University of Nebraska Medical Center
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JANUARY 2023

NeuroNExT

from the Departments of Neurological Sciences & Neurosurgery

Happy New Year!

As we wrap up this holiday season, we reflect on our growing accomplishments and weigh the considerable promise and potential of 2023.

In December, we welcomed Brigette Soltis-Vaughan to the UNMC Department of Neurological Sciences (DONS) faculty, bringing valuable expertise in investigator initiated clinical trials and mental health treatment. We will also be welcoming Drs. Jennifer Shaw and Salman Assad mid-year as stroke fellows, plying new expertise in vascular neurological care.

We congratulate Movement Disorders Division Chief Dr. Diego Torres-Russotto, who will assume an inaugural neurology chair at the Miami Neuroscience Institute/ Baptist Health/Florida International University. Dr. John Bertoni, after decades in the field, will be retiring from UNMC/ Nebraska Medicine and aims to continue improving the lives of patients with Parkinson's disease as professor emeritus. Division leadership will be entrusted to Dr. Amy Hellman.

In this issue, we feature silo-spanning programs, including a technology initiative featuring Dr. Bethany Lowndes, new research in the Mind and Brain Health Labs and Warren Neuroscience Lab, a précis of pain medicine from Dr. Madhuri Are and key events and symposia over the last several months. Gladly this includes in-person events, building camaraderie and connections for success across the neurosciences, including advanced care and teaching, with strong community engagement.

We hope you enjoy this winter 2023 version of NeuroNExT!

Matthew Rizzo, MD, FAAN
Frances & Edgar Reynolds Chair
Professor, Department of Neurological Sciences

Aviva Abosch, MD, PhD
Nancy A. Keegan & Donald R. Voelte, Jr. Chair
Chair & Professor, Department of Neurosurgery

Howard Fox, MD, PhD
Senior Associate Dean, Research & Development, College of Medicine
Professor, Department of Neurological Sciences

In This Issue

Welcome!

New Faculty

Bridgette Soltis Vaughan, MSN, APRN-BC, PMHNP

Three things people may not know about me:

- I am a certified BodyPump and BodyStep instructor and have taught group fitness for 15 years.
- I am a lifelong Denver Broncos fan and have a tattoo of John Elway's autograph on my ankle.
- I have served on the UNMC IRB for 17 years, and have been a chair of IRB-02 for nearly two years. I serve on the pediatric IRB, the single-site IRB and the rapid-response IRB.

I look forward to working with DONS faculty and staff to increasing investigator initiated research activities, specifically those combining neurological disorders with mental and behavioral health outcomes. One of my primary roles will be co-leading the CBD PTSD grant along with Drs. Matt Rizzo and Jennifer Merickel and the rest of our study team.

New Stroke Fellows

Jennifer Shaw, MD, MS

Three things people may not know about me:

- I have been practicing yoga for more than seven years.
- I was a college and graduate school instructor prior to medical school.
- I was a competitive swimmer and surfer in my younger years.

I look forward to learning more and hopefully contributing to the future of all things vascular neurology, including prevention, treatment and rehabilitation. I hope to continue my involvement in medical student and resident education, patient safety and quality improvement projects, physician advocacy and political engagement.

Salman Assad, MD

Three things people may not know about you

- I really don't know how to swim but can float.
- I like meditation and yoga in my spare time to decompress.
- In New York, I learned salsa dancing.

Goals during my Vascular Fellowship:

- Taking care of acute ischemic/ hemorrhagic stroke patients and providing the evidence-based management guidelines.
- Learning to build a strong academic career and research portfolio.
- Achieving high-quality care during stroke admission and post stroke rehabilitation.

The Herman Foundation has committed to help fund DONS stroke program

The Herman Foundation recently committed $150,000 in funding over the next three years to help improve Emergency Medical Services (EMS) stroke education.

Wheelchair Emergency Evacuation System: Senior Engineering Design Project Facilitated through the Great Plains IDeA-CTR Technology (engineering-medicine) Initiative

GREAT PLAINS IDeA | Clinical and Translational Research

by Bethany Lowndes, PhD

During an emergency evacuation when elevators cannot be used, patients in wheelchairs on higher floors of a building must be transferred to an evacuation sled.

The Technology Initiative of the Great Plains IDeA-CTR facilitated a Senior Engineering Capstone design project to address these issues. Dr. Bethany Lowndes, health systems engineering liaison and assistant professor in the DONS, connected our clinicians with professors and students in the University of Nebraska-Lincoln (UNL) Department of Mechanical and Materials Engineering to probe design criteria and solutions. The emergency evacuation system prototype consists of a wheelchair attachment that is folded for regular use and engaged for a stairway emergency evacuation. The team developed and tested a physical prototype at the Dr. Edwin G. & Dorothy Balbach Davis Global Center at UNMC, teaming with emergency medical technicians (EMTs) and paramedics to identify pragmatic opportunities and iterations for better final design.

