

WINTER 2025

NeuroNEXT

from the Departments of Neurological Sciences and Neurosurgery

Turning the Page, Embracing the Future

When the calendar turned over to 2025, we took time to reflect on the past year and to look ahead to the new year.

The year 2024 demonstrated the mission of both the department of neurosurgery and department of neurological sciences in patient care, education, research, and outreach.

Changing the world through research is a central part of the department neurological sciences (DONS) mission. UNMC researchers were among the top 2% of researchers in their fields. At UNMC over 100 current and former members were recognized, including DONS faculty members. The 2024 Distinguished Scientist Award ceremony also saluted DONS faculty for continued excellence in research. We extend our congratulations to all UNMC current and former researchers.

Clinicians carry a heavy load not only in the clinic but also in outreach efforts. Those in the department of neurosurgery and DONS continued to show their strength during this past year. The Parkinson's Disease Patient and Caregiver Symposium hosted over 600 patients and caregivers. A collaboration among the Great Plains IDeA-CTR, the Nebraska Rural Health Association, and the rural community in Nebraska formed Nebraska Rural Health Connect to address the gap within critical access hospitals and rural health clinics across Nebraska. With health system dynamics, clinical work also needs leaders who put the pieces together. The 2025 Health Management Academy Physician Leadership Program provides clinicians with this leadership training.

cont. pg. 2

IN THIS ISSUE

- 3 Researchers Continue to Make an Impact
- 3 UNMC Distinguished Scientists
- 4 Welcome
- 4 Physician Leadership
- 5 Society for Neuroscience
- 6 Neurocritical Care Conference
- 6 Mexico International Consortium
- 7 2024 Great Plains IDeA CTR Scientific Meeting
- 7 Nebraska Neurological Society Annual Meeting
- 8 Parkinson's Disease Patient-Caregiver Symposium
- 8 Ukrainian Surgeons Visit UNMC
- 9 I Love Rural Health
- 9 Remembering Howard Hawks
- 10 2024 Publication Recap
- 14 2024 Grant Awards
- 15 Smiles for Ukraine children
- 15 Save the Dates



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



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



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

Turning the Page from pg.1

Whether locally, nationally, or internationally, researchers and clinicians continued their education through various meetings and events. We not only learned, but we also taught. UNMC hosted Ukrainian healthcare professionals. UNMC senior faculty and students traveled to Veracruz, Mexico, to continue its partnership with the University of Anahuac Veracruz.

AI (artificial intelligence) has been in the news for technology, industry, business, and health care. The 2024 Great Plains IDeA CTR Scientific Meeting addressed AI in the transformation of health care and patient outcomes.

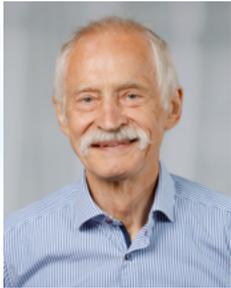
Community outreach has gone beyond our borders. UNMC Student Alliance for Global Health organized a toy drive for Ukrainian children affected by the on-going war. This drive continues into the new year.

Our departments continue to grow with new staff. We count on each other. Enjoy reading highlights on new staff.

We cannot do our jobs alone. Support from philanthropists is integral to our organizations. We honor the late Howard Hawks and his family.

Our 2024 grant funding and publications, along with continued education and community outreach, prepare us to embrace and shape the future.

We wish all of you a wonderful year!



Bernd Fritsch, PhD

Researchers Continue to Make an Impact

UNMC researchers are among the top 2% of all researchers in the world in their fields. Stanford University released its yearly research rankings. This ranking is based on the 2016 work by Stanford Professor John P. A. Ioannidis and colleagues who created an indicator using several citation metrics. The group analyzed the work of more than 6 million scientists worldwide and ranked them in their field of study (**Ioannidis, et al. 2016**). The report has been released annually since 2019.

At UNMC, over 100 current and former faculty members were recognized in the most recent database of the 100,000 top-cited scientists. Included in that list were Howard S. Fox, MD, PhD, Bernd Fritsch, PhD, and Matthew Rizzo, MD, FAAN, from the Department of Neurological Sciences. A complete list of UNMC researchers is available in [UNMC Today, December 13, 2024](#).

UNMC Interim Chancellor H. Dele Davies, MD, said, "Research is an integral part of UNMC's mission to create healthier futures for people in Nebraska and beyond," Davies said. "We are excited to see so many current and former UNMC investigators recognized as among the most influential in their field."

UNMC Vice Chancellor for Research Ken Bayles, PhD, said, "These rankings are yet another indicator of the productivity of our talented faculty and the impact of their research on the broader research community."

UNMC 2024 Distinguished Scientist Award Ceremony

Over 500 faculty investigators at UNMC are solving today's critical medical questions and inspiring the next generation of providers and researchers. Since 2006, the University of Nebraska Medical Center has honored those researchers during the Distinguished Scientist Award ceremony.

Vice Chancellor for Research Ken Bayles, PhD, said, "This is an annual celebration of UNMC research and researchers, including their collaborators and supporters, and the impact we have regionally and around the world. My congratulations to all those being honored."

The Department of Neurological Sciences is proud to recognize Associate Professor Bethany Lowndes, PhD, MPH, who was honored as a New Investigator at the ceremony on November 14, 2024. New Investigator Awards go to outstanding UNMC scientists who in the past two years have secured their first funding from the National Institutes of Health, the Department of Defense, or other national sources. New Investigators

also had to demonstrate scholarly activity, such as publishing their research or presenting their findings at national conventions. Dr. Lowndes joined UNMC in 2018. Her research focus has been on human-centered engineering.

Dr. Lowndes shared why research is important in the world today, "As medical treatments and healthcare practices advance, the systems supporting care delivery become more complex. This complexity leaves healthcare systems vulnerable to errors, high workload for clinicians, and functioning with siloed procedures and practices. Research in healthcare delivery can take a principled approach to identify these vulnerabilities, develop human-centered solutions, and guide sustainable implementation. These research efforts are invaluable for informing the future of healthcare delivery and optimizing safety, patient experience, and clinician wellbeing.

My research will make a difference because people come first. Patient-centered care is successful through

multidisciplinary approaches. Through Human Factors and Ergonomics, I collaborate with clinicians to assess, co-develop, and implement solutions that meet the needs of all users on the team. I apply what we know about people—their abilities, characteristics, preferences, and limitations—to inform the design of equipment, environments in which they work, and their workflow. Research and innovative development by my team will enhance safety and well-being."

We also extend our congratulations to Hamid Band, MD, PhD, who was honored as the UNMC 2024 Scientist Laureate, and all those recognized at the ceremony. [Read the entire program](#)



Bethany Lowndes, PhD, MPH

Welcome! *New Faculty & Staff*

PHYSICIAN LEADERSHIP

by Shari Griffin

Congratulations to Michele Aizenberg, MD, who was selected for the 2025 Health Management Academy Physician Leadership Program. Dr. Aizenberg will tackle a nine-month program that develops clinical physicians for physician leadership. Dr. Aizenberg will learn how her role plays in the larger health system dynamic.

“Being selected for this opportunity is exciting for me as I want to continue to leverage my clinical experience and expertise to foster growth for our organization. The exposure I will have in our business and industry as well as networking opportunities will equip me with the necessary tools to continue to add value and improvements and enable change,” said Dr. Aizenberg.

Dr. Aizenberg will learn how to balance priorities that include budget control and workforce optimization all while tapping into her professional network.



Michele Aizenberg, MD



Luther Mardock

Luther Mardock grew up in Schuyler, Nebraska and joined the Department of Neurological Sciences as Chief Scientific Administrator for the IDeA-CTR; Instructor, Department of Neurological Sciences, College of Medicine. His interests include Human-Centered Design in Healthcare and Health Sciences Education. “Working with UNMC has given me incredible opportunities to develop my professional skills, especially related to writing and communicating complex regulatory and accreditation requirements.”

Three interesting facts about me:

- I’m an avid motorcyclist and teach beginning and intermediate Motorcycle Safety Foundation courses in Omaha and Lincoln
- I also teach English Composition as an adjunct faculty at several local community colleges
- I live just a couple of blocks from campus with my wife, daughter, and our dog.



Diane Ratigan-Schmidt

Diane Ratigan-Schmidt grew up in Omaha, Nebraska, and joins the Department of Neurological Sciences as an instructor and Director of Workforce Strategy. She leads and consults in organizational transformation, strategic employee engagement, strategic performance management, leadership development, talent review, strategic planning, road-mapping, future-visioning, and team collaboration.

