

Department of Neurological Surgery Newsletter

S U M M E R - 2 0 2 1

Letter from the Department Chair



It is a new academic year here at the University of Massachusetts Medical School and UMass Memorial Health. Just as spring brings new growth and new life to New England each year, it has brought the same to the Department of Neurological Surgery. In terms of new programs and facilities, the Department just opened a completely new Neurological Surgery Clinic on the third floor of the Ambulatory Care Center. We have also initiated a new teleneurology program with hospitals in our community. Faculty in the

Department continue to make new discoveries, including novel findings on the pathogenesis of idiopathic normal pressure hydrocephalus that were published in high profile journals such as EMBO Molecular Medicine and the Proceedings of the National Academy of Sciences. Progress on the first in human gene therapy trial for Tay-Sach's Disease was highlighted in USA Today. In addition, the Department was featured prominently in several state and local media campaigns aimed at increasing COVID-19 vaccination rates in Massachusetts and increasing the growth of clinical programs at UMass Memorial Health. There are several new faces in the Department, including a new neurosurgery spine attending, **Irene Say, MD**. Other new faces include **Constance Mietus, MD, PhD**, who is our new PGY1 resident in neurological surgery, as well as several new Advanced Practice Providers (**Chloe Friedman, PA-C**, **Corey Caracciolo, PA-C**, **Brittany Dellechiaie, FNP-BC**, and **Martin Shott, PA-C**). Despite the pandemic, the Department's clinical volume has continued to grow. Indeed, these are exciting times as we work relentlessly toward our goal of becoming the best place to give care and the best place to get care, anywhere!

Mark D. Johnson, MD, PhD

Maroun Semaan Professor in Neurological Surgery
Chair, Department of Neurological Surgery

In This Issue

Welcome to Neurological Surgery,
Intern Constance Mietus, MD, PhD

A Year of Residency, Intern Brittany
Owusu-Adjei, MD

Neurological Surgery - On the Move
Bethany Berry, MD-PhD Candidate,
Awarded Grant to Promote Diversity
in Health-related Research

Research: Mark Johnson, MD, PhD,
Origins of Idiopathic Normal Pressure
Hydrocephalus

Change: The Conversation

Neurological Surgery Spotlight:
Amanda Sibai, PA-C

Welcome New Staff

Relentless Pursuit of Healing:
Neurological Surgery Featured in
UMass Memorial Branding Campaign



Jaime Rogers, NP and **Amanda Sibai, PA** from our talented Neurosurgery APP team, ready to place an ICP monitor. The device is inserted into the skull to measure intracranial pressure.

Welcome Constance Mietus, MD, PhD, Neurological Surgery Intern Resident

We are pleased to announce that **Constance Mietus, MD, PhD**, will be our next resident in the Department of Neurological Surgery at the University of Massachusetts Medical School and UMass Memorial Health. Constance grew up in a small rural town in Nebraska and, through a combination of grit, hard work and outstanding academic achievement, made her way to the University of Pennsylvania where she earned BA degrees in biology and psychology. She then spent several years doing laboratory research on neuroinflammation and traumatic brain injury before matriculating in the MD/PhD program at the University of Nebraska College of Medicine. Her clinical and academic performance were described as “outstanding” with “an amazing fund of knowledge.” One recommender wrote “She takes initiative and has a strong work ethic...Professionally, she leads by example. She demonstrates excellence in all that she does and is gracious to all members

