



THE MONTLAKE CUT

A PUBLICATION OF THE DEPARTMENT OF NEUROLOGICAL SURGERY



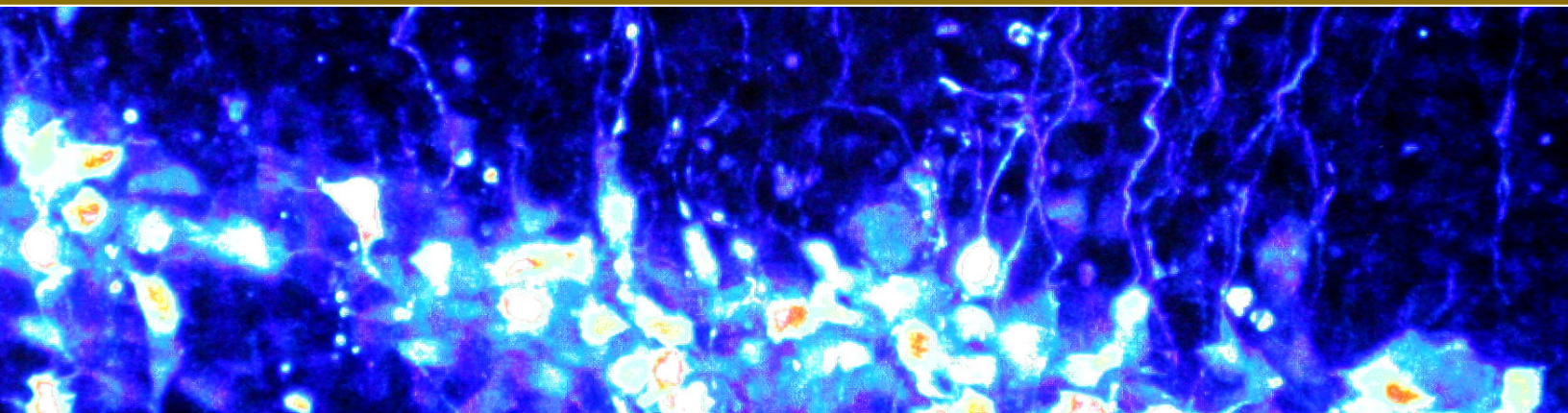
We are all enormously fortunate to live not only in a beautiful and thriving part of the world, but to be surrounded by bright and thriving colleagues. In this issue of the newsletter, we welcome several new members to the team, thank those who have moved on, and recognize the intellectually magnificent scholarship of members of our department.

Our former resident Tim Lucas, who graduated in 2010, writes about his exciting career at Penn and work in China on brain computer interface, sensory neuro-prosthetics and limb reanimation. He was a brilliant resident and has continued to amaze us with his original scholarship. Closer to home, Associate Professor Christine Mac Donald, Ph.D. continues her leadership and discovery in the science of traumatic brain injury. She describes the pathway she took into what has become her major contributions to TBI, military blast injury and concussion. She has recently been chosen by the UW to hold the James and Gaye Pigott Sports Health and Safety Endowed Chair based on her cutting-edge research portfolio and leadership skills.

Longtime UW faculty member Melanie Walker, MD, a Neurologist, Joint with Neurological Surgery is currently the Neurological Surgery Endovascular Fellow, was awarded yet another honor. Dr. Walker was named one of only seven Rockefeller Foundation Fellows in the USA for 2017-18, chosen for their innovative international health plans.

Two additional Fellows will be with us for the remainder of the academic year. Dr. Behzad Sabit, who is interested in spinal cord trauma, will be the Spine Fellow, and Dr. Qazi Zeeshan joins the department as a new Research Fellow. All of the members of our remarkable department are to be congratulated for their service to the public, their accomplishments and their dedication to our patients, our institution, and to each other. This is the face of a happy, productive neurological surgery family.

Richard G. Ellenbogen, M.D., F.A.C.S.
Professor & Chairman
Department of Neurological Surgery



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DR. ELLENBOGEN RECEIVES DISTINGUISHED SERVICE AWARD



Professor and Chair of Neurological Surgery Richard Ellenbogen, MD, FACS received the Congress of Neurological Surgeons Distinguished Service Award at the October 2017 CNS annual meeting in Boston - the most significant award the CNS can bestow on an individual. Since the award was initiated in 1961, Dr. Ellenbogen is the 41st recipient.

As described by the CNS this is “a prestigious award designed to honor the contributions and activities of outstanding individuals and members of the CNS. The legacy, accomplishments, and contributions of prior award recipients are remarkable.”

