Department of Neurosurgery
University of Cincinnati

2024 - 2025 Annual Report

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Welcome from the Chair

It is my distinct pleasure as the Frank H. Mayfield Endowed Chairperson to lead an outstanding group of individuals that comprise the University of Cincinnati Department of Neurosurgery.

Together, we have produced exceptional work and achievements that align with our mission and vision to be an international destination for comprehensive care and education. Included below are some highlights of the achievements detailed in the pages of this annual report.

Clinical capacity: Our providers cared for patients at over 39,000 visits and in more than 2,400 surgical cases.

Clinical expansion: We expanded our geographic reach by building the number and complexity of neurosurgical services provided at West Chester Hospital and beyond.

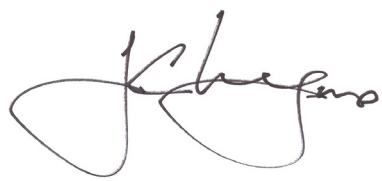
Residency training: Our ongoing excellence in training the next generation of neurosurgeons persists. Notably, we began a major construction project of building the Ong Lab for Neurosurgical Innovation and Training.

Educational excellence: We broadened our educational footprint with a new research training curriculum for our residents. Additionally, we launched a research training program for medical students aspiring to a neurosurgical career with Cincinnati Children's Hospital Neurosurgery faculty.

Research reach: Over the past academic year, faculty, residents, medical students, and undergraduates published over 70 academic articles in leading neurosurgical journals. We are on the cutting edge of clinical research with our participation in numerous clinical trials across all divisions. Our multi-center INDICT clinical trial is the first phase-2 trial of spreading depolarizations in TBI. To date, we have enrolled 34 patients at UC.

These are only a few of the many achievements from the following pages. I am profoundly proud of what we have accomplished, and the future of the UC Department of Neurosurgery is bright. I look forward to seeing what next year brings.

Collegially,



Joseph S. Cheng, MD, MS, FAANS

Frank H. Mayfield Endowed Chair
Professor
Department of Neurosurgery
University of Cincinnati

Our Department

Department Leadership

Joseph S. Cheng, MD, MS

Professor of Neurosurgery

Frank H. Mayfield Endowed Chair

Associate. Director for UC Gardner Neruoscience Institute

Director, Dunsker Spine Service

Charles J. Prestigiacomo, MD

Professor of Neurosurgery

Executive Vice-Chair, Neurosurgery

Director, Neurovascular Surgery Division

Chair, Education Division

Laura B. Ngwenya, MD, PhD

Associate Professor of Neurosurgery

Vice-Chair for Research, Neurosurgery

Director, Neurotrauma Surgery

Director, Neurotrama Center, UCGNI

Chair, Research Division

Brian D. Bain, MBA

Executive Director of Businesss and Administration, Neurosurgery

Neurosurgery Clinical Faculty

Joseph S. Cheng, MD, MS

Professor of Neurosurgery

Frank H. Mayfield Endowed Chair

Assoc. Director, UC Gardner Neruoscience Institute

Director, Dunsker Spine Service

Owoicho Adogwa, MD, MPH, MBA

Associate Professor of Neurosurgery

Norberto O. Andaluz, MD, MBA

Professor of Neurosurgery

Director, Tew Cranial Service

Director, Skull Base Surgery

Co-Director, Brain Tumor Center

Director, Goodyear Microsurgery Lab

Jonathan A. Forbes, MD

Associate Professor of Neurosurgery

Residency Program Director, Neurosurgery

Co-Director, Brain Tumor Center

Director, Ong Lab

Benjamin D. Motley, MD

Assistant Professor of Neurosurgery

Rani M. Nasser, MD

Associate Professor of Neurosurgery

Director, Spine Fellowship

Laura B. Ngwenya, MD, PhD

Associate Professor of Neurosurgery

Vice-Chair for Research, Neurosurgery

Director, Neurotrauma Surgery

Director, Neurotrama Center, UCGNI

Chair, Research Division

Director, Neurotrama Fellowship

Charles J. Prestigiacomo, MD

Professor of Neurosurgery

Executive Vice-Chair, Neurosurgery

Director, Neurovascular Surgery Division

Chair, Education Division

Director, Endovascular Fellowship

John P. Sheehy, MD

Assistant Professor of Neurosurgery

Justin N. Virojanapa, DO

Assistant Professor of Neurosurgery

Director, Neurosurgery, West Chester Hospital

Neurosurgery Research Faculty

Ishita Basu, PhD

Assistant Professor of Neurosurgery

Jed Hartings, PhD

Professor of Neurosurgery

Advance Practice Providers

Scott Everhart, PA-C

Lead APP

Inpatient, WCH

Amanda Elsen, CNP

Inpatient, UCMC

Ann Nixdorf, PA-C

Outpatient, Tew Cranial Division

Amy Perkins, MSN, APRN

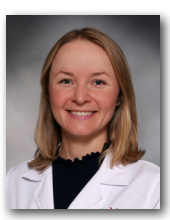
Outpatient, Dunsker Spine Division

Tory Robinson, APRN

Inpatient, UCMC

Paul Siegwald, PA-C

Outpatient, Dunsker Spine Division



Maria Surmachevska, CRNP

Outpatient, Tew Cranial Division

Milea Virojanapa, PA-C

Inpatient, WCH

Brendan Wilson, PA-C

Outpatient, Tew Cranial Division

Inpatient, UCMC

Joshua Wood, MSN, FNP

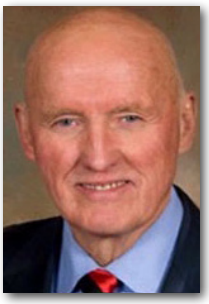
Outpatient, Dunsker Spine Division

Inpatient, UCMC

Volunteer, Emeritus, and Outreach Faculty

Kerry Crone, MD

Associate Professor of Neurosurgery

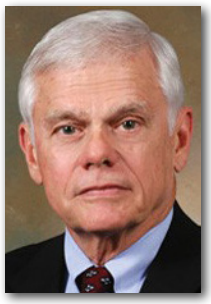


John Tew, MD

Professor of Neurosurgery

Dale Horne, MD, PhD

Volunteer Assistant Professor of Neurosurgery



Thomas Berger, MD

Emeritus Professor of Neurosurgery

Keith Crutcher, PhD

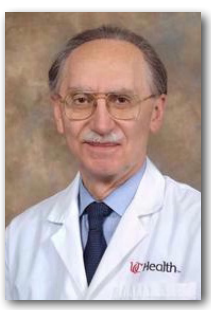
Emeritus Professor of Neurosurgery

Stewart Dunsker, MD

Emeritus Professor of Neurosurgery

Jeffery Keller, PhD

Emeritus Professor of Neurosurgery



Mario Zuccarello, MD

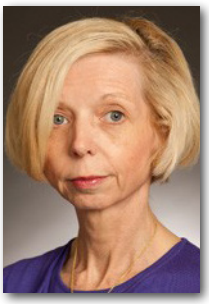
Emeritus Professor of Neurosurgery

CCHMC Affliliate Faculty

Francesco Mangano, DO

Professor of Neurosurgery, Affiliate

Chair, Pediatric Neurosurgery



Karin Bierbrauer, MD

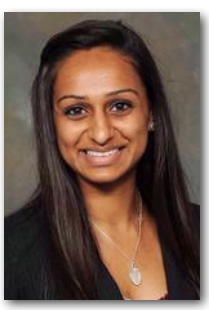
Associate Professor of Neurosurgery, Affiliate

Steven Crone, PhD

Associate Professor of Neurosurgery, Affiliate

June Goto, PhD

Assistant Professor of Neurosurgery, Affiliate



Smruti Patel, MD

Assistant Professor of Neurosurgery, Affiliate

Jesse Skoch MD

Associate Professor of Neurosurgery, Affiliate

Sudhakar Vadivelu, DO

Associate Professor of Neurosurgery, Affiliate

Who We Are

Our Mission: To improve the quality of life for patients with neurological disorders through patient focused clinical care with proven outcomes, education, and research.

Our Vision: To be a national and international destination for high quality, comprehensive neurosurgical care and education aligned with a regional network of neurosurgical services serving the greater Cincinnati community.

Dunsker Division of

Spine Surgery

Joseph S. Cheng, MD, MS

Professor of Neurosurgery

Frank H. Mayfield Endowed Chair

Chair, Department of Neurosurgery

Assoc. Dir., UC Gardner Neuroscience Institute

Chief, Division of Spine Surgery

Clinic Staff

Josh Wood, MSN, FNP
Nurse Practitioner

Rebecca Wood, RN
Nurse Navigator

Jaylee Cregar
Medical Assistant

Louann Revak
Surgery Scheduler

Owoicho Adogwa, MD, MPH, MBA

Associate Professor of Neurosurgery

Clinic Staff

Amy Perkins, APRN
Nurse Practitioner

Stephanie Witt, RN
Nurse Navigator

Alexis Marshall
Medical Assistant

Jessica Fletcher-Hall
Surgery Scheduler

Ben D. Motley, MD

Assistant Professor of Neurosurgery

Clinic Staff

Paul Siegwald, PA-C
Physician Assistant

Rebecca Wood, RN
Nurse Navigator

Amanda Smith
Medical Assistant

Louann Revak
Surgery Scheduler

Rani Nasser, MD

Associate Professor of Neurosurgery

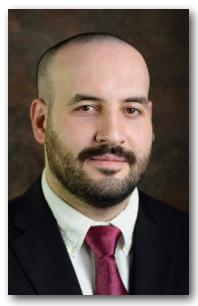
Clinic Staff

Amy Perkins, APRN
Nurse Practitioner

Stephanie Witt, RN
Nurse Navigator

Shanika Shealey
Medical Assistant

Tiffany Brogden
Surgery Scheduler



Anas Bardeesi, MD

Spine Surgery Fellow

AY '25 - '26

Baki Kozan, MD

Spine Surgery Fellow

AY '25 - '26

Justin Virojanapa, DO

Assistant Professor of Neurosurgery

Clinic Staff

Paul Siegwald, PA-C
Physician Assistant

Jess Cordes, RN
Nurse Navigator

Katie Mckenna
Medical Assistant

Ashley Greene
Surgery Scheduler

The Department of Neurosurgery's Spine Program treats patients from across the region for spine problems such as spinal cord and nerve compression, spinal deformities, spinal tumors, neck and back pain, sciatica, and other conditions of the spine. We offer a full range of treatments including minimally invasive and non-surgical treatments, along with complex surgical care beyond what our community spine surgeons can provide. As the busiest of all the clinical services available at our Cincinnati hospitals, the division sees a large volume of cases and a significant number of highly complex cases.