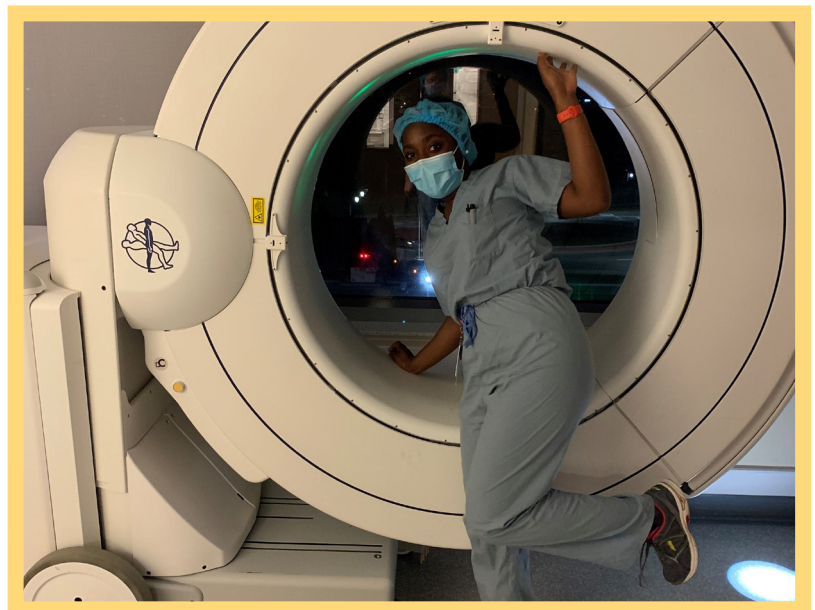


of the healthcare team.” Her PhD thesis focused on the microvascular pathology of peripheral vascular disease. She has co-authored 10 peer-reviewed publications and has received numerous awards, including a University of Nebraska Presidential Graduate Fellowship (awarded for research accomplishments and scholastic performance), a First Place Research Poster Award, the Most Outstanding Student Grand Rounds Presentation Award, and a top 10% presentation at the American Heart Association scientific sessions.

Constance is a proven leader, having served as Founder and President of the Nebraska chapter of the American Physician Scientist Association, Founder and President of the student chapter of the American Association of Neurological Surgeons, and secretary/treasurer of the student interest group in Neurological Surgery. Please join us in welcoming Constance to our UMass Neurosurgery family.

A Year of Residency at UMass Neurological Surgery by Brittany Owusu-Adjei, MD, PGY-2

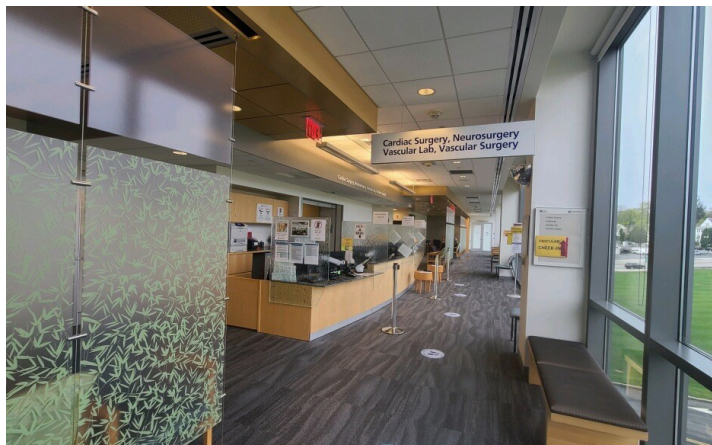
My first year here at UMass has been quite an experience! I've learned so much, not only from rotating on our service but from rotating on the other services as well, like the Neuro ICU, neuroradiology, trauma, orthopedic surgery and neurology. Starting out in July, I was definitely filled with a lot of nerves and anxiety about the steep learning curve I knew residency brings intern year, but now looking back, it's amazing to see how far I've come and how much my knowledge has grown in only a year. All the faculty have been so supportive throughout the year and have really provided me with the advice and resources for success. I never imagined I would have this much operative experience as an intern which is not something most surgical interns can say. I was incredibly happy when I matched to UMass last March and now, one year later, I am excited to be starting my PGY-2 year!



Brittany Owusu-Adjei, MD, PGY-2 poses next to the new O-Arm which takes intra-operative CT-like images, mostly for spine and deep brain stimulation cases.

Neurological Surgery - On the Move

On Monday, April 5, the Department of Neurological Surgery began welcoming patients to a new clinic space located on the third Floor of the Ambulatory Care Center. This move will provide the department with ample space to accommodate its growing team, which includes a dedicated triage nurse, nurse practitioners, patient care assistants and check in/out staff. In addition to the specialized support staff, patients will benefit from the increased accessibility of the clinic, which is conveniently adjacent to the patient parking garage.



Left photo - Neurological Surgery Staff at the new Ambulatory Care Center clinic. Front row (left to right) **Sandra Jean-Baptiste, PCA 1, Chelsey Quinones, PCA II, Carol Taylor Kazanjian, MA.** Back row (left to right), **Judy Madden, RN, Colin Hetzko, ASR, Steven Fitzmaurice, ASR.** Right photo - Reception area of the new clinic over looking University Campus.

