







Baylor Pediatrics Research Impact Report

2023-2025

Baylor College of Medicine

Texas Children's®



Jan and Dan Duncan Neurological Research Institute at Texas Children's Hospital Medical Center

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Welcome to the Baylor Department of Pediatrics Research Impact Report!

Advancing Discovery. Transforming Child Health.

The mission of the Baylor Department of Pediatrics Research (BPR) is to optimize the health and well-being of all children through discovery, innovation, and translation. We are delighted to share with you the breadth of our scientific advances and their impact on the health and well-being of children and young adults in Houston, Texas, and around the world.

In this report, we share a high-level view of the research activity and impact of the 570 BPR faculty across 23 divisions. Together, they drive discoveries that advance fundamental biology, inform clinical practice, and improve outcomes for patients and communities. From mechanistic laboratory science to implementation in clinical trials, BPR spans the full translational research spectrum.

Over the past year, BPR has undergone a strategic reorganization designed to strengthen our research community and accelerate growth. We recruited world-class scientists to serve as associate vice chairs in three key domains: Researcher Development (**Dr. Mirjana Maletic-Savatic**), Research Strategy (**Dr. Beth Van Horne**), and Global Research (**Dr. Anna Mandalakas**). This leadership structure enhances mentorship, supports early-career investigators, aligns institutional priorities, and expands global partnerships.

Despite a challenging national funding period, the Department of Pediatrics increased NIH funding in 2025 and now ranks #2 in the Blue Ridge Rankings among pediatric departments nationwide. Our discoveries are being tested and translated in more than 400 clinical trials. We are especially inspired by the enthusiasm and accomplishments of our trainees and junior faculty who represent the future of pediatric research leaders.

We are also grateful for the strong institutional commitment to research at Texas Children's Hospital. We are excited to share updates on Texas Children's Hospital's prioritization of and investment in research through the Research Vision and the recently launched Texas Children's Research Institute. We are privileged to partner closely with **Debra F. Sukin, PhD** (President and CEO, Texas Children's), **Dr. Huda Zoghbi** (Research-in-Chief, Texas Children's Hospital), and **Dr. James Versalovic** (President, Texas Children's Research Institute) in fulfilling our shared research mission.

We thank you for your interest in BPR activity and impact. We look forward to strengthening partnerships, developing new collaborations, and expanding our research networks as we aspire to learn as much as possible from every patient while delivering the very best care.

On behalf of the Baylor Pediatric Research Team,
Carl Allen, Vice Chair for Research; Drs. Mirjana Maletic-Savatic,
Anna Mandalakas, and Beth Van Horne, Associate Vice Chairs for Resesarch;
Dr. Lara Shekerdemian, Chair of the Department of Pediatrics



Picture from left to right: Beth Van Horne, Carl Allen, Anna Mandalakas, Mirjana Maletic-Savatic, and Lara Shekerdemian

We'd love to hear from you!

Whether you have inspired ideas, thoughtful questions, or exciting collaboration opportunities in mind, please reach out.
Let's create something remarkable together.

Contact us at ceallen@bcm.edu



PARTNERSHIPS

Texas Children's Hospital and Baylor College of Medicine

Baylor College of Medicine is academically affiliated with Texas Children's Hospital in the areas of pediatrics, children's surgery, anesthesiology, pathology, radiology, and obstetrics and gynecology. This partnership brings together two leading institutions in medical education, research, and pediatric care in the United States. Baylor College of Medicine is ranked by U.S. News & World Report as one of the nation's top medical schools for pediatrics and consistently earns Tier 1 status for research among medical schools nationwide, while Texas Children's Hospital is recognized as the #1 children's hospital in Texas and consistently ranks among the nation's leading pediatric hospitals.

Through this longstanding partnership, Texas Children's Hospital has served as Baylor's primary pediatric training site, welcoming medical students, residents, and fellows across its many specialty practices.

Texas Children's Hospital®

Baylor College of Medicine®



By the Numbers

Our Researchers

570 Research Faculty

39 Instructors

267 Assistant Professors

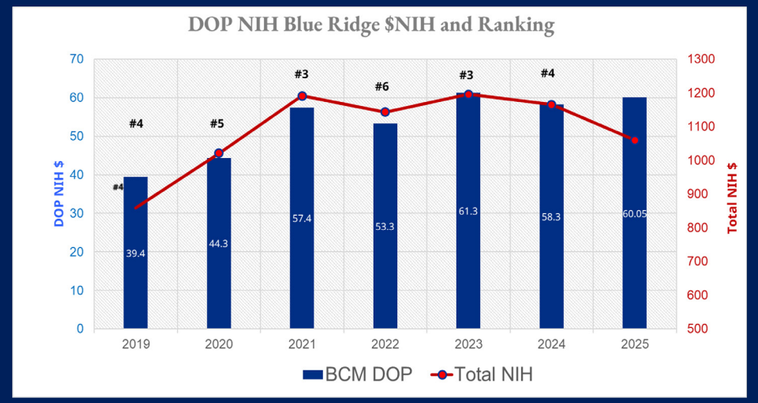
168 Associate Professors

96 Professors/Senior Faculty

Research Funding

Ranked #2 Department of Pediatrics Funding for FFY25

With a total of $118,370,176 in NIH Funding for 2024 & 2025



Blue-ridge Institute for Medical Research
NIH Funding

2024		2025
$58.3 million	→	$60.05 million

3% Increase
$1.75 million increase

From July 1, 2023 - June 30, 2025

>$270 million in total research funding received

3,386 active IRB-approved protocols

1,449 peer-reviewed publications

Division Highlights

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Academic General Pediatrics

Mission: **To demonstrate exemplary leadership in pediatric primary care, medical education, and research to benefit the medical and global community.**

Impact

Leading Innovation in Medical Education

The Division of Academic General Pediatrics (AGP) has historically led efforts in medical education and, more specifically, medical education research. With educational roles in resident continuity clinics, fellowship, and medical schools, we are uniquely positioned to conduct educational research. Over the years, we have led research in curriculum design, program implementation, resilience, and professional development. Most recently, as artificial intelligence (AI) has played an increasingly important role across the broad spectrum of medical education, our faculty have served as innovators in this field. Our faculty are leading research and serving as resources on how to integrate AI into medical education.

Child Prevention Research

AGP faculty have led research to assure the well-being of all children and families. This work has spanned multiple areas. Our faculty have conducted research on immunization effectiveness and disease surveillance. They have also led behavioral research on understanding how parents influence children's obesity-related behavior and improving measurement of children's behaviors and parenting behaviors. This portfolio of work has been funded by CDC, NIH, PCORI, USDA, and the Canadian Institute of Health Research.





Awards

Dr. Lindy McGee was awarded the 2025 Ralph D. Feigin, MD, Award for Excellence by the Immunization Partnership.



Faculty

Chief: Jean L. Raphael, MD, MPH
Research Faculty:

- Jennifer Benjamin, MD, MS
- Avni Bhalakia, MD
- Julie Boom, MD
- Audrea Burns, PhD
- Shelly Kumar, MSc
- Lindy McGee, MD
- Sanghamitra Misra, MD, MEd
- Ana Monterrey, MD, MPH
- Teresia O'Connor, MD, MPH

Selected Publications

- Kusma JD, Raphael JL, Perrin JM, Hudak ML; Committee on Child Health Financing. Medicaid and the Children's Health Insurance Program: optimization to promote equity in child and young adult health. Pediatrics. 2023 Nov 1;152(5):e2023064088.
- Musaad SMA, Mâsse LC, Beltran A, Perez O, O'Connor TM. Factor structure of food and physical activity parenting practices among US fathers by ethnicity and survey language: a cross-sectional study. BMC Public Health. 2025;25(1):3625.
- Suresh S, Misra SM. Large language models in pediatric education: current uses and future potential. Pediatrics. 2024;154(3):e2023064683.
- Benjamin J, Masters K, Agrawal A, MacNeill H, Mehta N. Twelve tips on applying AI tools in HPE scholarship using Boyer's model. Med Teach. 2025 Jun;47(6):949–954.
- Weinberg GA, de St Maurice AM, Qwaider YZ, Stopczynski T, Amarin JZ, Stewart LS, et al. The epidemiology and burden of human parainfluenza virus hospitalizations in US children. J Pediatr Infect Dis Soc. 2025 Apr;14(4):piaf026.

Adolescent Medicine and Sports Medicine



Mission: To be the national leader in advancing the health and well-being of adolescents and young adults through exceptional clinical care, groundbreaking research, and comprehensive education and training.

Vision: To be a leader in healthcare excellence for adolescents and young adults.

Impact

Advancing Adolescent Sexual Health Through Expanded Community Access

The Baylor Teen Health Clinic continues to lead regional efforts to decrease sexually transmitted infections among youth by expanding access to timely and evidence-based care. Through a five-year CDC-funded initiative, **Dr. Meghna Raphael** and her team strengthened community partnerships, created a Youth Advisory Council to elevate adolescent voices, and increased availability of same-day point-of-care testing for gonorrhea and chlamydia. The team is now working to expand same-day testing for syphilis and HIV. These efforts have increased access to free sexual health services for uninsured and underinsured young people ages 13-24 across Houston. Early outcomes have been presented at international and local conferences, and additional dissemination is underway. This work reflects a growing commitment to adolescent-centered sexual health services and to reducing inequities in access to care.

Improving Outcomes in Eating Disorder Recovery Through Family Navigation

Transitioning from inpatient to outpatient care is a vulnerable period for adolescents recovering from anorexia nervosa. Families often experience significant stress, competing responsibilities, and barriers that make it difficult to maintain consistent engagement with required medical, nutrition, and mental health services. With support from a Baylor College of Medicine Pediatric Pilot Award, **Dr. Elizabeth Franklin** evaluated the feasibility and early effectiveness of a family navigator intervention that offers caregivers practical support and guidance following inpatient hospitalization. Adolescents who received family navigator support attended more outpatient appointments and participated in a higher percentage of recovery and prevention program sessions compared with a historical control group. These sessions are associated with reduced readmissions. Caregivers reported high satisfaction and noted that the guidance helped reduce stress. This project resulted in a peer-reviewed publication and is informing an NIH proposal. It has also improved access to outpatient services at Texas Children's Hospital for patients who rely on public insurance.

Preparing Youth with Special Healthcare Needs for Successful Transition to Adult Care

Adolescents and young adults with special healthcare needs often need extra support as they transition from pediatric to adult medical care. With funding from the Health Resources and Services Administration, **Dr. Al Hergenroeder** developed and tested the Intervention to Promote Autonomy and Competence in Transition Age Youth (IPACT), a collaborative program for providers, adolescents, and caregivers. Providers took part in brief training focused on meeting privately with adolescents, encouraging self-management, and planning for adult care, while adolescents and caregivers attended sessions on communication, consent changes at age eighteen, and using MyChart. Pilot testing across four clinical services showed high satisfaction and positive changes in provider practices, adolescent confidence, and caregiver support, highlighting IPACT's potential to prepare youth for successful transition to adult care and broader implementation.



Faculty

Chief: Al Hergenroeder, MD, FSAHM
Director of Research: Connie Wiemann, PhD, FSAHM
Research Faculty:

- Lauren Bretz, MD
- Caelyn Caivano, MS, RD
- Daniel Flint, PhD
- Elizabeth Franklin, PhD
- Beth Garland, PhD
- Meghna Raphael, MD
- Stefani Ricondo, MD

Awards

Adolescent Medicine and Sports Medicine received two major recognitions in 2024 for the project "Identifying provider attitudes, practices, and barriers to three-point extra-genital testing for Neisseria gonorrhea and Chlamydia trachomatis infections among adolescents and young adults."

These awards included:

- **Second Place Poster Presentation Award – Health Systems Science Category, Henry J.N. Taub Young Investigator Award**
- **Top 5 Abstracts for Oral Presentation – Pediatric Research Symposium**

Project Team: Babayev R*, DeCuir JT*, Wiemann CM, Ricondo SA, Zucker J, Hergenroeder AC, Raphael M
*Trainee

Selected Publications

- Carey MN, Cameron LH, Rider NL, Hergenroeder A, Cohen A. What came first: malnutrition or severe disease? Pediatrics. 2023 Sep 1;152(3):e2022060983.
- Franklin EV, Mathias M, Nguyen DT, Hergenroeder AC, Wiemann CM. A family navigator improves post-discharge treatment adherence among adolescents with anorexia nervosa: a pilot study. J Eat Disord. 2025 Jun 12;13(1):109.
- Babayev R, DeCuir J, Wiemann CM, Ricondo S, Zucker J, Richards P, Hergenroeder A, Raphael M. Identifying provider attitudes, practices, and barriers to extra-genital testing for Neisseria gonorrheae and Chlamydia trachomatis infections among adolescents and young adults. J Adolesc Health. 2025 May;76(5):889-896. doi: 10.1016/j.jadohealth.2024.12.021.
- Raphael M, Abacan A, Cotter S, Smith PB, Chacko MR. Telehealth for reproductive health services for economically disadvantaged youth. J Adolesc Health. 2024 Dec;75(6):958-964. Epub 2024 Sep 29.

Cardiology

Mission: Provide extraordinary, lifelong care for patients and families impacted by pediatric cardiovascular disease by delivering exceptional, integrated clinical care, pioneering innovative therapies; educating the next generation of cardiac care leaders; and ensuring the best experience for patients, families, staff, and providers.

Vision: Be the world standard of excellence in lifelong care for those impacted by cardiovascular disease of childhood.

Impact

Investigating Cardiac Arrhythmias in Tango2 Disorder

TANGO2 deficiency disorder (TDD) is a rare autosomal recessive neurodegenerative disease first identified at Texas Children's Hospital and Baylor College of Medicine in 2016. Patients often experience severe metabolic crises triggered by fasting or illness, while life-threatening cardiac arrhythmias remain the leading cause of death due to resistance to conventional therapies. In 2019, with support from the Patient-Centered Outcomes Research Institute, a team led by **Dr. Christina Miyake** launched a retrospective natural history study that led to a major breakthrough: vitamin B5 (pantothenic acid) and vitamin B9 (folate) significantly alter the course of TDD. Patients receiving these therapies were protected from metabolic crises, with improved survival and quality of life, particularly when treatment began in infancy. The team also showed that intravenous folate and B-vitamin therapy can terminate otherwise refractory lethal arrhythmias and, in some cases, reverse severe heart failure in children who would otherwise require transplantation. These findings have transformed an inexpensive, widely available supplement into a life-saving therapy. Today, Texas Children's Hospital leads the world's foremost multidisciplinary TANGO2 program, advancing both clinical care and research into B-vitamin rescue, and has fundamentally reshaped the outlook for patients with TDD.

Prevention of Atherosclerotic Cardiovascular Disease (ASCVD) by Addressing Cholesterol, Blood Pressure and Vascular Medicine Risk in Children

Prevention of atherosclerotic cardiovascular disease (ASCVD) beginning in childhood remains a key focus in preventive cardiology. **Dr. Justin Zachariah** and his team have advanced precision medicine–guided interventional clinical trials in the United States, shaping new approaches to early cardiovascular risk reduction. Drawing on his training as the first pediatric cardiologist from the Framingham Heart Study program and his MPH from the Harvard T.H. Chan School of Public Health, his research spans epidemiology, vascular imaging, outcomes research, and translational and "-omic" approaches, including Mendelian randomization. His contributions include co-authoring multiple scientific statements from the American Heart Association and publishing key studies on statin adherence in youth, diabetes risk with statin use, and the vascular impact of elevated LDL cholesterol. This work at Texas Children's Hospital has helped advance national priorities in pediatric cardiovascular disease prevention.



Awards

Dr. Nancy Ayres was awarded the American Society of Echocardiography Lifetime Achievement Award.

Dr. Doug Moodie was awarded the American Academy of Pediatrics Lifetime Achievement Award.

Dr. Dan Penny was awarded the Marfan Foundation Hero with Heart Award.

Dr. Shaine Morris was awarded the American Society of Echocardiography Feigenbaum Lectureship Award.

The Heart Failure Team was awarded the Heart Failure Society of America Outstanding Heart Failure Care Team Award.





Faculty

Division Chief: Jeffrey Kim, MD
Executive Director: Daniel Penny, MD, PhD
Research Faculty:

- Carolyn Altman, MD
- Deidra Ansah, MD
- Manish Bansal, MBBS
- Judith Becker, MD
- Jolie Britt, MD
- Christopher Broda, MD
- Matthew Campbell, MD, MS
- Bryan Cannon, MD
- Heather Dickerson, MD
- Tam Doan, MD, MS
- Steve Dolgner, MD
- William Jeff Dreyer, MD
- Lindsay Eilers, MD
- Tom Glenn, MD
- Srinath Gowda, MD
- Kyle Hope, MD, MS
- Taylor Howard, MD
- Josh Kailin, MD
- Buck Kyle, MD
- Asra Khan, MD
- Wilson Lam, MD
- Regina Lantin, MD
- Emily Lawrence, DO
- Christian Lilje, MD
- Daniel Lior, MS, PhD
- Aimee Liou, MD
- Christina Miyake, MD, MS
- Silvana Molossi, MD, PhD
- Shaine Morris, MD, MPH
- Minh Nguyen, MD
- Angeline Opina, MD
- Anitha Parthiban, MD
- Tony Pastor, MD
- Tina Pham, MD
- Ricardo Pignatelli, MD
- Jack Price, MD
- Athar Qureshi, MD
- Marco Rodriguez, MD, FAAP
- Shagun Sachdeva, MD
- Katie Salciccioli, MD
- Juan Pablo Sandoval, MD
- Sara K. S. Tejtel, MD, PhD
- Shreya Sheth, MD
- Joey Spinner, MD
- Sara Stephens, MPH, PhD
- Hanna John Tadros, MBBCh
- Hari Tunuguntla, MD, MPH
- Santiago Valdes, MD
- Wes Vick, MD, PhD
- Kae Watanabe, MD
- Justin Weigand, MD
- Chris Wilkinson, MD
- Betul Yilmaz, MD
- Justin Zachariah, MD, MPH

Selected Publications

- Morris SA, Flyer JN, Yetman AT, Quezada E, Cappella ES, Dietz HC, et al; American Heart Association Council on Lifelong Congenital Heart Disease and Heart Health in the Young (Young Hearts); Council on Cardiovascular and Stroke Nursing; Council on Peripheral Vascular Disease; Council on Cardiopulmonary, Critical Care, Perioperative and Resuscitation; Council on Cardiovascular Surgery and Anesthesia. Cardiovascular management of aortopathy in children: a scientific statement from the American Heart Association. Circulation. 2024 Sep 10;150(11):e228–e254.
- Puri K, Jentzer JC, Joey Spinner, Kyle Hope, Adachi I, Tume SC, Hari Tunuguntla, et al. Clinical presentation, classification, and outcomes of cardiogenic shock in children. J Am Coll Cardiol. 2024 Feb 6;83(5):595–608.
- Kim J, Baggish AL, Levine BD, Ackerman MJ, Day S, Dineen E, et al; Silvana Molossi. Clinical considerations for competitive sports participation for athletes with cardiovascular abnormalities: a scientific statement from the American Heart Association and American College of Cardiology. J Am Coll Cardiol. 2025 Feb 20.
- Sachdeva S, Armstrong AK, Arnaout R, Grosse-Wortmann L, Han BK, Mertens L, et al; Anitha Parthiban. Novel techniques in imaging congenital heart disease: JACC scientific statement. J Am Coll Cardiol. 2024 Jan 2;83(1):63–81.

Critical Care

Vision: Improve the outcomes and lives for all persons impacted by pediatric critical illness.





Impact

Pursuit of Excellence

Our critical care division pursues excellence in research and innovation across all units and locations, with the overarching goal to improve outcomes for patients and families affected by pediatric critical illness. Research efforts span the translational spectrum (T0–T4), encompassing basic science mechanistic studies through implementation science, across all subspecialty units, programs, and service lines. Not only do we pursue research in subspecialty care areas, but our teams broadly investigate nutrition, extracorporeal therapies, child development during and after critical illness, use of AI in family education, trainee education, and burnout in our workforce. Between 2023 and 2025, our division produced 396 peer-reviewed publications.

Collaborative Research Networks

Our division maintains active participation in multiple national research networks, with collaborative ties spanning Baylor College of Medicine, peer institutions across the nation, and partners worldwide. Our division, led by **Drs. Ayse Akcan-Arikan** and **Trung Nguyen**, is one of 12 core sites in the Collaborative Pediatric Critical Care Research Network (CPCCRN). CPCCRN is funded by the National Institutes of Health (NIH) and the Eunice Kennedy Shriver National Institute of Child Health and Human Development (NICHD). Our division is an active member institution in the Pediatric Acute Lung Injury and Sepsis Investigators Network (PALISI), a volunteer research network of more than 90 institutions collaborating on impactful clinical research in the pediatric and cardiac ICUs.

Training the Next Generation of Physician Scientists

We are committed to training the next generation of physician-scientists. Fellows undertake rigorous research projects as a core component of their training. Our division supports early career faculty on a K-to-R pathway. Currently supported early-career faculty are **Drs. Hasini Ediriweera, Sameer Thadani, Arun Saini,** and **Diwakar Turaga.**

Highlighted Projects:

Fong Lam, MD, FAAP: NIH R01

Purifying platelets with high-throughput microfluidics for pediatric and neonatal transfusions

Platelet transfusions are crucial for preventing and treating bleeding, but they have significant side effects. **Dr. Lam** is developing an innovative device to purify platelets safely and efficiently, maximizing their therapeutic benefits while minimizing harm. The purpose of this study is to conduct preclinical testing of our novel device aimed at making platelet transfusions safer and more effective for treating and preventing bleeding, especially in premature babies.

Katri Typpo, MD, MPH: NIH R01

Microbiome and Nutrition in Severe PARDS

Mortality from pediatric acute respiratory distress syndrome (PARDS) remains high. **Dr. Typpo's** 'Microbiome and Nutrition in Severe PARDS' research program examines whether feeding strategies during PARDS improve the relative abundance of beneficial microbes and their metabolites, which may act as signaling molecules to reduce acute lung inflammation and injury.

Diwakar Turaga, MD, PhD:

Additional Ventures 2025 Catalyst to Independence Award, K99/R00 equivalent

Role of FOXO Signaling in Hypoplastic Left Heart Syndrome

Dr. Turaga's research focuses on elucidating how increased expression of FOXO family members impairs cardiomyocyte function by utilizing Hypoplastic Left Heart Syndrome (HLHS) patient-derived iPSC models. **Dr. Turaga's** research could identify new targets for therapeutic intervention and improve outcomes for single-ventricle patients.

Faculty

Chief: Katri Typpo, MD, MPH

Research Faculty:

- Sebastian Acosta, PhD
- Sabrina Agbabian, PA, PA-C
- Natasha Afonso, MD, MPH
- Mubasheer Ahmed, MD
- Ayse Akcan Arikan, MD
- Amy Arrington, MD, PhD
- Marc Anders, MD
- Ashish Ankola, MD, FAAP
- Dalia Bashir, MD
- Aarti Bavare, MD, MPH
- Saleh Bhar, MD, QIA
- Paul Checchia, MD
- Moreshwar Desai, MD
- Cameron Dezfulian, MD, FAHA
- Katherine Doane, MD
- Kristin Dolan, MD
- Jenny Erklauer, MD
- Hasini Ediriweera, MD, PhD
- Saul Flores, MD
- Thomas Fogarty III, MD, FAAP
- Brandon Hunter, MD, FAAP
- Mona Karimullah, MD, BS
- Jesse Kay, MSN, MA
- Curtis Kennedy, MD, PhD
- Yi-Chen Lai, MD
- Fong Lam, MD, FAAP
- Laura Loftis, MD
- Marwa Mansour, MD, FAAP
- Raysa Morales Demori, MD, FAAP
- Priscila Mount, MSN, APRN
- Amir Navaei, MD
- Cynthia Nelson, MPH, MS
- Trung C. Nguyen, MD
- Andrea Ontaneda, MD
- Chetna Pande, MD, MPH
- Pamela Petersen, MD, FAAP
- Kriti Puri, MBBS, FAAP
- Arun Saini, MD, MS
- Lynne Singleton, MS, PA-C
- Fabio Savorgnan, MD, MS
- Faridis Serrano Forty, PhD, CCRP
- Emma Seymour, MS, PA-C
- Khayri Shalhoub, MD
- Erik Su, MD
- Sameer Thadani, MD
- Satid Thammasitboon, MD
- Sundararajah Thevananther, PhD
- Rocky Tsang, MD
- Sebastian Tume, MD
- Diwakar Turaga, MD, PhD
- Manpreet Virk, MD

Selected Publications

- Iqbal M, McLennan AL, Mukhamedshin A, Dinh MTP, Liu Q, Junco JJ, Mohan A, Srivaths PR, Rabin KR, Fogarty TP 3rd, Gifford SC, Shevkoplyas SS, Lam FW. Ultra-low extracorporeal volume microfluidic leukapheresis is safe and effective in a rat model. Nat Commun. 2025 Feb 24;16(1):1930.
- Thadani S, Jujjavarapu HV, Silos C, Gist KM, Srivaths P, Typpo K, Horvat C, Bell MJ, Fuhrman DY, Arikan AA. Net fluid balance impacts pediatric continuous renal replacement therapy liberation. Crit Care Med. 2025 May 1;53(5):e1033-e1044.
- Bashir DA, Cargill JC, Gowda S, Musick M, Coleman R, Chartan CA, Hensch L, Pezeshkmehr A, Qureshi AM, Sartain SE. Implementing a pediatric pulmonary embolism response team model: an institutional experience. Chest. 2024 Jan;165(1):192-201.
- Li X, Turaga D, Li RG, Tsai CR, Quinn JN, Zhao Y, Wilson R, Carlson K, Wang J, Spinner JA, Hickey EJ, Adachi I, Martin JF. The macrophage landscape across the lifespan of a human cardiac allograft. Circulation. 2024 May 21;149(21):1650-1666.
- Nguyen TC, Marini JC, Guillory B, et al. Pediatric swine model of methicillin-resistant Staphylococcus aureus sepsis-induced coagulopathy, disseminated microvascular thrombosis, and organ injuries. Crit Care Explor. 2023;5(6):e0916.

Developmental-Behavioral Pediatrics

Mission: **To lead transformative research that deepens our understanding, improves outcomes and expands access to care for children with developmental and behavioral conditions by working in partnership with clinicians, families, and community organizations.**

Vision: **To ensure all children with developmental and behavioral needs thrive through equitable, evidence-driven care.**

Impact

Advancing Data Science and Precision Medicine in Autism and Neurodevelopmental Disorders

The Developmental-Behavioral Pediatrics Division is leading major national efforts to transform how autism and neurodevelopmental conditions are diagnosed, understood, and treated. **Dr. Holly Harris** serves as a co-investigator on a $4.8M NIH Autism Data Science Initiative, contributing clinical expertise to a multi-modal, cross-institutional framework that validates data-science models using comprehensive clinical, genomic, environmental, and physiologic datasets. The division is also a core member of the HRSA-funded Autism Research Consortium, with Texas Children's Hospital serving as one of four national sites evaluating the effectiveness of autism diagnosis in primary care—a study led by **Dr. Harris** and **Dr. Nikki Gambhir.** Together, these efforts position the division at the forefront of precision medicine and scalable diagnostic innovation in autism care.

Expanding Access to Lifespan Neurodevelopmental Care Through Training, Systems Innovation, and Clinical Integration

Developmental Pediatrics is strengthening the neurodevelopmental workforce and improving access to high-quality evaluation and services for individuals across the lifespan. Through a 5-year, $1.3M HRSA Developmental Pediatrics Training Grant, **Dr. Holly Harris** leads efforts to train future leaders in developmental and behavioral pediatrics in partnership with the Division of Transition Medicine. This work improves clinical capacity for children, adolescents, and adults with a wide range of developmental and behavioral needs. Additionally, programs like the Cardiology Developmental Outcomes Clinic (directed by **Dr. Sonia Monteiro**) integrate specialty care with developmental follow-up to better understand and address the long-term outcomes of children with complex congenital heart disease. Collectively, these initiatives strengthen the systems of care that families rely on and advance a workforce capable of meeting rising community needs.

Advancing Discovery in Down Syndrome, Fragile X, and Rare Neurogenetic Disorders

The division is a national leader in research that deepens understanding of rare neurodevelopmental conditions and accelerates progress toward targeted therapies. As part of the NIH INCLUDE Project, **Dr. Kathryn Ostermaier** helps lead a nationwide effort to enroll individuals with Down syndrome across the lifespan, collecting biospecimens, imaging, omics, and phenotypic data—including a Texas Children's–led focus on sleep patterns—to drive high-impact scientific discovery. **Dr. Harris** also directs the Fragile X Clinic and serves as site PI for a CDC-funded study defining the natural history of Fragile X Syndrome. In addition, she contributes developmental outcome measurement expertise to multiple industry-funded rare disease trials and participates in the NIH Developmental Synaptopathies Consortium. These efforts ensure that individuals with rare neurogenetic disorders are represented in cutting-edge research and that clinical insights translate into improved care.



Faculty

Division Chief: Kathryn Ostermaier, MD
Director of Research: Holly Harris, MD
Research Faculty:

- Jennifer Cervantes, MSW, LCSW-S
- Nikki Gambhir, MBChB, MSPH
- Dinah Godwin, MSW, LCSW-S
- Sonia Monteiro, MD
- Noel Mensah-Bonsu, MD, FAAP

Awards



Dr. Noel Mensah-Bonsu was awarded the 2025 American Academy of Pediatrics (AAP) Section on Developmental and Behavioral Pediatrics Dale Richmond/Justin Coleman Award.



Dr. Holly Harris was designated as a Baylor College of Medicine Student Opportunities for Advancement in Research (SOAR) Office Research Mentor Champion in 2024.

Selected Publications

- Harris HK, Kook M, Boedeker P, Gusick AG, Lyons-Warren AM, Goin-Kochel RP, Murali C, Berry LN, Storch EA. The impact of cognitive behavioral therapy on sleep problems in autistic children with co-occurring anxiety. J Autism Dev Disord. 2024 Apr 1.
- Harris HK, Weissman L, Friedlaender EY, Neumeyer AM, Friedman AJ, Spence SJ, Rotman C, Krauss S, Broder-Fingert S, Weitzman C. Optimizing care for autistic patients in healthcare settings: a scoping review and call to action. Acad Pediatr. 2024 Apr;24(3):394–407.
- Pehlivan D, Huang C, Harris HK, et al. Comprehensive assessment reveals numerous clinical and neurophysiological differences between MECP2-allelic disorders. Ann Clin Transl Neurol. 2025 Jan 21.
- Serrano F, Guffey D, Shekerdemian L, Noll L, Voigt RG, Monteiro S. Early identification of autism spectrum disorder in children with CHD attending a Cardiac Developmental Outcomes Program. Cardiol Young. 2024 Mar;34(3):483–488.

Diabetes and Endocrinology

Mission: **We pursue innovation and excellence in the academic missions of education, research, and quality improvement to enhance the healthcare of children with diabetes and endocrine dysfunction.**

Overview

The Division of Diabetes and Endocrinology leads a broad research portfolio across diabetes (type 1, type 2, monogenic, cystic fibrosis-related, and atypical), obesity, and other endocrinologic disorders in youth. Faculty are advancing earlier prediction and prevention of type 1 diabetes, precision approaches to diabetes classification, improved use of diabetes technologies, and innovative strategies to improve obesity and metabolic care. Since 2019, division research activity has grown substantially, with approximately 71% growth in publications, 130% growth in outside presentations, and 118% growth in research studies approved by the ethics committee (IRB). The division currently supports 38 active studies. Faculty with primary appointments in Diabetes & Endocrinology have generated over $8.5 million during the past five years, hold national research leadership roles in major networks and scientific review, including TrialNet, RADIANT, and NIH study section, and contribute to multiple national and international consensus documents. Together, these activities reflect a division with strong national engagement and expanding research impact.

Impact

Diabetes Technology & Therapeutics

Drs. DeSalvo and **Siller** work to advance diabetes technology and novel therapeutics to enable more proactive, equitable, and patient-centered care for youth with diabetes. A major focus of this work is translating real-world data into actionable clinical decision support and scalable care models. Key efforts include ROCKET T1D (Remote Outreach & Care for Kids' Empowerment and Technology use in Type 1 Diabetes)—a remote patient monitoring and proactive care program for children with new-onset type 1 diabetes. Complementary work includes the SenSE study focusing on hypoglycemia risk prediction, leveraging machine learning with wearable sensor data; clinical trials; and real-world evidence studies of automated insulin delivery (AID) systems evaluating safety, effectiveness, usability, and psychosocial outcomes. In addition, **Dr. DeSalvo** and **Dr. Aguirre** collaborate on type 1 diabetes screening, prevention and early intervention efforts.

