the Pituitary Symposium at the Cleveland Clinic.

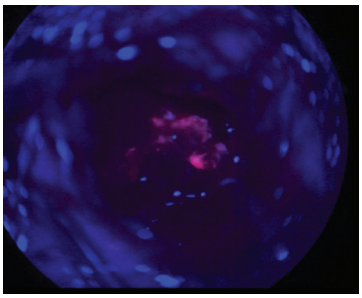
These are just a few examples of the invitations our faculty receive each year. We are always proud to share our expertise on the global stage.

Yours in good health,



Dr. Schwartz and the "Pink Drink"

Theodore Schwartz, MD, David and Ursel Barnes Professor of Minimally Invasive Surgery and Co-director of Surgical Neuro-oncology, recently became the first surgeon at NewYork-Presbyterian Weill Cornell to use Gleolan, dubbed "the pink drink," during surgery to remove a high-grade glioma. He has since used it on half a dozen other patients undergoing surgery for glioblastoma.



Gleolan makes tumor cells glow pink during brain tumor surgery.

Gleolan, or 5-Aminolevulinic Acid (5-ALA), was approved by the FDA in 2017 and became commercially available in the United States in late 2018. When given orally to patients before surgery, Gleolan can pass through the blood-brain barrier and penetrate a 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 ability to identify the full extent of a tumor is invaluable to a neurosurgeon during surgery to resect an aggressive tumor, particularly glioblastoma. "Often in these tumors, we cannot tell if there are small amounts of residual tumor that is left in the brain," says Dr. Schwartz. "Those residual tumors cannot be distinguished from normal brain matter."

Any tumor cells that remain in the brain can lead to a recurrence, making it critical to remove the entire tumor. The bright fluorescence allows the neurosurgeon to clearly identify the glioma and assure that all of it is excised. "In all my cases, the post-operative MRI scans showed that the entire tumor had been removed," notes Dr. Schwartz.

Gleolan requires a neurosurgeon to use an operating microscope outfitted with a blue-emitting light source and filters in order to see the hot pink color. "Using Gleolan dye and the appropriate filters, we could now see tumor cells that were previously invisible," says Dr. Schwartz. "The patients all did extremely well and were sent home in only a few days."

Dr. Schwartz is regularly named to prestigious lists of top doctors, including *New York* magazine's Best Doctors in New York, New York Super Doctors, America's Top Surgeons, America's Best Doctors, and America's Best Doctors for Cancer. He is known for using state-of the-art technology—brain mapping, intraoperative imaging, laser surgery, and endoscopy—to achieve the best outcomes for his patients.

This Is Your Brain Is Tops on Apple Podcasts

Since its launch in April, Dr. Stieg's podcast has tackled subjects from pain to music to romance and featured a wide range of fascinating guests. Its popularity among listeners has turned it into a regular fixture in Apple Podcasts "Top Shows" roster, and it's also available on Google Play, Spotify, Pandora, Luminary, and wherever podcasts are found.

In addition to subscribing to the podcast, or listening to new episodes on **drphilstieg.com,** you can now follow *This Is Your Brain* on Facebook.

Upcoming CME Events

November 9, 2019

Endoscopic and Open Surgical Approaches for Craniosynostosis: A Hands-On Practical Course

For neurosurgeons and plastic surgeons: A hands-on course in advanced surgical treatments—both open and endoscopic—for craniosynostosis, performed on unique 3D-printed models of actual patients.

Register at cranio-course.org

December 12-14, 2019 NYC-MISS 2019

13th New York City Spinal MIS, Endoscopy, Robotics, 3D Navigation, and Augmented Reality Symposium: Case-based and Hands-on

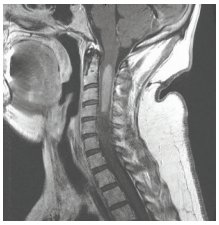
This year's must-attend NYC-MISS course is now accepting abstracts for posters and oral presentations. Featuring the latest techniques and trends in robotics, navigation, and minimal access approaches. Hands-on, case-based, and can't-miss.

CALL FOR ABSTRACTS: This year's course will include oral presentations and posters. More information at nyc-miss.org

SAVE THE DATES!

April 16, 2020

Spine Tumor Seminar 2020



Specialists share state-of-the-art treatment paradigms for patients with metastatic and primary tumors of the spinal cord and column. We will cover the surgical and non-surgical options and feature experts in neurological surgery, neuro-oncology, medical and radiation oncology, neuroradiology, and pain anesthesia.

More information at spineseminar.org

April 17, 2020

Recognition and Management of Common Neurosurgical Conditions in the Pediatric Practice

This course is designed to teach or refresh pediatricians and nurse practitioners about disorders that need further evaluation by a pediatric neurosurgeon (including brain tumors, seizures, and inborn brain and spine, and skull abnormalities) in the midst of a busy practice, as well as how to triage, when to image, and when to send a child to an emergency room.

