



A MESSAGE FROM THE CHAIR

Philip E. Stieg, PhD, MD

I've been thinking a lot about connection these days—not only the neuronal kind, but the human kind, the spiritual kind. In our polarized world, it seems more important than ever to get us all back to thinking about what binds us together, what makes us all one.



Connection is a common theme in so much of what we're doing here, as you'll see in this newsletter. Our new Gamma Knife Center, for example, is a tight collaboration between our neurosurgical experts in radiosurgery and our colleagues in radiation oncology, with a keen focus on providing advanced care for those with brain conditions. For those with brain tumors, particularly metastatic tumors, the new Gamma Knife Center offers a less invasive option for state-of-the-art treatment. See the news story at right, and see more photos and information at weillcornellbrainandspine.org.

On page 3, you'll read about the strong connection we've forged between our pediatric neurosurgery teams here at Weill Cornell Medicine and at our partner institution uptown at Columbia University. These two programs combined into one service a couple of years ago, and today we have one of the top programs for kids in the country. Together, our four pediatric neurosurgeons have world-class expertise in everything from craniofacial disorders to epilepsy to tumors to stroke. For our littlest patients and their concerned parents and families, there is no team anywhere more compassionate and more skilled—and as you'll read, they are cultivating the next generation of pediatric specialists today to provide that same level of care to patients tomorrow.

Personally, I feel strong connections to the three faculty members who were recently promoted (page 2). I'm sure their patients and colleagues feel the same pride I do in seeing their accomplishments recognized. Congratulations to Drs. Pannullo, Greenfield, and Hoffman!

The subject of connection has come up several times with my recent podcast guests, too, so I know I'm not the only one thinking about it. If you haven't tuned in to Season 4 yet, give the new episodes a listen. New this season: What happens inside your sleeping brain, how the two sides of your brain react after a stroke, and (soon) how spirituality affects depression. Listen and subscribe today at thisisyourbrain.com.

Yours in good health,

NEW GAMMA KNIFE CENTER OPENS AT WEILL CORNELL MEDICINE

NYP/WCM doubles its advanced radiosurgery options with the opening of the Gamma Knife Center

After a dramatic delivery in September and several weeks of installation, setup, and testing, the new Gamma Knife® Icon™ is now operational at NewYork-Presbyterian/Weill Cornell Medical Center. With the opening of the new Gamma Knife Center, patients are being treated for conditions that include brain tumors, pituitary lesions, and disorders of cranial nerves, including trigeminal neuralgia.

The latest Gamma Knife technology allows neurosurgeons and radiation oncologists to target multiple areas of the brain simultaneously. The Icon is particularly well suited for fast, accurate, and painless treatment of small, difficult-to-reach lesions. There is typically no overnight stay and virtually no recovery time.



We persuaded the Gamma Knife team to remove their masks for a brief moment so we could capture their smiles on opening day.

The new Gamma Knife Center at Weill Cornell Medicine is operated jointly by the departments of Radiation Oncology and Neurological Surgery and will further cement their partnership in providing the best-in-class care for their patients with brain tumors and other disorders.

"The Gamma Knife allows the neurosurgery and radiation oncology teams at the Weill Cornell Medicine campus to offer the latest, most precise technology available for patients with brain tumors and other conditions," says **Dr. Philip E. Stieg**, who is the Margaret and Robert J. Hariri, MD '87, PhD '87 Professor of Neurological Surgery, Chair of Neurological Surgery, and Neurosurgeon-in-Chief of NewYork-Presbyterian/Weill Cornell Medical Center. The new machine is dedicated to the brain and will be used exclusively for patients of the Weill Cornell Medicine Brain and Spine Center and Weill Cornell Medicine Radiation Oncology.

"We pride ourselves on providing the best treatment plan for each patient, based on that individual's needs," says **Dr. Susan Pannullo**, director of neurosurgical radiosurgery for NewYork-Presbyterian Weill Cornell Medicine. "With each machine offering specific benefits for different types of lesions, it's great to have multiple options for treating patients."

Continued on page 2

FACULTY NEWS

Susan C. Pannullo, MD, has been promoted to Professor of Neurosurgery, becoming the first woman to become a full professor of neurosurgery at Weill Cornell Medicine. Dr. Pannullo, Director of Neurosurgical Radiosurgery and Neuro-oncology at the Weill Cornell Medicine Brain and Spine Center, is one of the few neurosurgeons in the world with a neurosurgical practice focused only on stereotactic radiosurgery. In addition to her clinical practice Dr. Pannullo is an educator (Weill Cornell Medicine's Robert G. Schwager, MD '67 Education Scholar), innovator (Adjunct Professor in Cornell's Department of Biomedical Engineering), and serves in leadership positions in several institutional and national organizations.