Type 1 Diabetes Heterogeneity and Precision Medicine in Diabetes

Research led by **Drs. Redondo, Tosur, Siller, Kubota, Uysal** and collaborators at Baylor College of Medicine and partner institutions in the US and abroad studies diabetes heterogeneity to improve prediction, classification, and treatment. The group uses genetic, immune, and metabolic markers in TrialNet and other studies to identify individuals at highest risk of type 1 diabetes, understand why progression and response to preventive therapies differ, and improve timely classification of diabetes type so that care can be tailored earlier and more precisely. This work also includes studies through the NIH-supported Rare and Atypical Diabetes Network (RADIANT) to identify underlying causes and guide more targeted use of genetic testing.

Monogenic, Type 2, and Ketosis-Prone Diabetes in Youth

Research led by **Drs. Tosur, Kubota, McKay, Redondo,** and collaborators at Baylor College of Medicine and partner institutions is improving recognition of pediatric diabetes forms beyond classic type 1 diabetes. The group has shown that commonly used tools for identifying monogenic diabetes may perform poorly in diverse pediatric populations, that youth-onset type 2 diabetes includes clinically distinct subgroups, and that ketosis-prone diabetes represents an important subtype with different prognosis and treatment needs. Together, these studies support earlier and more accurate diagnosis so that treatment can be better tailored to each patient.

Cystic Fibrosis-Related Diabetes

Dr. Merjaneh's research integrates technology in the management of cystic fibrosis-related diabetes, such as detecting hyperglycemia during pulmonary exacerbations using continuous glucose monitors, and the efficacy and safety of the bionic pancreas for glycemic control.



Awards

Dr. Daniel DeSalvo was awarded 2023 T1D Exchange Outstanding Pediatric PI Award.



Dr. Mustafa Tosur was awarded the 2025 American Diabetes Association Nutritional Science & Metabolism Interest Group Early Career Abstract Award.

Faculty

Chief: Rona Sonabend, MD
Director of Research: Maria Redondo, MD, PhD
Associate Director of Research: Stephanie Sisley, MD
Research Faculty:

- Rebecca Aguirre, MD, PhD
- Daniel DeSalvo, MD
- Sarah Lyons, MD
- Siripoom McKay, MD
- Lina Merjaneh, MD
- Katerina Nella, MD
- Maria J. Redondo, MD, PhD
- Alejandro Siller, MD
- Mustafa Tosur, MD



Selected Publications

- Leslie RD, Ma RCW, Franks PW, Nadeau KJ, Pearson ER, Redondo MJ. Understanding diabetes heterogeneity: key steps towards precision medicine in diabetes. Lancet Diabetes Endocrinol. 2023;11:848-860.
- Tobias DK, Merino J,... Tosur M, Wallace AS, Wang CC, Wong JJ, Redondo MJ, Sherr JL, Sims EK, Sweeting A, Tuomi T, Udler MS, Vesco KK, Vilsbøll T, Wagner R, Rich SS, Franks PW et al. Second international consensus report on gaps and opportunities for the clinical translation of precision diabetes medicine. Nature Medicine, 2023 Oct;29(10):2438-2457.
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- ElSayed NA, Aleppo G, Aroda VR, Bannuru RR, Brown FM, Bruemmer D, Collins BS, Cusi K, Das SR, Gibbons CH, Giurini JM, Hilliard ME, Isaacs D, Johnson EL, Kahan S, Khunti K, Kosiborod M, Leon J, Lyons SK, Murdock L, Perry ML, Prahalad P, Pratley RE, Seley JJ, Stanton RC, Sun JK, Woodward CC, Young-Hyman D, Gabbay RA. Standards of care in diabetes-2023. Diabetes Care. 2023 Jan 1;46(Supplement_1):S1-S280.

Emergency Medicine

Impact

Pediatric Emergency Care Applied Research Network (PECARN)



BCM/TCH has been involved in **PECARN** since 2009. Through this NIH-funded network, our investigators have published practice-changing studies on management of refractory status epilepticus, febrile young infants, suspected cervical spine injuries, diabetic ketoacidosis, and sepsis. In addition, recognizing the role of the ED as a community safety net, we have also studied screening for suicidality, substance use, and sexually-transmitted infections.

G7 Pediatric Disaster Center of Excellence

Dr. Brent Kaziny developed and leads the newest Pediatric Disaster Center of Excellence, which is creating a coordinated response across 6 Gulf Coast states and Puerto Rico to strengthen regional preparedness. This ensures that both healthy children and those with special healthcare needs can be linked to appropriate care after natural disasters that disproportionately impact our region.

Pediatric Emergency Medicine Collaborative Research Committee (PEM-CRC)

The **PEM-CRC** is the research arm for the AAP's Section on Emergency Medicine. **Dr. Victor Gonzalez** is the current head of the data center, organizing international studies at over 50 hospitals, and **Dr. Andrea Cruz** is the immediate past chair. The PEM-CRC has studied imaging in children with psychosis and suspected abuse, anaphylaxis, submersion injuries, and rare but severe infectious diseases such as HSV, bacteremia in children with intestinal failure, and hemolytic uremic syndrome.

Awards



Elyse Portillo was named Working group lead for the Pediatric Emergency Care Applied Research Network (PECARN) Disparities Committee.



Dr. Gina Aloisio received the Ken Graff Award for her research on organoid models of RSV and other respiratory viral infection.



Dr. Shubhada Hooli received a K23 from NHLBI for her work on childhood pneumonia and serves our community as a member of the Board of Trustees of the Harris Health System.



Faculty

Chief: Sage R. Myers, MD, MSCE
Director of Research:
Andrea T. Cruz, MD, MPH
Research Faculty:

- Gina M. Aloisio, MD, PhD
- Anthony R. Arredondo, DO
- Elizabeth A. Camp, PhD
- Benjamin Choi, MD, MBA
- Heather L. Crouse, MD
- Nichole R. Davis, MD, MEd
- Cara B. Doughty, MD, MEd
- Zach Foughty, MD, MBA
- Victor M. Gonzalez, MD
- Shubhada Hooli, MD, MPH
- Brent D. Kaziny, MD, MA
- Kathryn M. Kothari, MD
- Saamia I. Masoom, MD
- Julie K. McManemy, MD, MPH
- Elyse N. Portillo, MD, MPH
- Daniel M. Rubalcava, MD, MSPH
- Eric A. Russell, MD
- Esther M. Sampayo, MD, MPH
- Rohit P. Shenoi, MD
- Nidhi V. Singh, MD
- Andrea T. Vo, MD
- Shabana Yusuf, MD, MEd
- Shaila Zaman, PhD

Selected Publications

- Kuhn EC, Melkonyan K, Eckardt D, Carroll B, Coffin SE, Henretig F, Poliwoda S, Barth B, Collins S, Myers SR. Taking a shot at inequities in emergency response: COVID-19 pandemic spurs ongoing healthcare and community partnership to promote equity for children facing disaster. J Emerg Manag. 2025 Mar-Apr;23(2):327-339.
- Portillo EN, Rees CA, Hartford EA, Foughty ZC, Pickett ML, Gutman CK, et al. Research priorities for pediatric emergency care to address disparities by race, ethnicity, and language. JAMA Netw Open. 2023 Nov;6(11):e2343791.
- Moran ED, Hsu D, Wisbon M, Camp EA, Duncan E, Elkarim A, et al. Pediatric emergency medicine fellows' procedural experiences during training. Pediatr Emerg Care. 2025 May;41(5).
- Shenoi R, Crowe J, Dorfman SR, Bergmann KR, Mistry RD, Hariharan SL, et al. Factors associated with pediatric drowning-associated lung injury. J Pediatr. 2024;279:114459.
- Cruz AT, Palmer CA, Augustine EM, Casper TC, Dowshen N, Elsholz CL, et al. Concordance of adolescent gender, race, and ethnicity: self-report versus medical record data. Pediatrics. 2024 Jan;153(2):e2023063161.
- Aloisio GM, Nagaraj D, Murray AM, Schultz EM, McBride T, Aideyan L, Nicholson EG, Henke D, Ferlic Stark L, Rajan A, et al. Infant-derived human nasal organoids exhibit relatively increased susceptibility, epithelial responses, and cytotoxicity during RSV infection. J Infect. 2024 Dec;89(6):106305.

Gastroenterology

Impact

Advancing Care for Children with Cholestatic Liver Disease

Cholestatic liver diseases including biliary atresia cause significant morbidity and mortality in childhood, frequently requiring liver transplantation. BCM/TCH leads many of the key projects and contributes to many of the others in the largest national prospective, multicenter study of children with biliary atresia and other cholestatic liver diseases. Our goals are to accelerate advances in our understanding of pediatric cholestasis and to improve care for children with rare disorders of the liver.

Using Advanced Analytics to Identify Genetic Drivers of Pediatric Inflammatory Bowel Disease

Inflammatory bowel disease is a chronic and often debilitating condition with increasing prevalence among children. Although the cause remains unknown, genetic factors can increase a child's susceptibility. Investigators in our state-of-the-art pediatric inflammatory bowel disease program leveraged network analytics to identify functionally relevant genes, such as MYO5B, to expand the list of genes of interest in very-early-onset inflammatory bowel disease.

Linking Early-Life Gut Microbiome Function to Neonatal Growth

A unique collaboration between the Divisions of Gastroenterology and Neonatology aims to prevent neonatal growth failure, which affects half of all infants born with extremely low birth weight. Our team discovered a novel link between a gut bacterial enzyme called bile salt hydrolase and newborn growth. Early-life colonization by specific gut bacteria that carry bile salt hydrolase increases intestinal concentrations of certain bile acids that might help infants digest and absorb mother's milk more efficiently. This study highlights a potential future mechanism of growth failure prevention via therapeutic manipulation of the early-life gut microbiome.





Faculty

Chief: Benjamin Shneider, MD

Director of Research:

- Eric Chiou, MD
- Geoffrey Preidis, MD, PhD

Research Faculty:

- Ricardo Arbizu Alvarez, MD
- Anna Banc-Husu, MD, MSCI
- Andrew Chu, MD
- Douglas Fishman, MD
- Sanjiv Harpavat, MD, PhD
- Paula Hertel, MD
- John Hollier, MD
- Faith Ihekweazu, MD, MS
- Lina Karam, MD
- Richard Kellermayer, MD, PhD
- Daniel Leung, MD, FAASLD
- Krupa Mysore, MD, MS
- Anthony Olive, MD
- Priya Raj, MD, MS
- Krishnakant Soni, PhD
- Mary Elizabeth Tessier, MD, BS
- Kristin Whitfield Van Buren, MD, BA
- Seema Walsh, MD, BS

Selected Publications

- Tessier MEM, Schraw JM, Beer S, Harpavat S, Kyle Jensen M, Magee JC, Ng V, Scheurer ME, Taylor SA, Shneider BL. The association of human milk intake and outcomes in biliary atresia. J Pediatr Gastroenterol Nutr. 2025;80(1):163-173.
- Watson A, Harris RA, Engevik AC, Oezguen N, Nicholson MR, Dooley S, Stubler R, Satter LF, Karam LB, Kellermayer R. MYO5B and the polygenic landscape of very early-onset inflammatory bowel disease in an ethnically diverse population. Inflamm Bowel Dis. 2025;31(1):189-199.
- Lynch LE, Hair AB, Soni KG, Yang H, Gollins LA, Narvaez-Rivas M, Setchell KDR, Preidis GA. Cholestasis impairs gut microbiota development and bile salt hydrolase activity in preterm neonates. Gut Microbes. 2023;15(1):2183690.
- Harpavat S, Borovsky KA, Schuerer ME, Cavallo L, Erhiawarie FE, Vasudevan S, Vogel AM, Cerminara D, Tessier EM, Patel KR, Devaraj S, Shneider BL. A phase 2 trial of short-term intravenous N-acetylcysteine in biliary atresia after Kasai portoenterostomy. Hepatol Commun 9:e0729, 2025.
- Molleston JP, Goodrich NP, Ye W, Leung DH, Sokol RJ, Shneider BL. Prospective analysis of liver stiffness measurement by vibration controlled elastography as a predictor of outcomes in biliary atresia. Gastroenterology 168:393-395, 2025.

Global Health



Mission: To excel in complementary clinical, educational, and research arenas to improve the health and well-being of children and families.

Vision: A world in which all children can grow, thrive, and reach their full potential, no matter where they are born.

Overview

The Division of Global Health leads a diverse research portfolio spanning basic, translational clinical, and implementation science, with a strong emphasis on infectious diseases, health systems strengthening, and equitable delivery of care in low- and middle-income settings. The division supports large multisite studies, long-standing international partnerships, and robust training of early-career investigators. Over the past decade, faculty in our division have successfully secured nearly $56 million of external funding including three NIH K-series career development awards, 12 NIH R01 awards or equivalent, 1 U01 award, and 1 UG1 award, and published over 300 peer-reviewed manuscripts.

Impact

Shaping Global Policy and Clinical Practice

As of May 2025, the Global Health Division's faculty work has been cited in clinical guidelines and health policy documents in more than 20 countries. The division's faculty publications and direct contributions have also informed the World Health Organization's technical guidance and policy recommendations for tuberculosis and HIV prevention, treatment, and management. The Global Health Division plays a strategic role in advancing collaborative global health research across the Department of Pediatrics and Texas Children's Hospital. It supports research capacity strengthening at affiliated Baylor College of Medicine Children's Foundations worldwide, enabling locally led research that reflects regional priorities and contexts across multiple disease areas. The division also fosters ethically sound partnerships that meaningfully engage local collaborators and align with best practices in equitable global health research.

Advancing Precision and Innovation in Global Pediatric HIV and TB Research

Global Health faculty leads high-impact global research that advances more precise, individualized approaches to pediatric infectious disease care in low-resource settings. **Dr. Alexander Kay's** multinational HIV research produced validated mortality and viral suppression prediction tools that outperform existing WHO criteria, enabling more targeted care for children and adolescents initiating antiretroviral therapy. Complementing this work, **Dr. Andrew DiNardo's** research uncovered persistent epigenetic immune suppression following tuberculosis and sepsis, identifying distinct disease endotypes and mechanisms that challenge one-size-fits-all treatment approaches. These discoveries expand the scientific foundation for host-directed therapies and precision medicine in global TB and HIV care.

Strengthening Global Research Through Partnership and Capacity Building

The Division of Global Health serves as a catalyst for high-quality global research by building and sustaining ethically grounded partnerships across Texas Children's Hospital, Baylor College of Medicine, and low- and middle-income country institutions. The Division supports faculty and trainees by strengthening local research capacity within affiliated global foundations and facilitating collaborative relationships that reflect local priorities and health system contexts. All partnerships are guided by institutional standards for co-creation, equitable authorship, regulatory compliance, and transparent dissemination. **Dr. Saeed Ahmed's** work through the Tingathe platform in Malawi illustrates this model, integrating rigorous implementation science with public-sector HIV care for children and adolescents. By safeguarding partners and investing in long-term collaboration, the Division ensures global research is both scientifically rigorous and mutually beneficial.

Faculty

Chief: Anna Mandalakas, MD, PhD
Director of Research: Alexander Kay, MD, MSepi
Research Faculty:

- Miriam Abadie, MD
- Saeed Ahmed, MD, MSc
- Teferi Beyene, MD, MPH
- Carrie Cox, MD
- Andrew DiNardo, MD, PhD
- Karla Fredricks, MD, MPH
- Heather Haq, MD, MHS
- Maria Kim, MD, MSc
- Liz Maidl, MD
- Kevin McKenzie, MD, MSPH
- Julia Moorman, MBBS
- Tara Ness, MD, MPH
- Brigid O'Brien, DO, MS
- Sarah Perry, MD, PhD
- Jaime Petrus, MD
- Katherine Simon, MD
- Teresa Steffy, MD
- David Thomas, MD, BOT
- Jacob Todd, MD, MPH
- Debrah Vambe, MBChB, MPH
- Anca Vasiliu, MD, PhD
- Henry Welch, MD

Awards:

2024 – The US CDC recognized **Dr. Debrah Vambe** for her continued contributions and dedication to ending TB in the Kingdom of Eswatini and named **Dr. Debrah Vambe** a TB Elimination Champion.

2025 - **Dr. Tara Ness** was awarded a BCM Junior Faculty Seed award to support her project titled "Correlating Mycobacterium Tuberculosis Lineage Identified by Targeted Next Generation Sequencing with Tuberculosis Disease Phenotype and Clinical Outcomes."

2025 - **Dr. Mandalakas** received the Michael E. DeBakey Excellence in Research Award in recognition of her significant published scientific contribution to clinical research during the past three years.

Selected Publications

- Abhimanyu, Longlax SC, Nishiguchi T, Ladki M, Sheikh D, Martinez AL, Mace EM, Grimm SL, Caldwell T, Portillo Varela A, Sekhar RV, Mandalakas AM, Mlotshwa M, Ginidza S, Cirillo JD, Wallis RS, Netea MG, van Crevel R, Coarfa C, DiNardo AR. TCA metabolism regulates DNA hypermethylation in LPS and Mycobacterium tuberculosis-induced immune tolerance. Proc Natl Acad Sci U S A. 2024 Oct 8;121(41):e2404841121.
- Cox CM, Masiano S, Mazenga A, Stark M, Udedi M, Simon KR, Ahmed S, Nyasulu P, Kim MH. Phone-based psychosocial counseling for people living with HIV: feasibility, acceptability and impact on uptake of psychosocial counseling services in Malawi. Global Mental Health (Cambridge). 2024; 11:e3.
- Kay A, Vasiliu A, Carratala-Castro L, Mtafya B, Mendez Reyes JE, Maphalala N, Munguambe S, Mulengwa D, Ness T, Saavedra B, Bacha J, Maphalala G, Mejia R, Mtetwa G, Acacio S, Manjate P, Mambuque E, Shiba N, Kota N, Ziyane M, Ntinginya NE, Lange C, Kirchner HL, DiNardo AR, Garcia-Basteiro AL, Mandalakas AM; Stool4TB Global Partnership. Performance of a stool-based quantitative PCR assay for the diagnosis of tuberculosis in adolescents and adults: a multinational, prospective diagnostic accuracy study. Lancet Microbe. 2024 May;5(5):e433-e441.
- Kay A, Mendez-Reyes J, Devezin T, Bakaya M, Steffy T, Dlamini S, Msekandiana A, Ness T, Bacha J, Amuge P, Matshaba M, Chodota M, Nyasulu P, Thahane L, Mwita L, Kekitiinwa A, DiNardo A, Lukhele B, Kirchner HL, Mandalakas A. Optimal timing of antiretroviral therapy initiation in children and adolescents with human immunodeficiency virus-associated pulmonary tuberculosis. Clin Infect Dis. 2023 Jan 6;76(1):10-17.

Hematology and Oncology

Mission: **To discover, evaluate and deliver the best possible care to every child and young adult with cancer and blood disorders through research, collaboration and mentorship.**

Vision: **To transform outcomes for children and young adults with cancer and blood disorders in Texas and around the world.**

Impact

Discovering and targeting new brain tumor growth pathways

The Taylor Lab recently published a study that uncovered a previously unrecognized communication cascade in metastatic medulloblastoma, showing that tumor cells secrete PDGF ligands to recruit and reprogram meningeal fibroblasts into metastasis-associated fibroblasts that actively support tumor growth. These reprogrammed fibroblasts then secrete BMP4 and BMP7, enhancing leptomeningeal colonization and driving proliferation of metastatic tumor cells. Importantly, we demonstrated that targeting this PDGF–BMP signaling axis with a PDGFRA-neutralizing antibody significantly improves survival in xenograft models. Together, this work defines a targetable metastatic niche and offers a promising therapeutic direction for children with medulloblastoma.

Association between congenital anomalies and childhood cancer incidence and outcomes

Our program demonstrated that children born with structural congenital anomalies have a significantly higher risk of developing certain childhood malignancies, providing new insight into shared developmental and etiologic pathways. Our team has established a large, population-based study spanning 22 million live births helped clarify tumor-specific and anomaly-specific co-occurrence patterns that had not been well described previously. Additionally, we have linked congenital heart disease and Down syndrome to elevated childhood cancer risk and mortality, highlighting vulnerable populations for targeted interventions.

Establishing multi-institutional collaborations to disentangle drivers of childhood leukemia disparities

The Reducing Disparities in Acute Leukemia (REDIAL) Consortium is a federally-funded U54 program grant, led by our program. The first pediatric cancer focused Specialized Programs of Research Excellence (SPORE), this multi-institutional collaboration will study the biological, social, and structural drivers of disparities in childhood leukemia incidence and outcomes. These collaborative efforts create shared infrastructure and harmonized data resources to accelerate equity-focused discovery.

Detecting Langerhans cell histiocytosis disease risk at diagnosis

The Texas Children's Cancer Center Henry and Judy Sauer Histiocytosis Program is focused on deciphering mechanisms of pathogenesis and discovering and testing novel therapeutic strategies to improve outcomes for children and adults with histiocytic disorders, including Langerhans cell histiocytosis. Recent research discovered that progressive neurodegeneration that arises in ~20% of children after developing LCH come from blood cells that are clonal with CD207+ LCH lesion cells. Patients with detectable blood cells that carry the BRAFV600E mutation at diagnosis have much higher risk of treatment failure and eventual development of LCH-ND. Based on this work, the team is working with colleagues across the US to test more effective therapies to prevent relapse and LCH-ND.

Pioneering cell therapies for cancer

The Texas Children's Cancer Center Pediatric Cell Therapy program and its translational laboratories are national leaders in developing and translating novel immunotherapies through a bench-to-bedside approach. We have engineered therapeutic immune cells targeting multiple pediatric cancer antigens—including HER2, GD2, GPC3, and CD70—and advanced these first-in-man products to phase 1 clinical trials for children with the deadliest cancers. The group is now developing and translating a robust portfolio of studies that extends beyond single-product testing by targeting multiple antigens, combining cellular therapies with other immunotherapies, enhancing CAR T-cell activity through co-expression of constitutive cytokine receptors or receptors designed to counteract inhibitory signals in the tumor microenvironment, and integrating distinct cellular therapy platforms. Our center also successfully sponsored the first consortium-led CAR T-cell trial for children with brain tumors delivering autologous CAR T-cell products manufactured at Texas Children's Hospital to patients across North America and establishing a model for expanded access to novel cellular therapies.

Understanding outcomes of beta-globin gene editing in sickle cell disease.

Dr. Cecile Karsenty's research includes the development of a fluorescent reporter cell model that serves as a valuable tool for dissecting gene editing outcomes due to different DNA repair pathways and quantitatively linking editing genotypes to red cell phenotypes. This work can be used to evaluate the safety of CRISPR/Cas-9 (gene editing) therapies such as those for patients with sickle cell disease.

The role of infection in clonal hematopoiesis

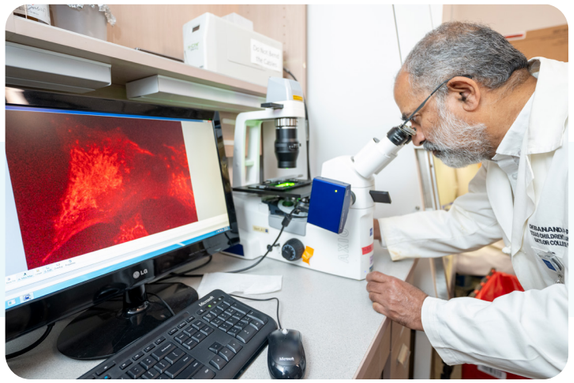
Dr. Ajibike Lapite seeks to compare the frequency and driver mutations of clonal hematopoiesis – which can impact blood, cardiovascular health, and overall mortality – in regions of high versus low infection. Better understanding of factors that drive clonal hematopoiesis, including infection, may have wide-reaching implications in many different populations, including, but not limited to, those undergoing bone marrow transplant or gene therapy.

Immune Hematology - Optimal therapies and predictive tools for immune thrombocytopenia (ITP)

Work led by **Dr. Amanda Grimes**, the Chair of the ITP Consortium of North America (ICON), resulted in the successful completion of a large randomized clinical trial of a new thrombopoietin-receptor agonist for the treatment of children with ITP. Her collaborative work using the ITP Biobank at TCH has also resulted in the development of a clinical prediction model for development of chronic ITP based on initial laboratory testing and clinical features (cITP-RM: Chronic Immune Thrombocytopenia Purpura Risk Model).



Inside the CAGT Facility



Research conducted at the Pati and Steven Labs

Hematology and Oncology Cont.

Awards:

- **2023 -** Established the Center for Advanced Innate Cell Therapy (led by **Dr. Leonid Metelitsa**) and recruited **Drs. Taylor, Ogilvie,** and **Gallo** to develop the Texas Children's Hospital Brain Tumor Research Program.
- **2024 –** Launched the Team Telomere Center of Excellence (led by **Dr. Alison Bertuch**), recipient of the Carson Family Telomere Biology Disorder Research Award.
- **2025 –** The Dan L. Duncan Cancer Center Pediatric Cancer Program received an "Exceptional" rating. Finalist for the MacArthur Award (Lubega/Global HOPE) for global sickle cell disease diagnosis and management. **Dr. Sharon Plon** received the Arthur L. Beaudet Outstanding Mentorship Award. The Cancer Center Epidemiology team received a major NIH SPORE grant to establish the REDIAL Consortium to reduce leukemia outcome disparities. Development of the Kinder Cancer Center with MD Anderson was initiated.
- **Program Scope –** 120 research faculty; >$55M annual research funding; >330 publications per year; >250 active clinical trials.

Selected Publications

- Lee JJY, Tao R, You Z, Haldipur P, Erickson AW, Farooq H, Hendriske LD, Abeysundara N, Richman CM, Wang EY, Das Gupta N, Hadley J, Batts M, Mount CW, Wu X, Rasnitsyn A, Bailey S, Cavalli FMG, Morrissy S, Garzia L, Michealraj KA, Visvanathan A, Fong V, Palotta J, Suarez R, Livingston BG, Liu M, Luu B, Daniels C, Loukides J, Bendel A, French PJ, Kros JM, Korshunov A, Kool M, Chico Ponce de León F, Perezpeña-Diazconti M, Lach B, Singh SK, Leary SES, Cho BK, Kim SK, Wang KC, Lee JY, Tominaga T, Weiss WA, Phillips JJ, Dai S, Zadeh G, Saad AG, Bognár L, Klekner A, Pollack IF, Hamilton RL, Ra YS, Grajkowska WA, Perek-Polnik M, Thompson RC, Kenney AM, Cooper MK, Mack SC, Jabado N, Lupien M, Gallo M, Ramaswamy V, Suva ML, Suzuki H, Millen KJ, Huang LF, Northcott PA, Taylor MD. ZIC1 is a context-dependent medulloblastoma driver in the rhombic lip. Nat Genet. 2025 Jan;57(1):88-102.
- Johnston MJ, Lee JJY, Hu B, Nikolic A, Hasheminasabgorji E, Baguette A, Paik S, Chen H, Kumar S, Chen CCL, Jessa S, Balin P, Fong V, Zwaig M, Michealraj KA, Chen X, Zhang Y, Varadharajan S, Billon P, Juretic N, Daniels C, Rao AN, Giannini C, Thompson EM, Garami M, Hauser P, Pocza T, Ra YS, Cho BK, Kim SK, Wang KC, Lee JY, Grajkowska W, Perek-Polnik M, Agnihotri S, Mack S, Ellezam B, Weil A, Rich J, Bourque G, Chan JA, Yong VW, Lupien M, Ragoussis J, Kleinman C, Majewski J, Blanchette M, Jabado N, Taylor MD, Gallo M. TULIPs decorate the three-dimensional genome of PFA ependymoma. Cell. 2024 Sep 5;187(18):4926-4945.e22.
- Steffin D, Ghatwai N, Montalbano A, Rathi P, Courtney AN, Arnett AB, Fleurence J, Sweidan R, Wang T, Zhang H, Masand P, Maris JM, Martinez D, Pogoriler J, Varadarajan N, Thakkar SG, Lyon D, Lapteva N, Zhuyong M, Patel K, Lopez-Terrada D, Ramos CA, Lulla P, Armaghany T, Grilley BJ, Gottschalk S, Dotti G, Metelitsa LS, Heslop HE, Brenner MK, Sumazin P, Heczey A. Interleukin-15-armoured GPC3 CAR T cells for patients with solid cancers. Nature. 2025 Jan;637(8047):940-946.

Faculty

Interim Chief: Tammy Kang, MD, MSCE

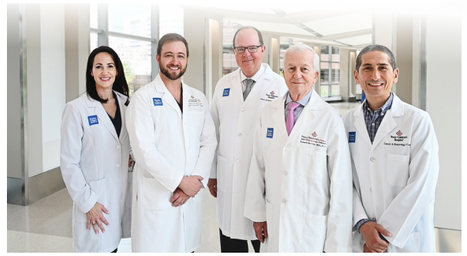
Research Representatives:
- Pavel Sumazin, PhD
- Sarah Sartain, MD
- Jennifer Foster, MD, MPH



Precision Oncology Team

Research Faculty:

- Mohammad H. M. Abu Arja, MD, Msc
- Shiley L. Aguilar, APRN, MSN
- Nabil M. Ahmed, MD
- Gladstone E. Airewele, MD, MPH
- Carl E. Allen, MD, PhD
- Arianexys Lopez, MD, PhD
- Eveline Barbieri, MD, PhD
- Patricia A. Baxter, MD, MBA
- Stacey L. Berg, MD
- Juan C. Bernini, MD
- Alison A. Bertuch, MD, PhD
- Lisa R. Bomgaars, MD, MS
- Lisa Bouchier-hayes, PhD
- Julienne Brackett, MD
- Austin L. Brown, PhD, MPH
- Leidy Diana C. Galva, PhD
- Tina Huey-miin Chen, PhD
- Murali Chintagumpala, MD, MBBS
- Hua-sheng Chiu, PhD
- Clay Cohen, MD
- Shannon E. Conneely, MD
- Amy N. Courtney, PhD
- John A. Craddock, MD, BS
- Craig Daniels BSc, PhD
- Atreyi Dasgupta, PhD
- Lauren R. Desrosiers-battu, MS, CGC
- Erin Doherty, MD
- Zoann E. Dreyer, MD
- Olive Eckstein, MD, BS
- Nader K. El-mallawany, MD, BA
- Rodrigo Erana, MD
- Titilope Fasipe, MD, PhD
- Josaura V. Fernandez Sanchez, MD
- Stephanie L. Fetzko, MD
- Jonathan M. Flanagan, PhD
- Kayla L. Foster, MD, MPH
- Mostafa W. Gaber, PhD
- Marco Gallo, PhD
- Julie M. Gastier-foster, PhD, FACMG
- Brande D. Gill, APRN, MSN
- Maria M. Gramatges, MD, PhD
- Bambi J. Grilley, RPH, RAC
- Amanda B. Grimes, MD
- Meenakshi G. Hegde, MD, MBBS
- Marika C. Highberger, APRN, MSN
- Thanh T. Hoang, PhD
- Terzah M. Horton, MD, PhD
- Richard L. Hurwitz, MD
- Ionela Iacobas, MD
- Sujith K. Joseph, PhD
- Sarah S. Kappa, MD
- Cecile L. Karsenty, MD
- Ajibike D. Lapite, MD, MPHTM
- Ann M. Leen, PhD
- Frank Y. Lin, MD
- Joseph Lubega, MD, MPH
- Taylor M. Luckie, MD
- Tsz-kwong Man, PhD, BS
- Caridad A. Martinez, MD
- Casey McAtee, MD MPH
- Kenneth L. McClain, MD, PhD
- Matthew T. McEvoy, MD
- Leonid S. Metelitsa, MD, PhD
- Erin Andrea C. Morales Ubico, MD
- Shoba A. Navai, MD
- Danitza M. Nebor, PhD
- Alexander I. Ngwube, MD
- Tamra E. Ogilvie, PhD
- Mehmet F. Okcu, MD, MPH
- Bilal Omer, MD
- Nmazuo Ozuah, MD
- Robin Parihar, MD, PhD
- Will Parsons, MD, PhD
- Debananda Pati, MS, PhD
- Erin C. Peckham-Gregory, PhD, MPH
- Sharon E. Plon, MD, PhD
- Jacquelyn M. Powers, MD, MS
- Zachary Prudowsky, MD, FAAP
- Shawki L. Qasim, MD
- Nino C. Rainusso, MD
- Michele S. Redell, MD, PhD
- Surya Rednam, MD, MS
- Melissa A. Richard, PhD
- Xavier Rios, MD, PhD
- Deborah I. Ritter, PhD
- Cliona M. Rooney, PhD
- Rayne H. Rouce
- Leila C Sahni, MD, BS
- Baheyeldin M. Salem, MD
- Poonam Sarkar, PhD
- Eric S. Schafer, MD, MHS
- Lauren Scherer, MD
- Jeremy Schraw, PhD
- Sarah Scollon, MS, CGC
- Jay A. Shah, MD
- Omar Shakeel, MD
- Shubham Singh, PhD
- Valeria R. Smith, MD
- David Steffin, MD
- Alexandra M. Stevens, MD, PhD
- Jack M. Fen Su, MD
- Michael D. Taylor, MD, PhD
- Megha K. Thakkar, MD
- Gengwen Tian, MD, PhD
- Venee N. Tubman, MD, MMSc
- Rajkumar Venkatramani, MD, MS
- Andrew A. Takla Wahba
- Lisa L. Wang, MD
- Peter M. Wasswa, MD, FRCPath
- Sarah Whittle, MD, BA
- Xiaochong Wu, PhD
- Xin Xu, PhD, MS
- Khaled Yassine, MD
- Andrew Yee, PhD
- Joanna S. Yi, MD
- Jamie L. Zagozewski, PhD
- Jiao Zhang, PhD
- Mark Zobeck, MD



Histiocytosis Team

Hospital Medicine

Mission: **To be the premier provider of general pediatric inpatient care at Baylor College of Medicine affiliated hospitals and in so doing become a national leader in the practice and advancement of Pediatric Hospital Medicine.**

Impact

Hospital-Based Interventions for the Caregiver-Child Dyad

Research at Texas Children's Hospital was among the first to highlight the high prevalence of social needs and the impact of social drivers of health on hospitalized children. In a foundational RCT on the Pediatric Hospital Medicine Service, **Drs. Michelle Lopez, Claire Bocchini,** and **Jean Raphael** demonstrated that passive approaches to addressing social needs were ineffective in helping families access resources during and after hospitalization. Building on strong partnerships within TCH and in the community, the team secured foundation funding to evaluate active interventions for the caregiver-child dyad, targeting household and hospital-based social needs, as well as caregiver mental health, across multiple hospital services. Looking ahead, the Division of Hospital Medicine will participate in a PCORI-funded, multicenter trial comparing strategies for social needs assistance to improve health outcomes for hospitalized children. **Drs. Michelle Lopez** and **Marina Masciale** will lead this work on the PHM Service at West Campus starting in 2026.

