On the Job: Tina Nichols

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Success of Pilot Grant Program leads to Funding by Robert Saligman Charitable Foundation

In 2016, the Department of Surgery launched the Support of Surgery Research Activities Pilot Grant Program. In the first year alone, six projects were approved and funded. Recognizing the importance of innovative research and the success of this funding model, the Robert Saligman Charitable Foundation made a generous contribution in June 2017 to bolster future exploratory studies.

The new Saligman Family Surgery Pilot Grant Program encourages faculty members, residents and fellows to apply for grants of up to $15,000 per year to pursue independent research programs. Here are updates from the principal investigators of three ongoing studies.

“This funding mechanism is invaluable for our faculty, residents, and medical students to initiate important clinical research projects and address questions that we hope may ultimately improve patient care at Jefferson.”

– Jonathan R. Brody, PhD
J. Wallace Davis and Gail C. Davis Professor of Surgery
Director, Division of Surgical Research
Vice Chair for Research
Department of Surgery

Reducing colorectal surgical site infections

“Several years ago, I attended an American College of Surgeons meeting and saw a poster presentation about the use of lidocaine in cholecystectomy wounds. Lidocaine either kills or stops reproduction of many bacterial organisms, and had a dramatic impact on reducing surgical site infection in cholecystectomy patients. I thought, ‘Why don’t we give that a try in colorectal cases?’ With the use of lidocaine, we found that our rate of surgical site infection declined, but we couldn’t prove how. With this lab-based study, we have microbiologists and surgical residents, Brock Hewitt MD, MPH, and Sami Tannouri, MD, working together to explore how another local anesthetic, bupivacaine, works to prevent surgical site infections. Bupivacaine can be delivered alone or can be bound with liposomes, or fat, so that it lasts longer.

“We are working to understand whether or not liposomal binding affects wound infection rates. What are the bacteriologic effects? In other words, is liposomal bupivacaine better, worse or about the same as traditional bupivacaine or lidocaine? In the next few months, we hope to have results that can help us understand the best drug to use to prevent these infections.”

‘Personalizing’ transplant decision making

“Across the board, transplant programs do a great job in collecting and analyzing population-level data. Every program reports the same data about how it’s doing in terms of graft function and loss, as well as patient outcomes over time. Our regulators publish reports about our one- and three-year outcomes – evaluations that typically shape key decisions about which patients receive which organs. I became curious: What would the decisions and metrics look like if we optimized transplantation based on what is best for each individual patient?

“In this study, we are analyzing national data to develop a model that helps programs make more tailored decisions when they receive offers of organs from their organ procurement organization. We’re looking at specific patient variables, such as age, sex, race, disease and time on dialysis, and trying to determine the expected long-term outcome for people with a certain set of characteristics. What would we expect those patients’ organ offers to be at a particular time? What about one year later?

“Ultimately, such models can help transplant programs make better decisions at the individual patient level and achieve even better population-level outcomes.”

Exploring disparities that impact cancer care

“When it comes to care for cancer patients, we look at two factors: efficacy and effectiveness. Efficacy is whether or not a treatment works, while effectiveness is how the treatment performs in the real world. In other words, a treatment may work, but if patients aren’t consistently receiving or tolerating it, there can be differences in outcomes that are not appreciated. Having treated patients from a wide variety of backgrounds and with a broad range of diseases and presentations, I’ve come to realize there are differences in patient presentations and outcomes that are outside of biology.

“Building on previous work exploring disparities in early-stage breast cancer treatment, this particular study is building a dataset based on Jefferson patients. We’re analyzing their pathology alongside demographic variables, such as ethnicity, insurance status, occupation and the ZIP code where the patient lives. We can then assess the decisions patients made and the actions they took. Did they complete the recommended treatment on time? Which groups were most at ease with the treatment? Where did people fall off the path? What are the critical points where we might intervene?

“One you have those kinds of insights, you can make the most effective intervention. But if we don’t study and understand the risks to our patients, we’re going in somewhat blind – not really appreciating the external circumstances that can impact our care.”

To learn more about supporting innovative surgical research at Jefferson, please visit giving.jefferson.edu or contact Kelly Austin in the Office of Institutional Advancement at 215-555-6303 or kelly.austin@jefferson.edu.