

# THE TRIBUNE

JANUARY 2019

## Models for Research

### TRI Helps Busy Neurosurgeon Lead Multiple Studies

Erika Petersen, M.D., saw the outlines of her career when she was just 16. As a participant in a summer research program at Duke Cancer Institute, she gained insights beyond the lab work.

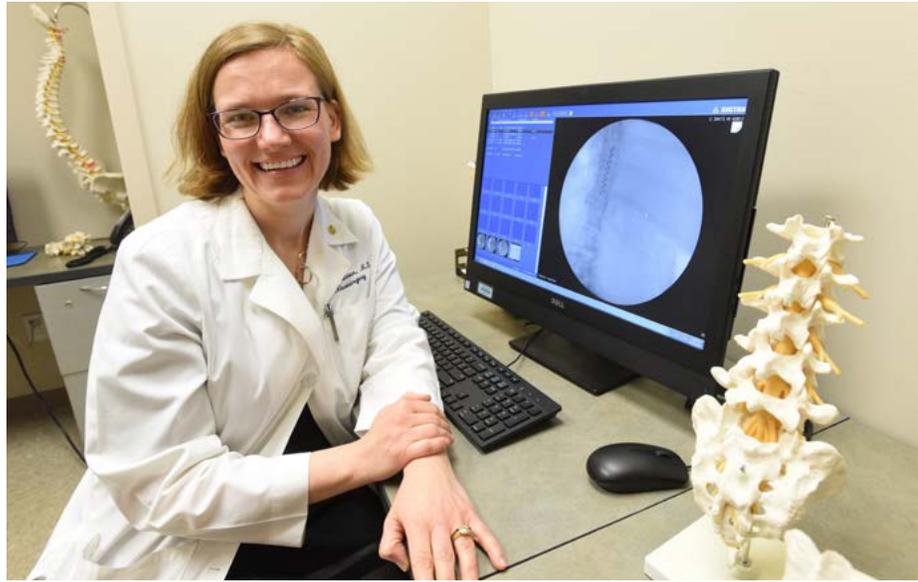
“As part of the program, I got to stand beside an anesthesiologist and watch open-heart surgery,” she said. “That was the moment I knew I was interested in medicine.”

Petersen, a UAMS neurosurgeon and associate professor in the College of Medicine, also noted at the time how her Duke mentor, a breast oncologist, was able to run a research lab in addition to seeing patients.

“That helped me see a model of how doctors could do research in different ways,” she said.

#### FUTURISTIC THERAPIES

Petersen came to UAMS in 2010 and sees patients at the Stephens Spine & Neurosciences Institute. Her expertise in neuromodulation is unique to the region, futuristic even, with her ability to use deep brain stimulation and implant other devices to treat



*UAMS neurosurgeon Erika Petersen, M.D., hopes research can provide the evidence needed to remove the “experimental” label from some of the therapies she offers.*

*(Continued on page 2)*

## TRI Happy to Have Role in Researcher’s Success



Dear Colleagues,

One of the great things about my position at the Translational Research Institute is hearing from researchers who have worked with our expert support staff. In this issue we highlight the leadership and commitment of Erika

Petersen, M.D., an elite neurosurgeon who is tackling translational research studies.

Dr. Peterson’s clinical care and research are inspired by patients with nowhere else to turn for pain relief and movement disorders. She provides treatments that are unavailable elsewhere in the region and is among a small group of clinician scientists chosen to study the effectiveness of the latest neuromodulation devices. It is especially gratifying that one of her TRI-managed studies will become a model for other institutions.

Dr. Petersen has incorporated her research into her clinical practice, but as she tells us, it could not be done without TRI. We appreciate the compliment and we couldn’t be happier to have a role in her success.

We also highlight in this issue the awardees of pilot funding for opioid addiction and pain management. The six pilots are promising and we look forward to seeing the outcomes of this important work.

Sincerely,

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

# Models for Research

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movement disorders and chronic pain.

"I have a friend who jokes that I'm creating cyborgs," she said.

She's not, of course. But by working at the cutting edge of medicine, she can help patients who don't respond to conventional therapies.

"When you meet people who have seen dozens of practitioners, and they come to you saying, 'I've heard great things about you, can you please help me?' you want to offer every single possibility you can," Petersen said.

