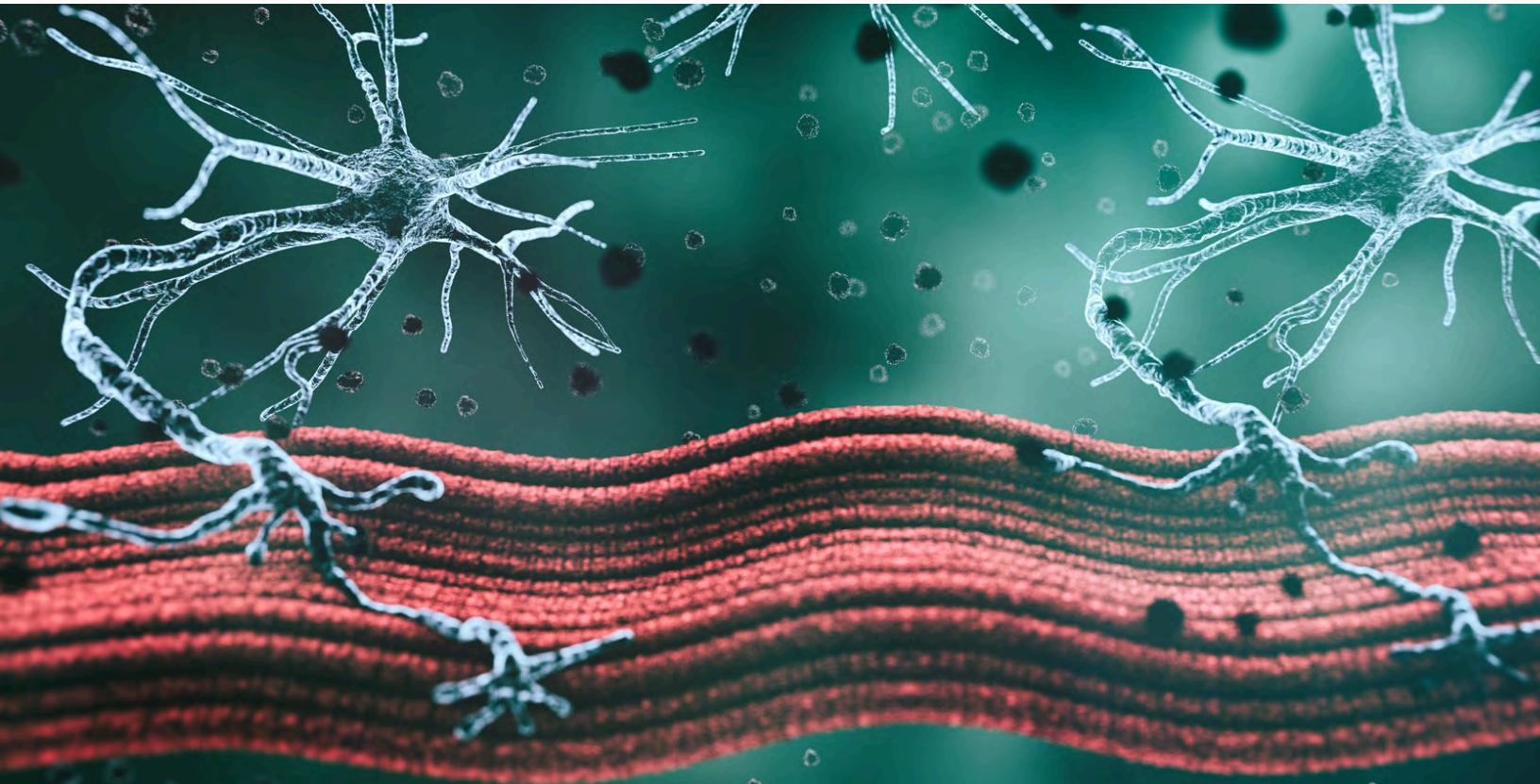


OCTOBER 2024 | ISSUE 10

THE GEORGE WASHINGTON UNIVERSITY

WASHINGTON, DC

The Neurosciences Newsletter



The GW Medical Faculty Associates
2150 Pennsylvania Avenue
NW Washington, D.C. 20037
202-741-3000

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A WELCOME MESSAGE

Dear Colleagues,

I am pleased to announce that our newsletter has been renamed the Neurosciences Newsletter, reflecting our integration of updates from both the Neurology and Neurosurgery departments. This marks a new chapter of interdisciplinary collaboration at GW.