Senior Capstone design projects are part of a larger Technology Initiative. Three other projects were completed during the 2021 – 2022 academic year, six projects are underway this 2022 – 2023 academic year, and applications for future projects will be requested this spring. This innovative initiative aims to integrate engineering and technological resources into clinical and translational research (CTR), facilitate development of innovative tools for CTR clinicians and researchers, link engineering experts with clinicians and researchers, together with tech transfer experts and fund team-building engineer-medicine technology pilot projects.

The Technology Initiative also supports:

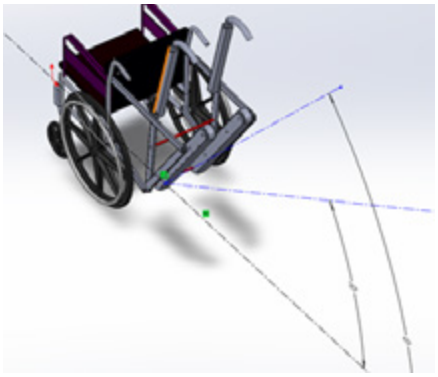
1. Concierge Service: linking engineering and technology expertise and clinician and clinical researchers.
2. Research Studios: Identifying and connecting experts for research studios focused on technology and innovation.
3. Engineering and Technology track within the UNMC College of Medicine.

EMET Technology Track

Engineering and technology track within the UNMC College of Medicine. Each year, the Enhanced Medical Education Track (EMETrack) for engineering and technology in medicine will recruit up to four medical students into this four-year program. The first cohort of students (class of 2026) were selected last fall and are blazing a path to new knowledge on the role of technology and engineering applications to healthcare delivery, guided by faculty experts and a systems approach.

To advance this technology initiative, Dr. Bethany Lowndes continues to work with the Engineering Liaison Dr. Mark Riley from the UNL College of Engineering and other faculty members to connect clinical researchers to key partners in engineering and technology.

Demonstration of emergency wheelchair prototype.



3D rendering of evacuation wheelchair.

Questions regarding the Technology Initiative contact Dr. Bethany Lowndes at **bethany.lowndes@unmc.edu**

For more information and to become a member of the Great Plains IDeA-CTR Network, visit **https://gpctr.unmc.edu/**.

Updates from the **Movement Disorders Team**

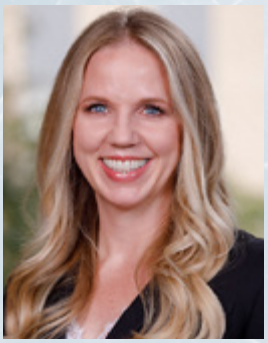
Diego Torres-Russotto, MD, FAAN

Dr. Diego Torres-Russotto has accepted the position of inaugural neurology chair at the Miami Neuroscience Institute/Baptist Health/Florida International University, starting in March 2023. We are grateful for Dr. Torres-Russotto's service to UNMC/Nebraska Medicine and wish him all the best in this next step in his career.

Dr. Amy Hellman will assume the role of interim chief of the Movement Disorders Division and Dr. Erin Smith has accepted the Movement Disorders Fellowship director position. The Movement Disorders Fellowship currently has three fellows and another will join in July 2023.

DONS is a world leader in orthostatic tremor (OT) research and has the largest and longest longitudinal research program for this condition. The movement disorders team has recently collaborated to submit additional OT peer-reviewed manuscripts, including a paper on the plantar grasp sign (i.e., the curling of the toes that many patients experience), which has very high sensitivity and specificity for the screening of OT, and was found to be present in more than 80% of patients enrolled in the study. Additionally, Dr. Torres-Russotto has also collaborated with a team of movement disorders experts from the Amsterdam University Medical Centers in the Netherlands, including Drs. Fleur van Rootselaar and Bart Swinnen, to validate the first translation of the OT-10 Severity Scale from English into a different language (Dutch).

Did you know?



Amy Hellman,MD, FAAN
Director, Huntington's disease center

The Huntington's Disease Society of America (HDSA) Center of Excellence at Nebraska Medicine is a study site for Enroll-HD and Kinect-HD. Enroll-HD is a global observational study and clinical research platform aiming to accelerate the development of therapies for Huntington's disease (HD), a rare, inherited disease-causing progressive breakdown/degeneration of nerve cells in the brain. It is the world's largest observational study for HD with more than 20,000 participants. Kinect-HD is a Phase 3, randomized, double-blind, placebo-controlled study evaluating the efficacy of valbenazine to reduce chorea associated with HD.

Department of Neurosurgery clinical trial is now recruiting participants

UNMC's Department of Neurosurgery and University of Colorado School of Medicine's Department of Psychiatry and Division of Neuroradiology are now recruiting subjects for a NIDA funded Deep Brain Stimulation for Methamphetamine study.

