

THE TRIBUNE

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Era of Innovation

Erika Petersen, M.D., and TRI Bring Device Trials, Relief to Arkansans



Erika Petersen, M.D. (seated, left), led only the second surgical implant in the world of a prosthetic hand that restores a sense of touch. Co-leading the surgery were UAMS' John Bracey, M.D. (left), and Mark Tait, M.D. (seated, right). (photo by Evan Lewis)

New and evolving technologies that can alter a patient's nerve activity, known as neuromodulation, have rewarded UAMS neurosurgeon Erika Petersen, M.D., with a growing number of patients expressing their profound gratitude for her successful treatment of their intractable pain or movement disorders.

Inspired by their outcomes, Petersen continues to expand the boundaries of neuromodulation, using implantable electrical devices for potential new procedures for Parkinson's disease, chronic migraines, stroke and spinal cord injuries.

Making it all possible are accelerating technological advances, innovative surgical techniques, and a robust research infrastructure offered by TRI, said Petersen, a professor and director of the Section of

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Dear Colleagues,

In this issue of *The Tribune*, we profile Erika Petersen, M.D., who is bringing the latest advances in neuromodulation to Arkansas through clinical trials facilitated by TRI.

Since 2015, Dr. Petersen has led nine studies utilizing our Clinical Trials Innovation Unit (CTIU), making her one of our most active researchers. As she has discovered, TRI's CTIU makes it possible to maintain her clinical practice while also conducting life-changing research.

We're grateful to have Dr. Petersen at UAMS and proud to have the Clinical and Translational Science Award-supported infrastructure to help her reach her goals. TRI's infrastructure, funded by the National Center for Advancing Translational Sciences and UAMS, helps clinicians conduct research and continues to expand internal and external collaboration networks.

As Dr. Petersen said, "Just because somebody at UAMS is a clinician doesn't mean that they can't lead research

if they have the right team, the right support and the right motivation behind it."

If you are interested in conducting noncancer-related clinical research, please contact David Avery, our senior director of Clinical Research Operations, at daavery@uams.edu.

As we approach the summer break, we are excited to launch the 2024 Summer Writing Challenge – our fourth! We hope that you will join this friendly competition among faculty with an opportunity to win great prizes in several categories according to your academic rank. Our story on page 3 has the details!

Sincerely,

Laura James, M.D.
Director, TRI
Associate Vice Chancellor for Clinical and Translational Research, UAMS

Era of Innovation (continued from page 1)

Functional and Restorative Neurosurgery in the College of Medicine Department of Neurosurgery.

Peterson is a pioneer in deep-brain stimulation techniques to treat movement disorders such as Parkinson's disease, and she is excited about possible neuromodulation approaches that don't require brain surgery.

"We are really in an era of innovation in this field," she said. "One of the interesting things about neuromodulation is that anywhere there's a nerve, there's a chance that you can change the message the nerve is carrying, so there is a lot of opportunity."

With Parkinson's disease, for example, if patients could benefit from stimulation of the nervous system somewhere other than in the brain, it could open the door to more patients, including those who may not be good candidates for deep brain stimulation.

Petersen led her first neuromodulation device study at UAMS in 2015, and her growing reputation in the field has helped attract exciting new research opportunities to UAMS.

A Beacon

She enhanced her reputation as principal investigator and lead author on a device study published in the Journal of the American Medical Association (JAMA) in 2021. The 18-center clinical trial demonstrated that a spinal cord stimulation system offered substantial pain relief and improved quality of life for people with refractory painful diabetic neuropathy. The Food and Drug Administration (FDA) has now approved the device, which is also being covered by many insurance companies.

"I'm really glad that we were able to lead that study here, and I think it's something that should be part of UAMS' legacy for its national impact on patients with diabetes," she said.

The JAMA publication also helped cement an invitation for Petersen to lead the 2023 surgical implant of the first prosthetic hand to restore a meaningful sense of touch and grip force developed by researchers at the Institute for Integrative and Innovative Research (I³R).

"That article was a beacon for us," said Ranu Jung, Ph.D., who co-leads the I³R team based at the University of Arkansas in Fayetteville with James Abbas, Ph.D.

The diabetic neuropathy study and prosthesis study are among nine device studies led by Petersen and supported by TRI's Clinical Trials Innovation Unit since 2015. Five studies have concluded enrollment, three are currently enrolling participants, and one is in startup.

TRI Support

About 90% of Petersen's surgical cases involve implanting a device for neuromodulation, she said. Most involve FDA-approved devices that once were part of clinical studies she helped lead.

"Having the ability to bring cutting-edge treatments to the people of Arkansas and bring those opportunities through research is really an important asset to UAMS and the state," she said.

It takes a team, she added, and TRI is an essential player - from the study startup to closeout. TRI services include Medicare coverage analysis, study budget development, regulatory and nurse/coordinator support, administration of the Clinical Trial Management System, and post-award financial management.

"To do this kind of cutting-edge research at the bedside, we have to be sure we are getting the paperwork right, that we're following up with the patients according to the protocol, and that everything is correct so that the quality of our science is good," Petersen said. "There is no way that I could do this research without the support of TRI."

Her experience has been replicated with other UAMS-affiliated clinicians who found they could lead research studies thanks to TRI. She hopes more clinicians will do the same.

"Just because somebody at UAMS is a clinician doesn't mean that they can't lead research if they have the right team, the right support and the right motivation behind it."