In alignment with this, we will be merging our Neurology and Neurosurgery Grand Rounds into a unified Neurosciences Seminar Series. These seminars will be scheduled six months in advance and will be announced online. Each session will be videotaped and archived for future reference, ensuring that our knowledge is accessible to a global audience.

We are also excited to welcome three outstanding physicians who have recently joined us:

- Dr. Sawsan Alabad (Headache Disorders)
- Dr. Ariel Lefland (Neuroimmunology)
- Dr. Panos Kassavetis (Movement Disorders)

They are already busy building their academic programs and providing excellent care to patients in their respective specialties.

In addition, we are thrilled to announce the upcoming launch of an Infusion Suite on our floor. This new facility will offer specialized treatment for patients with headache disorders, neuroimmunological conditions, and more.

Thank you for your ongoing dedication, and I look forward to continuing our collaborative efforts in advancing neurosciences at GW.

Warm regards,

M. Z. Koubeissi, MD
Professor and Interim Chair
GW Department of Neurology & Rehabilitation Medicine



OUR NEWS



Our Physical Medicine and Rehabilitation physicians were voted best in the South over other prestigious programs.



**Dr. Mohamad Koubeissi gave a presentation titled “The State of Surgical Intervention for Drug-Resistant Epilepsy New Frontiers: Narrowing the Treatment Gap in Drug-Resistant Epilepsy”.
Denver, CO. Sep 21, 2024.**



**Dr. Henry Kaminski gave a presentation titled ‘Myasthenia Gravis in 2024.’
Neuroscience Grand Rounds, University of Alberta, Edmonton, Alberta Canada,
(Warren Wismer Annual Lecture and visiting professor). September 13, 2024.**



**Dr. Henry Kaminski gave a presentation titled ‘Myasthenia Gravis in 2024’ for
Patients, Alberta Canada, September 14, 2024 (11th Myasthenia Gravis Patient
Day Keynote Lecture).**



**Dr. Mohamad Koubeissi was a speaker at The 2024 Academic Annual Meeting of
the Neurology Professional Committee of the Hunan Medical Association and
Xiangya Neuromedicine Forum, Changsha, China. August 31, 2024. Presentation:
On Seizure Semiology**



OUR NEWS



Abstract titled: “Amyotrophic Lateral Sclerosis: Improving Care with Artificial Intelligence and Affective Computing” has been accepted for a Poster Presentation at the 2024 Annual NEALS Meeting on October 21-24th 2024. Presenting author: Gülşen Öztosun



Original research article titled: “AI-Powered Telemedicine for Automatic Scoring of Neuromuscular Examinations” by Quentin Lesport, Davis Palmie, Gülşen Öztosun, Henry J. Kaminski and Marc Garbey was published in MDPI’s Bioengineering Journal September 20th 2024



Poster titled: “Digital Tools for Assessment of the Myasthenia Gravis Examination” was presented by Gülşen Öztosun at the American Neurological Association 14th Annual Meeting in Orlando, Florida on September 15th 2024.



Dr. Mohamad Koubeissi was a visiting Professor and Neurological Institute Grand Rounds speaker. Upstate Medical University. Syracuse, NY Sep 11, 2024. Presentation: Novel Targets for Neuromodulation in Epilepsy.

Researchers at the George Washington University are looking for interested volunteers for a healthy control study to better understand an autoimmune, neuromuscular (disease affecting nerves and muscles) known as Myasthenia Gravis.

Faculty and staff are welcome to participate.