Dr. Russell Lonser, 2016 CNS President notes; *Dr. Ellenbogen was specifically selected because he has made critical and fundamental contributions to the specialty of neurological surgery and the broader medical community. Importantly, the award recognizes that his work has indelibly shaped the field through the improved care of patients, the enriched training of neurosurgeons, outstanding leadership and scientific advancement. In short, Dr. Ellenbogen represents the best of neurosurgery both in his contributions, as well as character. Dr. Ellenbogen's selection was the unanimous decision of the award selection committee and underscores the profound impact that he has had on neurosurgery and the respect that he commands across our field.*

Nathan R. Selden, MD, PhD, 2015 CNS President adds, *Rich Ellenbogen is a trusted leader who went on after his presidency of the CNS to add value and advance the mission of other very important neurosurgical organizations, such as the American Society of Pediatric Neurosurgeons, and now most importantly to the American Board of Neurological Surgery. Rich focuses on the health of our specialty, and how we can help every neurosurgeon advance the interests of their patients. He consistently gives extensive amounts of personal and professional time to neurosurgery and is highly deserving of recognition for this sustained period of generous productivity over more than two decades.*

WAYNE'S NEW NORMAL



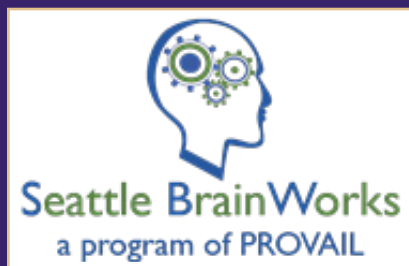
I'm learning to walk again since I've been head injured. I fell on my head and injured my brain rock-climbing. I've been walking with a crutch and walker. I've been walking on my own without support of any kind, which is hard to balance my body. Sometimes I fall down without support. I practice on the grass, which is difficult because it is uneven and soft. I'm getting better at walking on my own without support, so I need to practice this more!

I'm getting better at this now. I can walk by myself well but I still need to practice this! I can walk again! It's difficult but I can do it! I just need to gain more confidence in myself! This is good for me. I just need to practice more! Yes, I will practice more!

I can walk again!

I'm working on my socializing skills and communicating more. I love this. I'm coming along fine. I just need more practice with this too. While I'm at Seattle BrainWorks I practice these skills with people. I like coming to SBW, making music, and sharing with others.

EDITOR'S NOTE

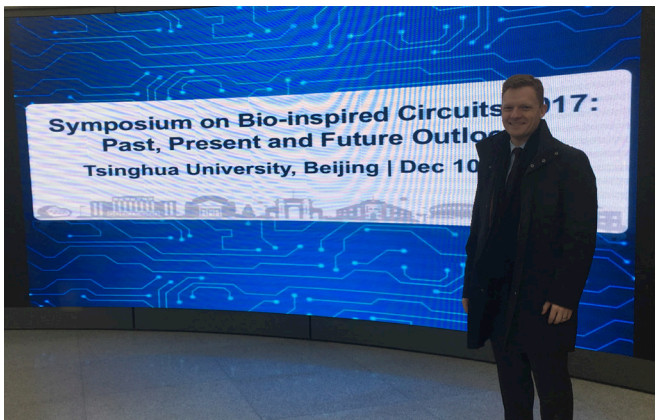


Wayne Crill is the son of Jean and Dr. Wayne Crill. His father was longtime Professor of Neurology, Chief of Neurology and Director of the Epilepsy Center at the VA Medical Center, then Professor and Chair of the Department of Physiology and Biophysics, UW School of Medicine (1983-1999). For those of us who knew and worked with Professor Crill as younger people, he was heroic. He died on September 2, 2012.

Around noon on August 9, 2014 his highly experienced climber son, also named Wayne, was 60 feet up his fourth first ascent of the day on the Lower Peanuts Wall in Eldorado Canyon, Colorado. Seconds later, the academic career he was about to begin ended abruptly when he fell 60 feet, sustaining a serious TBI. Recently he wrote this, originally published in Bee News, the newsletter of Seattle BrainWorks.

PROVAIL's Seattle BrainWorks seeks to support the growth and recovery of individuals living with traumatic brain injuries in our community. Through a combination of lifestyle enrichment and structured learning opportunities, BrainWorks activities help members prepare for returning to positive social and family relationships, school, work and volunteering.