Improving the Evaluation and Management of Common Conditions in Hospitalized Children

Pediatric Hospital Medicine (PHM) researchers conducted retrospective and prospective studies, which have informed the evaluation and management of conditions commonly seen among hospitalized children, including urinary tract infections, skin and soft tissue infections, asthma, and behavioral health conditions. Several PHM researchers have served as PIs for multicenter retrospective studies using the Pediatric Health Information System (PHIS) database through the Children's Hospital Association. Additionally, pediatric hospitalists have engaged in clinical trials aimed at improving the value of care for hospitalized children across multiple areas, including decreasing pulse oximetry overuse and streamlining post-hospitalization follow-up. PHM researchers have leveraged the evidence generated from their clinical research to inform quality improvement initiatives that directly impact patient care at the local level and also nationally through the AAP Pediatric Acute and Critical Care Quality Network.

Enhancing Learner Experience and Outcomes

The PHM research group includes several investigators who hold educational leadership roles within the department and Baylor College of Medicine, positioning them to identify key research questions aimed at improving learner experiences and outcomes. Their educational research has included medical students, residents, fellows, and faculty, with a focus on learner autonomy, clinical reasoning, shared decision-making, and metacognition. Findings have informed the implementation of clinical reasoning tools in work-based assessments for medical students and have shaped PHM resident rotations. PHM researchers have also conducted national needs assessments on topics such as learner wellness and the need for formal advocacy curricula within PHM fellowships.

Awards

Michelle Lopez received the 2023 Pediatric Hospital Medicine Diversity, Equity, and Inclusion Award and the 2024 American Medical Association Women Physicians Section Inspiration Award, recognizing her national impact in advancing equity and providing exceptional mentorship and support to physicians, trainees, and students.

Ray Parlar-Chun received the 2024 and 2025 Baylor College of Medicine Student Opportunities for Advancement in Research (SOAR) Office Research Mentor Champion award.

Kelly Pretorius received the 2025 Southern Nursing Research Society Early Science Investigator Award for emerging leadership and contributions to nursing research.





Faculty

Chief: Ricardo Quinonez, MD, FAAP, FHM
Director of Research: Sowdhamini Wallace, DO, MS
Associate Research Director: Marina Masciale, MD, MPH
Research Faculty:

- Rathi Asaithambi, MD, EdM
- Lisa Ayoub-Rodriguez, MD
- Kathryn Ban, MD
- Gal Barak, MD, MEd
- Lisa Beckner, MD, MPH
- Marina Bishai, DO, FAAP
- Colleen Bishop, MD
- Julia Bratic, MD, MPH
- Cody Clary, MD, MEd
- Adam Cohen, MD, MEd
- Evan Dalton, MD, MSHP
- Andrea Dean, MD
- Melissa Diaz, MD
- Stephen Edwards, MD
- Asha Freeman, MD
- Pamela Gregerson, MD
- Lauren Hess, MD, FAAP
- Emily Hopkins, MD
- Seema Jilani, MD, FAAP
- Colleen Keough, MD
- Huay-ying Lo, MD
- Michelle Lopez, MD, MPH
- Shiva Majmudar, MD
- Stephen Manning, MD, MPH
- Meghan McClure, MD
- Brent Mothner, MD
- Rabbia Naeem, MD
- Julio Ortiz, MD
- Vipul Parikh, MD
- Raymond Parlar-Chun, MD, MS
- Krista Preisberga, MD
- Kelly Pretorius, PhD, APRN
- Veena Ramgopal, MD
- Mary Rocha, MD, MPH
- Geeta Singhal, MD, MEd
- Diana Stewart, MD
- Janani Sundaresan, MD, MSc
- Shimona Thakrar, DO
- Rebecca Trillo, MD
- Grace Truong, MD
- Joyee Vachani, MD, MEd
- Jennifer Werdenberg, MD, MPH

Selected Publications

- Alali KF, Crouse HL, Rus MC, Marton S, Haq H. Debriefing Trainees After Global Health Experiences: An Expert Consensus Delphi Study. Acad Pediatr. 2024 Jan-Feb;24(1):155-161. Epub 2023 Jul 29.
- Lopez MA, Yu X, Hetrick R, Raman S, Lee J, Hall J, Tran K, Vonasek B, Garg A, Raphael J, Bocchini C. Social needs screening in hospitalized pediatric patients: a randomized controlled trial. Hosp Pediatr. 2023 Feb 1;13(2):95–114.
- Masciale M, DiValerio Gibbs K, Asaithambi R, Murillo MC, Espinoza-Candelaria G, Jaramillo M, Domínguez J, Haq H, Fredricks K, Lopez MA, Bocchini C. Qualitative study of barriers and facilitators to care among children in immigrant families. Hosp Pediatr. 2023 Dec 1;13(12):1087–1096.
- Forster CS, Wood AC, Davis-Rodriguez S, Desai S, Chang PW, Tchou MJ, Morrison JM, Hamdy RF, Vemulakonda V, Brady PW, Abou Zeid C, Wallace SS; on behalf of the UTI in Children with CAKUT Study Group. Variability in treatment of UTIs in children with genitourinary anomalies in children's hospitals. Hosp Pediatr. 2025;15(4):309–317.
- Dalton EM, Raymond K, Kovacs B, Vespe K, Kaufmann V, Lasoski M, Gunnison C, Beauchamps J, Kane E, Andrade G. Reducing physical restraint use in the medical behavioral unit. Pediatrics. 2024 Mar 1;153(3):e2023062747.
- Barak G, Dean A, Haq H, Falco C, Singhal G. The senior resident-fellow dynamic on pediatric hospital medicine teams: a qualitative study. Hosp Pediatr. 2023 Oct 1;13(10):912-921.

Immunology, Allergy, and Retrovirology

Mission: **Leading with compassion and teamwork to advance the care of children, adolescents, young adults, and families with immunologic, allergic, and HIV disorders in our local and global communities through excellence in patient care, education, and science.**

Impact

Advancements in Immunogenetics

The Immunogenetics Program at Texas Children's Hospital, led by **Dr. Ivan Chinn** and supported by **Dr. Sebastian Ochoa,** uses the latest genomic approaches to both elucidate novel causes of genetic errors of immunity and validate genetic hypotheses of immunologic disease. The program has produced over 50 publications reporting new genetic findings in high-impact, peer-reviewed journals, including the discovery of at least 16 novel inborn errors of immunity. It leads national and international efforts to curate gene-disease validity and variant pathogenicity in genetically driven immunologic disorders.

Advancing Allergy Research

Dr. Aikaterini Anagnostou, Director of Food Allergy Therapeutics, leads food allergy therapeutics efforts as PI on multiple Phase I-III food allergy and anaphylaxis trials. She contributes to national policy through the FDA advisory panel on food allergy thresholds and USDA WIC advisory meetings and partners with FARE on the Clinical Development Days initiative. **Dr. Sara Anvari,** director of clinical research for allergy, leads the division's largest FPIES registry and is a site leader for SUNBEAM, the NIH-funded birth cohort study on food allergy. **Dr. Meera Gupta,** Director of Respiratory and Translational Research, has launched the Asthma Clinical Trials section.

Immune Disorder Clinic Network

The Immune Disorder Clinic Network is a series of multidisciplinary clinics for patients with multisystem immune dysregulation—partnering with Pulmonary (interstitial lung disease), GI (VEO-IBD), Rheumatology, Bone Marrow Transplant, and the Heme/One histiocyte group through the iLEAD clinic. **Dr. Lisa Forbes Satter** holds NIH funding for mechanistic studies of JAK/STAT-related immune disease; a basket clinical trial using a JAK inhibitor in activating JAK/STAT disorders, partnering with industry, is planned to open in July 2026. The division partners closely with the William T. Shearer Center for Human Immunobiology, where functional and translational validation of immunogenetics discoveries is performed. **Dr. Alexander Vargas-Hernandez** leads the Forbes Satter Laboratory and directs the center's Flow Cytometry Core.

Advances in HIV Care and Prevention

The Baylor/TCH IMPAACT Site conducts clinical trials to improve the treatment and prevention of HIV in infants, children, and adolescents. Recent highlights include publication of 48-week data showing efficacy, safety, acceptability, and tolerability of a long-acting injectable regimen to treat HIV in adolescents.

Adult Clinical Immunology

Led by **Dr. Joud Hajjar,** Adult Clinical Immunology is a clinical and translational program for adolescents and adults with inborn errors of immunity, integrating transition-to-adult care, microbiome-based investigation of immune dysregulation in CVID, functional immune diagnostics (MOPA assay), and therapeutic trials including LE8201 (Phase II leniolisib in CVID), CLEP in hypereosinophilic syndrome, and bezuclastinib in systemic mastocytosis.

Translating Discovery to the Clinics



Research Faculty



Lisa Forbes-Satter, MD
Chief



Nouf Alsaati, MD, MMSc



Aikaterini Anagnostou, MD, PhD



Sara Anvari, MD, MSc



Ivan Chinn, MD



Susan Gillespie, MD, PhD



Meera Gupta, MD



Joud Hajjar, MD, PhD



Gayatri Mirani, MD, MAS



Lenora Noroski, MD, MPH



Sebastian Ochoa Gonzalez, MD



Mary Paul, MD



Ashley Sauceda, MS, APRN



Alexander Vargas-Hernandez, PhD

FY25 Research Highlights

Publications: 105 total | **12 with impact factor > 10**

By Section	Total Funding
Allergy	$7,885,852
Asthma	$1,174,883
Immunology	$4,364,704
Retrovirology	$6,195,958
Grand Total	**$19,621,397**

FY25 Funding:
NIH $16,484,396
Industry $2,385,264
Foundation $611,737
Internal $140,000

Immunology, Allergy, and Retrovirology Cont.

Awards

Dr. Joud Hajjar – 2024–2025 Research Mentor Champion for Medical Students; Castle Connolly Top Doctor & Exceptional Women in Medicine (2019–2026); Texas Top Doctor (2019–2025)

Dr. Aikaterini Anagnostou – 2025 EAACI Best Patient Engagement Abstract Award; 2024 TCH Ambulatory Practitioner Excellence Award; Member, ACAAI Board of Regents; Chair, ACAAI Food Allergy Committee; Director, FARE FCN and GA LEN ANACARE Centers of Excellence

Research and National Leadership

Dr. Lisa Forbes Satter – Medical Director, Center for Research Advancement, TCRI; Director, William T. Shearer Center for Human Immunobiology, Texas Children's Hospital; President-Elect, Clinical Immunology Society (CIS); Chair, Basic & Clinical Immunology Interest Section, AAAAI; Clinical Steering Committee, Chan Zuckerberg Initiative Grant (BCM/TCH)

Dr. Aikaterini Anagnostou – Chair, ACAAI Food Allergy Committee; Immediate Past Chair, AAAAI Adverse Reactions to Foods Committee; Director, FARE FCN Center of Excellence

Dr. Meera Gupta – Vice Chair, AAAAI ADT Interest Section & Chair, Asthma, Cough, Diagnosis and Treatment Committee; Vice Chair, ACAAI Asthma Committee; Secretary/Treasurer & National Issues Committee Chair, TAAIS; Secretary, GHAAIS

Dr. Sara Anvari – Vice Chair, AAAAI Adverse Reactions to Drugs, Biologicals & Vaccines Committee

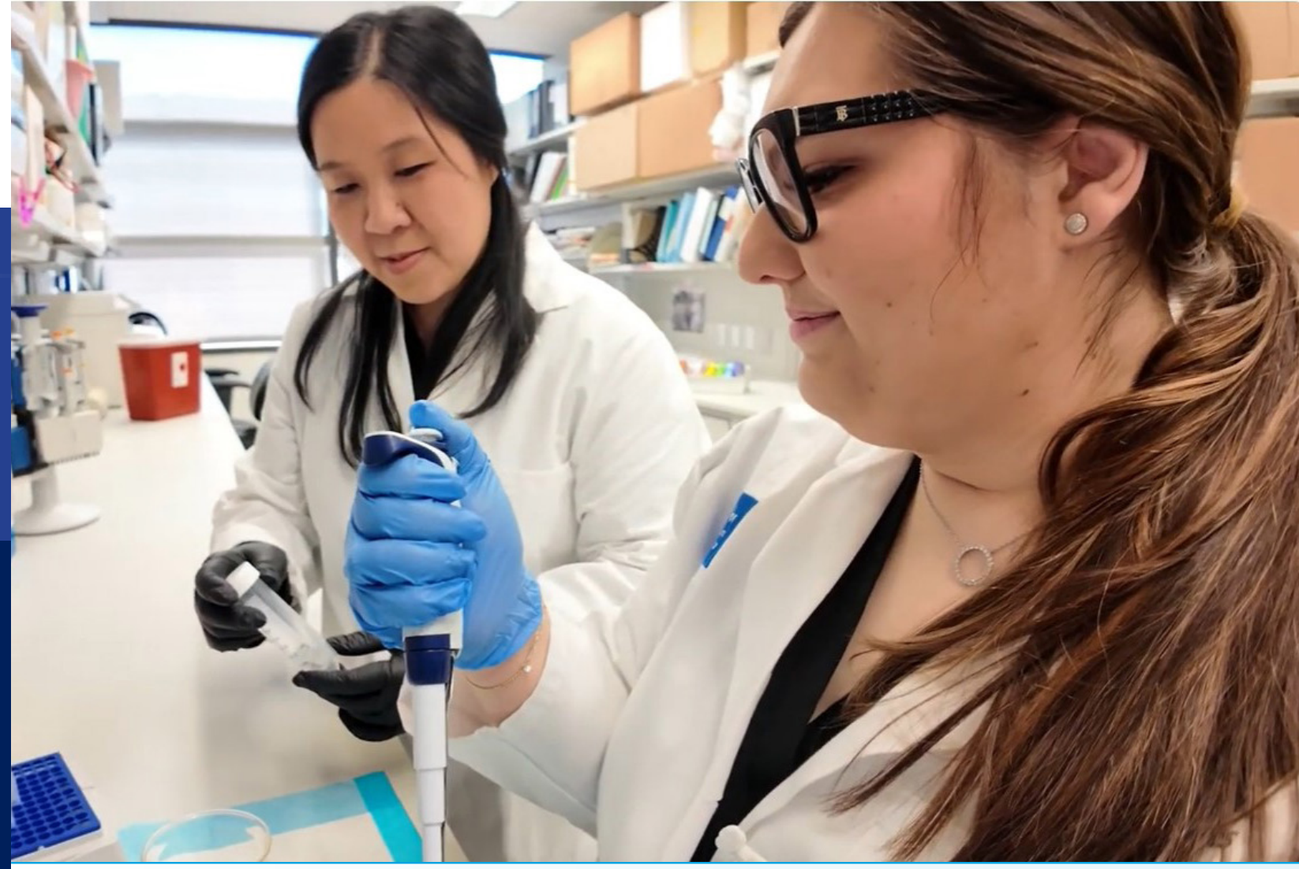
Dr. Mary Paul – Co-Chair, Advisory Panel to the Office of AIDS Research Advisory Council (Guidelines for Antiretroviral Agents in Pediatric HIV Infection)

Dr. Joud Hajjar – Elected Council Member, Clinical Immunology Society

Dr. Ivan Chinn – Co-Chair, ClinGen Immunology Clinical Domain Working Group & SCID Variant Curation Expert Panel; Editorial Board, Journal of Allergy and Clinical Immunology

Dr. Sebastian Ochoa – Co-Chair, CIS Genetics/Genomics Committee; Clinical Steering Committee, Chan Zuckerberg Initiative Grant (BCM/TCH)

Dr. Lenora Noroski – Co-Director, T-Cell Lymphopenia Program on Abnormal Newborn Screening/SCID, Texas; Director, David's Champions iCARE Network on Immune Disorders



Selected Publications

- Greenhawt M, Sindher SB, Wang J, O'Sullivan M, du Tait G, Kim EH, Albright D, Anvari S, et al. Phase 3 trial of epicutaneous immunotherapy in toddlers with peanut allergy. N Engl J Med. 2023;388{ 9): 17 55-1766.
- Stewart O, Gruber C, Randolph HE, et a l; Chinn IK, et al. Monoallelic expression can govern penetrance of inborn errors of immunity. Nature. 2025;637(8048): 1186-1197.
- Tever OK, Mentrup T, Chinn IK, et al. The DNase TREXl is a substrate of the intramembrane protease SPP. Cell Mol Life Sci. 2025;82(1):107.
- Szafran V, Rana R, Anvari S. Updates in food allergen immunotherapy. Curr Opin Pediatr. 2023;35(6):680-685.
- Eapen AA, Gupta MR, Lockey RF, Bard in PG, Baptist AP. Gastroesophageal reflux disease, laryngopharyngeal reflux, and vocal cord dysfunction. J Allergy Clin Immunol. 2024; 154(6): 1369-1377.
- Olivero R, Williams PL, Sawyer G, et al; Paul M, et al. Birth outcomes following bictegravir exposure during pregnancy. AIDS. 2025;39(4):381-386.
- Anagnostou A, Abrams EM, Carver M, et a l. Development and acceptability of a decision-aid for food allergy oral immunotherapy in children. Allergy. 2025;80{1) :205-214.
- Ochoa S, Hsu AP, Oler AJ, et al. A deep intronic splice-altering AIRE variant causes APECED syndrome through antisense oligonucleotide-targetable pseudoexon inclusion. Sci Transl Med. 2024;16{765):eadk0845.
- Leiding JW, Vogel TP, Santarlas VGJ, et al; Vargas-Herniindez A, et al. Natural history of STAT3 gain-of-function syndrome. J Allergy Clin Immunol. 2023;151(4):1081-1095.

Infectious Diseases

Mission: To deliver outstanding patient care, advance cutting-edge research, and educate the next generation of clinicians regarding the prevention, diagnosis, and treatment of pediatric infectious diseases to benefit children worldwide.

Impact

Advancing Prevention and Treatment of Pediatric Infectious Diseases

The Division of Pediatric Infectious Diseases conducts research spanning pathogen biology, clinical epidemiology, and translational science to prevent illness and improve diagnosis and treatment for children. Our faculty leads research on community-acquired bacterial infections, including Streptococcus pneumoniae and Staphylococcus aureus, through the largest National Pediatric Pneumococcal Surveillance Network outside the CDC. These studies are critical to track serotype distributions and antimicrobial susceptibility profiles of common pediatric pathogens. Our faculty perform innovative research to harness the human nasal microbiome for infection prevention and novel biotherapeutics. Faculty leadership of the Pandemic Threat Technology Center at Baylor College of Medicine supports complementary work on respiratory viruses through the development of a human nasal organoid platform to model viral pathobiology and evaluate vaccines and therapeutics critical for pandemic preparedness.

Translating Immunology and Inflammation Science to Improve Outcomes

Some of the division's most impactful translational research focuses on how infection-driven inflammation alters immune function and long-term disease risk. Our faculty discovered that infections activate hematopoietic stem cell division, providing a mechanistic explanation for how chronic inflammation contributes to bone marrow failure and impedes successful transplantation. This work also established links between inflammatory activation of hematopoietic stem cells, clonal hematopoiesis, conditions associated with cardiovascular disease, and Alzheimer's disease, demonstrating that mutant immune cells confer neuroprotection through enhanced clearance of damaged brain tissue. Ongoing studies aim to translate these discoveries into immune engineering strategies to prevent or treat disease.

Improving Prevention, Diagnosis, and Care for Vulnerable Populations

Division research integrates clinical trials, diagnostics, implementation science, and informatics to reduce infection risk and improve care delivery for all pediatric populations. Division faculty lead vaccine trials across the lifespan (including against COVID-19, MPOX, and RSV), addressing vaccine hesitancy through behavioral science–informed interventions, and advancing hospital epidemiology and infection prevention strategies to reduce healthcare-associated infections. Parallel research efforts in rapid diagnostics, antimicrobial stewardship, and penicillin allergy de-labeling improve precision therapy while mitigating antimicrobial resistance. Within these division-wide efforts, specialized research programs focus on congenital and neonatal infections and immunocompromised children, including transplant populations. These research programs are supported by longitudinal cohorts, multicenter trials, and emerging applications of responsible artificial intelligence to enhance diagnosis, surveillance, and outcomes.



Awards

Dr. Katherine King was appointed chair of the NIH Study Section on Basic Biology of the Blood, Heart, and Vasculature for the 2023–2024 term and received the 2025 Society for Pediatric Research Award in Honor of E. Mead Johnson.

Dr. Mary Healy was named Co-Director of the Clinical Operations Unit of the Infectious Diseases Clinical Research Consortium (IDCRC).

Drs. Liset Olarte and Katherine Lemon were elected Fellows of the Infectious Diseases Society of America (IDSA).

Drs. Mary Healy, Brittany Rodriguez, and Katherine Lemon were elected Fellows of the Pediatric Infectious Diseases Society (PIDS).

Dr. Liset Olarte was nominated as the PIDS representative for the World Society for Pediatric Infectious Disease (WSPID) International Scientific Committee in 2025.

Dr. Flor Munoz was honored with the 2025 Publication of the Year at the Infectious Diseases Clinical Research Consortium (IDCRC) Meeting.

Dr. Deb Palazzi was appointed the president of the Pediatric Infectious Diseases Society for 2025.

Faculty

Chief: Deb Palazzi, MD, MEd

Director of Research:

- Katherine King, MD, PhD
- C. Mary Healy, MD

Research Faculty:

- Hani Abou Hatab, MD
- Claire Bocchini, MD
- Judith Campbell, MD
- Kathryn Carpenter, MD
- Andrea Cruz, MD, MPH
- Magaret Taylor Danner, MD
- Gail Demmler-Harrison, MD
- Kristen Valencia Deray, MD
- Sanjay Deshpande, MD
- Ankhi Dutta, MD
- Catherine Foster, MD
- Chrisevelle Heller, PA-C
- Kristina Hulten, PhD
- Sheldon Kaplan, MD
- Keziah Kuriakose, APRN, CPNP-AC
- Katherine Lemon, MD, PhD
- Lucila Marquez, MD
- Katie Matatall, PhD
- Morgan Martinez, APRN, CPNP-AC
- J. Chase McNeil, MD
- Gayatri Mirani, MD, MAS
- Elizabeth Moulton, MD, PhD
- Flor Muñoz, MD
- Diana Nguyen, DO
- Erin Nicholson, MD
- Denver Niles, MD
- Liset Olarte, MD
- Pedro Piedra, MD
- Brittany Rodriguez, PharmD
- Holly Roos, PA-C
- Ryan Rochat, MD, PhD
- Beenish Rubbab, MD
- Amira Said, MD
- Grant Stimes, PharmD
- Jesus Vallejo, MD
- Jill Weatherhead, MD

Selected Publications

- Cardemil CV, Cao Y, Posavad CM, Badell ML, Bunge K, Mulligan MJ... Munoz FM. Maternal COVID-19 vaccination and prevention of symptomatic infection in infants. Pediatrics. 2024;153(3):e2023064252.
- Rochat R, Goodman E, Miller J, Wang W, Demmler-Harrison GJ. Healthcare outcomes and special education eligibility in children with congenital CMV. PLoS One. 2024;19(12):e0313163.
- Kaplan SL, Barson WJ, Lin PL, Dahl S, Bradley JS, Pannaraj PS...Hulten KG. Invasive pneumococcal disease at eight children's hospitals in the United States, 2018–2023. Pediatr Infect Dis J. 2025.

Neonatology

The Division of Neonatology continues to expand its research portfolio, encompassing a diverse range of federally funded, foundation-supported, and industry-sponsored studies focused on improving outcomes for premature and critically ill infants. Faculty are leading innovative projects in neonatal nutrition, microbiome science, lung development, neuroprotection, and environmental health.

The division has strengthened interdisciplinary and multi-institutional collaborations across Baylor College of Medicine, Texas Children's Hospital, and national consortia such as CHNC. These efforts support our mission to translate scientific discovery into clinical innovation, mentorship, and community impact.

Mission: **United together to ensure the highest quality of care for babies and their families.**

Vision: **Best possible outcomes through: community and collaboration, innovation and quality-driven care and world-class education and research.**



Impact

Optimizing Nutrition and Growth in Premature Infants

Dr. Amy Hair's research has transformed neonatal nutrition by defining evidence-based strategies for human milk fortification and growth optimization in preterm infants. Her work has advanced understanding of nutrient needs, body composition, and long-term outcomes in vulnerable newborns, directly influencing NICU feeding practices and national nutrition guidelines.

Harnessing Machine Learning and Multi-omics to Predict Outcomes in Preterm Infants

Through **Dr. Mohan Pammi's** NIH-funded R01, 'Machine Learning and Multiomics for Predictive Models and Biomarker Discovery in Preterm Infants,' **Dr. Pammi** is developing innovative computational models that integrate clinical, genomic, and metabolomic data to predict morbidity and mortality in very low birth weight neonates. This precision medicine approach aims to enable earlier, individualized interventions that improve survival and long-term outcomes in preterm infants.

Understanding Environmental Exposures and Preterm Birth

Dr. Bhagavatula Moorthy's NIH-funded research is advancing understanding of how environmental pollutants such as polycyclic aromatic hydrocarbons (PAHs) contribute to adverse pregnancy outcomes and neonatal lung injury. His team has identified molecular pathways linking maternal PAH exposure to preterm birth and oxidative stress in the developing lung. This work provides critical insight into how environmental toxicants affect infant health and informs preventive strategies to reduce exposure-related risks.

Faculty

Chief: Kristina Reber, MD
Interim Director of Research:
Amy Hair, MD
Research Faculty:

- Xanthi Couroucli, MD
- Danielle Gonzales, MD
- Bhagavatula Moorthy, PhD
- Mohan Pammi, MD, PhD
- Muralidhar Premkumar, MD, MS
- Binoy Shivanna, MD, PhD
- Nathan Sundgren, MD, PhD



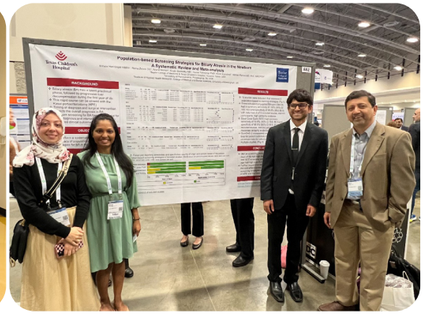


Awards

Dr. Bhagavatula Moorthy - Recognized by Baylor College of Medicine with a 35-year Service Award for outstanding contributions to research and mentorship.







Selected Publications

- Pammi M, Shah PS, Yang LK, Hagan J, Aghaeepour N, Neu J. Digital twins, synthetic patient data, and in-silico trials: can they empower pediatric clinical trials? Lancet Digit Health. 2025;7(5):100851.
- Clark SL, Saade GA, Tolcher MC, Belfort MA, Rouse DJ, Silver RM, Kapadia A, Sundgren NC, Sibai BM. An organ-specific approach to the management of gestational hypertension: evidence versus tradition. Am J Perinatol. 2025;42(4):546–554.

Nephrology

Mission: The mission of the Division of Pediatric Nephrology is to provide world-class holistic patient- and family-centered care from the prenatal setting through the transition to adulthood. We are committed to preparing the next generation of leaders in the field of pediatric nephrology through advancements in patient care, quality, patient safety, education, and research. We recognize and value the diversity of our patients, team members, providers, and trainees both on a personal and on a cultural level.





Impact

- Organized PPETS Symposia in 2023 and 2025, most recently focused on innovation in Maternal-Fetal-Neonatal and Pediatric Critical Care Nephrology.
- Published the first multicenter evaluation of functional outcomes in pediatric CRRT survivors.
- Advanced efforts to standardize the identification and treatment of pediatric malnutrition, strengthening the care continuum to ensure equitable, high-quality interventions for all pediatric patients.
- Contributed to international consensus recommendations that standardize bedside pharmacological and nutritional care, helping optimize nutritional status and recovery for critically ill children with AKI.
- Conducted research on food insecurity that has heightened awareness of how social drivers of health influence chronic disease outcomes.
- Significantly advanced the understanding and management of a rare pediatric kidney disease, primary hyperoxaluria.



Faculty

Interim Chief: Geeta Singhal, MD
Director of Research:
Poyyapakkam Srivaths, MD
Research Faculty:

- Alisa Acosta, MD
- Ayse Arikan, MD
- Michael C. Braun, MD, FASN
- Rossana Malatesta Muncher, MD
- Mini Michael, MD, FRACP
- Elizabeth Onugha, MD, MSCI
- Sweta Shah, MD, MBBS
- Sahar Siddiqui, MD
- Julie Steinke, MD, MS
- Sarah Swartz, MD
- Sameer Thadani, MD
- Molly Wong Vega, PhD, RDN

Awards

- **Dr. Ayse Arikan** was invited to give the Hector Wong Memorial Lecture in Vicenza, and the Mark Taubin Memorial Lectureship Grand Rounds at Children's National Hospital.
- **Dr. Elizabeth Onugha** was named a Harvard Health Equity Scholar, Center for Health Equity, Education and Advocacy.
- **Dr. Elizabeth Onugha** received a Kidney Health Equity Community Engagement Award, National Kidney Foundation.
- **Dr. Elizabeth Onugha** was named PRIDE Scholar (Programs to Increase Diversity Among Individuals Engaged in Health-related Research) NIH/NHLBI.
- **Dr. Poyyapakkam Srivaths** was named head of the recruitment committee and to the steering committee of the NIH multicenter FIT4KID trial.
- **Dr. Poyyapakkam Srivaths** named head of nephrology section of American Society of Apheresis research committee.
- **Dr. Sarah Swartz** received the American Society of Pediatric Nephrology Equity, Social Justice, and Advocacy Award.
- **Molly Wong Vega** named Pediatric Renal Dietitian of the Year and received a Pediatric Nutrition Practice Group Research Grant Award.