PARTICIPATION INVOLVES:

One-time blood draw (You will have either 4 teaspoons (20 milliliters) or 10 teaspoons (50 milliliters) from an arm vein.



YOU MAY QUALIFY IF YOU:

- Don't have any autoimmune diseases
- No prednisone or corticosteroid use
- No vaccinations within a month

For more information, contact goztosun@mfa.gwu.edu



OUR NEWS



The Annual GW Epilepsy Board Review Course & Best Practices 2024 was held from the 26th to the 28th of September



THE GEORGE WASHINGTON UNIVERSITY HOSPITAL



GW
2024
Epilepsy Board Review
&
Best Practices



WHAT'S NEW IN NEUROLOGY

WHAT'S NEW

A deep brain stimulation for Parkinson's Disease triggered by movement.

WHY IT MATTERS

Deep brain stimulation (DBS) was approved by the FDA for the treatment of Parkinson's disease (PD) in 2002. Since its approval, DBS has been extensively studied and is widely recognized for its efficacy in managing motor symptoms such as tremor, rigidity, and bradykinesia (slowness of movement). Over the years, numerous clinical trials and long-term studies have shown that DBS can significantly improve quality of life in patients with advanced PD, particularly those who do not respond well to medication. The procedure is generally well-tolerated, with the most common side effects being related to the surgical procedure itself or the device, such as infection or hardware complications. Advances in DBS technology, including adjustable stimulation settings and adaptive DBS systems, have further improved its safety profile and therapeutic outcomes, making it a cornerstone treatment for PD.

Traditional DBS offers consistent electrical stimulation to the brain, but because patients' symptoms can fluctuate, this approach may not always provide optimal relief. Adaptive DBS (aDBS), on the other hand, is an innovative technology that adjusts stimulation based on real-time patient conditions, offering more personalized and dynamic therapy. A new aDBS method was recently developed that enhances movement by increasing stimulation during physical activity. Compared to conventional methods, this approach has shown significant improvements in movement speed, reduced side effects like dyskinesia, and better overall patient satisfaction. Additionally, a machine learning system was introduced to fine-tune aDBS settings remotely, making it more accessible for at-home use. This advancement in movement-responsive aDBS, paired with machine learning, represents a promising new direction in PD treatment, offering more effective and customizable care.

Reference: Dixon TC, Strandquist C, Zeng A et al. Movement-responsive deep brain stimulation for Parkinson's Disease using a remotely optimized neural decoder. medRxiv 2024.08.14.24312002.

WHAT'S NEW

Exploring surgical outcomes in non-lesional epilepsy.

WHY IT MATTERS

Identifying the seizure onset zone (SOZ) is crucial for successful resective epilepsy surgery, especially in patients with medication-resistant epilepsy. When an MRI reveals a structural brain lesion, the chances of pinpointing the SOZ and achieving seizure freedom post-surgery are significantly higher. However, when no lesion is visible on MRI, it complicates clinical decision-making and often leads to less favorable surgical outcomes. Studies have shown that around 35% to 43% of medication-resistant epilepsy cases are MRI-negative, and these cases generally have lower success rates in achieving seizure freedom post-surgery compared to those with identifiable lesions.

Recent research from the European Epilepsy Brain Bank Consortium focused on MRI-negative and pathology-negative epilepsy patients. The study found that while overall seizure freedom rates were lower in these patients compared to those with visible lesions, temporal lobe epilepsy still offered relatively higher success rates, especially when the mesial temporal structure was part of the SOZ and treated with hippocampectomy. However, these findings must be interpreted with caution due to potential limitations like selection bias and the retrospective nature of the study. The study underscores the importance of early surgical intervention and highlights the need for advanced diagnostic methods, including genetic testing, to improve outcomes in MRI-negative and pathology-negative epilepsy cases. This study highlights the complexities of treating MRI-negative medication-resistant epilepsy and suggests that while outcomes are generally less favorable compared to lesional cases, careful surgical planning and early intervention can still lead to significant improvements.

