

UAB 2019 ACADEMIC ANNUAL REPORT



UAB MEDICINE.



Children's
of Alabama®

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Welcome from the Chair

Dear Friends and Colleagues,

In the midst of busy clinics, complex inpatient care, teaching the next generation of providers, discovering new knowledge and everything else that fills our days here at Children's of Alabama and UAB Pediatrics, we know it is important to take a moment to reflect on the past year and our vision for the future. This Academic Annual Report is an opportunity to do just that. This has been a year of growth and innovation for Children's of Alabama and UAB Pediatrics. Our research report details our accomplishments by division.

In the Department of Pediatrics, we seek to discover new knowledge in order to improve the health of the children of Alabama, the region, and the world. The clinical advances and research breakthroughs we describe here have a direct impact on children's lives. That impact will be our legacy. We present in this report evidence of this impact as measured by major research accomplishments, grants, publications and awards. In fiscal year 2019, the Department of Pediatrics faculty had 341 publications, research funding from the National Institutes of Health (NIH) totaling \$18.8 million and total research funding of \$30.5 million.

In addition to our research accomplishments, our focus on safety and quality is always paramount. For the tenth consecutive year, U.S. News & World Report ranked Children's of Alabama's pediatric specialty services among the top 50 in the nation. Six specialties were ranked: Cancer, Cardiology & Heart Surgery, Neonatology, Nephrology, Neurology & Neurosurgery and Pulmonology.

The department aims to build on these successes, expand the size and, importantly, the impact of our research in the coming years. We anticipate growth not only in our core areas of significant accomplishment—virology, therapeutic drug development, cancer, neonatology and outcomes—but also in newer areas where the recruitment of talented young researchers will ensure continued and expanded success. With the recruitment of Dr. Girish Dhall as division director in Pediatric Hematology-Oncology, we have further advanced our clinical and translational research in neuro-oncology. Dr. Liz Worthey was recruited by the Departments of Pediatrics and Pathology and the Precision Medicine Institute to lead the Center for Computational Genomics and Data Sciences, to expand our diagnostic power to identify undiagnosed diseases, and to predict the role of multiple genes on disease outcomes and response to treatment.

The Kaul Pediatric Research Institute (KPRI) continues to support investigators at Children's and remains an important edge in helping our faculty achieve extramural funding through initial pilot and feasibility funding. We also initiated a new series of KPRI Quality and Safety Grants. And with support from the KPRI, we have begun a new Clinical Trials Office in collaboration with the Pediatric Research Office.

Our clinical mission is to deliver exceptional, safe and accessible care to improve the outcomes for children in Alabama and elsewhere. From the simple to the most complex conditions, we work as a team to deliver the best care. Our achievements simply would not be possible without the physicians, nurses and staff who bring their talents and passion to the care of children every day, from everywhere in the state, the region and the nation. This coming year, we are finding ways to further increase access to our clinics, improve provider-to-provider communication and identify even more subspecialty services that we can offer to our patients and those who help care for them.

No matter what the next year holds, please know that one thing always remains in focus: our commitment to serving the patients and families who look to us for healing and hope. Thank you for being part of that most worthy endeavor.



Mitchell B. Cohen, M.D.
Katharine Reynolds Ireland Chair of Pediatrics
University of Alabama at Birmingham
Physician in Chief, Children's of Alabama



High-Impact Research

\$6.38 million grant to study blood cancers, blood marrow transplantation impact on survivors' health

by Savannah Koplon

Researchers at the University of Alabama at Birmingham have been awarded a \$6.38 million grant from the National Cancer Institute to determine the long-term burden of morbidity borne by blood cancer patients treated with or without blood or marrow transplantation, or BMT.

In 2018, an estimated 175,000 individuals were diagnosed with a hematologic malignancy—or blood cancer, such as leukemia, myeloma or lymphoma—in the United States. Such cancers are typically managed through high-intensity chemotherapy with or without radiation. Patients with progressive disease or high risk of relapse are treated with even higher-intensity chemotherapy/radiation and BMT.

"Survival rates after BMT are improving at the rate of 10% per decade—steady improvements in outcome have resulted in a growing number of BMT survivors, a population uniquely vulnerable to long-term life-threatening chronic morbidity," said Smita Bhatia, M.D., principal investigator on the study, director of the Institute for Cancer Outcomes and Survivorship, and senior scientist in the O'Neal Comprehensive Cancer Center. "A better understanding of post-BMT health care needs could result in the deployment of targeted strategies that yield better quality of survival and reduced utilization of health care resources."

The study will construct a cohort of more than 10,000 patients treated with BMT between 1974 and 2014 at three transplant sites—UAB, University of Minnesota and City of Hope—as well as a cohort of 3,000 patients treated with conventional therapy without BMT, which will amount to the largest cohort ever studied.

In addition to ascertaining the burden of morbidity borne by blood cancer patients treated with or without BMT, study results will be used to understand the mechanisms and development of treatment-related health conditions in the context of accelerated aging, an outcome seen in cancer patients. Understanding



how high-intensity treatment exposures used for BMT, such as chemotherapy and radiation therapy, cause late effects can help in the development targeted treatments for survivors.

"Accelerated aging is a constellation of criteria, one of which is the premature occurrence of the chronic health conditions that are typically seen in older populations," Bhatia said. "It is not clear what contributes to accelerated aging—we speculate that both the cancer and its treatment do so, and we will be studying this in greater detail."

High-Impact Research

Researchers awarded \$10 million to study acute flaccid myelitis

by Savannah Koplon

The National Institute of Allergy and Infectious Disease, part of the National Institutes of Health, has awarded the University of Alabama at Birmingham Department of Pediatrics a \$10 million contract to conduct a multicenter, multinational natural history study of acute flaccid myelitis (AFM) in pediatric patients.

UAB will be co-leading the study with Johns Hopkins University School of Medicine. The study is anticipated to begin enrollment in August 2019 to correspond with this year's predicted outbreak cycle, which typically is in the summer and fall. In past years, the largest pattern of outbreaks occurred in this seasonal window.

AFM is a rare but serious condition referred to as a "polio-like" illness for the way it affects a child's nervous system and causes their muscles and reflexes to become weakened. It is suspected that many common viruses—including enteroviruses—play a role in the spread of AFM, but there are no identified causes or proven therapies for AFM.

"Since at least 2014, children have been at risk of developing a polio-like syndrome likely due to enteroviruses, and this study will provide the basis for understanding the cause of those children's paralysis," said David Kimberlin, M.D., co-director of the Division of Pediatric Infectious Diseases at UAB and co-principal investigator of the study. "Knowledge gained from this study hopefully will provide the foundation for future treatment studies of antiviral drugs. We hope to better understand why acute flaccid myelitis occurs and which children are most at risk, and to develop the biorepository and associated clinical database to understand what we can do about it in the future."

The five-year natural history study will occur at 38 or more sites across the United States, Canada, the United Kingdom and Peru, and will review serious and life-threatening viruses in pediatric populations that could be connected to AFM cases.

"The major problem with AFM as a public health threat is not only the emergence of hundreds of cases around the United

States and the world, but the fact that AFM produces devastating and long-standing neurological problems for affected children," said Carlos A. Pardo-Villamizar, M.D., director of the Johns Hopkins Hospital Myelitis Center and co-principal investigator of the study on behalf of the AFM Task Force, a multidisciplinary and multicenter collaborative group of clinicians and scientists. "Thus, there is an urgent need for a concerted collaborative effort around the country to tackle the problem with the best research tools available to develop better options for diagnosis and treatment and, most importantly, to help children and families affected by this devastating neurological disorder."

In developing the research study, UAB and Johns Hopkins researchers have worked closely with the National Institutes of Health, the Centers for Disease Control and Prevention, and investigators at many of the study sites to ensure that it meets both the scientific and public health objectives of the national response to AFM.



High-Impact Research

\$37.5 million grant will address research of high-priority infections

by Savannah Koplon

The Antiviral Drug Discovery and Development Center (AD3C) at the University of Alabama at Birmingham has been awarded a five-year, \$37.5 million grant from the National Institute of Allergy and Infectious Diseases Centers of Excellence for Translational Research to study and develop treatment for high-priority infections.

These infections to be studied include influenza, flaviviruses like dengue, West Nile virus and Zika, coronaviruses that cause SARS and MERS, and alphaviruses such as Venezuelan equine encephalitis virus and chikungunya.

Led by Richard Whitley, M.D., Distinguished Professor at UAB, AD3C's goals involve developing new small molecule therapeutics for emerging and re-emerging viral infections. Additionally, AD3C provides an infrastructure to accelerate the development of new potential drugs from the lab toward the clinic.

"This grant will help us improve and create new treatment options for these four virus families and ultimately impact the global understanding of these viruses at large," Whitley said. "The viruses of focus within AD3C are of the highest priority to the United States government. We are confident that our future findings will help transform the way we treat patients, unmet medical needs and the safety of millions."

UAB is the lead institution for AD3C, but the team unifies scientists experienced in virology, viral immunology, pathogenesis, medicinal chemistry and translation to human disease from UAB, University of North Carolina, Vanderbilt University, Emory University, Washington University, The University of Texas Medical Branch, Southern Research, and Oregon Health & Science University.

Since its inception, AD3C has already contributed significant data to an IND filed for MERS and two patent applications for compounds with activity against chikungunya, illustrating the success of the collaborative, multi-institutional model.



High-Impact Research

Study aims to discover if hookworm, related intestinal parasites are present in Alabama Black Belt

by Savannah Koplon

Whether or not hookworm and related intestinal parasites are present in parts of Alabama's Black Belt is the focus of a new study led by the University of Alabama at Birmingham. The study, which is funded by the Centers for Disease Control and Prevention, will take place in Wilcox and Perry counties and has started participant recruitment.

Hookworm, an intestinal parasite of humans, was once widespread in the United States, particularly in the Southeast. According to the CDC, improvements in living conditions have greatly reduced hookworm infections. Today, it is most commonly found in warm, moist climates in developing nations in South America, South Asia and Southeast Asia.

However, due to environmental and wastewater disposal issues in areas of Alabama's Black Belt, conditions are such to support the persistence of these infections.

"Our interest in this project stems from local concerns about health issues in children related to inadequate infrastructure in some of Alabama's rural communities," said Claudette Poole, M.D., a pediatrician who specializes in infectious diseases at UAB and is the study's lead researcher. "We believe that, through partnership, community leaders, the community itself and UAB, we can improve the lives of children in our state."

Hookworm, one of the infections under investigation, is spread through eggs that are passed in the feces of an infected person. If sewage of infected persons contaminates the environment, other persons who come in contact with the contaminated environment can become infected. These infections are indicators of inadequate sewage disposal and, if left untreated, may lead to ill health.

To find out whether children are infected with hookworm or other related intestinal parasites, the researchers have hired local community health care workers to collect stool samples from children in each county. The samples will then be delivered to J. Paul Jones Hospital, a partnering hospital of UAB, in Camden, Alabama, where they will be processed and then sent to the



Amy Badham, director of Service Learning and Undergraduate Research at UAB, David Kimberlin, M.D., co-director of the Division of Pediatric Infectious Diseases at UAB, Claudette Poole, M.D., pediatrician in infectious diseases at UAB.

CDC and Georgia Institute of Technology for testing. It is there that a determination will be made whether hookworm or other intestinal parasites are indeed present.

Community members have been integral to the inception, design and implementation of this study and as such are essential partners with UAB in this important work.

"We have held focus groups with families in each county to talk to parents about how to collect the samples, to distribute the stool collection kits and to make sure they are comfortable with this process," said Amy Badham, director of Service Learning and Undergraduate Research at UAB and one of the researchers.

"Our partners here at UAB have worked closely for decades with the local communities that are part of this important project," said David Kimberlin, M.D., co-director of the Division of Pediatric Infectious Diseases at UAB. "We are hopeful that this new investigation can continue to advance that important relationship."

Researchers plan to collect three samples from each child. Families will receive a monetary reward for each collected sample. The first enrollment opportunity will be on Dec. 12 with Bama Kids, a not-for-profit organization in Camden, Alabama, focused on helping with holistic development of youth in Wilcox County.

High-Impact Research

Open source: How data scientist Liz Worthey is bringing precision medicine to the people

by Matt Windsor



In some ways Elizabeth Worthey, Ph.D., is a typical nerd. She likes having lots of computer screens and solving puzzles, and nothing so much as coming up with novel ways to use software to solve complex problems.

Unlike most geeks, though, Worthey is intimately familiar with her own source code. A chunk of her laptop hard drive is dedicated to a complete copy of her DNA, which she had sequenced nearly a decade ago.

"I had them all."

When she hears about an interesting new deleterious variant at a genetics conference, "I go in and look at my genome and see if I have it or not," said Worthey, who joined UAB in July as director of the Center for Computational Genomics and Data Sciences in the Department of Pediatrics, director of the Bioinformatics Section in the Division of Genomics Diagnostics and Bioinformatics in the Department of Pathology, and the associate director of the Hugh Kaul Precision Medicine Institute, all in the School of Medicine.

Worthey hails from the Vale of Leven, in between Loch Lomond and the River Clyde on the west coast of Scotland, an area where heart problems run rampant. "Nobody in my family has cardiovascular disease, though," she said. "I was at a conference, and they put up a list of protective genetic variants. I looked, and I had them all."

The original genomic miracle

She knows from personal experience that many people aren't so fortunate. In 2009, Worthey was part of a team at the Medical College of Wisconsin that was the first to solve a medical mystery with precision medicine. Worthey and her team created a unique software program, CarpeNovo—Latin for "seize the new"—that identified the ultra-rare genetic mutation responsible

for 4-year-old Nicholas Volker's devastating illness. With this crucial information, clinicians were able to identify a treatment (bone marrow transplant) that saved the boy's life and resulted in a Pulitzer Prize-winning series and book about the case by reporters at the Milwaukee Journal Sentinel. The Volker case was the first in the world to demonstrate the power of genomic sequencing and analysis in patient care, but the costs and time involved in sequencing and analysis meant these methods could only be used in extraordinary cases.

Later, at the HudsonAlpha Institute for Biotechnology in Huntsville, Worthey and her team developed new software tools that have dramatically reduced analysis time. "That first clinical case took three months, and fortunately, the child was healthy enough to wait that long," Worthey said. "Many times they are not. We developed some of the first methods that allowed shortening of that time frame down to where we are today, which is being able to do sequencing and analysis in less than a week or a couple of days, in some cases."

Making the miracles routine

Worthey's mission is to help open up genetic insights as a routine part of clinical care at UAB. She is working with Alexander "Craig" Mackinnon, M.D., Ph.D., the inaugural director of the Genomics Diagnostics and Bioinformatics division in Pathology, to support the Precision Diagnostics Laboratory, which will combine and enhance efforts across the hospital. Genetics, Pediatrics, Pathology and other departments are all increasingly using genomic sequencing as a routine part of patient care, explained George Netto, M.D., the Robert and Ruth Anderson Endowed Chair in the Department of Pathology. "So it makes sense to bring all of that under one roof," Netto said.

A single whole genome sequence consists of 3.2 billion DNA letters and takes up half a terabyte of hard drive space. The first step in genomic-based medicine analysis is to align those billions

High-Impact Research

of letters against a reference genome. Then software tools are used to identify the 6 million or so differences, or variants, that any one person will have compared to another. Most of these aren't linked to a disease or are otherwise benign. In fact, only one or two are likely to be responsible for the patient's primary problem.

"A big part of precision diagnosis is interpretation and computation, looking at the patient's code and filtering out what is abnormal from what is normal," Netto said. "That is just as important as what kind of Cadillac sequencing machine you have. Liz built the tools for that at HudsonAlpha, and she will be doing the same here." The challenge keeps getting bigger, Netto added. UAB now sends out more than a thousand patient samples for sequencing each year, and that number will only grow, he said.

Sorting out the squishy bits

In some critical cases, turnaround times of many days aren't fast enough. "Ideally, we want to be able to get it down to under 24 hours," Worthey said, "and in my lab, we are exploring ways we think we can do that."

Speeding up the process requires more than faster hardware and better code, however. "There's also the squishy human bit," she said. "Think about the NICU. The process of sequencing and software with the output being a clinical report is one thing. But who reads it? Is it a neonatologist? If they have questions, who do they call? I can do the first two and help define the process. But you have to actually have a health care system to put it into health care. That's why I'm at UAB."

Figuring out how to incorporate genomic data into patients' electronic health records is also a top priority for James Cimino, M.D., director of UAB's Informatics Institute. Worthey will be collaborating with Cimino's team on the code and protocols needed to make that happen.

Tools for lots of people

She has seen how useful this data can be. After her daughter was born a few years ago, doctors diagnosed Worthey with an autoimmune thyroid disease. A quick search of her genome identified the mutation likely responsible. "If I had had in my medical record the note, 'Has a thyroid-stimulating hormone variant known to confer significantly risk of autoimmune thyroid disease,' I could probably have gotten a diagnosis 10 years before I did, which would have been very helpful," she said.

Having access to her entire genome can be a little frightening, too, Worthey noted. "I have two little kids," she said. "I think, 'Please don't let me find anything terrible—cancer or Alzheimer's.' It makes you very aware of the issues." But she is not dissuaded from the act of looking. Worthey has used her genome as test data, or when she needs an illustration during public speaking

engagements. "I probably have one of the most studied genomes on the planet; by me," she said.

Curiosity is the hallmark of a scientist, and Worthey's enthusiasm is infectious. She brought seven lab members with her from HudsonAlpha and will be hiring more—mainly software developers with computer engineering backgrounds but also data scientists and research scientists trained in interpreting molecular variation. "Most of these folks have worked in other industries before they came to the light side," she said with a laugh. "We're trying to develop tools that are commercial-grade, that are designed to be placed in the hands of lots of people."

A place for collaborations

Worthey intends for her Center for Computational Genomics and Data Sciences "to be a place for collaborations, where people with clinical and translational questions about patient populations can come to find a bunch of folks who know how to analyze that data," she said.

Her team is involved with the Alabama Genomic Health Initiative and the Undiagnosed Diseases Program, both led by UAB Chief Genomics Officer Bruce Korf, M.D., Ph.D. They contribute to the rare disease diagnosis efforts of the Precision Medicine Institute, directed by Matt Might, Ph.D. They work with Craig Mackinnon on diagnostic components of -omics based tests. They are working in the Department of Pediatrics with Smita Bhatia, M.D., director of the Institute for Cancer Outcomes and Survivorship, and Matthew Alexander, Ph.D., on his work to increase understanding of the inherited disease Duchenne's muscular dystrophy. Worthey works to understand the genetic basis of chronic fatigue syndrome, working with Jarred Younger, Ph.D., director of the Neuroinflammation, Pain and Fatigue Laboratory in the Department of Psychology, and she has done a considerable amount of work in cystic fibrosis. "I'm pretty disease agnostic," Worthey said. "We really want to help people extract what they want and get their questions answered."

The through line in all these efforts is a focus on translation, Worthey said. "For us, it's about helping patients alive today. We are very clinical, not just looking at research to gain generalizable knowledge."

At the time the Human Genome Project was completed in 2003, patients with rare or complex genetic diseases could only get a definitive diagnosis about 5% of the time, Worthey noted in a talk this past year at Stanford Medicine's Big Data | Precision Health conference. That 5% figure hadn't moved much by 2010. But today, it is at 40%.

"My goal at UAB is to help obtain definitive diagnoses for all of our patients and then to go beyond the diagnosis to extract clinically useful information that helps those taking care of these patients to make molecularly informed decisions where possible," Worthey said. "These are cool times, and we're excited to be here."

Department Leadership

Mitchell Cohen, M.D.

Chair

Department of Pediatrics

Smita Bhatia, M.D., MPH

Vice Chair for Outcomes

Tamera Coyne-Beasley, M.D., MPH

Vice Chair for Community Engagement

Peter Glaeser, M.D.

Vice Chair for Clinical Affairs

David Kimberlin, M.D.

Vice Chair for Clinical and Translational Research

Michele H. Nichols, M.D.

Vice Chair for Education

Tina Simpson, M.D.