Selected Publications

- Stitt G, Thibault C, Mueller BA, Cies JJ, Daniel JM, Arikan AA, Watt KM, Pharmacokinetic research in pediatric extracorporeal therapies: current state and future directions. Blood Purif. 2024 Jun;53(6):520-526.
- Fairless BM, Fawole OA, Nguyen DT, Banerjee A, Nobleza KJ, Oluyomi AO, Rosales O, Dave JM, Onugha EA, Neighborhood disadvantage and inequities in access to preemptive and living kidney transplantation. Kidney360. 2025 Mar 21;6(6):1007-1019.
- Onugha EA, Banerjee A, Nobleza KJ, Nguyen DT, Rosales O, Oluyomi A, Dave JM, Samuels J, School neighborhood deprivation is associated with a higher prevalence of hypertension. Ann Epidemiol. 2025 Mar;103:9-15.
- Michael M, Harvey E, Milliner DS, Frishberg Y, Sas DJ, Calle J, Copelovitch L, Penniston KL, Saland J, Somers MJG, Baum MA. Diagnosis and management of primary hyperoxalurias: best practices. Pediatr Nephrol. 2024 Nov; 39(11):3143-3155.
- Gist KM, Menon S, Anton-Martin P, Bigelow AM, Cortina G, Deep A, De la Mata-Navazo S, Gelbart B, Gorga S, Guzzo I, Mah KE, Ollberding NJ, Shin HS, Thadani S, Uber A, Zang H, Zappitelli M, Selewski DT, WE-ROCK Investigators. Time to continuous renal replacement therapy initiation and 90-day major adverse kidney events in children and young Adults. JAMA Netw Open. 2024 01 02; 7(1):e2349871.

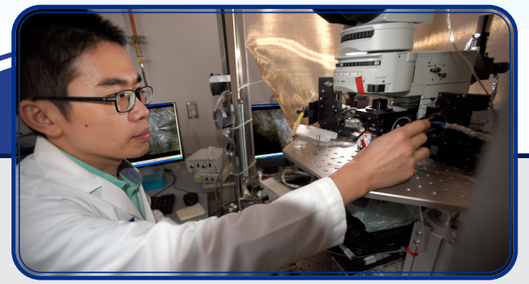
Neurology

Mission: **To provide world-class neurological care while advancing fundamental and translational neuroscience.**

Vision: **To be a global leader in the prevention, diagnosis, and treatment of neurological disease, setting the standard for excellence in clinical care, scientific innovation, and education.**

Overview

The Division of Neurology at Baylor College of Medicine and Texas Children's Hospital is a nationally and internationally recognized leader in the clinical care, research, and education of neurological disorders across the lifespan. Anchored within one of the world's largest and most innovative medical centers, our division brings together expert clinicians, clinician–scientists, and researchers working collaboratively to understand, prevent, and treat disorders of the nervous system in children and adults. Our integrated model links cutting-edge science with state-of-the-art clinical practice, ensuring that discoveries at the bench inform care at the bedside and that insights from patients guide research innovation. With a deep commitment to compassionate care, academic excellence, and transformative discovery, we strive to advance neurology as a discipline and improve outcomes for patients and families affected by neurological disease.



Faculty

Division Chief: Gary Clark, MD

Research Faculty:

- Ajay Thomas, MD, PhD
- Alexander Sandweiss, MD, PhD
- Anne Anderson, MD
- Anuranjita Nayak, MD
- Ariel Lyons-Warren, MD, PhD
- Bernhard Suter, MD
- Carlos Ballester Rosado, PhD
- Cecilia Ljungberg, PhD
- Daniel Calame, MD, PhD
- Daniel Davila Williams, MD
- Danielle Takacs, MD
- Davut Pehlivan, MD
- Dinghui Yu, PhD
- Elaine Seto, MD, PhD
- Hari Yalamanchili, PhD
- Hsiao-Tuan Chao, MD, PhD
- Hu Chen, PhD, BS
- Hyun Kyoung Lee, MS, PhD
- Hyun-Hwan Jeong, PhD
- Irene Patniyot, MD
- James Riviello Jr., MD
- Jasia Mahdi, MD
- Jimmy Holder Jr, MD, PhD
- Junseok Park, PhD
- Juyeon Jo, PhD
- Kristen Fisher, DO
- Lisa Emrick, MD
- Mariam Hull, MD
- Mered Parnes, MD
- Mirjana Maletic-Savatic, MD, PhD
- Nikita Shukla, MD
- Steven Lee, MD, PhD
- Sukru Aras, MD, PhD
- Thara Bala, MD, MHA
- Timothy Lotze, MD
- Vishnu Cuddapah, MD, PhD
- Xiangling Meng, PhD, BS
- Yang He, PhD, BS
- Yi Zhong, PhD
- Zhandong Liu, PhD

Impact

Advancing First-in-Human Genetic Therapies for Rare Neurodevelopmental Disorders

The Neurology Division has emerged as a national leader in the development and implementation of genetic therapies for rare neurological disorders, working in close partnership with family foundations and biotechnology innovators. Notably, the division was the first institution in the United States to enroll a patient in the Neurogene gene therapy trial for Rett syndrome, in collaboration with **Dr. Bernhard Suter** and the Neurogene team. This milestone reflects both the division's clinical readiness and its longstanding scientific leadership in MECP2-related disorders. By integrating deep expertise in neurogenetics, robust clinical trial infrastructure, and strong relationships with patient advocacy organizations, the division is accelerating the translation of molecular discoveries into transformative therapies for children and families affected by devastating rare diseases.

Expanding the Frontiers of Neurogenetics Through Translational Discovery

Dr. Lisa Emrick and colleagues have led numerous innovative neurogenetics initiatives that bridge gene discovery with clinical application. Through multidisciplinary collaboration, these projects integrate genomic sequencing, mechanistic studies, and precision phenotyping to better define rare neurodevelopmental syndromes and identify actionable therapeutic targets. This work not only improves diagnostic accuracy for families navigating complex and often prolonged diagnostic journeys but also lays the groundwork for future gene-targeted and mechanism-based interventions. By transforming genetic insights into clinically meaningful strategies, our neurogenetics program exemplifies how precision medicine can reshape the care of children with neurological disorders.

Translating Small-Molecule Therapeutics into Global Clinical Impact for Juvenile Batten Disease

Under the leadership of **Dr. Gary Clark,** the team conducted a pioneering small-molecule clinical trial for Juvenile Batten disease (CLN3), a rare and devastating childhood neurodegenerative disorder. The trial demonstrated encouraging clinical signals, providing critical evidence of therapeutic potential. This accomplishment underscores a commitment to scientific rigor and meaningful global impact by advancing treatments from experimental evaluation toward real-world access for affected children and families worldwide.

Selected Publications

Pehlivan D, Bengtsson JD, Bajikar SS, Grochowski CM, Lun MY, Gandhi M, Jolly A, Trostle AJ, Harris HK, Suter B, Aras S, Ramocki MB, Du H, Mehaffey MG, Park K, Wilkey E, Karakas C, Eisfeldt JJ, Pettersson M, Liu L, Shinawi MS, Kimonis VE, Wiszniewski W, Mckenzie K, Roser T, Vianna-Morgante AM, Cornier AS, Abdelmoity A, Hwang JP, Jhangiani SN, Muzny DM, Mitani T, Muramatsu K, Nabatame S, Glaze DG, Fatih JM, Gibbs RA, Liu Z, Lindstrand A, Sedlazeck FJ, Lupski JR, Zoghbi HY, Carvalho CMB. Structural variant allelic heterogeneity in MECP2 duplication syndrome provides insight into clinical severity and variability of disease expression. Genome Med. 2024 Dec 18;16(1):146.

Palliative Care

Mission: **To advance the care of seriously ill children and their families through collaborative and innovative patient-centered research.**

Vision: **To be a center of excellence in Pediatric Palliative Care where best practices in interdisciplinary care for infants, children, adolescents, and young adults are developed, studied, and disseminated for many populations. We aim to increase equitable access to high-quality Pediatric Palliative Care locally and globally.**

Impact

Advancing Quality and Access in Pediatric Palliative Care

The division of Palliative Care is dedicated to strengthening the quality and accessibility of pediatric palliative care through rigorous research and continuous quality improvement. A recent study published in the Journal of Pain and Symptom Management examined palliative care delivered in person and through telehealth for children with complex medical needs. The study found that health outcomes, end-of-life quality metrics, and encounter-level quality indicators were comparable across care delivery methods. These findings affirm that families can receive high-quality palliative care regardless of how they receive palliative services. The study also identified important disparities in telehealth use among families with limited English proficiency or limited digital access, guiding our efforts to expand equitable access to care.

Advancing Equity Through Research and Practice

Equity is a central focus of our division's work. We conduct research that helps identify and address differences in care experiences among children and families from diverse racial, ethnic, and linguistic backgrounds. In our most recent studies, we have highlighted how communication, structural factors, and clinical practices shape families' experiences of pediatric palliative care. By translating these findings into practice, our division is strengthening culturally responsive, family-centered care and ensuring that all children and families receive care that respects their needs, values, and lived experiences.

Growing Knowledge Through Interdisciplinary Collaboration

Pediatric palliative care draws from many areas of expertise, including medicine, psychology, social work, chaplaincy, and the humanities. Our division actively collaborates across these fields to advance research and scholarly work to deepen the understanding of the psychosocial dimensions of caring for children with serious illness. Recent studies reflect this interdisciplinary approach, including work on ethical decision-making in pediatrics, psychological experiences of children and adolescents with life-limiting conditions, and communication practices in complex care settings. These collaborations generate insights that strengthen clinical practice and support families and care teams. Through this work, our division continues to shape the future of pediatric palliative care research and its application in real-world settings.

Faculty

Chief: Tammy Kang, MD, MSCE
Director of Research:
Jill Ann Jarrell, MD, MPH
Research Faculty:

- Jessica Casas, MD, MPH
- Claire Crawford, PhD, LCSW
- Nikashia Franklin, MSN, RN
- Melody Hellsten, DNP, APRN
- Jaime Jump, DO
- Faith Kinnear, CPNP-AC, APRN
- Jeff Klick, MD
- Rachel Kentor, PhD
- Marina Ma, MD
- Nellie McCollum, APRN, FNP-C
- Matt McEvoy, MD
- Regina Okhuysen, MD
- Amanda Padilla, MD
- Jennifer Placencia, PharmD, MS
- Jared Rubenstein, MD
- Gina Santucci, FNP, APRN-BC
- Kimberly Sawyer, MD, MA
- Meghna Singh, MD





Awards



Claire Crawford was awarded Les Amis d'Antonio Lefebvre D'Ovidio Young Researcher Award at the 5th Maruzza International Congress on Paediatric Palliative Care in Rome, Italy in 2022 for her work on Elise's Legacy Library, a free, online resource for mindfulness, relaxation, and coping for patients and families with serious illness.





Dr. Jill Ann Jarrell manuscript's "Quality of Outpatient Pediatric Palliative Care Telehealth: A Retrospective Chart Review" and **Dr. Jessica Casas's** manuscript "Exploring Pediatric Code Status, Advance Care Planning, and Mode of Death Disparities at End of Life" were both honored as Pediatric State of the Science at the American Academy of Hospice and Palliative Medicine's Annual Assembly 2025.

Selected Publications

- Sawyer K, Opel D. Shared decision-making in pediatrics. Pediatr Clin North Am. 2023 Feb;71(1):39-48.
- Thompson A, Kentor R. Competencies for psychology practice in pediatric palliative care. J Pediatr Psychol. 2023 Jul;48(6):614-622.
- Lanocha N, Mahoney DP. Fostering humanism through stories: A plea for narrative medicine in palliative care education. J Pain Symptom Manage. 2023 Mar;65(3):e1-e3.

Psychiatry



Mission: To provide compassionate, timely and high-quality care for the children and families we are privileged to serve.

Vision: To strive for the highest quality of clinical practice, education, and innovation to improve access to care and enrich children's lives.

Overview

The Division of Child and Adolescent Psychiatry is deeply committed to an integrated academic mission that advances clinical care, education, and research. We have significantly expanded access to high-quality, evidence-based mental health services through innovative, collaborative programs, including the intensive outpatient programs in Bellaire and The Woodlands, the Bridge Clinic, and enhanced access to TCPs. In parallel, our research portfolio continues to grow, with active clinical research grants focused on pediatric mood disorders and related conditions. Through close collaboration with other pediatric subspecialties, we have developed specialty programs that deliver truly multidisciplinary care, while simultaneously creating fertile ground for trainee education, scholarly inquiry, and the translation of research discoveries into improved outcomes for children and adolescents.

Impact

National Visibility and Scholarly Leadership

Our division was prominently represented at the American Academy of Child and Adolescent Psychiatry (AACAP) Annual Meeting 2025, with a broad and impactful portfolio of presentations. Topics spanned iron and brain development in internalizing disorders; mentalizing-based workshops; media theater innovations; pharmacologic interventions for youth with ASD; consult-liaison care for ASD and IDD; management of complex catatonia; ADHD and eating patterns; and emerging applications of artificial intelligence in bipolar disorder. This breadth reflects the division's leadership across neuroscience, clinical innovation, and translational psychiatry.

Advancing the Safety Science of Psychopharmacology

Dr. Chadi Calarge leads a nationally recognized research program focused on the long-term safety of psychotropic medications in children, adolescents, and emerging adults. His NIH-funded work examines the effects of psychotropics on skeletal health, hormonal regulation, and metabolic outcomes, addressing a critical gap in pediatric psychiatry. In parallel, **Dr. Calarge** is investigating the relationship between peripheral iron stores and brain iron content during adolescence, with the goal of defining how iron biology influences brain development and vulnerability to psychopathology.

Innovation in Pediatric Bipolar Disorder Assessment and Early Detection

Dr. Kriti Saxena directs a comprehensive clinical and research program dedicated to pediatric bipolar disorder (PBD). Her work integrates neuroimaging and neurocognitive assessment to elucidate disease mechanisms and clinical heterogeneity. Most recently, she completed an innovative project developing and implementing a Behavioral Health Avatar (BHA). This platform captures multimodal behavioral and physiological signals—including pupil dilation, eye fixation, facial expression, body rigidity, and vocal acoustics—to support the identification of early indicators of bipolar symptomatology, representing a novel approach to objective, technology-enabled psychiatric assessment.



Image of faculty from left to right: Kirti Saxena, Chadi Calarge, Alice Mao, Sindhu Idicula, Ajay Shah, Brett Shaw, Sana Younus, Sohail Nibras

Faculty

Chief: Kirti Saxena, MD

Research Faculty:

- Chadi Calarge, MD
- Alice Mao, MD
- Sindhu Idicula, MD
- Ajay Shah, MD
- Brett Shaw, MD
- Sana Younus, MB, BS
- Sohail Nibras, MD

Selected Publications

- Fiani D, Kim J, Hu M, Salas R, Heilbronner S, Powers J, Haque M, Dinh S, Huang X, Worthy D, Devaraj S, Xu J, Calarge CA. Iron deficiency without anemia is associated with reduced basal ganglia iron content in youths. JAMA Network Open. 2025 Jun 2;8(6):e2516687
- Simonetti A, Bernardi E, Kurian S, Restaino A, Calderoni C, De Chiara E, Bardi F, Sani G, Soares JC, Saxena K. Understanding pediatric bipolar disorder through the investigation of clinical, neuroanatomic, neurophysiological and neurocognitive dimensions: a pilot study. Brain Sci. 2025;15(2).

Psychology

Mission: **To advance pediatric psychological science through innovative research that improves the prevention, understanding, and treatment of behavioral and mental health challenges in children, adolescents, and young adults with serious health conditions.**

Vision: **To be a global leader in pediatric behavioral and mental health research, integrating research into the clinical care experience, to drive transformative prevention and intervention efforts that improve the health, functioning, and well-being of youth and their families.**

Overview

The Division of Psychology is dedicated to advancing the science and practice of psychology at Baylor College of Medicine and Texas Children's Hospital. Our faculty members lead high-impact, federally funded research programs that span multidisciplinary clinical, translational, and population-based research focused on the characterization, etiology, prevention, and treatment of mental, emotional, behavioral, cognitive, and neurodevelopmental disorders in children and adolescents. Our work also encompasses behavioral medicine research to promote engagement in disease management and health behaviors among youth with chronic medical conditions, with the goal to improve medical outcomes and support quality of life. Through dedicated research infrastructure—including specialized neurobehavioral assessment, patient-reported outcomes, recruitment and retention science, and advanced qualitative and quantitative research methods—we integrate rigorous research directly into clinical care across Texas Children's Hospital. Leveraging strong partnerships across Baylor College of Medicine and Texas Children's Hospital, our faculty and trainees seek to generate evidence-based solutions to the most pressing behavioral health challenges facing today's youth and their families.



Awards

Marisa Hilliard placed in the Top 10 Abstracts (Psychology) for the Youth Strategies Committee at the American Diabetes Association in 2025.

Faculty

Chief: Karen Price, PhD
Associate Chief of Research:
Lisa Kahalley, PhD
Research Faculty:

- Ashley Butler, PhD
- Marisa Hilliard, PhD
- Se-Kang Kim, PhD
- Robin Kochel, PhD
- Kimberly Raghubar, PhD



Impact

Advancing Neurocognitive and Functional Outcomes Research in Pediatric Brain Tumor Survivors

The Psychology Division has been at the forefront of research focused on defining and mitigating the neurocognitive late effects of pediatric cancer treatment. Through a series of NIH- and CPRIT-funded longitudinal studies, **Drs. Kahalley** and **Raghubar** have published seminal findings demonstrating that proton radiotherapy provides meaningful neurocognitive advantages compared with conventional photon radiotherapy in pediatric brain tumor survivors. Their multi-institutional investigations, including the PXCOG, PBMRI, and SOCOG studies, have examined neurocognitive trajectories, white-matter changes, and symptom burden across treatment modalities, informing the development of evidence-based survivorship care models. Recent dosimetry analyses further showed that proton radiotherapy significantly reduces radiation exposure to brain regions critical for cognition, directly supporting treatment-planning strategies that preserve intellectual function.

Transforming Autism Research and Family Engagement Through the SPARK Initiative

Robin Kochel serves as site PI for the SPARK (Simons Foundation Powering Autism Research for Knowledge) study—the largest autism research cohort in history, with over 50,000 participants nationwide. Under her leadership, Texas Children's Hospital ranks #1 nationally in new enrollments, contributing more than 3,500 families who have provided both clinical and genetic data. These contributions have accelerated the discovery of novel autism-associated genes and established a research infrastructure that ensures Texas families both shape and benefit from global autism science. Kochel has leveraged SPARK data to launch innovative studies examining parent perceptions of autism, drivers of vaccine hesitancy, causes of developmental regression, and evidence-based recruitment methods that enhance diversity in clinical research participation. Her work directly informs public health communication strategies and family-centered interventions aimed at improving outcomes across the autism spectrum.

Improving Psychosocial and Clinical Outcomes in Youth with Chronic Conditions

Ashley Butler's research focuses on increasing positive psychosocial outcomes in vulnerable youth with chronic conditions through family- and community-centered engagement. She has led multiple randomized controlled trials implementing behavioral interventions in partnership with vulnerable families of youth with type 1 and type 2 diabetes and community stakeholders, demonstrating the feasibility and effectiveness of co-developing behavioral interventions to improve psychosocial well-being among underserved youth by engaging families and communities with limited resources. Engagement roadmaps developed by **Ashley Butler** have been widely disseminated through the Patient-Centered Outcomes Research Engagement Repository and have informed engagement recommendations for diabetes research in the NIDDK Heterogeneity of Diabetes Report to the NIDDK Advisory Council. **Marisa Hilliard** has led multi-site randomized controlled trials demonstrating that brief, scalable behavioral interventions significantly improve psychosocial well-being, reduce diabetes distress, and, in some cases, improve glycemic outcomes among youth and young adults with type 1 diabetes and their families. **Marisa Hilliard's** strengths-based behavioral intervention trials for youth, young adults, and parents have collectively shown reductions in youth and parent distress, improvements in quality of life, fewer severe hypoglycemia events, increases in glucose time-in-range, and enhanced engagement in diabetes self-management. Measures and intervention frameworks developed by **Marisa Hilliard** have been incorporated into the Standards of Care for the American Diabetes Association and the International Society for Pediatric and Adolescent Diabetes, and are now being implemented internationally.

Selected Publications

- Yi-Frazier JP, Hilliard ME, O'Donnell MB, Zhou C, Ellisor BM, Garcia Perez S, Duran B, Rojas Y, Malik FS, DeSalvo DJ, Pihoker C, Bradford MC, Scott S, Devaraj S, Rosenberg AR. Promoting resilience in stress management for adolescents with type 1 diabetes: a randomized clinical trial. JAMA Netw Open. 2024;7(8):e2428287.
- Ferm ML, DeSalvo DJ, Zhou C, Bradford MC, Malik F, O'Donnell MB, Pihoker C, Rosenberg AR, Yi-Frazier JP, Hilliard ME. CGM metrics in adolescents with type 1 diabetes and diabetes distress in the Promoting Resilience in Stress Management (PRISM-T1D) trial. Diabetes Technol Obes Med. 2025;1:431-437.
- Sienna J, Kahalley LS, Mabbott D, Grosshans D, Santiago AT, Paulino ADC, Merchant TE, Manzar GS, Dama H, Hodgson DC, Chintagumpala M, Okcu MF, Whitehead WE, Laperriere N, Ramaswamy V, Bartels U, Tabori U, Bennett JM, Das A, Craig T, Tsang DS. Proton therapy mediates dose reductions to brain structures associated with cognition in children with medulloblastoma. Int J Radiat Oncol Biol Phys. 2024;119(1):200-207.

Public Health Pediatrics

Mission: To create a healthier future for Texas's children and families by leading in patient care, education and research that seeks to mitigate childhood adversities and to accentuate individual, family and community resilience.

Impact

Driving Innovation in Maternal and Early Childhood Health

What began as community needs assessments in the mid-2010s has grown into a portfolio of evidence-based, state- and grant-funded programs reaching nearly 1,500 families each year across Greater Houston. Early work led to funding from the Texas Medical Center for a non-inferiority study comparing home visitation for perinatal depression with referral to psychiatry and State of Texas support to develop a CHW-led perinatal home visiting program helping expectant mothers prepare for a safe, stable, and nurturing home environment. Through the upSTART Community Programs, the Division of Public Health Pediatrics now addresses community priorities in maternal mental health, early brain and language development, maternal-infant well-being, and social drivers of health, insights that inform and advance the Division's research, evaluation, and policy priorities.

Leading in Injury Prevention

The Division of Public Health Pediatrics leads national and local efforts to prevent injuries and violence among children and youth. Our faculty co-lead the Violence and Injury Prevention Research (VIPR) Center, the first CDC-funded Injury Control Research Center focused specifically on preventing injury and violence in children and adolescents. Locally, our team directs the Harris County Child Fatality Review Team, identifying preventable causes of child deaths and advancing data-informed recommendations for safety and prevention. We also lead regional suicide prevention initiatives, engaging schools, healthcare providers, and community partners to strengthen early identification and response. Through our CDC-funded Safe Sleep initiatives, we partner with hospitals and community agencies to promote evidence-based practices to improve safe infant sleep environments across Greater Houston. Together, these integrated efforts are transforming how we understand, prevent, and respond to the leading causes of injury and death among children and youth.

Transforming Care for Children in Foster Care

In 2018, funding from the Texas Medical Center launched a focused effort to better understand and improve the health and well-being of children in foster care. This work led to a systematic review of mental health needs and multiple studies examining mental health diagnoses and psychotropic medication use among children in the foster care system. Findings directly informed clinical practice within the Texas Children's Foster Care Clinic, prompting the addition of multidisciplinary visits with integrated mental health services and new efforts to support safe medication de-escalation. These research-to-practice efforts are shaping more responsive, coordinated, and effective care for children and youth in foster care.

Faculty

Chief: Christopher Greeley, MD, MS
Director of Research: Beth Van Horne, DrPH
Research Faculty:

- Angela Bachim, MD, MS
- Katherine Budolfson, MD
- Cary Cain, PhD, RN
- Angela Cummings, DrPH
- Rachael Keefe, MD, MPH
- Kimberly Lopez, DrPH
- Miao "Jessica" Yu-Carr, PhD, MSW





Awards

Dr. Rachael Keefe was appointed as the Child Welfare Policy Fellow at the American Academy of Pediatrics (AAP) for 2024-2025.







Selected Publications

- Koire A, Nong YH, Cain CM, Greeley CS, Puryear L, Van Horne BS. Prenatal depression screening with postpartum follow-up in an integrated healthcare system identifies risks for positive screens and persistent depressive symptoms. J Affect Disord Rep. 2023;12:100509.
- Keefe RJ, Cummings ADL, Smith AE, Greeley CS, Van Horne BS. Psychotropic medication prescribing: youth in foster care compared with other Medicaid enrollees. J Child Adolesc Psychopharmacol. 2023;33(4):149-155.
- Isaac R, Greeley C, Marinello M, Herman BE, Frazier TN, Carroll CL, Armijo-Garcia V, Musick M, Weeks K, Haney SB, Wang M, Hymel KP, Pediatric Brain Injury Research Network. Skeletal survey yields in low vs. high risk pediatric patients with skull fractures. Child Abuse Negl. 2023;139:106130.
- Lindberg DM, Greeley C, Christian CW. Potential pitfalls in Bayesian analysis for child abuse: tending to each tree with a forest of data. JAMA. 2025;334(2):124-125.

Pulmonology

Impact

Advancing Care for Children with Complex Chronic Lung Disease

The Division of Pulmonology plays a leading role in advancing care for children with complex chronic lung conditions, particularly bronchopulmonary dysplasia (BPD) and pulmonary hypertension. In 2024, Baylor and Texas Children's launched a multidisciplinary Bronchopulmonary Dysplasia Center in partnership with Neonatal Medicine, strengthening coordinated care for infants and children with severe lung disease and home ventilator dependence. **Drs. Natalie Villafranco** and **Amit Agarwal** are active members of national and international collaboratives studying BPD outcomes such as liberation from home mechanical ventilation and tracheostomy decannulation, and **Dr. Villafranco** serves as site leader for research exploring the role of the microbiome in BPD development. In pulmonary hypertension, Texas Children's is a Pulmonary Hypertension Association Center of Comprehensive Care, with **Drs. Nidhy Varghese** and **Ryan Coleman** serving as site investigators for multicenter trials, contributing to national registries, and leading development of evidence-based clinical guidelines for children with progressive disease. Together, these efforts are shaping standards of care and improving outcomes for some of the most medically fragile patients.

Transforming Outcomes in Cystic Fibrosis Through National Clinical Trial Leadership

Led by **Drs. Fadel Ruiz** and **Michelle Mann**, the Baylor and Texas Children's Cystic Fibrosis (CF) Center is a key site in the Cystic Fibrosis Foundation's Therapeutic Development Network research program. The center has been a leading national clinical trial recruiter, including transformative studies of CFTR modulators that have significantly improved disease control and quality of life. **Dr. Mann** directs the CF Regional Cooperative across Texas and Oklahoma. **Dr. Ruiz** contributed to updated national evidence-based guidelines for CF-related metabolic syndrome (CFMS). Through sustained clinical trial leadership and national service, the Division continues to accelerate therapeutic innovation and elevate standards of care for CF patients.



Harper Going Home Parade at Texas Children's Hospital

Strengthening Academic Medicine Through Educational Innovation and Research

Dr. Jennifer Rama, core faculty in the Department of Pediatrics Fellows' College, leads the division's medical education scholarship. She serves as a co-investigator in a multicenter study of clinician educators and is a site principal investigator of a national study examining fellowship director roles in academic pediatrics. Locally, she has led curriculum redesign using process-oriented guided inquiry learning and design thinking. Her national recognition reflects the division's commitment to advancing excellence in pediatric training.

Leading National Innovation in Pediatric Sleep Medicine

The TCH Sleep Program is one of the largest in the country. In addition to its high clinical volume, several sleep faculty members are actively involved in clinical research. **Binal Kancherla,** Medical Director of the Sleep Program, is involved in multiple multicenter studies, including research on sleep metrics for patients with neurodevelopmental disorders and the use of the hypoglossal nerve stimulator (Inspire). **Dr. Kancherla** also chairs the AAP Section on Pulmonary and Sleep Medicine and is a member of the International Pediatric Sleep Society.

Amee Revana, DO, is involved in research that includes a multicenter study of pitolisant in patients with Prader-Willi Syndrome.

Faculty

Chief: Manuel Silva Carmona, MD

Research Faculty:

- Amit Agarwal, MD
- Carolyn Cannon, MD, PhD
- Shailendra Das, DO
- Harold Farber, MD, MPH
- Julie Katkin, MD
- Michelle Mann, MD
- Ernestina Melicoff-Portillo, MD
- David Moreno McNeill, MD
- Jennifer Rama, MD
- Amee Revana, DO
- Fadel Ruiz, MD
- Marianna Sockrider MD, DrPH
- David Spielberg, MD, MHSc
- Nidhy Varghese, MD
- Natalie Villafranco, MD



Awards

Dr. Julie Katkin was named the Associate Dean for Research Assurance at Baylor in 2025.



Selected Publications

- Johnston LC, Gans HA, Rose JA, Frost MS, Bone MF, Kumar S, Rama JA. Director of fellowships: A new level of educational leadership in academic pediatric departments. Acad Pediatr. 2025;25(4):102797.
- Coleman RD, Cohen SP, Eghtesady P, Grady RM, Morales DLS, Hayes D, Ruminjo JR, Graham WC. Summary for clinicians: Clinical practice guideline on interventional strategies for children with progressive pulmonary hypertension despite optimal therapy. Ann Am Thorac Soc. 2025 Mar 28.
- Varghese NP, Austin ED, Galambos C, Mullen MP, Yung D, Guillerman RP, Vargas SO, Avitabile CM, Chartan CA, Cortes-Santiago N, Ibach M, Jackson EO, Jarrell JA, Keller RL, Krishnan US, Patel KR, Pogoriler J, Whalen EC, Wikenheiser-Brokamp KA, Villafranco NM, Hopper RK, Usha Raj J, Abman SH; Pediatric Pulmonary Hypertension Network (PPHNet). An interdisciplinary consensus approach to pulmonary hypertension in developmental lung disease. Eur Respir J. 2024;64(3):2400639.

Rheumatology

Mission: **The section of pediatric rheumatology aims to provide compassionate and quality care for children with rheumatic conditions through educational efforts, research endeavors, and community partnerships.**

Vision: **During the next 5 years, we will leverage the patient volume, robust disease pathophysiology, and TCH/BCM resources to enhance the section's reputation as a clinical and academic center of excellence.**



Faculty

Chief: Eyal Muscal MD, MS

Research Faculty:

- Marietta Deguzman, MD
- Miriah Gilispie-Taylor, MD
- Olivia Kwan, MD
- Jamie Lai, MD
- Mailan Nguyen, MD
- Maria Pereira, MD
- Cagri Toruner, MD
- Tiphanie Vogel, MD, PhD

Image of faculty from left to right:
Eyal Muscal, Marietta Deguzman, Miriah Gilispie-Taylor, Olivia Kwan, Jamie Lai, Mailan Nguyen, Maria Pereira, Cagri Toruner, Tiphanie Vogel

Impact

Understanding mechanisms of immunodysregulation in novel disorders

Rheumatology faculty are involved in investigator-initiated and collaborative research aimed at elucidating critical immune pathways in novel and often life-threatening conditions, such as interferonopathies, systemic lupus erythematosus, new-onset refractory status epilepticus, and autoimmune encephalitis. These efforts include biorepositories, translational research, and observational studies.

Advancing innovative therapies in autoimmune conditions

Multiple faculty members serve as principal investigators on seminal clinical trials in disorders such as COPA syndrome (coatomer subunit alpha syndrome), systemic lupus erythematosus (SLE), and antineutrophil cytoplasmic antibody (ANCA)–associated vasculitis, advancing therapeutic innovation in complex autoimmune and autoinflammatory diseases. Upcoming work includes enrollment of lupus patients in a cellular immunotherapy (CAR T cell) trial. As one of the largest pediatric rheumatology centers in North America, the section strives to enhance access to state-of-the-art therapies for children in Houston, Texas, and the Southwest.