Unfortunately, some of her work isn't covered by insurance because the procedures are still considered experimental. It's distressing for her and her patients.

"The compassion to treat versus the business decision of coverage is frustrating, so I'm motivated to create the evidence that will remove the disconnect between the two," she said.

## PROLIFIC PI

Although she has no protected time for research, Petersen has been a prolific principal investigator. She is overseeing two active industry-sponsored clinical trials and three more are in the works. The active studies are testing implanted nerve stimulation devices for chronic amputation pain and diabetic neuropathy. The pending studies will test devices designed for treating chronic back pain (failed back surgery syndrome), and headache pain, including migraines. Another study involves the use of stem cells for stroke patients.

Her leadership of multiple clinical trials is a lot of extra work, but it's doable for a couple of reasons: One, she is able to blend the trials into her clinical practice, and two, she can get the clinical trial services she needs from the Translational Research Institute (TRI).

## LEVERAGING TRI

"A single clinician with a single nurse doesn't have the institutional context like TRI for navigating the regulatory issues, the budget negotiations, and legal negotiations," Petersen said. "Having the team of coordinators at TRI who are backing each other up also ensures that a research participant always has support, and that's been essential."

TRI has also helped her promote her research to the general public. "A clinical trial is only as successful as what you can do through recruitment," she said. "Working with TRI, we've done a lot in terms of media and outreach and in identifying subjects in the UAMS Epic (electronic medical record) system. So having those resources to help with recruiting is phenomenal."

Despite her busy schedule, Petersen has appeared on four local broadcast stations to advocate for the amputation pain study and diabetic neuropathy study. Her public education efforts, which also include an active Twitter account, have contributed to her growing national reputation in the field. UAMS is among a select group of institutions chosen to conduct neuromodulation research. In fact, she said UAMS' management of the amputation pain study will be a model used by Neuros, the sponsor, for the remaining research centers preparing for participant enrollment.

"When you have a good system and support to successfully manage the research, it leads to ongoing partnerships across multiple studies," Petersen said.

# Researcher Profile



## Erika A. Petersen, M.D., FAANS, FACS

Associate Professor,  
Neurological Surgery  
Director, Functional and  
Restorative Neurosurgery  
Residency Program Director  
UAMS College of Medicine

### What inspired you to become a researcher?

*A natural curiosity has always pushed me to try new things. Clinical research allows me to bring innovations directly to patients, developing treatments using new technologies.*

### What do you like most about your area of research?

*Neuromodulation involves the interface between the nervous system and technology. The mechanisms of action are poorly understood, which means that as we discover more, we can develop more devices, with novel designs and applications for these inventions.*

### What career would you have chosen if not research?

*That's a stumper, because I love what I do! In middle school I was very interested in architecture and design. I suppose that if I weren't in medicine and research, I would be in design or engineering, figuring things out in a different way.*

### What current or former biomedical researcher (from anywhere) do you admire most? Why?

*My fellowship mentors from the National Hospital for Neurology and Neurosurgery, Ludvic Zrinzo, M.D., Ph.D., and Marwan Hariz, M.D., Ph.D., who lead innovation in deep brain stimulation research in the UK, have an active clinical and basic science research program. They are compassionate clinician-scientists who model collaborative productivity.*

# UAMS Opioid/Pain Pilot Awardees Named

Six UAMS faculty have received pilot awards in opioid addiction and pain research. The one-year awards of up to \$25,000 each were made possible through the Office of Vice Chancellor for Research and are being administered by TRI. Below are the awardees and their research titles:



**Johnathan Goree, M.D.**

Video-based, Patient-Focused Opioid Education in the Perioperative Period: A Feasibility Study



**Issam Makhoul, M.D.**

The Development and Implementation of a Standardized Pain Management Protocol for Adult Sickle Cell Patients



**Corey Hayes, Pharm.D., MPH**

Linking the Arkansas Prescription Drug Monitoring Program Data with the Arkansas All-Payer Claims Database



**Clare Nesmith, M.D.**

Quantitation of Opioids in Neonates with Neonatal Opioid Withdrawal



**Linda Larson-Prior, Ph.D.**

Impact of Buprenorphine-Assisted Treatment on Sleep, Mood and Cognition among Opioid Use Disorder Patients



**Alison Oliveto, Ph.D.**

Gamified Intervention to Prevent Adolescent Opioid Misuse

The awardees were selected from a diverse and competitive pool of applicants. Seventeen letters of intent were submitted, and 12 were invited to submit a full application. Ten full applications were reviewed and scored by a study section of 29 faculty and community reviewers. The pilot projects will provide important preliminary data for federal grant applications to expand opioid addiction and pain research at UAMS.

