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THE GEORGE WASHINGTON UNIVERSITY

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The Clinical Neurosciences Newsletter



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

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OUR NEWS

Children's National Hospital was ranked 4th by USNWR in Neurology & Neurosurgery hospitals rankings.



Our success and our ability are reflected in the CNS meeting this year: Dr DiSabella received the Training Director Award. Dr Gropman (past trainee and former faculty) the Hower Award, and then 4 seminars directed by our faculty, the Genetics Summit (Kuntal Sen, Jeff Strelzik, John Schrieber, 2 genetic councilors Hannah Grindling, Margie Ream) and a workshop talk. A symposium talk and 3 workshop/session talks graduates or former faculty. Not to mention several posters (17)).



The GW Lab for MG Research provided two invited presentations at the International Thymic Malignancy Group Annual Conference in Milan Italy discussing work on the Autoreactome of Thymoma-associated Myasthenia Gravis, presented by the lab director Dr. Linda Kusner and the other entitled A Whole Blood Spatial Transcriptomic Signature Defines Thymectomy Response for Myasthenia Gravis by Henry Kaminski



Dr. Mohamad Koubeissi published a paper titled "Chronoepileptology: Mapping the Rhythms of Seizure Risk." in *Epilepsy Currents*.



Dr. Henry Kaminski presented a talk entitled "The Future is Here for Myasthenia Gravis" at the Rare Disease Connect Conference in Barcelona, Spain.



Dr. Mark Baker has been named a "2025 Top Doctor" in the neurology category by Washingtonian Magazine.



Dr. Mohamad Koubeissi presented at the 20th National annual academic conference of China Association Against Epilepsy (CAAEE). Chengdu, Sichuan province of China. 24th-26th October 2025. Presentation: Old and Novel Targets for Neuromodulation in Epilepsy



Dr. Ted Rothstein was the initial speaker at the 2025 Advanced Immunology and Virology Conference in Berlin Germany on September 25, 2025.
The presentation was on "Grey Matter Volume Depletion links to Neurologic Sequelae in Post-COVID "long haulers".



WHAT'S NEW IN NEUROLOGY

WHAT'S NEW

The Best Practices Guidelines for the Management of Traumatic Brain Injury, which were originally published in 2015, are now updated to include new developments and considerations in TBI care

The revisions were developed through consensus opinion and a review of evidence conducted by an international, multidisciplinary panel of experts chaired by Geoffrey T. Manley, MD, PhD of the University of California, San Francisco. Specialties represented among members of the panel include nursing, radiology, anesthesiology, neurosurgery, emergency medicine, pediatric medicine, rehabilitation medicine, and pharmacology

Blood Based Biomarkers:

- **S100B:** is a calcium-binding protein primarily found in glial cells
- **GFAP and UCH-L1:** GFAP is an intermediate filament protein found predominantly in astrocytes, and UCH-L1 is an enzyme that neurons express in high abundance
- **can be used to rule out the need for brain CT imaging for patients with suspected (mild) TBI who meet certain criteria**
- **useful as adjuncts for predicting functional recovery at 6 months postinjury in patients with GCS 3-12 associated with TBI (mod-severe).**

Int J Mol Sci. 2024 Feb 17;25(4):2372. doi: 10.3390/ijms25042372. Innovative Insights into Traumatic Brain Injuries: Biomarkers and New Pharmacological Targets
Baseline levels of biomarkers, including neurofilament light chain (NF-L), ubiquitin carboxy-terminal hydrolase-L1 (UCH-L1), Tau, and glial fibrillary acidic protein (GFAP) in TBI, have demonstrated prognostic value for cognitive outcomes, laying the groundwork for personalized treatment strategies.

In terms of pharmacological progress, the most promising approaches currently target neuroinflammation, oxidative stress, and apoptotic mechanisms. Agents that can modulate these pathways offer the potential to reduce a TBI's impact and aid in neurological rehabilitation. Future research is poised to refine these therapeutic approaches, potentially revolutionizing TBI treatment.