Vice Chair for Faculty Development

Richard J. Whitley, M.D.

Vice-Chair for Research

DIVISION DIRECTORS

Terry Wall, M.D.	Academic General Pediatrics
Tamera Coyne-Beasley, M.D., MPH.....	Adolescent Medicine
Prescott Atkinson, M.D., Ph.D.	Pediatric Allergy & Immunology
Yung R. Lau, M.D.....	Pediatric Cardiology
Michael Taylor, M.D.....	Child Abuse Pediatrics
Nancy Tofil, M.D., M.Ed.	Pediatric Critical Care
Laura McGuinn, M.D.	Developmental & Behavioral Pediatrics
Peter Glaeser, M.D.....	Pediatric Emergency Medicine
Ambika Ashraf, M.D.....	Pediatric Endocrinology & Diabetes
Reed Dimmitt, M.D., MSPH.....	Pediatric Gastroenterology, Hepatology & Nutrition
Girish Dhall, M.D.	Pediatric Hematology/Oncology
Robert Pass, M.D.....	Pediatric Hospital Medicine
David Kimberlin, M.D.	Pediatric Infectious Diseases
Richard J. Whitley, M.D.	
Namasivayam Ambalavanan, M.D.....	Neonatology
Waldemar A. Carlo, M.D.	
Daniel Feig, M.D., Ph.D.	Pediatric Nephrology
Leon S. Dure, M.D.....	Pediatric Neurology
Hector Gutierrez, M.D.	Pediatric Pulmonology & Sleep Medicine
Drew Davis, M.D.	Pediatric Rehabilitation Medicine
Randy Cron, M.D., Ph.D.....	Pediatric Rheumatology

Endowed Chairs

CHILDREN'S OF ALABAMA ENDOWED CHAIRS

William Bew White Jr. Chair in Child Neurology.....	Leon Dure, M.D.
Frederick W. Renneker III Endowed Chair for Pediatric Education	Michele Nichols, M.D.
Ann Dial McMillan Endowed Chair in Pediatric Critical Care.....	Nancy Tofil, M.D.
Margaret M. Porter Chair in Pediatric Nephrology.....	Dan Feig, M.D.
Raymond K. Lyrene, M.D. Endowed Chair in Pediatric Pulmonary Medicine.....	Hector Gutierrez, M.D.
John W. Benton, M.D. Endowed Chair in General Pediatrics	Terry Wall, M.D.
Sergio Stagno, M.D. Endowed Chair in Infectious Diseases	David Kimberlin, M.D.
C. Phillip McWane Endowed Chair in Pediatric Emergency Medicine	Peter Glaeser, M.D.
Thomas N. Carruthers Jr. Endowed Chair in Pediatric Cardiology	Yung R. Lau, M.D.
Beth Gordy Dubina Endowed Chair in Pediatric Hospital Medicine	Robert F. Pass, M.D.
David Dixon Endowed Chair in Pediatric Gastroenterology, Hepatology & Nutrition	Reed Dimmitt, M.D.
Derroll Dawkins, M.D., F.A.A.P. Endowed Chair in Adolescent Medicine.....	Tamera Coyne-Beasley, M.D.
Thomas Lowder Chair in Developmental Pediatrics	Laura McGuinn, M.D.
Ralph Frohsin Endowed Chair in Pediatric Endocrinology & Diabetes	Ambika Ashraf, M.D.
Virginia Walker Jones Endowed Chair in Neonatology	Namasivayam Ambalavanan, M.D.
Benjamin Russell Endowed Chair in Pediatric Hematology/Oncology.....	Girish Dhall, M.D.

CHILDREN'S OF ALABAMA ENDOWED PROFESSORSHIPS

Child Abuse Pediatrics Professorship.....	Michael Taylor, M.D.
Hugh Dillon, M.D., Endowed Professorship in Pediatric Infectious Diseases.....	Suresh Boppana, M.D.
Waldemar A. Carlo, M.D. Endowed Professorship in Clinical Neonatology	Carl Coghill, M.D.

UAB ENDOWED CHAIRS

Loeb Eminent Scholar Chair in Pediatrics.....	Rich Whitley, M.D.
Katharine Reynolds Ireland Chair of Pediatrics.....	Mitch Cohen, M.D.
Lionel M. Barger Jr., M.D. Endowed Chair in Pediatric Cardiology.....	Ed Colvin, M.D.
Edwin M. Dixon Chair in Neonatology	Wally Carlo, M.D.
Arthritis Foundation Alabama Chapter Endowed Chair in Pediatric Rheumatology	Randy Cron, M.D.
Charles A. Alford, M.D. Endowed Chair in Pediatric Infectious Diseases	Bill Britt, M.D.
Gay and Bew White Chair in Pediatric Oncology.....	Smita Bhatia, M.D.

UAB ENDOWED PROFESSORSHIPS

Sarah Katherine Bateh Endowed Professorship for Rett Syndrome.....	Alan Percy, M.D.
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Pediatric Divisions

The UAB Department of Pediatrics at Children's of Alabama is comprised of 19 Subspecialty Divisions each with a research, educational and clinical focus. To find research initiatives, areas of clinical excellence, educational efforts and learn more about the faculty.

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Pediatric Faculty

Featured Research

Significant Publications

Participation in National Research, Quality Improvement and Learning Networks

Extramural Awards, Recognition & Leadership Roles

Division Fellows





Academic General Pediatrics

PEDIATRIC FACULTY

Dr. Terry Wall	Director Professor
Dr. Jennie Andresen	Associate Professor
Dr. Heather Relyea Ashley	Assistant Professor
Dr. Cason Benton	Professor
Dr. Jennifer Chambers	Associate Professor
Dr. Candice Dye	Associate Professor
Dr. Crayton Fargason	Professor
Dr. Adnan Haque	Instructor
Dr. Jason Hartig	Associate Professor
Dr. Stewart Hill	Assistant Professor
Dr. DeeAnne Jackson	Professor
Dr. Rose James	Assistant Professor
Dr. Carin Richard Kiser	Associate Professor
Dr. Rachel Klein	Assistant Professor
Dr. Morissa Ladinsky	Associate Professor
Dr. Jaime McKinney	Assistant Professor
Dr. Susan Powell	Assistant Professor



FEATURED RESEARCH

The UAB Division of Academic General Pediatrics' work focuses largely on advocacy and quality improvement (QI).

Elizabeth Cason Benton, M.D., FAAP

- As the director of the Alabama Child Health Improvement Alliance (ACHIA), Dr. Benton leads this QI initiative through partnerships with practitioners, payers, families and organizations that deliver care to improve health outcomes of children in the state. In 2019, 24 practices that care for approximately 10% of the children in Alabama participated in the collaborative. These practices increased the Teen Well Visit Rate for teens in the office to 86% by decreasing missed opportunities by 10%, in addition to providing technical advice to develop confidentiality and transition policies.
- Additionally, Dr. Benton provided technical training to Medicaid's Alabama Coordinated Health Networks to develop quality improvement initiatives around childhood obesity prevention.

DeeAnne Jackson, M.D., MPH

- Dr. Jackson continues working with Drs. Mark Powell and Sara Anne Lester from the UAB Department of Anesthesiology to evaluate the effects on breastfeeding rates of the Early Recovery After Surgery (ERAS) protocol for women undergoing scheduled caesarean sections.
- This year, she completed a QI project to implement the use of oral glucose gel for neonatal hypoglycemia into standard care in the UAB Newborn Nursery and is continuing to collect data on the effects of this change.
- She has initiated a QI project to decrease antibiotic usage in the Newborn Nursery through incorporation of the Neonatal Sepsis Calculator and is collaborating with the UAB Division of Neonatology in the VON Network antibiotic stewardship project.

Morissa Ladinsky, M.D.

- Dr. Ladinsky continues working with Dr. Shawn Galin in the UAB Department of Medicine and others to develop a programmatic expansion of the UAB School of Medicine Standardized Patient Program around LGBTQ curricular metrics. This will make the UAB School of Medicine one of only two US medical schools to utilize transgender individuals as standardized patients to enhance medical students' abilities to communicate with this growing underrepresented population.

PARTICIPATION IN NATIONAL AND REGIONAL RESEARCH COLLABORATIVES, QUALITY IMPROVEMENT PROJECTS AND LEARNING NETWORKS

Morissa Ladinsky, M.D., is a member of the Quality Improvement Center for Collaborative Community Court Teams, Jefferson County Site Steering Committee, a collaboration between Family Court, DHR and Medicine around enhanced care for mothers facing substance dependence and their children.

Jaime McKinney, M.D., was selected for the Alabama Chapter of American Academy of Pediatrics HPV Peer to Peer QI Initiative. This initiative's goal is to increase the HPV vaccination completion rates of private practice patients throughout Alabama.

EXTRAMURAL AWARDS, RECOGNITION & LEADERSHIP ROLES

Cason Benton, M.D., FAAP

- Dr. Benton received the Marsha Raulerson Advocacy Award at the Alabama Chapter–American Academy of Pediatrics Meeting. This award recognizes service to children through dedication to better policies for improved child health. The award is named in honor of Marsha Raulerson, M.D., FAAP, of Brewton, Alabama, who has worked tirelessly for children in Alabama during her more than 30 years of practicing community pediatrics through consistent and effective advocacy for children's programs and policies at the local, state and national levels.
- She serves as a reviewer for the national American Academy of Pediatrics Maintenance of Certification review committee. This committee reviews proposals for MOC Part IV (quality improvement).

DeeAnne Jackson, M.D, MPH

- Dr. Jackson is a member of the Alabama Perinatal Excellence Collaborative Executive Leadership Committee.

Morissa Ladinsky, M.D.

- Dr. Ladinsky serves on Mayor Randall Woodfin's LGBTQ+ Advisory Board for the city of Birmingham.
- She serves on the Board of Directors for the Children's Policy Council of Jefferson County.
- She was appointed by the Medical Association of State of Alabama (MASA) to the Alabama Medicaid Medical Advisory Council.
- She won first place for Innovation in the UAB Medicine RIME (Research in Medical Education) Poster Contest. Her poster was titled "Closing Healthcare Gaps for Marginalized Populations: A Transgender Standardized Patient Approach" and co-authored by Shawn Galin, Ph.D., and Tara Edmonds, Ph.D.
- Additionally, she is a member of the Governor's Opioid Council/Alabama Opioid Overdose and Addiction Council. This group is developing data-driven priorities and strategic objectives to guide our state's coordinated response to the opioid crisis.

Jaime McKinney, M.D.

- Dr. McKinney was one of three founding board members of Birmingham's first Charter School: Legacy Prep.
- She continues to serve on the Admissions Selection Committee for the UAB School of Medicine.



Adolescent Medicine

PEDIATRIC FACULTY

Dr. Tamera Coyne-Beasley	Director Professor
Dr. Heather Relyea Ashley*	Assistant Professor
Dr. Heather Austin.....	Associate Professor
Dr. Krista Casazza.....	Associate Professor
Dr. Nefertiti Durant	Associate Professor
Dr. Samantha Hill	Instructor
Dr. Jaime McKinney*	Assistant Professor
Dr. Christa Nevin**.....	Assistant Professor
Dr. Rebekah Savage	Assistant Professor
Dr. Tina Simpson	Professor
Dr. Stephenie Wallace	Associate Professor

*Primary appointment in General Pediatrics

**Primary appointment in Internal Medicine



FEATURED RESEARCH

The UAB Division of Adolescent Medicine performs an array of investigations that include behavioral science and outcomes research, as well as assessments of physiologic changes during growth and development. Specific areas of research include: improving outcomes for people living with HIV, HIV prevention, nutrition research, quality improvement, randomized clinical trials and adolescent health risk and resiliency research.

Tamera Coyne-Beasley, M.D.

- Dr. Coyne-Beasley serves as co-principal investigator on 15-1175 PCORI, PESRAMHIP: Patient Empowered Strategy to Reduce Asthma Morbidity in Highly Impacted Populations. In patient populations that bear a disproportionate burden of asthma morbidity (Black and Hispanic adults) can PARTICSS improve outcomes of importance to patients, providers, and the health-care system? (Dr. Coyne-Beasley was the PI prior to leaving the University of North Carolina.)
- Dr. Coyne-Beasley serves as co-investigator on Prevention of Lower Urinary Tract Symptoms (PLUS). This study seeks the impact of voiding and toileting behaviors on bladder health and lower urinary tract symptoms. Sponsored by the National Institutes of Health (NIH).

Tina Simpson, M.D.

- Dr. Simpson serves as principal investigator and medical faculty on the Leadership Education in Adolescent Health (LEAH) Program grant sponsored by the Health Resources and Services Administration (HRSA). The LEAH Program offers trainees interdisciplinary leadership education through a comprehensive core of clinical, didactic, research and experiential curricula in the following disciplines: medicine, nursing, nutrition, psychology and social work. The program is committed to improving the health status of adolescents, particularly those in the southeastern region of the US by training the next generation of adolescent health professionals in a model center of excellence in training, research and service that is adolescent-centered/family-involved, culturally competent and community-based.
- **Heather Austin, Ph.D.**, serves as psychology faculty, and **Dr. Krista Casazza** serves as co-PI and nutrition faculty.

Krista Casazza, Ph.D.

- Dr. Casazza serves as principal investigator on the Leadership Education in Maternal and Child Health Nutrition Program grant sponsored by the Maternal and Child Health Bureau (MCHB). The Leadership Education in Pediatric Nutrition Program strives to improve the nutritional health status of infants, children, adolescents and families by providing leadership training, education, and collaboration to health professionals to improve their knowledge and skills in MCH nutrition and physical activity. The program provides nutrition education through training, research and service.
- **Stephenie Wallace, M.D.**, serves as nutrition faculty.

Dr. Samantha Hill, M.D.

- Dr. Hill serves as co-investigator on Administrative Supplement Opportunity: Strategic Partnerships to End the HIV Epidemic in America's Racial and Ethnic Minority Populations-Promoting PrEP Use Among African-American AGYW in the Deep South At-risk for HIV: Provider and Client Perspectives. This is a qualitative study evaluating provider and youth perspectives and experiences with PrEP access in urban, suburban and rural Alabama. Sponsored by the NIH Center for AIDS Research (CFAR)/AIDS Research Centers (ARC).
- She also serves as clinical point person/provider managing prescribing on EPrEP: Testing an electronic PrEP initiation and maintenance home care system to promote PrEP among adolescent MSM in rural and small-town areas. The aim of this grant is to facilitate extended access to PrEP among MSM in rural settings. Sponsored by the National Institute of Child Health and Human Development (NICHD).

OTHER STUDY INVOLVING ADOLESCENT MEDICINE FACULTY

Surveillance Monitoring for ART Toxicities Study (SMARTT)

Follows three cohorts of HIV- and ART-exposed but uninfected children.
Sponsored by Pediatric HIV/AIDS Cohort Study (PHACS)

Adolescent Master Protocol for Participants 18 Years of Age and Older (AMP UP LITE)

Enrolling young adults ages 18 and older who are born to HIV-infected mothers.
Sponsored by Pediatric HIV/AIDS Cohort Study (PHACS)

Tailored Motivational Interviewing Implementation Intervention Effectiveness Trial in Multidisciplinary Adolescent HIV Care Settings

Study seeks to determine primarily the effect of the TMI implementation intervention on provider fidelity (adherence plus competence) and secondarily HIV care continuum outcomes.
Sponsored by Adolescent Medicine Trials Network for HIV/AIDS Interventions (ATN 146)

Triggered Escalating Real-time Adherence Intervention to Promote Rapid HIV Viral Suppression among Youth Living with HIV Failing First Line Antiretroviral Therapy: The TERA Study

Youth participating in the virtual youth advisory board.
Sponsored by Adolescent Trials Network (ATN) 152

Women Involved in Supporting Health (WISH)

Enrolling HIV-positive pregnant women to a peer support intervention.
Sponsored by Center for AIDS Research

A Comparative Analysis of Long-Acting Reversible Contraception Use among HIV-Positive and HIV-Negative Adolescents and Women

Compares contraception choices among women with and without HIV.
Unfunded

Identification of Strategies that Increase PrEP Uptake for Adolescents and Young Adults in the Deep South

Identify parent/caregiver knowledge about HIV and PrEP and ways in which they would support an adolescent's adherence to PrEP.
Sponsored by Dixon Award

Evaluating the Acceptability and Uptake of PrEP for Adolescent Women in the Deep South

RCT comparing adherence to PrEP among cis- and trans-female youth who use telehealth visits to SMS texting.
Sponsored by Gilead Sciences

Promoting PrEP Use among African-American AGYW in the Deep South at-risk for HIV: provider and client perspectives

Understanding barriers and facilitators for PrEP use in African American female adolescents and their primary care providers.
Sponsored by NIH CFAR/ARC Administrative Supplement

Identifying Missed Opportunities for HIV Pre-exposure Prophylaxis in the Deep South -

Quantify the number of adolescents receiving primary care who are also eligible and were recommended to start PrEP.
Unfunded

Culinary Medicine Intervention

Empowering pre-adolescent children to take ownership of their behaviors.
Sponsored by UAB—Center for Clinical and Translational Science

Neurobiology of Anorexia

Development of protocol to compare brain imaging of girls with and without anorexia.
Sponsored by UAB—Center for Clinical and Translational Science

Ketone Supplementation in Sports-Related Concussion

Investigate if ketone supplementation may mitigate the adverse effects of sports related concussion in high school football players.
Sponsored by Faculty Development Program

Dietary Intervention in Morbidly Obese Pregnant Women (Co-Investigator)

Tailored hands on nutrition education for at-risk pregnant women.
Sponsored by Center for Women's Reproductive Health

Integrating Research into Service Learning

Provides funding for integrating research into service learning classes.
Sponsored by QEP-CTL

Eating Behaviors in Middle School Students

Longitudinal study assessing the relationship between diet, behavior and academic performance.
Sponsored by Institute of Education Sciences (IES)

Assisted Pet Therapy

Decrease anxiety in eating disorders patients in partnership with Hand in Paw.
Sponsored by Institute of Education Sciences (IES)

Muscle/Bone Study

Evaluate balance, muscle strength, muscle power and bone strength in obese vs. normal-weight kids.
Sponsored by Casazza Start-Up funds

SIGNIFICANT PUBLICATIONS

Contraception. 2019 Jun 23. pii: S0010-7824(19)30214-8. *A comparative analysis of documented contraceptive use among women age 18-30 living with and without HIV in Alabama*. Hill S, Kuo HC, Aban I, Gray S, **Simpson T**, Dionne-Odom J.

Hum Vaccin Immunother. 2019 Feb 19. *A systematic literature review to examine the potential for social media to impact HPV vaccine uptake and awareness, knowledge, and attitudes about HPV and HPV vaccination*. Ortiz RR, Smith A, **Coyne-Beasley T**.

Int J Obes (Lond). 2019 Jun 17. *Change, predictors and correlates of weight- and health-related quality of life in adolescents 2-years following bariatric surgery*. Reiter-Purtill J, Ley S, Kidwell KM, Mikhail C, **Austin H**, Chaves E, Rofey DL, Jenkins TM, Inge TH, Zeller MH; in cooperation with the TeenView Study Group and Teen-LABS Consortium.

J Adolesc Health. 2019 Jan;64(1):139. *Perspectives on adolescence and young adulthood*. **Coyne-Beasley T**.

J Pediatr Adolesc Gynecol. 2019 Oct 28. *Crisis Pregnancy Centers in the United States: Lack of Adherence to Medical and Ethical Practice Standards; A Joint Position Statement of the Society for Adolescent Health and Medicine and the North American Society for Pediatric and Adolescent Gynecology*. Swartzendruber A, English A, Greenberg KB, Murray PJ, Freeman M, Upadhyia K, **Simpson T**, Miller E, Santelli J.

J Public Health Manag Pract. 2019 Jul 24. *Toward Optimal Communication About HPV Vaccination for Preteens and Their Parents: Evaluation of an Online Training for Pediatric and Family Medicine Health Care Providers*. Cates JR, Diehl SJ, Fuemmeler BF, North SW, Chung RJ, Hill JF, **Coyne-Beasley T**.