Reference: Sanders MW, Van der Wolf I, Jansen FE, et al. Outcome of Epilepsy Surgery in MRI-Negative Patients Without Histopathologic Abnormalities in the Resected Tissue. Neurology. 2024 Feb 27;102(4):e208007.



Interview with

Dr. Pritha Ghosh



Interview with

Dr. Pritha Ghosh

What are movement disorders?

It is understood that motor control involves the complex, two-way connection between the brain and the muscles and nerves of the body, which can be disrupted in various ways. This can result in involuntary movements such as tremors, dystonia, or athetosis. Movement disorders manifest in different forms, and we diagnose these disorders based on the specific types of movements observed.

In our approach to movement disorders, we initially focus on the phenomenology or type of the movement to guide our diagnosis. My clinic handles a wide spectrum of movement disorders, with Parkinson's disease, tremor disorders and dystonia being the most prevalent. Parkinson's disease, a degenerative disorder, is characterized by four cardinal symptoms including tremor, bradykinesia, rigidity, and postural instability. The diagnosis is clinical, based on a pattern of symptoms with "bradykinesia," or slowness of movement, being a fundamental criterion. The progression of symptoms, response to medication, and exclusion of secondary causes are additional diagnostic considerations.

We sometimes utilize various tests, including diagnostic imaging and, more recently, skin biopsies approved by the FDA, which are promising especially in research contexts. Treatment options for Parkinson's are extensive, with Levodopa remaining the gold standard. We often employ a variety of medications and sometimes surgical therapies, such as deep brain stimulation, to manage motor control, aiming for a balanced medication strategy to prevent fluctuations between overmedication and undermedication.



Interview with

Dr. Pritha Ghosh

What does GW offer to patients with movement disorders?

We pride ourselves on providing comprehensive care, involving time spent with patients to fully address their needs, and connecting them to resources such as the local Parkinson's foundation. Our approach extends beyond typical motor symptoms to include non-motor symptoms, ensuring collaboration across specialties to provide holistic care. Our division has recently expanded with the addition of Dr. Kassavetis, enhancing our expertise particularly in simulation programs.

Could you kindly specify your areas of interest?

My specific areas of interest have always centered around education – of students, residents and patients. I am passionate about empowering others with knowledge of this fascinating field and have engaged with educational research as well. For many years, I served as the course director of the medical student Clinical Neuroscience Clerkship. This eventually led me to the honor of serving in an administrative position at the GW School of Medicine and Health Sciences as an Assistant Dean of Student Affairs, where I remain committed to supporting the education of the next generation of physicians.

In terms of research, my past interests have included imaging biomarkers for Parkinson's and deep brain stimulation, and more recently, I have conducted a dual-center study on the pattern of pain and other non-motor symptoms in Parkinson's disease. I have also studied the inpatient management of Parkinson's disease, as well as the impact of exercise on quality of life in Parkinson's. I continue to explore the many complex facets of Parkinson's disease.

What do you like the most about GW?

As an educator, I strive to illuminate the complexities of neurological disorders for both medical students and patients, providing clarity and empowerment through knowledge. This role parallels my clinical efforts, guiding patients through their treatment journeys and helping medical students navigate their career paths with a focus on personal fulfillment and professional development.



NEW ARRIVALS



Panagiotis Kassavetis,
MD, MSc, PhD
Movement Disorders



Ariel Lefland, MD
Neuroimmunology



Sawsan Alabbad, MD
Headache



January 9, 2024
Adam Ostendorf, MD
Nationwide Children's National, Ohio,
United States
Title: The Future of The Epilepsy
Monitoring Unit

February 13, 2024
Emilio Perruca, MD, PhD, FRCP
University of Melbourne, Australia
Title: Recent Advances and Future
Perspectives in The Pharmacological
Treatment of Epilepsy

March 12, 2024
Fred Lado, MD, PhD
Northwell Health, New York, United
States
Title: TBA