Learn more here: **https://medschool.cuanschutz.edu/psychiatry/research/faculty-labs/cona-lab**

PRANK Study in the Warren Lab

Alzheimer's disease (AD) may seem far removed from the field of child development, but Dr. David E. Warren, an associate professor in the DONS at UNMC, is currently investigating possible links between child development and risk of late-life AD in a multi-year project funded by the National Institute on Aging.

Multiple genes have been linked to an increased risk of late-onset AD, raising the important possibility that those AD-risk genes may influence brain development from the very beginning of a person's life. Dr. Warren's research will test the key notion that AD-risk genes may alter childhood brain development in ways that make an individual more vulnerable to late-onset AD decades later.Enrolling healthy children, the project, "Polygenic Risk of Alzheimer's disease in Nebraska Kids" (or "PRANK" for short), seeks to examine certain brain regions (such as the hippocampus) and functional brain networks that are vulnerable to late-onset AD in older adults. Dr. Warren's team uses genomic assays to map AD-risk genes in participating children ("PRANKsters") to determine whether children who carry AD-risk genes exhibit any differences in key brain regions and brain networks that are vulnerable to AD. The team also assesses the cognitive abilities of participants to explore potential differences among those with genetic AD-risk factors.

This research project holds the promise of shining light on the very earliest evidence of AD vulnerabilities and the way in which some genes may lead to increased long-term risk of neurodegenerative diseases such as AD. Filling this knowledge gap may motivate early interventions in healthy children to reduce the likelihood of developing dementia decades later in life.

To achieve their research aims, Dr. Warren's team seeks to enroll healthy kids ages 8 to 13. Due to delays in participant enrollment caused by the COVID-19 pandemic, Dr. Warren is eager to consider additional venues and collaborations that could help introduce more families to the opportunity to participate.

In addition to the primary PRANK study, several of Dr. Warren's graduate students have designed complementary studies to augment the main protocol with additional research questions:

- Ms. Abi Heller-Wight has designed the PRANK-Fit protocol, which seeks to investigate the relationship between modifiable health factors (e.g., exercise), AD-risk genes (e.g., APOE and brain/cognitive development).
- Ms. Jennifer Sexton has designed the PRANK-DS protocol, which has adapted the original protocol to assess cognitive and brain development in children with Down Syndrome (DS), a condition that greatly increases the risk of early-onset AD.
- Ms. Meghan Ramirez is designing a project that explores how environmental factors during various stages of development interact with genetic risk for developing AD.

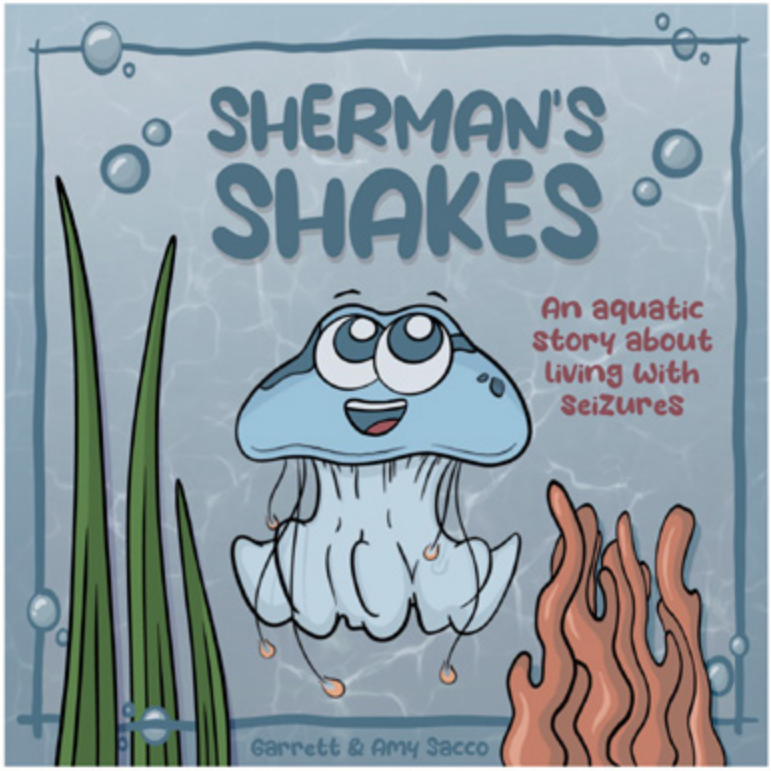
David E. Warren, PhD
Assistant professor

If you or someone you know is interested in learning more about the PRANK study, including details regarding participation, please contact the Warren Neuroscience Lab by calling **402-559-3158**, emailing **wnl@unmc.edu**, or through the web form **https://forms.office.com/r/Z6TQ7MJhBA**.