Dr. Susan Pannullo
Professor of Neurological Surgery

Jeffrey Greenfield, MD, PhD, has been promoted to Professor of Neurosurgery in Pediatrics. Dr. Greenfield specializes in pediatric neurosurgery and also sees adult patients with certain congenital neurosurgical conditions. As co-director of the Children's Brain Tumor Project, Dr. Greenfield is dedicated to finding new treatment options for pediatric brain tumors and bringing those treatments to the bedside. He is also the creator and director of the Chiari CARE program, where he has developed an international reputation caring for children and adults with Chiari malformation and associated conditions. He is a strong proponent of transitional neurosurgery—caring for patients with specific conditions from childhood through adulthood.



Dr. Jeffrey Greenfield
Professor of Neurological Surgery,
Pediatric Neurosurgery

Caitlin Hoffman, MD, has been promoted to Associate Professor of Neurosurgery in Pediatrics. Dr. Hoffman, who sees patients in Manhattan, Brooklyn, and Queens, specializes in the surgical treatment of epilepsy and craniofacial disorders. Her craniofacial practice involves a multi-disciplinary craniofacial program that treats complex syndromic patients collaboratively. She utilizes both open and endoscopic approaches, and is currently involved in investigating the genomics of synostosis as it relates to outcomes. Our department's diversity champion, Dr. Hoffman has led a campaign focused on mentorship of underrepresented minority students interested in careers in medicine, and is a co-founder of the PRiMES mentorship program.



Dr. Caitlin Hoffman
Associate Professor of Neurological Surgery in Pediatrics

NEW GAMMA KNIFE CENTER

Continued from page 1

The Gamma Knife Icon rounds out one of the most robust stereotactic radiosurgery (SRS) programs in the Northeast, with both NYP campuses (Weill Cornell Medicine on the Upper East Side and Columbia on the Upper West Side) now offering multiple options for non-invasive approaches to brain lesions and other conditions. At Weill Cornell, the new Gamma Knife complements the existing Brainlab system, which delivers precise radiation beams to brain tumors, arteriovenous malformations, and functional neurological disorders, and the ViewRaysystem that is used for spinal tumors. All are available to patients in the tri-state area and beyond.

"For patients who are not in Manhattan, the new Gamma Knife Center is a tremendous asset," says **Dr. Rohan Ramakrishna**, chief of neurosurgery at NewYork-Presbyterian Brooklyn Methodist and the director of

the Weill Cornell Medicine regional SRS program. "My patients with metastatic brain tumors will now have access to all of the state-of-the-art radiosurgery options in our hospital network." Dr. Ramakrishna is also the director of the Weill Cornell Medicine Brain Metastases Program and co-director of the William Rhodes and Louise Tilzer-Rhodes Center for Glioblastoma at NewYork-Presbyterian.



The new Gamma Knife Center is located in the Stich Radiation Center on the Weill Cornell Medicine campus of NewYork-Presbyterian.

"For metastatic brain tumors and some primary brain tumors, especially, the Gamma Knife Icon allows us to offer the most precise and individualized treatment for each patient," says **Dr. Silvia Formenti**, professor and chair of Radiation Oncology, Professor of Medicine, and the Sandra and Edward Meyer Professor of Cancer Research. She is also associate director for translational research of the Meyer Cancer Center at Weill Cornell Medicine.

Save the Date: June 9, 2023

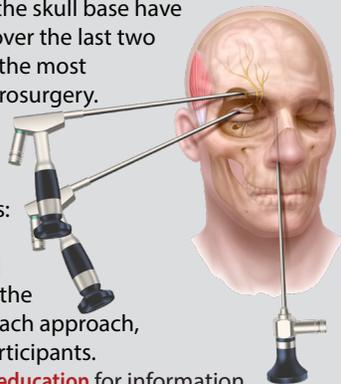
Transorbital, Supraorbital, and Endonasal: Three Minimally Invasive Approaches to the Skull Base

Directed by Dr. Theodore Schwartz

Minimally invasive approaches to the skull base have revolutionized skull base surgery over the last two decades and have become one of the most important emerging trends in neurosurgery.

This one-day virtual course will provide step-by-step instruction and demonstrate the key surgical steps in three different approaches: endonasal, transorbital, and supraorbital. Through lectures and then real-time cadaver dissection, the instructors will take you through each approach, and answer questions from the participants.

Visit neurosurgery.weill.cornell.edu/education for information.



"We are most fortunate to be starting a unique Brain Metastasis and Survivorship program," continues Dr. Formenti. The program will be led by **Dr. Kathryn Beal**, associate professor of radiation oncology and director of the new Gamma Knife Center.