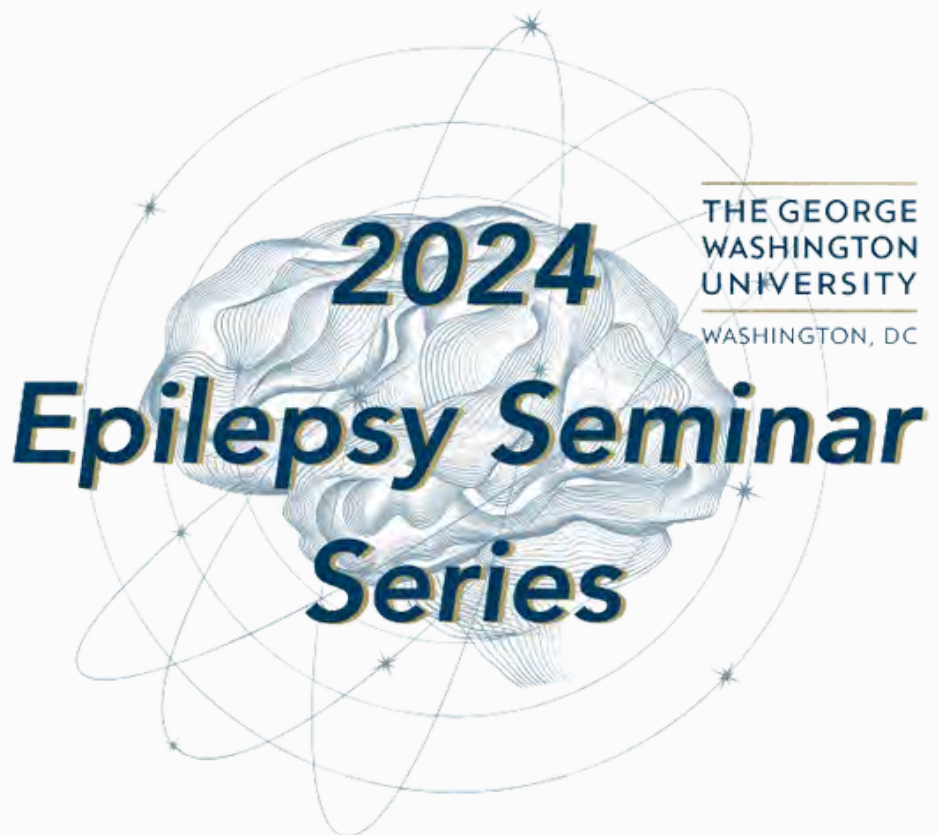
April 9, 2024
William Stacey, MD, PhD
University of Michigan,
United States
Title: Predicting Surgical Outcome With
Network Properties of HFOs

May 14, 2024
Judy Liu, MD, PhD
Brown University, Rhode Island, United
States
Title: Metabolic Pathways in Epilepsy

June 11, 2024
Samir Sheth, MD, PhD
Columbia University, New York,
United States
Title: Network-Minded Epilepsy Surgery

July 9, 2024
Brian Lundstrom, MD, PhD
Mayo Clinic, Minnesota
United States
Title: Low Frequency Brain Stimulation

August 13, 2024
Michael Fox, MD, PhD
Brigham and Women's Hospital,
Massachusetts, United States
Title: Causal Mapping of Epilepsy and Other
Symptoms Onto Human Brain Circuits



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September 17, 2024
Carrie McDonald, PhD
University of California San Diego,
United States
Title: Imaging of Cognitive Networks in
Epilepsy

October 15, 2024
Lori Isom, PhD
University of Michigan,
United States
Title: Discovering Mechanisms of
Developmental and Epileptic Encephalopathy
With SUDEP

November 11, 2024
Jeff Noebels, MD, PhD
Baylor College Of Medicine, Texas,
United States
Title: Glioblastoma Epilepsy: A
Hypersynaptic Ring of Fire

December 17, 2024
Joseph Tracy, PhD, ABPP/CN
Thomas Jefferson University, Pennsylvania,
United States
Title: TBA



Connect with us



Thank you

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