## Research on the Horizon: New TRI Study of the Month



TRI research coordinator Gail Runnells, R.N., meets with Mitesh Lotia, M.D.

- **UAMS Principal Investigator:** Mitesh P. Lotia, M.D., MPH, Assistant Professor, Department of Neurology, College of Medicine
- **Summary:** A Phase 2 withdrawal study to test the safety, tolerability, and maintenance of effectiveness of valbenazine in children and adolescents with Tourette syndrome.
- **Significance:** It is a challenging condition to treat, especially in a pediatric population. This FDA-approved drug can be a potential solution for children suffering from severe tics.
- **TRI Services:** Medicare coverage analysis, study budget review and negotiation, IRB submission, completion of sponsor's regulatory startup packet, training for study staff/investigators, oversight of enrollment startup, and research nurse coordinator services.
- **Sponsor:** Neurocrine Biosciences

## TRIBUTES

*The following UAMS researchers cited the Translational Research Institute (TRI) in publications after utilizing TRI resources or funding:*

Byrum SD, Loughran AJ, Beenken KE, Orr LM, Storey AJ, Mackintosh SG, Edmondson RD, Tackett AJ and Smeltzer MS. "Label-Free Proteomic Approach to Characterize Protease-Dependent and -Independent Effects of Sara Inactivation on the Staphylococcus Aureus Exoproteome." *J Proteome Res* 2018 Oct 5 **17**(10): 3384-3395.

Felix HC, Bradway C, Bird TM, Pradhan R and Weech-Maldonado R. "Safety of Obese Persons in Nursing Homes." *Med Care* 2018 Dec **56**(12): 1032-1034.

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Lo D, Kennedy JL, Kurten RC, Panettieri RA, Jr. and Koziol-White CJ. "Modulation of Airway Hyperresponsiveness by Rhinovirus Exposure." *Respir Res* 2018 Oct 29 **19**(1): 208.

Mao XW, Byrum S, Nishiyama NC, Pecaut MJ, Sridharan V, Boerma M, Tackett AJ, Shiba D, Shirakawa M, Takahashi S and Delp MD. "Impact of Spaceflight and Artificial Gravity on the Mouse Retina: Biochemical and Proteomic Analysis." *Int J Mol Sci* 2018 Aug 28 **19**(9).

Nowak G and Bakajsova-Takacsova D. "Protein Kinase Cepsilon Targets Respiratory Chain and Mitochondrial Membrane Potential but Not F0 F1 -ATPase in Renal Cells Injured by Oxidant." *J Cell Biochem* 2018 Nov **119**(11): 9394-9407.

Stewart MK, Spencer N, Huff Davis A, Hart C and Boateng B. "Developing and Piloting a Community Scientist Academy to Engage Communities and Patients in Research." *J Clin Transl Sci* 2018 Apr **2**(2): 73-78.

Swindle TM, Ward WL, Bokony P and Whiteside-Mansell L. "A Cross-Sectional Study of Early Childhood Educators' Childhood and Current Food Insecurity and Dietary Intake." *J Hunger Environ Nutr* 2018 **13**(1): 40-54.

Zimmerman SM, Besio R, Heard-Lipsmeyer ME, Dimori M, Castagnola P, Swain FL, Gaddy D, Diekman AB and Morello R. "Expression Characterization and Functional Implication of the Collagen-Modifying Leprecan Proteins in Mouse Gonadal Tissue and Mature Sperm." *AIMS Genet* 2018 **5**(1): 24-40.

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Find the appropriate citation language at [tri.uams.edu/about-tri-2/cite-tri](http://tri.uams.edu/about-tri-2/cite-tri).*

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