Leaders in national and international clinical research work groups

Rheumatology faculty serve as North American and international clinical research and content experts. They serve as disease consortium workgroup leaders, clinical trial and medical advisory steering committee members, and members of data safety monitoring boards. Involvement in such efforts has led to clinical guidelines, meeting abstracts, and manuscripts.

Selected Publications

- Chun A, Bautista-Castillo A, Osuna I, Nasto K, Munoz FM, Schutze GE, Devaraj S, Muscal E, de Guzman MM, Sexson Tejtel K, Vogel TP, Kakadiaris IA. Distinguishing multisystem inflammatory syndrome in children from typhus using Artificial Intelligence: MIS-C Versus Endemic Typhus (AI-MET). J Infect Dis. 2025 Apr 15;231(4):931-939.
- Simchoni N, Koide S, Likhite M, Kuchitsu Y, Kadirvel S, Law CS, Elicker BM, Kurra S, Wong MM, Yuan B, Grossi A, Laxer RM, Volpi S, Dissanayake D, Taguchi T, Beck DB, Vogel TP, Shum AK. The common HAQ STING allele prevents clinical penetrance of COPA syndrome. J Exp Med. 2025 Apr 7;222(4):e20242179.





Highlights at the Texas Children's Hospital Austin Specialty Care - Rheumatology Area

Tropical Medicine

Mission: Advancing health for pediatric populations globally through the development of innovative and accessible tropical medicine research, technologies, clinical care, and education.

Vision: A world where no child's future is hindered by tropical diseases.

Impact

Developing a First-in-Class Anti-Anemia Vaccine to Block Hookworm Infection

The Texas Children's Center for Vaccine Development, in collaboration with George Washington University, completed a Phase 2 controlled human infection study demonstrating that the Na-GST-1 hookworm vaccine achieved near-complete protection. Vaccinated participants generated the highest levels of GST-specific IgG antibodies, supporting an antibody-mediated mechanism of protection. These landmark findings place the vaccine at a strategic inflection point, poised to advance toward licensure to address major anemia-related health burdens in low- and middle-income country (LMIC) populations.

Defining the Molecular Mechanisms Driving Transovarial Transmission of Acari-Borne Pathogen

Acari (mites and ticks) contribute substantially to vector-borne disease burdens in the U.S., with economic losses exceeding $20 billion annually. Leveraging advances in genomics, researchers are investigating an often-overlooked but critical process: the transovarial transmission of pathogens from infected female ticks to their offspring. Understanding this mechanism is essential for disrupting the biological cycles that sustain persistent tick-borne infections.

Engineering a Superior Vaccine Candidate to Transform Lyme Disease Prevention

Lyme disease is the most common tick-borne illness in the U.S. and Eurasia. Researchers in the Division of Tropical Medicine have engineered an improved CspZ-based vaccine candidate designed to expose protective epitopes and stabilize antigen structure. The refined antigen induces strong bactericidal antibody responses after just two immunizations, positioning it as a promising candidate for advancement to clinical evaluation.

A Citizen Science Approach to Determining the Risk of Tick Borne Disease in Texas

Researchers in the Division of Tropical Medicine are conducting statewide surveillance for emerging tick-borne diseases using a citizen science reporting model. This approach aims to identify which pathogens Texas ticks carry, determine who is most at risk of exposure, and generate actionable data to guide targeted prevention strategies and reduce future disease incidence.

Awards

- **Dr. Michael Curtis** was chosen to be a participant in the American Pediatric Society and Society for Pediatric Research's Journeys and Frontiers in Pediatric Research program.
- **Drs. Chen, Clinton and Curtis** each received a Texas Children's Pediatric Pilot Award.
- **Maria Elena Bottazzi, PhD; Peter Hotez, MD, PhD; Yi-Lin Chen; Jeroen Pollet, PhD; Cristina Poveda; Ulrich Strych, PhD; Nestor Uzcategui; and Bin Zhan, MD, MS** co-authored the most popular preprint of 2023 in Biology and Life Sciences on Preprints.org (**A Recombinant Protein XBB.1.5 RBD/Alum/CpG Vaccine Elicits High Neutralizing Antibody Titers against Omicron Subvariants of SARS-CoV-2**)
- **Dr. Sara Gunter** received a Department of Pediatrics Young Investigator Award.
- **Dr. Mejia** was a 2025 nominee to The Alpha Omega Alpha Honors Medical Society.
- **Dr. Lopez** received a Department of Pediatrics Junior Faculty Research Award.



Members of the Division of Tropical Medicine stand in solidarity and celebrate progress and their collective strength to achieve their mission and vision.

Faculty

Chief: Maria Elena Bottazzi, PhD

Research Faculty:

- Amy Arrington, PhD, MD
- Wen-Hsiang Chen, PhD
- Eva Clark, MD, PhD
- Jennifer Clinton, PhD
- Michael Curtis, PhD
- Megan Duffey, MD
- Sarah Gunter, PhD
- Peter Hotez, MD, PhD
- Kathryn Jones, DVM, PhD
- Alexander Kneubehl, PhD
- Job Lopez, PhD
- Rojelio Mejia, MD
- Jeroen Pollet, PhD
- Cristina Poveda
- Shannon Ronca, PhD, MPH
- Ulrich Strych, PhD
- Nestor Uzcategui, PhD
- Jill Weatherhead, MD, PhD



Selected Publications

- Brangulis K, Malfetano J, Marcinkiewicz AL, Wang A, Chen YL, Lee J, Liu Z, Yang X, Strych U, Tupina D, Akopjana I, Bottazzi ME, Pal U, Hsieh CL, Chen WH, Lin YP. Mechanistic insights into the structure-based design of a CspZ-targeting Lyme disease vaccine. Nat Commun. 2025 Apr 7;16(1):2898.
- Gunter SM, Nelson A, Kneubehl AR, Justi SA, Manzanero R, Zielinski-Gutierrez E, Herrera C, Thompson J, Mandage R, Desale H, Maliga A, Bautista K, Ronca SE, Morey F, Fuentes RC, Lopez B, Dumonteil E, Morazan GH, Murray KO. Novel species of Triatoma (Hemiptera: Reduviidae) identified in a case of vectorial transmission of Chagas disease in northern Belize. Sci Rep. 2024 Jan 16;14(1):1412.
- Curtis MW, Lopez JE. Tick-Borne diseases and pregnancy: a narrative review evaluating pregnancy complications caused by tick-borne diseases. Trop Med Infect Dis. 2024 Oct 24;9(11):254.
- Silva de Oliveira A, Versteeg L, Briggs N, Adhikari R, Villar MJ, Redd JR, Hotez P, Bottazzi ME, Pollet J, De Oliveira AS. Altering the intracellular trafficking of Necator americanus GST-1 antigen yields novel hookworm mRNA vaccine candidates. PLoS Negl Trop Dis. 2025 Jan; 19(1):e0012809.

Core Research Infrastructure

Research Vision

Dr. Huda Zoghbi (Research-In-Chief) began the **Research Vision program** in 2021 to enhance and expand the research enterprise of Texas Children's Hospital. Her vision is committed to advancing discovery and improving health outcomes for children and women. The TCH Research Vision mission aligns with the enterprise vision to identify disease causes, deepen understanding of disease mechanisms, and develop treatments that impact communities locally and globally. In 2025, the growth of the research enterprise inspired the creation of the Texas Children's Research Institute (TCRI) led by **Dr. James Versalovic.**



Dr. Huda Zoghbi, MD

Impacts

Data Science: Availability of biostatistics and bioinformatic services to all TCH investigators including assistance with data analysis for grants and manuscripts. Implementation of the Palantir pilot program, which integrates multimodal data, enables AI-powered cohort creation, and automates REDCap form population—reducing manual effort by 50-90%. These innovations accelerate research in rare diseases, epilepsy, mental health, congenital heart disease, and diabetes.

Communications: Increased visibility for TCH RV through faculty meeting presentations across departments and the establishment of the Viva Engage TCH Research Vision Community. TCH Research Support Hub is now active on the BCM Share Drive with all resources centralized for ease of access.

Clinical Research: Transformed the former Office of Clinical Research into the Center for Research Advancement. Improvement and enhancement of services using a pod-based model to expand service to departments and campuses across the enterprise.

Mentorship: Initiated and implemented the TCH Mentorship Program whereby prospective mentors and mentees are matched by the committee with the goal of cross-disciplinary mentorship. All TCH Research Scholars are automatically enrolled in the program.

Infrastructure:

Core Facilities: Increased visibility and access to core facilities across the enterprise, including those housed in the Duncan NRI, Feigin Tower, and Children's Nutrition Research Center.

Research Capital and Space:
Realigned space needs with the strategic goals of the enterprise. Initiated a global space survey and implemented a new request system for research space. Created a master space plan for Feigin Tower.

Partnership and Commercialization:
Implemented stream-lined processes and a TCH-based support structure for research agreements and industry partnerships with BCM. Increased visibility and access for research disclosures and initiation of potential commercialization ventures.

Search & Recruitment: A special talent search committee is responsible for the TCH Research Scholar open search that occurs from July to October each year with the goal of bringing the best and brightest physician-scientists and basic scientists talent to the TCH Research Enterprise. Scholars receive start-up packages funded by the TCH Research Vision. To date, eight scholars have joined TCRI or signed to start in 2026, and four others are under consideration.

Committees:

Six strategic committees—spanning Clinical Research (**Drs. Lisa Forbes-Satter and Nada Midani**), Data Science (**Drs. Zhandong Liu and Ben Choi**), Infrastructure which was split into three subcommittees - Core Facilities (**Drs. Cecilia Ljungberg** and **Surabi Veeraragavan**), Research Capital and Space (**Drs. James Versalovic and Katherine King**), and Partnership and Commercialization (**Drs. Jin Xu and Sarah Haigh Molina**), Search & Recruitment (**Drs. Hugo Bellen and Sharon Plon**), Mentorship (**Drs. Igna Van den Vyver and Hyun Lee**), and Communications (**Dr. Sara Anvari**)—drive the implementation of Research Vision.



Outside view of the Texas Children's Hospital at the Texas Medical Center

Additional RV Activities

- In addition to new recruits, the Research Vision invests in physician-scientists and scientists at TCH through bridge, seed, and career-transition funding to enhance their opportunities to successfully secure extramural research support.
- The Research Vision has developed a grantsmanship and writing program, the Internal Reviewer Program, staffed by three PhD scientists who train faculty members on grantsmanship and manuscript writing as well as figure making and other activities.
- **The Better Together® Biobank** was established by the Research Vision and is currently overseen by the TCRI. Led by Co-Directors **Anthony Zoghbi, MD,** and **Ryan Dhindsa, MD, PhD,** the Biobank is an all-encompassing biorepository that aims to enroll the largest cohort of pediatric patients in the US.
- To encourage and incentivize faculty to engage in research activities, the Research Vision has established the Faculty Incentive Program, which rewards TCH investigators dedicating 50% or more of their effort to research for high-impact extramural funding and publications as well as mentorship activities, honors, and professional service.

Current and Future Impact:

Looking ahead, TCH Research Vision will first and foremost continue to invest in and empower our researchers and trainees. It will also expand automation and AI tools to advance research, work with the CRA at TCRI to enhance translation of basic discoveries into clinical trials, strengthen academic and industry partnerships, and invest in emerging technologies to position TCH as a national leader in pediatric research innovation.

The Center for Research Advancement

Core to the Texas Children's Research Institute (TCRI), **the Center for Research Advancement (CRA)** serves as the Department of Pediatrics' and Texas Children's Hospital's central hub for expert clinical trial administration, research infrastructure support, and education related to all regulatory aspects of investigator-initiated studies, NIH cooperative group studies, and pharmaceutical industry-sponsored research. The CRA also provides centralized resources for the pre- and post-award processes involved in the development and implementation of a wide range of basic, translational, and clinical studies conducted by our investigators.

Mission: The CRA is dedicated to improving the health of children and women by facilitating and supporting cutting-edge research and medical therapeutic advancement.

Vision: The CRA brings together world-class expertise in clinical, translational and basic research to ensure a robust and sound infrastructure to facilitate excellence in research for children and women.

Leveraging a structure aligned to division/department-specific pods and direct partnerships with our investigators, our research teams are intimately familiar with TCH research demands, seamlessly navigating the intricacies of our patient populations to best serve the clinical study/trial, facilitating safe, reliable, and reproducible trial outcomes. Coupled with providing cutting-edge data science expertise, including biostatistics, bioinformatics, and enhanced data science management, we are committed to providing robust, agile research infrastructure support to all investigators across our Texas Children's Hospital campuses, accelerating therapeutic discoveries and advancing our research mission.

Our Initiatives and Impact

Significantly contributed to Baylor College of Medicine's advancement to position #2 in NIH awards as recorded by the Blue Ridge Institute for Medical Research Rankings in FY2025.

First Device trial successfully opened at West Campus in 2025 with our first interventional trial enrolling in April 2026 supporting Pediatric Insomnia.

Advancing community research infrastructure with successful implementation at West Campus, facilitated by faculty Champions and CRA Lead Coordinators onsite. The Woodlands and Austin are on track to begin Q3 2026 and Q1 2027 respectively.

Completion of the EPIC/CTMS bidirectional integration to improve billing efficiencies and accuracy in partnership with Research IT and TCH teams.

Advanced international/remote QA plans aligned to the unique requirements of participating sites in Africa.

Launched the Medical Device Clinical Trial Unit (MDCTU) in partnership with Dr. Chester Koh to support the unique regulatory, ethical, and operational needs of pediatric medical device trials.

Successfully partnered with Baylor Vaccine and Treatment Evaluation Unit (VTEU) in support of a therapeutic study at West Campus, the first ever run through the Special Isolation Unit (SIU).

Expanded the breadth and depth of the CRA Education Program, with regularly updated workshops, e-learning, and training modules to empower fellow and faculty investigators to further their expertise in basic, translational and clinical research across BCM and TCH.

CRA leadership co-authored "Tips for Submission to the IRB" in partnership with Cincinnati Children's Hospital.

Leadership



Lisa Forbes Satter, MD
Medical Director



Sowdhamini Wallace, MD
Assistant Medical Director



Miki Gillis
Executive Director, Clinical Research



Nada Midani
Principal, Business Development and Strategy



Supriya Parikh
Senior Manager, Protocol Development / IND



Lori Malone
Director, Grants and Contracts



Joe Kanewske
Director, Financial Planning and Analysis



Serpil Tutan
Director, Regulatory



Stephanie Hulsey MD
Director, Research Nursing and Coordination



Uma Ramamurthy, PhD
Executive Director, Research Informatics



Zhandong Liu, PhD
Data Science Lead

Our Numbers...and Counting

100+ CRA Multidisciplinary Subject Matter Experts

20+ Divisions/Departments supported by CRA research coordination/nursing with 4 Division-specific pods inclusive of Neurology, Retrovirology, and Molecular and Human Genetics

165 Active clinical studies supported across various stages

100+ Pending studies in queue

1,800+ BRAIN ESP2 funding proposals approved in CY2025

3 Successfully completed "No Action Indicated" FDA audits

9 Complex gene therapy studies supported. Most recently the first intraparenchymal neurologic gene therapy ever cleared by the FDA called Kebiliti

7 Device exclusive studies supported

The CRA offers a variety of services in the following domains:

- Clinical Research Coordination, Research Nursing & Data Management
- Regulatory Affairs, QA/QC
- Protocol Development, FDA Investigational Drug and Device Support
- Pre and Post Award Grants Management (Non-Industry Sponsored such as NIH, CPRIT, Foundations)
- Pre and Post Award Clinical Trials (Industry Sponsored)
- Informatics
- Biostatistics, Bioinformatics, and Data Science
- Investigator and Clinical Research-Based Education and training

Texas Children's Research Institute (TCRI)

Vision

The Texas Children's Research Institute (TCRI) was officially founded in February 2025, emerging as a cornerstone of leadership and forward-thinking under the guidance of President and CEO, **Debra F. Sukin, PhD.** In collaboration with the Board of Trustees, **Dr. Sukin** appointed **James Versalovic, MD, PhD,** Pathologist-in-Chief, to serve as the inaugural President of TCRI. Their shared vision is to position Texas Children's as the gold standard for research in pediatric and women's health.

Dr. Versalovic actively collaborates with our Research-in-Chief, **Huda Zoghbi, MD,** and the Vice Chairs for Research to foster advancements in biomedical discovery and translation across the institution. Together, they aim to provide expanded support for enterprise-wide clinical research, ensuring a cohesive and strategic approach system-wide.



James Versalovic, MD, PhD



Leadership and Strategic Foundation

In June 2025, the **TCRI Advisory Council** was established, featuring representatives from different departments. The council plays a pivotal role in laying the groundwork and shaping the strategy for TCRI's future. Council members include **Carl Allen, MD, PhD; Ananth Annapragada, PhD; Maria Elena Bottazzi, PhD; Lisa Forbes Satter, MD; Helen Heslop, MD; Sundeep Keswani, MD; Chester Koh, MD;** and **Igna Van den Veyver, MD.** Their first annual retreat took place in August 2025 at TMC Helix Park, during which the team discussed plans to strengthen the research enterprise across Texas Children's and in close partnership with Baylor College of Medicine (BCM). In addition to the departments and divisions, the new Institute will work with the leadership of the Duncan Neurological Research Institute (NRI), the Kinder Children's Cancer Center, the Children's Nutrition Research Center (CNRC), and the BCM Office of Research.

From left to right, Images of Carl Allen, MD, PhD, Ananth Annapragada, PhD, Maria Elena Bottazzi, PhD, Lisa Forbes Satter, MD, Helen Heslop, MD, Sundeep Keswani, MD, Chester Koh, MD, and Igna Van den Veyver, MD.

Commitment to Collaboration and Growth

The TCRI embodies a bold commitment to interdisciplinary collaboration, swift translation of research findings to patient care, and sustained financial support for the research enterprise. In November, the institute welcomed more than 300 faculty as inaugural members, alongside numerous faculty leaders who contribute actively to the research mission. These members gain direct access to TCRI discovery research centers, resources facilitating clinical investigation, and priority access to shared services and research capital support. The diverse expertise of TCRI members is both inspiring and dynamic, with ongoing efforts to recruit new talent and expand the institute's impact. TCRI aims to provide an interdisciplinary platform for collaboration among investigators through new seminars, symposia, and enhanced communications about research programs and initiatives. Another initiative for collaboration and growth is the establishment of a new Research Division led by **Dr. Carl Allen** in the Department of Pediatrics with support from the TCRI.

Resources for Translational Research and Clinical Trials

One of TCRI's key achievements has been the consolidation of research resources that were previously managed separately under individual departments. Such consolidation and investment will enable this new Institute to serve the broader discovery and clinical research enterprise. The Center for Research Advancement (CRA), led by **Dr. Forbes Satter,** has undergone strategic growth and expansion, aiming to oversee clinical research and trials throughout Texas Children's Hospital (TCH), its four hospital campuses and the whole integrated healthcare delivery system. The CRA team has established a research program at West Campus and initiated discussions with teams in The Woodlands and Austin. Additionally, Dr. Forbes Satter and her team have created an investigational new drug regulatory group to enhance support for complex clinical studies. With hundreds of clinical trials actively enrolling patients in 2025, the CRA is positioning Texas Children's as a leading site for clinical research.





Biobank Program and Research Infrastructure

The Better Together™ Biobank Program, initially supported by a $6 million capital investment from Texas Children's in November 2024, is overseen by the TCRI and faculty co-directors **Ryan Dhindsa, MD, PhD,** and **Anthony Zoghbi, MD.** Additional philanthropic support has provided generous funding to advance a comprehensive biobanking initiative.

The pilot program launched in September with a cutting-edge automated cryostorage system that is capable of processing up to 130,000 DNA extraction samples daily. Our close partnership with Cryogene (just south of the TMC) has enabled Texas Children's to make rapid progress in establishing a platform for long-term growth. Current plans include moving the main Biobank Laboratory from the Duncan NRI to the Feigin Tower, and to co-locate this laboratory with existing biobanks already in the Feigin Tower. The team is planning to integrate legacy biobanks so we can combine blood, body fluids, tissue and microbial samples to ensure the longevity and ongoing success of precision medicine initiatives.

Image from top to bottom: Ryan Dhindsa, MD, PhD and Anthony Zoghbi, MD

Texas Children's Research Institute (TCRI)

Integration and Capital Investments

Texas Children's Research Administration provides essential operational and financial management services for the TCRI. Working closely with **Dr. Versalovic** and our TCRI advisory council, the administration is exploring the integration of key facilities such as the Clinical Research Center (CRC), the Small Animal Imaging Facility, and the Pathogen Resource Core. Over the past several months, more than $6.5 million has been invested in research capital that was committed to 28 different investigators, with similar funding anticipated for 2026 as part of Research Vision working closely with the TCRI and the NRI.

A New Landscape

We are moving to a more highly integrated and interdisciplinary landscape for biomedical research at Texas Children's. From discovery to delivering new treatments for patients, our research institutes (the NRI and TCRI) will foster greater levels of collaboration and synergy of key initiatives. Whether we are aiming for new groundbreaking discoveries, applications in precision medicine, and novel strategies for computation and AI, our research institutes are bringing specialties, divisions, centers, and departments together to create expanded opportunities for our investigators and research staff. With TCRI leading our clinical research enterprise, this new institute (TCRI) will serve as a bridge of hope to translate discoveries and advances from any source to improve patient outcomes. The institute encourages ongoing input from stakeholders as it co-creates the future of biomedical research in children's and women's health.



Dr. Bilal A. Omer working in a laboratory in Feigin Tower



Feigin Tower at Texas Children's Hospital

Children's Nutrition Research Center (CNRC)

USDA-ARS Children's Nutrition Research Center

The United States Department of Agriculture (USDA) Agricultural Research Service (ARS) Children's Nutrition Research Center (CNRC), a collaborative venture with Baylor College of Medicine and Texas Children's Hospital, represents the forefront of federal efforts to define and optimize the nutritional health of children, and the special dietary needs of pregnant and nursing women. The CNRC is uniquely designed to support a multidisciplinary approach to pediatric nutrition, integrating biochemistry, human genetics, physiology, epidemiology, and behavioral science. Operating under a cooperative agreement that sustains half of its operating budget through USDA/ARS funding, the center houses specialized infrastructure including room calorimeters, mass spectrometry labs for stable isotopic tracer studies, and a metabolic research unit.

The Bier Legacy and the Allison Directorship:

Between January 2023 and December 2025, the center underwent a change in leadership from the legacy of **Dr. Dennis Bier** to the directorship of **Dr. David B. Allison.** The retirement of **Dr. Dennis Bier** in early 2024 concluded an era focused on building programs in molecular neurobiology, behavioral nutrition, and neonatal metabolism and development.

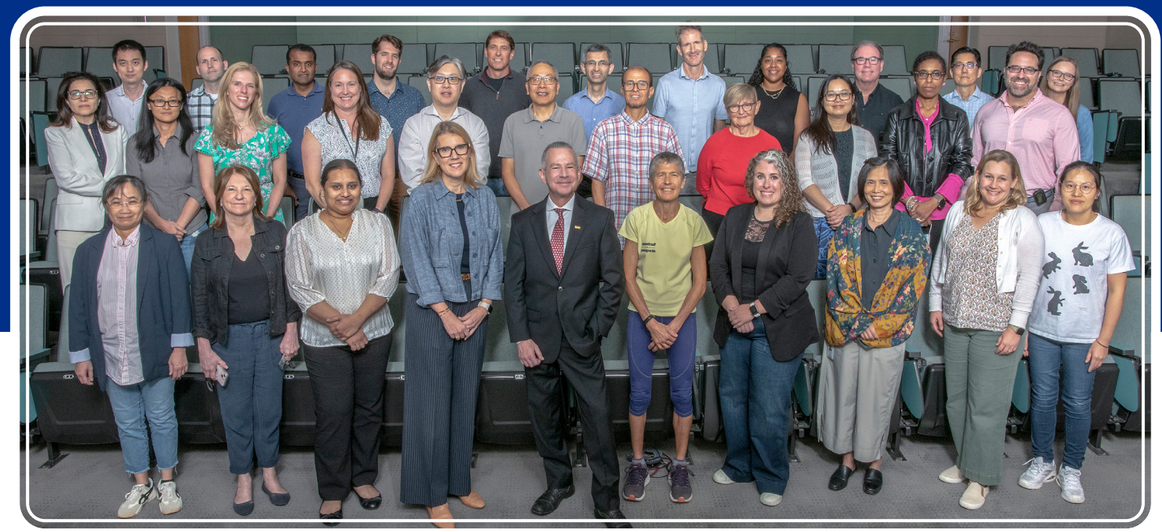
Dr. Allison's strategic vision emphasizes the intersection of human, environmental, and economic health outcomes. **David B. Allison, Ph.D.,** is the Director of the USDA-ARS Children's Nutrition Research Center and an Endowed Chair at Baylor College of Medicine. He is a leading obesity researcher and biostatistician with over 700 publications and 30 years of continuous NIH funding. **Dr. Allison** was elected to the National Academy of Medicine in 2012 and is a Fellow of the American Society for Nutrition (ASN).



David B. Allison, PhD

Molecular Neurobiology Discoveries in Metabolic Signaling and Energy Homeostasis

The 2023–2025 triennium witnessed groundbreaking advances in neurobiology, specifically regarding how the brain integrates metabolic signals to regulate appetite and weight. A landmark achievement was the discovery of beta-hydroxybutyrate-phenylalanine (BHB-Phe), a metabolic compound that regulates body weight through interactions with the central nervous system. While beta-hydroxybutyrate (BHB) has long been known as a fuel source, the CNRC team identified it as a signaling molecule that activates neural populations in the hypothalamus and brainstem to suppress feeding behavior. This pathway involves the enzyme carnosine dipeptidase 2 (CNDP2), which catalyzes the conjugation of BHB with free amino acids. In parallel, research revealed that the small GTPase Rap1 in pro-opiomelanocortin (POMC) neurons functions as a "molecular brake" that prevents the brain from responding effectively to leptin in obesity. Removing this Rap1 brake corrected diabetic conditions in mice, leading to a rapid drop in blood sugar levels even before significant weight loss occurred.



Group photo image of the Children's Nutrition Research Center (CNRC) team

Behavior Nutrition Targeting Improved Public Health Outcomes

The School-Summer Paradigm and Weight-Related Behaviors. **Dr. Jennette Moreno** conducted analyses showing that inconsistent bedtime routines and increased screen media use during the summer are significantly associated with increases in children's Body Mass Index (BMI).

Advances in Diabetes Diagnosis and Management

Research led by **Dr. Fida Bacha** addressed the challenge of distinguishing between type 1 and type 2 diabetes in youth. A 2024 study in Diabetologia identified insulin clearance as a vital factor in maintaining glycemic balance, varying significantly by sex and race.

Neonatal Nutrition Strategies to Improve Health and Growth

Researchers led by **Dr. Douglas Burrin, Dr. Gregory Guthrie,** and **Dr. Caitlin Vonderohe** has pioneered the use of neonatal piglet models to address critical clinical challenges in pediatric gastroenterology, particularly regarding parenteral nutrition and sepsis. A major focus during 2024 and 2025 was the risk of parenteral nutrition-associated liver disease (PNALD), a condition affecting up to 50% of premature infants on long-term intravenous feeding. Research by the Guthrie lab investigated whether new-generation mixed oil-lipid emulsions (MLE), containing fish oil, olive oil, and soy oil, could protect against liver injury in the context of biliary atresia (BA). A study in JCI Insight demonstrated that while MLE significantly improved weight gain compared to traditional soy-based lipid emulsions (SLE), it failed to prevent the progression of liver injury, ductular reaction, or fibrosis caused by complete bile flow obstruction. The team highlighted the functional importance of bile acid-FXR signaling in neonatal immunity. They found that enteral administration of obeticholic acid (OCA) could prevent cholestasis by inducing hepatobiliary transporters rather than suppressing bile acid synthesis.

Children's Nutrition Research Center (CNRC)

Awards and Recognitions

2023

- **Yong Xu** received the Michael E. DeBakey Award for excellence in research.
- **Sheryl Hughes, Teresia O'Connor,** and **Yong Xu** elected to the American Pediatric Society.
- **Douglas Burrin** received the ARS Distinguished Senior Research Scientist Award and the Bruce Bistrian Nutrition Mentorship Award from the American Society for Parenteral and Enteral Nutrition.
- **Teresia O'Connor** served as Chair, Lifestyle Change and Behavioral Health Study Section, National Institutes of Health (2023–2025).

2024

- **Teresa A. Davis** elected to the National Academy of Medicine.
- **Nancy Butte** received the Samuel J. Fomon Nutrition Award for lifetime contributions to pediatric nutrition.
- **Jayna Dave** selected for the Mid-Career Research Leadership Development Program, Society for Pediatric Research (2024–2025).

2025

- **Teresa A. Davis** named Director, Texas A&M AgriLife Institute for Advancing Health Through Agriculture.
- **Marta Fiorotto** and **Robert Shulman** inducted as Distinguished Fellows of the American Society for Nutrition.
- **David Allison** received the Irving S. Wright Award of Distinction from the American Federation for Aging Research.

Selected Publications

- He, Y., Brouwers, B., Liu, H., Liu, H., Lawler, K., Mendes De Oliveira, E., Lee, D., Yang, Y., Cox, A.R., Keogh, J.M., Henning, E., Bounds, R., Perdikari, A., Ayinampudi, V., Wang, C., Yu, M., Tu, L., Zhang, N., Yin, N., Han, J., Scarcelli, N., Yan, Z., Conde, K., Potts, C., Bean, J.C., Wang, M., Hartig, S.M., Liao, L., Xu, J., Barroso, I., Mokrosinski, J., Xu, Y., I Sadaf, F. 2022. Human loss-of-function variants in the serotonin 2C receptor associated with obesity and maladaptive behavior. Nature Medicine. 28:2537–2546.
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USDA-ARS Human Nutrition Program

Defining the role of food and its components to optimize health throughout the life cycle for all Americans by conducting high national priority research, the USDA Human Nutrition Program focuses on five component priorities:

1. **Bridge the gap** between food production and human health: Determine agriculture practices and complex food system interactions that influence the nutritional quality, composition of food, and impacts on health.
2. **Analyze** food composition and national nutrient intake: Provide food composition data, determine food consumption and dietary patterns, and develop improved methods of analysis.
3. Improve the scientific basis for **dietary guidance**: Keep national dietary standards and guidelines updated by identifying mechanisms to promote health.
4. Identify mechanisms for **prevention of diet-related chronic diseases**: Consider how food, food components, and physical activity help prevent diet-related chronic diseases, and develop and evaluate strategies for prevention.
5. Understand **diet-related life stage nutrition** and metabolism: Diet and lifestyle impacts for healthy development and function from conception to old age.

6 USDA-ARS Human Nutrition Program operates 6 unique research centers across the country.



Stay up to date with ARS! Learn how we're solving major agricultural problems.

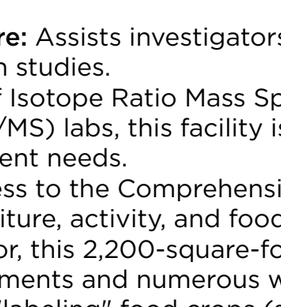
USDA Agricultural Research Service
U.S. DEPARTMENT OF AGRICULTURE
www.ars.usda.gov

USDA is an equal opportunity provider, employer, and lender.



The Children's Nutrition Research Center

Located in the Texas Medical Center in Houston, Texas, the Children's Nutrition Research Center (CNRC) is operated by Baylor College of Medicine (BCM) in cooperation with Texas Children's Hospital (TCH) and the U.S. Department of Agriculture/Agricultural Research Service (USDA/ARS). Its overall mission is to investigate the nutritional needs of healthy children from infancy through adolescence, and the special dietary needs of pregnant and nursing women. As a result of the collaborative sponsorship from the USDA, BCM, and TCH for almost 50 years, the CNRC is home to a remarkably diverse group of scientists tasked with understanding the roles of nutrition to promote children's lifelong health and prevent disease. CNRC's unique combination of pediatricians and pediatric sub-specialists, nutrition scientists, plant physiologists, and other scientist conduct basic and clinical research that represents the vibrant and diverse scope of childhood nutrition.