We are dedicated to leading the field with comprehensive team management of diseases and disorders of the spine with research and expertise to offer better treatments and outcomes for patients. In doing so, we attract medical students, residents, fellows, and visiting physicians from all over the world who are immersed in their clinical exposure and academic environment. Abundant opportunities for both basic science and clinical research are available, with laboratory focus on spinal cord injury and soft tissue biomechanics. The Goodyear Microsurgery Laboratory is a home for studies directed at surgical anatomy and the development of innovative operative skills and approaches such as microsurgical techniques.

As patient care is improved with a collaborative team, our neurosurgeons work closely with our orthopedic surgeons, physiatrists, physical therapists and pain management specialists to diagnose spine disease and treat patients using advanced nonsurgical or surgical techniques. We know that patients with serious acute or chronic spinal disease can benefit from the advanced, personalized care which is focused on accurate diagnosis and where successful treatment requires a complex blend of specialized experience, advanced technology, sophisticated diagnostic expertise and outstanding surgical skills combine to ensure the best outcomes.

We look at the whole picture of patient care, as it is not just about performing surgery or providing physical therapy, but rather to help the patient overcome the disability for which they come in to seek help. Our Neurosurgery Spine Program provides comprehensive diagnostic services for patients whose conditions have not been definitely identified as well as those who had unsuccessful treatments including previous surgeries. The Program hosts a registry of outcomes that tracks how our patients are doing, to improve how we care for patients every day.

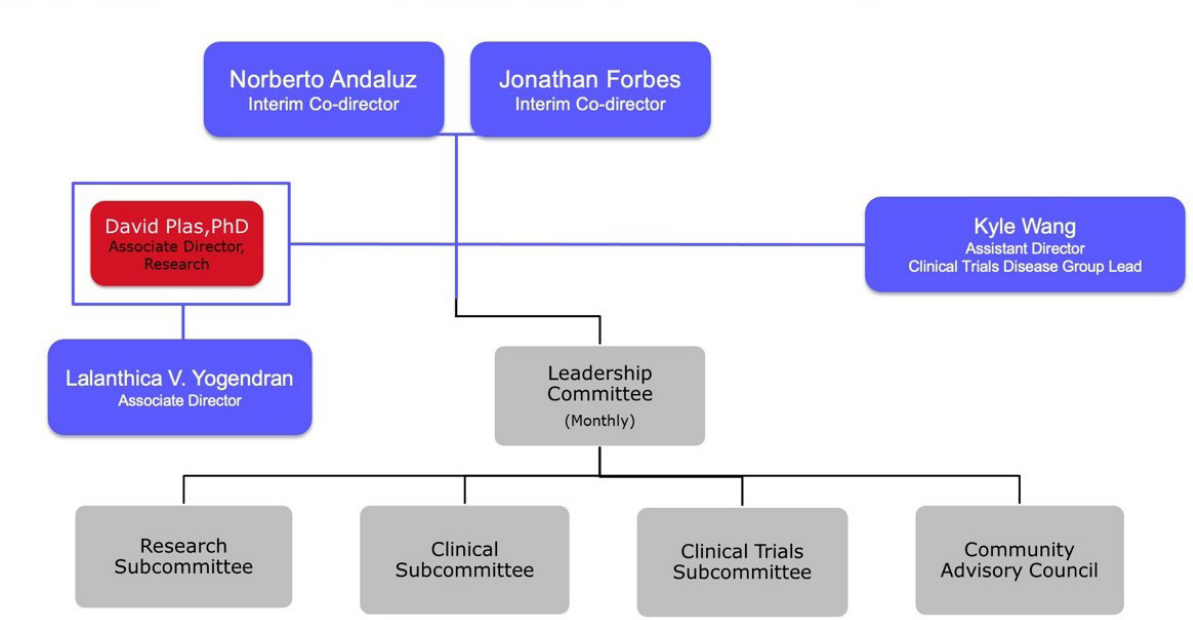
Divisional accomplishments over the past year include:

- Increased clinic volume
- Increased OR utilization
- Fellowship curriculum was aligned with AO Spine Global Spine Diploma
- Dual vendor implant initative cost savings

Tew Division of

Cranial Surgery

Brain Tumor Center



Current Brain Tumor Center Organization

Norberto O. Andaluz, MD

Professor of Neurosurgery

Director, Skull Base Surgery

Co-Director, Brain Tumor Center

Jonathan A. Forbes, MD

Associate Professor of Neurosurgery

Co-Director, Brain Tumor Center

The University of Cincinnati's Brain Tumor Center sees a wide breadth of tumor diagnoses, both benign and malignant. The heterogeneous, collaborative, and multidisciplinary structure of the Center provides a comprehensive collection of clinical and ancillary services for patients.

Cooperating departments and units include:

- Neuro-Oncology
- Hematology & Oncology
- Neurosurgery
- Radiation Oncology
- Neuroradiology
- Neuropathology
- Neuropalliative Care

Brain Tumor Center highlights and initiatives for the past year include:

- BTC Joint Commission Accreditation
- NSQIP UC Neurosurgery data places the Center at or below expected rates for all surgical complications
- Optimized Brain Tumor Board rules and procedures
- Optimization of Neuroradiology imaging protocols
- Commitment to science and precision neuro-oncology when standard therapies fail: in a recent publication in *Neurosurgery*, the University of Cincinnati Brain Tumor Center became the first center in the world to achieve a cure for an aggressive pituitary adenoma using an immunotherapy regimen after failure of standard of care treatment.
- In a recent publication in *Pituitary*, our physicians proposed the use of this novel immunotherapy regimen as an alternative to standard of care treatment of pituitary carcinomas with a certain genetic profile.

- Acquisition of a navigated focused ultrasound unit (NaviFUS), the third such center in the US to offer treatment using this device. The NaviFUS is able to transiently open the blood-brain barrier, which will allow the development of many novel treatment strategies using high-molecular weight pharmaceuticals in the future.
- In the final stages of approval for two Phase 1 clinical trials where the NaviFUS will be used with targeted therapy to treat recurrent glioblastoma patients.
- Development of a comprehensive brain tumor database using AI language models to allow for long-term tracking of patient outcomes and improve treatment regimens

The Joint Commission

ACS NSQIP
National Surgical Quality Improvement Program
American College of Surgeons

Functional Neurosurgery

John P. Sheehy, MD

Assistant Professor of Neurosurgery

Functional Neurosurgery

Clinic Staff

Maria Surmachevska, CRNP
Nurse Practitioner

Robin Knear, RN
Nurse Navigator

Abigail Devoll
Medical Assistant

Devona Whitfield
Surgery Scheduler

The mission of the Division of Functional Neurosurgery is to improve lives and transform health of patients through surgical procedures which modify the function of the nervous system. This includes treating patients with movement disorders, epilepsy, spasticity, and chronic pain.

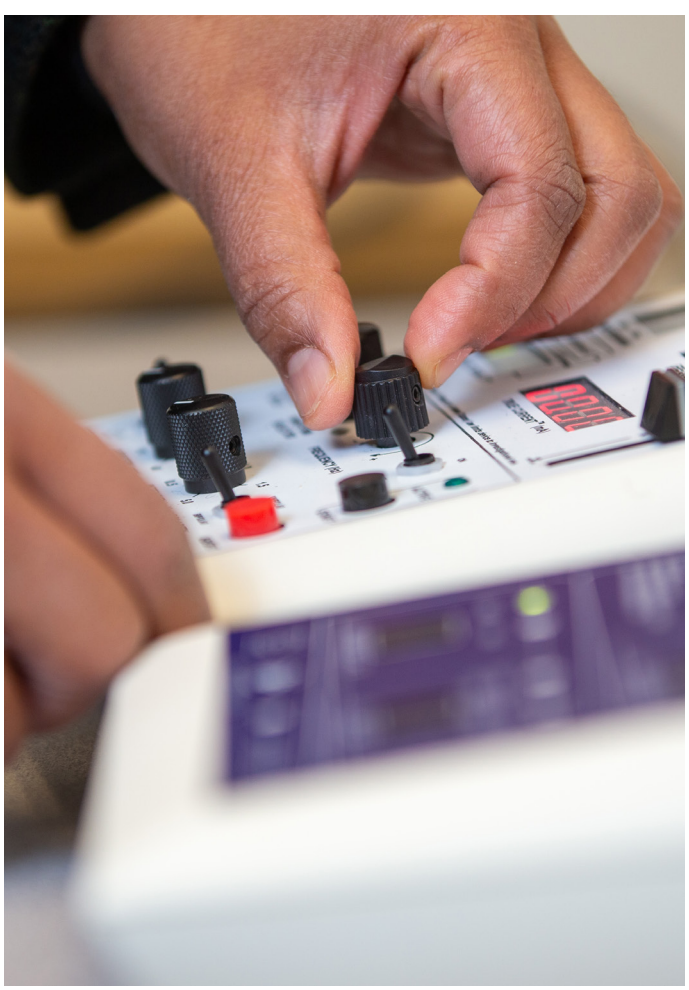
The division collaborates closely with the James J and Joan A Gardner Family Center for Parkinson's Disease and Movement Disorders. We perform deep brain stimulation for patients with Parkinson's disease, essential tremor, dystonia, and rare conditions such as orthostatic tremor. Each patient's customized surgical plan is discussed in a multidisciplinary conference with movement disorders neurology, neuropsychology, and neurosurgery.