Meghan Ramirez, BS
Graduate research assistant

Jennifer Sexton, BS
Graduate research assistant

Abe Heller-Wright
Graduate research assistant



Fourth-year Medical Student Garrett Sacco writes book on neurological conditions

Garrett is a fourth-year medical student and aspiring neurologist. The images are a few selected pages from his children's book about seizures, *Sherman's Shakes*.

"I have been a hobby drawer for many years, and the arts and humanities have always been friendly companions to my journey learning medicine. I believe that deliberate integration of these pursuits can help patients, caregivers, and providers connect with each other, learn about their bodies and practice healthy coping skills" says Sacco.

"A few years ago, my wife Amy and I discussed the idea of writing and illustrating children's books later in life. When an opportunity was presented at UNMC to create a medical humanities-based project, we thought "why not start now?"

To blend visual art and storytelling and contribute to lay education about common neurological conditions, Garrett and Amy set out to create a children's book about seizures. After identifying a target audience and a narrative, Amy helped write a script and Garrett mocked up digital drawings of characters.

The product is a friendly story called *Sherman's Shakes*. It follows a young jellyfish as he experiences his first seizures (what he calls "the shakes"), learns about his brain from his doctor, finds support in his family and friends and feels empowered to live his life fully.

"Throughout my career, I hope to improve in using narrative, rhyme and illustration to demystify disease, define terms and direct patients faced with difficult neurological diagnoses. Our goal is to provide fun and engaging stories like this one to make complex topics more accessible to patients, so that every family can feel informed, supported and empowered to cope with changes and live life fully."

Want to read this book or get more information about future books?

Read digitally via SlideShare PDF link: **slideshare.net/GarrettSacco2/shermans-shakes-pdf-copypdf**

To purchase a physical copy, Garrett and Amy are working on funding the printing of more copies of this book through relevant publishing companies and sponsorship through national organizations. Feel free to contact Garrett to remain up to date on when these will be available, and for updates on future books at **garrett.sacco@gmail.com** or **402-320-9428**

Pain Medicine

by Madhuri Are, MD

Providing Care

The Department of Anesthesiology's Division of Pain Medicine provides patient care at multiple locations within the Nebraska Medicine network. The division is largely separated in two service lines: The Chronic Pain Service (CPS) and the Acute Pain Service (APS).

The CPS provides patients with many tailored avenues of relief and guidance in managing their chronic pain. This safe, multi-modal approach utilizes procedures varying from minimally invasive to complex, non-narcotic prescription medication management, physical therapy, pain management therapy, and more. Additionally, the team is actively pursuing other innovative procedures, such as cement augmentation, dorsal root ganglion dorsal column stimulation, and minimally invasive lumbar decompression (MILD) procedure and other tactics that improve the patient experience.

The APS provides pain management to inpatient and perioperative patients at Nebraska Medicine. At least one APS faculty is available 24/7, ready to provide perioperative consultation and safe, non-invasive services using imaging technology and the latest techniques to enhance patient care.

The pain medicine division synergizes with the region-leading headache care provided by DONS faculty Drs. Peter Soh, Beth Hartman, Swetha Pedavally and NP Autumn Nye, along with the spine and pain initiative in neurosurgery.

Madhuri Are, MD
Chief, Division of Pain Medicine, Department of Anesthesiology, UNMC
Director, Cancer Pain Medince, Village Pointe Health Center, Nebraska Medicine

Fellowships

The Division of Pain Medicine has two Accreditation Council for Graduate Medical Education (ACGME)-accredited fellowships, the Pain Medicine Fellowship and the Regional Anesthesiology and Acute Pain Medicine (RAAPM) Fellowship. Currently, there are three fellows in the Pain Medicine Fellowship (chronic pain) and one fellow in the RAAPM fellowship.

Many division members and trainees are active in clinical research such as IOVERA +/- Adductor Canal Blocks for patients undergoing total knee arthroplasty and the pursuit of advanced therapies that enhance patient care. Several faculty members in the department hold leadership positions within subspecialty societies and serve as reviewers for industry journals.

Mind & Brain Health Labs

Pictured above, the MBHL driving simulator equipment.

The Mind and Brain Health Labs (MBHL) of DONS is dedicated to clinical and translational research to support mind and brain health across the lifespan.

Dr. Matt Rizzo, founder of the MBHL, noted that they use technology like smart watches, phones and sensors in cars — along with innovative data analytic tools — to learn how our health affects our behavior, movement, sleep, mobility and quality of life in the real world. This research also enables the team to find new ways for tracking health and identifying early signs of disease for earlier treatment, better outcomes and independence.

The team is excited to be gaining an ever better understanding of the effects of impairment and disease on patterns of behavior at home, at work, at play and travel in between. Successful discovery depends on active engagement and participation of community members, together with scientists and physicians like ours, working to develop new tools and technologies that support mind and brain health.