Diane is finishing her book “Healing Organizational Trauma” centered around well-being and translational organizational healing methodologies. She is also an immersive facilitator, keynote speaker, and consultant, having worked with a wide range of organizations, including UNMC Chancellor’s Office & Chancellor’s Leadership Team, UNMC Academic Affairs, UNMC College of Pharmacy, and more.

Three interesting facts about me:

- I am a mom to four incredible kids, including one UNMC doctor.
- I am absolutely obsessed with the beautiful hills on the UNMC campus and walking them as often as I can (running them when I’m in better shape).
- I use rock and roll music as my own personal therapy and always have several concerts booked (sometimes four a month).

Society for Neuroscience 2024 Annual Meeting

by Anna Dunaevsky, PhD, Professor

Members of the Department of Neurological Sciences made a strong showing at the annual Society for Neuroscience (SfN) meeting in Chicago October 5-9, 2024. In a week jam-packed with mini-sessions, lectures, workshops, posters, and panels, thousands of neuroscientists from around the world gathered to share the latest and greatest ideas and discoveries in neuroscience.

As part of a symposium on 'Cortical neural circuits for motor learning at spine, dendrite, and network level,' Anna Dunaevsky, PhD, Professor and Director of the Cognitive Neuroscience of Development & Aging Center, gave a talk titled "Dendritic spine dynamics and AMPA receptor trafficking impairments with motor skill learning in Fragile X syndrome." This presentation described the work we performed in a mouse model of FXS. Here, we performed *in vivo* multiphoton imaging of synapses and the neurotransmitter receptors within the synapses at different stages of motor skill training. We found that formation of new synapses and accumulation of receptors that occur in control mice is impaired in the mouse model of FXS.

Padmashri Ragunathan, PhD, Assistant Professor, Developmental Neuroscience, also attended the conference. Her lab presented a poster titled "Effects of prenatal alcohol exposure on the auditory system." In this study, the effect of chronic low to moderate-level exposure to alcohol in utero on the GABAergic interneuron populations in the primary auditory cortex was examined in a mouse model of maternal voluntary alcohol consumption throughout gestation. The data from this

ongoing study point toward layer-specific susceptibilities of inhibitory neurotransmission in the primary auditory cortex in mice prenatally exposed to alcohol.

Kelly Stauch, PhD, Associate Professor and Seahorse Core Director, presented a poster on "Chronic glial activation and behavioral alterations induced by acute/subacute pioglitazone treatment in a mouse model of traumatic brain injury." Using a controlled cortical impact mouse model of TBI, this work revealed that although pioglitazone has been shown to lead to attenuated TBI outcomes acutely, long-term deleterious consequences, including disruption of tau homeostasis, chronic glial activation, neuronal pathology, and worsened injury severity are observed chronically, with male mice being more susceptible than female mice. Further, male pioglitazone-treated TBI mice exhibited increased dominant and offensive-like behavior while having a decreased nonsocial exploring behavior.

The SfN Conference is a great learning opportunity for students. Alexandria Anding, graduate student research assistant in Dr. Dunaevsky's lab, presented a poster titled "Investigating the role of astrocytes in deficient sleep in Fragile X syndrome." Nshanthea Roland, graduate student in Dr. Stauch's lab, presented a poster titled "APOE4 induces synaptic mitochondrial cholesterol, proteome, and Daniel Estrella, graduate student with Dr. Stauch, presented a poster titled "Increased diapedesis across the blood-brain-barrier and impaired T-cell populations in a Pink1/Parkin dual knockout model of Parkinson's disease."

Applauds to Ms. Anding, who was accepted to the Neuroscience Scholars Program and to Mr. Estrella, who received the SfN 2024 Trainee Professional Development Award. Mr. Estrella also received the "UNMC Center for Heart and Vascular Research Trainee Award."

Congratulations to all who presented their work at SfN. We look forward to seeing you at the 2025 SfN meeting in San Diego.



Alexandria Anding



Daniel Estrella



Nshanthea Roland

Annual Neurocritical Care Conference

by Subin Mathews, MD, MBBS

The Neurocritical Care Division at UNMC (MDs and APPs) attended the Annual Neurocritical Care Conference held from October 14–17, 2024, in San Diego. Andrew Brown, MD, presented his research on the safety of tirofiban, a drug to prevent blood clots from forming, following carotid stenting for acute ischemic stroke. This annual meeting provides a valuable opportunity for professionals from various disciplines within neurocritical care to come together, exchange insights, and discuss the latest advancements, research, and best practices in the field.



Attending the Annual Neurocritical Care Conference: Subin Mathew, MD, Andrew Brown, MD, Austin Clark, NP, Tori Fenger, NP, Monica Johnson, MD, and Daryl Gress, MD

Mexico International Consortium

by Bruce Grogan

In 2016, UNMC College of Public Health initiated a partnership with the University of Anahuac Veracruz (UAV), Veracruz, Mexico. The shared vision of this partnership is to build on the successes experienced by the UNMC medical Spanish program, the annual global health course taught in Veracruz by UNMC faculty, annual service-learning trips for UNMC students, and the annual international health fair conducted in numerous communities surrounding the campuses in Xalapa and Cordoba.

This important partnership continues today and has evolved in ways that will enhance the benefits of both UAV and UNMC faculty and students, as well as the communities that we each serve.

The next phase in the expansion of the partnership will focus on UNMC's support in the development of research infrastructure and related portfolio, and beginning in the summer of 2025, the bi-directional exchange of students and faculty.

To design an effective and proactive program, a senior delegation from UNMC traveled to Veracruz for several days in early October 2024 to engage in planning meetings focusing on the design and implementation schedule for these activities. The UNMC team was led by Jane Meza, PhD, interim vice chancellor for academic affairs, and Ken Bayles, PhD, vice chancellor for research. They were joined by Jeff

Harrison, MD, chair of the department of family medicine; Matt Rizzo, MD, FAAN, FANA, chair of the department of neurological sciences; Harnoor Dhaliwal, associate executive director of the Scott Scholars Program, University of Nebraska Omaha; and Armando De Alba, MD, MPH, PhD, associate professor and assistant dean, department of family medicine.

According to Dr. Rizzo, "This partnership opens doors for two nations. It's not just about swapping ideas – it's about tackling real health issues together. By joining forces, we are creating global opportunities that will benefit neurology and neurosciences education, discovery, and care for all the communities we share and serve."



Some members of the UNMC delegation to the University of Anahuac Veracruz, Mexico this past October: Armando De Alba, MD, MPH, PhD, associate professor and assistant dean, department of family medicine; Harnoor Dhaliwal, associate co-executive director, Scott Scholars Program, college of medicine; Ken Bayles, PhD, vice chancellor for research; Jane Meza, PhD, interim vice chancellor for academic affairs; and Matt Rizzo, MD, FAAN, FANA, chair of the department of neurological sciences.

2024 Great Plains IDeA CTR Scientific Meeting: Leveraging AI and Innovative Study Designs to Transform Healthcare and Improve Patient Outcomes

by Emily Frankel and Casey Allen

In October, the NIH-funded GP IDeA-Clinical Translational Research (CTR) Network held its 8th Annual Scientific Meeting, focused on the theme Leveraging AI and Innovative Study Designs to Transform Healthcare and Improve Patient Outcomes. This hybrid event attracted 134 in-person attendees and 47 virtual participants, representing a diverse audience of UNMC faculty, staff, students, external partners, and members of the public.

The meeting opened with a keynote address by Chris Lindsell, PhD, exploring Contemporary Clinical Trials: Current Advances and the Role of AI. Dr. Lindsell's talk set the tone for the conference by highlighting advancements in AI-driven clinical trials and their potential to transform healthcare delivery.

Following the keynote, attendees were engaged by Erin Iturriaga, DNP, MSN, RN, who presented From Fundamentals to Frontiers: The Journey of Basic Science into Transformative Technology, bridging foundational research with real-world applications. Susan Gregurick, PhD, shared insights into High-impact Data-centric Programs and NIH Funding Opportunities, emphasizing opportunities for researchers to engage with innovative data-centric initiatives. The keynote speakers concluded with Glen Hazlewood, MD, PhD, FRCPC, who detailed Automation and Efficiencies in Systematic Reviews and Guidelines, showcasing how AI and automation are redefining evidence synthesis.

A key feature of the meeting was a dynamic panel discussion on data sharing and management, which featured perspectives from representatives of local

institutions. This dialogue underscored the critical role of collaboration and data stewardship in advancing clinical and translational research.