Pediatrics. 2019 Aug. *The Impact of Racism on Child and Adolescent Health*. Cavanaugh RM, Lacroix AE, Fanburg J, Rahmandar MH, Hornberger LL, Schneider MB, Yen S, Chilton LA, Green AE, Dilley KJ, Gutierrez JR, Duffee JH, Keane VA, Krugman SD, McKelvey CD, Linton JM, Nelson JL, Mattson G, Breuner CC, Alderman EM, Grubb LK, Lee J, Powers ME, Upadhyia K, **Wallace SB**.

Pediatrics. 2019 Nov 18. *Emergency Contraception*. Breuner CC, Alderman EM, Grubb LK, Hornberger LL, Powers ME, **Wallace SB**.

Pediatrics. 2019 Nov 18. *Unique Needs of the Adolescent*. Grubb LK, Powers ME, Upadhyia K, **Wallace SB**.

EXTRAMURAL AWARDS, RECOGNITION & LEADERSHIP ROLES

Tamera Coyne-Beasley, M.D.

- Dr. Coyne-Beasley was elected to the Alpha Omega Alpha Honor Medical Society.
- She was elected president of the Past President's Council of the Society for Adolescent Health and Medicine, where she also serves as a member of the Board of Directors.
- She was appointed to a consensus study committee on Applying Lessons of Optimal Adolescent Health to Improve Behavioral Outcomes for Youth with the Board on Children, Youth and Families at the National Academies of Sciences, Engineering and Medicine (NASEM).
- She was appointed as a new member to the UAB Center for Aids Research.
- She was accepted into the UAB Healthcare Leadership Academy Class of 2020.

- She is part of the National Alliance to Advance Health–Got Transitions, Transitions and Preventative Care for Youth and Young Adults, which develops recommendations for incorporating health care transition into preventive care for adolescents and young adults and is funded by Maternal and Child Health Bureau.
- She is a member of the Committee on Pediatric Research, American Academy of Pediatrics as the Society for Adolescent Health and Medicine liaison.
- She is a NIH Study Section Member, NICHD, Health Behavior and Context Committee.
- She is a member of the Diversity and Inclusion Committee of the American Pediatric Society.
- She was elected to the Birmingham Civil Rights Institute Board of Directors.
- Dr. Coyne-Beasley has been selected as the 2020 Adele D. Hofmann Visiting Professor in Adolescent Medicine and Health. The Hofmann Professorship is one of the Society for Adolescent Health's highest honors.

Heather Austin, Ph.D.

- Dr. Austin was invited to participate in the American Psychological Association Leadership Institute for Women in Psychology.
- She received the 2019 Dr. Helen L. Coons Leadership Institute for Women in Psychology Scholarship, awarded by the American Psychological Association.
- She received of the UAB Healthcare Educators Academy Extramural Award 2019–2021.
- She was selected to serve a three-year term starting in 2020 on the Society for Adolescent Health and Medicine Health Services–Mental Health Committee.
- She was appointed as a liaison to the American Psychological Association Deep Poverty Initiative.

Krista Casazza, Ph.D.,

- Dr. Casazza was awarded a Center for Clinical and Transitional Science Research Voucher for her application titled "Culinary medicine intervention to empower pre-adolescent girls to help their families to improve nutrition literacy, self-image and overall well-being." This voucher will be used in a study involving Dr. Casazza's partnership with Girls Inc.
- She received a CTL-QEP Teaching Innovation Award for her application titled "Integrating Research and Service Learning into a Team Environmental Approach to Improve Community Health Literacy." The goal of this approved proposal will be disseminated to service learning classes related to health that have the capacity to implement a research project into their curriculum, particularly focused on improving aspects of health literacy in vulnerable/underserved populations.
- She was selected for the Summer 2019 National Center for Faculty Development and Diversity Faculty Success Program Grant.
- She was appointed to the UAB Center for Women's Reproductive Health.

Stephenie Wallace, M.D.

- Dr. Wallace was elected president of the Southeast Region of the Society for Adolescent Health and Medicine.

Tina Simpson, M.D.

- Dr. Simpson was elected to the Alpha Omega Alpha Honor Medical Society.

ADOLESCENT MEDICINE FELLOWSHIP PROGRAM

2019–2020 Fellow

Hannah Hulsey, M.D.

Second Year Fellow

Residency: University of South Carolina/Palmetto Health Children's Hospital

Program Director

Tina Simpson, M.D., MPH

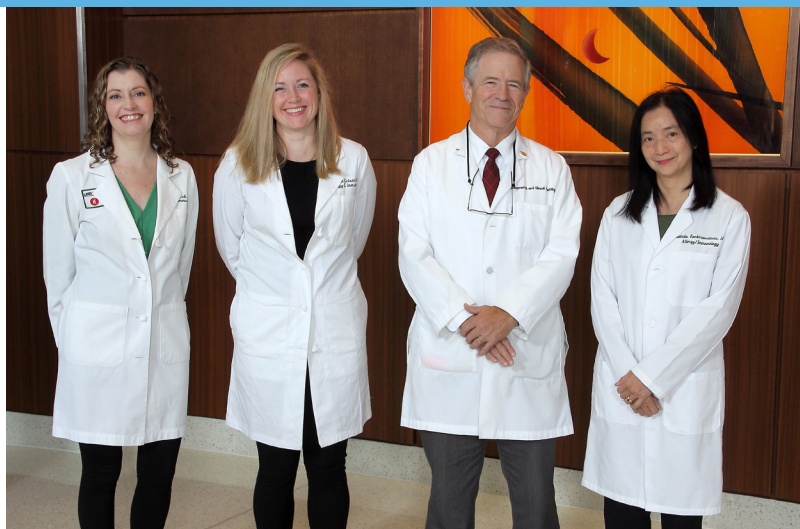
Fellowship Program Director

The UAB Adolescent Medicine Fellowship Program provides a wide array of clinical and scholarly experiences enabling fellows to gain sufficient knowledge and skills in all areas of adolescent health and medicine. As part of their clinical curriculum, fellows train in both primary care and subspecialty consultation. During their training, our fellows gain experience in interdisciplinary collaboration in research, teaching, advocacy and clinical care. Our fellows are actively involved in the teaching of medical students, residents, and other health care trainees. As part of their scholarly activities, our fellows can participate in master's-level training in public health, health administration, or other health-related fields, as suits their individual interests. Our fellows also participate in the interdisciplinary Maternal and Child Health (MCH) Bureau-funded Leadership Education in Adolescent Health (LEAH) Training Program which encompasses: MCH leadership training, community program development and involvement, policy and advocacy training, and professional networking opportunities.

Pediatric Allergy & Immunology

PEDIATRIC FACULTY

Dr. Prescott Atkinson..... Director | Professor
Dr. Amy CaJacob.....Assistant Professor
Dr. Kathleen Grisanti.....Assistant Professor
Dr. Suthida Kankirawatana.....Assistant Professor



FEATURED RESEARCH

The UAB Division of Pediatric Allergy & Immunology faculty are dedicated to research in the field of allergy and immunology and advancing knowledge in the diagnosis and care of patients with allergic diseases such as drug allergy, food allergy, asthma and atopic dermatitis, and those with primary and secondary immunodeficiencies. Since 1990, the division has been home to the UAB Allergy & Immunology Fellowship Program, which continues to graduate one or two fellows annually. The faculty have ongoing collaborations with clinical immunologists at the NIH that have resulted in the identification of novel immunodeficiency diseases in several patients and extended knowledge in the clinical manifestations, diagnosis and treatment of these disorders. **Prescott Atkinson, M.D., Ph.D.**, has a long-standing collaboration with the UAB Diagnostic Mycoplasma Lab studying the role of these parasitic bacteria in chronic diseases such as asthma and in opportunistic infections in patients with primary and secondary immunodeficiencies.

SIGNIFICANT PUBLICATIONS

Arthritis Rheumatol. 2019 Sep 12. *Benefit of Anakinra in Treating Pediatric Secondary Hemophagocytic Lymphohistiocytosis.* Eloiseily EM, Weiser P, Crayne CB, Haines H, Mannion ML, Stoll ML, Beukelman T, **Atkinson TP**, Cron RQ.

Front Immunol. 2019 Feb 4;10:40. *Clinical Efficacy, Safety and Tolerability of a New Subcutaneous Immunoglobulin 16.5% (Octanorm [Cutaquig®]) in the Treatment of Patients With Primary Immunodeficiencies.* Kobayashi RH, Gupta S, Melamed I, Mandujano JF, Kobayashi AL, Ritchie B, Geng B, **Atkinson TP**, Rehman S, Turpel-Kantor E, Litzman J.

Front Microbiol. 2019 Jul 30;10:1720. *Differential Susceptibility of Mycoplasma and Ureaplasma Species to Compound-Enhanced Copper Toxicity.* Totten AH, Crawford CL, Dalecki AG, Xiao L, Wolschendorf F, **Atkinson TP**.

JAAD Case Rep. 2019 Jan 31;5(2):195-197. *Epidermodyplasia verruciformis in a young adult with activated PI3Kδ syndrome.* Donaldson SL, Purnell JC, Pavlidakey PG, **Atkinson TP**, Kissel R.

J Allergy Clin Immunol. 2019 Oct 7. pii: S0091-6749(19)31256-4. *Recurrent microdeletions at chromosome 2p11.2 are associated with thymic hypoplasia and features resembling DiGeorge Syndrome.* Bernstock JD, Totten AH, Elkahloun AG, Johnson KR, Hurst AC, Goldman F, Groves AK, Mikhail FM, **Atkinson TP**.

J Clin Microbiol. 2019 Sep 4. pii: JCM.00968-19. *Macrolide-Resistant Mycoplasma pneumoniae in the United States as Determined from a National Surveillance Program.* Waites KB, Ratliff A, Crabb DM, Xiao L, Qin X, Selvarangan R, Tang YW, Zheng X, Dien Bard J, Hong T, Prichard M, Brooks E, Dallas S, Duffy L, Mixon E, Fowler KB, **Atkinson TP**.

Oncoimmunology. 2019 Oct 21;8(12):e1678921. A novel in situ multiplex immunofluorescence panel for the assessment of tumor immunopathology and response to virotherapy in pediatric glioblastoma reveals a role for checkpoint protein inhibition. Bernstock JD, Vicario N, Rong L, Valdes PA, Choi BD, Chen JA, DiToro D, Osorio DS, Kachurak K, Gessler F, Johnston JM Jr, **Atkinson TP**, Whitley RJ, Bag AK, Gillespie GY, Markert JM, Maric D, Friedman GK.

Pediatrics. 2019 Sep 5. pii: e20191642. *Mycoplasma pneumoniae* Carriage With De Novo Macrolide-Resistance and Breakthrough Pneumonia. Alishash AS, **Atkinson TP**, Schlappi C, Leal SM Jr, Waites KB, Xiao L.

Pediatr Blood Cancer. 2019 Feb 25:e27649. A unique phenotype of T-cell acute lymphoblastic leukemia in a patient with GATA2 haploinsufficiency. Esparza O, Xavier AC, **Atkinson TP**, Hill BC, Whelan K.

EXTRAMURAL AWARDS & LEADERSHIP ROLES

Prescott Atkinson, M.D. Ph.D.

- Dr. Atkinson serves on the Accreditation Council for Graduate Medical Education (ACGME) Review Committee for Allergy & Immunology and is a member of the ACGME Allergy & Immunology Milestones Workgroup.
- He is the outgoing chair of the Allergy & Immunology Program Directors Assembly Executive Committee.
- He is a member of the Alabama Newborn Screening Advisory Board.
- He was elected as the new president of the United States Organization for Mycoplasma.

Amy CaJacob, M.D.

- Dr. CaJacob serves as the medical director of Camp WheezeAway, the annual asthma summer camp and works in fundraising for the camp to fund transportation for low-income children to and from camp.
- She was elected as the president of the Alabama Society of Allergy, Asthma and Immunology for the 2019–2020 term.

ALLERGY & IMMUNOLOGY FELLOWSHIP PROGRAM

2019–2020 Fellows

JaneMarie Freeman, M.D.

First Year Fellow

Residency: UAB

Michael Polcari, M.D.

Second Year Fellow

Residency: University of South Alabama

Program Directors

Prescott Atkinson, M.D., Ph.D.

Program Director

Amy CaJacob, M.D.

Associate Program Director

The UAB Allergy & Immunology Fellowship Program strives to train and educate fellows to be empathic and prepared to practice as an allergist in any setting. Our fellows receive intensive clinical training in allergic and immunologic diseases in children with division faculty. During their training, fellows participate in research and quality improvement projects under the mentorship of UAB research faculty and are also encouraged to pursue electives in specialties with considerable overlap in our field. Fellows and division faculty meet twice weekly for didactic seminars in basic and clinic science and attend a monthly journal club/case presentation session with community allergist/immunologists.

Pediatric Cardiology & Cardiac Critical Care

PEDIATRIC FACULTY CARDIOLOGY

Dr. Yung R. Lau	Director Professor
Dr. Wally F. Carlo	Associate Professor
Dr. Leslie Collins	Assistant Professor
Dr. Edward Colvin	Professor
Dr. Camden Hebson	Assistant Professor
Dr. Walter Johnson	Professor
Dr. Austin Kane	Assistant Professor
Dr. Mark Law	Associate Professor
Dr. William McMahon	Professor
Dr. Bennett Pearce	Professor
Dr. Robb Romp	Associate Professor
Dr. Khalisa Syeda	Assistant Professor

CARDIAC CRITICAL CARE

Dr. Santiago Borasino	Section Chief Professor
Dr. Ahmed Asfari	Assistant Professor
Dr. Jonathan Byrnes	Associate Professor
Dr. Matthew Clark	Assistant Professor
Dr. Erika Mendoza	Assistant Professor
Dr. Leslie Rhodes	Assistant Professor
Dr. Hayden Zaccagni	Associate Professor



FEATURED RESEARCH

The UAB Division of Pediatric Cardiology & Cardiac Intensive Care had a productive year in research. The division continues to be a leader in multi-institutional collaborations such as NEPHRON, the Congenital Catheterization Research Collaborative (CCRC), and Advanced Cardiac Therapies Improving Outcomes Network (ACTION). In 2019, the division began a collaboration with the Todd and Karen Wanek Family Program for Hypoplastic Left Heart Syndrome (HLHS). This collaboration will help provide valuable research and clinical options for our patients with HLHS, one of our most vulnerable patient populations. Members of our team are assisting in valuable efforts toward expanding our knowledge of xenotransplantation and its potential use in our patient population. The divisions is currently participating in several Industry Sponsored Research Protocols, as well as various Investigator Initiated/Bench Research Projects with multiple other divisions throughout UAB.

Important innovations/novel findings from our research in 2019:

- Publication of the first CCRC manuscript describing outcomes in children with congenital heart disease.
- Publication of the NEPHRON descriptive manuscript.
- Publication of a multi-institutional analysis of perioperative serum albumin and its postoperative outcomes.
- Publication of aspiration after congenital heart surgery.
- Publication of transcatheter versus surgical pulmonary valve replacements.
- Publication of intra-aortic balloon pump as a bridge to transplant.
- Presented preliminary findings of our investigator initiated study of intraoperative adrenal insufficiency undergoing cardiopulmonary bypass surgery with and without preoperative steroids at international conferences.
- Completed our preliminary analysis of patients who received pooled plasma during cardiopulmonary bypass versus those who received standard hospital issued single-donor plasma. This was a collaboration with Octapharma USA, Inc.
- Completed enrollment of patients in phase 3 trial into the use of L-citrulline to prevent pulmonary injury after cardiopulmonary bypass surgery.
- Continue to enroll in a phase 3 randomized trial of subjects to either endoxaban tosylate versus standard of care therapy for prevention of thromboembolic events children with heart disease and have been featured in national newsletters highlighting our research participation.
- Preparing to initiate a phase 3 trial randomizing subjects to macitentan versus placebo to determine its safety and efficacy in Fontan-palliated adult and adolescents.

- Continue to enroll in the first-ever national collaboration looking at standardizing immunosuppressant therapy six months post-cardiac transplantation.
- Initiated enrollment in a post-approval study implanting the SAPIEN XT Transcatheter Heart Valve and have been featured in national newsletters highlighting our study participation.
- Currently screening patients for our participation in a phase 4 trial randomizing subjects to apixaban to standard of care therapy for treatment of venous thromboembolism.
- Continue to collect specimens for our biorepository, now with more than 500 individual patient samples.
- Completed data analysis for our collaborative trial with Children's of Colorado looking at acute kidney injury after the Norwood procedure. Preliminary results have been presented at a national conference.
- Contributed data to an international collaborative looking at catecholaminergic polymorphic ventricular tachycardia.
- Contributed data to a multi-institutional project looking at the physiology of the Fontan Liver after Cardiac Transplantation.
- Contributed data to a multi-institutional project looking at placements of transcatheter pulmonary valves.
- Contributed data to a multi-institutional project looking at Fontan patients who received ventricular assist devices.
- Our division had four poster research presentations at scientific conferences in 2019.
- A member of our team was the representative of the NEPHRON collaborative to give an oral presentation at this year's PCICS meeting in London, England.

SIGNIFICANT PUBLICATIONS

Am J Cardiol. 2019;pii:S0002-9149(19)31100-2. *Comparison of Transcatheter Pulmonic Valve Implantation with Surgical Pulmonic Valve Replacement in Adults (from the National Inpatient Survey Databset).* Chatterjee A, Bhatia N, Torres MG, Cribbs MG, Mauchley DC, **Law MA**.

Ann Thorac Surg. 2019. *Anti-pig antibody in infants: Can a genetically-engineered pig heart bridge to allotransplantation?* Li Q, Hara H, Banks CA, Yamamoto T, Ayares D, Mauchley DC, Dabal RJ, Padilla L, **Carlo WF, Rhodes LA**, Cooper DKC, Cleveland DC.

Cardiol Young. 2019 Apr;29(4):511-518. *Neonatal and Paediatric Heart and Renal Outcomes Network: design of a multi-centre retrospective cohort study.* Gist KM, Blinder JJ, Bailly D, **Borasino S**, Askenazi DJ, Cooper DS, Krawczeski CD, Gaies M, Morales DLS, Hock KM, Alten J.

Cardiol Young. 2019 Jun 4:1-7. *Perioperative serum albumin and its influence on clinical outcomes in neonates and infants undergoing cardiac surgery with cardiopulmonary bypass: a multi-centre retrospective study.* Henry BM, **Borasino S**, Ortmann L, Figueroa M, Rahman AKMF, Hock KM, Briceno-Medina M, Alten JA.

Cardiol Young. 2019 Dec 16:1-2. *A large ventricular fibroma requiring surgical resection in a symptomatic 3-month-old infant.* Marshall AS, Dabal RJ, **Law MA**.

Circ Heart Fail. 2019;12(9):e006130. *Intra-aortic balloon pump as a bridge to heart transplant after non-ST-segment-elevation myocardial infarction in palliated hypoplastic left heart syndrome.* Osula D, Farris GR, Chatterjee A, **Law MA**, Cribbs MG.

Circulation. 2019 May 28;139(22):2588-2590. *An Infant With Hemodynamic Collapse.* Prejean SP, **Raulston JEB**, Kay GN.

Congenit Heart Dis. 2019 May;14(3):341-349. *Comprehensive comparative outcomes in children with congenital heart disease: The rationale for the Congenital Catheterization Research Collaborative.* Petit CJ, Qureshi AM, Glatz AC, McCracken CE, Kelleman M, Nicholson GT, Meadows JJ, Shahanavaz S, Zampi JD, **Law MA**, Pettus JA, Goldstein BH.

Pediatric Cardiology. 2019 July 10. *Aspiration After Congenital Heart Surgery.* **Raulston JE**, Smood B, Moellinger A, Heinemann A, Smith N, **Borasino S, Law MA**, Alten JA.

Pediatr Transplant. 2019 Feb 8:e13366. *Comparison of 10-year graft failure rates after induction with basiliximab or anti-thymocyte globulin in pediatric heart transplant recipients-The influence of race.* **Carlo WF**, Bryant R 3rd, Zafar F.