TIM LUCAS, MD, PHD IS NOW ASSISTANT PROFESSOR OF NEUROSURGERY AT PENN, BUT WRITES TO US FROM CHINA



I am in Beijing as Visiting Professor at Tsinghua University in the Department of Electronics Engineering. Tsinghua is China's version of MIT, [as they frequently remind me](#). I am here lecturing on our work developing sensory neuroprosthetics. Since I was in Seattle I have been interested in strategies to re-animate paralyzed limbs for patients suffering from spinal cord injury. There has been significant progress with motor (or efferent) brain-machine interface systems in the past decade. Motor BCI systems decode kinematic features from motor cortex neurons to derive command signals for robotic arms, or functional electrical stimulation of paralyzed muscles. Very little work has been devoted to restoring somatosensory (afferent) feedback to the brain, which is the second half of the equation of bi-directional information flow between the body and brain that is lost following spinal cord injury. Our lab develops what we call coin 'body area network' systems toward this aim. These networks are implantable suites of electronic devices that act as artificial mechanoreceptors—all linked wirelessly—like the peripheral devices in your home area network.

Clinically, my practice remains focused on epilepsy surgery and neuro-oncology. We have seen significant growth in the epilepsy volume, clawing market share back from local competitors. When I arrived in 2011, Penn only performed 5 epilepsy implant surgeries a year. Now, we do stereo EEG implants every week. I have also broadened the surgical portfolio in the functional program. We offer gene therapy on clinical trial, laser interstitial therapy, and interventional MRI procedures. This has significantly improved our resident's exposure to functional procedures and a number of our graduates seem to be heading in that direction these days.

(continued on page 4)

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I have also been participating in the Master's program at Wharton focused on Health and Public Policy. The opportunity is funded by a fellowship from AOA as part of leadership development program. My program funds a 'capstone' project examining the financial intersection of academic medicine and health care centers to develop novel business models. The traditional model in academics is one of cross-subsidization to support the tripartite mission. That business model is failing in the face of declining hospital revenues and stagnant NIH grant funding. Academic physicians who reside at this crossroad are being squeezed out of the market. The capstone primary objective is to develop an 'academic value unit' to counter-balance the clinical RVU so academics can quantitate their value to the university medical center (and society at large), attempting to build societal support for protected funding mechanisms.

Finally, the family is doing well. My wife Patricia, daughter Sophia (8) and son Thomas (4) are here with me in China. They are practicing with chopsticks. I had to convince them that Peking Duck was actually chicken so they would try it! One of our hobbies is travel, which we do for triathlons monthly during race season, and try to race in locations that they have not visited, including Miami, Raleigh, Virginia, Boston, Atlantic City and a few others last year. I now have a break until Iron-man Lake Placid next year.

SAVE THE DATE!

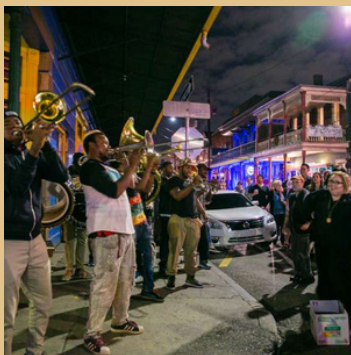
UW Department of Neurological Surgery
Faculty and Alumni Reception at the AANS

April 30, 2018 from 6:00-8:00 PM

Arnaud's Restaurant

813 Rue Bienville (Bienville Street)

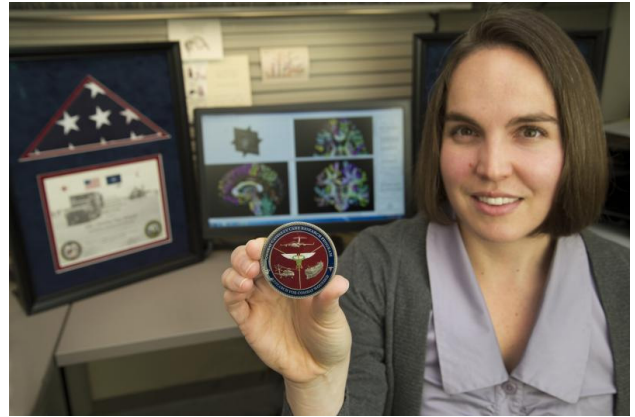
New Orleans, LA 70112



THE INVISIBLE WOUNDS OF WAR

Written by Tina Mankowski, reprinted with permission

You can hear the compassion in Christine Mac Donald's voice when she talks about the military men and women she has known for nearly 10 years. She met many of them at some of the most challenging moments of their lives following medical evacuation to Landstuhl, Germany from the battlefields of Iraq and Afghanistan. The bright, lively associate professor in the department of Neurological Surgery counts these 591 service members from 50 states, two territories and 11 countries as patients first and data sets second. She is humbled by what they have given up for this country and laser-focused on unlocking the mysteries of battlefield concussion to help develop better diagnostics and treatments for both acute and long term care. It's a mission for her.