The Annual CTR Superstar competition was a highlight of the event. Siwei Zhao, PhD, received top honors for his innovative project, A Novel and Efficacious Electrotaxis System for Enhancing Chronic Skin Wound Healing, earning a \$35,000 award to propel his groundbreaking work. This competition, aimed at raising awareness of CTR, recognizes promising scholars developing innovative tools for healthcare applications.

Melanie Menning, MD, MPH, was named Community Collaborator of the Year for her unwavering dedication to Omaha's underserved and refugee communities. A Spanish-speaking provider at OneWorld Community Health Center and an associate professor, department of family medicine with the UNMC College of Medicine, Dr. Menning partners with community health workers to address cultural and linguistic barriers, with a focus on diabetes education and cancer prevention. Her efforts to create culturally adapted educational materials have built trust and improved health outcomes in marginalized populations.

The Annual Scientific Meeting exemplified the power of collaboration, offering a vibrant platform for stakeholders to exchange ideas and forge new partnerships. By addressing cutting-edge topics like artificial intelligence, innovative study designs, and community engagement, the meeting reaffirmed its commitment to advancing translational research and improving healthcare outcomes for all.

Nebraska Neurological Society Annual Meeting

by Subin Mathews, MD, MBBS

The Nebraska State Neurological Society proudly hosted the 3rd Annual Fall Meeting on November 2, 2024, at The View at West Shores. This meeting provided an outstanding educational opportunity for neurologists, neurology residents, and ARNPs/PAs to learn and showcase their research.

This year's guest speakers—Daniel M. Goldenholz, MD, PhD, James Hillis, MBBS, DPhil, and Matthew Rizzo, MD,

FAAN—delivered insightful talks on the recent and upcoming applications of deep learning and artificial intelligence in clinical neurology. While highlighting the significant potential of AI, they also discussed challenges such as data quality, ethical considerations, and the inherent complexities of applying data science in healthcare. Dr. Hillis and Dr. Goldenholz emphasized the promise of AI in automating image interpretation tasks, accurately identifying brain structures, and detecting abnormalities.



Additionally, Dr. Mitchell Floura, one of our PGY-2 residents, presented a compelling case series on rare presentations of West Nile Virus. Several

other residents also showcased their innovative research projects, contributing to an engaging and productive meeting for all attendees.



Nebraska Neurological Society Fall Meeting

Parkinson's Disease Patient and Caregiver Symposium

by Mara Seier, MD

The UNMC Department of Neurological Sciences' annual Parkinson's Disease Patient and Caregiver Symposium was held on November 13, 2024, at the Embassy Suites La Vista Conference Center.

This six-hour event included topics ranging from Parkinson's disease diagnosis and management, Parkinson's disease research updates, cognitive changes in Parkinson's disease, deep brain stimulation for Parkinson's disease, and the role of

therapy and diet in Parkinson's disease. The event wrapped up with a question-and-answer session from our own Parkinson's disease movement disorder specialists.

The event was free to attendees, and nearly 600 patients and family members registered at the conference. Speakers included Miguel Situ, MD; Erin Cameron-Smith, MD; Emmy Smith, EdD; Pamela May-Weeks, PhD, ABPP; Josue Avecillas-Chasin, MD, PhD; Carolin Curtze, PhD; Jenna Wuebker,



Registered Dietician; Jennifer McKune, PT; Anne Mahnke, OT; Natalie Smith, SLP; Amy Hellman, MD; Kiel Woodward, MD. Dr. Matthew Rizzo gave the opening remarks, and Dr. Mara Seier was emcee for the event. The event was recorded in its entirety and can be viewed by anyone by accessing the following website: <https://go.unmc.edu/pd-symposium>

Ukrainian Surgeons Visit UNMC

In a remarkable display of global collaboration and knowledge exchange, a group of five Ukrainian surgeons visited UNMC in November to share their experience on polytrauma and injuries of war. Prominent Ukrainian trauma surgeons, named the 2024 Ben Nelson Fellows, visited the College of Medicine as part of a broader annual initiative by the Open World Program.

The Department of Neurological Sciences and the Department of Neurosurgery greeted them wholeheartedly at a luncheon and other informal gatherings.

Their stories of courage and resilience were astounding. Drs. Viktor Panichev, Hryhorii Petruk, and Olegsandr Gladushenko, who work at the large tertiary care centers in Kyiv and Vinnytsia, told us about their daily duties of performing surgeries in the dim lights of generator-powered ORs under constant air raid sirens. As surgeries frequently last through midnight, doctors often sleep at the hospitals and do not see their families for several days.

Other doctors described their service at the frontlines, which comes with different challenges. Dr. Victor Romanchuk, the head of the Central Region Military Unit, has worked as a military surgeon for over a decade. He shared the details of his recent

remarkable initiative on streamlining the evacuation process and setting up the early stabilization units for injured soldiers, which significantly reduced mortality. He stated that his medical unit's record-keeping and triage processes are unsophisticated and concise. "During mass casualties, when we receive 20-30 patients simultaneously, we promptly attend to the silent victims, as they are the most critical ones, before helping the patients who cry, even though it is emotionally difficult," stated Dr. Romanchuk. Neurosurgery resident Dr. Andrii Svyst, who currently serves in a medical military unit in Donbas, stated that it will be difficult for him to return to his civilian neurosurgery practice after his traumatizing experience in Donbas. "My OR in a bunker is as large as a closet," shared Dr. Svyst, "but I can do a lot of things with a fork and a screwdriver because oftentimes this is all we have."

Their technical skills and ability to work under constant pressure are unparalleled.

During their time at UNMC, the Ukrainian surgeons participated in lectures, workshops, and simulated demonstrations, allowing them to learn advanced surgical techniques and other latest innovations in the area of trauma and

resuscitation. They were particularly impressed with the advanced laparoscopic technologies and our trauma rehabilitation approaches.

We have established a long-lasting partnership and have already shipped certain donated medical supplies from UNMC to their hospitals in Ukraine. If you wish to show solidarity with these physicians or other medical professionals in Ukraine you can donate at GoFundMe at Fundraiser by Viktoriya Mashinson : Medical Supplies for Ukraine or donate tax-free at Heartland Family Services (Address: John Jeanetta, CEO, 2101 S 42nd St, Omaha, NE 68105, mark check "for Ukraine").

Visit UNMC Today to read more on this visit.



I Love Rural Health

by Elizabeth Reisher, Nebraska Rural Health Connect, Project Manager

The Great Plains IDeA-CTR received supplemental funding to leverage FHIR (Fast Healthcare Interoperability Resources) to enhance research infrastructure and address the engagement gap within rural communities. We launched Nebraska Rural Health Connect, a collaborative effort between the Great Plains IDeA-CTR, the Nebraska Rural Health Association, the Practice-Based Research Network, and the rural community in Nebraska. Nebraska Rural Health Connect is a cloud-based data ecosystem supporting rural health research by executing data use agreements with six critical access hospitals to enable secure and efficient data sharing. This statewide platform addresses data-sharing barriers and interoperability challenges, laying the groundwork for impactful research to inform targeted interventions and policies, engage rural stakeholders in clinical research, and improve healthcare delivery in rural Nebraska.

This project engages critical access hospitals and rural health clinics across Nebraska to build infrastructure for statewide data sharing and electronic health record (EHR) access. Our goal is to equip rural healthcare sites with tools and training to actively contribute to and benefit from a shared data ecosystem.

To date, six critical access hospitals and their associated clinics (21 sites total) joined the Nebraska Rural Health Connect, creating a foundation for centralized, statewide data sharing. This infrastructure enhances rural healthcare research capacity by enabling better access to EHR data and fostering collaboration across institutions. One participating partner, Syracuse Area Health, shared their experience and the benefits to the rural community on [RFD-TV](#).

This network – a collaboration among the Great Plains IDeA-CTR, the Nebraska Rural Health Association,



GREAT PLAINS
IDeA | Clinical and
Translational Research



NEBRASKA RURAL
HEALTH ASSOCIATION

and the rural community in Nebraska – is expanding. For more information about Nebraska Rural Health Connect, please contact Elizabeth Reisher (ereisher@unmc.edu), or reach out to Emily Frankel (emily.frankel@unmc.edu) to learn more about the Great Plains IDeA-CTR Practice-Based Research Network (PBRN).

The project described is supported by the National Institute of General Medical Sciences U54 GM115458, which funds the Great Plains IDeA-CTR Network. The content is solely the responsibility of the authors and does not necessarily represent the official views of the NIH.

