Significant Accomplishments

Productive research, growing fellowships
Our faculty set records in the past year for providing national and international lectures, hosting visiting professorships, producing education and research publications, and securing new grants. We recruited 12 pediatric anesthesia fellows and nine advanced fellows in pain medicine, cardiac anesthesia, palliative care, research, education, quality and safety, and intraoperative neuropsychological monitoring. We also formed the Principal Investigators Leadership Group, which includes Steve Danzer, PhD, Michael Jankowski, PhD, Andreas Loepke, MD, PhD, David Richards, PhD, Senthilkumar Sadhasivam, MD, Anna Varughese, MD, MPH, John McAuliffe III, MD, MBA, and Nicole Sutton, business manager, Neurobiology.

Record volumes, declining infections
The Divisions of Anesthesia, Palliative Care, Perioperative Pain Management, and Intraoperative Neuromonitoring set records for clinical encounters, driven by lengthy, high complexity cases. The palliative care division created a palliative pain service and palliative medical service to facilitate care and growth. The anesthesia division sustained improved processes of care which decreased surgical site infections and serious airway events and is organizing around the perioperative microsystems to facilitate pre-operative communication. David L. Moore, MD, and Lisa Rice, business director, Pain Management, advanced the dental, CBDI, and Biopsy anesthesia service which increased the quality of care and case volume of service.
The cardiac service became a division apart from anesthesia; the cardiac division set record for number of cardiac catheterizations.

**Promotions and honors**

Nick Pratap, MBChir, Rajeev Subramanyan, MBBS, MD, Rupi Mavi, MD, and Matthew Sjoblom, MD, became assistant professors; Richards and Mario Patino, MD, were promoted to associate professor; and Sadhasivam and Varughese were promoted to professor. Joseph Previte, MD, FAAP, Veronica Busso, MD, and Pornswan Ngamprasertwong, MD, MSc, were appointed clinical directors. Anne Boat, MD, is the hospital patient experience officer. Karmella M. Franic-Everhart, CRNA, received a doctorate in nurse anesthesia.

McAuliffe serves as president of the American Society of Neurophysiological Monitoring (ASNM). Paul Samuels, MD, leads the Board Exam review course for the Society for Pediatric Anesthesia (SPA). C. Dean Kurth, MD, Anesthesiologist-in-Chief, is president of the SPA pediatric anesthesia leadership council and a board member for the society and its journal, *Pediatric Anesthesia*. SPA also awarded first prizes in research to Subramayan and Mavi for fellow and junior faculty categories.

**Significant Publications**


Effective perioperative analgesia is lacking for children owing to interindividual variations and underdosing of opioids caused by fear of adverse effects. Dr. Sadhasivam, et al showed that in 149 children undergoing tonsillectomy, minor allele carriers of 4 COMT SNPs (rs6269, rs4633, rs4818 and rs4680) were approximately three-times more likely to require analgesic interventions than homozygotes of major alleles (p-value range: 0.0031-0.0127; odds ratio range: 2.6-3.1). COMT SNPs may play a significant role in interindividual variation in postoperative pain perception and postoperative morphine requirements in children. This study, *Genetics of pain perception, COMT and postoperative pain management in children*, was published in February 2014 issue of *Pharmacogenomics*. The research team is recruiting 1000 children to the study from Cincinnati Children’s and 15 other pediatric hospitals. Their goal is to validate the initial findings and identify additional important genes in surgical pain management.


It is well accepted that neonates of all ages experience thermal and mechanical hypersensitivity after a peripheral injury. In this study, we have demonstrated that the primary afferent subpopulations that likely drive the development of these pediatric pain states are likely quite different depending upon the age in which peripheral injury is sustained. This is an important consideration for the management of pain in children as therapies may need to be more specifically tailored depending on the patient’s age in order to obtain an appropriate level of analgesia.


The PI3K/PTEN-mTOR pathway regulates a variety of neuronal functions, including cell proliferation, survival, growth and plasticity. Moreover, dysregulation of the pathway is implicated in the development of both genetic and acquired epilepsies. This review highlighted structural and physiological abnormalities, associated with mTOR hyperactivation, which are thought to cause recurrent excitatory circuits and neuronal hyperexcitability during epileptogenesis.