Research Grant Awarded to Bethany Berry, Our New Research Team Member

Meet Bethany Berry, MD-PhD Candidate

Bethany Berry, a 3rd year MD/PhD candidate in the laboratory of Mark Johnson, MD, PhD, has been awarded a research supplement to promote diversity in health-related research by the National Institute of Neurological Disorders and Stroke. This training grant is in support of the National Institutes of Health initiative to increase opportunities and support for outstanding individuals from diverse backgrounds underrepresented within the biomedical sciences. This initiative seeks to further the numerous benefits of increased diversity of experience and perspectives within the scientific workforce, including fostering scientific innovation, enhancing global competitiveness, contributing to robust learning environments, improving the quality of the research, advancing the likelihood that underserved or health disparity populations participate in, and benefit from health research, and enhancing public trust. Bethany is a rural Maine native and Williams College graduate who is passionate about promoting equity and justice in health care and research. Since matriculating to the University of Massachusetts Medical School, she has worked with White Coats for Black Lives, the Student National Medical Association, and the Medical Scientist Training Program Student Council to advocate for mentorship reform, increased student and faculty diversity, and community outreach. Her interest in translational neuroscience has grown throughout her exceptional early career conducting research at the Jackson Laboratory, Woods Hole Marine Biological Laboratory, Oxford University, Mayo Clinic, Wesleyan University, and Dana-Farber Cancer Institute. Bethany is currently investigating the pathophysiological mechanisms underlying idiopathic normal pressure hydrocephalus, specifically testing the role of motile cilia on iNPH development using two novel mouse models generated by the Johnson laboratory. Bethany joined the Johnson laboratory in the Fall of 2020 and has continued to show her work ethic, professionalism, and meticulous attention to detail which have led to this much deserved recognition. This is a multi-year award which will support Bethany's training in biomedical research and advancement in her career as a future physician-scientist.



Research Provides Insights into Origins of Idiopathic Normal Pressure Hydrocephalus

By Susan E.W. Spencer, UMass Medical School Communications

The research by **Mark D. Johnson, MD, PhD**, the Maroun Semaan Professor and Chair in Neurosurgery, Hongwei Yang, MD, PhD, and other colleagues, was published Jan. 18 online in the journal *EMBO Molecular Medicine*. An additional commentary regarding the article appeared in the journal's News and Views section.

INPH is a neurological disorder characterized by excessive accumulation of cerebrospinal fluid in the brain, with symptoms that include walking and balance difficulty, incontinence and cognitive impairment. According to the Hydrocephalus Association, about 750,000 Americans suffer from iNPH. It has been estimated that one in seven people living in nursing homes has iNPH, but most are undiagnosed or misdiagnosed because symptoms can resemble other disorders.

"For a long time, there was a debate about whether it was even a real disease or was it something else—an already known disease. So that is a debate that we were trying to solve," said Dr. Johnson. "This publication and additional yet-to-be published data demonstrate that this is a distinct disease. And it points us in the direction of what's

wrong and may help us understand why the patients develop these symptoms."