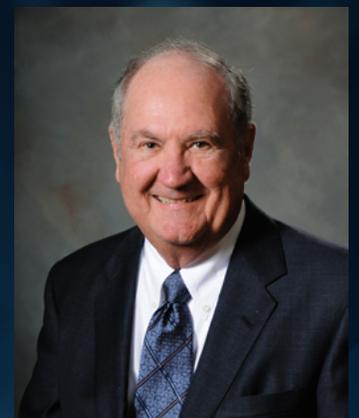
Remembering Howard Hawks

Regent Emeritus Howard L. Hawks, a distinguished philanthropist and visionary, passed away on December 6, 2024. Mr. Hawks, along with his wife Rhonda, was a passionate supporter of numerous initiatives across the University of Nebraska (NU) system. Their philanthropy made a significant impact, including funding the Rhonda and Howard Hawks Movement Disorders Fellowship at the University of Nebraska Medical Center (UNMC) Department of Neurological Sciences.

Since 2013, this fellowship has been instrumental in supporting research and education for specialists in movement disorders. With 16 fellowships awarded so far, their generosity has helped foster expertise in this specialized field, benefiting patients and advancing scientific knowledge. This philanthropic gesture speaks to their commitment to improving healthcare, particularly for those suffering from movement disorders.

Erin Cameron-Smith, MD, Program Director of the UNMC Movement Disorders Fellowship program and a recipient of the fellowship said, "His influence on my career and those of my colleagues cannot be measured. In my role as a fellow, Howard changed my life by supporting the amazing clinician educators who spent countless hours teaching me. When I became a fellowship program director, he gave me the tools to give back the passionate education and mentorship demonstrated to me. Most recently as a physician and friend, Howard inspired me to care deeply for all others, fight back in the face of adversity, and always strive to be a better human."

On behalf of the UNMC Movement Disorders Fellowship program, our deepest condolences to Rhonda and the Hawks family. Mr. Hawks' legacy will be remembered for his tireless efforts in advancing education, healthcare, and community development throughout Nebraska.



Howard Hawks

2024 *Publication Recap*

With over 100 publications, 2024 was another productive year for both the departments of neurosurgery and neurological sciences. Included below are selected publications from each department. A full list of publications can be found on each department's websites https://go.unmc.edu/dons_publications and https://go.unmc.edu/neurosurgery_publications

Neurological Sciences

Kuan-Hau Chen, PhD

Chen K-H, Merrilees J, Brown CL, Yee C, Sapozhnikova A, Wells JL, Ferrer E, Pressman P S, Fredrickson BL, Levenson RW. (2024). Interpersonal Linkage in Positive and Negative Emotional Behaviors, Emotional Well-Being, and Physical Functioning in Dementia Caregivers. *Clinical Psychological Science*, 12(6), 1039-1055. <https://doi.org/10.1177/21677026231214530>

Levenson RW, **Chen KH**, Levan DT, Chen EY, Newton SL, Paul D, Yee CI, Brown CL, Merrilees J, Moss D, Wang G. (2024). Evaluating In-home Assistive Technology for Dementia Caregivers. *Clinical Gerontologist*, 47(1), 78–89. <https://doi.org/10.1080/07317115.2023.2169652>

Anna Dunaevsky, PhD

Beaver M, Bergdolt L, **Dunaevsky A**, Kielian T, Skar GL. C1q is elevated during chronic *Staphylococcus epidermidis* central nervous system catheter infection. *Front Immunol*. 2024;15:1342467. Epub 20240531. doi: 10.3389/fimmu.2024.1342467. PubMed PMID: 38881889; PMCID: PMC11176433.

Bernd Fritzschn, PhD

Fritzschn B, Weng X, Yamoah EN, Qin T, Hui CC, Lebrón-Mora L, Pavlinkova G, Sham MH. Irx3/5 Null Deletion in Mice Blocks Cochlea-Sacculle Segregation and Disrupts the Auditory Tonotopic Map. *J Comp Neurol*. 2024;532(12):e70008. doi: 10.1002/cne.70008. PubMed PMID: 39655644; PMCID: PMC11629443.

Poytt SJ, Pavlinkova G, Yamoah EN, **Fritzschn B**. Harmony in the Molecular Orchestra of Hearing: Developmental Mechanisms from the Ear to the Brain. *Annu Rev Neurosci*. 2024;47(1):1-20. Epub 20240701. doi: 10.1146/annurev-neuro-081423-093942. PubMed PMID: 38360566.

Howard S. Fox, MD, PhD

Trease AJ, Totusek S, Lichter EZ, Stauch KL, **Fox HS**. Mitochondrial DNA Instability Supersedes Parkin Mutations in Driving Mitochondrial Proteomic Alterations and Functional Deficits in Polg Mutator Mice. *Int J Mol Sci*. 2024;25(12). Epub 20240611. doi: 10.3390/ijms25126441. PubMed PMID: 38928146; PMCID: PMC11203920.

Xu X, Niu M, Lamberty BG, Emanuel K, Ramachandran S, Trease AJ, Tabassum M, Lifson JD, **Fox HS**. Microglia and macrophages alterations in the CNS during acute SIV infection: A single-cell analysis in rhesus macaques. *PLoS Pathog*. 2024;20(9):e1012168. Epub 20240916. doi: 10.1371/journal.ppat.1012168. PubMed PMID: 39283947; PMCID: PMC11426456.

Valentina Gumenyuk, PhD

Zhou DJ, **Gumenyuk V**, **Taraschenko O**, Grobelny BT, Stufflebeam SM, Peled N. Visualization of the Spatiotemporal Propagation of Interictal Spikes in Temporal Lobe Epilepsy: A MEG Pilot Study. *Brain Topogr*. 2024;37(1):116-25. Epub 20231115. doi: 10.1007/s10548-023-01017-z. PubMed PMID: 37966675; PMCID: PMC11648160.

Nicholas Kavish, PhD

Armstrong TA, Boisvert DL, Wells J, Lewis RH, Cooke EM, Woeckener M, Kavish N, Harper JM. Testosterone, cortisol, and psychopathy: Further evidence with the Levenson self-report psychopathy scale and the inventory of callous unemotional traits. *Soc Neurosci*. 2024;19(3):168-80. Epub 20240822. doi: 10.1080/17470919.2024.2390849. PubMed PMID: 39172261.

Bethany R. Lowndes, PhD

Hummel, K., **Lowndes, B.R.**, Ryherd, E., Kennel, V. Impact of Soundscapes on Healthcare Teams: A Literature Review Proceedings of the Human Factors and Ergonomics Society, 2024, 68(1), pp. 1777–1782.

Subin Mathews, MD, MBBS

Ukpabi C, Sadan O, Shi Y, Greene KN, Samuels O, **Mathew S**, Joy J, Mei Y, Asbury W. Pharmacologic Venous Thromboembolism Prophylaxis in Patients with Nontraumatic Subarachnoid Hemorrhage Requiring an External Ventricular Drain. *Neurocrit Care*. 2024;41(3):779-87. Epub 20240510. doi: 10.1007/s12028-024-01993-5. PubMed PMID: 38730118.

Nui Meng, PhD

Ament SA, Campbell RR, Lobo MK, et al. The single-cell opioid responses in the context of HIV (SCORCH) consortium. *Mol Psychiatry*. 2024;29(12):3950-61. Epub 20240615. doi: 10.1038/s41380-024-02620-7. PubMed PMID: 38879719; PMCID: PMC11609103.

Caocci M, **Niu M**, Fox HS, Burdo TH. HIV Infection Drives Foam Cell Formation via NLRP3 Inflammasome Activation. *Int J Mol Sci*. 2024;25(4). Epub 20240217. doi: 10.3390/ijms25042367. PubMed PMID: 38397063; PMCID: PMC10889596.

Xu X, **Niu M**, Lamberty BG, Emanuel K, Ramachandran S, Trease AJ, Tabassum M, Lifson JD, Fox HS. Microglia and macrophages alterations in the CNS during acute SIV infection: A single-cell analysis in rhesus macaques. *PLoS Pathog*. 2024;20(9):e1012168. Epub 20240916. doi: 10.1371/journal.ppat.1012168. PubMed PMID: 39283947; PMCID: PMC11426456.