CBD and PTSD in Adults
(IRB # 159-22-FB)

This is a new clinical trial looking to better understand the effects of cannabidiol (CBD) on addressing symptoms of post-traumatic stress disorder (PTSD) in adults ages 21 to 65. People with and without PTSD are invited to participate. Comparing people with and without PTSD may help better understand how PTSD affects a person's daily life. People with PTSD will take a study medication (CBD or a placebo) and all participants will wear a smart watch to understand daily activity and sleep patterns. Participants will also have the option to participate in driving procedures and fMRI scans. All this information will inform our understanding of how the use of CBD can be used to treat both CBD and comorbid psychiatric disorders (e.g., anxiety, depression) and develop new measures to assess symptom severity and outcomes in people with PTSD.

Driving and Alzheimer's disease **(IRB # 522-20-FB)**

This is a study of active drivers between the ages of 65 and 90 with a range of cognitive abilities. The goal of this study is to evaluate how changes in a person's memory or thinking affect how they sleep, move and drive, to develop better ways to detect early impairments in Alzheimer's disease. Participants have a sensor package installed in their car to measure driving and wear a smart watch to measure daily patterns of movement activity and sleep. How a person sleeps, moves and drives may help demonstrate health changes — even before they reach the clinic. Early detection may enable earlier help and treatment in patients with early Alzheimer's disease.

Mind and Brain Health Registry **(IRB #398-15-EP)**

MBHL seeks volunteers to join a research registry of people who are interested in participating in mind and brain health research at UNMC. Together, we are working to support research aiming to improve mind and brain health. A registry is a list of people who are interested in being contacted about ongoing research studies. Joining a registry does not mean you have to participate in any research studies. You may decline to participate in any research study you learn about.

If you are interested in joining one of the MBHL studies please call at **402-559-6870** or email **mbhl@unmc.edu** for further details.

Greetings from the UNMC Department of Physical Medicine and Rehabilitation

The Department of Physical Medicine and Rehabilitation (PM&R) continues to expand its faculty with the addition of Dr. Daniel Pierce.

Dr. Pierce joined faculty in September after completing a VA Fellowship in Quality Improvement at the University of Washington. Dr. Pierce splits his time between the Nebraska Medicine PM&R consultation service and the Omaha VA, where he is increased electromyography (EMG) experience for residents.

The PM&R residency program has a complement of 16 current residents and anticipates another excellent match year with 80 student interviews in progress. Of the division's 2022 graduates, 75% are completing fellowships. Of the current senior cohort, two senior residents have already matched into fellowships. The division offers an ACGME-accredited brain injury medicine fellowship starting this year, which is open to neurology, psychiatry, and PM&R graduates. PM&R has partnered with the University of Nebraska at Omaha Department of Biomechanics and the Madonna Research Institute to increase involvement in clinical research in areas such as stroke rehabilitation and cerebral palsy. The PM&R department looks forward to continuing collaboration with neurology residents, fellows and faculty.

Samuel M. Bierner, MD
Professor & Chair, Department of Physical Medicine and Rehabilitation

Daniel Pierce, MD
Assistant Professor, Department of Physical Medicine and Rehabilitation

2022 Event Recaps

Mind & Brain Health Labs team sponsored a booth at the 2022 Walk to End Alzheimer's on Oct. 15 at Stinson Park in Omaha

Elizabeth Vlock, Madison Wilson, Karla Lynch and Tammy Jackson helped educate walkers and shared resources on how to get involved in Alzheimer's research at UNMC. Dr. Daniel Murman and clinical research assistant Nick Miller also showed their support at the event.

2022 Biomedical Research and Healthcare Informatics Conference Recap

Thank you to all who attended the 2022 Biomedical Research and Healthcare Informatics Conference in October 2022! The event was co-sponsored by the Great Plains IDeA-CTR, UNMC Center for Intelligent Health Care, and the UNMC College of Medicine, and was well attended both virtually and in person, with more than 250 total attendees.

The first day of the event featured several speakers with an informatics and artificial intelligence focus, including a "fireside chat" with Dr. Robert Califf, Commissioner of Food and Drugs, U.S. Food and Drug Administration.

cont. pg. 11

Robert Califf, MD, MACC
Commissioner of Food and Drugs, U.S. Food and Drug Administration

Biomedical Conference Recap from pg. 10

Other distinguished presentations included:

- Shelley Rusincovitch, MMCi, Managing Director, Duke Artificial Intelligence Health: The Challenges of Artificial Intelligence (AI) Ethics and Safety
- Jin Tian, PhD, Associate Professor, Department of Computer Science, Iowa State University: AI and Causality
- Kensaku Kawamoto, MD, PhD, MHS, FACMI, FAMIA, Professor of Biomedical, Informatics and Associate Chief Medical Information Officer, University of Utah
- School of Medicine: Extending the EHR (electronic health records) to Enable AI-Augmented Decision Support: The University of Utah ReImagine EHR Experience
- Lesley Curtis, PhD, Professor and Chair, Department of Population Health Sciences, Duke School of Medicine: Post-implementation Surveillance of AI-based Clinical Decision Support Algorithms
- Julia Skapik, MD, MPH, Chief Medical Information Officer, National Association of Community Health Centers (NACHC), Staff Physician, Inova Health System: Taming Clinical Registries