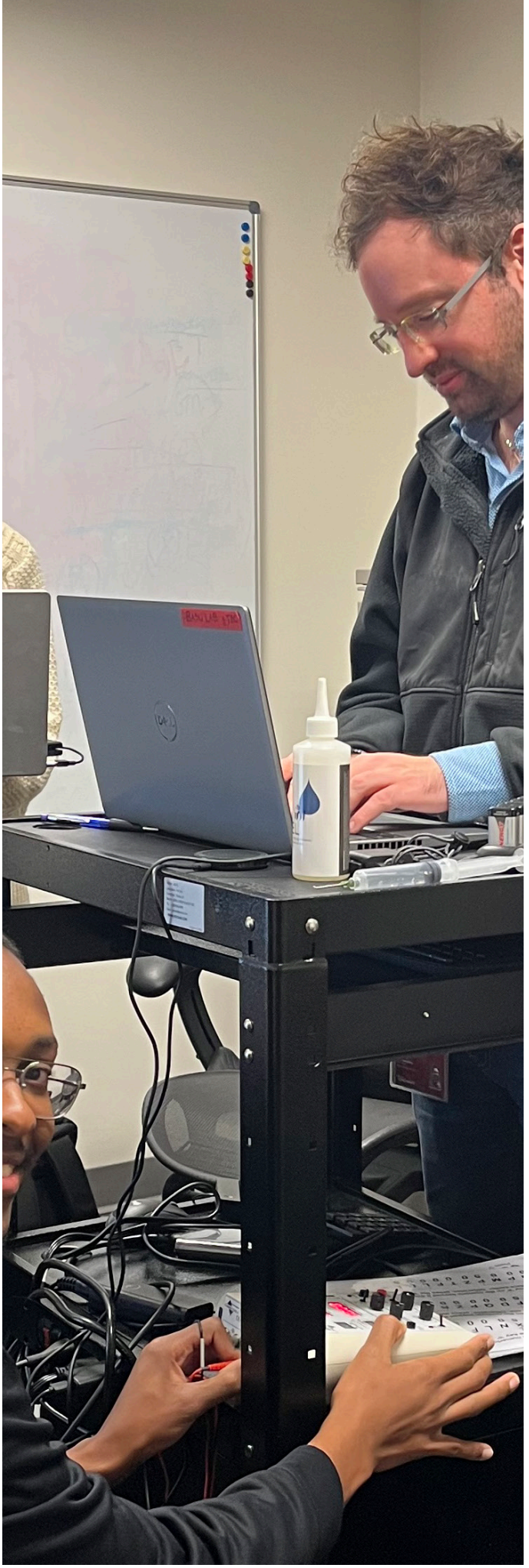
The division is also the neurosurgical component of the UCGNI Epilepsy Center, which is the only NAEC level 4 adult epilepsy center in southwest Ohio. Working closely with our colleagues in UC Neurology's division of epilepsy, we perform surgical procedures to help patients who suffer from seizures that cannot be controlled with medication. We perform intracranial electrode placement to localize the source of seizure onset, and when the source is localized, we perform open surgical resection or minimally invasive laser ablation of the seizure focus to help patients find seizure freedom. We also perform neuromodulation procedures to reduce seizure frequency and severity, including placement of vagus nerve stimulators, deep brain stimulators, and responsive neurostimulators. For each procedure, the patient's surgical plan is discussed in a multidisciplinary conference with close coordination between epilepsy neurology, neuropsychology, nuclear medicine, radiology, and neurosurgery.

Working closely with our colleagues in Physical Medicine and Rehabilitation, we also provide surgical treatment for patients with spasticity

secondary to stroke, spinal cord injury, multiple sclerosis, and other causes. We also support pain anesthesia providers both at UC and throughout the community help patients with chronic pain with surgical procedures such as targeted drug delivery, spinal cord stimulation, and DREZ lesioning.

In addition to our clinical work, we also perform research to further humanity's understanding of brain function, such as Dr. Ishita Basu's study of characterization and modulation of neural oscillations underlying cognitive control in healthy as well as depressed and anxious human subjects. This work could potentially yield game-changing therapies for depression and anxiety.





Neurotrauma Surgery

Laura B. Ngwenya, MD, PhD

Associate Professor of Neurosurgery

Director, Neurotrauma Surgery

Director, UC Gardner Neuroscience Institute Neurotrauma Center

Clinic Staff

Ann Nixdorf, PA-C
Physician Assistant

Sharon Hull, RN
Nurse Navigator

Vianey Antoni
Medical Assistant

Cassie Dobbins
Surgery Scheduler

The Division of Neurotrauma Surgery continues as a leader in diagnosis and treatment of traumatic injuries. The Neurotrauma Program, based at University of Cincinnati Medical Center, involves the surgical care of patients who have suffered traumatic brain injury (TBI) or spinal cord injury (SCI.) Neurotrauma surgeons who treat these patients work directly with neurointensivists.

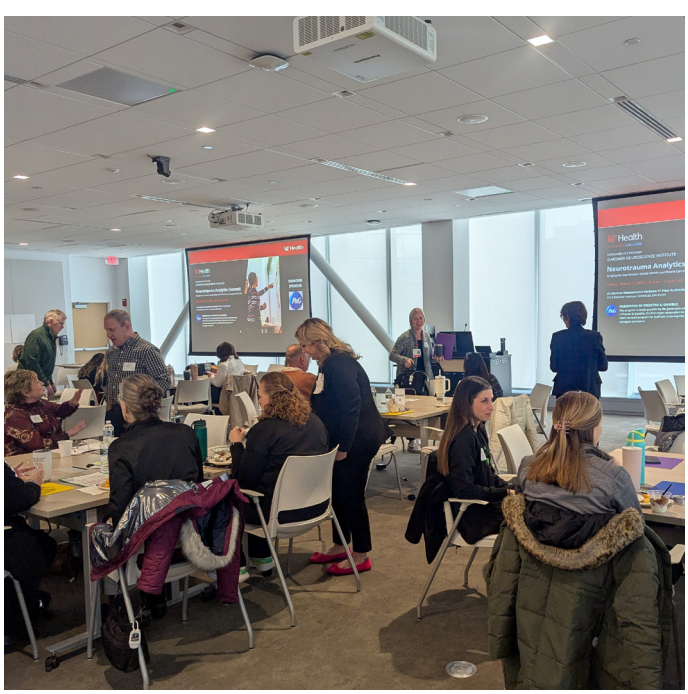
Clinical services are provided in the neuroscience intensive care unit (NSICU) and acute care unit. The NSICU is a 20-bed, state-of-the-art unit with full cardiopulmonary monitoring capabilities and additional specialized monitoring options for brain pressure and oxygenation, cerebral microdialysis and electrophysiology.

The NSICU's features include substations located close to patient rooms, enabling the highly skilled nursing staff to observe patients at all times. Five full-time dedicated intensivists provide attending coverage in close collaboration with our neurotrauma team. Our Neurotrauma team members include fellows, residents, critical care nursing staff, pharmacists, respiratory therapists and medical students.

The Neurotrauma Center is served by University Air Care, a helicopter transport system that is nationally recognized for excellence in emergency trauma care.

Spotlight: UCGNI Neurotrauma Learning Health System

For the second year in a row, the Neurotrauma division hosted a Neurotrauama symposium as a part of the UC Neurotrauma Learning Health System. Held in partnership with UC Health, and sponsored by Procter & Gamble, the symposium brought together practitioners, health system administrators, corporate partners, and patients to learn about neurotrauma in a collaborative environment and to create a plan for comprehensive treatment throughout the UC Health system.



Neurovascular Surgery

Charles J. Prestigiacomo, MD

Professor of Neurosurgery

Director, Division of Neurovascular Surgery

Executive Vice-Chair, Neurosurgery

Clinic Staff

Brendan Wilson, PA-C
Physician Assistant

Melissa Yahle, RN
Nurse Navigator

Makenna Brown
Medical Assistant

Lisa Sorrells
Surgery Scheduler

Affiliated Vascular Faculty

Aaron Grossman, MD, PhD *Neurology*

Peyman Shirani, MD
Neurology

Matthew Smith, MD
Neurology

Samer Hoz, MD

Endovascular Neurosurgery Fellow

AY '25-'26

The Division of Neurovascular Surgery has an extensive history within the University of Cincinnati College of Medicine (UCCOM) system and the community. Unique in its blend of surgical and endovascular (neurointerventional) specialties, the Neurovascular Division serves as the surgical and interventional core of the internationally recognized UC Comprehensive Stroke Center. This designation, reserved for hospitals capable of treating the most intricate stroke and cerebrovascular cases, underscores the division's expertise in handling the full spectrum of vascular pathology affecting the brain and spinal cord. Clinically, the team specializes in managing high-risk conditions, including both ruptured and unruptured intracranial aneurysms, complex arteriovenous malformations (AVMs), cavernous malformations, and ischemic and hemorrhagic strokes. The division's practice is defined by a highly coordinated, multidisciplinary approach, ensuring close collaboration with vascular neurologists, neuro-interventionalists, and neurocritical care specialists to deliver immediate, round-the-clock emergency care and thoughtful, long-term elective treatment plans.

The division holds a distinct position in research, a legacy most notably marked in the management of ischemic and hemorrhagic stroke. In close collaboration, the Neurovascular Division offers patients access to the latest, most advanced clinical trials and first-in-kind therapies. These include novel operative procedures for hemorrhage and bypass to leading technologies in endovascular clot retrieval devices and new neuroprotective agents. Practitionersactively translate discoveries from the laboratory directly to the patient's bedside faster than most institutions globally.

Technologically, the faculty are expert practitioners of both traditional open microsurgical and state-of-the-art endovascular techniques, enabling fully customized treatment strategies. The microsurgical team performs highly complex procedures such as aneurysm clipping and intricate cerebral revascularization, including bypass surgery for conditions like Moyamoya disease, often utilizing

advanced intraoperative imaging for unparalleled precision. Simultaneously, the interventional specialists employ minimally invasive, catheter-based approaches for immediate mechanical thrombectomy in acute stroke, as well as aneurysm coiling and flow diversion procedures. Most importantly, the endovascular team is able to enhance care for patients with tumors of the brain and face and neck through techniques not routinely offered in other institutions. This capability to seamlessly move between open surgery and endovascular intervention is critical for optimizing outcomes for patients with the most challenging cerebrovascular pathologies and other pathologies of the head and neck.

As educators and not just clinicians and scientists, the neurovascular faculty continue to train future generations of neurosurgeons and neurointerventionalists though their residency training program and nationally recognized fellowships. Furthermore, with a unique opportunity afforded to UCCOM and some externally-based medical students, the neuovascular faculty provides a curriculum that is unparalleled currently.

Fundamentally, the Neurovascular Division operates with a clear, two-fold academic mission: to provide the highest level of clinical care for existing disease processes while aggressively probing the fundamentals of cerebrovascular anatomy and pathophysiology to develop future treatments. Through rigorous residency and fellowship programs, the faculty train the next generation of neurosurgical leaders, instilling expertise in complex microsurgery, neurocritical care, and translational research. With scholarly activity spanning from novel mathematical modeling of aneurysms, anatomically based complex neurosurgical approaches derived from our Goodyear and Ong anatomy laboratories, computational decision-making for vascular disease and participation in major national research consortia, the division ensures its contribution extends far beyond the operating room, maintaining its status as a major academic authority in neurovascular science.