Daniel Murman, MD

Xue C, Kowshik SS, Lteif D, Puducheri S, Jasodanand VH, Zhou OT, Walia AS, Guney OB, Zhang JD, Pham ST, Kaliaev A, Andreu-Arasa VC, Dwyer BC, Farris CW, Hao H, Kedar S, Mian AZ, **Murman DL**, O'Shea SA, Paul AB, Rohatgi S, Saint-Hilaire MH, Sartor EA, Setty BN, Small JE, Swaminathan A, **Taraschenko O**, Yuan J, Zhou Y, Zhu S, Karjadi C, Ang TFA, Bargal SA, Plummer BA, Poston KL, Ahangaran M, Au R, Kolachalama VB. AI-based differential diagnosis of dementia etiologies on multimodal data. *medRxiv*. 2024. Epub 20240326. doi: 10.1101/2024.02.08.24302531. PubMed PMID: 38585870; PMCID: PMC10996713.

Matt Rizzo, MD, FAAN

Basuto-Elias G, Hallmark S, Barnwal A, Sharma A, **Rizzo M**, Merickel J. (2024). Strategy and safety at stop intersections in older adults with mild cognitive impairment and visual decline. *Transportation Research Interdisciplinary Perspectives*. November: Volume 22. <https://doi.org/10.1016/j.trip.2023.100939>

Chang JH, Bhatti D, Uc EY, **Rizzo M**, Merickel J. (2024) Digital driving data can track driving exposure and quality of life in Parkinson's disease. *Traffic Inj Prev*. 25(1):20-6. Epub 20231130. doi: 10.1080/15389588.2023.2247110. PubMed PMID: 37722820.

Graber A, **Rizzo M**. (2024). Tourette Syndrome: A Catalyst for Operationalizing

Neurodiversity. *Neurology*. Epub 2024, Jun 13. PMID: 38870461

Philibert I, Fletcher A, Poppert Cordts K, **Rizzo M**. (2024). Evaluating Governance in a Clinical and Translational Research Organization. *Journal of Clinical and Translational Science*. PMID: 38476243

Brigitte Soltis-Vaughan, MSN, APRN
Hwang S, Suk JW, Meffert H, Lerdahl A, Garvey WF, Edwards R, Delizza A, **Soltis-Vaughan B**, Cordts K, Leibenluft E, Blair RJR. Neural Responses to Intranasal Oxytocin in Youths With Severe Irritability. *Am J Psychiatry*. 2024;181(4):291-8. Epub 20240229. doi: 10.1176/appi.ajp.20230174. PubMed PMID: 38419495; PMCID: PMC10984767.

Kelly Stauch, PhD

Estrella DL, Trease AJ, Sheldon L, Roland NJ, **Fox HS, Stauch KL**. Tau association with synaptic mitochondria coincides with energetic dysfunction and excitatory synapse loss in the P301S tauopathy mouse model. *Neurobiol Aging*. 2024;147:163-75. Epub 20241220. doi: 10.1016/j.neurobiolaging.2024.12.006. PubMed PMID: 39778459.

Estrella LD, Manganaro JE, Sheldon L, Roland N, Snyder AD, George JW, Emanuel K, Lamberty BG, **Stauch KL**. Chronic glial activation and behavioral alterations induced by acute/subacute pioglitazone treatment in a mouse model of traumatic brain injury. *Brain Behav Immun*. 2025;123:64-80. Epub 20240904. doi: 10.1016/j.bbi.2024.09.006. PubMed PMID: 39242055.

Olga Taraschenko, MD, PhD

Barnett AJ, Guo Z, Jing J, Ge W, Kaplan PW, Kong WY, Karakis I, Herlopian A, Jayagopal LA, **Taraschenko O**, Selioutski O, Osman G, Goldenholz D, Rudin C, Westover MB. Improving Clinician Performance in Classifying EEG Patterns on the Ictal-Interictal Injury Continuum Using Interpretable Machine Learning. *NEJM AI*. 2024;1(6). Epub 20240523. doi: 10.1056/aioa2300331. PubMed PMID: 38872809; PMCID: PMC11175595.

Espino-Alvarado P, Eschbach K, Blank L, Cervenka M, Muscal E, Farias-Moeller R, Gilmore E, Gopaul M, Haider H, Hanin A, Hirsch L, Kellogg M, Kluger G, Lee S, Melendez A, Navarro V, Oliger A, Pasini E, Reuner G, Sharpe C, Sheikh Z, Steigleder L, Steriade C, Coral S, Strzelczyk A, **Taraschenko O**, van Baalen A, Vinette S, Wickström R, Wong N, Yoo JY, Gofton T.

New-onset refractory status epilepticus: Long-term outcomes beyond seizures, Epilepsia, in press.

Taraschenko O, Fox HS, Eldridge E, Heliso P, Al-Saleem F, Dessain S, Casale G, Willcockson G, Anderson K, Wang W, Dingleline R. MyD88-mediated signaling is critical for the generation of seizure responses and cognitive impairment in a model of anti-N-methyl-D-aspartate receptor encephalitis. *Epilepsia*. 2024;65(5):1475-87. Epub 20240312. doi: 10.1111/epi.17931. PubMed PMID: 38470097; PMCID: PMC11087204.

Taraschenko O, Fox HS, Heliso P, Al-Saleem F, Dessain S, Kim WY, Samuelson MM, Dingleline R. Memory loss and aberrant neurogenesis in mice exposed to patient anti-N-methyl-d-aspartate receptor antibodies. *Exp Neurol*. 2024;378:114838. Epub 20240525. doi: 10.1016/j.expneurol.2024.114838. PubMed PMID: 38801989.

Jieqiong Wang, PhD

Azzam M, Xu Z, Liu R, Li L, Meng Soh K, Challagundla KB, Wan S, **Wang J**. A review of artificial intelligence-based brain age estimation and its applications for related diseases. *Brief Funct Genomics*. 2024. Epub 20241022. doi: 10.1093/bfpg/elae042. PubMed PMID: 39436320.

Feng J, Sun M, Liu C, Zhang W, Xu C, **Wang J**, Wang G, Wan S. SAMP: Identifying antimicrobial peptides by an ensemble learning model based on proportionalized split amino acid composition. *Brief Funct Genomics*. 2024;23(6):879-90. doi: 10.1093/bfpg/elae046. PubMed PMID: 39573886; PMCID: PMC11631067.

Li L, Sun M, **Wang J**, Wan S. Multi-omics based artificial intelligence for cancer research. *Adv Cancer Res*. 2024;163:303-56. Epub 20240709. doi: 10.1016/bs.acr.2024.06.005. PubMed PMID: 39271266.

Xiao H, Zou Y, **Wang J**, Wan S. A Review for Artificial Intelligence Based Protein Subcellular Localization. *Biomolecules*. 2024;14(4). Epub 20240327. doi: 10.3390/biom14040409. PubMed PMID: 38672426; PMCID: PMC11048326.

David E. Warren, MD

Ramirez MK, Phipps CJ, Murman DL, Beadle JN, Phatak VS, **Warren DE**. Structural neuroimaging correlates of neuropsychiatric symptoms in Alzheimer's

disease: A systematic literature review. *Dementia and Geriatric Cognitive Disorders* 2025, In Press

Erlandson KM, Geng LN, Selvaggi CA, Thaweethai T, Chen P, Erdmann NB, Goldman JD, Henrich TJ, Hornig M, Karlson EW, Katz SD, Kim C, Cribbs SK, Laiyemo AO, Letts R, Lin JY, Marathe J, Parthasarathy S, Patterson TF, Taylor BD, Duffy ER, Haack M, Julg B, Maranga G, Hernandez C, Singer NG, Han J, Pemu P, Brim H, Ashktorab H, Charney AW, Wisnivesky J, Lin JJ, Chu HY, Go M, Singh U, Levitan EB, Goepfert PA, Nikolich J, Hsu H, Peluso MJ, Kelly JD, Okumura MJ, Flaherman VJ, Quigley JG, Krishnan JA, Scholand MB, Hess R, Metz TD, Costantine MM, Rouse DJ, Taylor BS, Goldberg MP, Marshall GD, Wood J, **Warren D**, Horwitz L, Foulkes AS, McCormey GA. Differentiation of Prior SARS-CoV-2 Infection and Postacute Sequelae by Standard Clinical Laboratory Measurements in the RECOVER Cohort. *Ann Intern Med*. 2024;177(9):1209-21. Epub 20240813. doi: 10.7326/m24-0737. PubMed PMID: 39133923; PMCID: PMC11408082.

Phipps CJ, Whitney D, Shou J, Torres-Russotto D, **Warren DE**. Measurement of Functional Brain Network Connectivity in People with Orthostatic Tremor. *Brain Sci*. 2024;14(3). Epub 20240227. doi: 10.3390/brainsci14030219. PubMed PMID: 38539608; PMCID: PMC10968606.