"The outcome of patients with brain metastases has improved dramatically over the past decade," says Dr. Beal. "The need for effective, timely, and precise treatment of brain metastases with SRS has become imminently important for patient survival and functional outcome."

The Gamma Knife program makes advanced radiosurgical options available to our patients anywhere. Gamma Knife treatments at the Weill Cornell Medicine Brain and Spine Center campus will be offered by neurosurgeons **Dr. Susan Pannullo**, **Dr. Babacar Cisse**, **Dr. Rohan Ramakrishna** (based at NYP Brooklyn Methodist), and **Dr. John Park** (based at NYP Queens).

For additional information please call 866-426-7787 or visit our web site at weillcornellbrainandspine.org to request an appointment or make a referral.

A Focus on Excellence in Pediatric Neurosurgery

When the pediatric neurosurgery services of Weill Cornell Medicine and Columbia merged a few years ago, we knew the combination would be a powerful one. We were right about that—the joint service has been a resounding success. We see thousands of young patients every year, with a unique focus on the transition to adulthood; we lead the field in innovative research and surgical advances; and we train the most remarkable young residents and fellows in the unique sub-specialty of pediatric neurosurgery. There is certainly a reason why we are the #1 children's hospital in New York (as ranked by *US News & World Report*) and why we are rated one of the top pediatric neurosurgery services in the country. Here are just a few recent accomplishments from our outstanding service:

Best Chiari Paper at Peds Section 2022

Rachael Han, a second-year medical student at Weill Cornell Medical College, was named winner of the Best Paper on Chiari award at the AANS/CNS Joint Section on Pediatric Neurological Surgery in December. The award is given for the best paper on the topic of Chiari malformation; it is funded by the Bobby Jones Chiari & Syringomyelia Foundation.

Rachael's winning paper ("Fourth Ventricular Sub-arachnoid Stent for Chiari-associated Persistent Syringomyelia") was co-authored by three Weill Cornell Medicine neurosurgery residents (**Alexandra M. Giantini Larsen, MD**; **John K. Chae, MD**; and **Andrew Garton, MD**) and a prior pediatric neurosurgery fellow (**Mauricio P. Medina, MD**) under the guidance of senior author **Jeffrey P. Greenfield MD, PhD**. The research demonstrated significant, early resolution of syrinx persisting after a posterior fossa decompression in Chiari patients in addition to a low complication rate with this technique.



Rachael Han with co-authors Alexandra Larsen, Jeffrey Greenfield, and John Chae.

"Our residents and alumni are already some of the very best young academic neurosurgeons in the field," says Dr. Greenfield. "Adding a medical student as promising as Rachael is to our roster of academic authors and investigators is incredibly gratifying to me as a mentor and a neurosurgeon."

Dr. Garton Awarded Prestigious Resident Traveling Fellowship

Dr. Andrew Garton, a fourth-year resident in neurosurgery and current unfolded fellow in interventional neuroradiology, has been awarded a prestigious Resident Traveling Fellowship in Pediatric Neurosurgery by the AANS/CNS Joint Pediatric Section. Dr. Garton will spend one month at the end of this year at the Boston Children's Hospital under the mentorship of Dr. Edward R. Smith and Dr. Alfred Pokmeng See.

Only two of these traveling fellowships, which can be spent at any pediatric neurosurgery program in North America, are awarded each year, supporting talented residents who seek additional experience in pediatric neurosurgery during their residency. Dr. Garton anticipates using this dedicated time to study additional techniques in pediatric cerebrovascular and endovascular neurosurgery, as well as collaborate with faculty at BCH on clinical outcomes and applications for novel endovascular devices in the pediatric population.

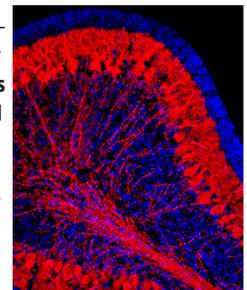
Dr. Garton received his medical degree from Columbia University College

of Physicians and Surgeons and joined the residency program at NewYork-Presbyterian Weill Cornell Medicine immediately thereafter. With the guidance of Drs. Souweidane, Greenfield, and Hoffman, he hopes to pursue a fellowship in pediatric neurosurgery after residency.

"I am extremely proud of Dr. Garton's work, and delighted to see his name on the short list of residents who have been awarded this fellowship," says **Dr. Mark Souweidane**, professor and vice chair of neurological surgery and director of pediatric neurological surgery at Weill Cornell Medicine.