Erika Petersen, M.D., poses with a patient whose amputation pain was relieved by an implanted device.

Here's Your Chance to Win the Summer!



UAMS | Translational Research Institute

Get ready to make this summer your winning season! The TRI 2024 Summer Writing Challenge begins June 1!

Join your research colleagues for this friendly competition with a chance to win one or more great prizes and burnish your reputation as well as your promotion and tenure portfolio.

You are eligible to participate if you have received any TRI funding or other TRI research services since Jan. 1, 2019.

Please submit your manuscripts using the QR code or visit TRI.uams.edu. Got questions? Please contact **Nikolas Berardi**, NDBerardi@uams.edu.

Scan here



Let's make this summer one for the record books!

TRI Study of the Month

Principal Investigator: Nithin Karakala, M.D., associate professor, UAMS College of Medicine, Department of Internal Medicine, Division of Nephrology.

Summary: A multicenter study to test the safety of Regional Citrate Anticoagulation delivered by a new Continuous Renal Replacement Therapy (CRRT) system in adult patients who have acute kidney injury or end-stage kidney disease requiring continuous renal replacement therapy.

Significance: If approved by the Food and Drug Administration, the new CRRT system's anticoagulation method would help avoid the risk of bleeding associated with heparin use in the current CRRT system.

TRI Services: Medicare coverage analysis, study budget development, regulatory and nurse/clinical coordinator support, administration of Clinical Trial Management System, and post-award financial management.

Sponsor: Fresenius Medical Care Renal Therapies Group, LLC



TRI's Alperdis L. Keyes, BSN, RN, CRS, director of Clinical Trials, meets with Nithin Karakala, M.D.

TRI Announces Six K12 Scholars for 2024-2026

Six early-career researchers have been selected to receive two years of funded translational research training and support in the TRI K12 Mentored Research Career Development Scholar Awards Program.

The promising junior faculty researchers were selected for the 2024-2026 program through a competitive application process. K12 (previously KL2) scholars receive two years of mentored translational research training, 75% salary support and up to \$25,000 a year for research, tuition, travel and education.

Funding for the program comes from TRI, supported by a Clinical and Translational Science Award from the NIH National Center for Advancing Translational Sciences, as well as the UAMS College of Medicine, UAMS Winthrop P. Rockefeller Cancer Institute and Arkansas Children's Research Institute (ACRI).

The scholars, their project titles and mentors are:



Lauren Appell, M.D., assistant professor, College of Medicine Department of Pediatrics, based at ACRI
Project: STRONGER ALL: An Early Exercise Regimen for Pediatric Patients with Acute Lymphoblastic Leukemia (ALL)
Mentor: Ellen van der Plas, Ph.D., associate professor of hematology/oncology,



Shiloah Kviatkovsky, Ph.D., assistant professor, College of Medicine Department of Orthopaedics.
Project: Effects of Collagen Supplementation on Surgical Outcomes Following TKA
Mentor: Roy Morello, Ph.D., associate professor, College of Medicine departments Physiology & Cell Biology, Orthopaedic Surgery, and the Division of Genetics.



Ramey Moore, Ph.D., assistant professor, College of Medicine Department of Internal Medicine.
Project: Enhancing HPV Vaccine Recommendations in Clinics Serving Rural Arkansas
Mentor: Geoffrey Curran, Ph.D., professor, College of Pharmacy Department of Pharmacy Practice; professor, College of Medicine Department of Psychiatry



Bernard Muriithi, Ph.D., assistant professor, College of Health Professions Department of Occupational Therapy
Project: Adapted Lifestyle Redesign for Diabetes Management among the Marshallese
Mentor: Steven Wheeler, Ph.D., Ed.D., department head, Communication Disorders and Occupational Therapy, University of Arkansas, Fayetteville



Mollie Steely Smith, Ph.D., assistant professor, College of Medicine Department of Psychiatry
Project: Adaptation and Implementation of an Evidence-Based Parenting Intervention for Postpartum Women Receiving Medications for Opioid Use Disorder
Mentor: Michael Cucciare, Ph.D., professor, College of Medicine Department of Psychiatry



James Williams, M.D., assistant professor, College of Medicine Department of Pediatrics, based at ACRI.
Project: scRNA seq Analysis of Lower Respiratory Tract Immune Cells to Uncover Immuno-Endotypes in Sepsis-Associated Pediatric Acute Respiratory Distress Syndrome
Mentor: Brian Varisco, M.D., vice chair of Research and professor of Pediatric Critical Care Medicine, College of Medicine Department of Pediatrics

TRI Names Mathias Brochhausen, Ph.D., to Leadership Post



TRI recently announced the appointment of Mathias Brochhausen, Ph.D., to the role of associate director for Strategic Collaborations, effective May 1. Brochhausen is a professor and vice chair in the UAMS College of Medicine Department of Biomedical Informatics.

He will continue to co-chair TRI's Clinical and Translational Science Pilot Program with Shelley Crary, M.D., MS. In addition, he will serve as TRI's liaison for PCORNet® Initiatives through an affiliation with the University of Florida's OneFlorida+ PCORNet® program. PCORNet® is a national resource funded by the National Patient-Centered Outcomes Research Institute (PCORI) and enables comparative effectiveness research to advance health outcomes through community, research and data partnerships.

TRI's other two associate directors are Antiño Allen, Ph.D., associate director, Pathway Initiatives, and John Arthur, M.D., Ph.D., associate director, Translational Research.

Congratulations Dr. Brochhausen!