The second day began with enthusiastic discussion on topics related to informatics, with key action items and takeaways from various breakout groups. The meeting was concluded with a series of presentations from UNMC College of Medicine faculty and a keynote presented by Bradley Malin, PhD, accenture professor of biomedical informatics, biostatistics and computer science at Vanderbilt University Medical Center.

We are pleased to have hosted another successful meeting, with opportunities to network and address key topics in our region. For more information and recorded videos from the event, please visit our recap website at **https://gpctr.unmc.edu/2022-biomedical-research-and-healthcare-informatics-conference-recap/.**

2022 Parkinson's Disease Conference

The Parkinson's Disease Conference convened on Monday, Oct. 10, 2022, at the Scott Conference Center in Omaha

The educational outreach symposium reached Parkinson's disease (PD) patients across Nebraska and around the country. There were in-person and webinar options for participating patients and their care partners/families. Speakers included neurological sciences faculty experts covering PD topics of memory, exercise and nutrition, cognitive changes, care partners, apathy and depression, deep brain stimulation (DBS) and more.

Community partners also presented on the importance of movement and exercise in PD. A dozen sponsors participated in the event. With more than 130 registrants, the event was a tremendous success, showing great recovery from the pandemic.

Event director, Julie Pavelka, APRN-NP, has coordinated this event for four years, with the largest program occurring pre-COVID in 2019 with almost 1,000 attendees. Julie has recently taken on a new role as co-director of the Memory Disorders Lewy Body Dementia Program at UNMC/Nebraska Medicine.

"I will continue to work closely with our movement disorder specialists to ensure this transition is as seamless as possible and will continue to see individuals with PD dementia in my new role with the Memory Disorders Clinic. It has been a distinct honor and pleasure to be involved in so many PD journeys, and I will forever be grateful for the relationships made over the past ten years," says Pavelka.

UNMC Neurology Alumnus Zbigniew Wszolek, MD, receives Mayo Clinic Distinguished Alumni Award

"Individuals who have received the award have been recognized nationally and often internationally in their fields. The Distinguished Alumni Award recognizes the outstanding attributes and accomplishments of individuals who have served at high levels in all aspects of their respective fields." — Mayo Clinic

Dr. Wszolek will be visiting UNMC in June for a speaking engagement.

Read the full article here: **https://newsnetwork.mayoclinic.org/discussion/mayo-clinic-honors-6-with-distinguished-alumni-awards/**

Zbigniew Wszolek, MD

Thoughts on my retirement

By John Bertoni, MD, PhD

Life is the most precious gift of all. Life is an adventure. I am thankful to so many people I have met on my journey and all my encounters with each of them in this incredible universe all around us. We have our many teachers to thank, and we stand on the shoulders of giants. We live and learn, and I hope all reading this will realize the importance of this moment. And of the next moment. Make them count.

John Bertoni, MD, PhD

Some say the journey of life is all about the ending or the destination, but we do not know exactly where, how or when our journeys will end. This makes each moment even more precious. We cannot know how many moments there will be.

I say it is each precious moment that matters. The past is over and done. If we are wise, we can bring the lessons learned to better live our present moment. The future is unknown, and most of our worries won't happen, and most of what happens we cannot control. We are wise to plan for the future but are wiser to focus on what we do in the present.

I have devoted my working life moments to provide health care for those in need. The study of the brain and spinal cord, and all the nerves that connect us to our muscles, our bones, our skin, and our senses is the final frontier. There will always be more to learn.

I have learned so much from those I have served. I cannot thank my patients enough for all they have taught me.

I learned much from all the textbooks, all my teachers, all my colleagues, and all my experiences; but I learned the most from what my patients taught me. I learned more when I set aside my preconceptions, and really listened. Sometimes they spoke to me in whispers. Whispers tell the innermost secrets of one human being to another. Sometimes it's about how they want to live or why they want to live and sometimes when it's time to accept the end.

Atul Gawande says it very well in his book Being Mortal. We physicians and all of us health care providers often think our job is to ensure health and survival, but it is really to enable well-being. Well-being is about the reasons one enjoys life and wishes to be alive and for whom they want to be alive. When we and our patients and colleagues approach burnout with the pandemics and the sorrows we share together, we find these reasons the best we can. Sometimes, it is about the well-being of just living well and dying well, if for no other reason than to show others around us an example. The inspiring examples of so many of my patients have given me reasons to live and to give them all I can.