Dr. Dahmane Awarded NIH Pilot Grant

Nadia Dahmane, PhD, associate professor of developmental biology in neurological surgery and a key investigator at the Weill Cornell Medicine **Children's Brain Tumor Project**, has been awarded a pilot NIH grant for deciphering the three-dimensional (3D) genome of pediatric brain tumors. In collaboration with Dr. Katherine Pollard of the Gladstone Institute and Dr. Adam Resnick of the Children's Hospital of Philadelphia, Dr. Dahmane will be investigating how the disruption of mechanisms controlling normal development, including those controlling acquisition of cell identity, play a role in the development of pediatric brain tumors.



In this sagittal section of the cerebellum, a common location for AT/RT and medulloblastomas, the red indicates Purkinje neurons; nuclei are in blue.

Despite identification of genetic and epigenetic events underlying their biology, pediatric brain tumors remain the most frequent and most fatal of all tumors in children. These tumors arise in developing brain, so Dr. Dahmane's approach to discovering new therapeutic targets is to study them within the context of their developmental origin.

The grant, nearly \$400,000, will allow Dr. Dahmane and her collaborators to explore whether disruption of 3D genome folding during embryonic or postnatal development leads to altered gene expression that causes abnormal cell differentiation and tumorigenesis in the developing brain. The project will begin with determining the 3D genome architecture of atypical teratoid/rhabdoid tumors (AT/RT) and then expand into other malignant brain tumors such as medulloblastoma, ependymoma, and high-grade glioma.

The study leverages a deep-learning model called Akita, developed by Dr. Pollard's group, that predicts 3D chromatin interaction frequencies from genome sequence alone. It also uses pediatric brain whole-genome sequences from Gabriella Miller Kids First, plus chromatin capture, epigenetic, and expression data from other NIH Common Fund resources such as 4D Nucleome and Genotype-Tissue Expression (GTEx) programs. It is expected that this project will lead to novel research hypotheses and accelerate the discovery of additional regulators of cancer tumorigenesis, and thus to potential therapeutic strategies for these devastating diseases.

UPCOMING HANDS-ON COURSE

Endoscopic and Open Surgical Approaches for Craniostostosis

Directed by Dr. Caitlin Hoffman and Dr. Thomas Imahiyerobo

Pediatric neurosurgeons and plastic surgeons from around the world come to us to learn advanced techniques.



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neurosurgery.weill.cornell.edu/education

IT'S A NO-BRAINER: EMPLOYEE RECOGNITION AWARDS

The Neurosurgery Outstanding Service Award spotlights members of the department who exemplify the core values of the department. The winner for Q4 2022 is Anthony Yarrell, the administrative professional in our Interventional Neuroradiology office.



Colleagues describe Anthony as collegial, hardworking, and helpful—even under pressure. “He has displayed an excellent work ethic, meets all deadlines, sends follow-up emails, closes outstanding matters, is very responsive and sees each project through,” says one nominator.

Honorable Mention

It's difficult to pick a winner each quarter, and sometimes we simply can't limit ourselves to just one! This month we give a shout-out to Ruben Encalada, a senior patient coordinator who is relatively new to the department. Ruben spends a lot of his time working with patients of our neuropsychologists, who call him “a self-starter, bright, inquisitive, and a highly conscientious employee. He is extremely kind and patient, even in challenging situations.”

Visit weillcornellbrainandspine.org/nominate to see previous winners and to nominate the next one. Congratulations to Anthony and Ruben!

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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)

Cerebrovascular Surgery

Aneurysms, AVMs, carotid occlusive disease

Dr. Philip E. Stieg 212-746-4684
Dr. Jared Knopman 212-746-5149
Dr. Justin Schwarz 212-746-2821

CSF Leak Repair

Multidisciplinary management of cranial and spinal CSF leaks

Dr. John Park 718-670-1837

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

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. Evan Noch 646-962-2185

Neuropsychology

Testing, psychotherapy, and cognitive remediation

Heidi Bender, PhD 212-746-2197
Amanda Sacks-Zimmerman, PhD 212-746-3356

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
Dr. Neil Feldstein 212-305-1396 (Columbia campus)

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)

Stereotactic and Functional Neurosurgery

Parkinson's disease, essential tremor, and pain

Dr. Michael Kaplitt 212-746-4966

Stereotactic Radiosurgery

Noninvasive treatments for brain tumors and other conditions

Dr. Susan Pannullo 212-746-2438
Dr. Rohan Ramakrishna 718-780-3070
Dr. Babacar Cisse 646-962-3389

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Dr. Srikanth Boddu, interventional neuroradiology
Dr. Lynn McGrath, spine surgery
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Dr. Martin Zonenshayn, movement disorders, peripheral nerve conditions
Dr. Michael Ayad, cerebrovascular surgery
Dr. Ibrahim Hussain, minimally invasive and complex spine
Dr. Paul Park, minimally invasive and complex spine
Dr. Justin Schwarz, cerebrovascular surgery
Dr. Caitlin Hoffman (pediatric) 212-746-2363



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