Faculty, Staff, and Trainees

Faculty Members

C. Dean Kurth, MD, Professor

Leadership Anesthesiologist-in-Chief and Chair, Department of Anesthesiology

Elena Adler, MD, Associate Professor

Leadership Medical Director, Anesthesia Supply Chain, Division of Anesthesiology

Lori Aronson, MD, Associate Professor

Anne Boat, MD, Associate Professor

Leadership Director, Fetal Surgery Team, Division of Anesthesiology, Patient Family Experience Officer

Veronica Busso, MD, Assistant Professor

Leadership Clinical Director, Division of Anesthesiology

Vidya Chidambaran, MD, Associate Professor

Smokey Clay, MD, Assistant Professor
Leadership Co-Director, Core Fellowship Program; Division of Anesthesiology

Andrew Costandi, MD, Assistant Professor

Steve Danzer, PhD, Associate Professor

Bobby Das, MD, Assistant Professor

Hilary Flint, DO, Assistant Professor

Lisa Francis, DO, Assistant Professor

Kenneth Goldschneider, MD, Associate Professor

Leadership Director, Medical Pain Service and Chronic Pain Clinic, Division of Pain Management

Diane Gordon, MD, Assistant Professor

Joel Gunter, MD, Professor

Nancy Hagerman, MD, Assistant Professor

Leadership Co-Medical Director, Same Day Surgery and Pre-Anesthesia Consultation Clinic, Division of Anesthesiology

Elizabeth Hein, MD, Associate Professor

Michael Jankowski, PhD, Assistant Professor

Thomas Kabalin, MD, Associate Professor

Michael "Jack" Kibelbek, MD, Associate Professor

Rachael Koll, MD, Assistant Professor

Renee Kreeger, MD, Assistant Professor

Jennifer Lam, DO, Assistant Professor

Christopher Lee, MD, Assistant Professor

Ik Lee, MD, Associate Professor

Leadership Director, Division of Anesthesiology

Erica Lin, MD, Assistant Professor

Andreas Loepke, MD, PhD, Associate Professor

Mohamed Mahmoud, MD, Associate Professor

Leadership Director, Anesthesia Imaging

Jagroop Mavi, MD, Assistant Professor

John McAuliffe, MD, MBA, Professor

Leadership Director, Research; Interim Director, Division of Neurobiology

Mark Meyer, MD, Associate Professor

Leadership Director, Procedure Management, Division of Pain Management

Jeffrey Miller, MD, Associate Professor

David Moore, MD, Associate Professor

Leadership Clinical Coordinator, Anesthesia Fellow Pain Management Education, Division of Pain Management
Jacquelyn Morillo-Delerme, MD, Associate Professor
  Leadership Director of Anesthesia - Liberty Campus, Division of Anesthesiology

Pornswan Ngamprasertwong, MD, Assistant Professor
  Leadership Clinical Director, Division of Anesthesiology

Vanessa Olbrecht, MD, Assistant Professor

Mario Patino, MD, Assistant Professor

Jayant "Nick" Pratap, MD, Assistant Professor

Joseph Previte, MD, FAAP, Associate Professor
  Leadership Director, Information Technology Services, Division of Anesthesiology; Clinical Director, Division of Anesthesiology

David Richards, PhD, Associate Professor

John Rose, MD, Professor

Senthilkumar Sadhasivam, MD, MPH, Associate Professor
  Leadership Director, Perioperative Pain Management, Division of Pain Management

Nancy Samol, MD, Assistant Professor

Paul Samuels, MD, Associate Professor
  Leadership Director, Education, Division of Anesthesiology

Matthew Sjoblom, MD, Assistant Professor

Ximena Soler, MD, Assistant Professor
  Leadership Director, Liver Transplant Surgery Team, Division of Anesthesiology

James Spaeth, MD, Associate Professor
  Leadership Associate Director, Department of Anesthesiology; Director, Cardiac Anesthesia Team, Division of Anesthesiology

Theodore Striker, MD, Professor

Rajeev Subramanyam, MD, Assistant Professor

Alexandra Szabova, MD, Assistant Professor

Anna Varughese, MD, MPH, Associate Professor
  Leadership Associate Director, Department of Anesthesiology; Director, Quality, Department of Anesthesiology; Co-Medical Director, Same Day Surgery and Pre-Anesthesia Consultation Clinic; Division of Anesthesiology; Associate Director, Perioperative Services

Luigi Viola, MD, Assistant Professor

Norbert Weidner, MD, Associate Professor
  Leadership Director, Palliative Care and Comfort Team, Division of Pain Management

Junzheng Wu, MD, Associate Professor

Joint Appointment Faculty Members
  Susmita Kashikar-Zuck, PhD, Associate Professor (Behavioral Medicine & Clinical Psychology)
Clinical Staff Members