The CNRC's five overarching research categories:

- Regulatory aspects of nutritional metabolism
- Regulatory aspects of obesity development
- Enhancing childhood health and lifestyle behaviors
- Lactation and nutritional health
- Impact of dietary components of health

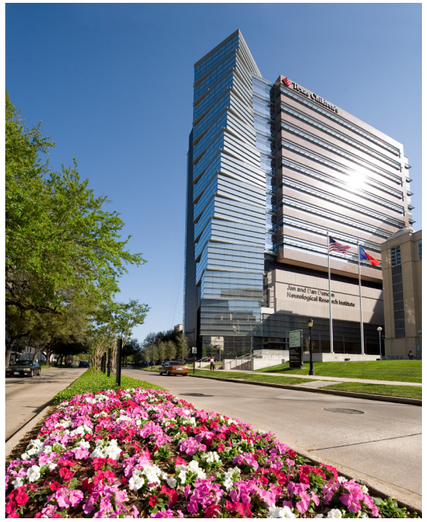
USDA Agricultural Research Service
U.S. DEPARTMENT OF AGRICULTURE

Baylor College of Medicine | Children's Nutrition Research Center | Texas Children's Hospital

The research core facilities at the USDA-ARS Children's Nutrition Research Center (CNRC) are organized into specialized units to support human, animal, and plant nutrition science:

- **Shared Human Nutrition and Core Laboratories**
- **Metabolic Research Unit (MRU):** Occupies two floors of the center, providing volunteer accommodations (single rooms and family suites) and a metabolic kitchen for controlled clinical nutrition studies.
- **Body Composition Unit:** Offers a full suite of body composition measurements for everyone from low-birth-weight infants to adults.
- **Energy Metabolism Unit:** Supports research on nutrition and energy metabolism, utilizing specialized room calorimeters to measure human energy expenditure.
- **Eating Behavior Laboratory:** A specialized space for observing and recording the food intake and behaviors of children and adults.
- **Community Engagement and Recruitment Core:** Assists investigators with the ethical and effective recruitment of volunteers for research studies.
- **Stable Isotope Core Laboratory:** Comprised of Isotope Ratio Mass Spectrometry (IRMS) and Gas Chromatography/Mass Spectrometry (GC/MS) labs, this facility is an international leader in using non-radioactive tracers to assess nutrient needs.
- **Mouse Metabolic Research Unit:** Provides access to the Comprehensive Lab Animal Monitoring System for tracking energy expenditure, activity, and food intake.
- **Plant Physiology Core:** Located on the 11th floor, this 2,200-square-foot facility includes a rooftop greenhouse with three active compartments and numerous walk-in and reach-in growth chambers. Specializes in growing and "labeling" food crops (such as spinach, green beans, and rice) with stable isotopes for use in nutritional tracking studies.

Duncan Neurological Research Institute



Picture of the Jan and Dan Duncan Neurological Research Institute (Duncan NRI) at Texas Children's Hospital

The Jan and Dan Duncan Neurological Research Institute (Duncan NRI) at Texas Children's Hospital is a premier neuroscience research center dedicated to transforming the understanding and treatment of neurological disease across the lifespan. With a strong emphasis on pediatric and developmental neuroscience, the Duncan NRI fosters an interdisciplinary environment that integrates genetics, neurobiology, bioengineering, and data science to address the most pressing unmet needs in neurology. Since 2010, experts at the Duncan NRI have solved some of the most complex medical mysteries, pushed forward innovative hypotheses, and developed novel therapeutic strategies that have transformed the lives of patients, who are at the core of all that we do. Through innovation, collaboration, and a commitment to patient-centered impact, the Duncan NRI serves as a global leader in advancing brain health and neurological care.

Mission: To solve the unsolvable by bridging fundamental discovery and clinical application, uniting basic scientists, physician–scientists, and data analysts to accelerate the translation of breakthroughs into meaningful therapies for patients.

Vision: To redefine how neurological disorders are studied and treated by leveraging human-relevant models, cutting-edge technologies, and deeply collaborative science.

Impact

Advancing our understanding of neurodevelopment, neurodegeneration, and neural circuitry across genetic, metabolic, and systems levels

A central contribution of the Duncan NRI scientists is the redefinition of cellular vulnerability and resilience in the nervous system. New studies in Nature Neuroscience and Neuron, for example, demonstrate that proteins classically viewed through a neuronal lens—such as tau and MeCP2—play critical, cell-type-specific roles in glial metabolism, chromatin regulation, and oxidative stress resistance, revealing early molecular events that precede overt neurological dysfunction. These findings shift prevailing models of disease pathogenesis from late-stage neuronal loss to earlier, modifiable cellular states, with direct implications for therapeutic timing. Further, multiple studies in AJHG, Genetics in Medicine, and Stem Cell Reports identify and functionally validate novel neurodevelopmental disorder genes (e.g., CDKL1/2, RBBP5, GPKOW, ITSN1), establish dose sensitivity and haploinsufficiency as core pathogenic mechanisms, and introduce computationally resolved neural progenitor cell biomarkers that link developmental trajectories to human disease risk. Together, these studies improve diagnostic yield, refine genotype–phenotype relationships, and provide mechanistic anchors for rare and common neurological disorders. At the circuit and systems level, Duncan NRI work elucidates how defined neural circuits encode behavior, plasticity, and homeostasis, spanning feeding, memory, movement, sleep, and sensory processing (see recent publications). Importantly, several novel studies demonstrate how neuromodulation strategies (DBS, VNS) can restore circuit function across conditions such as epilepsy and dystonia, offering mechanistic insight into how circuit-based therapies achieve dual behavioral and physiological benefits. Taken together, these contributions have reshaped our understanding of how genetic variation, metabolic state, and circuit architecture interact to drive neurological disease while establishing new paradigms for early intervention, precision diagnosis, and mechanism-based therapy. This work bridges fundamental neuroscience and clinical impact, positioning it at the forefront of next-generation neurobiology and translational medicine.



Duncan Neurological Research Institute Faculty

New Centers of Excellence

The Duncan NRI has recently launched two new Centers of Excellence that strengthen its mission to advance fundamental discovery and translational impact in neuroscience. The Cerebellum Science Center, co-led by **Roy Sillitoe, Javier Medina,** and **Huda Zoghbi,** brings together complementary expertise in development, circuitry, computation, and disease to redefine the role of the cerebellum in motor control, cognition, and neuropsychiatric disorders. By integrating genetics, systems, and behavioral approaches across species, this center aims to uncover cerebellar mechanisms that can be leveraged for therapeutic innovation. In parallel, the Center for Learning and Memory, directed by **Jeff Magee,** focuses on the cellular and circuit principles that underlie learning, memory formation, and adaptive behavior. This center unites cutting-edge electrophysiology, computational modeling, and circuit-level analysis to elucidate how experience is encoded in neural networks and how these processes are disrupted in neurological and psychiatric disease. Together, these Centers of Excellence position the Duncan NRI as a leader in addressing some of the most fundamental questions in brain function while accelerating discovery toward clinical relevance.

Expanding Core Facilities

The Duncan NRI's new Advanced Robotics for Human Neural Engineered Systems and Studies (HARNESS) core facility will accelerate next-generation research in human brain models and neuroengineering. The HARNESS Core provides automated, scalable, and highly reproducible platforms for the generation, maintenance, and interrogation of complex human neural systems, including brain organoids and engineered neural tissues. By integrating robotics, microfabrication, high-density electrophysiology, confocal microscopy, and computational control, the core enables experiments that were previously infeasible due to technical complexity or scale. HARNESS is designed to support longitudinal, high-throughput studies of human neural development, plasticity, and disease, while minimizing variability and enhancing rigor. As a shared institutional resource, the core empowers investigators at the Duncan NRI and across the Texas Medical Center to pursue ambitious, data-rich studies that bridge basic neuroscience, bioengineering, and translational discovery.

Awards

Shinya Yamamoto, DVM. PhD
2025 Genetics Society of America Early Career Medal

Andrea Ballabio, MD
Beth Levine MD Prize in Autophagy Research

Ben Deneen, PhD
Stat Madness 2025 Winner

Hyun Kyoung Lee, PhD
Multiple Sclerosis Healthcare Champion Award

Ballabio-Beth Levine, MD
Prize in Autophagy Research

Recent Publications

- Goodman LD, Ralhan I, Li X, Lu S, Moulton MJ, Park YJ, Zhao P, Kanca O, Ghaderpour Taleghani ZS, Jacquemyn J, Shulman JM, Ando K, Sun K, Ioannou MS, Bellen H. Tau is required for glial lipid droplet formation and resistance to neuronal oxidative stress. Nat Neurosci. 2024 Oct;27(10):1918-1933.
- Dhindsa RS, Weido BA, Dhindsa JS, Shetty AJ, Sands CF, Petrovski S, Vitsios D, Zoghbi AW. Genome-wide prediction of dominant and recessive neurodevelopmental disorder-associated genes. Am J Hum Genet. 2025 Mar 6;112(3):693-708.
- Pugazenthi S, Patel B, English CW, Leidig WA, McGeehan KP, McCornack CR, Mok S, Anzaldua-Campos M, Nouri SH, Roberts K, Chatrath A, Khan A, Gadot R, Yano H, Klisch TJ, Harmanci AS, Patel AJ, Kim AH. Multiomic and clinical analysis of multiply recurrent meningiomas reveals risk factors, underlying biology, and insights into evolution. Sci Adv. 2024 Oct 25;10(43):eadn4419
- Lee D, Chen W, Kaku HN, Zhuo X, Chao ES, Soriano A, Kuncheria A, Flores S, Kim JH, Rivera A, Rigo F, Jafar-Nejad P, Beaudet AL, Caudill MS, Xue M. Antisense oligonucleotide therapy rescues disturbed brain rhythms and sleep in juvenile and adult mouse models of Angelman syndrome. Elife. 2023 Jan 3;12:e81892
- Bajikar SS, Zhou J, O'Hara R, Tirumala HP, Durham MA, Trostle AJ, Dias M, Shao Y, Chen H, Wang W, Yalamanchili HK, Wan YW, Banaszynski LA, Liu Z, Zoghbi HY. Acute MeCP2 loss in adult mice reveals transcriptional and chromatin changes that precede neurological dysfunction and inform pathogenesis. Neuron. 2025 Feb 5;113(3):380-395.e8.

Data Science Center

The Data Science Center, established in 2024 within the Jan and Dan Duncan Neurological Research Institute, comprises 9 faculty members supported by a team of ~30 postdoctoral researchers, quantitative analysts, AI/ML engineers, programmers, and graduate trainees. Organized around four core groups, Computational Biology, Biomedical Informatics, Biostatistics, and Generative AI/ML, the center provides comprehensive analytical support spanning multi-omics data science, clinical and biomedical informatics, machine learning and AI development, and computational tool engineering.

Our mission is to advance science and clinical care through rigorous, collaborative, and reproducible data science, guided by a vision to elevate pediatric research using state-of-the-art analytics and AI to accelerate breakthroughs from data to discovery to patient impact. The Center supports investigators across Texas Children's Hospital, Baylor College of Medicine, the Texas Medical Center, and partner institutions nationally and internationally, fostering interdisciplinary research and innovation.

Since Inception, we have facilitated...

> 100 Research Projects
> 26 Grants Applications
> 12 Active NIH and USDA Funded Projects
> 40 Publications

In leading journals including NEJM AI, PNAS, Science Advances, Nature Communications, Call Reports Methods, eLife, The American Journal of Human Genetics, Alzheimer's & Dementia, and FEBS Letters.

Signature platforms developed by the Center include AI-MARRVEL for genomic variant interpretation, PARMESAN for therapeutic target prediction, PolyA-miner for alternative polyadenylation analysis, and emerging AI foundation models and clinical decision-support systems. Through these collective efforts, the Data Science Center is expanding data-driven discovery, strengthening national collaborations, and accelerating translational impact across pediatric medicine and beyond.

Impact

- **AI-powered genetic diagnosis:** The Hub developed AI-MARRVEL, a machine-learning system trained on millions of variants to support rare-disease diagnosis. AIM outperformed existing tools across multiple patient cohorts and successfully prioritized new disease-gene candidates, demonstrating the power of AI to accelerate genomic interpretation.
- **Computational tools that accelerate therapeutic discovery:** The PARMESAN platform uses large-scale biomedical literature to predict drug–gene relationships, enabling rapid identification of therapeutic targets for Mendelian disorders and advancing precision-medicine research.
- **Advancing neurogenetics and molecular neuroscience:** Bioinformatic analyses from the Hub contributed to major findings on MeCP2 and Gdf11 regulation, strengthening insights into Rett syndrome and MECP2-related neurological disorders.
- **Innovations in RNA biology and transcriptomics:** PolyA-miner (Nucleic Acids Research), developed by Hub researchers, has become a benchmark tool for detecting alternative polyadenylation changes. It has enabled discoveries of RNA-processing defects linked to neurodevelopment, neurodegeneration, cancer, and metabolic disease.
- **Mechanistic insights into neurodegenerative disease:** Hub scientists helped reveal how MATR3 pathogenic variants disrupt cryptic-splicing repression in ALS (FEBS Letters, 2024). This work provides a molecular framework for RNA-targeted therapeutic strategies and advances understanding of variant-specific disease mechanisms.

The Biostatistics Team

Established in July 2023, the team consists of highly skilled PhD- and master's-level epidemiologists and biostatisticians. The team provides comprehensive support for interdisciplinary research, including statistical analysis, study design, grant development, publications, mentoring, and participation in Data Safety Monitoring Boards (DSMBs). Since its inception, the team has supported **255 projects** across **44 divisions and departments within the Texas Children's Hospital System and Baylor College of Medicine**, contributing to **60 peer-reviewed publications** and **71 abstracts, including 17 oral presentations.**

The team has also assisted with 31 grant applications, including 10 R01s, four R21s, one R34, one U54, one UM1, and two K23 awards. Dr. Duc Nguyen currently serves as co-investigator on two funded R01 grants.

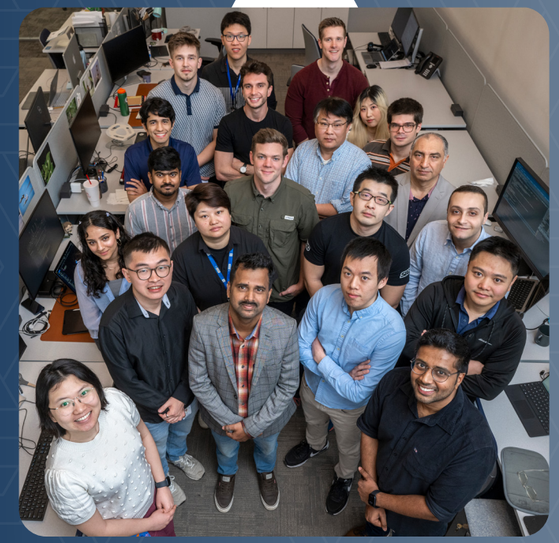
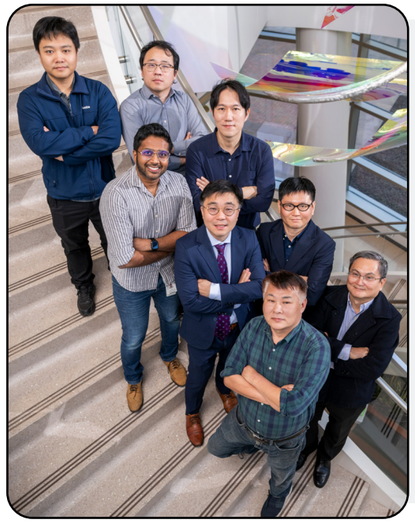


Photo of the Biostatistics Team



Faculty

Research Faculty:

Associate Professor

- Zhandong Liu, PhD

Assistant Professor

- Andrea Ballabio, MD
- Hu Chen, PhD
- Harikrishna Yalamanchili, PhD
- Duc Nguyen, PhD
- Sukru Aras, PhD
- Junseok Park, PhD
- Yi Zhong, PhD
- Gao Xiaotian, PhD

Awards and Recognitions

Harikrishna Yalamanchili, PhD was awarded the USDA/ ARS project: "Molecular Mechanisms in Diet-Related Chronic Disease".

Andrea Ballabio, MD was awarded Beth Levine, M.D. Prize in Autophagy Research from UT Southwestern.

Selected Publications

- Li X, Liu C, Li W, Qi G, Dai Y, Gu C, Sun Y, Zhou W, Ciliberto VC, Liang J, Kumar S U, Guan D, Hu Z, Zheng H, Liu Z, ChenH, Wan YW, Sun Z. Multiomics delineate growth factor network underlying exercise effects in an Alzheimer's mouse model. Alzheimers Dement. 2025 Mar;21(3):e70024.
- Wang L, Liu C, Gao Y, Zhang XH, Liu Z. Unravelling spatial gene associations with SEAGAL: a Python package for spatial transcriptomics data analysis and visualization. Bioinformatics. 2023 Jul 1;39(7):btad431.
- Neeley MB, Qi G, Wang G, Tang R, Mao D, Liu C, Pasupuleti S, Yuan B, Xia F, Liu P, Liu Z, Hu X. Survey and improvement strategies for gene prioritization with large language models. Bioinform Adv. 2025 Jun 24;5(1):vbaf148.
- Anvar Z, Chakchouk I, Sharif M, Mahadevan S, Nasiotis ET, Su L, Liu Z, Wan YW, Van den Veyver IB. Loss of the Maternal Effect Gene Nlrp2 Alters the Transcriptome of Ovulated Mouse Oocytes and Impacts Expression of Histone Demethylase KDM1B. Reprod Sci. 2023 Sep;30(9):2780-2793. Epub 2023 Mar 28.
- Li S, Zhao S, Sinson JC, Bajic A, Rosenfeld JA, Neeley MB, Pena M, Worley KC, Burrage LC, Weisz-Hubshman M, Ketkar S, Craigen WJ, Clark GD, Lalani S, Bacino CA, Machol K, Chao HT, Potocki L, Emrick L, Sheppard J, Nguyen MTT, Khoramnia A, Hernandez PP, Nagamani SC, Liu Z; Undiagnosed Diseases Network; Eng CM, Lee B, Liu P. The clinical utility and diagnostic implementation of human subject cell transdifferentiation followed by RNA sequencing. Am J Hum Genet. 2024 May 2;111(5):841-862. Epub 2024 Apr 8.

PEDSnet + PCORnet

Accelerating Collaborative Research to Improve Child Health

In 2022, Texas Children's Hospital joined **PEDSnet**, a national consortium of leading pediatric health systems working together to conduct research that improves the health of children. PEDSnet includes data from inpatient, emergency, specialty outpatient, and primary care encounters and represents more than 15 million children with at least one encounter across 13 health systems. Joining this network marked an important milestone for Baylor College of Medicine and Texas Children's Hospital, expanding our ability to conduct large-scale, collaborative research that reflects real-world pediatric care.

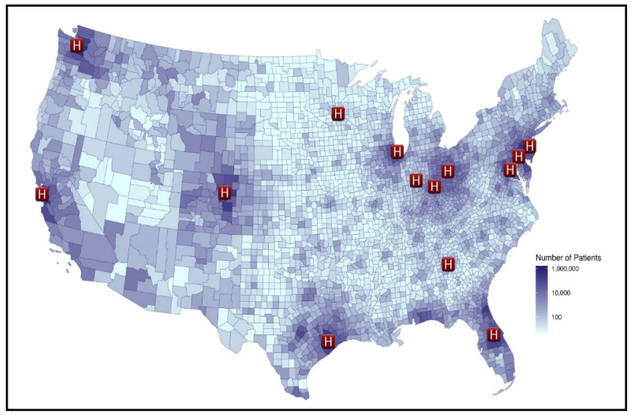


Figure 1. Geographic distribution of patients

A central strength of PEDSnet is its shared infrastructure, which allows investigators across sites to work from a unified foundation. The use of the OMOP common data model, standardized data use agreements, and a reliable IRB protocol makes it faster and more efficient to launch and complete multicenter studies. These shared resources help reduce administrative hurdles, support data consistency, and allow research teams to focus on generating evidence that improves clinical care.

In 2024, our reach expanded when Texas Children's Hospital joined **PCORnet**, a national patient-centered research network that brings together data from eight collaborating networks and more than 40 million children and adults with at least one encounter. Participation in PCORnet enables our investigators to contribute pediatric expertise to broader research initiatives and participate in studies that address health questions at a national scale.

Our involvement with these networks is already catalyzing new opportunities. Researchers from six divisions have engaged in PEDSnet or PCORnet studies (see Figure 1), and fifty-five studies have leveraged Texas Children's Hospital data to advance child health. These efforts have helped secure more than $1.7 million in research and infrastructure funding, reflecting strong institutional momentum and growing interdisciplinary collaboration.



Dr. Michelle Lopez, Associate Professor in the Division of Hospital Medicine, became the **first BCM/TCH PEDSnet Scholar, a two-year national program dedicated to developing leaders in pediatric learning health systems.** Scholars receive mentorship, immersive network experience, and the opportunity to lead large multi-site studies.

PEDSnet/PCORnet Research Activity Occurring at TCH/BCM

- Computational Phenotype of Acute and Long-term Kidney Disease in Children with Septic Shock. Site PI: Julie McManemy (Emergency Medicine)
- Environmental Features of Pediatric Onset MS. Site PI: Ben Choi (Emergency Medicine)
- PCORnet Query Pilot Tests. Site PI: Ben Choi (Emergency Medicine)
- The COVID-19 Diabetes Assessment Study. Site PI: Fida Bacha (Nutrition)
- Expanding Demographic Representation of PCORnet, Site PI: Beth Van Horne (Public Health)
- PEDSnet: Advancing Child/Family-Centered Outcomes Research in PCORnet. Site PI: Beth Van Horne (Public Health)
- PCORI Science of Engagement: Developing a multi-dimensional measure of adolescent engagement in research. Site PI: Katie Budulfson (Public Health)
- Personalizing Outcomes of Nephrolithiasis in Youth (PONY) P20 Center. Site PI: Nicolette Janzen (Urology)
- USDHub: Urologic community resource network. Site PI: Jacob Smith (Urology)
- P50 Nephrology Center of Excellence, Biopsy Registry. Site PI: Michael Braun and Jonathan Chawla (Nephrology)
- PCEN: Impact of social drivers of health on pediatric kidney transplant outcomes. Site PI: Layet Tal (Nephrology)
- P50 Nephrology Center of Excellence, Clinical Insights. Site PI: Layet Tal (Nephrology)
- Comparative effectiveness of treatments for recurrent focal segmental glomerulosclerosis in pediatric kidney transplantation. Site PI: Layet Tal (Nephrology)
- PKDnet: ARPKD Learning Network. Site PIs: Layet Tal, Michael Braun, Rossana Malatesta Muncher (Nephrology)
- Biologic Abatement and Capturing Kid's Outcomes and Flare Frequency in Juvenile Spondyloarthritis (BACK-OFF JSpA). Site PI: Eyal Muscal (Rheumatology)

Family and Youth Advisory Councils

Family and Youth Advisory Councils are central to PEDSnet and PCORnet, ensuring that research questions, study design, and dissemination are grounded in the lived experiences of patients and families. Through the leadership and insight of family advisors like **Ed Woff** and **Lisa Traleaven**, these councils strengthen patient-centered research and help translate data into meaningful, real-world impact for children and families.

Parent Partner - Picture from left to right:
Ed Wolff and Lia Traleaven EdD, LPC



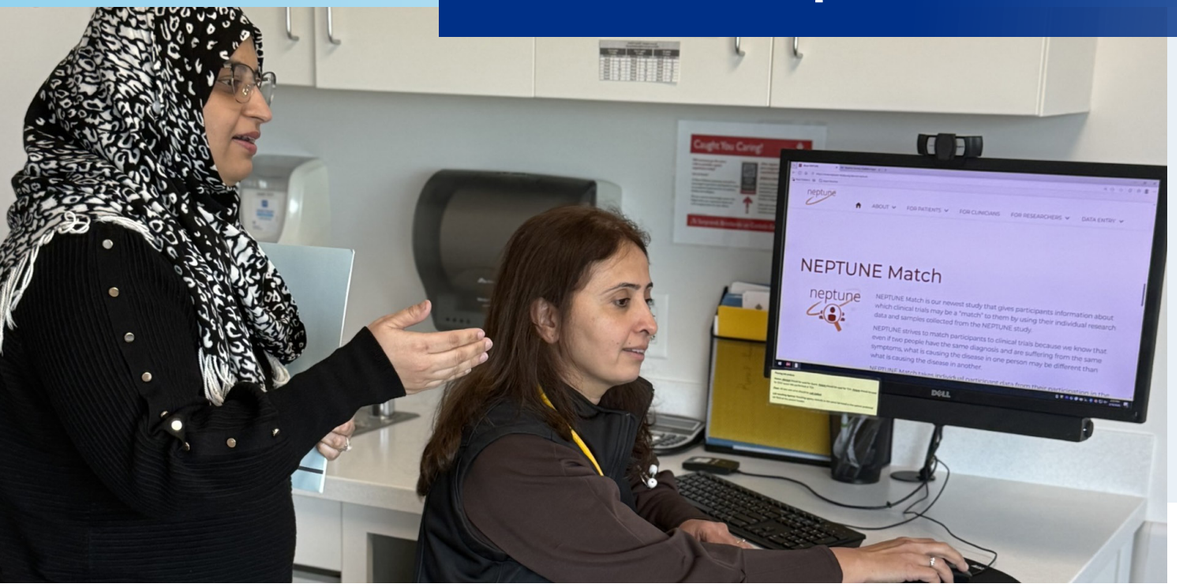


Community Research and Impact

Research conducted by members of the Department of Pediatrics extends far beyond the walls of Baylor College of Medicine and Texas Children's Hospital in the Texas Medical Center. Our work is deeply embedded in the communities we serve, spanning settings from our West Campus hospital to homes, schools, and community organizations across the region. The projects highlighted in this section represent just a glimpse of the many innovative, community-engaged efforts underway to improve child health and family well-being.

Community Research and Impact

West Campus



*Introducing **NEPTUNE***

NEPTUNE is a collaborative, multicenter clinical and translational research study supported by the **National Institute of Diabetes and Digestive and Kidney Diseases (NIDDK)** that focuses on patients with nephrotic syndrome. The overarching goal of the study is to advance precision medicine for nephrotic syndrome. Blood and urine samples are collected at the time of a new diagnosis, and kidney biopsy tissue is analyzed to study underlying molecular pathways. These molecular findings are then linked to clinical outcomes and used to help match patients to relevant, available clinical trials.

"We have identified patients who fulfill the inclusion criteria at the West Campus location and successfully recruited them to the NEPTUNE cohorts. Being a community campus, it sees a sizeable number of new nephrotic admissions per year. The availability of research support at this location ensures we can prescreen as many eligible patients as possible, which we would have missed otherwise. Many of the patients express gratitude that they do not have to travel far for research purposes, and this increases enrollment and retention."

- Shweta Shah, M.D.

*Introducing **FAAN-C***

The FAAN-C (Follow Up Automatically vs. As Needed Comparison) trial, launched in 2022, has successfully completed enrollment at Texas Children's Hospital West and Medical Center campuses as of March.

Funded by the Pediatric-Centered Outcomes Research Institute (PCORI), this multicenter, randomized study spans both tertiary and community hospitals nationwide. The trial is evaluating whether automatic or as-needed pediatrician follow-up after hospitalization leads to better outcomes for children with common conditions such as urinary tract infections, skin and soft tissue infections, pneumonia, and acute gastroenteritis. The primary outcome focuses on hospital readmissions within 14 days of discharge, while secondary measures include parent-reported outcomes such as anxiety, confidence in care, satisfaction, and impacts on missed school or work.

The research team aims to generate evidence that will help pediatric hospitalists provide clearer, more effective guidance to families about post-discharge follow-up care.

Importantly, the inclusion of Texas Children's Hospital West Campus strengthens the study by ensuring representation from both community and tertiary care settings. Differences in patient demographics, socioeconomic factors, and disease patterns highlight the need for inclusive research that reflects real-world populations and supports more informed, equitable pediatric care.



Community Research and Impact

Woodlands

HIKO-STEC: Community Sites Driving National Pediatric Research

The Hyperhydration to Improve Kidney Outcomes in Children with Shiga toxin–producing E. coli (HIKO STEC) study highlights the critical role of community-based sites in advancing pediatric research. Since local enrollment began in 2023, Texas Children's Hospital–The Woodlands has emerged as one of the leading enrolling sites, with approximately 80% of eligible patients screened across community campuses and over half of enrollments occurring at the Woodlands location.

This large, multinational, collaborative trial, conducted through the **Pediatric Emergency Care Applied Research Network (PECARN)**, spans 26 emergency departments across the United States and Canada and focuses on improving outcomes for children at risk of hemolytic uremic syndrome and acute kidney injury. The study compares early aggressive intravenous hydration with conservative management, delivered through coordinated care across emergency medicine, hospital medicine, nephrology, and critical care teams.

The success of enrollment at community sites underscores their unique ability to capture patients early in the disease course. The Woodlands campus, serving a broad suburban and semi-rural population, may encounter higher rates of STEC exposure, allowing for timely identification and enrollment of patients who might otherwise not access tertiary care centers.

This work demonstrates how community campuses expand access to clinical research while serving as essential contributors to large-scale, practice-changing studies.



Texas Children's Hospital
Woodlands Outpatient Building

Community Research and Impact

Neuroscience, Excellence and Unity (NEU)

Neuroscience, Excellence, and Unity (NEU) is a multidisciplinary initiative spanning Baylor College of Medicine, Texas Children's Hospital, and the Neurological Research Institute (NRI), committed to advancing equity in neuroscience through inclusive education, community engagement, collaborative research, and improvements in clinical care access and outcomes.

Since its founding in 2023, NEU has grown to a network of **over 250 members and has led 13 Grand Rounds, 9 educational workshops, and 3 multicultural events** while securing **multiple external grants**—including awards from the AAP Section on Early Career Physicians (SOECP), Section on Pediatric Trainees (SOPT), and the Community Access to Child Health (CATCH) program.

In May 2025, NEU hosted its **second annual Brain Fair** at the NRI, welcoming more than 50 underrepresented eighth-grade students from Yes Prep Northwest Middle School for a day of immersive learning that featured 11 interactive exhibits and 4 lab tours. Supported by approximately 60 volunteers, the fair received overwhelmingly positive feedback, with post-event surveys showing that 92% of students expressed interest in neuroscience-related careers.





A word from the event:

"These kiddos have not stopped talking about the different things they did this morning... thank you so much for giving them this experience. Y'all definitely opened their eyes more to the field of neuroscience, and I think that some will want to pursue something in the field of science now."

From Mr. Tim Floyd
Chaperoning science teacher from Yes Prep Northwest Middle School at the 2025 NEU Brain Fair

The upREACH Study

The **upREACH Study team**, led by **Dr. Cary Cain**, used an intervention mapping approach to design and test a new, brief home visitation program intended to meet the broad needs of Texas prenatal and early postpartum families, while also accounting for workforce capacity, funding considerations, and the diversity of resources and cultures across the state. upREACH is a brief home visitation program designed to prepare families to bring their newborn home to a safe, stable, and nurturing environment and to equip them with the tools, resources, and knowledge needed to maintain that environment. Through the program, families receive a minimum of two home visits during pregnancy and/or the postpartum period from a home visitor (a community health worker or similarly qualified personnel). The home visitor assesses each family's strengths and needs in order to provide tailored support and brief education focused on promoting maternal health and self-care, infant health and safety, and connection to and awareness of community resources (community orientation). The team is currently analyzing the results of a parallel randomized controlled trial evaluating upREACH in comparison to standard care at community-based obstetric clinics.

Meaning for the work

Across all stories, the upREACH program demonstrates how personalized, compassionate home-visiting support helps pregnant and parenting families overcome significant challenges and build stability. Home visitors provide practical resources—such as safe sleep spaces, car seats, blood pressure monitors, baby supplies, and transportation support—while also connecting parents to medical care, mental health services, insurance coverage, dental care, and other community programs.

Families describe feeling understood, encouraged, and empowered. Through ongoing education and emotional support, parents gain confidence, improve their health behaviors, adopt safer practices, and become stronger advocates for themselves and their children. The feedback shows that upREACH does more than meet immediate needs—it strengthens family resilience, promotes maternal and infant health, and creates lasting positive change in the lives of diverse and often high-need families.

Quote from Participants:
What I liked most about the program...

"What I liked most about the program was the check-ins with [my home visitor] She made me feel seen and supported. I appreciated every time she asked me if I needed anything to help me with my pregnancy or even postpartum. She was very kind, helpful, and supportive."