World Journal for Pediatric and Congenital Heart Surgery. 10(1):42-49. January 2019. *Congenitally Corrected Transposition Presenting in the First Year of Life: Survival and Fate of the Systemic Right Ventricle.* Smood B, Kirklin JK, Pavnica J, Tresler M, **Johnson WH**, Cleveland DC, Mauchley DC, Dabal RJ.

PARTICIPATION IN NATIONAL AND REGIONAL RESEARCH COLLABORATIVES, QUALITY IMPROVEMENT PROJECTS AND LEARNING NETWORKS

The Division of Cardiology and Cardiac Critical Care participates in the following Quality Improvement Networks:

- PC4–Cardiac Intensive Care Unit Data on outcomes
- STS–Pediatric and Adult Congenital Heart Disease surgery outcomes
- ACC–Impact–Pediatric and Adult Heart Catheterization outcomes
- PediMac–Extracorporeal Ventricular Device outcomes
- InterMac–Adult Ventricular Assist Device outcomes in patients with congenital heart disease

- ELSO–ECMO outcomes
- NPC–QIC–Complex congenital heart disease outcomes
- Pediatric Heart Transplant Study
- UNOS–Organ Transplantation Outcomes
- CCRC–Comparison of Management Strategies for Symptomatic Young Infants with Tetralogy of Fallot: A Multicenter Congenital Catheterization Research Collaborative Study
- ACTION–Advanced Cardiac Therapies Improving Outcomes Network to Improve the Health of Pediatric and Congenital Heart Disease Patients with Heart Failure
- PCMR (process initiated)–Pediatric Cardiomyopathy Registry
- CPVT–Improving Diagnosis and Treatment in Catecholaminergic Polymorphic Ventricular Tachycardia

EXTRAMURAL AWARDS, RECOGNITION & LEADERSHIP ROLES

Ed Colvin, M.D., was selected for the 2019 Dean's Excellence Award in Service, Senior Faculty.

PEDIATRIC CARDIAC CRITICAL CARE FELLOWSHIP PROGRAM

2019–2020 Fellow

Sai Krishna Surapa Raju, M.D.

First Year Fellow

Residency: Driscoll Children's Hospital

Program Director

Leslie Rhodes, M.D.

Program Director

The UAB Pediatric Cardiac Critical Care Fellowship Program is dedicated to educating future cardiac intensivists in the independent management and care of pediatric patients with congenital and acquired heart disease. This one-year fellowship is uniquely designed to provide training based on our fellow's previous clinical experience and focuses on developing clinical skills and knowledge specifically in pediatric cardiac critical care. As the only Pediatric Cardiothoracic Surgery Center in the state of Alabama, our fellow is exposed to a wide-breath of both acute and chronic congenital and acquired heart disease in children and young adults. This exposure includes pre- and postoperative care of neonates and children with congenital heart disease, medical management of patients with heart failure and arrhythmias, ventricular assist devices, ECMO, and heart transplantation. As part of their training, our fellow participates in multidisciplinary research with opportunities available in both clinical and basic science research.

PEDIATRIC CARDIOLOGY FELLOWSHIP PROGRAM

2019–2020 Fellows

Christian Tan, M.D.

First Year Fellow

Residency: University of South Florida

Stephen Clark, M.D.

Second Year Fellow

Residency: UAB

Jeb Raulston, M.D.

Third Year Fellow

Residency: UAB

Program Directors

Mark Law, M.D.

Program Director

Robb Romp, M.D.

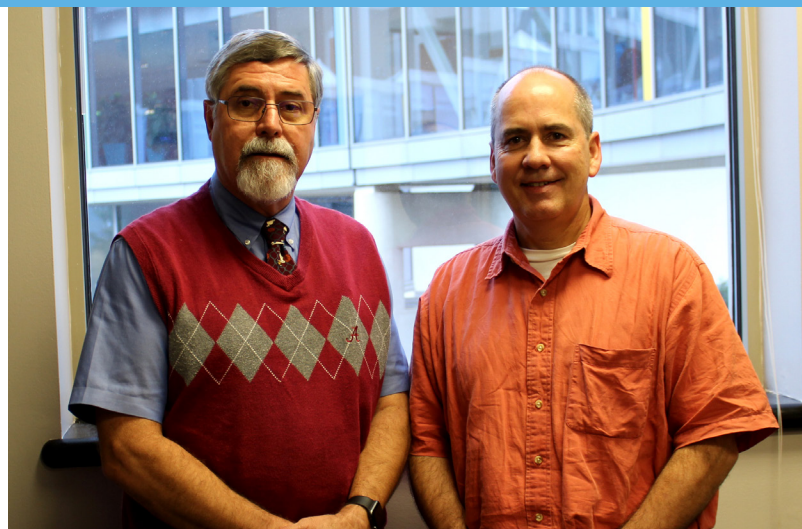
Associate Program Director

The UAB Pediatric Cardiology Fellowship Program offers an innovative training opportunity to develop clinical excellence and the skills needed to be an independently practicing pediatric cardiologist. Our fellows are exposed to a broad diversity of congenital and acquired cardiac disease, as well as ample opportunities for scholarly activity, advocacy and leadership. During their training, our fellows participate in multidisciplinary research with mentorship from division faculty. Our goal is to provide our fellows with the knowledge and skills necessary to become proficient and effective in identifying reasonable research hypotheses.

Child Abuse Pediatrics

PEDIATRIC FACULTY

Dr. Michael Taylor..... Director | Professor
Dr. David Bernard..... Professor
Dr. Melissa Peters..... Associate Professor



FEATURED RESEARCH

Michael Taylor, M.D.

Dr. Taylor was the principal investigator of the West Alabama Child Medical Evaluation Program: a clinic for medico-legal evaluation of potentially abused children. John C. Higginbotham, Ph.D., MPH, from the University of Alabama was co-principal investigator. This was an extensive analysis of the findings of 574 children examined for sexual abuse from 1991–2004. This was the first study of medical findings on children being assessed for potential sexual abuse from Alabama. The study was completed and published in June 2019.

Screening for nonviral sexually transmitted infections in children being evaluated for sexual abuse: a comparison of nucleic acid amplification tests vs. culture and wet preparations.

Aim: To evaluate the performance of nucleic acid amplification tests (NAATs) to detect infection with *Neisseria gonorrhea*, *Chlamydia trachomatis*, and/or *Trichomonas vaginalis* in children being evaluated for possible sexual abuse in comparison to culture and wet preparation slides (vaginal).

Methods: Patient population: All children under 18 years of age who were seen for an examination due to concerns for possible sexual abuse at the Children's Hospital Intervention and Prevention Services (CHIPS) Center and all children under 18 years of age seen by the Pediatric Sexual Assault Nurse Examiner (SANE) nurses in the Children's of Alabama emergency department during a four-year period from January 1, 2014 through December 31, 2017.

Child Abuse Medical Systems Survey 2019

Aim: This is a project to survey child abuse medical providers in all 50 US States, Puerto Rico, and Washington, DC. The goal is to identify any regional and/or statewide networks and then identify how the identified networks function. Information obtained from the proposed surveys will be used to demonstrate to potential funding agencies in Alabama what other states have done to develop and/or maintain a medical system for child abuse. We intend to share the child abuse medical network information obtained by this project with the participants who choose to receive it. The database would also serve as a valuable resource across the country to help primary healthcare providers direct potential victims of child maltreatment to the appropriate networks of medical providers specifically trained to care for such individuals.

SIGNIFICANT PUBLICATIONS

J Child Sex Abus. 2019 Jun 20;1-22. *Child Sexual Abuse Exam Results in West Alabama.* **Taylor MA**, Higginbotham JC.

South Med J. 2019 Sep;112(9):487-490. *A Simulation Course Focusing on Forensic Evidence Collection Improves Pediatric Knowledge and Standardizes Curriculum for Child Abuse.* **Bernard DW**, White ML, Tofil NM, Jolliffe C, Youngblood A, Zinkan JL, Gaither SL, Peterson DT, Yuan YY.

EXTRAMURAL AWARDS & LEADERSHIP ROLES

Michael Taylor, M.D.

- Dr. Taylor is a governor's appointee member of the Alabama Child Death Review System State Child Death Review Team.
- He is a member of the American Academy of Pediatrics Council on Child Abuse & Neglect and the AAP Child Death Review Section.
- He serves as the Alabama Chapter–AAP appointed representative to the Alabama Health Care Human Trafficking Training Program Commission.

David Bernard, M.D.

- Dr. Bernard is the medical director of Children's of Alabama Sexual Assault Nurse Examiner (SANE) Program.
- He serves on the Shelby County Multidisciplinary Team and the Shelby County Child Death Review Committee.
- He serves as the coordinator and moderator for the Alabama Child Abuse Web Based Quarterly Review sessions that involves many of the medical providers performing examinations of potentially abused children for the 34 Alabama Child Advocacy Centers.

Melissa Peters, M.D.

- Dr. Peters serves on both the Child Death Review Committee and the Multidisciplinary Team for the city of Bessemer and for Jefferson County.
- She also serves on the following:
 - Federal Human Trafficking Task Force for the Northern and Middle Districts of Alabama,
 - the Alabama State Human Trafficking Task Force, the Child Trafficking Solutions Protocols Work Group for Jefferson County,
 - BEAMS (Bringing the Exploitation of Alabama's Minors to a Stop) Advisory Board,
 - and the Steering Committee for the Prevention of Child Maltreatment Fatalities for the Alabama State Department of Human Resources.



Pediatric Critical Care

PEDIATRIC FACULTY

Dr. Nancy Tofil	Director Professor
Dr. Mark Buckmaster	Associate Professor
Dr. Madhura Hallman.....	Assistant Professor
Dr. Leslie Hayes.....	Professor
Dr. Michele Kong	Associate Professor
Dr. Priya Prabhakaran	Professor
Dr. Robby Richter	Assistant Professor
Dr. Chrystal Rutledge.....	Assistant Professor
Dr. Will Sasser	Associate Professor



FEATURED RESEARCH

The UAB Division of Pediatric Critical Care has many important research endeavors housed both within and outside of our division.

Within our division, **Michele Kong, M.D.**, is leading basic and translational science research focusing on acute lung injury and respiratory viral infections. She recently presented her preliminary findings, highlighting the impact of azithromycin in the treatment of children with Respiratory Syncytial Virus (RSV)-induced respiratory failure. In addition, she is delineating the role and impact of protease dysregulation in the pathogenesis of Respiratory Syncytial Virus (RSV)-induced respiratory failure in children.

Robert Richter, M.D., is studying endothelial disruption and activation in the setting of sepsis in collaboration with Jillian Richter, Ph.D., Division of Acute Care Surgery, UAB Department of Surgery, under the mentorship of Jean-Francois Pittet, M.D., Division of Critical Care Medicine, UAB Department of Anesthesiology and Perioperative Medicine. He was awarded a multi-year Kaul Pediatric Research Institution grant in January 2018 to help fund his research.

Leslie Hayes, M.D., leads our division's quality improvement efforts with two major projects this year, including early mobility and delirium screening. She and her team have presented their findings at several national meetings, including Society for Critical Care Medicine and the Institute for Healthcare Improvement.

Dr. Hayes is also the director for our clinical database, Virtual Pediatric Systems (VPS), and manages its use for research and quality improvement in the PICU.

She was an invited speaker at the National VPS annual meeting to discuss our unique and robust approach to using data for quality improvement.

Mark Buckmaster, M.D., leads our deep sedation service. He is nationally involved with a pediatric sedation network focusing on best sedation practices in children. He has recently published a book chapter on pediatric sedation.

Madura Hallman, M.D., leads a Tracheostomy Decision Support Service, which is a multidisciplinary effort to improve the process of advanced technology in complex pediatric patients.

Many of our faculty are actively involved with education and simulation research.

Will Sasser, M.D., and **Priya Prabhakaran, M.D.**, are heavily involved with important education projects focusing on medical students, residents and PICU fellows. Dr. Sasser is a member of a multicenter education research collaborative (EPIC Investigators: Education in Pediatric Intensive Care) focused on education topics related to PICU fellows.

Chrystal Rutledge, M.D., and Kristen Waddell, CRNP, have developed an important simulation outreach program, COACHES (Children's of Alabama Community Healthcare Education Simulation Program), to assist hospitals throughout the state with pediatric emergency preparedness.

Nancy Tofil, M.D., and **Crystal Rutledge, M.D.**, work on many simulation education studies and best practices of cardiopulmonary resuscitation within the INSPIRE (International Network for Simulation-based Pediatric Innovation, Research, Education) Network.

SIGNIFICANT PUBLICATIONS

Am J Respir Crit Care Med. 2019; 199(2):181-189. *Plasma Matrix Metalloproteinase Profiles. A Novel Pathway in Pediatric Acute Respiratory Distress Syndrome.* Zinter MS, Delucchi KL, **Kong MY**, Orwoll BE, Spicer AS, Lim MJ, Alkhoul MF, Ratiu AE, McKenzie AV, McQuillen PS, Dvorak CC, Calfee CS, Matthay MA, Sapru A. Early.

BMJ Simulation. August 2019. *Rapid cycle deliberate practice improved and sustains pediatric resident PALS algorithm adherence.* **Swinger ND, Rutledge C**, Gaither S, Whitfield A, Youngblood A, Zinkan JL, **Tofil NM**.

Front Pediatr. 2019 Apr 26;7:165. *Contemporary Trainee Knowledge of Autism: How Prepared Are Our Future Providers?* Austriaco K, Aban I, Willig J, **Kong M**.

Front Pediatr. 2019; *Utilization of a Novel Pathway in a Tertiary Pediatric Hospital to Meet the Sensory Needs of Acutely Ill Pediatric Patients.* **Gupta N**, Brown C, Deneke J, Maha J, **Kong NM**.

Health System. May 2019. *Development of a Computerized Paediatric Intensive Care Unit Septic Shock Pathway: Improving User Experience.* Shivers L, Feldman S, **Hayes LW**.

Health Syst (Basingstoke). 2019 Dec 2;8(3):153-154. *Introduction to "health informatics, healthcare quality and safety, and healthcare simulation: the new triad to advance healthcare operations."* Feldman SS, Zengul FD, Ozaydin B, Brazil V, **Hayes L**, Schooley B.

J Arthroplasty. 2019 Aug 6. pii: S0883-5403(19)30724-7. *Optimization of Orthopedic Surgical Instrument Trays: Lean Principles to Reduce Fixed Operating Room Expenses.* Cichos KH, Hyde ZB, Mabry SE, Ghanem ES, Brabston EW, **Hayes LW**, McGwin G Jr, Ponce BA.

J Nurses Prof Dev. 2019 Jul/Aug;35(4):E1-E8. *Nurse Vigilance: A Three-Part Simulation Course to Decrease Cardiopulmonary Arrests Outside Intensive Care Units.* Zinkan JL, **Rutledge C**, Norwood C, Wise KM, Gaither S, Cameron B, **Tofil NM**, Raju SKS.

Journal of Critical Care Medicine. 2019;5(2):71-75. *Pyruvate Dehydrogenase Complex Deficiency: An Unusual Cause of Recurrent Lactic Acidosis in a Paediatric Critical Care Unit.* **Neha Gupta, Chrystal Rutledge**.

Leadersh Health Serv (Bradf Engl). 2019 May 7;32(2):251-263. *Training leaders for a culture of quality and safety.* Feldman SS, Buchalter S, Zink D, Slovinsky DJ, **Hayes LW**.

Minerva Pediatr. 2019 Feb;71(1):76-81. *Clinically relevant cardiopulmonary interactions for the pediatric intensivist.* **Sasser WC**, Sims AN, **Loberger JM, Tofil NM, Prabhakaran P**.

Pediatr Crit Care Med. 2019 Feb;20(2):101-109. *Antibiotic Prescription in Young Children With Respiratory Syncytial Virus-Associated Respiratory Failure and Associated Outcomes.* Shein SL, **Kong M**, McKee B, O'Riordan M, Toltzis P, Randolph AG.

Pediatr Crit Care Med. 2019 Apr;20(4):e191-e198. *Influence of Cardiopulmonary Resuscitation Coaching and Provider Role on Perception of Cardiopulmonary Resuscitation Quality During Simulated Pediatric Cardiac Arrest.* Cheng A, Kessler D, Lin Y, **Tofil NM**, Hunt EA, Davidson J, Chatfield J, Duff JP; International Network for Simulation-based Pediatric Innovation, Research and Education (INSPIRE) CPR Investigators.

Pediatr Crit Care Med. 2019 Aug;20(8):795-796. *The authors reply.* Shein SL, **Kong M**, Toltzis P, Randolph AG.

Pediatr Res. 2019 Jul 2. *Sensory processing: shifting our mindset to improve care delivery.* **Kong M**, Maha J.

Pediatr Rev. 2019 Oct;40(Suppl 1):29-30. *Failure to Thrive and Frequent PICU Admissions in a 2-year-old Boy.* Morrison TM, **Cooper J**, O'Shea K, Unaka N.

South Med J. 2019 Sep;112(9):487-490. *A Simulation Course Focusing on Forensic Evidence Collection Improves Pediatric Knowledge and Standardizes Curriculum for Child Abuse.* Bernard DW, White ML, **Tofil NM**, Jolliffe C, Youngblood A, Zinkan JL, Gaither SL, Peterson DT, Yuan YY.

The Healthcare Quality Book, Vision, Strategy, and Tools. Fourth Edition. 2019. *Chapter 7: Health Information Technology in Healthcare Quality and Safety: Prevention, Identification, and Action.* Feldman SS, Buchalter SE, **Hayes LW**.

PARTICIPATION IN NATIONAL AND REGIONAL RESEARCH COLLABORATIVES, QUALITY IMPROVEMENT PROJECTS AND LEARNING NETWORKS

Michele Kong, M.D., is the PI for several multi-centered trials including:

- The NIH funded PROSpect trial that seeks to determine the effects of prone positioning and high frequency ventilation on pediatric acute respiratory distress syndrome outcome
- The ADAPT trial that investigates the current approaches for pediatric traumatic injury
- The PICFLU trial that aims to identify genetic factors underlying disease susceptibility and severity in children with influenza virus-related critical illness.
- Many of these involve the international study group, Pediatric Acute Lung Injury and Sepsis Investigators (PALISI).

EXTRAMURAL AWARDS & LEADERSHIP ROLES

Michele Kong, M.D., was named a 2019 Woman of Impact by Yellowhammer News. She was recognized for dedication to serving others.

Robby Richter, M.D., was awarded funding from the UAB Faculty Development Grant Program (FDGP) for his proposed projects "Evaluation of Roneparstat as a Novel Treatment Strategy in Sepsis."

Nancy Tofil, M.D., M.Ed., was elected to the Board on the Executive Council for the INSPIRE (International Network for Simulation-Based Research and Education) Pediatric Simulation Collaborative.

PEDIATRIC CRITICAL CARE FELLOWSHIP PROGRAM

2019–2020 Fellows

Joshua Cooper, M.D.

First Year Fellow

Combined Critical Care & Infectious Diseases

Residency: UAB

Nick Rockwell, M.D.

First Year Fellow

Residency: UAB

Lece Webb, M.D.

First Year Fellow

Residency: University of South Carolina/Greenville Health System

Felicia Sifers, M.D.

Second Year Fellow

Residency: University of Oklahoma

Emily Walroth, M.D.

Second Year Fellow

Residency: University of South Carolina/Greenville Health System

Veronica Godsey, M.D.

Third Year Fellow

Residency: University of West Virginia

Jeremy Loberger, M.D.

Third Year Fellow

Residency: University of South Carolina/Greenville Health System

Program Director

Priya Prabhakaran, M.D.