"The research I am doing focuses on combat concussion and the long-term impact it has on these service men and women and their families," said Mac Donald. "These exposures are often referred to as invisible wounds of war—just because you can't see the injury doesn't make it any less devastating."

Mac Donald always wanted to serve her country. At 18 she was headed to the naval academy with the hopes of being a nuclear engineer. A knee injury deterred her plebe experience at Annapolis; instead she completed undergraduate studies at Santa Clara University in California. But the military kept luring her and she intentionally chose a work study position in the ROTC Bronco Battalion in Santa Clara's Military Science Program.



As part of her clinical fellowship training following graduate school at Washington University, Mac Donald was asked to direct a study on advanced imaging in acute combat brain injuries. Because of her prior experiences working with the military, she knew the culture and was able to rapidly integrate into the combat casualty care environment overseas. Living for 5 years, on and off, in Landstuhl, Germany to see medically evacuated casualties of war, she examined new imaging methods and acute screening tools for blast-related traumatic brain injuries with the initial seminal paper published

in the New England Journal of Medicine in 2011. Additionally she teamed up with a Navy Neurologist to conduct the only advanced MRI study and clinical outcome study to date in the combat theatre in 2012.

Completing prospective, observational, longitudinal research studies with these service men and women has enabled Mac Donald and her team to connect the dots from acute injury to long term outcome. "When you can literally be at a patient's bedside, and then personally see them a year later, and then 5 years after that, you can appreciate patient outcome trajectories in ways that are unfortunately missed with cross-sectional studies" says Mac Donald.

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This has allowed for an in-depth look at many co-morbid conditions that arise following these exposures. In a recent JAMA Neurology publication, her team found that the majority of patients exhibited evolution not resolution of symptoms over the first 5 years post-injury; a surprising finding for these seemingly mild injuries.

She calls her current research a ‘grass roots’ effort as she pieces together Department of Defense dollars and NIH RO1 grants to fuel her longitudinal study of combat concussion. Several weekends a month, Mac Donald and her team run a research clinic at UWMC and fly in these military men and women who are part of the study for continued clinical and imaging evaluation.

Unfortunately, some in the study have been lost to suicide. It saddens Mac Donald and makes her even more resolved to serve those who have served this country and sacrificed so much. “They have made it through the war,” she says, “but in so many ways the battle has just begun. We hope that the work we are doing contributes in a meaningful way to lessen this long term burden.”

LATE ADDITION NEWS FLASH

James and Gaye Pigott recently endowed a new Chair in Sports Health and Safety. The purpose of this endowment is to recruit and retain distinguished neuroscience faculty focused on sports health and safety, TBI and related fields. Christine MacDonald, in addition to all of her other recent awards, grants, and significant contributions to science, will be the first holder of the Pigott Chair. As such, she will serve as the Research Director for the Sports Health and Safety Institute at UW Medicine.

SIGNIFICANCE OF tSAH AND MINOR CONTUSIONS IN TBI PATIENTS WITH GLASGOW COMA SCALE 13 OR GREATER

There is abundant published evidence that following TBI significant contusions, clots, aSDH or EDH on CT scan and a low Glasgow Coma Scale grade are associated with poor neurological outcome or death (1). There is likewise a similar robust published body of data that strongly suggest patients with a GCS of 13 or higher and small traumatic SAH, IPH, or very thin acute subdural or epidural hematoma are at essentially no risk for progression (2,3,4,5,6,7,8). It should be noted that in the biggest published study of patients who fit the above criteria, 0 of 500 progressed. (2)

On the basis of this evidence, it does seem that some transfers to the HMC ED from afar because of TBI that fits the above criteria might be avoided. It also seems reasonable not to hospitalize patients that fall into this category of mild head injury at all, but to send them home with information for follow up and contacts in the very remote chance that they do progress.