Premnath P, Nester CO, Krishnan A, Quinn CG, Bodek H, Paré N, **Warren DE**, Rabin L. Incremental validity of the test of practical judgment (TOP-J) in the prediction of diagnosis in preclinical dementia. *Neuropsychol Dev Cogn B Aging Neuropsychol Cogn*. 2024:1-16. Epub 20241007. doi: 10.1080/13825585.2024.2411981. PubMed PMID: 39376002.

Pamela E. May-Weeks, PhD, ABPP

Landler KK, Schantell M, Glesinger R, Horne LK, Embury CM, Son JJ, Arif Y, Coutant AT, Garrison GM, McDonald KM, John JA, Okelberry HJ, Ward TW, Killanin AD, Kubat M, Furl RA, O'Neill J, Bares SH, **May-Weeks PE**, Becker JT, Wilson TW. People with HIV exhibit spectrally distinct patterns of rhythmic cortical activity serving cognitive flexibility. *Neurobiol Dis*. 2024;201:106680. Epub 20240924. doi: 10.1016/j.nbd.2024.106680. PubMed PMID: 39326464; PMCID: PMC11525061.

Petro NM, Rempe MP, Schantell M, Ku V, Srinivas AN, O'Neill J, Kubat ME,

Bares SH, **May-Weeks PE**, Wilson TW. Spontaneous cortical activity is altered in persons with HIV and related to domain-specific cognitive function. *Brain Commun.* 2024;6(4):fcae228. Epub 20240713. doi: 10.1093/braincomms/fcae228. PubMed PMID: 39035415; PMCID: PMC11258575.

Schantell M, John JA, Coutant AT, Okelberry HJ, Horne LK, Glesinger R, Springer SD, Mansouri A, **May-Weeks PE**, Wilson TW. Chronic cannabis use alters the spontaneous and oscillatory gamma dynamics serving cognitive control. *Hum Brain Mapp.* 2024;45(11):e26787. doi: 10.1002/hbm.26787. PubMed PMID: 39023178; PMCID: PMC11256138.

Szymkowicz SM, **May PE**, Weeks JW, O'Connell D, Nelson Sheese AL. Psychometric properties of the Montreal Cognitive Assessment (MoCA) in inpatient liver transplant candidates. *Appl Neuropsychol Adult.* 2024;31(1):19-26. Epub 20211008. doi: 10.1080/23279095.2021.1986510. PubMed PMID: 34622723.

Rana Zabad, MD, FAAN

Thompson, CA, Arcot LJ, Zabad, RK. Relapse Management in Multiple Sclerosis: Corticosteroids Remain the Linchpin of Therapies. *Practical Neurology: Jan/Feb 2024, 12-30.*

Neurosurgery

Aviva Abosch, MD, PhD

Das R, Gliske SV, Maroni D, Situ-Kcomt M, West LC, Summers MO, Tang S, Vaswani PA, Halpern CH, Thompson JA, Kushida CA, **Abosch A**. Sleep spindle variation in patients with Parkinson's disease on first nights of sub-optimal deep brain stimulation. *Clin Neurophysiol.* 2024 Dec 6;170:91-97. doi: 10.1016/j.clinph.2024.11.020. Epub ahead of print. PMID: 39705860.

Das R, Gliske SV, West LC, Summers MO, Tang S, Hirt L, Maroni D, Halpern CH, Thompson JA, Kushida CA, **Abosch A**. Sleep macro-architecture in patients with Parkinson's disease does not change during the first night of neurostimulation in a pilot study. *J Clin Sleep Med.* 2024 Sep 1;20(9):1489-1496. doi: 10.5664/jcsm.11180. PMID: 38652493; PMCID: PMC11367722.

Sakai JT, Tanabe J, Battula S, Zipperly M, Mikulich-Gilbertson SK, Kern DS, Thompson JA, Raymond K, Gerech

PD, Foster K, **Abosch A**. Deep brain stimulation for the treatment of substance use disorders: a promising approach requiring caution. *Front Psychiatry.* 2024 Jul 12;15:1435109. doi: 10.3389/fpsy.2024.1435109. PMID: 39071229; PMCID: PMC11272460.

Wang M, Graner AN, Knowles B, McRae C, Fringuello A, Paucek P, Gavrilovic M, Redwine M, Hanson C, Coughlan C, Metzger B, Bolus V, Kopper T, Smith M, Zhou W, Lenz M, **Abosch A**, Ojemann S, Lillehei KO, Yu X, Graner MW. A tale of two tumors: differential, but detrimental, effects of glioblastoma extracellular vesicles (EVs) on normal human brain cells. *bioRxiv [Preprint].* 2024 Apr 12:2024.04.08.588622. doi: 10.1101/2024.04.08.588622. PMID: 38645117; PMCID: PMC11030303.

Wang M, Graner AN, Knowles B, McRae C, Fringuello A, Paucek P, Gavrilovic M, Redwine M, Hanson C, Coughlan C, Grimaldo-Garcia S, Metzger B, Bolus V, Kopper TJ, Smith M, Zhou W, Lenz M, **Abosch A**, Ojemann S, Lillehei KO, Yu X, Graner MW. Differential Effects of Extracellular Vesicles from Two Different Glioblastomas on Normal Human Brain Cells. *Neurol Int.* 2024 Nov 6;16(6):1355-1384. doi: 10.3390/neurolint16060103. PMID: 39585062; PMCID: PMC11587087.

Zhang J, Ryu JY, Tirado SR, Dickinson LD, **Abosch A**, Aziz-Sultan MA, Boulos AS, Barrow DL, Batjer HH, Binyamin TR, Blackburn SL, Chang EF, Chen PR, Colby GP, Cosgrove GR, David CA, Day AL, Folkerth RD, Frerichs KU, Howard BM, Jahromi BR, Niemela M, Ojemann SG, Patel NJ, Richardson RM, Shi X, Valle-Giler EP, Wang AC, Welch BG, Williams Z, Zusman EE, Weiss ST, Du R; GENIE Investigators. A Transcriptomic Comparative Study of Cranial Vasculature. *Transl Stroke Res.* 2024 Dec;15(6):1108-1122. doi: 10.1007/s12975-023-01186-w. Epub 2023 Aug 23. PMID: 37612482.

Michele Aizenberg, MD

Li J, Ellis DG, Pepe A, Gsaxner C, **Aizenberg MR**, Kleesiek J, Egger J. Back to the Roots: Reconstructing Large and Complex Cranial Defects using an Image-based Statistical Shape Model. *J Med Syst.* 2024 May 23;48(1):55. doi: 10.1007/s10916-024-02066-y. PMID: 38780820; PMCID: PMC1116219.

Josue M. Avecillas-Chasin, MD, PhD

Avecillas-Chasin JM, Galbiati T, Porta M, Servello D. Deep brain stimulation

for Tourette syndrome: modulation of the limbic-motor interface network. *J Neurosurg.* 2023 Dec 29;140(6):1620-1629. doi: 10.3171/2023.10.JNS231317. PMID: 38157543.

Hurwitz TA, **Avecillas-Chasin JM**, Bogod NM, Honey CR. Ventral targeted anterior capsulotomy for treatment-resistant depression and obsessive-compulsive disorder: A treatment method with cases. *J Affect Disord.* 2024 Apr 1;350:887-894. doi: 10.1016/j.jad.2024.01.176. Epub 2024 Jan 23. PMID: 38272366.

Krauss P, Duarte-Batista P, Hart MG, **Avecillas-Chasin JM**, Bercu MM, Hvingelby V, Massey F, Ackermans L, Kubben PL, van der Gaag NA, Krüger MT; functional section of the EANS. Directional electrodes in deep brain stimulation: Results of a survey by the European Association of Neurosurgical Societies (EANS). *Brain Spine.* 2024 Feb 3;4:102756. doi: 10.1016/j.bas.2024.102756. PMID: 38510592; PMCID: PMC10951785.

Levinson S, Miller M, Iftekhar A, Justo M, Arriola D, Wei W, Hazany S, **Avecillas-Chasin JM**, Kuhn TP, Horn A, Bari AA. Corrigendum: A structural connectivity atlas of limbic brainstem nuclei. *Front Neuroimaging.* 2024 Apr 30;3:1405806. doi: 10.3389/fnimg.2024.1405806. Erratum for: *Front Neuroimaging.* 2023 Jan 12;1:1009399. doi: 10.3389/fnimg.2022.1009399. PMID: 38752127; PMCID: PMC11095942.

Nicholas Borg, MD

Oushy S, **Borg N**, Brinjikji W. Transvenous embolization of cerebrospinal fluid-venous fistulas: A comprehensive technical video guide. *Interv Neuroradiol.* 2024 Aug 11:15910199241264859. doi: 10.1177/15910199241264859. Epub ahead of print. PMID: 39129242.