Divisional updates from the past year include:

- Service expanded at WCH to become thrombectomy capable with a possible expansion to a 3rd site
- New single plane rooms added to UCMC and WCH
- Programs include:
    - Comprehensive Stroke Center
    - MMA Embolization
    - Venous CSF spinal fistulae
    - Robust bypass program

Divisional projections include:

- Volume growth in northern market
- Establish strong presence in southern market
- Create and expand programs or expand existing:
    - Tumor embolization
    - Venous-CSF Fistulae
    - Bypass
    - Open vascular

Skull Base Surgery

Norberto O. Andaluz, MD

Professor of Neurosurgery

Director, Skull Base Surgery

Clinic Staff

Rebekah Davidson, RN
Nurse Navigator

Justin Dubose
Medical Assistant

Megan Kaeff
Surgery Scheduler

Jonathan A. Forbes, MD

Associate Professor of Neurosurgery

Clinic Staff

Maria Surmachevska, CRNP
Nurse Practitioner

Rebekah Davidson, RN
Nurse Navigator

Devin Bigby
Medical Assistant

Angie Russell
Surgery Scheduler

The Division of Skull Base Surgery has been committed to academic excellence, technical innovation and training for more than two decades.

A heavy clinical volume at University of Cincinnati Medical Center, a fully equipped skull base dissection laboratory and a renowned faculty assure state-of-the-art treatment of tumors deep within the brain.

The division has expertise in confronting acoustic neuromas, meningiomas, pituitary adenomas, chordomas and the entire range of benign and malignant conditions affecting the nerves, bones and tissues of the skull base.

The use of frameless stereotactic guidance, neuroendoscopy, electrophysiologic monitoring and cortical mapping, stereotactic radiosurgery and intraoperative MRI minimizes morbidity while maximizing the effectiveness of surgical treatment.

A weekly neuro-oncology conference, also known as tumor board, brings together medical and radiation oncologists, neuroradiologists, otologists, head and neck surgeons, ophthalmologists, and neurosurgeons to establish the most appropriate treatment and to provide continuity of care long after treatment has been performed.

Divisional highlights from the past year include:

- Recertification as Pituitary Center of Excellence by NASBS
- Dr. Andaluz was named an Unsung Hero Award in Cancer Care
- Dr. Andaluz was named to the International Tuberculum Sellae Meningioma Consortium
- Dr. Forbes was appointed to Board of Directors, Interurban Neurosurgical Society
- Initiation of renovation plans for Ong Lab
- Expanded medical student anatomy courses
- Organized 4 resident training courses
- Awarded more than $30,000 awarded in educational grants
- Awarded more than $60,000 awarded in equipment donations
- Awarded more than $10,000 income on rental


EMENS

Division of

Pediatric Neurosurgery

The Division of Pediatric Neurosurgery at Cincinnati Children's Hospital Medical Center is a comprehensive team of health care providers that treats children from the Ohio-Indiana-Kentucky region as well as those drawn from around the United States and the world.

Because of the large volume of children treated by the neurosurgery service, efficiency, responsiveness, and—most importantly—exceptional care can be achieved only with a team approach.

Attending neurosurgeons, nurses and house staff all play an integral role in the care of these children. Pediatric nurse practitioners are vital to the pediatric neurosurgery service, providing care to inpatients and those in the ambulatory care setting.

Cincinnati Children's has a strong and direct affiliation with the University of Cincinnati College of Medicine. Attending pediatric neurosurgeons have dual appointments in the Departments of Pediatrics and Neurosurgery. Because of this longstanding affiliation and the pediatric neurosurgery service's critical role in resident education, neurosurgical house staff coverage is provided at Cincinnati Children's.

Scholarly endeavors are central to the division's goals. Current studies focus on the treatment of Chiari malformations and the application of neuroendoscopic procedures in pediatric neurosurgery.

Divisional highlights from the previous year include:

- Samantha Himsworth - Octopus Award Winner
- Cincinnati Top Doctors: Drs. Bierbrauer, Patel, Mangano, Skoch, Vadivelu
- Dr. Patel featured in *Cincinnati Magazine* with article "How Gender Bias in Medical Care Impacts Your Health"
- Dr. Mangano elected President of American College of Osteopathic Surgeons
- Dr. Vadivelu awarded US Patent #11338116: Cranial plate for US guided shunt replacement
- Dr. Skoch awarded provisional patent for craniofacial springs
- Drs. Mangano & Goto awarded $1.8 million in grant funding
- Dr. Crone awarded $150,000 in grant funding

Spotlight: The Cincinnati Neurosurgery Gap Year Scholars Program

The Departments of Neurosugery at Cincinnati Children's Hospital Medical Center and the University of Cincinnati have established a novel collaborative research program, The Cincinnati Neurosurgery Gap Year Scholars program, with a generous funding from a CCHMC donor. This program is a year-long opportunity for two medical students who are committed to a career in neurosurgery and are seeking additional support and experience before applying for residency. The program is specifically designed for students from DO and MD programs that do not have a home neurosurgery residency program and takes place between the OMS3/M3 and OMS4/M4 years. Through a combination of research, clinical exposure, and mentorship, the program helps students strengthen their residency applications while gaining meaningful experience in academic neurosurgery, working with faculty from both institutions. Each participant will receive $50,000 in funding, which may be used toward: medical school tuition, living expenses, and/or travel to scientific meetings.

West Chester Hospital

Justin Virojanapa, DO

Assistant Professor of Neurosurgery

Director, Neurosurgery, West Chester Hospital

The Department of Neurosurgery at West Chester Hospital has seen tremendous growth in the past couple of years. Our Spine team has acquired an O-arm and Mazor robot. Our Endovascular team has begun performing thrombectomies, middle meningeal artery embolizations, carotid stents, and RCVS infusions. Our WCH Neurotrauma team is capable of emergently inserting intracranial pressure monitors and external ventricular drains and emergently evacuating acute traumatic subdural hematomas, epidural hematomas, and intraparenchymal hemorrhages.

Ambulatory Operations

Angie Black, MBA

Executive Administrative Director of UC Gardner Neuroscience Institute

Service Line Director, Neurosurgery

Jill Panko, DNP

Operations Director

Heather Molenkamp, MA

Operations Manager

Lori Lay, CCMA

Program Manager, Operations

Cassie Dobbins, MA

Program Manager, Scheduling

Melissa Conry, CCMA

Program Manager, Referrals and Authorizations

Ambulatory Staff

Medical Assistants

- Devin Bigby, Senior MA
- Amanda Smith, Senior MA
- Vianey Antoni
- Brook Bartholomew
- Makenna Brown
- Jaylee Cregar
- Taneka Dawson
- Abby Devoll
- Justin DuBose
- Efran Farhey
- Danielle Gerth
- Jazmine Lindsay
- Alexis Marshall
- Faith Martin
- Emad Qaqish
- Jacob Reed
- Kais Samara
- Saldin Hekmat Sharaydeh
- Shanika Shealey
- Nick Young

Neurosurgery Nurses

- Jess Cordes
- Rebekah Davidson
- Jamie Denlinger
- Sharon Hull
- Robin Knear
- Stephanie Whitt
- Rebecca Wood
- Melissa Yahle

Scheduling Team

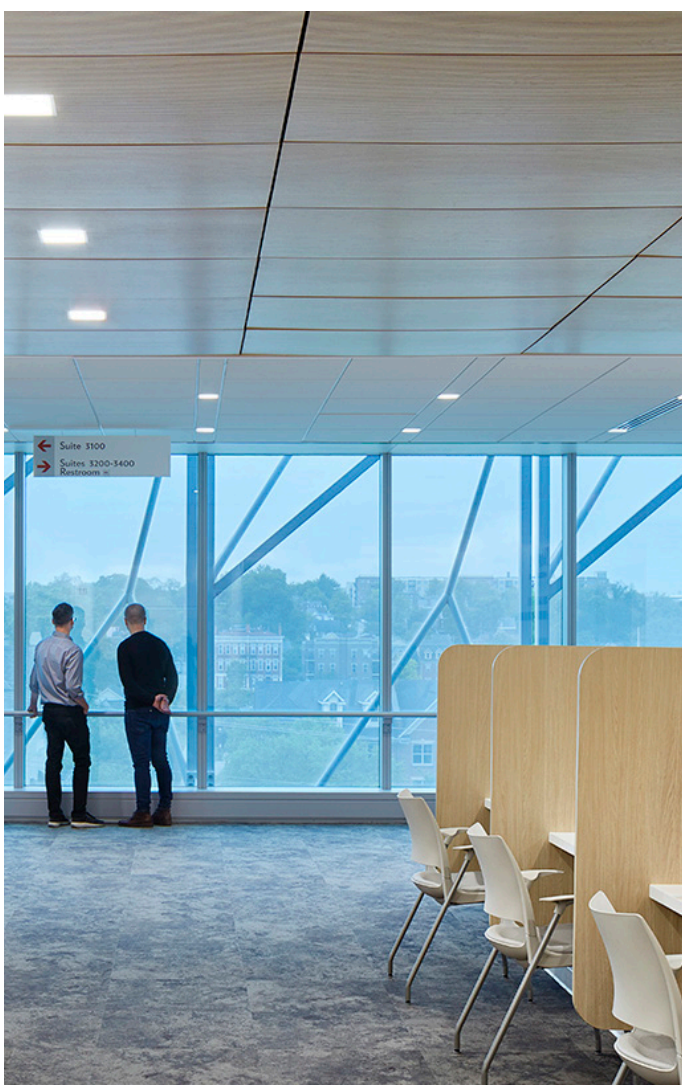
- Davin Black
- Rachel Benoit
- Tiffany Brogden
- Jessica Fletcher-Hall
- Ashley Greene
- Megan Kaeff
- Louanna Revak
- Angie Russel
- Jeanise Simmons
- Felicia Sorrells
- Devonna Whitfield

Authorization, Referal, Front, and Back Office Staff

- Rachel Carlson
- Jessica Knox
- Amber Hamm
- Rasheeda Hollerman
- Melissa Parker
- James Ryan
- Chantrell Stubler
- Jami Sweemer
- Tracie Turner

Divisional highlights from the previous year include:

- Neurosurgery served 21,098 patients in FY '25
- Neurosurgery new patient percentage is 22.9% for FY '25
- Began Access 2.0, a 16 week process to increase new patient visits. Includes:
  - Enhanced access to technology
  - Enhanced referral panels
  - Complete review of decision tree for scheduling
  - Complete template review with changes to enhance access



Celebrating providers with high patient office recommendation scores:

Charles Prestigiacomo, MD:	98.1 %
Norberto Andaluz, MD:	97.9 %
Ann Nixdorf, PA-C:	97.6 %
Aaron Grossman, MD, PhD: *(Vascular Neurology)*	96.6 %
Scott Everhart, PA-C:	93.5 %
Jonathan Forbes, MD:	92.9 %

University Business and Operations

Brian Bain, MBA

Executive Director of Business Affairs

Joanie Brown

Associate to the Chair

Karen Burk

Program Manager

Yasmin Diallo

Administrative Assistant

Bradley Hinger

Project Coordinator

Tracy Hopkins

Senior Research Associate, Lab Manager, Ngwenya Lab

Andy Johnson

Senior Financial Analyst

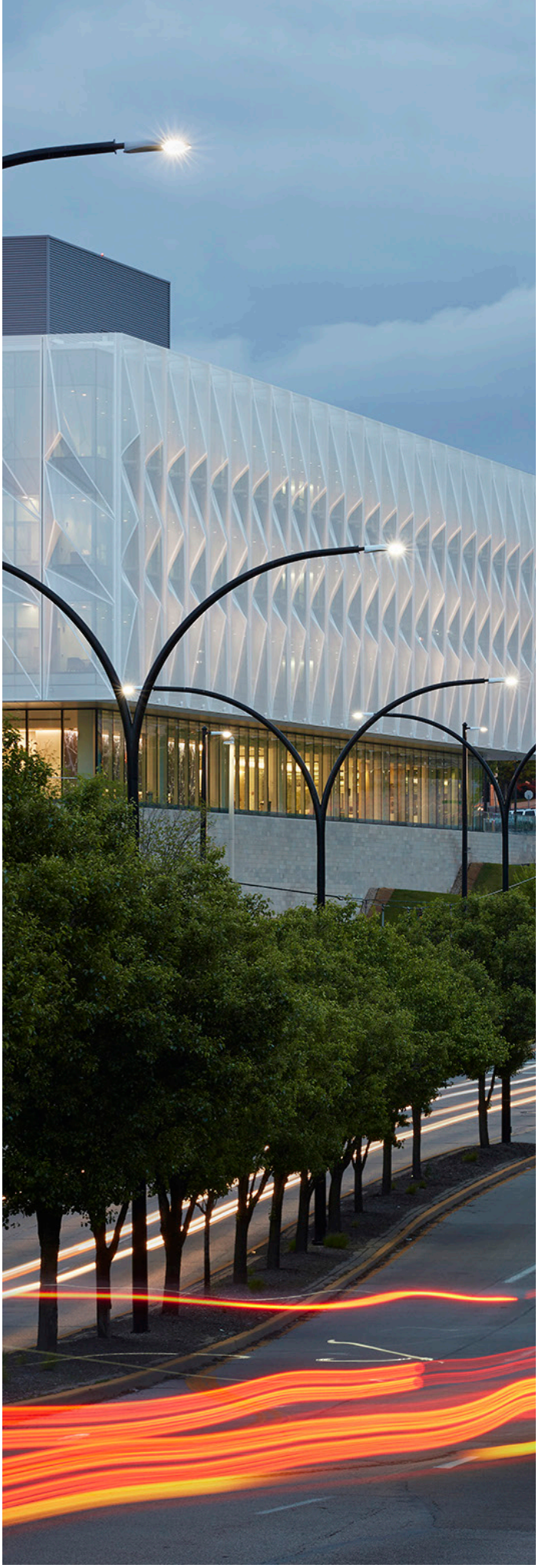
Penny Schwab

Program Manager

Kathi Smith

Principal Research Associate, Lab Manager, Goodyear Lab

The Department of Neurosurgery's Administrative and Business Operations Team plays a pivotal role in driving the department's mission forward by managing its complex operational and financial activities. Comprised of 14 dedicated professionals, the team oversees a dynamic grant portfolio totaling $1.9m, administers an annual University of Cincinnati Physicians (UCP) Operating Budget of $16.1m, and manages the College of Medicine (COM) Budget of $5.2m. Their meticulous attention to detail and strategic oversight ensure that resources are allocated efficiently and that all administrative functions support the department's clinical, research, and educational priorities. In addition to their financial and operational expertise, the team provides critical support to the department's clinical workforce - 10 neurosurgeons, 8 Advanced Practice Providers (APPs), 2 fellows, 15 residents and 2 PhDs. Their work is fundamental to sustaining high-quality care, innovative research, and academic excellence within the Department of Neurosurgery.



Residency Program

Jonathan Forbes, MD

Associate Professor of Neurosurgery

Director, Neurosurgery Residency Program

Smruti K. Patel, MD

Assistant Professor of Neurosurgery

Associate Director, Neurosurgery Residency Program

Penny Schwab

Program Manager, Neurosurgery Residency Program

Residents (AY '25 - '26)

PGY-7

Amber Gaulden, MD

Mark Johnson, MD

PGY-6

Rebecca Garner, MD

Joel Kaye, MD

PGY-5

Bryce Owen, MD

PGY-4

Natalie Ivey, MD

Abhijith Matur, MD

Kyle McGrath, DO

Current Residents

PGY-3

Christiana Cornea, MD

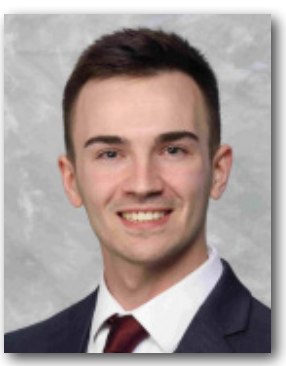
Samuel Griffin, MD

PGY-2

Christopher Cutler, MD

Manjari Daniel, MD

PGY-1



Warren Back, MD

Giancarlo Ventre, MD

Andrew Wu, MD

The University of Cincinnati Department of Neurosurgery, is one of the leading academic neurosurgery residency training programs in the country. The Department provides broad-based education for medical students and comprehensive residency training programs, as well as continuing medical education for neurosurgeons worldwide.

A large attending staff with diverse expertise administers clinical neurosurgical training at affiliated hospitals:

- UC Medical Center
- Cincinnati Children's Hospital Medical Center
- West Chester Hospital

Residents who successfully matriculate become proficient in the use of advanced technologies and techniques in cranial, spinal and peripheral nerve surgeries. They become expert at clinical evaluation, application and interpretation of state-of-the-art diagnostic procedures, and they become accomplished in the methods of neuroscience investigation, data analysis, presentation and publication.

Divisional updates for the previous year include:

- 100% oral board passage rate since 2019
- New Ong Lab renovation completion by end of 2025 to increase resident entrustable professional activities and host national courses

Resident & Fellow Alumni, AY '24 - '25

Sanjit Shah, MD, PGY-7, Spine Fellow
Neurosugical Oncology Fellow '25 - '26
Memorial Sloan Kettering Cancer Center
New York, NY

Vadim Fuchs, DO, Spine Fellow
Provider - Neurosurgery
Ohio Health, Riverside Methodist Hospital
Columbus, OH

Division of

Education

Charles J. Prestigiacomo, MD

Professor of Neurosurgery

Chief, Division of Education

Executive Vice Chair, Neurosurgery

Joseph S. Cheng, MD, MS

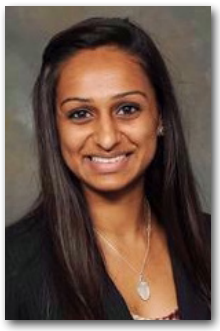
Professor of Neurosurgery

Jonathan A. Forbes, MD

Associate Professor of Neurosurgery

Laura B. Ngwenya, MD, PhD

Associate Professor of Neurosurgery



Smruti K. Patel, MD

Assistant Professor of Neurosurgery

Brian Bain, MBA

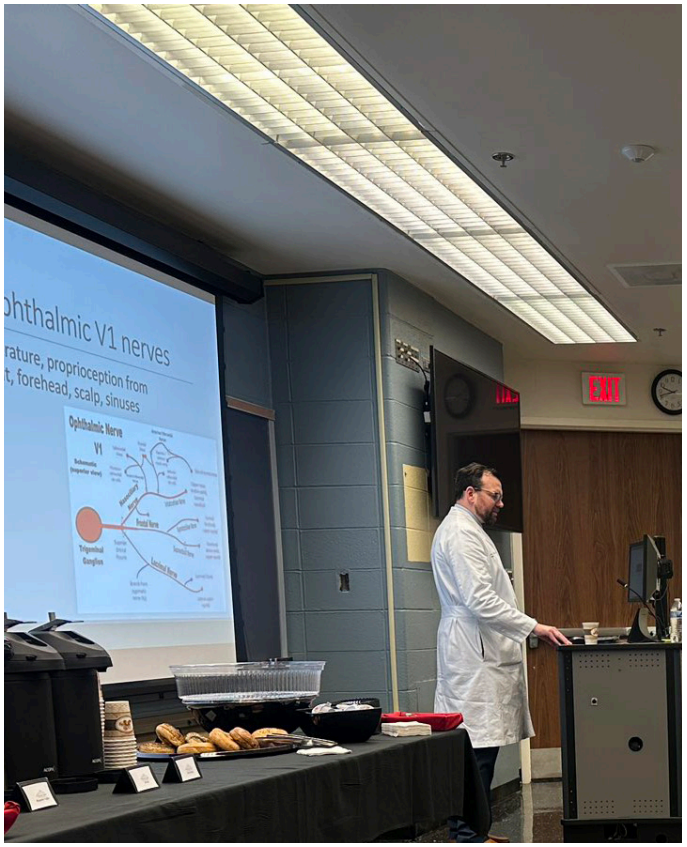
Executive Director of Business Affairs

Penny Schwab

Program Manager

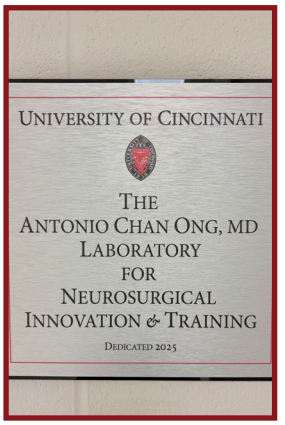
Divisional updates for the previous year include:

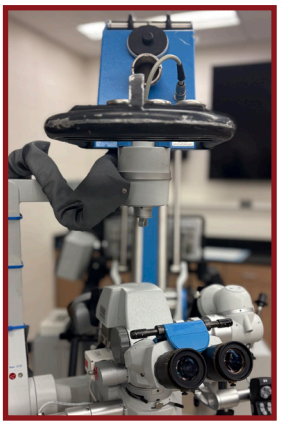
- 8th year of Advanced Neuroanatomy course with two modules and the highest attendance recorded (12 students)
- 8th year of History of Medicine and Surgery course (8 students)
- Suturing seminar for medical students
- Clinic lunch and learns for clinic staff
- Perioperative lectures



Spotlight: The Ong Training Lab

Under the guidance of Dr. Jonathan Forbes, construction of the Antonio Chan Ong, M.D. Lab for Neurosurgical Innovation and Training began on February 3, 2025. The Ong Lab will feature virtual reality surgical stations, operating room preparatory stations, an endovascular simulator, 7 cranial surgical training stations, spinal cadaveric training stations, and a rapid prototyping station. The Lab is being funded by a generous and significant donation from residency alumnus Dr. Antonio Ong and his spouse Lily.