WHY IT MATTERS

The recommendations include guidance on the use of blood-based biomarkers such as glial fibrillary acidic protein (GFAP), ubiquitin carboxy-terminal hydrolase L1 (UCH-L1), and S100 calcium-binding protein (S100B) for ruling out the need for head CT and predicting patient recovery at 6 months postinjury.



Interview with

Dr. David Mendelowitz



Interview with

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Can you please tell us about your background and your current role?

Sure. My background is in cardiovascular physiology. I completed my graduate studies focusing on cardio-respiratory reflexes. However even back in graduate school, I realized that the cardiovascular field involved a lot of work with fluids, some of them unpleasant, and I found myself drawn to what I like to call “the beautiful people,” the neuroscientists.

That’s when I became fascinated with neurophysiology and neurology. I later completed a postdoctoral fellowship that deepened my interest in ion channels and their role in neural function. That path eventually led me to studying the neural circuits, receptors, and potential therapeutic targets involved in cardio-respiratory diseases such as sleep apnea, post-myocardial infarction complications, and opioid-induced respiratory depression. My overarching goal is to understand how the nervous system contributes to these conditions and to identify new therapeutic opportunities to treat them.

Can you please tell us about your background and your current role?

Absolutely. In the last few years, our research has really blossomed, thanks in large part to the work of former graduate students, including Ramon Pinol, Julie Frank, Heather Jameson and Chris Gorini. They discovered an important pathway from the hypothalamus to the brainstem that plays a key role in cardio-respiratory control. This pathway releases oxytocin, a neuropeptide most people associate with social behavior, but also plays a critical role in regulating respiration and cardiac function.

Our lab is currently investigating how oxytocin signaling in this pathway is altered in conditions such as heart failure, post-myocardial infarction states, and sleep apnea. We’re also exploring whether restoring oxytocin release in this network or activating oxytocin receptors could help mitigate these disorders by improving upper airway resistance and parasympathetic control of the heart.

How do you think the field has evolved in recent years?

I think the field has evolved tremendously, especially in the last decade or two. There’s been a shift from studying isolated mechanisms in narrow silos to adopting a much broader and more collaborative approach. Today, it’s no longer enough to understand a mechanism or receptor in isolation, we also are challenged to translate that knowledge into therapeutic opportunities.

Researchers are now much more engaged in interdisciplinary collaborations, reaching out to experts in other specialties to connect molecular mechanisms with clinical applications and comorbid conditions. This collaborative mindset is helping us paint a fuller picture of human disease and move closer to developing effective treatments.



Interview with Dr. David Mendelowitz

How do you see your research translating into clinical practice?

I've been very fortunate to collaborate with outstanding investigators and clinicians across multiple disciplines. As I mentioned, our recent work focuses on the hypothalamic-brainstem oxytocin pathway. Through collaborations, particularly with Dr. Vivek Jain in the Division of Pulmonary and Critical Care Medicine, and more recently with Dr. Seva Polotsky in Anesthesiology and Critical Medicine, we've been able to explore whether oxytocin could benefit patients with obstructive sleep apnea. Another very productive collaboration has been with Dr. Matt Kay in the Biomedical Engineering Department, where we jointly examine the benefits of oxytocin in improving cardiac function in diseases such as heart failure.

We're also expanding this work with colleagues to study whether oxytocin might help mitigate opioid-induced respiratory depression in patients who are taking opioids for chronic pain and others who are recovering from bariatric surgery. These projects involve a remarkable number of people across many department and divisions, such as Anesthesiology and Critical Medicine, Pharmacology and Physiology, Anatomy and Cell Biology, Pulmonary and Critical Care Medicine, and Surgery. This NIH funded project is a wonderful example of how colleagues at GWU can bridge the gap between bench and bedside.

I'd like to take a moment to acknowledge the many collaborators who make this work possible, not only in the basic science departments of Pharmacology and Physiology and Anatomy and Cell Biology, but also the clinician-scientists in Anesthesiology and Critical Medicine, Surgery and Pulmonary and Critical Care Medicine, and those in the Department of Biomedical Engineering. The breadth of collaboration across divisions at our University has been truly remarkable.

Do you see new technologies, playing a role in your research in the near future?