I love what I do. On my watch, I strive to give every patient the best care possible, so they may enjoy each of their precious moments for as long as possible. I also love the teaching of the next generations, as they climb higher and stand on our shoulders. I love sharing whatever skills I must help those who need my help. I love the challenge in the research to find a way to cure and to alleviate the suffering. I love the challenge of thinking outside the box and finding the solution and returning our patients to a better life with many more precious moments on their own journeys. It is because I tell my patients to exercise and take care of themselves and be in the driver's seat of their own lives that has made me practice what I preach and has given me more precious moments to serve them!

I'm retiring from what I do now in early 2023 to give others their opportunity to come to the front of the line and stand on our shoulders. It's time for them to reach even greater heights. They have been taught the latest and best truths and have learned more ways to help in this ever more complicated final frontier.

I am not done yet, however. I will continue in my precious moments to find ways of serving this final frontier and all of you as long as possible.

2022 Faculty Publications

Michele R. Aizenberg, MD

Ellis D, **Aizenberg MR**. (2022). Structural brain imaging predicts individual-level task activation maps using deep learning. *Frontiers in Neuroimaging*. https://doi.org/10.3389/fnimg.2022.834883

Josue M. Avecillas Chasin, MD, PhD

Avecillas-Chasin JM, Honey CR, Heran MKS, Krüger MT. (2022) Sweet spots of standard and directional leads in patients with refractory essential tremor: white matter pathways associated with maximal tremor improvement. *J Neurosurgery*. Apr 29:1-10. PMID: 35535840 DOI: 10.3171/2022.3.JNS212374

Katrina Cordts, PhD

Suk J, Vaughan B, **Poppert Cordts KM**, Lerdahl A, Bohn A, Garvey WF, ... Hwang S. (2021). Structural abnormality of superior frontal gyrus in adolescents with severe irritability. *Biological Psychiatry,* 89(9), S188. doi: 10.3389/fpsyt.2022.742148

Suk J, **Poppert Cordts KM**, Garvey W, Lerdahl A, Soltis-Vaughan B, Bohn A, Edwards R, Kratochvil C, Blair J, Hwang S. (2022). Clinical utility of a dimensional disruptive mood and behavior psychopathologies in child and adolescent psychiatry practice. *Front Psychiatry,* 13, 1-12. doi: doi.org/10.3389/fpsyt.2022.742148

Howard Fox, MD, PhD

Fox HS, Niu M, Morsey BM, Lamberty BG, Emanuel K, Periyasamy P, Callen S, Acharya A, Kubik G, Eudy J, Guda C, Dyavar SR, Fletcher CV, Byrareddy SN, Buch S. Morphine suppresses peripheral responses and transforms brain myeloid gene expression to favor neuropathogenesis in SIV infection. *Front Immunol.* 2022 Nov 16;13:1012884. doi: 10.3389/fimmu.2022.1012884. PMID: 36466814; PMCID: PMC9709286.

Trease AJ, Niu M, Morsey B, Guda C, Byrareddy SN, Buch S, **Fox HS**. Antiretroviral therapy restores the homeostatic state of microglia in SIV-infected rhesus macaques. *J Leukoc Biol.* 2022 Nov;112(5):969-981. doi: 10.1002/JLB.3HI0422-635R. Epub 2022 Jun 10. PMID: 35686500; PMCID: PMC9796061.

Emanuel KM, Runner K, Brodnik ZD, Morsey BM, Lamberty BG, Johnson HS, Acharya A, Byrareddy SN, España RA, **Fox HS**, Gaskill PJ. Deprenyl reduces inflammation during acute SIV infection. *iScience.* 2022 Apr 6;25(5):104207. doi: 10.1016/j.isci.2022.104207. PMID: 35494221; PMCID: PMC9046124.

Elizabeth Hartman, MD

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Maximiliano Hawkes, MD

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2022 Research Grants

Neurological Sciences

Award Year(s): 2022 – 2023
PI: Anna Dunaevsky, PhD
Funding Source: FRAXA Research Foundation
Title: Astrocyte contribution to sensory hypersensitivity in FXS

Award Year(s): 2022 – 2023
PI: Pierre Fayad, MD
Funding Source: University of Nebraska Omaha
Title: Improving gait outcomes in stroke survivors through tactile stimulation: Understanding the brain mechanisms

Award Year(s): 2022
PI: J. Americo Fernandes, MD
Funding Source: Massachusetts General Hospital
Title: Task Order #10: Regimen E, SLS-005-Trehalose

Award Year(s): 2022 – 2025
PI: J. Americo Fernandes, MD
Funding Source: National Muscular Dystrophy Association
Title: MDA Care Team Project

Award Year(s): 2022 – 2027
PI: Howard Fox, MD, PhD
MPI: Paul Trippier, PhD
Funding Source: DHHS/NIH/NIA
Title: UNMC Training program in Alzheimer's Disease and related dementias drug discovery