Program Director

The UAB Pediatric Critical Care Fellowship Program combines research and clinical experiences to prepare our trainees to be excellent intensivists and successful in the academic setting. Our program is the only fully accredited comprehensive critical care fellowship program in the state of Alabama. We have a 100% pass rate for first-time board taker of the American Board of Pediatrics Subspecialty board exam in Pediatric Critical Care Medicine. As the only Level I pediatric trauma center and ECMO center in the state, fellows encounter a wide variety of common and rare critical illnesses representing all subspecialties and acquire the necessary skills to become excellent academic intensivists. They learn to diagnose and care for patients with a wide variety of conditions such as multiple traumas, respiratory failure, surgical diagnoses, shock and multi-organ failure dysfunction. During their training, our fellows also devote time and effort to academic interests, including research projects (clinical, translational, or bench research), and are able to select a research mentor from across all specialties on the UAB campus.

Developmental-Behavioral Pediatrics

PEDIATRIC FACULTY

Laura McGuinn, M.D. Division Director | Professor
Allison Cavender, M.D. Assistant Professor
Myriam Peralta-Carcelen, M.D. Professor
Snehal Khatri, M.D. Associate Professor
Justin Schwartz, M.D. Assistant Professor
Kimberly Stringer, M.D. Associate Professor

CIVITAN SPARKS CLINICS PEDIATRIC TEAM MEMBERS

Fred Biasini, Ph.D. Professor
Kristi Guest, Ph.D. Associate Professor
Stephen Mitchell, DMD Professor
Sarah O'Kelley, Ph.D. Associate Professor



FEATURED RESEARCH

The Division of Developmental-Behavioral Pediatrics is working to improve the system of care and care delivery for children with autism and related neurodevelopmental disorders. Faculty and staff participate in multidisciplinary research spanning a variety of concerns including: development of an autism registry and bio-banking repository for autism etiological research in collaboration with the UAB Department of Neurobiology; NIH Neonatal Research Network neonatal follow-up, including neonatal opioid exposure with the Division of Neonatology; and work on Rett syndrome and tuberous sclerosis with the Division of Pediatric Neurology.

Myriam Peralta, M.D. serves as the co-PI, with Dr. Namasivayam Ambalavanan, UAB Division of Neonatology, of the Outcomes of Babies with Opioid Exposure (OBOE) project, a NICHD-funded multicenter project to evaluate long-term neurodevelopmental outcomes and structural brain changes by MRI in infants exposed to opioids in the perinatal period. Dr. Peralta also serves as the follow-up PI for the UAB Center of the NICHD Neonatal Research Network (NRN). The Newborn Follow-up Program transitioned this year from the Division of Developmental-Behavioral Pediatrics to its new home in Neonatology with Dr. Waldermar Carlo, UAB Division of Neonatology, who is the PI for the UAB NRN. She is the follow up coinvestigator for the PREMOD trial: A randomized Controlled Trial of Umbilical Cord Milking vs. Delayed Cord Clamping in Premature Infants. Dr. Peralta is the follow-up investigator for the Randomized Clinical Trial Comparing the Overall Adverse Event Rate of Inguinal Hernia Repair (IHR) prior to NICU Discharge vs. IHR after NICU discharge and beyond 55 weeks post menstrual age in premature infants.

Kimberly Stringer, M.D., continued as a co-investigator for the Early Childhood Health Promotion System for High Need Program, which is a Human Resources and Services Administration (HRSA)-sponsored grant through the University of Mississippi Medical Center. The central purposes of this project are to increase the prevalence of developmental screening rates throughout Mississippi, establish a well-trained workforce in regard to early childhood development, and achieve policy change and sustainability based on the novel system developed.

Fred Biasini, Ph.D., continued as the principal investigator for the US Maternal and Child Health Bureau (MCHB)-funded University Centers for Excellence in Developmental Disabilities (UCEDD) and Leadership Education in Neurodevelopmental Disabilities (LEND) programs. **Sarah O'Kelley, Ph.D.**, continued to serve as the training director for the UCEDD and LEND programs.

SIGNIFICANT PUBLICATIONS

Am Psychol 2019. 74(3):356-367. *Impacting development in infants with tuberous sclerosis complex: multidisciplinary research collaboration.* Williams M, Pearson D, Capal J, Byars A, Murray D, Kissinger R, Bebin E, Krueger D, **O'Kelley S**, TACERN Study Group.

Epilepsia 2019. 60(8):1721-1732. *Increased electroencephalography connectivity precedes epileptic spasm onset in infants with tuberous sclerosis complex.* Davis P, Kapur K, Filip-Dhima R, Trowbridge S, Little E, Wilson A, Leuchter A, Bebin E, Krueger D, Northrup D, **O'Kelley S**, Tuberous Sclerosis Autism Centers of Excellence Research Network.

Epilepsia 2019. 60(12):2428-2436. *Scalp EEG spikes predict impending epilepsy in TSC infants: a longitudinal observational study.* Wu J, Goyal M, Peters J, Krueger D, Sahin M, Northrup H, **O'Kelley S**, Williams M, Pearson D, Hanson E, Byars A, Krefting J, Beasley M, Cutter G, Limdi N, Bebin E.

Int J Pediatr Neonat Care. 2019. 5:151. *Characteristics Associated with Improvement Following the SAM Robot Intervention for Children with Autism Spectrum Disorder.* Lebersfeld J, Brasher C, **Biasini F**, Hopkins M.

J Pediatr. 2019 pii: S0022-3476(19)30971-0. *Developmental outcomes of extremely preterm infants with a need for child protective services supervision*. McGowan EC, Laptook AR, Lowe J, **Peralta-Carcelen M**, Chowdhury D, Higgins RD, Hintz SR, Vohr BR; Eunice Kennedy Shriver National Institute of Child Health and Human Development Neonatal Research Network.

J Pediatr. 2019. 204:148-156.e4. *Behavioral deficits at 18-22 months of age are associated with early cerebellar injury and cognitive and language performance in children born extremely preterm*. Duncan AF, Bann CM, Dempsey A, **Peralta-Carcelen M**, Hintz S; Eunice Kennedy Shriver National Institute of Child Health and Development Neonatal Research Network.

Pediatrics. 2019;144(4):e20192520. *School-aged children who are not progressing academically: Considerations for pediatricians*. Rey-Casserly C, **McGuinn L**, Lavin A. AAP Committee on Psychosocial Aspects of Child and Family Health, Section on Developmental-Behavioral Pediatrics.

Pub Health Rev. 2019. 2(3). *Community education workshops aimed at reducing health disparities and bridging gaps in health care for the autism spectrum disorder population*. Griffith E, Clesli C, **O'Kelley S**, **Biasini F**.

PARTICIPATION IN NATIONAL AND REGIONAL RESEARCH COLLABORATIVES, QUALITY IMPROVEMENT PROJECTS AND LEARNING NETWORKS

Project ECHO® (Extension for Community Health-care Outcomes) is a live videoconferencing model that hosts educational events between the sub-specialists and primary care clinicians. The local provider uses this knowledge to manage patients in their community while receiving ongoing mentoring from subspecialists through the interactive ECHO sessions. Project ECHO: Autism, led by Justin Schwartz, M.D., completed its most recent cycle in early 2019. This multidisciplinary, cross-organizational team connected with primary care providers in pediatrics and family medicine to promote best practices in autism care. ECHO Autism is currently collaborating with the UAB School of Public Health to assess provider needs related to care for children with autism in preparation for future ECHO Autism cycles. Dr. Schwartz served in an advisory role to the Pediatric Access to Telemental Health System (PATHS) program at Children's of Alabama, particularly regarding their Project ECHO® component.

EXTRAMURAL AWARDS, RECOGNITION & LEADERSHIP ROLES

Snehal Khatri, M.D.

- Dr. Khatri was appointed to the leadership role as the Civitan-Sparks Clinical Director in June, 2019.
- She participated in the REACH Institute's Patient-Centered Mental Health in Pediatric Primary Care (PPP) Mini-Fellowship program, which provides pediatricians, family physicians, nurse practitioners, physician's assistants, psychiatrists and neurologists with up-to-date training in the diagnosis and treatment of mental health conditions they see every day in practice.

Laura McGuinn, M.D.

- Dr. McGuinn participated in the UAB Healthcare Quality and Safety Academy, earning a graduate certificate in December. The certificate prepares individuals to implement quality- and safety-based initiatives in their home institutions, using the concepts of high-reliability leadership, data system design, process management and hazard analysis. In this semester, group projects focused on improving the organization of developmental-behavioral clinical services for children with autism and related neurodevelopmental disabilities offered through the division.

Myriam Peralta, M.D.

- Dr. Peralta continued to serve as an executive member of the American Academy of Pediatrics Section of Developmental and Behavioral Pediatrics.
- She was appointed to the UAB Center for Women's Reproductive Health.

Justin Schwartz, M.D.

- Dr. Schwartz continued to serve as an executive committee member of Alabama Interagency Autism Coordinating Council (AIACC) as the Alabama Chapter of the American Academy of Pediatrics representative. The Alabama state legislature created the AIACC to work with stakeholders to establish a long-term plan for a system of care for individuals with ASD and their families.
- He is the chair of the Diagnostics and Health subcommittee of the AIACC.
- He participated in the Alabama Chapter of the American Academy of Pediatrics Alabama Child Health Improvement Alliance (ACHIA) Quality Improvement Network to conduct a project to improve the developmental screening and referral services in primary care pediatric offices throughout the state.
- He participated in the UAB Healthcare Quality and Safety Academy, earning a graduate certificate in December. The certificate prepares individuals to implement quality- and safety-based initiatives in their home institutions, using the concepts of high-reliability leadership, data system design, process management and hazard analysis. In this semester, group projects focused on improving the organization of developmental-behavioral clinical services for children with autism and related neurodevelopmental disabilities offered through the division.

Kimberly Stringer, M.D.

- Dr. Stringer participated in the UAB Healthcare Quality and Safety Academy, earning a graduate certificate in December. The certificate prepares individuals to implement quality- and safety-based initiatives in their home institutions, using the concepts of high-reliability leadership, data system design, process management and hazard analysis. In this semester, group projects focused on improving the organization of developmental-behavioral clinical services for children with autism and related neurodevelopmental disabilities offered through the division.

Pediatric Emergency Medicine

PEDIATRIC FACULTY

Dr. Peter Glaeser	Director Professor
Dr. Mark Baker	Associate Professor
Dr. Steven Baldwin	Professor
Dr. Judson Barber	Professor
Dr. David Bernard	Professor
Dr. Shaundra Blakemore	Assistant Professor
Dr. Christine Campbell	Assistant Professor
Dr. Christina Cochran	Assistant Professor
Dr. Teresa Coco	Associate Professor
Dr. Valerie Davis	Associate Professor
Dr. Shea Duerring	Assistant Professor
Dr. Pallavi Ghosh	Assistant Professor
Dr. Lynzee Head	Instructor
Dr. Terry Hope	Assistant Professor
Dr. Kara Huls	Assistant Professor
Dr. Nicole Jones	Assistant Professor
Dr. Ann Klasner	Professor
Dr. Patricia LaBorde	Instructor
Dr. Edward Lose	Assistant Professor
Dr. Laurie Marzullo	Associate Professor
Dr. Heather Mitchell	Assistant Professor



Dr. Kathy Monroe	Professor
Dr. Michele Nichols	Professor
Dr. Melissa Peters	Associate Professor
Dr. James Sedlis	Assistant Professor
Dr. Annalise Sorrentino	Professor
Dr. Marjorie Lee White	Professor

FEATURED RESEARCH

Researchers in the UAB Division of Pediatric Emergency Medicine are working on a number of multicenter studies involving infectious diseases in young infants, coordinated by the National Pediatric Emergency Medicine Clinical Research Network. The division has additional important research focus areas including:

- Improved education through simulation
- Injury prevention
- Pain management in the Emergency Department
- Quality improvement

SIGNIFICANT PUBLICATIONS

Clinical Infectious Disease. 2019 May 24. *Predicting Hemolytic Uremic Syndrome and renal Failure in Shiga Toxin-Producing Escherichia coli Infected Children*. McKee RS, Schnadow D, Tarr PI, Xie J, Finkelstein Y, Desai N, Lane RD, Bergmann KR, Kaplan RL, Hariharan S, Cruz AT, Cohen DM, Dixon A, Ramgopal S, Rominger A, Powell EC, Kilgar J, Michelson KA, Beer D, Bitzan M, **Pruitt CM**, Yen K, Meckler GD, Plint AC, Bradin S, Abramo TJ, Gouin S, Kam AJ, Schuh A, Balamuth F, Hunley TE, Kanegaye JT, Jones NE, Avva U, Porter R, Fein DM, Louie JP, Freedman SB.

Pediatrics. 2019 Jun 5. *A Predication Model to Identify Febrile Infants ≤ 60 Days at Low Risk of Invasive Bacterial Infection*. Aronson PL, Shabanova V, Shapiro ED, Wang ME, Nigrovic LE, **Pruitt CM**, DePorre AG, Leazer RC, Desai S, Sartori LF, Marble RD, Rooholamini SN, McCulloh RJ, Woll C, Balamuth F, Alpern ER, Shah SS, Williams DJ, Browning WL, Shah N, Neuman M; Febrile Young Infant Research Collaborative.

Acad. Pediatrics. 2019 June 11. *Funding Sources and Perceived Financial Insecurity in Pediatric Subspecialty Fellowship Programs*. Weiss P, Myers AL, McGann KA, Mason KE, Kesselheim JC, Fleming G, Barron C, **Klasner A**, Heyman MB, Weiss DL, Mauer E, Gerber LM, Abramson EL.

ADDITIONAL PUBLICATIONS

JEMF. 2019 Jan 16; 5(1). *Connecting School-Age Children with EMS Personell in an AMS Week/EMSC Day Project*. Hert K, **Klasner AE**.

J Community Health. 2019 Oct 17. *Parents' Perspectives on Safe Storage of Firearms*. Aitken ME, Minster SD, Mullins SH, Hirsch HM, Unni P, **Monroe K**, Miller BK.

J Grad Med Educ. 2019 Jun;11(3):341-343. *Utilizing QR Codes to Obtain Patient Evaluations*. Appelboom B, Raza SS, **Coco T, Klasner AE**.
Mol Genet Genomic Med. 2019 Jun 28:e829. *Menkes disease complicated by concurrent Koolen-de Vries syndrome (17q21.31 deletion)*. Woodfin T, Stoops C, Philips JB 3rd, **Lose E**, Mikhail FM, Hurst A.
Pediatrics. 2019 Aug 20. pii: e20183844. *Parenteral Antibiotic Therapy Duration in Young Infants With Bacteremic Urinary Tract Infections*. Desai S, Aronson PL, Shabanova V, Neuman MI, Balamuth F, **Pruitt CM**, DePorre AG, Nigrovic LE, Rooholamini SN, Wang ME, Marble RD, Williams DJ, Sartori L, Leazer RC, Mitchell C, Shah SS; Febrile young infant research collaborative.
Pediatric Emergency Care. 2018 Dec 27. *Unintentional Opioid Ingestions Presenting to a Pediatric Emergency Department*. **Ghosh P, Pruitt C**, Shah N, Kulkarni A, Slattery A, **Nichols M**.
Pediatr Emerg Care. 2019 Oct 29. *The Emergence of Academic Pediatric Urgent Care Fellowships*. Patel A, Cohen J, Pattishall A, Berkowitz D, **Coco T**, Herold S, Pierce M, Ramsook C, Vinograd A, Yen T, Berg L, Koutroulis I.
Pediatr Emerg Care. 2019 Dec 7. *Pain Assessment in Pediatric Emergency Departments: A National Survey*. **Haupt J**, Shah N, Fifolt M, Jorge E, **Glaeser P**, Zisette J, **Pruitt C**.
South Med J. 2019 Sep;112(9):487-490. *A Simulation Course Focusing on Forensic Evidence Collection Improves Pediatric Knowledge and Standardizes Curriculum for Child Abuse*. **Bernard DW, White ML**, Tofil NM, Jolliffe C, Youngblood A, Zinkan JL, Gaither SL, Peterson DT, Yuan YY.
South Med J. 2019 Sep;112(9):484-486. *Comment on "Propofol Versus Dexmedetomidine for Procedural Sedation in a Pediatric Population."* **Baldwin ST**.
South Med J. 2019 Nov;112(11):562-565. *Teen Driving Education in a Pediatric Emergency Department: Effectiveness of a Toolkit*. Spears ZG, Schoen B, Thompson T, **Nichols M**, King W, **Monroe K**.

EXTRAMURAL AWARDS & LEADERSHIP ROLES

Kathy Monroe, M.D.

- Dr. Monroe is an elected member of the Executive Council for Injury, Violence, and Poison Prevention for the American Academy of Pediatrics nationally.

Marjorie Lee White, M.D., MPPM, MA

- Dr. White is active in the international simulation community.
- She serves on the executive committee of the International Simulation Data Registry.
- She serves on the executive committee of the American Academy of Pediatrics' provisional Section on Simulation and Innovative Learning.
- She is on a board subcommittee of the International Pediatric Simulation Society.

Chris Pruitt, M.D.

- Dr. Pruitt was elected to the Executive Committee of the National Pediatric Emergency Medicine Clinical Research Network and also to the SSPR Council.
- He was elected president of the Southern Society for Pediatric Research. He will serve as president-elect until the 2020 SSPR Regional Meeting.

Annalise Sorrentino, M.D.

- Dr. Sorrentino is an elected member of the national American College of Emergency Physicians (ACEP) Steering Committee.
- She is the education chair of the Alabama Chapter of American College of Emergency Physicians.
- She is the medical director of an annual nine-state regional conference sponsored by ACEP.
- She was awarded a CTL-QEP Teaching Innovation Grants to support new approaches to instruction and learning in a team environment. Dr. Sorrentino will use the escape room concept as a tool to promote collaboration and critical thinking among teams of students. Participants will work through a clinical scenario in multidisciplinary teams, earning clues along the way, with the goal of "escaping" before time elapses.

Steve Baldwin, M.D.

- Dr. Baldwin is an elected member of the board of the Alabama chapter of American College of Emergency Physicians.

Mark Baker, M.D.

- Dr. Baker is a medical officer with the National Disaster Medical System in the US Department of Health and Human Services. (Hurricane Harvey in Texas most recent deployment.)

Jud Barber, M.D.

- Dr. Barber is a founding board member of the Society for Pediatric Sedation and received an award of appreciation for his service to the society and board as he rotated off the board in the last year.

Michele Nichols, M.D.

- Dr. Nichols is on the Business Model Committee of the National Association of Program Directors.

Terri Coco, M.D.

- Dr. Coco is a member of the national American Academy of Pediatrics Urgent Care Committee and the subcommittee responsible for writing a fellowship curriculum.

Shea Duerring, M.D.

- Dr. Duerring was named the assistant state EMS medical director, tasked with directing the Alabama Pediatric EMS system. This position is funded by the state.

PEDIATRIC EMERGENCY MEDICINE FELLOWSHIP PROGRAM

2019–2020 Fellows

Eric Jorge, M.D.
First Year Fellow
Residency: UAB

Emily Skoog, M.D.
First Year Fellow
Residency: Baylor Scott & White

Alicia Webb, M.D.
First Year Fellow
Residency: University of Alabama at Birmingham

Ryan Roddy, M.D.
Second Year Fellow
Residency: University of Arkansas for Medical Sciences

Stephen Ruffenach, M.D.
Second Year Fellow
Residency: Phoenix Children's Hospital

James Statler, M.D.
Second Year Fellow
Residency: Memorial Health University Medical Center

Erika Crawford, M.D.
Third Year Fellow
Residency: UAB

Laura Rochford, M.D.
Third Year Fellow
Residency: Cincinnati Children's Hospital

Samuel Strachan, M.D.
Third Year Fellow
Residency: UAB

Program Directors

Ann Klasner, M.D.
Program Director

Terri Coco, M.D.
Assistant Program Director

The UAB Pediatric Emergency Medicine Fellowship Program has been in existence for more than 30 years. We are the only Level 1 pediatric trauma center in the state and the fifth busiest pediatric emergency department in the country. This exposes our fellows to a wide range of patient experiences and provides them with the necessary skills to become excellent emergency medicine physicians. Our fellows have an intensive didactic educational conference curriculum that includes research, quality improvement, journal club, evidence-based medicine, patient safety, radiology and interesting cases. We offer various electives and a significant amount of protected research time throughout the training program. Our research program includes online courses in epidemiology and biostatistics, lectures and mentorship with a scholarly project to be completed during fellowship.