- Nancy Andersen, MD,
  Staff Anesthesiologist
- Clifford Hoffmann, MD,
  Staff Anesthesiologist
- Matthew Mitchell, MD,
  Staff Anesthesiologist
- Normidaris Jimenez, MD,
  Staff Anesthesiologist
- William Worden, MD,
  Staff Anesthesiologist

Trainees

- Orvil Ayala, MD, PGY-V, Montefiore Medical Center/Albert Einstein College of Medicine
- George Bishai, MD, PGY-V, University of Miami, Jackson Memorial Hospital
- James Bradley, MD, PGY-V, Georgia Health Sciences University
- David Buck, MD, PGY-X, Tufts Medical Center
- Richard Colquitt, MD, PGY-V, University of Virginia
- Elizabeth Cudilo, MD, PGY-V, University of California-Irvine, Medical Center
- Clare Herlihy, MD, PGY-V, University of Cincinnati
- Karen Johnson, MD, PGY-V, Cleveland Clinic Foundation
- Eapen Mathew, MD, PGY-V, University of Connecticut
- Ian McIntyre, MD, PGY-X, University of Manitoba
- Marc Mecoli, MD, PGY-V, Beth Israel Deaconess Medical Center
- Ryan Mills, MD, PGY-V, Advocate Illinois Masonic Medical Center
- Sara Powell, MD, PGY-V, University of Kansas-Wichita
- Matthew Reynolds, MD, PGY-V, University of Virginia
- Deborah Romeo, MD, PGY-V, Virginia Commonwealth University
- Joanna Rosing, MD, PGY-X, University of Cincinnati College of Medicine Department of Anesthesiology
- Michael Sikora, MD, PGY-X, BCM Anesthesiology
- Rachel Thienprayoon, MD, PGY-X, UT Southwestern Medical Center

Division Collaboration

Investigate airway dynamics in healthy and obstructive sleep apnea with anesthesia and sedation (Mohamed Mahmoud, MD, Mario Patino, MD)
  
  **Pulmonary Medicine** » Raouf Amin, MD
  
  **Radiology** » Alan Brody, MD and Blaise Jones, MD

Investigate anesthetics in neurophysiological signals during surgery (John McAuliffe, MD)
  
  **Orthopaedics** » Peter Sturm, MD

Investigate chronic pain in children (Kenneth Goldschneider, MD)
  
  **Behavioral Medicine and Clinical Psychology** » Susmita Kashikar-Zuk, MD, Anne Lynch-Jordan, MD, and Sara Williams, PhD
Rheumatology » Esi Morgan DeWitt, MD

Investigate learning and competency of intubation skills (Paul Samuels, MD)
Emergency Department » Benjamin Kerrey, MD and Joseph Luria, MD
Critical Care Medicine » Kenneth Tegtmeyer, MD

Investigate cerebral oxygenation during congenital heart disease (Jayant (Nick) Pratap, MD)
Heart Institute » David Morales, MD

Investigate pharmacogenetics of anesthetics and analgesics (Senthilkumar Sadhasivam, MD; Vidya Chidambaran, MD)
Asthma Research » Ji Hong, PhD
Biomedical Informatics » Jarek Meller, PhD and Michael Wagner, PhD
Center for Autoimmune Genomics and Etiology » John Harley, MD
Clinical Pharmacology » Tsuyoshi Fukuda, PhD and Sander Vinks, PhD
Human Genetics » Keijan Zhang, MD
Neurology » Tracy Glaser, MD
Orthopaedics » Peter Sturm, MD
Otolaryngology » Paul Willging, MD
Rheumatology » Kenneth Kaufman, MD

Investigation of factors leading to persistent postoperative pain in children (Vidya Chidambaran, MD; Senthilkumar Sadhasivam, MD)
Behavioral Medicine and Clinical Psychology » Susmita Kashikar-Zuck, MD
Neurology » Andrew Hershey, MD
Orthopaedics » Peter Sturm, MD

Investigate cerebral responses to pain (Dean Kurth, MD; Vanessa Olbrecht, MD)
Neurosurgery » Francesco Mangano, MD, Charles Stevenson, MD, and Sudhakar Vadivelu, MD

Investigate cerebral responses to language development (Dean Kurth, MD; John McAuliffe, MD; Vanessa Olbrecht, MD)
Radiology » Scott K. Holland, PhD

Tonsillectomy postoperative outcomes (Rajeev Subramanyam, MD; Anna Varughese, MD)
Adolescent and Transition Medicine » Maria Britto, MD
James M. Anderson Center for Health Systems Excellence » Evaline Allesandrini, MD
Otolaryngology » Paul Willging, MD

Risk factors for surgical site infection in scoliosis (Rajeev Subramanyam, MD; Anna Varughese, MD)
Hospital Medicine » Joshua Schaffzin, MD