More information at pediatricbrainandspine.org

May 1-2, 2020

5th Annual Principles and Techniques of Complex Spinal Reconstruction

Part didactic, part hands-on cadaveric, this course reviews the most common complex spine techniques used in contemporary spine surgery. Internationally renowned faculty present their experience with different techniques for complex spine pathologies. Attendees get hands-on experience at multiple stations, each with at least one faculty member, where they review the procedures and then perform them on the cadavers.

More information at complexspine.org

May 29-30, 2020

Minimally Invasive Cranial Neurosurgery: Recent Technical Advances with Hands-on Laboratory

This course is a comprehensive overview of the newly emerging field of minimally invasive cranial neurosurgery, combining didactic sessions with hands-on cadaver dissection. Endoscopic instruments and surgical navigation equipment will be available to participants for use on fresh cadavers during laboratory sessions. Participants will discuss difficult cases with the faculty during panel discussions.

More information at cranial-neurosurgery.org

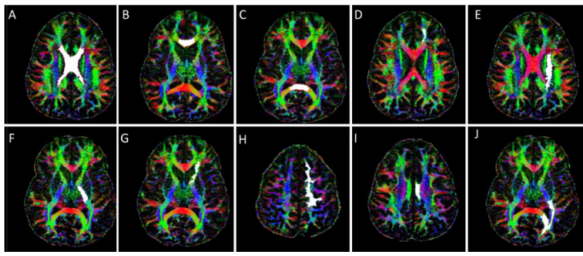
Visit: weillcornellbrainandspine.org/continuing-medical-education

New and Notable Publications

Increased Sensitivity to Traumatic Axonal Injury on Post-concussion Diffusion Tensor Imaging Scans in National Football League Players By Using Premorbid Baseline Scans

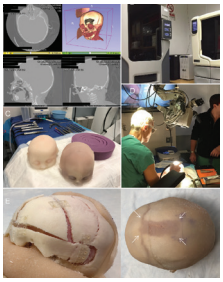
Journal of Neurosurgery, September 6, 2019

Niogi SN, Luther N, Kutner K, Shetty T, McCrea HJ, Barnes R, Weiss L, Warren RF, Rodeo SA, Zimmerman RD, Tsiouris AJ, Härtl R.



This study of active professional NFL players showed that the most accurate metric for assessing traumatic axonal injury is to compare concussed players' advanced quantitative diffusion MRI scans with their baseline MRI scans using advanced image analysis. The new imaging approach uses diffusion tensor imaging (DTI) along with new software that analyzes and compares the DTI scans. Using an athlete's DTI baseline as a comparison, the concussion evaluation can now be based upon an objective measure of microstructural changes inside the brain rather than a subjective evaluation of symptoms.

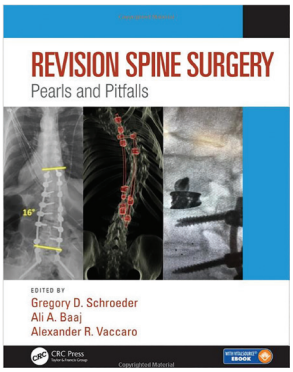
Developing a 3D Composite Training Model for Cranial Remodeling
Journal of Neurosurgery Pediatrics, November 2019
Du Cheng, BS; Melissa Yuan, BA; Imali Perera, MPH; Ashley O'Connor, CPNP, MSN, RN; Alexander I. Evins, PhD; Thomas Imahiyerobo, MD; Mark Souweidane, MD; and Caitlin Hoffman, MD



Craniosynostosis correction requires experience with complex anatomy and tools, but the lack of cadaveric specimens limits training. The authors developed lifelike 3D-printed models based on actual cases of craniosynostosis in infants and incorporated them into a practical course to prepare surgeons for *in vivo* procedures.

Magnetic Resonance-Guided Focused Ultrasound for Ablation of Mesial Temporal Epilepsy Circuits: Modeling and Theoretical Feasibility of a Novel Noninvasive Approach
Journal of Neurosurgery, June 14, 2019
Parker WE; Weidman EK; Chazen JL; Niogi SN; Uribe-Cardenas R; Kaplitt MG; Hoffman CE
Our researchers tested the feasibility of magnetic resonance-guided focused ultrasound (MRgFUS) ablation, already shown to be effective in reducing or eliminating symptoms of essential tremor, on mesial temporal lobe epilepsy (MTLE) seizure circuits. Results showed that MRgFUS has the potential to be a noninvasive option for seizure tract disruption; the study provides the groundwork for future clinical trials to apply this technique to patients with refractory MTLE and surgical contraindications, multiple prior surgeries, or other factors favoring noninvasive treatment.

Revision Spine Surgery: Pearls and Pitfalls
CRC Press, September 2019



Associate professor of neurological surgery Ali Baaj, MD, collaborated with Alexander R. Vaccaro, MD, PhD, MBA, and Gregory D. Schroeder, MD, of Thomas Jefferson University on the first-ever book focused entirely on revision surgery for spine patients. The text covers the differences between simple and complex revisions as well as nonsurgical options, and walks readers through patient evaluation and selection as well as risks and potential complications.