Pediatric Endocrinology & Diabetes

PEDIATRIC FACULTY

Dr. Ambika Ashraf	Director Professor
Dr. Hussein Abdul-Latif	Professor
Dr. Joycelyn Atchison	Professor
Dr. Giovanna Beauchamp	Assistant Professor
Dr. Christy Foster	Assistant Professor
Dr. Pallavi Iyer	Associate Professor
Dr. Kenneth McCormick	Professor
Dr. Gail Mick	Professor
Dr. Mary Lauren Scott	Associate Professor
Dr. Michael Stalvey	Associate Professor



FEATURED RESEARCH

Research from the UAB Division of Pediatric Endocrinology & Diabetes spans from the bench to the bedside. Through their research, division faculty and fellows strive to make an impact on the lives of patients.

The division's research includes cystic fibrosis (CF), type 1 diabetes, type 2 diabetes, lipid disorders, lipoprotein metabolism, congenital hypothyroidism, thyroid nodules, thyroid and parathyroid disorders, and the effect of pyridine nucleotides on both endoplasmic reticulum redox and calcium uptake.

The research of **Michael Stalvey, M.D.**, has parlayed from the translational models of CF to now include large-scale clinical studies. His sentinel paper describing improved growth in CF children treated with CFTR correction has ignited the interest into the idea of an intrinsic defect in growth.

He currently is the national PI for the PROMISE Endocrine Sub-Study: "A Prospective Study to Evaluate Biological and Clinical Effects of Significantly Corrected CFTR Function (PROMISE)." This prospective, multi-center, observational study is designed to measure the clinical effectiveness of triple combination modulator therapy in individuals with cystic fibrosis (with one or more copies of the F508del mutation), assess salutary effects across a number of CF disease manifestations, and collect specimens for future research. The major focus of the endocrine sub-study is to evaluate glucose metabolism, growth, bone metabolism and body composition in CF in response to the triple combination modulator therapy.

The pathogenesis of type 1 diabetes mellitus (T1DM) involves autoimmune destruction of pancreatic beta cells leading to total insulin dependence. Gamma aminobutyric acid (GABA) is a common bioactive compound that has been shown to both prevent and reverse diabetes in animal models. **Kenneth McCormick, M.D.**, led the first human trial of GABA in children with new onset T1DM in 2015. This was a phase 1, investigator-initiated, double-blind, placebo-controlled trial of low-dose GABA that enrolled 97 children age 4-18 years. Preliminary metabolic data were presented at the international EASD conference in Barcelona, Spain this September. GABA was remarkably well-tolerated and had an excellent safety profile. Glucagon was significantly inhibited by GABA and there was no change in circulating c-peptide. The immunologic results from the study are expected in early 2020. Dr. McCormick and his team are highly optimistic that, pending FDA approval, higher doses of GABA, or a long-acting preparation, will be efficacious in preserving insulin-secreting beta cells. The study design was reported this year in *Contemporary Clinical Trials*. The team will present the scientific results of the study, both metabolic and immunologic, next year.

Ambika Ashraf, M.D., is currently working on a research study of low carbohydrate diet in children with dyslipidemia and metabolic syndrome. Dr. Ashraf and Bhuvana Sunil, M.D., UAB pediatric endocrinology fellow, will assess this lipid-lowering dietary outcome using advanced lipoprotein measure and cardiovascular risk measures. Dr. Ashraf is also collaborating with the UAB Nutrition Sciences Center randomized control on trial on low-carbohydrate diet vs. standard diet intervention for children with non-alcoholic liver disease.

Another ongoing research project in this subject population includes evaluation of the cortisone/cortisol ratios before and after the dietary intervention in collaboration with Dr. McCormick. The premise is that a low carbohydrate diet will reduce intracellular glucose 6 phosphate which, in turn, lowers the endoplasmic pyridine redox (NADPH/NADP) and shifts tissue production of active cortisol to inactive cortisone via bidirectional 11- β hydroxysteroid dehydrogenase in hepatocytes and adipocytes. Therefore, a low CHO diet will improve the disordered peripheral glucocorticoid metabolism characteristic of obesity.

Mary Lauren Scott, M.D., and Jessica Schmitt, M.D., UAB pediatric endocrinology fellow, are participating in the Quality Improvement Collaborative of the T1D Exchange. Drs. Ashraf, Schmitt, Sunil, and Erin Greenup, D.O., UAB pediatric endocrinology fellow, are working on several diabetes-related projects aimed at understanding the epidemiology of type 1 and type 2 diabetes, diabetic ketoacidosis, hyperglycemic hyperosmolar syndrome and cerebral edema in children in the state of Alabama.

Christy Foster, M.D., is conducting research on polycystic ovary syndrome (PCOS). **Pallavi Iyer, M.D.**, is leading several research projects on thyroid nodule, thyroid cancer and parathyroid.

Hussein Abdullatif, M.D., directs the UAB/Children's of Alabama site for multi-center research studies for children Prader Willi syndrome. The studies evaluate the safety and efficacy of the investigational drugs, Livoletide and Cabetocin, as potential novel treatments for Prader-Willi syndrome.

Alabama is one of 12 states that employs two newborn screens for the diagnosis of congenital hypothyroidism (CH) and congenital adrenal hyperplasia (CAH), with our state lab measuring both T4 and TSH on all screens. **Mick, M.D.**, and Leslie Pitts, CRNP published in *Hormone Research Pediatrics*, "Eight-years of experience with two NBS screens in Alabama." Importantly, this comprehensive study included three-year follow outcome data, demonstrating that 17% of CH is detected by the second screen, and one-fifth of these children have permanent hypothyroidism. A separate publication, in press, examines the outcome of neonates who presented on NBS with a combination of low T4 and low TSH. Continuing their commitment to early diagnosis and treatment of CH, Dr. Mick and Leslie Pitts have recently completed a one-year pilot study to determine whether a lower second screen TSH cutoff would detect previously undiagnosed CH. Their evidence was confirmatory, and new state guidelines are anticipated next year.

Pyridine nucleotides serve an array of intracellular metabolic functions such as safeguarding against reactive oxygen species, enzyme detoxification pathways and the regulation of ion fluxes. In particular, the maintenance of a steep calcium gradient between the cytosol and endoplasmic reticulum (ER) is crucial for cell viability. As reported in *Physiologic Reports* this year, Dr. McCormick and Xudong Wang demonstrate that pyridine nucleotides regulate ER calcium flux. They propose a novel nutritional model of pyridine nucleotide-mediated endoplasmic reticulum calcium uptake.

SIGNIFICANT PUBLICATIONS

Contemp Clin Trials. 2019 Jun 20. pii: S1551-7144(19)30010-2. *Effect of gamma aminobutyric acid (GABA) or GABA with glutamic acid decarboxylase (GAD) on the progression of type 1 diabetes mellitus in children: Trial design and methodology*. Choat HM, Martin A, Mick GJ, Heath KE, Tse HM, McGwin G Jr, McCormick KL.

Horm Res Paediatr. 2019;91(5):319-328. *Congenital Hypothyroidism: 8-Year Experience Using 2 Newborn Screens in Alabama*. Pitts L, McCormick W, Mick GJ.

J Cyst Fibros. 2019 Oct; *Growth failure and treatment in cystic fibrosis*. Le TN, Anabtawi A, Putman MS, Tangpricha V, Stalvey MS.

Physiol Rep. 2019 Jul;7(12):e14151. *Pyridine nucleotide regulation of hepatic endoplasmic reticulum calcium uptake*. Wang X, Mick G, McCormick K.

ADDITIONAL PUBLICATIONS

J Clin Endocrinol Metab. 2019 May 23. pii: jc.2019-00150. *Improving Long-term Outcomes of Youth with Lipid Abnormalities-Expanding the Role of Pediatric Endocrinologists*. **Ashraf AP**, Kohn B, Wilson DP; PES Lipid Special Interest Group.

J Pediatr Hematol Oncol. 2019 Apr 3. *Effect of Sickle Cell Anemia Therapies on the Natural History of Growth and Puberty Patterns*. Nagalapuram V, Kulkarni V, Leach J, Aban I, Sirigaddi K, Lebensburger JD, **Iyer P**.

Pediatr Diabetes. 2019 Oct 7. *Temporal Trends in Pediatric Type 1 Diabetes in Alabama: 2000–2017*. Tanya A. Correya, **Ambika P. Ashraf**, Stella Aslibekyan, Russel Griffin, Hae Dong Kim, Sydney Middleton, **Kenneth McCormick**.

PLoS One. 2019 Jul 1;14(7):e0219144. *Glycemic control and lipid outcomes in children and adolescents with type 2 diabetes*. Barr MM, Aslibekyan S, **Ashraf AP**.

PARTICIPATION IN NATIONAL AND REGIONAL RESEARCH COLLABORATIVES, QUALITY IMPROVEMENT PROJECTS AND LEARNING NETWORKS

Giovanna Beauchamp, M.D. and Gail Mick, M.D.

The pediatric endocrine-ECHO team was organized in November 2016. Project ECHO® (Extension for Community Health-care Outcomes) is a live videoconferencing model that hosts educational events between the sub-specialists and primary care clinicians. The spirit of ECHO is to increase knowledge by encouraging all participants to share medical expertise, ask questions and learn from each other. Indeed, it is a valuable learning environment for both the subspecialists and providers. Drs. Beauchamp, Mick and Michelle Coulter, CRNP completed a highly successful endo-ECHO in the spring of 2018 on "Pediatric Diabetes and Obesity." This topic was selected because Alabama faces a staggering health crisis in obesity and diabetes. Fifty-nine providers from 14 Alabama counties participated in 2018 series. Based on rave reviews and ongoing requests from our primary care colleagues for more ECHO programing, the Endo-ECHO team will launch an expanded and updated diabetes program in 2020.

Mary Lauren Scott, M.D. and Jessica Schmitt, M.D., UAB pediatric endocrinology fellow, are participating in the Quality Improvement Collaborative of the T1D Exchange.

EXTRAMURAL AWARDS, RECOGNITION & LEADERSHIP ROLES

Michael Stalvey, M.D.

- Cystic Fibrosis Foundation
 - Physician Training Program Evaluation Working Group
 - Strategic Planning Group
 - Research and Research Training Grants Review Committee
 - Clinical Research Advisory Board
- Cystic Fibrosis Foundation, Alabama Chapter
 - Board of Directors
- Cystic Fibrosis Canada
 - Targeted Research Review Panel
- Natural Sciences and Engineering Research Council of Canada (NSERC)
- Pediatric Endocrine Society
 - Education Committee
- University of Alabama at Birmingham Faculty Senate
 - Senator
 - UAB Faculty Senate Research Committee
- UAB Healthcare Leadership Academy, Class of 2019
- UAB GME Wellness Subcommittee

Ambika Ashraf, M.D.

- Pediatric Endocrine Society
 - Co-chair, Education Council
 - Established Lipid Special Interest Group (SIG) within the Pediatric Endocrine Society
 - Co-chair of the PES Lipid SIG
 - Member, "Drugs and Therapeutics and Rare Diseases" committee
- AAP National Conference and Exhibition (NCE)
 - Chairperson for Section on Endocrinology (SOEn) the 2019 Annual NCE conference
- The American Board of Pediatrics
 - Member, Sub-Board of Pediatric Endocrinology
- Castle Connolly's Exceptional Women in Medicine
- Center for Clinical and Translational Science Panels Program Member

Hussein Abdullatif, M.D.

- UAB Pediatric Clerkship Director
 - Pediatric Clerkship awarded 2019 Argus Award for Best Clerkship
- UAB Healthcare Educators Academy

Member of the Steering Committee

- COMSEP (Council on Medical Student Education in Pediatrics)
 - Member of Wellness Task Force
- Pediatric Endocrine Society
 - Education Committee

Mary Lauren Scott

- Juvenile Diabetes Research Foundation
 - Board of Directors
- Pediatric Endocrine Society
- Co-chair, Diabetes Education Subcommittee of Education Council
- Southeastern Diabetes Education Services Camp Sugar Falls, The Mario Foundation
 - Medical Director

Pallavi Iyer, M.D.

- Pediatric Endocrine Society
 - Member of the "Drugs and Therapeutics and Rare Diseases" Committee
- UAB Clinical Scholar Program
- Clinical Skills Scholar, "Introduction to clinical medicine for 1st and 2nd year students"—instructing students the essential skills of history taking and physical examination

Christy Foster, M.D.

- Pediatric Endocrine Society
 - Education Committee

PEDIATRIC ENDOCRINOLOGY & DIABETES FELLOWSHIP PROGRAM

2019–2020 Fellows

Margaret Marks, M.D.

First Year Fellow

Residency: University of Alabama at Birmingham

Leen Matalka, M.D.

First Year Fellow

Residency: University of Alabama at Birmingham

Jurhee Freese, M.D.

Second Year Fellow

Residency: University of Arkansas for Medical Sciences

Erin Greenup, D.O.

Second Year Fellow

Residency: University of South Florida

Bhuvana Sunil, M. D.

Third Year Fellow

Residency: Harlem Hospital Center/Columbia University Medical Center

Jessica Schmitt, M.D.

Third Year Fellow

Residency: Cincinnati Children's Hospital

Program Directors

Michael Stalvey, M.D.

Fellowship Program Director

Mary Lauren Scott, M.D.

Associate Fellowship Program Director

The UAB Pediatric Endocrinology Fellowship Program consists of a three-year comprehensive experience that incorporates clinical care, research activities and evidence-based learning.

Our curriculum is a balance of inpatient and outpatient clinic rotations, with ample time devoted to developing research and/or career interest. Clinical management of outpatient and inpatient endocrine disorders is the emphasis of the first year of training. The second and third years are devoted to pursuing research opportunities in an area of basic or clinical research under the supervision of a faculty preceptor. Fellows are encouraged to participate in other institutional clinical experiences here at UAB, including genetics, reproductive endocrinology and adult endocrinology. Research experiences are available through our division or vast resources here at UAB. These research opportunities may include basic science, clinical or transitional research, as well as projects in medical education.

Pediatric Gastroenterology, Hepatology & Nutrition

PEDIATRIC FACULTY

Dr. Reed Dimmitt.....	Director Professor
Dr. Margaux Barnes	Assistant Professor
Dr. Nick CaJacob	Assistant Professor
Dr. Mitch Cohen.....	Professor
Dr. David Galloway	Assistant Professor
Dr. Marissa Gowey	Assistant Professor
Dr. Traci Jester.....	Associate Professor
Dr. Rachel Kassel	Assistant Professor
Dr. Jeanine Maclin.....	Associate Professor
Dr. Jose Mestre	Professor
Dr. Janaina Nogueira	Associate Professor
Dr. Amanda Soong	Assistant Professor
Dr. Vanessa Cardenas Soto	Assistant Professor



FEATURED RESEARCH

The UAB Division of Pediatric Gastroenterology, Hepatology & Nutrition focuses on research that mirrors our growth in developing specialty programs. Specific highlights include:

- Our Inflammatory Bowel Disease (IBD) Program continues to be a part of the multi-institutional collaborative ImproveCareNow (ICN). This collaborative is developed to aid clinicians in benchmarking patient outcomes. We continue to excel in clinical outcomes compared to programmatic benchmarks. In addition, our IBD Program has spearheaded several ICN multi-center research projects.
- **Margaux Barnes, Ph.D.**, is investigating the role of nutrition and lean body mass in IBD patients. Her research is focused on improving the health of pediatric patients with IBD utilizing nutrition and exercise.
- The Alabama Center for Eosinophilic Disease continues to partner with Cincinnati Children's Hospital Medical Center to study novel gene mutations in our patients with eosinophilic esophagitis (EoE). This partnership is focusing on inheritance patterns with EoE, specifically racial/ethnic differences.
- We continue a site that is investigating a new medication for the treatment of EoE. This research will provide the first FDA approved ready to administer oral topical corticosteroids for EoE.
- The Intestinal Rehabilitation (IR) Program is part of an international network developing a database of patients with intestinal failure. As part of that effort, we are studying quality of life in our patients and have developed a novel quality instrument. Over the past year, we have established an IR collaborative in the Southeast to study outcomes and specific therapies.
- We are testing vaccines for diarrheal disease and have secured successful licensing of the first cholera vaccine in the US.
- **Marissa Gowey, Ph.D.**, has developed a novel study to understand pediatric obesity. The initiative is a family-based program focusing on executive function. Since last year, she has started enrolling families and collecting data for future research projects and funding.
- **Michelle Mastin, Ph.D.**, and Dr. Barnes are studying outcomes research in our Intensive Feeding Program.
- **David Galloway, M.D.**, is studying changes in the intestinal microbiome in patients with short bowel syndrome and intestinal failure. In addition, he is studying the role of ethanol locks for central venous catheters used for the delivery of parental nutrition

SIGNIFICANT PUBLICATIONS

Am J Clin Nutr. 2019 Aug 5. *It's not all in your head: Genetic underpinnings of the relationship between executive function and BMI.* **Gowey MA**, Dutton GR.

Ann Allergy Asthma Immunol. 2019 Jun 22. pii: S1081-1206(19)30454-5. *Concurrent Eosinophilic Esophagitis in pediatric patients with Inflammatory Bowel Disease—A case series.* **Talathi S**, Knight T, **Dimmitt R**, **Mestre J**, **Jester T**.

EGEMS (Wash DC). 2019 Sep 30;7(1):51. *Implementing a Novel Quality Improvement-Based Approach to Data Quality Monitoring and Enhancement in a Multipurpose Clinical Registry.* Pratt J, Jeffers D, King EC, Kappelman MD, Collins J, Margolis P, Baron H, Bass JA, Bassett MD, Beasley GL, Benkov KJ, Bornstein JA, Cabrera JM, Crandall W, Dancel LD, Garin-Laflam MP, Grunow JE, Hirsch BZ, Hoffenberg E, Israel E, **Jester TW**, Kiparissi F, Lakhole A, Lapsia SP, Minar P, Navarro FA, Neef H, Park KT, Pashankar DS, Patel AS, Pineiro VM, Samson CM, Sandberg KC, Steiner SJ, Strople JA, Sudel B, Sullivan JS, Suskind DL, Uppal V, Wali PD.

Hosp Pediatr. 2019 Feb 4. pii: hpeds.2017-0239. *Predictors of Hospital Reuse Among Publicly Insured Children Hospitalized for Status Asthmaticus.* Molina AL, **Magruder TG**, Aban IB, Ward L, Narayanan S, Walley SC.

J Pediatr Surg. 2019 Mar 7. pii: S0022-3468(18)30887-X. *Development of venous thrombi in a pediatric population of intestinal failure.* Asouzu MA, Shroyer M, Graham JS, Wilkinson L, **Galloway DP**, Martin CA.

JPEN J Parenter Enteral Nutr. 2019 Dec 16. *Key Determinants for Achieving Enteral Autonomy and Reduced Parenteral Nutrition Exposure in Pediatric Intestinal Failure.* Enman MA, Wilkinson LT, Meloni KB, Shroyer MC, Jackson TF, Aban I, **Dimmitt RA**, Martin CA, **Galloway DP**.

Mol Genet Genomic Med. 2019 Jun 28:e829. *Menkes disease complicated by concurrent Koolen-de Vries syndrome (17q21.31 deletion).* **Woodfin T**, Stoops C, Philips JB 3rd, Lose E, Mikhail FM, Hurst A.

Pediatrics. 2019 Oct 28. pii: e20192765. *The Use of Nonnutritive Sweeteners in Children.* Baker-Smith CM, de Ferranti SD, Cochran WJ; COMMITTEE ON NUTRITION, SECTION ON GASTROENTEROLOGY, HEPATOLOGY, AND NUTRITION. Abrams SA, Fuchs GJ 3rd, Kim JH, Lindsey CW, Magge SN, Rome ES, Schwarzenberg SJ, Lightdale JR, Brumbaugh D, **Cohen MB**, Dotson JL, Harpavat S, Oliva-Hemker MM, Heitlinger LA.