Award Year(s): 2022 – 2023
PI: Howard Fox, MD, PhD
Funding Source: DHHS/NIH/NIDA
Title: Supplement award: Uncovering HIV/opioid effects in the brain at the single cell level: transcription, chromatin accessibility and reservoir analysis int eh SIV/cART/morphine/rhesus monkey model

Award Year(s): 2022 – 2023
PI: Jennifer Merickel, PhD
Funding Source: Iowa State University
Title: Quantitative Assessment of Driving Capabilities of Senior Drivers

Award Year(s): 2022 – 2023
PI: Jennifer Merickel, PhD
Funding Source: Toyota
Title: Developing mechanisms to detect driver risk from driver state in diabetes

Award Year(s): 2022 – 2024
PI: Dan Murman, MD, MS
Funding Source: Biogen MA Inc.
Title: A Phase 3b/4 Randomized, double-blind, placebo controlled, parallel-group study to Verify the clinical benefit of Aducanuman (BIIB037) in participants with Alzheimer's Disease (Envision)

Award Year(s): 2022 – 2024
PI: Dan Murman, MD, MS
Funding Source: Genetech Inc.
Title: A Phase III, multicenter, randomized, parallel-group, double-Blind, placebo-controlled study to evaluate the efficacy and safety of Gantenerumab in Participants at risk for or at least the earliest stages of Alzheimer's disease

Award Year(s): 2022 – 2023
PI: Matthew Rizzo, MD
Funding Source: DHHS/NIH/NIGMS
Title: Supplement award #1: Great Plains IDeA-CTR

Award Year(s): 2022 – 2023
PI: Matthew Rizzo, MD
Funding Source: DHHS/NIH/NIGMS
Title: Supplement award #2: Urgent Competitive Revisions to IDeA and NARCH Programs for SARS-COV-2 Surveillance Studies

Award Year(s): 2022 – 2024
PI: Mara Seier, MD
Funding Source: Lundbeck Inc.
Title: Interventional, randomize, double-blind, parallel-group, placebo-controlled, multi-centre study to assess the efficacy, safety and tolerability of Lu AF82422 in patients with Multiple System Atrophy (Amulet)

Award Year(s): 2022 – 2024
PI: Kelly Stauch, PhD
Funding Source: Michael J. Fox Foundation
Title: Elucidating cell type-specific PINK1 and PRKN expression in vivo

Award Year(s): 2022 – 2023
PI: Olga Taraschenko, MD, PhD
Funding Source: NE DHHS LB606
Title: In vivo monitoring of neurogenesis in encephalitis

Award Year(s): 2022 – 2023
PI: Dave Warren, PhD
Funding Source: DHHS/NIH/NIA
Title: Research supplements to promote diversity in health-related research program for Meghan Ramirez

Award Year(s): 2022-2023
PI: Dave Warren, PhD
Funding Source: NE Bankers Assn. Equipment Grant
Title: Psychology Tools

Award Year(s): 2022 – 2023
PI: Dave Warren, PhD
Funding Source: Mayo Clinic Arizona
Title: Enhancing cognitive function in breast cancer survivors through community-based aerobic exercise training

Award Year(s): 2022 – 2023
PI: Peng Zhong, PhD
Funding Source: Brain & Behavior Research Foundation
Title: Dysfunction of sleep-control circuits in depression

Award Year(s): 2022 – 2023
PI: Peng Zhong, PhD
Funding Source: CoNDA Project
Title: Hypothalamic sleep-wake neuron defects in Alzheimer's Disease

Neurosurgery

Award Year(s): 2020 – 2025
PI: Aviva Abosch, MD, PhD
Funding Source: National Institutes of Health
Title: Adaptive Neurostimulation to Restore Sleep in Parkinson's disease: An Investigation of STN LFP Biomarkers in Sleep Dysregulation and Repair

Award Year(s): 2022 – 2024
PI: Aviva Abosch, MD, PhD
Funding Source: National Institutes of Health
Title: Deep Brain Stimulation (DBS) For Sever Treatment Refractory Methamphetamine Use Disorder

Award Year(s): 2021 – 2023
PI: Stephen V Gliske, PhD
Funding Source: National Institutes of Health
Title: Characterizing High Frequency Oscillations as an Epilepsy biomarker with Big Data tools

Award Year(s): 2020 – 2023
PI: Stephen V. Gliske, PhD
Funding Source: National Institutes of Health
Title: Real-time state of vigilance monitor for the neonatal intensive care unit

Award Year(s): 2021 – 2023
PI: Jamie Wilson, MD
Funding Source: University of British Columbia / Vancouver Coastal Health Authority
Title: The Canadian-American Spinal Cord Perfusion Pressure and Biomarker Study - CASPER

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