Stephen V. Gliske, PhD

Alsammani A, Stacey WC, **Gliske SV**. Estimation of Circular Statistics in the Presence of Measurement Bias. *IEEE J Biomed Health Inform.* 2024 Feb;28(2):1089-1100. doi: 10.1109/JBHI.2023.3334684. Epub 2024 Feb 5. PMID: 38032776; PMCID: PMC10964323.

Das R, **Gliske SV**, West LC, Summers MO, Tang S, Hirt L, Maroni D, Halpern CH, Thompson JA, Kushida CA, **Abosch A**. Sleep macro-architecture in patients with Parkinson's disease does not change during the first night of neurostimulation in a pilot study. *J Clin Sleep Med.* 2024

Sep 1;20(9):1489-1496. doi: 10.5664/jcsm.11180. PMID: 38652493; PMCID: PMC11367722.

Dimakopoulos V, Gotman J, Klimes P, von Ellenrieder N, Tan SB, Smith G, **Gliske S**, Maltseva M, Manalo MK, Pail M, Brazdil M, van Blooij D, van 't Klooster M, Johnson S, Laboy S, Ledergerber D, Imbach L, Papadelis C, Sperling MR, Zijlmans M, Cimbalk J, Jacobs J, Stacey WC, Frauscher B, Sarnthein J. Multicentre analysis of seizure outcome predicted by removal of high frequency oscillations. *Brain*. 2024 Nov 12;awae361. doi: 10.1093/brain/awae361. Epub ahead of print. PMID: 39530262.

Lin J, Smith GC, **Gliske SV**, Zochowski M, Shedden K, Stacey WC. High frequency oscillation network dynamics predict outcome in non-palliative epilepsy surgery. *Brain Commun*. 2024 Feb 7;6(1):fcae032. doi: 10.1093/braincomms/fcae032. PMID: 38384998; PMCID: PMC10881100.

Shi W, Shaw D, Walsh KG, Han X, Eden UT, Richardson RM, **Gliske SV**, Jacobs J, Brinkmann BH, Worrell GA, Stacey WC, Frauscher B, Thomas J, Kramer MA, Chu CJ. Spike ripples localize the epileptogenic zone best: an international intracranial study. *Brain*. 2024 Jul 5;147(7):2496-2506. doi: 10.1093/brain/awae037. PMID: 38325327; PMCID: PMC11224608.

Christopher Kovach, PhD

Kovach CK, Tsuchiya N, Kawasaki H, Oya H, Howard MA 3rd, Adolphs R. Manifestation of ocular-muscle EMG contamination in human intracranial recordings. *Neuroimage*. 2011 Jan 1;54(1):213-33. doi: 10.1016/j.neuroimage.2010.08.002. Epub 2010 Aug 6. PMID: 20696256; PMCID: PMC2975438.

Man V, Cockburn J, Flouty O, Gander PE, Sawada M, **Kovach CK**, Kawasaki H, Oya H, Howard MA 3rd, O'Doherty JP. Temporally organized representations of reward and risk in the human brain. *Nat Commun*. 2024 Mar 9;15(1):2162. doi: 10.1038/s41467-024-46094-1. PMID: 38461343; PMCID: PMC10924934.

Nourski KV, Reale RA, Oya H, Kawasaki H, **Kovach CK**, Chen H, Howard MA 3rd, Brugge JF. Temporal envelope of time-compressed speech represented in the human auditory cortex. *J Neurosci*. 2009 Dec 9;29(49):15564-74. doi: 10.1523/JNEUROSCI.3065-09.2009. PMID: 20007480; PMCID: PMC2851231.

Joseph P. Menousek, MD/ Elhaum Rezaii, MD

Menousek J, Rezaii EG, Sayles H, Anderson MJ, Strong S, Fornoff LE. Perception and Representation of LGBTQ+ Individuals in U.S. Neurosurgical Training. *World Neurosurg*. 2024 May;185:e1169-e1176. doi: 10.1016/j.wneu.2024.03.043. Epub 2024 Mar 19. PMID: 38503403.

Afshin Salehi, MD, MS/ Luke J. Weisbrod, MD

Weisbrod LJ, Thiraviyam A, Vengoji R, Shonka N, Jain M, Ho W, Batra SK, **Salehi A**. Diffuse intrinsic pontine glioma (DIPG): A review of current and emerging treatment strategies. *Cancer Lett*. 2024 May 28;590:216876. doi: 10.1016/j.canlet.2024.216876. Epub 2024 Apr 10. PMID: 38609002; PMCID: PMC11231989.

Mithun G. Sattur, MBBS

Elfil M, **Lookian PP**, Kumari K, Aladawi M, Jedras M, Phillips SM, **Sattur MG**. Reversible cerebral vasoconstriction syndrome due to teprotumumab: two case reports. *Oxf Med Case Reports*. 2024 Aug 6;2024(8):omae085. doi: 10.1093/omcr/omae085. PMID: 39119013; PMCID: PMC11304978.

Matsukawa H, Sowlat MM, Porto G, Spiotta AM, **Sattur MG**. Vertebral Artery Access Considerations in Coil Embolization of Small Superior Cerebellar Artery Aneurysm. *World Neurosurg*. 2024 Apr;184:29-37. doi: 10.1016/j.wneu.2024.01.014. Epub 2024 Jan 6. PMID: 38191058.

Daniel L. Surdell, MD

Curry SD, Boochoon KS, Casazza GC, **Surdell DL**, Cramer JA. Deep learning to predict risk of lateral skull base cerebrospinal fluid leak or encephalocele. *Int J Comput Assist Radiol Surg*. 2024 Dec;19(12):2453-2461. doi: 10.1007/s11548-024-03259-z. Epub 2024 Aug 29. PMID: 39207718.

Liu C, Evins AI, Atchley TJ, **Surdell DL**, Thorell WE, Nonaka M, Stieg PE, Bernardo A. The complete anterior petrosectomy: an expanded extended-middle fossa approach with removal of the infratrigeminal petrous apex and drilling of the lateral clivus. *J Neurosurg*. 2024 Jan 19;141(1):195-203. doi: 10.3171/2023.11.JNS231303. PMID: 38241665.

Luke J. Weisbrod, MD

Weisbrod LJ, Staple BL, Westmark DM, Gard AP, **Surdell DL**. Safety of Outpatient

Anterior Lumbar Interbody Fusion Surgery: A Systematic Review With Meta-Analyses. *Int J Spine Surg*. 2024 Nov 19;18(6):705-11. doi: 10.14444/8661. Epub ahead of print. PMID: 39562045; PMCID: PMC11687031.

Weisbrod LJ, Nilles-Melchert TT, Bergjord JR, **Surdell DL**. Safety and Efficacy of Riluzole in Traumatic Spinal Cord Injury: A Systematic Review With Meta-Analyses. *Neurotrauma Rep*. 2024 Feb 19;5(1):117-127. doi: 10.1089/neur.2023.0114. PMID: 38414779; PMCID: PMC10898229.

Weisbrod LJ, Nilles-Melchert TT, Bergjord JR, **Surdell DL**. Granulocyte-Colony Stimulating Factor Improves Neurological and Functional Outcomes in Patients With Traumatic Incomplete Spinal Cord Injuries: A Systematic Review With Meta-Analyses. *Neurotrauma Rep*. 2024 May 2;5(1):467-482. doi: 10.1089/neur.2023.0099. PMID: 39582880; PMCID: PMC11579545.

William E. Thorell, MD

Aladawi M, Elfil M, Najdawi ZR, Ghaith H, Sayles H, **Thorell W**, Hawkes MA. Aneurysmal Subdural Hematoma: A Systematic Review. *Neurocrit Care*. 2024 Aug;41(1):244-254. doi: 10.1007/s12028-024-01938-y. Epub 2024 Feb 8. PMID: 38332336.

Heinis FI, Merani S, Markin NW, Duncan KF, Moulton MJ, Fristoe L, **Thorell WE**, Sherrick RA, Wells TR, Andrews MT, Urban M. Considerations for the use of porcine organ donation models in preclinical organ donor intervention research. *Animal Model Exp Med*. 2024 Jun;7(3):283-296. doi: 10.1002/ame2.12411. Epub 2024 Apr 30. PMID: 38689510; PMCID: PMC11228092.