PLoS Negl Trop Dis. 2019 Nov 19;13(11):e0007874. *Immune responses to O-specific polysaccharide (OSP) in North American adults infected with *Vibrio cholerae* O1 Inaba.* Hossain M, Islam K, Kelly M, Mayo Smith LM, Charles RC, Weil AA, Bhuiyan TR, Kováč P, Xu P, Calderwood SB, Simon JK, Chen WH, Lock M, Lyon CE, Kirkpatrick BD, **Cohen M**, Levine MM, Gurwith M, Leung DT, Azman AS, Harris JB, Qadri F, Ryan ET.

Sci Rep. 2019 Apr 12;9(1):5971. *HMGB1 is a Central Driver of Dynamic Pro-inflammatory Networks in Pediatric Acute Liver Failure induced by Acetaminophen.* Zamora R, Barclay D, Yin J, Alonso EM, **Leonis MA**, Mi Q, Billiar TR, Simmons RL, Squires RH, Vodovotz Y.

Vaccine. Volume 37, Issue 4, 21 January 2019, Pages 602-611. *A Phase 1 dose escalating study of double mutant heat-labile toxin LTR192G/L211A (dmlT) from Enterotoxigenic Escherichia coli (ETEC) by sublingual or oral immunization.* Bernstein, D.I., Pasetti, M.F., Brady, R., Buskirk, A.D., Wahid, R., Dickey, M., **Cohen, M.**, Baughman, H., El-Khorazaty, J., Maier, N., Sztein, M.B., Baqar, S., Bourgeois, A.L.

EXTRAMURAL AWARDS & LEADERSHIP ROLES

Marissa Gowey, Ph.D., received a Pilot and Feasibility Program Award from the UAB Diabetes Research Center and UAB Comprehensive Diabetes Center for her proposal titled, "Identifying Cardiometabolic Biomarkers of Executive Dysfunction in Children."

Margaux Barnes, Ph.D., was awarded funding from the UAB Faculty Development Grant Program (FDGP) for her proposed project titled "Resistance Training Intervention to Promote Lean Mass in Youth with IBD."

PEDIATRIC GASTROENTEROLOGY, HEPATOLOGY AND NUTRITION FELLOWSHIP PROGRAM

2019–2020 Fellows

Claire Keith, M.D.

First Year Fellow

Residency Training: UAB

Carter Wallace, M.D.
First Year Fellow
Residency Training: UAB

Adam Cohen, M.D.
Second Year Fellow
Residency Training: UAB

Taylor Woodfin, M.D.
Second Year Fellow
Residency Training: UAB
Sasha Monteil, M.D.
Third Year Fellow
Residency: Emory University

Program Directors

Jeanine Maclin, M.D.
Program Director

Rachel Kassel, M.D.
Assistant Program Director

The UAB Pediatric Gastroenterology, Hepatology & Nutrition Fellowship Program is designed to provide fellows with the background and experience to diagnose and manage patients with acute and chronic diseases of the digestive system (esophagus, stomach, intestines, liver and pancreas), including those that are life-threatening, and to conduct research in this specialized field. The patient population is sufficiently varied, and complex diseases and volume ensure that residents have the opportunity to become clinically competent in the management of common as well as uncommon gastrointestinal, hepatobiliary and pancreatic diseases in patients ranging from infancy through young adulthood. Fellows will be guided in developing clinical judgement and decision-making skills in cost-effective, efficient evaluation and management of a wide variety of presenting complaints. Our program offers fellows the opportunity to train and develop skills in appropriate laboratory testing, procedures including indications, preparation, techniques and interpretations. During their training, fellows are provided mentoring and opportunities for clinical or laboratory-based research with support from division faculty.

Pediatric Hematology & Oncology

PEDIATRIC FACULTY

Dr. Girish Dhall.....	Director Professor
Dr. Elizabeth Alva	Assistant Professor
Dr. Jamie Aye.....	Assistant Professor
Dr. Christy Bemrich-Stolz	Assistant Professor
Dr. Smita Bhatia.....	Professor
Dr. Joseph Chewning.....	Associate Professor
Dr. Gregory Friedman.....	Associate Professor
Dr. Frederick Goldman.....	Professor
Dr. Hilary Haines	Assistant Professor
Dr. Lee M. Hilliard	Professor
Dr. Thomas Howard.....	Professor
Dr. Emily Johnston.....	Assistant Professor
Dr. Matthew Kutny	Associate Professor
Dr. Wendy Landier	Professor
Dr. Jeffrey Lebensburger.....	Associate Professor
Dr. Wayne Liang	Assistant Professor
Dr. Avi Madan-Swain.....	Professor
Dr. Katie Metrock.....	Assistant Professor
Dr. Donna Murdaugh.....	Assistant Professor
Dr. Brandi Pernell.....	Assistant Professor
Dr. Purnima Singh.....	Assistant Professor



Dr. Aman Wadhwa.....	Instructor
Dr. Erik Westin	Instructor
Dr. Kim Whelan	Professor
Dr. Hope Wilson.....	Assistant Professor
Dr. Julie Wolfson.....	Assistant Professor
Dr. Elizabeth Worthey.....	Associate Professor
Dr. Ana Xavier.....	Associate Professor

FEATURED RESEARCH

The UAB Division of Pediatric Hematology and Oncology is committed to advancing research and taking findings from the bench to the bedside and then to the community. The division's research efforts are coordinated by the Alabama Center for Childhood Cancer and Blood Disorders, a collaboration of UAB Pediatrics and Children's of Alabama. Additionally, the division works in close collaboration with members of the O'Neal Comprehensive Cancer Center at UAB, the UAB Institute for Cancer Outcomes and Survivorship (ICOS), the UAB Center for Clinical and Translational Science, the UAB Center for Outcomes and Effectiveness Research and Education, the Children's Center for Supportive and Palliative Care and the UAB School of Public Health. These multidisciplinary collaborations serve as a rich resource to accelerate the pace of discovery across the entire trajectory of disease from diagnosis to survivorship and end of life. We are one of only 21 sites nationwide to participate in the Children's Oncology Group (COG) Pediatric Early Phase Clinical Trials Network (PEP-CTN), one of 23 sites nationally to be a member of the Neurofibromatosis Consortium, and one of 23 members of National Pediatric Cancer Foundation Sunshine Project, which allows us to have access to latest cutting-edge clinical trials for our patients with poor prognosis malignant tumors.

ONCOLOGY RESEARCH

An example of discoveries taken from bench to bedside include the research led by **Gregory Friedman, M.D.**, in the field of neuro-oncology. Dr. Friedman has demonstrated that the deadliest subgroup of medulloblastoma is highly sensitive to a genetically modified herpes simplex virus (HSV). His innovative phase 1 study using modified HSV to attack difficult-to-treat brain tumors began recruiting patients from across the US in 2016. To date, 11 patients have been enrolled in this groundbreaking study with encouraging results thus far. This translation of engineered herpes simplex virotherapy is FDA-approved and supported by the National Institutes of Health (NIH).

Another example of bench-to-bedside research is in the field of blood or marrow transplantation (BMT), where **Frederick Goldman, M.D.**, is attempting to understand the pathogenetic mechanisms of bone marrow failure syndromes, congenital immune deficiencies and translating this information to the promotion of novel agents and stem therapies for these disorders. His translational research laboratory is addressing unmet needs in hematopoietic disorders using innovative gene correction technology, coupled with BMT, to develop safer cures.

Girish Dhall, M.D., joined UAB in 2019 as the division director of the UAB Division of Hematology, Oncology, and BMT. Dr. Dhall is a national leader in the field of pediatric neuro-oncology. He chaired the recently closed COG study for patients with malignant germ cell tumors of the central nervous system (CNS) and currently chairs the Head Start 4 clinical trial, which is an investigator-initiated, multi-institutional, international, clinical trial of using intensive induction chemotherapy and consolidation with high-dose chemotherapy with autologous hematopoietic stem cell rescue in order to avoid cranial irradiation for infants with malignant CNS embryonal tumors.

Matthew Kutny, M.D., serves as UAB's institutional principal investigator and is a member of the myeloid disease steering committee within the COG. In this role, he leads efforts to develop clinical trials testing novel treatments for childhood leukemia. He is the study chair for an international trial of acute promyelocytic leukemia open at over 100 institutions. His research efforts focus on improving treatment cure rates while also decreasing treatment toxicity.

Ana Xavier, M.D., is leading a new early phase 1 clinical trial looking to improve outcomes in patients with a rare form of lymphoma. Mature T/NK cell neoplasms are histologically, immunophenotypically and genomically distinct diseases generally associated with poor clinical outcomes despite intensified therapy. The implementation of autologous or allogeneic stem cell transplantation as upfront consolidation therapy or for chemotherapy sensitive relapsed disease have resulted in improved survival for some patient's subsets. Encouragingly, the use of novel targeted molecular and immunotherapeutic agents has also demonstrated survival advantage in small number of patients. Significant and sustained improvement in patient outcome is limited by the low incidence and heterogeneity of this disease. Thus, development and enrollment into pediatric and adolescent/young adult (AYA) mature T/NK cell lymphoma focused clinical trial is needed and encouraged. This will be the first prospective multi-institutional trial targeting pediatric and AYA mature T/NK cell lymphoma study. This trial will use chemo-immunotherapy followed by consolidation with reduced intensity conditioning stem cell transplant in advanced stage mature non-anaplastic T-cell or NK-cell lymphoma/leukemia in children, adolescent and young adults.

Jamie Aye, M.D., in collaboration with Dr. Elizabeth Beierle, UAB Department of Surgery, seeks to advance our current knowledge of pediatric solid tumors through the Tumor Xenograft Project. Despite recent advances in pediatric cancer care, the treatment and outcomes for many pediatric solid tumors has not significantly changed. Primary human tumors directly implanted into mice more accurately recapitulates the features of patient tumors compared to current cell-based models. Using primary human patient tumor models, the Children's of Alabama-UAB Pediatric Tumor Bank and Tumorgraft Development Program's long-term goal is to identify agents that are effective treatments for children with tumors having specific genetic and molecular profiles and to move these agents into the clinical realm. The program currently has approximately 100 patient tumors banked. Preliminary studies have demonstrated the tremendous potential of this rare resource with new discoveries featured in multiple peer-reviewed publications. Ongoing studies are investigating whether the addition of ALK inhibitors or novel retinoids improve the infectivity of herpes simplex virus, M032, in neuroblastoma, whether inhibition of PIM kinases coupled with standard chemotherapeutic agents decreases the tumorigenicity of hepatoblastoma and whether osteosarcoma pulmonary metastases are sensitive to novel M032 treatment.

SICKLE CELL DISEASE RESEARCH

The UAB Pediatric Hematology and Oncology Division has a strong team dedicated to cutting-edge research in the field of sickle cell disease. **Jeffrey Lebensburger, D.O.**, section head of Hematology, continues to focus his research efforts on understanding the progression to chronic kidney disease that impacts about one fourth of adults with sickle cell anemia. One recent pathway that he studied is the link between acute kidney injury during sickle cell crisis and progression to chronic kidney disease for patients with sickle cell disease. He recently received a second grant from the NIH to continue this work. Additionally, he was awarded funding from the Patient-Centered Outcomes Research Institute (PCORI) to develop a novel approach to improve transition of care to adult programs utilizing peer mentoring.

Lee Hilliard, M.D., recently completed a national clinical trial exploring the impact of omega acid to improve outcomes in sickle cell disease and **Tom Howard, M.D.**, is organizing a trial of a novel agent with the aim of improving baseline hemoglobin levels in patients with sickle cell. Dr. Goldman is using a murine model of sickle cell disease to optimize reduced intensity conditioning in blood or marrow transplantation to balance toxicity with efficacy.

Finally, **Brandi Pernel, DNP**, was awarded funding to improve education and implementation of sickle cell disease standard of care guidelines throughout Alabama. The sections of Hematology and Stem Cell Transplantation in the division are collaborating with the goal of improving outcomes in patients with sickle cell disease. **Hilary Haines, M.D.**, in conjunction with Drs. Goldman and Lebensburger, is producing new educational materials and pursuing new opportunities for our sickle cell patient population to learn more about curative options, including bone marrow transplant. The Alabama Center for Childhood Cancer and Blood Disorders has opened a collaborative haploidentical bone marrow transplant protocol, CTN1507. Additionally, the center, in collaboration with our adult hematology colleagues, will be participating in an autologous gene therapy protocol for sickle cell disease.

ADDITIONAL HEMATOLOGY RESEARCH

In addition to working on hemoglobinopathies, the Hematology section is working to develop subspecialty programs to improve the care of children with blood disorders. **Hope Wilson, M.D.**, **Christy Bemrich-Stolz, M.D.**, and **Dr. Hilliard** have opened a post thrombosis monitoring clinic to provide excellent care to children and young adults who develop blood clots. Drs. Bemrich-Stolz and Wilson are collaborating with the UAB Division of Adolescent Medicine to develop a women's and children bleeding disorders clinic. Dr. Goldman is developing a bone marrow failure clinic to care for children with diseases such as Fanconi's Anemia, Diamond Blackfan Anemia and Dyskeratosis Congenita. The Hematology section is also a member of the ITP Consortium of North America to improve the care for children with Immune-mediated Thrombocytopenia.

INSTITUTE FOR CANCER OUTCOMES AND SURVIVORSHIP (ICOS)

Smita Bhatia, M.D., MPH, is the founding director of the Institute for Cancer Outcomes and Survivorship (ICOS) and several division faculty are members of the institute. The mission of ICOS is to reduce the burden of cancer and its sequelae across all segments of population through interdisciplinary research, health promotion and education. ICOS has been very active over the past year. Currently, the institute has 14 faculty members with a primary research focus on cancer outcomes, with the total funding of more than \$32 million since its inception in 2015.

Dr. Bhatia was awarded the National Cancer Institute Outstanding Investigator Award in 2018, providing her with funding for the next seven years to identify childhood cancer survivors at highest risk for long-term complications. As part of this initiative, she has a multi-institutional study at more than 100 institutions to understand the molecular pathogenesis of treatment-related complications. Using this resource of more than 4,000 DNA samples, she has identified genomic variants that modify radiation-related subsequent neoplasm and anthracycline-related cardiac dysfunction. This has led to improved models to identify survivors most at risk for these complications. She also received funding to understand the pathogenesis of therapy-related leukemia in patients with lymphoma receiving autologous stem cell transplantation. In addition, Dr. Bhatia has received funding from the Leukemia Lymphoma Society (LLS) and the NIH to construct a cohort of 10,000 BMT survivors to understand the burden of morbidity borne by the survivors. This cohort has demonstrated that BMT survivors carry a substantial burden of morbidity with the highest risk seen in allogeneic BMT recipients with a history of chronic graft versus host disease. These findings have informed the need for lifelong follow-up of BMT survivors. She is also developing FDA-approved and NIH-funded strategies to reduce the risk of radiation-related breast cancer in survivors of Hodgkin's lymphoma.

Dr. Bhatia and **Wendy Landier, Ph.D.**, deputy director of ICOS, are evaluating the efficacy of an adherence intervention to improve adherence to oral chemotherapy in children with acute lymphoblastic leukemia (ALL); this trial is funded by the NIH. Dr. Landier has received funding from the NIH to understand the facilitators and barriers to HPV vaccination in childhood cancer survivors, as well as testing the immunogenicity and safety of using this vaccine in childhood cancer survivors. She has also received funding from the Alex's Lemonade Stand Foundation to develop a patient-family education intervention for children with newly diagnosed cancer and from Kaul Pediatric Research Institute (KPRI) to develop an educational smartphone app for parents of children with a new diagnosis of cancer.

Julie Wolfson, M.D., MSHS, has received funding from Hyundai Hope on Wheels and the Rally Foundation for Childhood Cancer Research to form a national multi-site consortium and investigate disparities in AYA patients with ALL. She also published findings regarding the factors related both to the patient and health care delivery that predict relapse among AYAs with ALL. She is leading two national intergroup studies within the NCI cooperative groups looking at AYAs with ALL, one focused on health care delivery and the other focused on medication adherence. She also continues to lead a prospective study which is establishing the infrastructure to identify reasons for outcome disparities among children, adolescents and young adults with cancer in Alabama.

Emily Johnston, M.D., MPH, has received funding from the St. Baldrick's Foundation, the Leukemia Lymphoma Society, Alex's Lemonade Stand and the Conquer Cancer Foundation in order to improve the quality of end-of-life care of children dying of cancer and other life-threatening illnesses. She has published extensively on the prevalence and patterns of high-intensity care received at end-of-life in children dying of cancer and is currently developing strategies to ensure that children receive goal-concurrent care at end-of-life.

Donna Murdaugh, Ph.D., is a board-certified neuropsychologist, funded by the UAB Center for Clinical and Translational Science KL2 career development award in order to develop cognitive remediation programs for patients with sickle cell disease. She is also conducting a cognitive remediation intervention trial in survivors of childhood acute lymphoblastic leukemia to facilitate transition of health care from a pediatric to an adult facility.

Aman Wadhwa, M.D., is funded by the St. Baldrick's Foundation to determine the association between body composition and subsequent toxicities in children with cancer.

GENOMIC DATA SCIENCE

Liz Worthey, Ph.D., has recently joined the UAB Division of Pediatric Hematology, Oncology & BMT as the director for the Center for Genomic Data Sciences. She has an additional appointment in the Department of Pathology. Dr. Worthey's research interests include the development and application of omic, informatic and data science-based methods and technologies in order to identify and understand causal molecular variation in rare, undiagnosed or misdiagnosed disease. Her laboratory also focuses on the identification and study of variation that alters an individual's response to therapeutics or modifies clinical presentation, progression and/or outcome. She undertook the first clinical application of genomics in medicine and has assisted in the development of genomics based MDx. Dr. Worthey's teams have identified the genetic underpinnings of more than 30 genetic disorders and diagnosed more than 2,000 patients with rare disease. Her tools and algorithms have been used to diagnose around 10,000 patients.

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World Neurosurg. 2019 Feb;122:e1592-e1598. *Stereotactic Placement of Intratumoral Catheters for Continuous Infusion Delivery of Herpes Simplex Virus -1 G207 in Pediatric Malignant Supratentorial Brain Tumors*. Bernstock JD, Wright Z, Bag AK, Gessler F, Gillespie GY, Markert JM, **Friedman GK**, Johnston JM.

EXTRAMURAL AWARDS & LEADERSHIP ROLES

Wendy Landier, Ph.D., RN, received the 2019 UCLA School of Nursing Distinguished Alumni Award for Excellence in Research, Platinum Bruin. She was selected for conducting an outstanding and renowned program of research and advancing the practice of nursing health and health care through scholarly research.

Julie Wolfson, M.D., was named the April Advocate of the Month by the St. Baldrick's Foundation. Dr. Wolfson is a St. Baldrick's Scholar and was recognized for her work on disparities in access to quality cancer care for adolescents and young adults.

Smita Bhatia, M.D., received the 2nd Annual Northwestern Mutual Award for Excellence in Childhood Cancer Survivorship. This award is administered by Northwestern Mutual in partnership with the American Society of Pediatric Hematology/Oncology. It recognizes an individual who is translating research findings into intervention-based approaches and/or making outstanding contributions to the clinical care of survivors of childhood cancer.

Donna Murdaugh, Ph.D., was appointed as Associate Scientist in the Cancer Control and Population Sciences Program by the O'Neal Comprehensive Cancer Center at UAB.

She was selected as one of the Scholars for the Deep South Mentored Career Development (KL2) awarded by the Center for Clinical and Translational Science.

Girish Dhall, M.D., was appointed Senior Scientist in the Neuro-Oncology Program by the O'Neal Comprehensive Cancer Center at UAB. He chairs the Young Investigators Committee in COG, whose mission is to make mentorship more accessible to junior faculty in pediatric oncology throughout the country. He is also a member of the Central Nervous System and Adolescent and Young Adult Steering Committees within COG.