1. Chieregato A, Fainardi E, Morselli-Labate A, et al: Factors Associated with Neurological Outcome and Lesion Progression in Traumatic Subarachnoid Patients. *Neurosurgery*, Vol 56 (4), 1 April 2005, 671-680
2. Ditty B, Omar, N, Foreman P, et al: The non-surgical nature of patients with subarachnoid or intraparenchymal hemorrhage associated with mild traumatic brain injury. *J. Neurosurg*, Vol 123, September 2015, 649-653
3. Mattioli C, Beretta L, Gerevini S, et al. *J Neurosurg*, Vol 98 (1), 2003, 37-42
4. Abdel Fattah K, Eastman, A, Aldy K, et al. *J Trauma Acute Care Surg*, Vol 73, 2012, 685-688
5. Almenawer, S Bogza I, Yarascavitch, et al, *Neurosurgery*, Vol 72, 2013, 56-64.
6. Borczuk P, Penn J, Peak D, et al, *J Trauma Acute Care Surg*, Vol 74, 2013, 1504-1509
7. Quigley M, Chew B, Swartz C, et al, *J Trauma Acute Care Surg*, Vol 74, 2013, 581-584
8. Wu C, Orringer D, Lau D, et al, *J Trauma Acute Care Surg*, Vol 73, 2012, 1247-1253

**IN MEMORY OF
LOWELL E. WHITE, M.D.
1928-2018**



Lowell E. (Bud) White, Jr. died on January 18, 2018, just two days after his 90th birthday.

Bud was one of the early graduates of the University of Washington School of Medicine and was the third UW Neurosurgery resident. Following his residency, he was a neuroanatomy fellow for a year in Oslo, Norway, and then returned to the UW to join Arthur Ward and Eldon Foltz on our faculty. Bud maintained an active neuroanatomy research laboratory during his tenure as a faculty member and was particularly interested in pain management. Along with John Bonica and Dorothy Crowley he cofounded the Pain Clinic at the UW. He became an Assistant Dean in the mid- 60's and played a significant role in the planning for the T wing.

In 1968, he accepted the position as Chief of Neurosurgery at the University of Florida in Gainesville. After 5 years there, he moved to Mobile where he founded the Department of Neurosciences at the University of South Alabama. Bud focused his efforts on education at each of his academic positions. After he retired, Dr. White returned to the Northwest to be near his two children, Leanna and Britt, and his grandchildren. His wife, Margie, passed away three years ago.

A service will be held on January 28, 2018 at 1:00PM at Timber Ridge Talus, 100 Timber Ridge Way, Issaquah, 98027.

**NEW ENDOVASCULAR FELLOW
MELANIE WALKER
NAMED ROCKEFELLER
FOUNDATION FELLOW**



The Rockefeller Foundation has a long and extraordinary history of investing in people, betting on brains, and supporting bold ideas – from Nobel Prize winners Linus Pauling and Niels Bohr, to the storied RockyDocs who led pioneering work in the social sciences, and the thousands of residents supported through the Bellagio Center. Continuing that tradition and to further advance new big, bold bets, the Foundation has selected seven new Fellows in 2017.

Dr. Melanie Walker, current Endovascular Fellow in the Department of Neurological Surgery at the UW School of Medicine in Seattle, has just been named a Rockefeller Foundation Fellow. The award supports the work of experts in both the nonprofit and private sector, scientists, journalists, public advocates, and other leading figures in a variety of fields that further the Foundation's mission to promote the well-being of humanity throughout the world.

Dr. Walker has focused on innovation at the intersection of life sciences, government and philanthropy and created partnerships between government and non-government institutions leading to new initiatives aimed at solutions to global problems in health and development. Her broad experience includes having been a Director and Senior Adviser to President Jim Yong Kim at the World Bank Group, serving as Deputy Director for Global Development at the Bill & Melinda Gates Foundation, and in multiple roles for the World Health Organization including as a Director for the Commission for Macroeconomics and Health. She is currently the finance chair for the Lancet Commission for Global Surgery, providing inputs to emerging economies on the development of surgical systems. Dr. Walker sits on the executive board of the American Medical Association Foundation serving as Program Chair. She has published and lectured extensively. Recently she won an AOA Visiting Professorship, was awarded an American Academy of Neurosurgery Hoffman Endowed Lectureship, and named a Young Global Leader by the World Economic Forum.

She is a graduate of the University of Texas in Austin and earned her MD at the UT Medical Branch in Galveston. Dr. Walker completed her post-doctoral studies in computational neurobiology at the California Institute of Technology concurrent with postgraduate surgical training at the Huntington Memorial Hospital in Pasadena, California. She was then a neurology resident and cerebrovascular disease fellow at the UW School of Medicine and the Palliative Care Practice Program at Harvard Medical School, where she was named a faculty scholar. She has served as attending physician and Clinical Associate Professor in the Departments of Neurological Surgery and Neurology at the UW and as an adjunct faculty member at the Johns Hopkins School of Medicine.