Division of

Research

Laura B. Ngwenya, MD, PhD

Associate Professor of Neurosurgery

Chief, Division of Research

Vice-Chair for Research, Neurosurgery

Owoicho Adogwa, MD, MPH, MBA

Associate Professor of Neurosurgery

Ishita Basu, PhD

Assistant Professor of Neurosurgery

Steven Crone, PhD

Associate Professor of Neurosurgery

Jonathan Forbes, MD

Associate Professor of Neurosurgery

June Goto, PhD

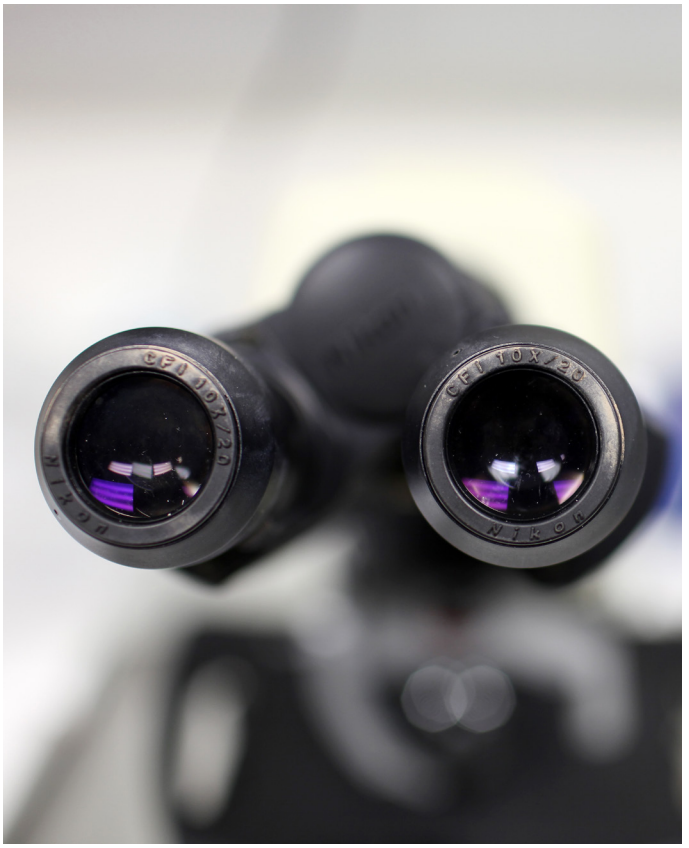
Assistant Professor of Neurosurgery

Jed Hartings, PhD

Professor of Neurosurgery

Our faculty members are committed to technology development, basic science and clinical trials. We are especially committed to translational research, the process by which laboratory discoveries lead to new therapies and treatments for our patients.

As a result, multidisciplinary collaboration among basic researchers and clinical subspecialists is a core value in our department. Examples of this cooperation include cofounding the UC Collaborative for Research on Acute Neurologic Injuries (CRANI) and working closely with the Neuroscience Graduate Program.



Divisional updates from the previous year include:

- 61 publications to date
- Departmental H-Index: 143
- Blue Ridge Ranking: 46
- New research funding: $2.77 Million
    - Previous 5-Year research funding: $16 Million
- 3+ summer research students supported annually
- Established gap year program
- Launch of first phase-2 clinical trial for spreading depolarizations

Brain Tumor Research

The UC Brain Tumor Center integrates the research and translational activities of an interdisciplinary team of clinicians and scientists from across the University of Cincinnati and its neighboring institutions. Our mission is to develop new diagnostic and therapeutic strategies for tumors that arise in the brain as well as tumors that have spread (metastasized) to the brain.

Affiliated Faculty

Norberto O. Andaluz, MD

Professor of Neurosurgery

Co-Director, Brain Tumor Center

Jonathan A. Forbes, MD

Associate Professor of Neurosurgery

Co-Director, Brain Tumor Center

Updates and achievements from this year include:

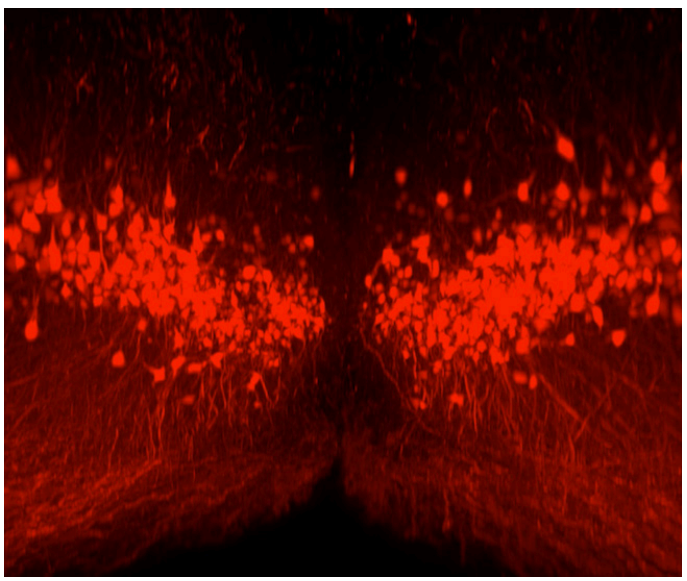
- 7 articles published or under review
- Phase 1 clincal trial: Pilot Study for the Use of Navigated Focused Ultrasound and Pembrolizumab in the Treatment of Recurrent WHO Grade 4 IDH-Wildtype Glioblastoma with Mismatch Repair Deficiency
    - Study protocol approved by the Investigator initiated trial committee, sent to for FDA approval
    - Grant applications submitted for a total of $280,000 in proposed funding from the Focused Ultrasound Foundation, UC Cancer Center, and American Cancer Society
- Development of a comprehensive brain tumor database using AI language model
- Preparation of a case report of twins who developed subependymomas and underlying genetic mutations
- Preparation of a cadaveric study manuscript related to the use of an adjusted anterior transcortical entry site and expansile, tubular retractors to improve visualization of the roof of the third ventricle to facilitate colloid cyst resection

The Crone Lab

The Crone Lab investigates how neural circuits that control breathing are altered by disease and injury. A variety of approaches are used to study the control of breathing in transgenic mice at the level of the whole animal (plethysmography, electromyography), neural circuit (synaptic tracing, 3D imaging, chemogenetics) and individual molecules (RNA sequencing).

We are working to develop new approaches to repair or enhance the function of respiratory circuits to improve breathing in patients with spinal cord injury, epilepsy, and neuromuscular diseases such as amyotrophic lateral sclerosis (ALS), spinal muscular atrophy (SMA) and muscular dystrophy.

Our lab is also actively involved in the Neuromuscular Development Group. Our collaborations aim to accelerate research in the development and diseases of the neuromuscular system.



Affiliated Faculty

Steven Crone, PhD

Associate Professor of Neurosurgery

Lab Members

Sarah Baumgartner
Lab Manager

Simon Sharples
Post-Doctoral Researcher

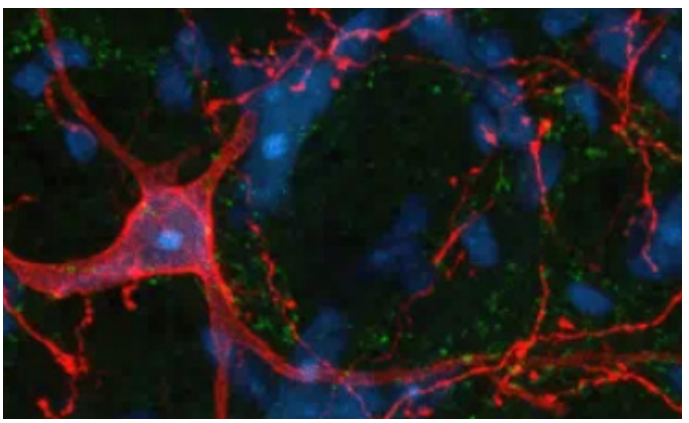
Patrick Waller
Graduate Student Researcher

Kabila Nagaraju
Graduate Student Researcher

Carlin Moore
Graduate Student Researcher

Matthew Revilla
Student Researcher

Rayan Ahmed
Student Researcher



Computational Neuromodulation Lab

The computational neuromodulation lab led by Dr. Ishita Basu uses modeling and signal processing techniques to study brain signals recorded invasively as well as non-invasively from human subjects to study the neural basis of cognitive functions and design innovative neuromodulation techniques to improve such functionality in individuals with mental illness. Specifically, we use time frequency decomposition of brain signals and biophysical modeling techniques to characterize how cognitive stimuli or electrical stimulation impact the brain and behavior to advance the knowledge of decision making and design therapeutic neuromodulation strategies to improve such faculties in mood and anxiety disorders.