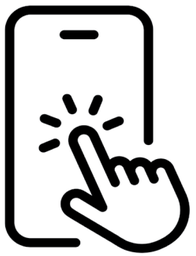
"I enjoyed our meetings and having someone to talk to. Someone who could guide me and provide personal knowledge and experiences with pregnancy and postpartum. Without [my home visitor] I don't know what I would have done."

Community Research and Impact

Introducing the NICU Village App: Supporting NICU Families' Mental Health from Hospital to Home

The **NICU Village** application was developed to promote equitable access to mental health screening tools and resources among parents of infants in the neonatal intensive care unit (NICU). By providing an anonymous, smartphone-based platform, the app aims to reduce stigma associated with mental health concerns. Importantly, it addresses a critical gap in care by allowing caregivers to monitor fluctuations in their mental health symptoms and obtain support privately, without the need to disclose sensitive information to clinical staff. This functionality is particularly valuable for caregivers who encounter logistical or socioeconomic barriers that limit their ability to be physically present in the NICU or to meet with social work staff, as well as for those who require access to resources outside typical clinical hours.

The app is available to all caregivers with an infant admitted to the Texas Children's Hospital (TCH) main-campus NICU. Families can access it while in the NICU and continue using it after discharge, creating a bridge between hospital-based care and the transition home. This continuity allows caregivers to track their mental health symptoms over time and connect with resources during a period when formal NICU support systems may no longer be immediately available. Users are able to complete validated screening measures for perinatal mental health conditions and directly access both community-based and hospital-based resources. From April 2022 to April 2024, more than 400 caregivers have downloaded and used the app. Approximately 55% screened positive for elevated depressive symptoms, and roughly 40% screened positive for elevated anxiety symptoms. Engagement has been particularly high among caregivers with historically limited access to mental health services compared with caregivers of higher socioeconomic status.



Future directions include expanding the app's reach and content, as well as conducting additional research to evaluate patterns of caregiver engagement and mental health resource utilization during both the NICU stay and the post-discharge period.





Parent and Youth Voices Shaping Research and Practice



Fida Bacha, MD
Nutrition



Ashley Butler, PhD
Psychology

Study Parent and Youth Advisory Board

Dr. Fida Bacha and **Dr. Ashley Butler** convened an advisory board of parents and youth who have, or are at risk for developing, youth-onset type 2 diabetes and other cardiometabolic diseases as part of our stakeholder engagement efforts for planning and conducting our ongoing research study.

> **"Our board members have played a meaningful role in shaping our research processes. In particular, board members have helped identify key barriers to participation, which has informed our recruitment approach; they also gave input that helped us refine the language used in advertisements and improved our community outreach efforts."**
>
> **- Fida Bacha, MD**

Healthcare Transition Caregiver Advisory Board

Division of Adolescent Medicine and Sports Medicine

The idea for what eventually became **IPACT—the Intervention to Promote Autonomy and Competence in Transition-Age Youth**—began taking shape during a meeting of the Healthcare Transition Caregiver Advisory Board. We were discussing the challenges of families as their adolescents move toward adulthood when one caregiver, the mother of an 18-year-old patient, shared a moment that had caught her completely off guard: the day she logged into MyChart and discovered she no longer had access to her daughter's medical information. Two parents of 17-year-olds likewise voiced surprise that they would lose access to MyChart and further did not think their children were ready to assume legal responsibility for medical decisions at age 18. These comments and others became the catalyst for creating IPACT.

IPACT is structured as a three-session caregiver–adolescent dyad intervention and a two-session provider intervention focused on strengthening communication skills, promoting self-management and healthcare autonomy through independent meetings with providers, preparing adolescents for changes in medical consent at age 18, and facilitating effective use of MyChart. Supported by extramural funding, IPACT was implemented across four clinical services and was found to be efficacious.

Research across the World

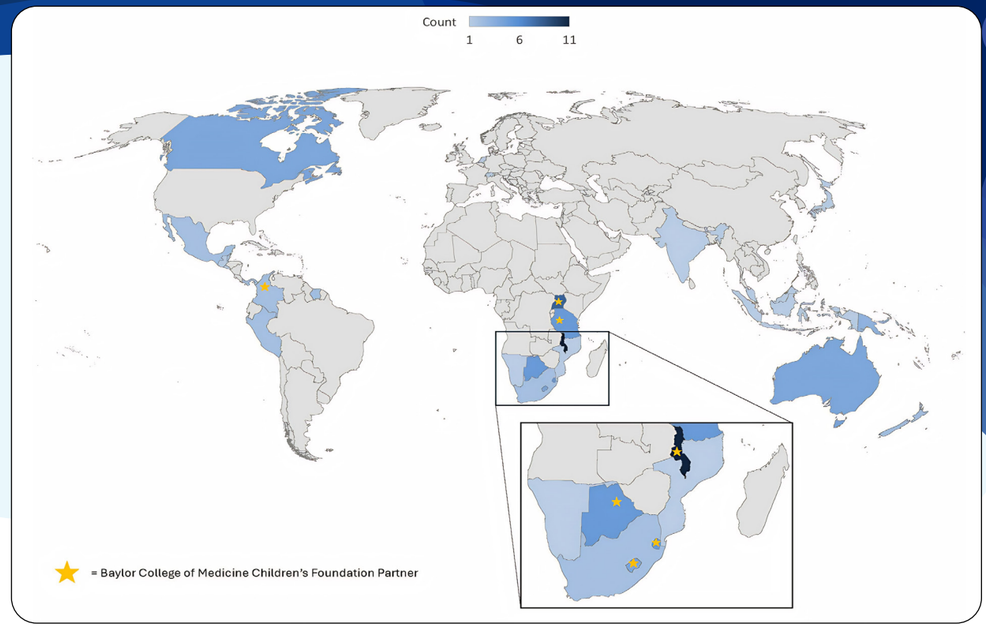
Research Across the World: Global Health Initiatives

Introduction

The Department of Pediatrics has a long and rich history of global engagement, born of a desire to ensure that global perspectives drive innovation in pediatric health research and benefit all children equitably. We are proud of our tripartite spirit, which has contributed to a robust platform built upon excellence in research, training, and clinical care.

Within the Department of Pediatrics, eighty faculty members collaborate on research implemented outside the United States in over two dozen countries spanning five continents. Currently, 40 Global Research faculty serve as principal investigators on 53 unique grants with a foreign component. These grants are collectively associated with funding of $53,000,000 in total costs. Global Research principal investigators hail from 15 unique pediatric divisions, illustrating the interwoven nature of global engagement within our Department. Sponsorship is provided by a broad spectrum of funders, including the U.S. National Institutes of Health (NIH) (inclusive of the Fogarty International Center), the U.S. Centers for Disease Control and Prevention (CDC), research foundations, and generous individual donors.

The Department of Pediatrics faculty and staff are privileged to collaborate with passionate partners, dedicated government representatives, and enthusiastic community representatives, patients, and families across 30 countries, including most closely with Baylor College of Medicine Children's Foundation Partners in Argentina, Botswana, Colombia, Eswatini, Lesotho, Malawi, Romania, Tanzania, and Uganda. Without these important longstanding partnerships, the projects highlighted in this report would not be possible.



Global Research Density Map – Number of DOP Global Faculty with partnerships or projects per country.

In our interconnected world, Baylor College of Medicine Department of Pediatrics' global research is advancing the health and well-being of communities worldwide, including among our neighbors here in the United States. Understanding, preventing, and treating disease globally translates to important protection for communities locally. Through collaboration, training, and sharing of lessons-learned and best practices, our global research partnerships translate research advances into improved health in our local communities as spotlighted in this report.

In this section of the annual research report, we are pleased to share highlights from our Global Researchers: profiling the Division of Global Health that serves as the fulcrum for global initiatives, spotlighting signature programs across the Department, and highlighting key research achievements of our colleagues working within the Baylor College of Medicine Children's Foundations in sub-Saharan Africa. If our work inspires you, please reach out to **Dr. Anna Mandalakas,** Professor of Pediatrics, Global Health Division Chief, and Associate Vice Chair of Global Research in the Department of Pediatrics to engage with us and learn more about our vision **(anna.mandalakas@bcm.edu).**

Research Across the World

Global Health Initiatives

Tackling the Global Burden of Anemia with a Novel Human Hookworm Vaccine

Anemia remains a major global health challenge especially among women and children. Much of the anemia can be attributed to parasite infections such as those caused by hookworm and malaria. Hookworm drives ~500M global infections, with highest burden in sub-Saharan Africa where there is also co-endemicity with malaria, which increases the maternal and child anemia health risk (see figure).

The **Texas Children's Hospital Center for Vaccine Development (CVD)** in the Department of Pediatrics for more than two decades has been advancing a vaccine against human hookworm. One of the promising hookworm vaccine candidates developed by CVD was recently evaluated to establish efficacy in a proof-of-concept Phase 2 clinical trial using a controlled human hookworm infection (CHHI) model developed by collaborators at the George Washington University. The great news is that the vaccine showed almost 100% protection. The less encouraging news is that global health agencies, vaccine producers, and country officials are reluctant to add a novel hookworm vaccine to an already complex vaccination schedule.

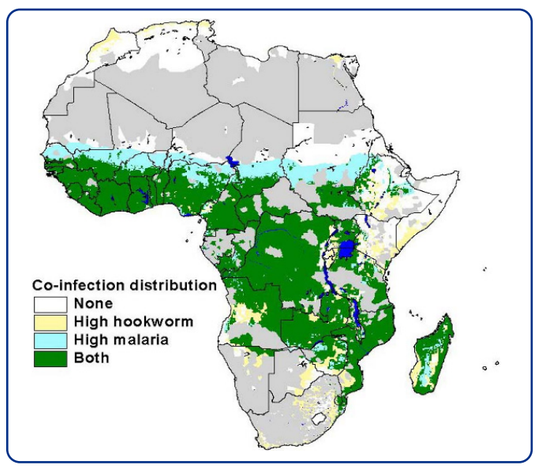


Figure: Distribution of Hookworm and Malaria Coinfection

Note. Adapted from Hotez PJ, Molyneux DH (2008) Tropical Anemia: One of Africa's Great Killers and a Rationale for Linking Malaria and Neglected Tropical Disease Control to Achieve a Common Goal. PLoS Negl Trop Dis 2(7): e270. https://doi.org/10.1371/journal.pntd.0000270

What is the solution, you may ask?

Dr. Maria Elena Bottazzi, co-director of the CVD presented a new idea of how to tackle advancing new and novel parasitic vaccines during a session at the 2025 American Society of Tropical Medicine and Hygiene (ASTMH) Annual Meeting in Toronto. The idea stems from repositioning the hookworm vaccine as an anti-anemia vaccine by combining it with one of the already licensed malaria vaccines. This interesting case study was featured as one of the ASTMH annual meeting blogs.

Read more about this trailblazing new concept at:
https://iamtropmed.org/blog/2025/11/12/making-the-case-for-a-combination-hookworm-malaria-vaccine.

TB GAPS Study Project Highlights

The TB GAPS project is a six-year, $5+ million initiative funded by the U.S. Centers for Disease Control and Prevention (CDC) and implemented across five CDC-priority countries—Eswatini, Lesotho, Malawi, Tanzania, and Uganda—in collaboration with Baylor College of Medicine and partner institutions. The project aims to strengthen the TB/HIV care cascade by evaluating innovative TB screening approaches, comparing patient-centered TB preventive therapy regimens, assessing the cost-effectiveness of these strategies, and expanding sustainable capacity-building efforts.

By the end of grant year 5, the project had achieved several major milestones, including enrollment of more than 5,000 participants in the screening arm and nearly 850 participants in the TB prevention arm. The team also completed qualitative interviews to identify implementation facilitators and barriers from the perspectives of healthcare workers and study participants, advanced cost-effectiveness analyses, expanded communications and capacity-building activities through the iECHOHub, and secured acceptance of two abstracts for oral presentation at The Union World Conference on Lung Health 2025. Additional accomplishments included maintaining laboratory quality assurance, developing an Excel-based biobank management tool, and providing ongoing data management support across study sites. In its final year, TB GAPS will complete participant recruitment, finalize follow-up activities and qualitative assessments, complete cost-effectiveness modeling, strengthen biorepository and laboratory systems, and continue collaborating with global partners to support rigorous analysis and dissemination of findings.

To learn more about this impactful multinational research project, please visit our website: **https://www.texaschildrens.org/TBGAPS**



Image on the right:
TB GAPS team conducting lab training in Tanzania

Research Across the World

Global Health Initiatives

Tackling Tuberculosis with a Global/Local Approach

Dr. Tara Ness, an Assistant Professor in the Global Tuberculosis Program of the Department of Pediatrics, is translating lessons learned from her team's research abroad to better care for patients in the United States.

Despite being preventable and curable, tuberculosis (TB) is the leading cause of death from an infectious agent, killing 1.3 million people each year with another 9 million people affected worldwide. In the United States, TB cases increased by 8% in 2023 to over 10,000 reported cases in 2024. The gold standard for TB diagnosis, growth of Mycobacterium tuberculosis from sputum, can take weeks to months. Further, children often struggle to produce adequate sputum samples for an accurate diagnosis, which can delay optimal care and cause more burdens for the family.

Innovative rapid diagnostic tools that perform well on multiple sample types, especially ones that are inclusive of children, are desperately needed. Through a distinct collaboration between Baylor College of Medicine and University of Alaska (Anchorage), the FreezeTB assay and software were developed to accurately diagnose tuberculosis and rapidly identify drug resistance. The Fast, Reliable, Economical Evaluation Tool to Zap Endemic TB (FreezeTB) is an innovative test that can be applied to direct sputum or stool samples, collected on the first day of a patient being seen in clinic and provide a result within 1-2 working days. FreezeTB is portable, low-cost, and does not require internet access, making it especially relevant for regions like Alaska where it is initially being pioneered.



Dr. Tara Ness's team in Alaska developing our targeted next generation sequencing assay (FreezeTB) that can identify drug resistance from sputum or stool in less than one working day



Dr. Tara Ness, MD, MPH

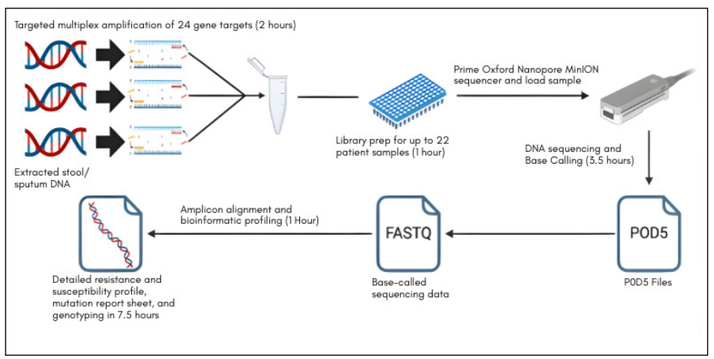


Image to the left: The **FreezeTB assay** is continuing to expand its research applications in the United States and abroad; including in Moldova, Ukraine, and Eswatini. The goal of the project is to ensure these accurate, rapid, low-cost, portable diagnostic tools are available to all researchers and clinicians in the world- promoting a shared vision of a world without TB.

TB Free PNG

The Baylor College of Medicine Department of Pediatrics Division of Global Health has been a close and collaborative partner implementing a Stop TB Partnership/TB Reach-funded project, TB Free PNG, since June 2023. TB Free PNG integrated TB care into maternal and newborn health services at Port Moresby General Hospital (PMGH) in Papua New Guinea, where the maternal and newborn division cares for over 15,000 deliveries annually. TB is the leading infectious cause of maternal mortality at PMGH, with historical data showing approximately 50 pregnant women and 30 infants under 6 months old diagnosed with TB annually, and an estimated two of three maternal TB cases missed.

Over the last 2 years, more than 30,000 women and children were screened for tuberculosis. Of these, 21,508 were mothers in antenatal care or postpartum care, resulting in 252 women diagnosed and starting treatment, an astonishing 1.2% of the screened population. This represents a 3-fold increase in case detection compared to routine passive case finding. This project demonstrated that peripartum women are at increased risk of TB and that integration of TB services within maternal-child healthcare services is necessary, appreciated, and impactful. The project used digital chest x-rays with artificial intelligence reading to screen for TB in this perinatal population, the first of its kind in PNG. The chest x-ray center established by TB Free PNG not only provides x-ray access to mothers who need it but also for children and families living with HIV.

Moreover, the project helped introduce critical educational lectures regarding maternal tuberculosis into the OBGYN medical curriculum of the University of Papua New Guinea. As a result of this project's success, TB Free PNG has received additional critical donor funding to sustain this work into the future, providing a foundation for clinical care and research embedded in local institutions.

The project was implemented by the University of Papua New Guinea Health Education & Clinical Services (HECS) Programme, the principal grant recipient; the PNG National TB Program; the Papua New Guinea Obstetrics and Gynaecology Society; Port Moresby General Hospital; the Paediatric Society of Papua New Guinea; the National Capital District Provincial Health Authority; and World Vision International-PNG with the integral support of Baylor College of Medicine Department of Pediatrics Faculty, **Dr. Henry Welch,** who has been based in PNG for over 12 years; and Postdoctoral Associate **Dr. Anca Vasiliu.**



TB Free PNG team at a hospital site

Research Across the World

Global Health Initiatives

Maternal Immunization as a Global Priority

Pregnant and lactating women remain underrepresented in vaccine research and are often left unprotected through vaccination, despite facing elevated risks from infectious diseases and the potential benefits of maternal immunization for both mother and infant.

Several recent events have underscored the risks of infections during pregnancy, including the 2009 H1N1 influenza pandemic, the emergence of Zika virus resulting in congenital infection, and the COVID-19 pandemic, among others. In response, a broad coalition of stakeholders—including global normative bodies, regulatory agencies, research funders, clinicians, researchers, community representatives, and pregnant individuals—has called for a shift from exclusion toward the ethical and proactive inclusion of pregnant women in biomedical research. This shift reflects the growing recognition that exclusion does not protect pregnant women, but rather denies them access to safe and effective interventions. This ethical imperative has been emphasized in the CIOMS/WHO International Ethical Guidelines (2016), the WHO R&D Blueprint (2018), and the recommendations of the PREVENT Working Group.

This momentum culminated in a landmark Call to Action at the 77th World Health Assembly (WHA77, May 2024), where Member States endorsed the WHO publication Promoting Equity for Pregnant and Lactating Women in Access to Medicines and Other Health Technologies. This resolution commits to ensuring that pregnant and lactating women are included in the development, evaluation, and equitable delivery of medicines and vaccines, including during public health emergencies.

Over the past three decades, substantial efforts have focused on evaluating the impact of infectious diseases during pregnancy on both mothers and infants; assessing vaccines in pregnant and lactating women; examining vaccine safety in pregnancy through clinical trials and post-authorization studies; and advancing global advocacy for the inclusion of pregnant and lactating women in research.

In her role as lead of the Special Populations Workgroup for the Coalition for Epidemic Preparedness Innovations (CEPI) Safety Platform for Emergency Vaccines (SPEAC), and as leader of the Brighton Collaboration project, Flor M. Muñoz has led multiple initiatives to support the inclusion of pregnant women and improve their access to vaccines targeting emerging CEPI priority pathogens.

These efforts include a systematic review of the burden of Lassa fever and chikungunya in pregnant women and children, along with the development of a Living Systematic Review (LSR) platform to assess vaccine safety for these diseases and for Mpox in these populations. The LSR builds on work conducted during the SARS-CoV-2 pandemic to evaluate the safety of COVID-19 vaccines in pregnancy and has been further expanded to assess, in near real time, the efficacy of maternal vaccination against respiratory syncytial virus (RSV) (Figures 1 and 2).

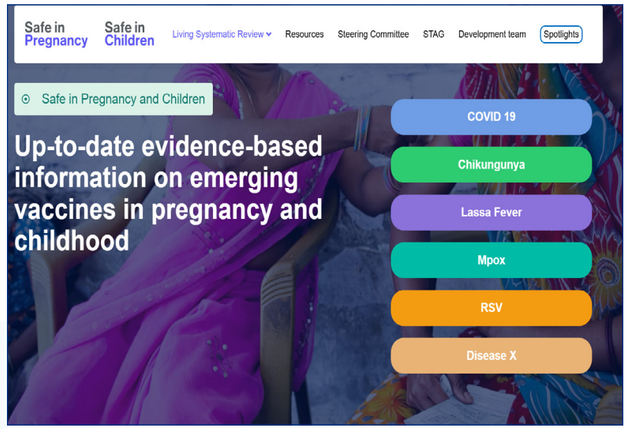


Figure 1: Safe in Pregnancy front page website. Sourced from safeinpregnancy.org

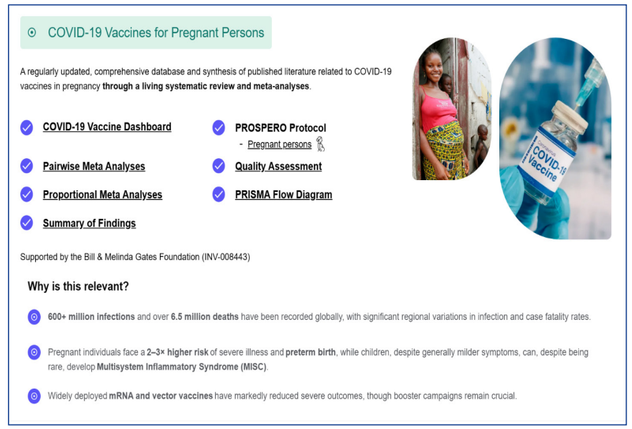


Figure 2: Safe in Pregnancy COVID page. Sourced from safeinpregnancy.org

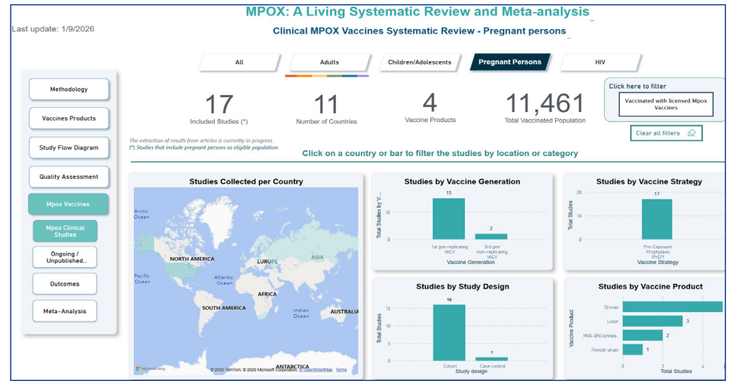


Figure 3: MPOX living systematic review and Meta-analysis. Sourced from safeinpregnancy.org

The LSR provides updates on the published literature every two weeks, visualization dashboards with summaries of studies in all relevant populations, and the ability to conduct meta-analyses of the safety, immunogenicity, efficacy, and effectiveness of these vaccines. This is particularly relevant in the context of outbreaks and emerging pathogen responses, such as Mpox (Figure 3). The tool has been instrumental in providing a standardized and reliable assessment of clinical trials and post-licensure studies in pregnant women and children, as well as other at-risk groups (e.g., immunocompromised individuals and older adults), while supporting vaccine guidance and implementation.

You can see our outputs and publications here:
https://www.safeinpregnancy.org

Research Across the World

Global Health Initiatives

Bridging Borders to Combat Global Health Threats through a One Health Lens

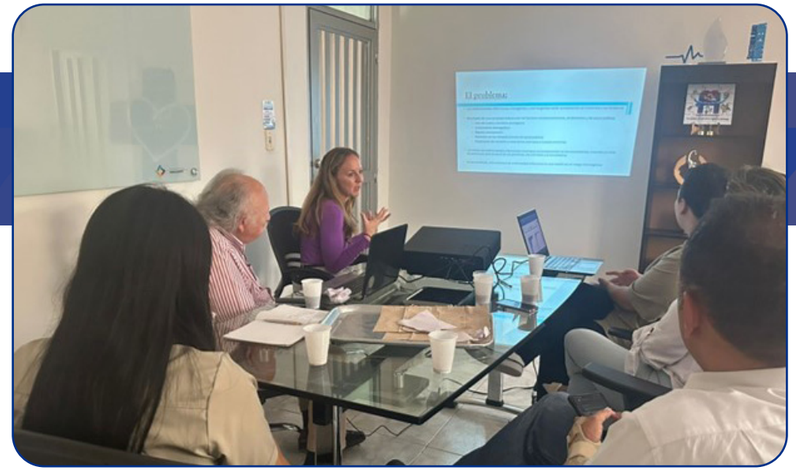
The future of global health isn't just about treating patients—it's about understanding the complex web that connects humans, animals, and our shared environment to prevent the emergence and re-emergence of diseases. The concept of "One Health," a multidisciplinary approach that provides infrastructure for sharing ideas across disciplines, is critical to developing creative solutions for complex health issues at the human-animal-ecosystem interface. To be at the forefront of One Health in the Americas, **Dr. Jill Weatherhead,** associate professor in the Division of Pediatric Tropical Medicine, recently spent 6 months working at Universidad del Rosario in Bogota, Colombia, to forge collaborations and craft the framework of an innovative One Health Center of Excellence.

Why Now?

Emerging and re-emerging infectious diseases are no longer distant threats; shifting geographic niches have led to surges of infectious diseases across the Americas. In 2023, the Americas saw record-breaking dengue fever cases and outbreaks of Oropouche virus, followed by the emergence of Yellow Fever in new regions in 2025. From Colombia to the U.S. Gulf Coast, the interplay of land use and ecological changes, population growth and rapid urbanization, as well as vector and animal reservoir adaptation to new environments, demands a unified defense across the Americas to prevent future surges of infectious diseases across the region.



Mountains in Bogota, Colombia



Dr. Jill Weatherhead collaborating at Universidad del Rosario, advancing global health work in Bogota, Colombia

Innovation in Action

This collaboration between Tropical Medicine and Universidad del Rosario has the objective of serving as a hub for innovation in One Health, breaking down the "silos" that traditionally separate scientific disciplines. The mission focuses on three transformative pillars:

- **Next-Gen Training:** Development of hyflex (hybrid and flexible) bilingual interactions focused on One Health concepts with opportunities for hands-on field epidemiology training that brings together learners from all disciplines.
- **Research & Mentorship:** Through monthly research incubators and an annual One Health Research Day, it is envisioned to provide a platform for scientific collaboration across disciplines and across institutions. Additionally, mentoring networks will support a diverse cadre of future leaders to develop sustainable, evidence-based One Health solutions for emerging and re-emerging health threats in the Americas.
- **Community engagement:** This program aspires to integrate local communities to ensure projects and interventions are tailored to real-world needs.

The One Health Center of Excellence is more than a project; it is our hope that the center provides a proof-of-concept for the entire American region. Anchored on open science across borders, we will build a proactive shield against the health challenges of tomorrow.

Research Across the World

Global Health Initiatives

BCM Pediatrics/Global Child Health Residency Program

The four-year **Pediatrics/Global Child Health Residency program**, co-led by **Drs. Heather Haq** and **Stephanie Marton**, integrates comprehensive pediatric training with immersive global health experiences, preparing residents to deliver high-quality care in diverse settings while advancing health equity. The program includes a longitudinal global health curriculum and is inclusive of three years of categorical pediatrics training in Houston with an additional global health year abroad, during which residents engage in clinical service, education, and scholarly work at one of the Baylor College of Medicine Children's Foundations partner sites. During intern year, each Global Child Health resident is paired with a dedicated global health mentor who provides longitudinal guidance and connections to research opportunities aligned with the resident's interests and career goals.

Residents receive formal instruction on ethical global health research practices during pre-service training, emphasizing principles of equitable partnerships, capacity strengthening, and alignment with local priorities. Training includes guidance on equitable authorship, collaborative protocol development, and strategies to ensure that scholarly work benefits partner institutions and communities. Before initiating any project, residents must obtain approval from the Executive Director of their host site and Houston-based leadership, and secure IRB clearance for all research activities. During their global health year, residents complete a scholarly project—spanning research, education, or advocacy—designed to address locally relevant priorities and strengthen sustainable collaborations. Residents also participate in the Global Health Network Meeting during their year abroad, fostering exposure to ongoing research initiatives within the network. This combination of structured mentorship, ethics-focused training, and oversight ensures that graduates are equipped to contribute meaningfully to global child health research and practice.



Baylor Foundation Uganda Clinic Manager **Dr. Jacqueline Balungi-Kanywa** presents poster on behalf of BCM Pediatrics/Global Child Health resident **Dr. Vimal Konduri** at the **Global Health Network Meeting in Johannesburg**, South Africa, November 2025

BCM Pediatric Emergency Medicine-Global Health Fellowship

The **Pediatric Emergency Medicine–Global Health (PEM-GH) fellowship program**, directed **by Dr. Nichole Davis,** is a four-year program during which fellows blend clinical, educational, and scholarly work at an international partner site. Founded by Dr. Heather Crouse, it was the first accredited pediatric global health fellowship in the U.S. Fellows receive structured training to prepare them to design, conduct, and disseminate meaningful global health research. Research preparation begins early in fellowship and includes formal mentorship in study design, qualitative and mixed-methods approaches, implementation science, and ethical conduct of research in resource-limited settings. Fellows receive guidance on IRB development (including international and multi-site protocols), data management, and dissemination strategies, with an emphasis on aligning scholarly work with local priorities and sustainable partnerships. Research projects are longitudinal and typically embedded within established global collaborations, allowing fellows to develop depth in a focused content area. Recent and ongoing scholarly work includes a qualitative study investigating the barriers and enablers to the implementation of the Pediatric Early Warning Score-Resource Limited, implementation of animated discharge instructions in both English & Spanish, qualitative analyses of healthcare worker experiences during pediatric public health emergencies, and curriculum development with outcomes-based evaluation. Fellows are supported in presenting their work at national and international conferences and in preparing manuscripts for peer-reviewed publication, ensuring that global health research training is both rigorous and impactful. Since its inception in 2005, PEM-GH fellows have delivered 57 national and international academic presentations and generated 49 distinct manuscripts.

Global Health Research Opportunities for Baylor College of Medicine Pediatric Subspecialty Fellows



Fellows from across the many Department of Pediatrics subspecialties are supported to implement global health research in collaboration with our Baylor Children's Foundation partners. Fellows are linked with appropriate site mentors and adhere to principles of ethical and equitable research, including alignment with local priorities, capacity strengthening, and equitable authorship. Recent examples include the work of Dr. Rebecca Mercedes, a Pediatric Gastroenterology fellow, who conducted a cross-network, multi-site study of hepatitis B prevalence among children living with HIV enrolled in care across six centers in sub-Saharan Africa. These collaborations allow subspecialty fellows to contribute to impactful research to advance pediatric health globally.

Baylor Foundation Uganda physician **Dr. George P. Akabwai**, presented on behalf of BCM Pediatric Gastroenterology fellow **Dr. Rebecca Mercedes** at the Conference on Liver Disease in Africa (COLDA). The oral abstract was entitled **"Screening Rates and Prevalence of Hepatitis B Among Children and Adults Living with HIV in Africa: A multinational study conducted across 6 Sub-Saharan African countries."**

Research Across the World

Global Health Initiatives

Transforming Sickle Cell Disease Care in Africa

For decades, sickle cell disease (SCD) has devastated sub-Saharan Africa, home to 85% of global cases. Most children remain undiagnosed and untreated, with over half dying before age five, despite the existence of proven, life-saving interventions.

The solution is already known. In the U.S., three interventions reduced childhood SCD deaths by 80%: universal infant screening, infection prevention through vaccinations and penicillin, and hydroxyurea therapy. The challenge has been implementing these interventions where they're needed most.

To help bridge this gap...

Texas Children's Global HOPE (Hematology-Oncology-Pediatric-Excellence) Program, launched in 2017, is transforming this landscape. Committed to ensuring healthier futures for children worldwide through leadership in patient care, education, and research, Global HOPE has trained over 36 pediatric hematologist-oncologists now leading clinical programs across more than 8 countries in Africa. These specialists are revolutionizing care for pediatric cancer patients while simultaneously implementing critical SCD interventions in urban African hospitals.