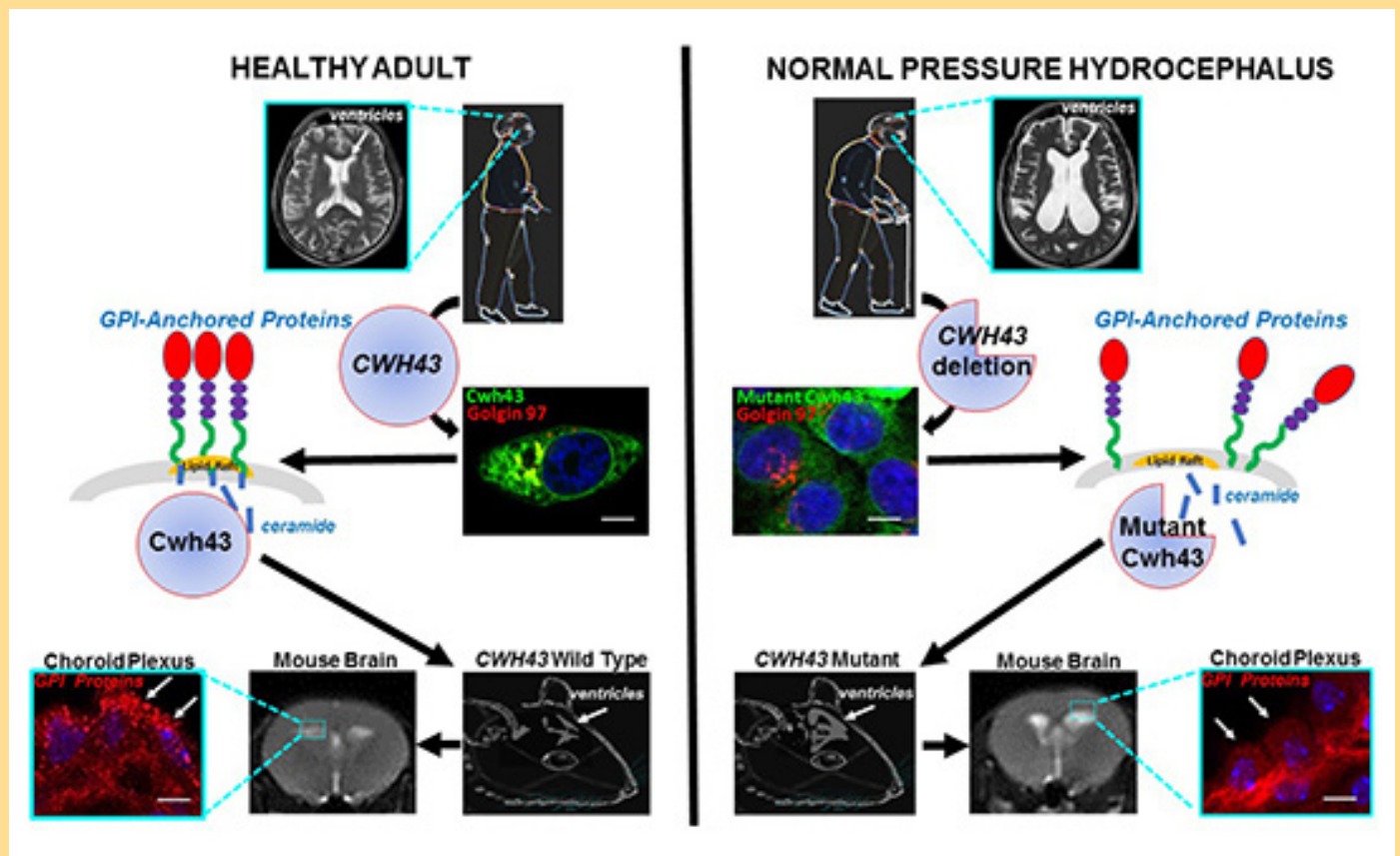
Using sophisticated techniques to sequence the DNA of patients with iNPH, Johnson and his team identified damaging mutations in a gene called CWH43 in 15 percent of iNPH patients. These mutations were found statistically more often among iNPH patients than in the general population.

The researchers then used genetically engineered mice to explore the mechanism by which mutant CWH43 proteins lead to symptoms of iNPH. Mice with the mutations displayed hydrocephalus, gait and balance abnormalities, and other functional and cellular changes leading to excess cerebrospinal fluid in the brain.

The findings provide new mechanistic insights into the origins of iNPH and may provide a blueprint for new treatments for this disorder, the researchers say.

Johnson's hunt for the cause of iNPH goes back more than a decade, as he was studying brain cancer. It was at that

(continued to page 5)



(continued from page 4)

time he met businessman and philanthropist Frederick B. “Rick” Sontag, whose wife, Susan Sontag, developed iNPH symptoms after surviving a brain tumor years earlier. Many people assumed her symptoms were related to the brain tumor, Johnson said. But having successfully treated people with normal pressure hydrocephalus, he placed a shunt to drain spinal fluid from Mrs. Sontag and her symptoms improved, at least for some time.

Sontag’s foundation had given Johnson a Distinguished Scientist Award grant in 2004 to pursue brain cancer research. Seeing potential in focusing research on the lesser-known iNPH, the foundation made a subsequent donation in 2013 to Brigham & Women’s Hospital, where Johnson was on staff as a neurosurgeon, to develop an adult hydrocephalus program.