Husband-and-Wife Team in Tanzania

Neurosurgeon Scott Zuckerman, MD, and his wife, Autumn Zuckerman, PharmD, are now in Dar es Salaam, Tanzania, where Scott is working as our Global Health Neurosurgery Fellow. Scott, who recently completed his neurosurgery residency at Vanderbilt University Medical Center, was named interim fellow until the next fellow arrives at the beginning of 2020.

Scott is based in the Muhimbili Orthopaedic Institute (MOI), where he evaluates patients, performs surgery, conducts research, and trains Tanzanian surgeons in neurosurgical care. He is helping to implement the MOI Spine Trauma Protocol, aimed at reducing the time between hospital admission and the OR in patients with traumatic injuries.

Autumn, program director of Health Outcomes and Research at Vanderbilt Specialty Pharmacy, is leading a project showing the cost-effectiveness of pharmacists in the OR, and teaching pharmacology for health professionals.

Scott and Autumn first visited Tanzania In August 2018 and saw the need for neurosurgical care. Given the opportunity to work with Dr. Roger Härtl, it was an easy decision for them to make. (Dr. Härtl is the founder of the Tanzania Neurosurgery Project, now in its 10th year.) For more information, please visit:
weillcornellbrainandspine.org/tanzania

Dr. Hoffman Brings Pediatric Epilepsy Surgery Expertise to Qatar

Dr. Caitlin Hoffman recently participated in the first annual Pediatric Neuroscience Conference at Sidra Medicine, a state-of-the-art new women's and children's hospital in Doha, Qatar.

The Pediatric Neuroscience Conference was conceived as a forum in which to bring together global experts in neurology, neurosurgery, rehabilitation medicine, and neuroradiology to explore the latest developments in complex neurological disorders in the pediatric population. The inaugural two-day conference, in October 2019, was focused on epilepsy and spasticity in children.

Dr. Hoffman's presentation covered surgical interventions for medically refractory epilepsy as well as patient selection and outcomes. She also participated in a panel discussion (above, with Dr. Michael Carter, Dr. Cigdem Akman, and Dr. Khaled Zamel) on pediatric epilepsy.

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. 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
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. Athos Patsalides 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
Dr. Rohan Ramakrishna 212-746-1996

Neuropsychology
Testing, imaging, psychotherapy, and cognitive remediation
Kenneth Perrine, 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. Rohan Ramakrishna 212-746-1996
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. Ali Baaj 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
Dr. Rohan Ramakrishna 212-746-1996

NewYork-Presbyterian Lower Manhattan
Dr. Samuel Kim 646-962-5115

NewYork-Presbyterian Queens
Dr. Jaime Nieto 718-670-1837
Dr. Ning Lin 718-670-1837
Dr. Srikanth Boddu 718-303-3739
Dr. Rupa Gopalan Juthani 718-670-1837

NewYork-Presbyterian Brooklyn Methodist
Dr. Martin Zonenshayn 718-246-8660
Dr. Michael Ayad 718-780-3070
Dr. George Selas 718-780-3000

IT'S A NO-BRAINER: NEUROSURGERY HONORS TEAM MEMBERS WHO GO THE EXTRA MILE

The Neurosurgery Outstanding Service Award spotlights a member of the department who goes above and beyond to assist our physicians, patients, or colleagues. The award recognizes those who exemplify the core values of the department, including collegiality/teamwork, compassion, perseverance/commitment, and leadership.

In July, pediatrics administrative assistant Erin Mack was named the first winner of the award for her work at the Weill Cornell Medicine Brain and Spine Center. Erin serves as the sole administrative assistant to our three pediatric neurosurgeons: Dr. Mark Souweidane, Dr. Jeffrey Greenfield, and Dr. Caitlin Hoffman.

Erin was nominated by teammates who wrote testimonials on her behalf. "Erin does a tremendous amount of work both in volume and complexity for Team Peds," wrote one. "Erin is the 'momma bear' to Team Peds. She treats each member of the team like part of her family." Another wrote, "Erin is continuously going above and beyond for people. She will be the first to assist you if you need something."

The next winner was Ashley O'Connor, pediatrics nurse practitioner and program director of the Craniofacial Program. In nominating her, teammates wrote that "Ashley is the go-to person for anything our team needs help with" and "Ashley goes over and beyond for her patients as well as her colleagues."

Congratulations to Erin and Ashley for excellence in putting into practice the core values of the department.

HONORABLE MENTION

In July, neurosurgery PA Beth Higgins made headlines on both sides of the Atlantic when she assembled a midair CPR team to save a passenger's life on a flight from Dublin to New York. Beth credits her instructor at NewYork-Presbyterian, Larry Wheeler, for giving her the skills and confidence she needed, and she encourages everyone to get trained in basic life-support. Read Beth's amazing story at **weillcornellbrainandspine.org/blog**

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