Liu C, Evins AI, Atchley TJ, **Surdell DL**, **Thorell WE**, Nonaka M, Stieg PE, Bernardo A. The complete anterior petrosectomy: an expanded extended-middle fossa approach with removal of the infratrigeminal petrous apex and drilling of the lateral clivus. *J Neurosurg*. 2024 Jan 19;141(1):195-203. doi: 10.3171/2023.11.JNS231303. PMID: 38241665.

Van Roy Z, Kak G, Korshoj LE, **Menousek JP**, Heim CE, Fallet RW, Campbell JR, Geary CR, Liu B, Gorantla S, Poluektova LY, Duan B, Campbell WS, **Thorell WE**, Keliian T. Single-cell profiling reveals a conserved role for hypoxia-inducible factor signaling during human craniotomy infection. *Cell Rep Med*. 2024 Nov 19;5(11):101790. doi: 10.1016/j.xcrm.2024.101790. Epub 2024 Oct 18. PMID: 39426374; PMCID: PMC11604514.

2024 Grant Awards

Neurological Sciences

PI: Dunaevsky, Anna

Award Year(s): 2024-2027

Funding Source: DOD

Title: The role of astrocyte in sleep impairments in ASD

PI: Dunaevsky, Anna

Award Year(s): 2024-2025

Funding Source: Edna Ittner Trust

Title: Cholesterol dysregulation in Fragile X Syndrome

PI: Fernandez, J Americo

Award Year(s): 2023-2024

Funding Source: Mass General Hospital

Title: ALL ALS East - ALL ALS Consortium project

PI: Fox, Howard

Award Year(s): 2023-2024

Funding Source: EMMES Corporation

Title: National NeuroHIV Tissue Consortium (NNTC) Data Coordinating Center

PI: Heller, Abi

Award Year(s): 2024-2029

Funding Source: NIH/NIA F30AG084348-01A1

Title: Measuring neurodevelopmental effects of genetic risk for Alzheimer's disease via cross-sectional study of brain, cognitive, and physical fitness variables in periadolescent children

PI: Korzyukov, Oleg

Award Year(s): 2024-2026

Funding Source: P20GM139762-04 Creighton COBRE Pilot

Title: Bioelectrical markers of age-related neurodegenerative diseases derived from manifestations of central auditory processing

PI: Rangunathan, Padmashri

Award Year(s): 2024-2029

Funding Source: NIH R01AA031026-01A1

Title: Cellular mechanisms of auditory processing deficits in a mouse model of Fetal Alcohol Spectrum Disorders

PI: Rangunathan, Padmashri

Award Year(s): 2024-2025

Funding Source: Edna Ittner Trust

Title: Effects of prenatal alcohol exposure on the auditory system

PI: Ramirez, Meghan (Warren Lab)

Award Year(s): 2024-2026

Funding Source: NIH F99NS139537-01A1

Title: Understanding the developmental impact of environmental risk factors on brain and cognitive systems vulnerable to Alzheimer's disease in children

PI: Stauch, Kelly

Award Year(s): 2024-2027

Funding Source: Alzheimers Assn

Title: The Role of APOE4 in Synaptic Mitochondrial Dysfunction

Neurosurgery

PI: Michele Aizenberg, MD

Award Year(s): 2023-2024

Funding Source: CoNDA

Title: Determining effects of high-grade glioma growth and treatment on brain connectivity and neurocognition

PI: Michele Aizenberg, MD

Award Year(s): 2023-2024

Funding Source: GT Medical Technologies

Title: A Multicenter Observational Study of GammaTile Surgically Targeted Radiation Therapy (STaRT) in Intracranial Brain Neoplasms

PI: Josue Avecillas-Chasin, MD, PhD

Award Year(s): 2023-2025

Funding Source: DHHS/NIH/NIMH

Title: Intracranial Neurophysiological Signatures of Fear and Anxiety in Humans

PI: Josue Avecillas-Chasin, MD, PhD

Award Year(s): 2023-2025

Funding Source: Great Plains IDeA-CTR

Title: Personalized Mapping of Brain Networks to Identify Responsive Neurostimulation Targets in Patients with Drug-Resistant Epilepsy

PI: Stephen Gliske, PhD

Award Year(s): 2023-2024

Funding Source: Great Plains IDeA-CTR

Title: Validation testing of a novel state of vigilance monitor prototype for hospitalized neonates

PI: Miki Katzir, MD

Award Year(s): 2023-2025

Funding Source: CarboFix Orthopedics

Title: Safety and effectiveness of carbon fiber reinforced polyetheretherketone (CFR PEEK) implants in patients with bone tumors: an international multicenter retrospective registry

PI: Mithun Sattur, MD

Award Year(s): 2023-2025

Funding Source: Medical University of South Carolina

Title: STAR: Stroke Thrombectomy and Aneurysm Registry

PI: Daniel Surdell, MD

Award Year(s): 2023-2025

Funding Source: Microvention

Title: RESTORE- REal-World Analyses of Stroke-Thrombus Occlusion Retrieval

PI: Afshin Salehi, MD

Award Year(s): 2025-2027

Funding Source: GE Healthcare

Title: Observational study on BK Medicals 9007 transducer

CoI: Michele Aizenberg, MD

(PI: Dr. Verma, University of Pennsylvania)

Award Year(s): 2024-2028

Funding Source: NIH NCI

Title: dMRI-based visualization of non-enhancing tumor for guiding supra-total resection of high-grade gliomas

Smiles for Ukraine children

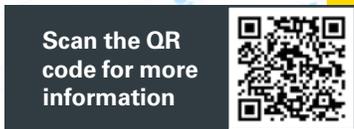
In September 2024, the UNMC Student Alliance for Global Health (SAGH) team helped organize a toy drive for children in Ukraine. The generous donors of these wonderful toys included students, faculty, hospital staff, housekeepers, and workers from the management department at Nebraska Medicine, UNMC, and the Omaha-Lincoln areas.

Approximately 300 pounds of amazing toys were collected and shipped to Ukraine for children tragically affected by the war initiated by Russia. These children are living in Ukraine under daily missile bombings, enduring up to 15 hours a day without electricity, and facing the heartbreaking reality that their father or mother may not return home from the war. These kids no longer smile.

We are deeply grateful to the people of Omaha, Lincoln, and the entire state of Nebraska for their generous hearts and support for the children in Ukraine with their donations of toys.

Toys from Nebraska will help bring smiles to these kids.

A million thanks to the SAGH team, especially Sara Pirtle, Program Manager, and student members Emma Plucknet, Zinab Alaskar, and Gisselle Perez. and everyone who took part in this amazing project! For those who would still like to participate, we will continue to accept toys for the next shipments to Ukraine!



SAVE THE DATES

CoNDA Center Annual Colloquium

Tuesday, March 11
UNMC Durham Research Center
550 Durham Research Plaza
Omaha, Nebraska

Resident Research Day

Thursday, May 15
Davis Global Center
4111 Emile Street
Omaha, Nebraska

PTSD Symposium

Friday, June 6
Scott Conference Center
6450 Pine Street
Omaha, Nebraska

DONS Graduation

Friday, June 13
A View on State
13467 State Street
Omaha, Nebraska

WAYS TO SUPPORT NEUROSCIENCES

Mental and neurological disorders have never been more prevalent. Life-changing disorders including epilepsy, stroke, Alzheimer's disease, Parkinson's disease, multiple sclerosis and brain injuries touch the lives of far too many.

We are committed to providing the best treatment available today, as well as pioneering new therapies for the future. Our team of internationally recognized physicians and researchers is dedicated to saving lives, relieving suffering and reducing the terrible impact of neurological disease on our patients, families and community.

Private donations play a critical role in advancing our state-of-the-art research, treatment, education, and patient care programs. Whether you would like to support patient care, research in a particular disease area, or the education of our next generation of doctors and scientists, your charitable gift can be directed to a project or topic that is most meaningful to you.

Gifts can be directed to any fund of your choice, or you can talk to Emily Tiensvold with the University of Nebraska Foundation about a donation to your area of special interest: emily.tiensvold@unfoundation.org



Emily Tiensvold



University of Nebraska Medical Center
Department of Neurological Sciences
988440 Nebraska Medical Center
Omaha, NE 68198-8440

If you have any news or upcoming events that you would like featured in the next edition of the *NeuroNExT UNMC* newsletter, please send the information to shgriffin@unmc.edu



FOLLOW US AT

Department of Neurological Sciences

-  unmc.edu/neurologicalsciences
-  [@UNMC_neurology](https://twitter.com/UNMC_neurology)

Department of Neurosurgery

-  unmc.edu/neurosurgery
-  [@UNMC_neurosurg](https://twitter.com/UNMC_neurosurg)