“I wanted to investigate what causes iNPH, but I had no preliminary data,” Johnson said. “Rick just did that on faith that we would be able to make progress. And it has taken

many years for us to get to this point.”

Johnson further developed his research since coming to UMass Medical School and UMass Memorial Medical Center as chair of the Department of Neurological Surgery in 2016.

“I think the most significant part of this research is that Mark has gotten down to the root cause of what’s happening [in iNPH],” Sontag said. “He is on the path of finding something deeper as a cause and maybe something that will treat it.”

Sontag believes there is a good chance that Johnson’s team’s findings will spark additional interest in understanding iNPH among other scientists.

Johnson was recently appointed to serve as a scientific advisor to the Sontag Foundation, which has invested \$38 million in support of brain cancer research.

Read more information about this research.



Left Photo: Neurological Surgery Basketball Game is held on the 4th Tuesday of every month. All departments welcome. Right Photo: **Constance Mietus, MD, PhD, PGY-1**, is seen drilling into a skull with assistance from Neurosurgery Sub-I, **Peter Cruz-Gordillo**, during a Society of Neurological Surgeons (SNS) Virtual Bootcamp.

CHANGE: THE CONVERSATION

MassLive.com moderated a panel discussion on the topic of health equity related to the COVID-19 vaccine and its distribution. Watch this eye-opening Health Equity Open Forum featuring our leaders **Eric Dickson, MD, Mark Johnson, MD, PhD, Maggie Rodriguez, and Stacey Luster, Co-Founder of Black Families Together**. Learn more about diversity, equity and inclusion in our workplace through our Employee Resources Groups and Anchor Mission hiring practices.



Neurological Surgery Spotlight:

Amanda Sibai, PA-C



What was your job prior to UMass Memorial Health Care?

Professional student and ABA Therapist for children with autism

What are three traits that define you?

Energetic, Loving, Helpful

If you weren't in your current profession, what would you be?

World traveler hiking different terrains with my dog, Buttercup OR professional pastry chef in Paris.

What is your favorite thing about working at UMass Memorial? My amazing coworkers and helping patients. I love working with my great APP team and learning from one another.

I am happiest when... I am out hiking with my black lab mix, Buttercup.

If you could learn to do anything, what would it be? Scuba diving

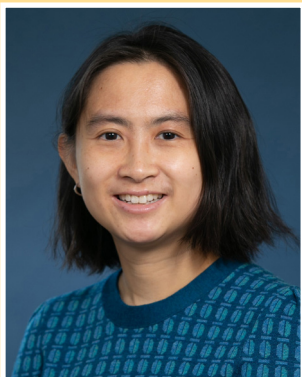
If you could meet anyone, living or dead, who would it be and why? Elvis Presley, I grew up in Memphis, Tennessee and was born on his birthday. I have always had a curiosity and love for him.



A lot to learn from **Oguz Cataltepe, MD** of neurological surgery and Joyce McIntyre, MD of the division of plastic surgery. Shown here are PGY-3 resident, **Rrita Daci, MD** assisting **Oguz Cataltepe, MD** with a pediatric craniotomy.

2021-2022 American Association of Neurological Surgeons (AANS) UMass Student Chapter

The AANS UMass Student Chapter holds monthly journal clubs led by a faculty member to discuss articles with recent discoveries in the field. **Rrita Daci, MD, PGY-3**, **Britanny Owusu-Adjei, MD, PGY-2** and **Constance Mietus, MD, PhD, PGY-1**, will serve as our resident advisors and be able to share their experiences as they advance during residency.



Our New Attending

Irene Say, MD is a fellowship trained spine surgeon and who has joined the department as an Assistant Professor of Neurosurgery. She specializes in complex and minimally invasive spine surgery for degenerative spine disease, tumors, and reconstructive surgery. She received dual orthopedic and neurosurgery spine fellowship training at the University of California, Irvine and the University of California, Los Angeles.

Dr. Say completed her undergraduate studies at Georgetown University and was elected to Phi Beta Kappa. She received her Doctor of Medicine at the University of California, San Diego School of Medicine. She completed her neurosurgery residency training at Rutgers University/University of Medicine and Dentistry, New Jersey.