NEW SPINE FELLOW: DR. BEHZAD SABIT

Dr. Sabit (a family name of Arabic origin) is Canadian, speaks French as well as English, and has worked at a Jewish hospital. Young people are diverse these days.

In 2006, he graduated with honors from Dawson College in Montreal, and then finished medical school at McGill in 2011. He completed his residency in neurological surgery at the University of Manitoba in 2017. Dr. Sabit's principal research interest has been in MAP goals following spinal cord injury. Both Dawson College and McGill have recognized his academic excellence. In addition, he won the Governor's Medal for Academic Achievement in 2004.

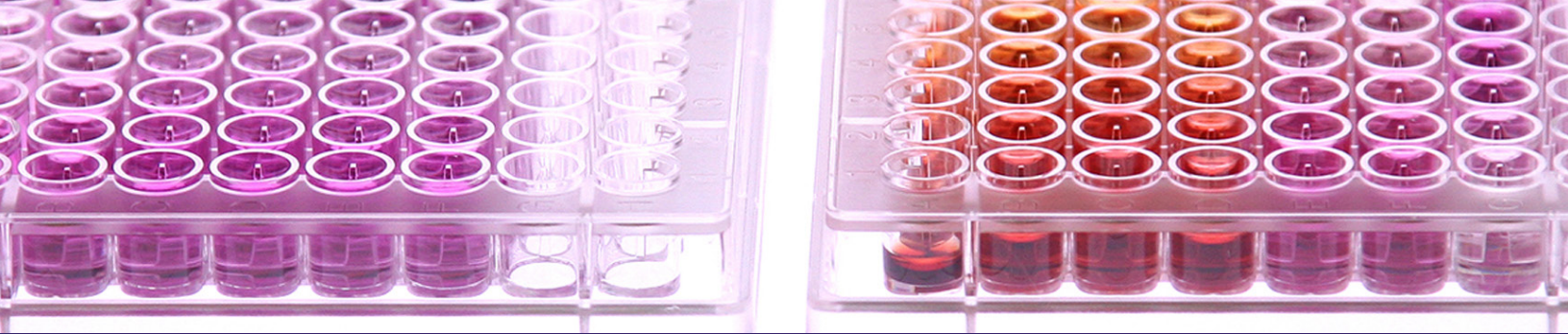
NEW RESEARCH FELLOW: DR. QAZI ZEESHAN

Udaipur has been called the "City of Lakes," the "Venice of the East," or the "Kashmir of Rajasthan," and is the administrative headquarters of the Udaipur district in the Indian state of Rajasthan.

Dr. Qazi Zeeshan earned his MBBS degree at the Institute of Medical Science in that city, and then trained in general surgery at the same place before completing his neurosurgical training at King George's Medical University, Lucknow where he was Chief Resident in 2014. Dr. Zeeshan has published on topics ranging from anterior encephalocele to spinal cord epidermoid cyst, cysticercosis and chordoma. Although the Research Fellow is without direct clinical responsibilities, he is already an accomplished surgeon.

NEW MEMBER OF UWMC INPATIENT TEAM

Charitey Lee Robar was born in Cedar Rapids, Iowa. She graduated from Bethel University in St. Paul, MN with a BSN in 2010, and from Creighton with a Doctor of Nursing Practice in 2016. She was elected to Sigma Theta Tau Nursing Honor Society and is a Board Certified ARNP with six years of experience, mostly in the Midwest. Charitey started January 1, and joins the outstanding neurosurgery practitioner team long established on the wards at UWMC.



PUZZLER



Dr. Minku Chowdhary
Director, Neurosurgery
Overlake Hospital

FALL EDITION ANSWER

Jurgen Aschoff formulated zeitgebers and the relationship to the circadian rhythm. He is the son of Ludwig Aschoff, one of the two men to discover the AV node.

WINTER EDITION QUESTION

As we celebrated NYE recently, a mass gathering of people convened at Times Square. This is the home to a famous hotel that is related to the world's fastest production car. Both of these clues will lead you to the man who was born in a flash. Who is he?

We remain eager to publish stories and photos about all aspects and activities of the Department. Please share your memories, ideas and suggestions for stories and news items that expand our common ground. Please contact us at these email addresses:

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