Absolutely. AI has enormous potential, particularly in identifying patient subgroups that may be at risk but go unrecognized through traditional means. Machine learning can help us analyze large datasets to detect subtle patterns, comorbidities, and risk factors that humans might miss. Incorporating AI into our research will enhance our ability to personalize treatments and identify new therapeutic targets much earlier.

How long have you been at GW, and what do you enjoy most about working here?

I've been here since 1999. What I've always loved about GW is the sense of camaraderie and shared purpose. Everyone here is genuinely working toward the same goals. I've never met anyone I wouldn't want to grab a coffee with. People leave their egos at the door, and that creates a uniquely collegial environment where great science and meaningful collaboration can thrive.

Is there any final message you'd like to share with our readers?

Just a heartfelt thank you to everyone who's supported me along the way, my colleagues within the University and, of course, my research team. Science is always a collective effort, and I'm incredibly grateful to be surrounded by so many talented and dedicated people who make this work possible.





July 1, 2025

Dr. Alberto Espay

University of Cincinnati

Title: The case for γ -secretase restoration and A β 42 replacement in familial and sporadic Alzheimer's disease

July 8, 2025

Dr. David Goldstein

NIH

Title: What is Autonomic Medicine?

July 15, 2025

Dr. Bernhard Steinoff

Kork Epilepsy Center

Title: Monocenter Kork experiences with the latest antiseizure medications: The real word

July 22, 2025

Dr. Chia-Chun Chiang

Mayo Clinic

Title: AI in Headache Medicine: Current and Future Applications

July 29, 2025

Dr. Gridihar Kalamaganam

University of Florida

Title: TBD

August 5, 2025

Dr. Aarti Sarwal

Virginia Commonwealth University

Title: TBD

August 12, 2025

Dr. Gordon Buchanan

University of Iowa

Title: TBD

August 19, 2025

Dr. Tova Gardin

Yale University

Title: TBD

August 26, 2025

Dr. Jon Stone

University of Edinburgh

Title: Functional Neurological Disorder (FND) – past present future

September 2, 2025

Dr. Ahmet Hoke

Johns Hopkins University

Title: TBD

September 9, 2025

Dr. Jaysingh Singh

Ohio State University

Title: What have we learned from Thalamic Stereo-EEG data

September 16, 2025

Dr. Rebecca Gottesman

NIH

Title: Vascular Dementia/Small Vessel Disease

September 23, 2025

Dr. Martijn Tannemaat

Leiden University Medical Center

Title: Novel non-invasive methods to diagnose and monitor myasthenia gravis

September 30, 2025

Dr. Daniel King

George Washington University

Title: TBD

October 7, 2025

Dr. Paul Nyquist

Johns Hopkins University

Title: Subarachnoid Hemorrhage

October 14, 2025

Dr. Tobias Loddemkemper

Boston Children's Hospital

Title: Detect, Predict and Prevent Acute Seizures – towards Digital Twins.

October 21, 2025

Dr. Carine Maurer

Stony Brook Medical Center

Title: Understanding Functional Neurological Disorder: Diagnosis, treatment, and pathophysiology.

GW

2025

Clinical Neurosciences
Grand Rounds

October 28, 2025

Dr. Xin Lyu

George Washington University

Title: TBD

November 4, 2025

Dr. Matthew Edwardson

Georgetown University Hospital

Title: Imaging and Molecular Biomarkers of Stroke Recovery

November 11, 2025

Dr. Lawrence Hirsch

Yale University

Title: Tentative title - may change: Updates on ICU EEG monitoring and refractory status epilepticus, including NORSE/FIRES

November 18, 2025

Dr. Geet Paul

George Washington University

Title: TBD

November 25, 2025

Dr. Alberto Serrano-Pozo

Mass General Hospital

Title: TBD

December 2, 2025

Dr. Dana Harrar

Children's National

Title: Acute Stroke Management in Children

December 9, 2025

Dr. Elaine Wirrel

Mayo Clinic

Title: Etiology targeted therapies for DEE

December 16, 2025

Dr. Panagiotis Kassavetis

George Washington University

Title: TBD



Connect with us



Thank you

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