Postoperative respiratory outcomes after ambulatory surgery (Rajeev Subramanyam, MD; Anna Varughese, MD)
Quality Improvement » Mary Ann Lenk
Anesthesia outcomes in radiology (Mohamed Mahmoud, MD; Rajeev Subramanyam, MD; Anna Varughese, MD)

**Radiology** » Robert Fleck, MD

Contributions of aberrant granule cell integration to the development of epilepsy (Steven Danzer, PhD; David Richards, PhD)

**Neurology** » Katherine Holland-Bouley, MD

Identification and reversal of primary and secondary epileptogenic changes (Steven Danzer, PhD; David Richards, PhD)

**Biomedical Informatics** » Prakash Velayutham

**Developmental Biology** » Matthew, Kofron, PhD

**Neurology** » Katherine Holland-Bouley, MD

Investigate the role of Schwann Cells in peripheral nerve function (Michael Jankowski, PhD)

**Developmental Biology** » Yutuka Yoshida, PhD

**Experimental Hematology and Cancer Biology** » Nancy Ratner, PhD

**Oncology** » Biplap DasGupta, PhD

Investigate the role of glial cells in peripheral nerve function (Michael Jankowski, PhD)

**Experimental Hematology and Cancer Biology** » Nancy Ratner, PhD

Investigate the epigenetic mechanisms of peripheral nerve function (Michael Jankowski, PhD)

**Experimental Hematology and Cancer Biology** » Richard Lu, PhD

Investigate the dual role of muscle afferents on cardiovascular reflexes and nociception (Michael Jankowski, PhD)

**Heart Institute and Molecular and Cardiovascular Biology** » Robert Hinton, MD

Investigate pharmacokinetics of anesthetic agents in the fetuses (Pornswan Ngamprasertwong, MD)

**Clinical Pharmacology** » Sander, Vinks, PhD

Investigate maternal-fetal hemodynamic changes during fetal surgery (Pornswan Ngamprasertwong, MD)

**Fetal Care Center** » Foong Yen Lim, MD

Updating guidelines for flexible airway endoscopy in children (Eric Wittkugel, MD)

**Otolaryngology** » Michael Rutter, MD

**Pulmonary Medicine** » Robert Wood, MD

Esophageal perforation in a neonate during transesophageal echocardiography for cardiac surgery (Jeffrey Miller, MD)

**Cardiology** » Chris Statile, MD

**Otolaryngology** » Catherine Hart, MD

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**Grants, Contracts, and Industry Agreements**

Grant and Contract Awards
CHIDAMBARAN, V

Opioid Safety in Children: Evaluation of Continuous Capnography Monitoring and Prediction of Susceptibility to Respiratory Depression
Anesthesia Patient Safety Foundation
07/01/12-06/30/14 $75,000

DANZER, S

Contributions of Aberrant Granule Cells Integration to the Development of Epilepsy
National Institutes of Health
R01 NS 062806 08/05/09-07/31/15 $206,872
Identification and Reversal of Primary and Secondary Epileptogenic Changes
National Institutes of Health
R01 NS 065020 05/01/14-04/30/19 $218,750

JANKOWSKI, M

Mechanisms of Muscle Afferent Sensitization after Ischemia
National Institutes of Health
R01 AR 064551 09/17/13-08/31/18 $212,500
Mechanisms of Postnatal Cutaneous Afferent Development during Inflammation
National Institutes of Health
R03 HD 077483 08/01/13-07/31/15 $50,000
Molecular Mechanisms of Musculoskeletal Pain After Ischematic Tissue Injury
American Pain Society
09/01/12-08/31/15 $50,000

LASARGE, C

Contribution of Abnormal Granule Cells to the Development of an Epileptic Hippocampal Network in an Inducible PTEN Knockout Mouse
National Institutes of Health
F32 NS 083239 09/01/13-08/31/14 $49,214

SADHASIVAM, S

Personalizing Perioperative Pain Management in Children: A Multicenter Pharmacogenetic Study
Thrasher Research Fund
04/01/12-03/31/15 $120,000

SINGH, S

Ontogenetic Silencing of Dentate Granule Cells as an Approach to Block Seizure Progression
American Heart Association
13PRE16340009 07/01/13-06/30/15 $26,000

WEIDNER, N

Hospice and Palliative Complementary Pain Management Therapies
Each One Counts Foundation
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**Industry Contracts**

**KURTH, D**
- Masimo Corporation $13,860

**SADHASIVAM, S**
- Astellas Pharma Europe BV $73,614

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