Affiliated Faculty

Ishita Basu, PhD

Assistant Professor of Neurosurgery

Lab Members

Alexander Ross
Research Assistant

Aniruddha Shekara
Graduate Student Researcher

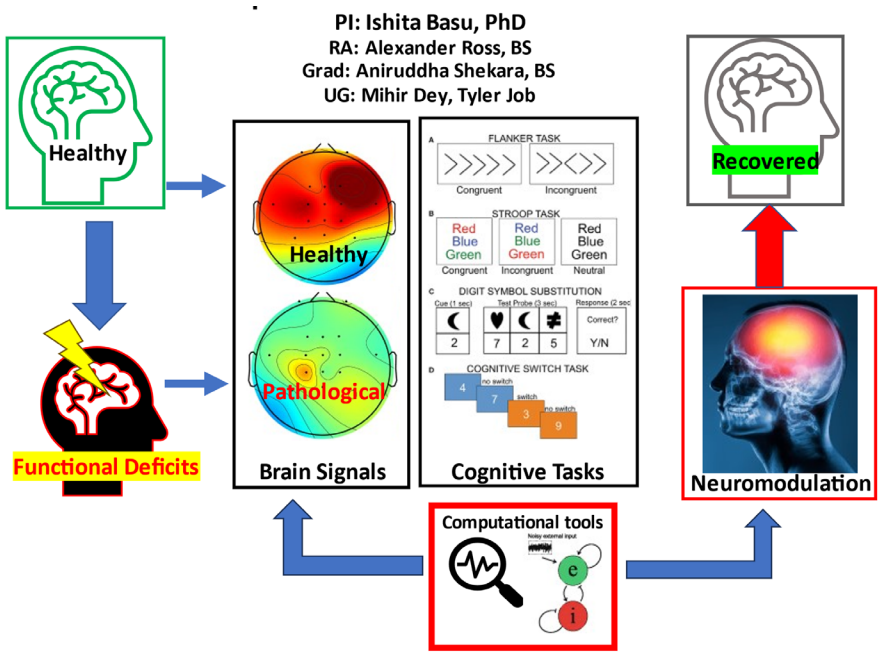
Aaron Kakazu
Medical Student Researcher

Malcolm Udeozor
Graduate Student Researcher

Mihir Dey
Student Researcher

Tyler Job
Student Researcher

Danika Li
Postbac Researcher



Computational Cerebrovascular Lab

With one of the first nationally certified fellowships in endovascular neurosurgery, the environment of rigorous training, with an active research arm focusing on clinical trials for endovascular devices and the treatment of various hemorrhages, solidifies UC's reputation as a leader in advancing neurovascular care and developing better treatment methodologies. Prominent faculty members, including those with expertise in both neurosurgery and endovascular techniques, continue to push boundaries through clinical outcomes analysis and sophisticated computational methods applied to vascular disease decision-making.

With the quality-of-life-based cost of brain hemorrhage being so high to patients and families alike, the faculty of the neurovascular division have focused on searching for tell-tale signs that can help clinicians predict rupture of aneurysms or other vascular anomalies. The Computational Cerebrovascular Laboratory, founded by Dr. Prestigiacomo, has been focused on identifying such patterns to try an understand why certain lesions rupture. Notably, the Computational Cerebrovascular Laboratory has produced novel methods of assessing aneurysm shape through the use of fractal dimensions, a technique that had never been applied to assessing aneurysm morphology and clinical effects. This technique allows for the holistic assessment of aneurysms that may one day help predict rupture before it happens.

Affiliated Faculty

Charles J. Prestigiacomo, MD

Professor of Neurosurgery

The Goodyear Lab

The Goodyear Microsurgery Laboratory was established by the departments of Neurosurgery and Otolaryngology in collaboration with the College of medicine in 1986. It became operational in 1987. Harry vanLoveren, M.D. and Jeffrey T. Keller, Ph.D. served as co-directors. During the ensuing years, the laboratory trained more than 50 research and clinical fellows, while becoming an integral part of the curricula for neurosurgery residents at the University of Cincinnati. The scholarly productivity resulting from their efforts as well as other members of the faculty includes more than 200 publications, a two-volume atlas of operative micro neurosurgery, greater than a hundred training and teaching programs conducted locally, nationally and internationally, and numerous presentations at local, national and international meetings. The skull base program and the Department of Neurosurgery at the University of Cincinnati have achieved national and international recognition as a result of those efforts. Work produced at the Goodyear Laboratory continues to be recognized as seminal and neuroanatomical descriptions as well as surgical techniques developed or perfected at the Goodyear Lab are currently in use in operating rooms around the world.

Affiliated Faculty

Norberto O. Andaluz, MD

Professor of Neurosurgery

Director, Goodyear Lab

Jonathan A. Forbes, MD

Associate Professor of Neurosurgery

Kathi Smith

Principal Research Associate

Lab Manager, Goodyear Lab

The Mangano/ Goto Lab

Pediatric hydrocephalus is one of the most commonly encountered pathology in pediatric neurosurgery with an overall incidence of three in 1,000 children under 2 years of age. Cerebrospinal fluid (CSF) abnormally accumulates in different regions of the brain and can raise intracranial pressure resulting in severe brain damage or mortality if left untreated. Various etiologies of hydrocephalus exist, including intracranial hemorrhage, brain tumors, congenital brain malformations, neural tube defects, as well as others. Unfortunately, for a significant population, this condition has an unknown etiology.

Several surgical treatments are available for pediatric hydrocephalus. These include resection of lesions that physically obstruct CSF flow, or CSF diversionary surgery to control CSF accumulation and ventricular size. These options have greatly reduced the morbidity and mortality associated with this condition. However, the long-term management of optimal shunt function is a challenge especially in young children and may require multiple brain surgeries during the patient's life time.

Research in the Mangano / Goto Lab is directed at understanding pathogenesis of pediatric hydrocephalus, that will lead us to develop new surgical and medical treatment options and to improve patient outcomes and quality of life. To establish the goals, we study essential brain anatomy, neural cell types, and genes involved in pediatric hydrocephalus utilizing advanced MR imaging methods (diffusion tensor imaging), mouse genetic models, and several surgical techniques.

Two main aspects of research are currently ongoing in the lab. Each project includes active collaborations with multidisciplinary researchers across divisions at Cincinnati Children's, including the divisions of Radiology, Developmental Biology and Human Genetics.

Affiliated Faculty

Francesco Mangano, DO

Professor of Neurosurgery

June Goto, PhD

Assistant Professor of Neurosurgery

Lab Members

Crystal Shula
Research Assistant

Stephanie Stephens
Research Assistant

Soner Duru, MD
Postdoctoral Researcher

Paloma Merchan, PhD
Postdoctoral Researcher

Gwendolyn Sebring
Graduate Student Researcher

Zohair Siddiqui
Student Researcher

Translational Neurophysiology Lab

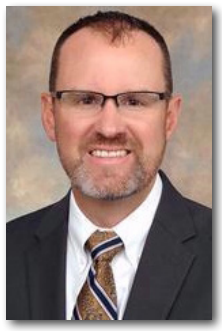
Jed Hartings, PhD, leads studies on the clinical significance of spreading depolarizations (SD), a class of pathologic waves that occur in the brain after injury or other insults. SDs are the largest known disturbance of living brain tissue –10X the size of a seizure – and cause disruption at all levels of molecular, cellular, and tissue function. They are now recognized as the central mechanism driving the toxic changes, including neuronal edema and intracellular calcium ion loading, that lead to tissue death such as infarction after stroke. However, SDs also occur in other conditions of acute injury, including contusion, subdural hematoma, intracerebral hemorrhage, and subarachnoid hemorrhage, and appear to be a requisite mechanism of tissue damage across these conditions.

SDs are studied in patients by placing electrode strips on the brain when patients require neurosurgery. By recording brain activity for several days in the intensive care unit, we find that 60% of patients exhibit SDs after brain trauma, and often these waves recur in a continuous, repetitive pattern for days. In some cases, this causes the progressive deterioration of brain activity to the point of isoelectricity (flat-line). In several large multicenter cohort studies, we have found that a severe course of SDs is an independent predictor of worse patient outcomes. These results raise the possibility that monitoring and treatment of SDs in the clinic could be an effective strategy to improve outcomes –survival and recovery– from severe brain trauma.

We are now testing this idea in a multicenter, randomized clinical trial, using a combination of physiologic and pharmacologic (ketamine) therapies to prevent and treat SDs in real time in the neuroscience intensive care unit. It is possible that, as both a marker and mechanism of progressive brain damage, the monitoring of SDs could become a new cornerstone for managing and treating acute brain injury. To advance clinical adoption, we are also developing custom software and algorithms to facilitate SD monitoring. The automated software solutions are expected to accelerate and standardize the display, recognition, and quantitative assessment of SDs in brain wave recordings, making it easier for physicians to apply this new science in their practices.

Our group collaborates widely with other investigators at UC, and also internationally with other medical centers in the Co-Operative Studies on Brain Injury Depolarization (COSBID), in both laboratory and clinical research.

Affiliated Faculty



Jed Hartings, PhD

Professor of Neurosurgery

Translational Neurotrauma Lab

The Department of Neurosurgery Translational NeuroTrauma Laboratory (TNT) is the laboratory of Dr. Laura Ngwenya, MD, PhD. The TNT Laboratory focuses on the mechanisms that underlie poor recovery after traumatic brain injury (TBI). TBI affects more than 2.8 million people in the US annually. However, despite the widespread societal and economic impact, there are no effective treatments for traumatic brain injury. Especially devastating are the cognitive deficits that occur after TBI. The TNT Laboratory utilizes clinical research, bioinformatics, and an experimental model of TBI to explore the underlying mechanisms of poor recovery after TBI and search for potential treatments. We employ statistical and bioinformatics analyses, cognitive / behavioral testing, histology and immunohistochemistry, stereological quantification, electrophysiology, and molecular techniques. The current focus of our NIH funded laboratory is exploring the interplay between spreading depolarizations, adult neurogenesis, and TBI. We have many collaborators throughout UC and CCHMC, including Dr. Jed Hartings (Professor, Neurosurgery), Dr. Steve Danzer (Professor, Anesthesia, CCHMC), Dr. Brandon Foreman (Assoc. Prof, Neurology), and Dr. Danny Wu (Assoc. Professor, University of North Carolina, Carolina Health Informatics Program). The TNT laboratory is affiliated with the UCGNI Neurotrauma Center, as well as the Collaborative for Research on Acute Neurological Injuries (CRANI).

Affiliated Faculty

Laura B. Ngwenya, MD, PhD

Associate Professor of Neurosurgery

Tracy Hopkins, MS

Senior Research Associate

Lab Manager, TNT Lab

Lab Members

Anthony DeSana, PhD
Postdoctoral Researcher

C'Asia Bishop
Research Fellow

Allie Heineman
Research Fellow

Henry Beckett
Medical Student Researcher

Jorge Robles Solivan
Medical Student Researcher

Spine Surgery Outcomes

Using national medical databases and University case studies, researchers at the University of Cincinnati Garner Neuroscience Institute Back, Neck, and Spine Center are examining outcomes of spine surgery with the intent of creating best practices for faster patient recovery.