Dr. Say's clinical and research interests include outcomes data, best practices, and neurosurgical innovation. She has authored several publications in peer-reviewed journals

and book chapters on neurosurgery.

She is a member of the American Association of Neurological Surgery, Congress of Neurological Surgeons and the North American Spine Society.

(New staff continued on next page)

Welcome New Staff



Kelly Head's career has centered around administrative support and project management. Most recently, she was project lead for an IT group at Cummins Corporation in Columbus, Indiana. Kelly, her husband Anirban and beloved dog, Harley, moved to Clinton, MA in January 2021. Originally from the Midwest (Iowa), this is her first time living in a different

region of the country. She is looking forward to visiting the many historic sites of Boston as well as exploring the beauty of New England. Kelly is excited to support UMass and it's mission each day.



Elisha Lico, DNP, BC is a certified nurse practitioner who graduated from the University of Massachusetts Medical School, Graduate School of Nursing with a Master of Science in 2020 and has recently completed a Doctorate of Nursing this past spring. She looks forward to collaborating with providers of all disciplines to support seamless patient care. Her passion is advocat-

ing for and working with patients and their families in the inpatient and outpatient setting to ensure optimal patient experiences and outcomes.



Yuming Huang, PhD, joined UMMS as a postdoctoral fellow in the Sichani Lab (Neuromorphology and Network Neurodynamics Lab) of the Department of Neurosurgery. He graduated from North Carolina State University with a PhD degree in Physics, with substantial experience in machine learning and network analysis. Currently, his research interests include neural

correlates of decision making and graph theoretical analysis of neuronal networks for seizure prediction.



Elza Mathew, PMVSc, MS, PhD, joined UMMS as a postdoctoral associate. She has research interests in tumor microenvironment studies, genetics and genomics of brain tumors and normal pressure hydrocephalus. Elza graduated from Kansas State University with a PhD degree in Physiology, with substantial experience in animal science, animal biotechnology and

veterinary science. Her hometown is Sasthamcotta, Kerala (State), India.



Kristen Kotsopoulos, PA-C, is a lifelong resident of Shrewsbury, MA and a 2015 graduate of Shrewsbury High School. She graduated from Duquesne University's 5 year accelerated physician assistant program in 2020 and earned her Bachelor of Health Sciences and MPAS. Kristen was awarded the Outstanding Student Award for the department of physician assistant studies. During

her college career, she was a member of Duquesne University's women's soccer team. Hobbies and activities include spending time with family, hiking, cycling and visiting Martha's Vineyard.



Bethany Berry, MD-PhD candidate, has joined our research team here at the Department of Neurological Surgery. Before joining UMass, she earned her BA from Williams College in Williamstown, MA. During her time as an undergraduate student, she was a Questbridge Scholar and was selected for the Williams-Exeter Programme at Oxford. She is also an

advanced ice dancer and figure skating instructor!

Find us on Social Media



Everyone, Everyday. Relentlessly: Meet Mark Johnson, MD, PhD

<https://www.ummhealth.org/umass-memorial-health-care/about-us/our-caregivers/mark-johnson-md-phd>

THE RELENTLESS PURSUIT OF HEALING.



UMMHEALTH.ORG

Always fight. Never quit.

Welcome to relentless.

[Learn More](#)

Mark D. Johnson, MD, PhD, Chair of the Department of Neurological Surgery, is featured in the UMass Memorial Relentless brand campaign which tells a story of heroism and a relentless commitment to doing what's best for our patients and each other. The campaign was featured on Billboards, television spots, and websites.

[Read more about the campaign here.](#)

UMass Memorial launches Brand Campaign "Relentless"



Mark D. Johnson, MD, PhD, Chair of the Department of Neurological Surgery, (middle) in the operating room with Neurological Surgery Residents, PGY-2, **Brittany Owusu-Adjei, MD**, (left) and PGY-3, **Rrita Daci, MD**, (right) in the recently launched UMass Memorial video, "Relentless". [Watch Video](#)



Department of
Neurological Surgery Newsletter

SUMMER - 2021

Editor:

Cassindra Wamester
Residency Program Coordinator
Department of Neurological Surgery

Designer:

Themia Pappas-Fillmore
Coordinator of Design and Publications
Surgical Administrative Services Group