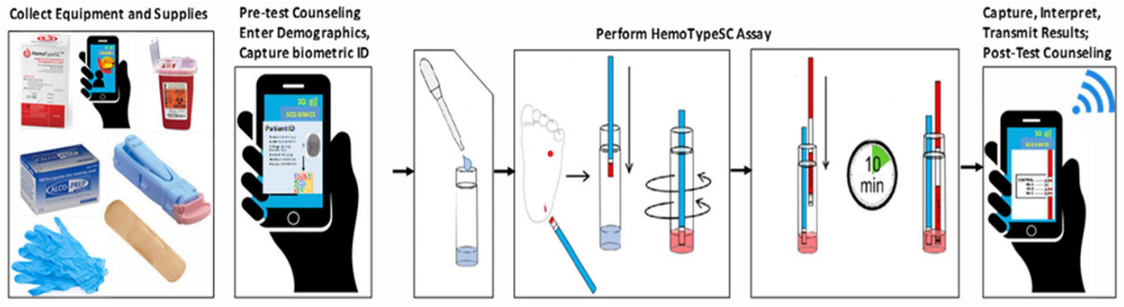


Sickle Cell Disease Infant Screening in a Rural Community in Uganda

Recognizing that most children with SCD die undiagnosed in rural communities, Global HOPE partnered with the Africa Centers for Disease Control to launch "A New Day for Children with Sickle Cell Disease." New Africa CDC Partnership Targets Childhood Disease and Vaccines – Africa CDC. This initiative integrates lifesaving SCD interventions into maternal-child health services through four strategic pillars: mobilizing stakeholders to develop an African SCD strategy, training primary healthcare workers on SCD care, catalyzing the diagnostics and hydroxyurea markets through partnerships, and deploying SIMCS—an AI-driven digital tool that streamlines screening, results transmission to national databases, and lifelong care coordination.

The results are already transformative.

Global HOPE has galvanized Africa-led specialists that developed a comprehensive continental SCD plan. In Uganda's Kayunga district, 170 primary health workers received training. Within one year, newborn screening rates surged from 24% to 98%; 99% of diagnosed children were linked successfully to care and began hydroxyurea treatment; and wellness visits doubled to 1,200. In Tanzania, 172 trained health workers screened 2,700 children in three months, identifying 115 with SCD. User testing confirmed the SCD SIMCS app was acceptable and easy to use for both caregivers and healthcare providers.



The initiative was selected among MacArthur Foundation's 100&Change finalists for 2025. For more information, visit: **https://www.macfound.org/press/perspectives/100change-finalists-share-insights-on-their-proposals**

Where neglect once meant near-certain death, Global HOPE is writing a new story—one where Africa's children with SCD don't just survive but thrive, transforming a silent epidemic into a solvable challenge with solutions led by Africans, for Africa.



Group Picture of the Global HOPE Team

Research Across the World

Global Health Initiatives

Improving Adolescent HIV Outcomes Through Scalable, Story-Based Counseling

Despite major global advances in HIV treatment, adolescents living with HIV remain one of the most vulnerable populations along the HIV care continuum. Compared to adults, adolescents experience lower rates of antiretroviral therapy (ART) initiation, poorer adherence, and lower viral suppression. These gaps are driven by stigma, mental health challenges, difficulties with disclosure, and the transition to lifelong self-management, contributing disproportionately to HIV-related morbidity, mortality, and onward transmission among young people in sub-Saharan Africa.

The Baylor College of Medicine Department of Pediatrics Division of Global Health, through its long-standing partnership with the Malawi Ministry of Health, has spent nearly two decades addressing these challenges through the Tingathe Program, a large-scale, community-based HIV prevention, care, and treatment platform operating across public-sector health facilities in Malawi. Founded by **Drs. Saeed Ahmed and Maria Kim** in 2008, Tingathe integrates clinical care, community outreach, training, and implementation research to improve outcomes for children, adolescents, and families affected by HIV. From 2008 through the present, Tingathe faculty have led a diverse portfolio of NIH, U.S. Agency for International Development, and U.S. Department of State funded studies totaling more than 200 million USD, advancing scalable HIV delivery models, digital health innovations, and psychosocial support systems.



Screenshots from the VITAL Start for Adolescents (VS4A) animated counseling module, designed for scalable, culturally adaptable delivery within public-sector HIV clinics

One of Tingathe's most successful innovations has been **VITAL Start,** a brief, standardized video-based counseling intervention designed to improve ART initiation and early adherence. Led by Principal Investigator **Dr. Maria Kim,** VITAL Start demonstrated that high-quality counseling could be delivered at scale by lay health workers, improving patient understanding while reducing provider burden.

But could this approach work for adolescents?

That question led to the development of **VITAL Start for Adolescents (VS4A)**, a multisite implementation science trial funded by the **National Institutes of Health.** Led by Principal Investigator **Dr. Saeed Ahmed, VS4A** adapts the original **VITAL Start** intervention to address adolescent-specific needs, including stigma, mental health, disclosure, and the transition to independent HIV care, while being implemented within routine **Ministry of Health** services to ensure real-world relevance.

A distinguishing feature of **VS4A** is its use of animation and narrative storytelling to deliver core counseling messages. Animation allows for easy dubbing into local languages and cultural adaptation without reshooting content, supporting rapid scale across diverse settings. Story-driven animation also resonates strongly with adolescents, enabling complex topics such as stigma, adherence, disclosure, and mental health to be conveyed in an engaging and emotionally accessible format.
By leveraging **Tingathe's** established cadre of trained lay counselors, digital tools, and supervision structures, the study is designed not only to test effectiveness but also to understand how adolescent-centered interventions can be adopted, scaled, and sustained in low-resource health systems.

VS4A is embedded within the **NIH-funded PATC3H-IN** research network, positioning the study to generate generalizable evidence that informs national programs and global policy on adolescent-centered HIV service delivery. Together, the **Tingathe platform** and **VS4A** demonstrate how adolescent-centered design and rigorous research can translate innovation into sustainable improvements in care for young people living with HIV.



The Tingathe team in Malawi delivers integrated HIV care, implementation research, and innovation to improve outcomes for children and adolescents

Research Across the World

Global Health Initiatives

K23 Spotlight

Acute lower respiratory infections (ALRI) are the leading cause of hospitalization and death among children under five worldwide. One of the most readily accessible indicators of ALRI severity is hypoxemia, or low blood oxygen levels, which clinicians rely upon to guide decisions about hospitalization, escalation of respiratory support, and critical care. Children living in low- and middle-income countries (LMICs) carry a disproportionate burden of ALRI-related hypoxemia and mortality, making accurate assessment of blood oxygen levels a global child health priority.

Dr. Shubhada Hooli, a pediatric emergency medicine physician-scientist in the Department of Pediatrics at Texas Children's Hospital and Baylor College of Medicine, has studied interventions to reduce child mortality from ALRI for nearly a decade. Her early prospective work in Malawi and Bangladesh, conducted in collaboration with Johns Hopkins University and University College London, demonstrated that moderate hypoxemia (oxygen saturation of 90–93%) was independently associated with ALRI-related mortality, challenging traditional clinical thresholds and informing global treatment guidelines.

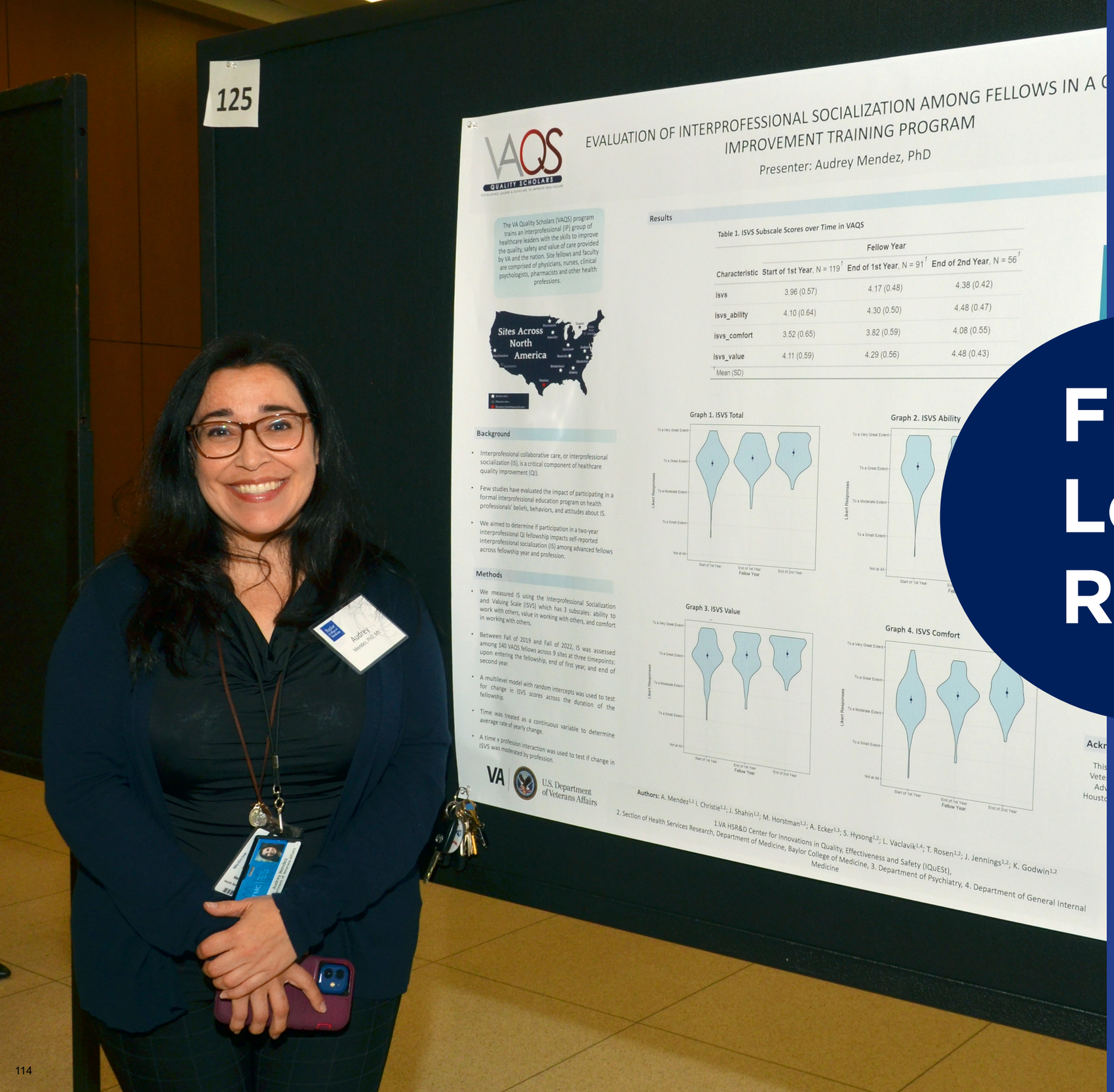
At the same time, a growing body of evidence suggests that some pulse oximeters may not meet U.S. Food and Drug Administration accuracy requirements when used in clinical settings. These inaccuracies may be more pronounced in patients with darker skin tones, raising concern that hypoxemia could be under-recognized in Black children and contributing to health disparities.

Building on this work and pilot data collected during her 1-year NIH Fogarty International Center research fellowship, **Dr. Hooli** now leads NIH and Thrasher Foundation–funded studies examining pulse oximeter accuracy in critically ill children in both the United States and South Africa, in partnership with Stellenbosch University and Johns Hopkins University. Since 2023, her team has enrolled more than 500 critically ill children at study sites in Houston and Cape Town. These studies rigorously evaluate a range of pulse oximeters, including those for hospital monitoring with wrap probes, emergency care use with reusable clip sensors, and investigational devices such as mobile phone–based reflectance pulse oximeters.

Through this work, **Dr. Hooli** aims to identify which groups of children are at highest risk of inaccurate pulse oximeter readings and to determine whether these inaccuracies impact clinical decision-making and patient-centered outcomes. By integrating lessons learned in LMICs and the United States, her program seeks to ensure that one of medicine's most ubiquitous tools provides accurate and equitable information for every child—regardless of skin tone or place of birth.



Future Leaders in Research



Future Leaders in Research

Rising Stars in Pediatric Physician-Scientist Leadership

Where Discovery, Compassion, and Community Converge

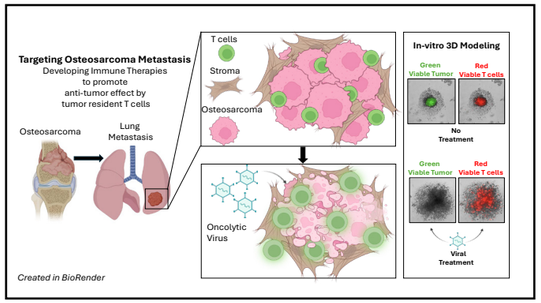
Baylor College of Medicine and Texas Children's Hospital are committed to cultivating physician–scientists who transform care through discovery. The following two Rising Stars exemplify how mentorship, opportunity, and purpose come together to shape careers—and futures—for children and families everywhere.



Turning Personal Experience into Hope for Children with Cancer

Born and raised in Puerto Rico, **Dr. Arianexys Aquino López's** path to medicine and science was shaped by early curiosity and a defining research experience at MD Anderson Cancer Center that revealed her calling as a physician–scientist. She completed her MD–PhD training through MD Anderson and the University of Puerto Rico, graduating in 2018, and was drawn to Houston by a commitment to discovery and to improving outcomes for children with serious disease. Inspired by the research culture and mentorship she encountered at Texas Children's Hospital and Baylor College of Medicine, she chose to train where physician–scientists are known, supported, and invested in. At Baylor, she built resilience through early setbacks, advanced through fellowship, and in 2024 was appointed Instructor in Pediatrics, supported by a K12 award, the Make It Better Osteosarcoma Alliance, and a major three-year St. Baldrick's Foundation grant. Along the way, she also became a mother, crediting her mentors at Baylor and TCH for fostering a culture that supports scientists as whole people. A proud Hispanic woman in science, she is committed to mentorship and to helping the next generation find their place in academic medicine.

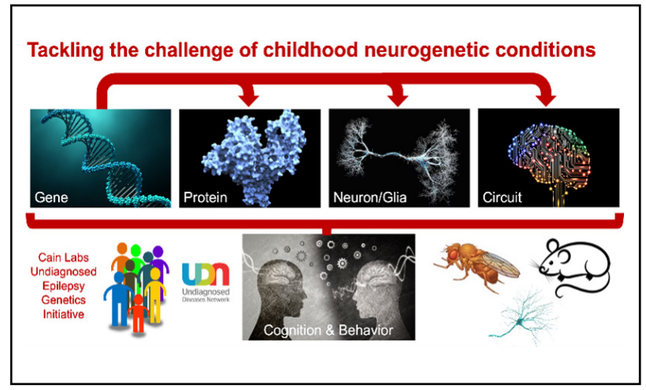
Dr. Aquino López's research centers on immunotherapy for pediatric solid tumors, with a particular focus on osteosarcoma and metastatic disease—especially lung metastases—where effective treatments remain limited. Her work bridges translational immunology and clinical need, evolving from innate and adaptive immune biology to the development of new immune-based strategies for cancers with poor prognosis. This mission is deeply personal: her brother survived osteosarcoma, and she is driven to make that outcome possible for more families. By combining rigorous science, clinical insight, and patient partnership, **Dr. Aquino López** aims to advance transformative therapies while building a collaborative, inclusive research community that translates discovery into hope.





Advancing Rare Disease Science at the Frontiers of Pediatric Neurology

Dr. Hsiao-Tuan Chao came to Houston to train at the Texas Medical Center, where medicine and discovery are inseparable. She chose the Medical Scientist Training Program at Baylor College of Medicine and found her calling at the intersection of basic neuroscience and translational neurogenetics research—the arena where she could make the greatest, most lasting impact for patients and her field. Through the Basic Neuroscience Research Pathway in Child Neurology, she fast-tracked into postdoctoral research during residency training at Texas Children's Hospital. We were fortunate to retain her at BCM and in 2019 **Dr. Chao** launched her independent research laboratory as a McNair Scholar at the Duncan Neurological Research Institute. As a woman physician–scientist in an underrepresented field, she is committed to visibility and mentorship, offering guidance and support through both formal roles and everyday engagement. Her trajectory reflects the power of belonging, sustained mentorship, and institutional commitment to physician–scientists.



Initially supported by a CNCDP-K12 and awards from the Child Neurology Society and the American Academy of Neurology, she is now an Assistant Professor of Pediatrics, Molecular and Human Genetics, and Neuroscience. After receiving the NIH DP5 Early Independence Award and the Burroughs Wellcome Fund Career Award for Medical Scientists, **Dr. Chao** established her laboratory focused on rare neurological disease discovery and translational neuroscience. Her work is deeply connected to family communities, exemplified by her partnership with the EBF3 HADDS Foundation and the Undiagnosed Diseases Network, as well as her leadership of the Cain Foundation Laboratories Epilepsy Genetics Discovery program. She helps amplify family voices, foster trust in research, and catalyze single rare disease discoveries into international collaborative efforts. Balancing rigorous scientific inquiry with academic leadership and motherhood, she continues to advance neurogenetics and neurological disease research while fostering a more inclusive, collaborative future in pediatric medicine.

Words from the rising stars!

> From our lab motto: "Be kind, be honest, be humble, do good science."
>
> **- Hsiao-Tuan Chao, MD, PhD**

> "Find your village," she says, "and hold it tight."
>
> **- Arianexys Aquino Lopez, MD, PhD**

Future Leaders in Research

Fellows in Action

The Department of Pediatrics is home to more than 200 fellows annually across a wide range of subspecialties. Scholarly activity is a core component of fellowship training, and each fellow completes a mentored research or quality improvement project as part of their program requirements.

Through these projects, fellows contribute meaningfully to the academic mission of the department, advancing clinical innovation, health services research, translational science, and community-engaged scholarship. Many present their work at regional and national meetings and publish in peer-reviewed journals, strengthening the department's scientific footprint while developing the next generation of clinician scientists and academic leaders.





Dr. Donnchadh O'Sullivan
Cardiology Fellow

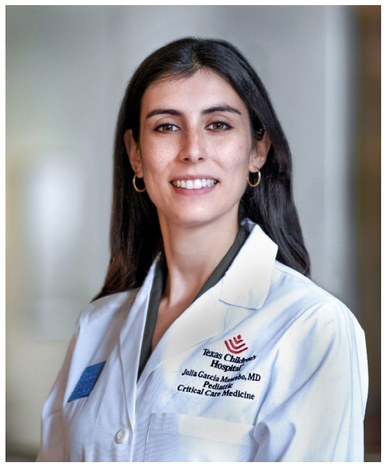
Project: Use of AI-ECG

Our work applies artificial intelligence to standard electrocardiograms (AI-ECG) to uncover clinically meaningful signals in children and patients with congenital heart disease. Through multi-site collaboration, we are developing and validating scalable AI-ECG tools for physiologic phenotyping and screening that are aimed at earlier disease detection, improved risk stratification, and real-world clinical impact.

A word from the fellows:

"This project has shaped my career by showing me how powerful collaboration can be in moving AI from a promising idea to clinically meaningful work. By building and validating AI-ECG methods across institutions, we're turning a ubiquitous test into a tool that can provide deeper insights for screening and risk assessment in children and adults with congenital heart disease. It's exciting to help drive this kind of innovation toward real bedside impact, where AI models can meaningfully support clinicians and improve patient care."

From Dr. Donnchadh O'Sullivan, MD



Dr. Julia Garcia Mancebo
Critical Care Fellow

Project: Plasma Arginine Depletion Reduces Inflammatory Response and Prevents Necrotizing Enterocolitis in Preterm Pigs

This project evaluates whether modifying the intravascular levels of arginine or citrulline reduces the incidence and severity of necrotizing enterocolitis (NEC) in a clinically relevant preterm piglet model. By directly comparing the effects of these two nitric oxide precursors, we aim to determine which strategy more effectively improves intestinal perfusion, possibly leading to novel nutritional interventions for vulnerable preterm infants.

A word from the fellows:

"This project has reinforced my commitment to translational research that begins with a clinically relevant problem at bedside and moves toward a practical solution. Studying NEC through targeted nutritional interventions has deepened my understanding of how metabolism, perfusion, and inflammation intersect and strengthened my resolve to develop therapies that are both mechanistically relevant and immediately applicable at the bedside."

From Julia Garcia Mancebo, MD

Future Leaders in Research

Fellows in Action



Dr. Lyca Intal

Neonatal-Perinatal Fellow

Project: Working with BPD

Infants with bronchopulmonary dysplasia (BPD) are at high-risk for poor growth, and traditional weight-based measures can be misleading due to fluid shifts and the presence of medical equipment. Reduced growth velocity is associated with an increased risk of BPD, highlighting the need for precise nutritional assessment. This research project uses body composition ultrasound, mid-upper arm circumference (MUAC), and length measurements to more accurately assess true fat and muscle growth and overall nutritional status. The study aims to evaluate correlations among these measures, track regional fat and muscle growth over time, and analyze how MUAC, length, and growth metrics relate to protein intake in infants with BPD.

A word from the fellows:

"Working on this project has been incredibly meaningful for my growth as a clinician and researcher. It has taught me how complex and important nutrition and growth assessments are in vulnerable infants. It has pushed me to think beyond traditional metrics to more accurate, patient-centered measurement tools. I'm thankful for the mentorship of Dr. Hair and Dr. Itriago for their ongoing guidance and support throughout this project. This work has strengthened my passion and commitment to improving neonatal nutrition and outcomes for these babies."

From Dr. Lyca Intal, MD





Dr. Mikael Guzman Karlsson

2024 Neurodevelopmental Disabilities Resident
Clinical Informatics Fellow

Project: EMR-Integrated Autism Diagnostic Workflow Design

Dr. Guzman Karlsson led the design, implementation, and evaluation of an EMR-integrated autism diagnostic workflow that embedded the Childhood Autism Rating Scale, Second Edition (CARS2), directly into clinical documentation and provider workflows, paired with a multimodal educational campaign to increase provider confidence and standardize Autism Spectrum Disorder (ASD) evaluation and counseling in pediatric neurology. Since October 2023, Neurology CARS2 utilization has increased by approximately 400%, with CARS2 completed for 390 neurology patients. Building on this neurology success, adoption scaled enterprise-wide to seven departments and 96 unique users, generating 3,345 assessments and supporting 2,913 ASD diagnoses. For its measurable impact on graduate medical education and patient care, this initiative received the 2025 ACGME David C. Leach Award, which honors resident- and fellow-led innovation that advances humanism while improving efficiency and educational outcomes.

A word from the fellows:

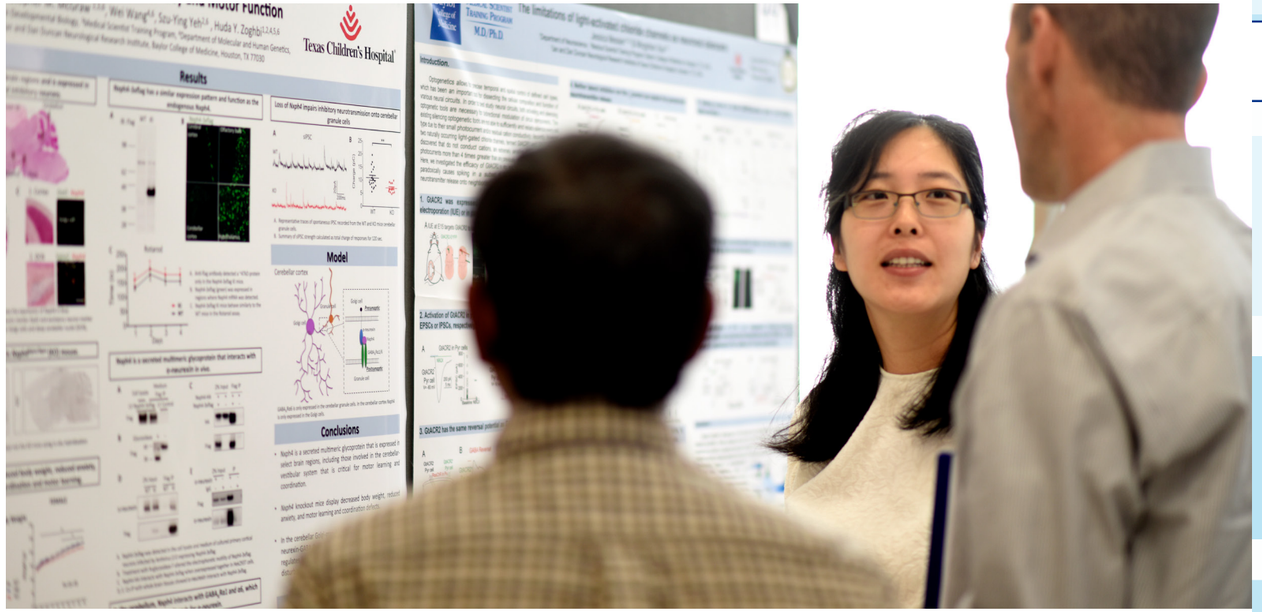
"This project demonstrated how residents and fellows can succeed by emphasizing data-driven innovation, multidisciplinary teamwork, and a patient-focused approach, transforming obstacles into scalable improvements in healthcare."

From Dr. Mikael Guzman Karlsson, MD, PhD

Future Leaders in Research

The Pediatrician-Scientist Program (PSP)

The Pediatrician-Scientist Program (PSP) provides an accelerated trajectory for MD/PhD scholars committed to a dual career of clinical mastery and high-impact scientific inquiry. Operating under the American Board of Pediatrics Integrated Research Pathway, the curriculum strategically condenses clinical requirements to two years, followed by a dedicated year of protected, innovative research. This integrated model gives trainees seamless access to the world-class investigative environments of the Texas Medical Center, fostering mentored discovery at the forefront of genomic and translational medicine. Since its 2014 inception, the program has achieved a 100% success rate in both peer-reviewed publication and placement into first-choice premier fellowship programs.



Dr. Xiangling Meng discussing a poster presentation at the Graduate Student Symposium

Current Residents

Class of 2028



Erin E. Bolte, MD, PhD
Medical School: Baylor College of Medicine



Kali Deans, MD, PhD
Medical School: Baylor College of Medicine

Class of 2027



Marisa Pinson, MD, PhD
Medical School: Texas A&M Health Science Center College of Medicine

Class of 2026



Tiffany King, MD, PhD
Medical School: Ohio State University College of Medicine



Christopher Peek, MD, PhD
Medical School: Vanderbilt University School of Medicine

Recent Program Alumni

Class of 2025



Sathi Wijeyesinghe, MD, PhD
Allergy & Immunology Fellow, University of Washington

Class of 2024



Andra Iness, MD, PhD
Molecular and Human Genetics Resident, Baylor College of Medicine



Jimmy Chang, MD, PhD
Molecular and Human Genetics Resident, Baylor College of Medicine

Class of 2023



Ian Francis, MD, PhD
Pediatric Critical Care Fellow, Nationwide Children's Hospital



Marimar De La Cruz Bonilla, MD, PhD
Hematology/Oncology Fellow, Texas Children's Hospital

Future Leaders in Research

Child Neurology Basic Neuroscience Pathway

The Basic Neuroscience Pathway in the Department of Pediatrics provides child neurology residents with a distinctive opportunity to integrate rigorous scientific training with world-class clinical education in child neurology. Residents benefit from exceptional access to cutting-edge research environments across the Texas Medical Center, including the Texas Children's Hospital Neurological Research Institute, fostering strong mentorship and opportunities for scientific discovery. This pathway prepares future child neurologists to build a solid foundation in translational neuroscience and equips them to lead advances in patient care and innovation.

Current Residents



Peter Whitney Campbell, MD, PhD
Medical School: University of Louisville School of Medicine



Whitney Franklin, MD, PhD
Medical School: University of Texas Health Houston



Ameya Shirish Walimbe, MD, PhD, MSE
Medical School: University of Iowa



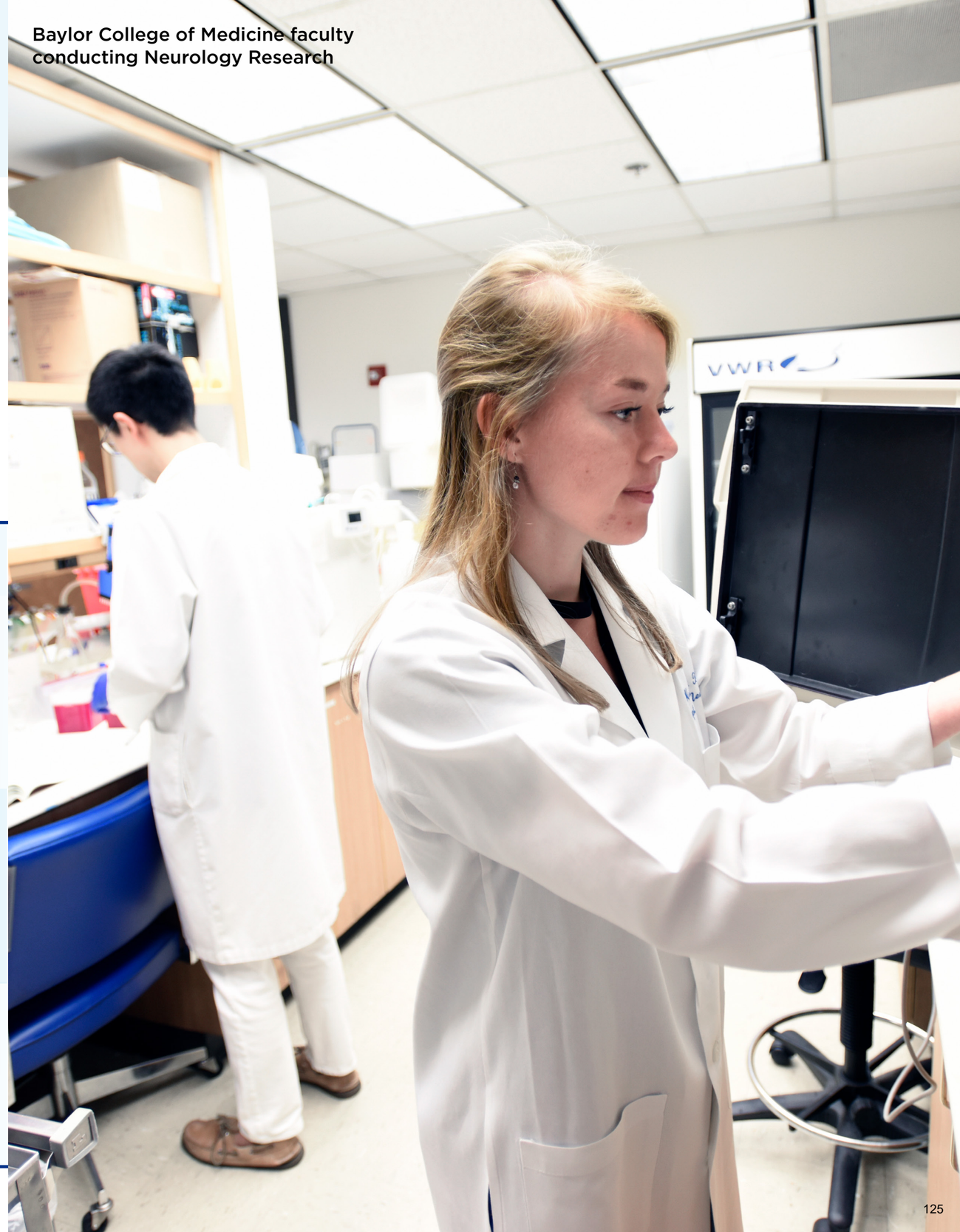
Hyunyong (Howard) Koh, MD, PhD
Medical School: CHA University School of Medicine



Lin Yao, MD, PhD
Medical School: Shanxi Medical University



Emily Frances Mendez, MD, PhD
Medical School: University of Texas Health Houston



Baylor College of Medicine faculty conducting Neurology Research

Future Direction



Thank you for exploring the Baylor Pediatrics Research Impact Report. The discoveries, partnerships, and people featured in these pages reflect a shared commitment to improving health and well-being for children and families in Houston, across Texas, and around the world.

As we move forward, we welcome your questions, ideas, collaborations, and contributions. Whether you are interested in launching a new study, strengthening a partnership, mentoring the next generation, supporting research infrastructure, or helping translate discovery into impact, there is a place for you in this work.

Together, we can build on this momentum to create a healthier future for children in Houston, across Texas, and around the world.

To learn more or connect with Baylor Pediatrics Research, please contact: ceallen@bcm.edu

To learn more about the department, visit our website at
www.bcm.edu/departments/pediatrics

Baylor College of Medicine

Texas Children's®