Affiliated Faculty

Owoicho Adogwa, MD, MPH

Associate Professor of Neurosurgery

Joseph S. Cheng, MD, MS

Professor of Neurosurgery

Spinal Cord Trauma

After completing a Phase 2a international study on a monoclonal antibody for patients with acute cervical spinal cord injury, researchers at the University of Cincinnati Gardner Neuroscience Institute are excited to collaborate on the next phase of the study. Our researchers are also involved in other collaborative studies regarding the timing of surgery for acute spinal cord injury, the use of diaphragm pacers in acute spinal cord injury, the use of diffusor tensor imaging in assessing spinal cord and brainstem abnormalities, and the development of novel approaches and devices for craniocervical spinal stabilization.

Affiliated Faculty

Justin Virojanapa, DO

Assistant Professor of Neurosurgery

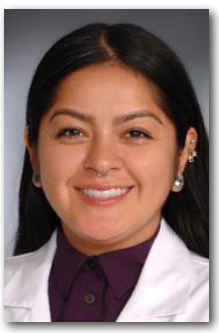
Clinical Trials

Karmen Herzig, CCRC

Clinical Research Project Manager

Jenna Goldthwait, MSN

Clinical Research Nurse



Alex Ramirez

Clinical Research Professional

Mikayla Wallace

Clinical Research Professional, II

UC Neurosurgery is a world-class clinical, research, and teaching program. We are the preeminent provider of neurosurgical services in the Ohio-Kentucky-Indiana Tristate region. UC researchers routinely conduct industry, investigator-initiated and National Institutes of Health (NIH) sponsored clinical trials (phase I-IV) in nearly all therapeutic areas, and have access to a variety of services that aid in the clinical research process, including:

- Local and central Institutional Review Boards
- UC Health Office of Clinical Research
- Investigational pharmacy
- Comprehensive laboratory services
- Marketing and participant recruitment support
- Education and training

Recently Completed Clinical Trials

TRACK-TBI Longitudinal Biomarker Study (TRACK-BIO)
NCT05201833
PI: Laura Ngwenya, MD, PhD

Transforming Research and Clinical Knowledge in Traumatic Brain Injury Epileptogenesis Project (TRACK-TBI EPI)
NCT05823766
PI: Laura Ngwenya, MD, PhD

Gene-based Opioid Studyin Patients Undergoing Spinal Surgery
PI: Owoicho Adogwa, MD, MPH, MBA

Evaluate the Safety and Efficacy of Dura Sealant Patch in Reducing CSF Leakage Following Elective Cranial Surgery (ENCASE-II)
NCT04086550
PI: Mario Zuccarello, MD

Study to Assess the Efficacy and Safety of MT-3921 in Subjects With Acute Traumatic Cervical Spinal Cord Injury
NCT04683848
PI: Justin Virojanapa, DO

Safety and Tolerability of GTX-104 Compared with Oral Nimodipine in Patients with ASAH (ACASTI)
NCT05995405
PI: Charles Prestigiacomo, MD

Real-World Analyses of Stroke - Thrombus Occlusion Retrieval (RESTORE)
NCT04451525
PI: Charles Prestigiacomo, MD

Clinical Evaluation of the i-STAT TBI Test (i-STAT)
NCT04171960
PI: Laura Ngwenya, MD, PhD

A Study to Evaluate the Efficacy and Safety of BIIIB093 in Participants With Brain Contusion (ASTRAL)
NCT03954041
PI: Laura Ngwenya, MD, PhD

Prospective Multi-Center Follow-up of Patients Undergoing Instrumented Thoracic and Lumbaar Arthrodesis Supplemented by the Implanet Jazz System
PI: Joseph Cheng, MD, MS
PI: Rani Nasser, MD

TRACK-LONG
PI: Laura Ngwenya, MD, PhD

Biomarker and Edema Attenuation in IntraCerebral Hemorrhage (BEACH)
NCT05020535
PI: Norberto Andaluz, MD, MBA

Ongoing Clinical Trials

Early Neuromodulation in Traumatic Brain Injury
NCT06871124
PI: Ishita Basu, PhD

Improving Neurotrauma by Depolarization Inhibition With Combination Therapy (INDICT)
NCT05337618
PI: Jed Hartings, PhD

Multi-Arm Multi-Stage Adaptive Platform Trial (APT) for the Acute Treatment of Traumatic Brain Injury (TRACK APT-TBI-01)
NCT05826912
PI: Laura Ngwenya, MD, PhD

Upcoming Clinical Trials

Transforming Research and Clinical Knowledge in Traumatic Brain Injury (TRACK-TBI) Precision Medicine Phase 2 Option 1
NCT04602806
PI: Laura Ngwenya, MD, PhD

Effectiveness and Safety of TachoSil Fibrin Sealant Patch in Comparison to a Hydrogel Sealant for Supporting Dural Sealing among Adult Inpatients in the Unted States: A Retrospective, non-Inferiority, Cohort Study
PI: Norberto Andaluz, MD, MBA

BLOCK-SAH - PPF-Block for Post-SAH Headache (BLOCK-SAH)
NCT06008795
PI: Charles Prestigiacomo, MD

A multicenter prospective study to develop a blood-based biomarker test for aiding the diagnosis/prognosis of traumatic brain injury in adult subjects (CLIN12.1) and for monitoring the development of secondary events in patients diagnosed with traumatic brain injury (CLIN12.2)
PI: Laura Ngwenya, MD, PhD

MMA Embolization with NeoCast for Chronic Subdural Hematoma
PI: Charles Prestigiacomo, MD

Spotlight: INDICT

The University of Cincinnati is the lead and coordinating center for a national, multi-center study focused on spreading depolarizations (SD), sometimes called “brain tsunamis”, a type of pathogenic brain activity often seen in TBI and other types of brain injuries. Clinical studies have shown that SDs occur with high incidence in TBI and are associated with worse outcomes, but real-time diagnosis of SDs to guide intensive care management has not been tested. The primary goals of this study are to determine (1) the feasibility of implementing a treatment protocol for intensive care of severe TBI that is guided by real-time SD monitoring, and (2) the effects of this protocol to reduce secondary injury and improve cerebral physiology. Participants are randomized to either standard of care treatment or SD guided treatment. Data on SD occurrence is used to guide treatment in a tier-based therapeutic escalation and de-escalation protocol, with the intent being suppression of SDs. Since January 2023, 48 patients have been enrolled at 3 sites and 26 (54%) with SDs were randomized. After randomization, the control group had 10.2 SDs/day over 4.0 days (median) of ECoG, while the treatment group had 4.7 SDs/day over 5.6 days Results to date suggest that a conservative, tiered treatment protocol can reduce SD incidence during intensive care by 54%. The study aims to continue enrollment and collect 6 month outcomes.

Ongoing Department Grants

Andaluz, NO. BEACH:Biomarker and Edema Attenuation. Johns Hopkins University: $15,000.

Basu, I. Early Neuromodulation for Cognitive Recovery & Rehabilitation in Traumatic Brain Injury. Department of Defense: $774,000.

Cheng, JS. Clinical Fellowship Grant. NREF: $70,000.

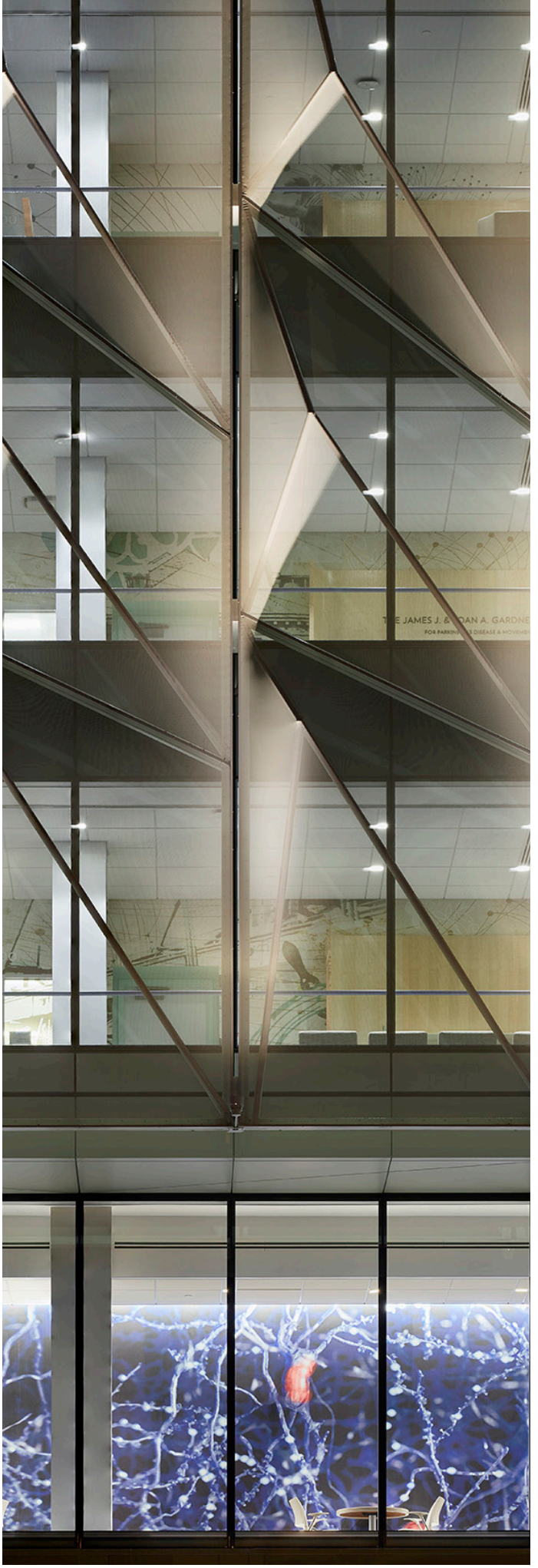
Hartings, JA. Improving Neurotrauma by Depolarization Inhibition with Combination Therapy (INDICT). US Army Medical Research and Development: $4,400,000.

Hartings, JA. Development of Smart Safety Helmets. US Army Meical Research and Development: $106,000.

Ngwenya, LB. Defining the remote effects of cortical spreading depolarizations on hippocampus after traumatic brain injury. National Institute of Neurological Disorders and Stroke: $1,800,000.

Ngwenya, LB. Spreading depolarizations as a mechanistic determinant of post-traumatic epilepsy. Department of Defense: $820,000.

Ngweya, LB. MSSRF Medical Student Summer Research Fellowship. NREF: $2,500. (Awarded to Gap Year Fellow Allie Heineman)



Faculty & Trainee Publications

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Coronel A, Bierbrauer KS, He H, Tolusso LK, Peiro JL. Medical and Early Developmental Outcomes for Patients with Congenital Ventriculomegaly. Fetal Diagn Ther. Published online January 16, 2025. doi:10.1159/000542269

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