Brandi Pernell, DNP, was selected as one of the Scholars for the Deep South Mentored Career Development (KL2) awarded by the Center for Clinical and Translational Science.

Matthew Kutny, M.D., was accepted into the UAB Healthcare Leadership Academy.

PEDIATRIC HEMATOLOGY/ONCOLOGY FELLOWSHIP PROGRAM

2019–2020 Fellows

Sara Claire Hutchins, M.D.

First Year Fellow

Residency: University of Mississippi Medical Center

Kathryn Six, M.D.

First Year Fellow

Residency: Carolinas Medical Center

Anna Hoppmann, M.D.
Second Year Fellow
Residency: UAB

Lauren Smith, M.D.
Second Year Fellow
Residency: Nationwide Children's Hospital

Aditi Dhir, M.D.
Third Year Fellow
Residency: Cleveland Clinic Foundation

Charles Schlappi, M.D.
Third Year Fellow
Residency: UAB

Program Directors

Kimberly Whelan, M.D.
Program Director

Hilary Haines, M.D.
Assistant Program Director

The UAB Pediatric Hematology/Oncology Fellowship Program emphasizes the development of clinical expertise, scholarship skills and teaching abilities in the training of our fellows. As the state's only comprehensive center for pediatric blood and malignant disorders, treating 90% of all pediatric cancer and other blood disorders patients diagnosed in Alabama, our program provides fellows with sufficient clinical experience with both inpatients and outpatients who have hematologic and oncologic disorders to develop their skills in diagnosing and managing both common and unusual problems. During their training, our fellows undertake an in-depth study of a specific area of pediatric hematology and oncology. This project may involve laboratory-based research or a joining a clinical research project that is ongoing within the division. In some circumstances our fellows may obtain a Master's of Science in Public Health or a Ph.D. as a component of their training.

Pediatric Hospital Medicine

PEDIATRIC FACULTY

Dr. Robert Pass.....	Director Professor
Dr. Stephanie Berger.....	Associate Professor
Dr. Emily Casey	Assistant Professor
Dr. Teresa Cornelius.....	Assistant Professor
Dr. Madeline Eckenrode.....	Assistant Professor
Dr. Stewart Hill.....	Assistant Professor
Dr. Meghan Hofto.....	Assistant Professor
Dr. Brian May.....	Assistant Professor
Dr. Adolfo Molina	Assistant Professor
Dr. Lauren Nassetta.....	Associate Professor
Dr. Mary Orr	Assistant Professor
Dr. Nichole Samuy	Assistant Professor
Dr. Paul Scalici	Associate Professor
Dr. Erinn Schmit	Assistant Professor
Dr. Cassi Smola	Assistant Professor
Dr. Susan Walley.....	Professor



Dr. Chang Wu.....Assistant Professor
Dr. Anthony Zanni.....Instructor

FEATURED RESEARCH

Faculty members in the UAB Division of Pediatric Hospital Medicine devote over 80% of their professional time to patient care and medical education. Much of the research effort of the division is aimed at improving systems of patient care, assessing management of specific diseases in relation to evidence based-medicine and improving programs for medical student and resident physician training.

MEDICAL EDUCATION RESEARCH

Erinn Schmit, M.D., and colleagues from UAB Departments of Pediatrics and Medicine studied medical student evaluation by faculty members, focusing on how students that are considered to perform at an honors level are identified. A survey framed around Accreditation Council for Graduate Medical Education competencies for students was given to faculty members at three large tertiary care hospitals, each associated with a medical school in an urban setting. The survey queried faculty that supervised third-year medical students on clinical rotations. Based on survey results, professionalism was the single most important factor to faculty members in identifying honors-level students. This result is comparable to a previously published single institution study from the same group of investigators that found "Taking Ownership of Patient Care" to be the most frequent comment by attending physicians in describing honors students.

Lauren Nassetta, M.D., is the site principal investigator for a study of pediatric resident burnout and resiliency. The Pediatric Resident Burnout-Resilience Study Consortium is a multi-year project sponsored by the Association of Pediatric Program Directors. These studies will provide data on personal and situational factors that contribute to burnout and resiliency. Results will likely influence residency program curriculum, help identify residents that need help, and could even influence factors used in selecting residents.

Stephanie Berger, M.D., developed and studied a new method for helping medical students improve their knowledge of normal developmental milestones in children. She created a virtual community using group text messaging with students to send them a weekly short video (<30 seconds) of children demonstrating a particular milestone. Following each video students were asked, "What skill is being demonstrated?" and "What is the child's expected age?" Dialogue between the students and Dr. Berger continued until the skill and expected age were given. The lesson was concluded with feedback and additional milestones expected at the same age as the lesson case. Results showed significant improvement in student engagement with this method of instruction compared to traditional lectures or didactic sessions.

CLINICAL RESEARCH

Adolfo Molina, M.D., and others studied adherence to prescribed asthma medications post-hospitalization for status asthmaticus using Medicaid claims data to identify prescriptions filled within 30 days and within 12 months of hospital discharge. The goal was to see if filling and refilling of prescribed asthma medications was associated with emergency room or hospital reuse within 12 months after discharge. Although they did not find that prescription fill history was associated with health care utilization in this study population, they found that severity of chronic asthma diagnosis and African American race were associated with repeated visits to the emergency room or hospital re-admissions. Another very important finding was evidence that there was widespread nonadherence to recommended

use of asthma controller medications in the study population with an average of around five refills in a 12 month period for these medications, which are expected to be refilled monthly. These results indicate that more research is needed to improve understanding of factors related to nonadherence to prescribed controller medications and the role of social and cultural factors in health care utilization for asthma in children.

It is well known that viruses and not bacteria cause the majority of community acquired pneumonias in children less than three years of age. **Meghan Hofto, M.D.**, studied pneumonias in 381 children between three and 36 months of age hospitalized at Children's of Alabama. Preliminary results revealed that 86% were discharged home on antibiotics. Patients that were tested for viral infection were much less likely to be discharged home on antibiotics. Results suggest that antibiotics are often used unnecessarily for community-acquired pneumonia in this age group and that more frequent viral testing could improve antibiotic stewardship. This study is near completion with results expected this year.

QUALITY AND HEALTH CARE IMPROVEMENT PROJECTS

Susan Walley, M.D., Lauren Wagner, M.D., UAB pediatric hospital medicine fellow, now faculty member at Mercer, and others conducted a quality improvement study at Children's of Alabama with the goal of improving screening for and reporting of tobacco product use in hospitalized adolescents. Four iterative plan-do-study-act cycles were used. Over a 33-month interval, 12,299 patients ≥ 13 years of age were admitted to the hospital; neither the rate of screening ($>90\%$, which was high at baseline) nor the percent of patients reporting tobacco (4.8%) use changed during the study. However, there was a notable increase in reported use of e-cigarettes, a finding that is particularly concerning given the serious pulmonary illnesses associated with vaping that has been in the news much of this year.

Dr. Walley is the principal investigator for grants aimed at preventing tobacco smoke-related health problems:

- American Cancer Society Tobacco-Free Generation Campus Initiative grant. The goal of this grant is for adoption and implementation of a 100% smoke- and tobacco-free campus policy. Funded November 2019–April 2020.
- Alabama Department of Public Health Youth Tobacco Prevention Program. The goals of this program are to educate high school and middle school students, as well as community decision makers on the harms of tobacco use and tobacco smoke exposure, including electronic cigarettes. Year 4 was completed in September 2019 and was renewed for Year 5 from November 2019–September 2020.

Sudden, unexpected infant deaths are associated with unsafe sleep practices, and these deaths have even occurred in hospitals. Drs. Adolfo Molina and Erinn Schmit conducted a quality improvement project aimed at improving adherence to the American Academy of Pediatrics safe sleep guidelines at Children's of Alabama. They achieved substantial improvement within a 12-month interval using quality improvement methods. Overall adherence improved from 72% at baseline to 93%. Results are being prepared for publication.

Additional quality improvement projects underway include adherence to consensus guidelines for management of community-acquired pneumonia and for bronchiolitis.

SIGNIFICANT PUBLICATIONS

Acad Med. 2019 Jun 11. *Which Student Characteristics Are Most Important in Determining Clinical Honors in Clerkships? A Teaching Ward Attending Perspective*. Herrera LN, Khodadadi R, **Schmit E**, Willig J, Hoellein A, Knudson C, Law K, Mingioni N, Walsh K, Estrada C, Williams W.

Acad Pediatr. 2019. *Use of a Group Text Messaging Application to Teach Developmental Milestones on a Pediatric Clerkship*. **Berger S**.

BMJ Case Rep. 2019 May 15;12(5). pii: e228425. *Splenic infarction from vascular torsion in a child with normal splenic anatomy*. **Molina AL, Smola C, Wu CL, Hofto ME**.

Children (Basel). 2019 Feb 28;6(3). pii: E37. *Quality Improvement Project to Improve Screening for Tobacco Use in Adolescent Inpatients at a Children's Hospital*. **Wagner LA, Molina AL, Grizzle K, Hofto ME, Nassetta LB, Orr MM, Samuy N, Schmit EO, Smola C, Harrington KF, Walley SC**.

Clin Infect Dis. 69:1533-4, Nov 1, 2019. *Prenatal cytomegalovirus infection: Timing is everything*. **Pass, RF**.

Diabetes Spectrum. 2019 May; 32(2): 83-84. *Finding My Diabetes*. **Berger S**.

Hosp Pediatr. 2019 Feb 4. pii: hpeds.2017-0239. *Predictors of Hospital Reuse Among Publicly Insured Children Hospitalized for Status Asthmaticus*. Molina AL, Magruder TG, Aban IB, Ward L, Narayanan S, **Walley SC**.

Hosp Pediatr. 2019 Aug 26. pii: hpeds.2019-0178. *Correctly Identifying Hospitalized Pediatric Patients With Tobacco Smoke Exposure: The First Step in Addressing Parental Tobacco Use*. **Walley SC, Boykan R**.

J Virol 93:e01695-18, 2019. *Intrahost dynamics of human cytomegalovirus variants acquired by seronegative glycoprotein B vaccines*. Nelson CS, Cruz DV, Su M, Xie G, Vandergrift N, **Pass RF**, Forman M, Diener-West M, Koelle K, Arav-Boger R, Permar SR.

Pediatrics. June 2019;143(6); e20182741. *A Public Health Crisis: Electronic Cigarettes, Vape and JUUL*. **Walley SC**, Wilson K, Winickoff J, Groner J.

Pediatrics. November 2019; e20193025. *The Intersection of Tobacco and Marijuana Use in Adolescent and Young Adults*. **Walley SC**, Jenssen B, Wilson K.

South Med J. 2019 Aug;112(8):450-454. *What Defines an Honors Student? Survey of Pediatric and Internal Medicine Faculty Perspectives*. **Schmit EO, Wu CL**, Khodadadi RB, Herrera LN, Williams WL, Estrada CA.

PARTICIPATION IN NATIONAL AND REGIONAL RESEARCH COLLABORATIVES, QUALITY IMPROVEMENT PROJECTS AND LEARNING NETWORKS

Nichole Samuy, M.D., and **Paul Scalici, M.D.**, are site co-investigators for the KIDCARE study, a multi-site, national comparative effectiveness study of infliximab versus a second dose of IVIG for Kawasaki disease refractory to initial IVIG treatment. The study is funded by the Patient Centered Outcomes Research Institute (PCORI).

Meghan Hofto, M.D., is a co-investigator on a National Institutes of Allergy and Infectious Diseases multi-institution study of community acquired pneumonia in children from six months to five years of age, comparing outcomes in patients assigned to five days of antibiotic to those receiving the standard 10-day antibiotic course.

EXTRAMURAL AWARDS, RECOGNITION & LEADERSHIP ROLES

Stephanie Berger, M.D.

- Dr. Berger, co-director of the UAB Pediatric Clerkship, received the Caduceus Club Award for Excellence in Clinical Education for the UAB School of Medicine
- In addition, the Pediatric Clerkship received the Caduceus Club Award for Best Clinical Department.

Susan Walley M.D.

- Dr. Walley graduated from the UAB Health Leadership Academy in 2019.
- She was elected chair of the American Academy of Pediatrics Executive Committee for the Section on Tobacco Control.

Erinn Schmit, M.D.

- Dr. Schmit is the chair of the Safe Sleep Task Force at Children's of Alabama and received a grant from Kaul Pediatric Research Institute to fund distribution of sleep sacks (wearable blankets) for infants.
 - This multidisciplinary task force has worked to improve practices at Children's of Alabama and to educate parents on the importance of safe sleep recommendations for infants.
 - A national organization that promotes safe sleep, Cribs for Kids, recognized Children's of Alabama as a Gold Safe Sleep Champion Certified Hospital in November 2019 as a result of the success achieved by the Safe Sleep Task Force.
- She completed her Master of Education from the University of Cincinnati/Cincinnati Children's Hospital Medical Center in December 2019.

Adolfo Molina, M.D.

- Dr. Molina graduated with a Master of Science in Healthcare Quality and Safety from the UAB School of Health Professions in August 2019.

Lauren Nassetta, M.D.

- Dr. Nassetta was one of 14 academic pediatric faculty members from across the nation selected for participation in the LEAD program for 2019–2020. The LEAD (Leadership, Educational and Academic Development) Program is aimed at developing outstanding leaders for postgraduate medical education programs.

Brian May, M.D.

- Dr. May was appointed as a member of the American Council of Graduate Medical Education Pediatric Milestones Working Group in 2019 and will work with colleagues from across the US to review and revise milestones for pediatric resident education.

Chang Wu, M.D.

- Dr. Wu was co-chair of Region 8 of the Academic Pediatric Association in 2019.

Meghan Hofto, M.D.

- Dr. Hofto was appointed co-chair of the Global Health Special Interest Group of the Academic Pediatric Association in 2019.

PEDIATRIC HOSPITAL MEDICINE FELLOWSHIP PROGRAM

2019–2020 Fellows

Samantha Hanna, M.D.

First Year Fellow

Residency: Vanderbilt University

Alexandra Healy, M.D.

First Year Fellow

Residency: University of Louisville

Hannah Gardner, M.D.

Second Year Fellow

Residency: Wake Forest University

Jennifer Hoefert, M.D.

Second Year Fellow

Residency: University of Louisville

Program Directors

Chang Wu, M.D.

Program Director

Erinn Schmit, M.D.

Assistant Program Director

The UAB Pediatric Hospital Medicine Fellowship Program prepares our fellows to have excellent clinical skills, the ability to perform meaningful scholarship and the capacity to become leaders in the field of hospital medicine. Our program provides sufficient clinical experience for fellows to become confident experts in the care of hospitalized children. Our division faculty have developed a core lecture series to give fellows a working knowledge of health information systems, study design and basic biostatistics, among other topics. As part of their training, our fellows complete a research project that will contribute to the field of pediatric hospital medicine in its broadest sense and also have the opportunity to build a disease-specific clinical pathway to be used at Children's of Alabama.

Pediatric Infectious Diseases

PEDIATRIC FACULTY

Dr. Richard Whitley.....	Co-Director Professor
Dr. David Kimberlin.....	Co-Director Professor
Dr. Suresh Boppana	Professor
Dr. William Britt.....	Professor
Dr. Karen Fowler	Professor
Dr. Cecelia Hutto	Professor
Dr. Scott James.....	Assistant Professor
Dr. Stephanie Moore.....	Instructor
Dr. Larisa Pereboeva	Assistant Professor
Dr. Swetha Pinninti	Assistant Professor
Dr. Claudette Poole.....	Assistant Professor
Dr. Shannon Ross	Associate Professor
Dr. Veronica Sanchez	Assistant Professor
Dr. Sergio Stagno.....	Professor Emeritus



FEATURED RESEARCH

The UAB Division of Pediatric Infectious Diseases is internationally known for its studies of congenital and perinatal viral infections as well as its studies of antiviral therapeutics. For 50 years, the division has defined the natural history, pathogenesis, diagnosis, treatment and prevention of congenital cytomegalovirus (CMV) and neonatal herpes simplex virus (HSV) infections and other viral infections in infants. These research programs were started by Dr. Charles Alford in the 1960s, following his return to UAB from training in the laboratory of Nobel Prize winner Dr. Thomas Weller. Applying a critical scientific approach to the emerging field of virology, Dr. Alford established UAB as the national leader in congenital and perinatal viral infections.

Currently, the division consists of nine physician scientists and three Ph.D.s. Collectively, these investigators are responsible for \$17.7 million in NIH grant and contract support in FY2019. Division faculty currently hold six R awards, 14 NIH contracts, two CDC contracts, one U award, one P award and one K award, and generate over 40 major original publications each year. This is in addition to a thriving clinical service and molecular diagnostic laboratory. The legacy of the work initially started in the laboratories of Drs. Weller and Alford continues. Advances in technology promise to take what today is cutting-edge science and make it the foundation upon which tomorrow's advances stand.

CONGENITAL CYTOMEGALOVIRUS PROGRAM

Multiple projects extend the division's studies of CMV infections. A significant effort, led by **Suresh Boppana, M.D., Karen Fowler, Ph.D., and Shannon Ross, M.D.**, is the completion of the National Institute on Deafness and Other Communication Disorder (NIDCD)-funded CMV and Hearing Multicenter Screening (CHIMES) study. These data have provided new insights into the changing natural history of congenital CMV infection. This study enrolled more than 100,000 infants from seven hospitals in the U.S. and was organized and administered by Drs. Boppana and Fowler. New findings from the study included the development of a highly sensitive and specific PCR-based assay for testing newborn saliva samples to identify babies infected with CMV and lack of sensitivity of newborn blood spots collected for routine screening to detect CMV infected babies.

Other major findings of the study included a significantly higher prevalence of congenital CMV infection in African American women and teens than previously reported, and the failure of newborn hearing screening to identify a significant proportion (~ 40%) of infants with CMV-associated hearing loss at birth. Most recently, the CHIMES data were utilized to establish the cost savings that would be achieved by a universal screening program for congenital CMV infections. The landmark findings from this pivotal study are being used to develop new guidelines on caring for infants and children locally, nationally and internationally.

Swetha Pinninti, M.D., focuses her efforts on defining the prevalence and severity of vestibular and balance disorders in children with asymptomatic congenital CMV infection with hearing loss and those with normal hearing. The goals of this work are to define the burden of vestibular involvement, develop screening methods for early identification of children with vestibular and balance disorders and develop effective intervention measures to improve outcomes. Dr. Pinninti is also studying the association between sexually transmitted infections and genital tract shedding of CMV.

Some of Dr. Fowler's current work focuses on behavioral interventions to prevent maternal CMV infections during pregnancy. A recent CDC-funded behavioral intervention study recruited young pregnant women into a 12-week cognitive-behavioral intervention to increase knowledge about congenital CMV and decrease self-reported risk behaviors. The results demonstrated that it is possible to raise awareness about congenital CMV and reduce CMV risk behaviors in young CMV seropositive pregnant women. Currently studies are proposed to evaluate whether these behavior changes result in lowering maternal infection during pregnancy thereby reducing congenital CMV infection rates in their offspring.

Internationally, **William Britt, M.D.**, and Drs. Boppana and Fowler have ongoing projects in Brazil and South Africa (supported by the NIH). In Brazil, more than 20,000 women and their newborn infants are being enrolled in studies to define the natural history of congenital CMV infection in a population of women with universal immunity to CMV, a critical question in the design of prophylactic vaccines for this infection.

Veronica Sanchez, Ph.D., and Drs. Britt, Boppana, Ross, and Pinninti all lead robust laboratory research programs as well, with studies in basic molecular virology, virus-host interactions and correlates of protection. A significant effort led by Dr. Britt and Sanchez has been focused on understanding the role of virus-induced inflammation and brain development in a small animal model of CMV infection of the developing central nervous system. This system has pointed to the role of inflammation in altered cell positioning in the developing brain, a finding that recapitulates aspects of the pathology of brain disease in infants with congenital CMV infection. A second major focus of this project is defining mechanisms of hearing loss in infants with congenital CMV infections. This small animal model closely recapitulates the findings of hearing loss in infants with congenital CMV infection and findings generated from studies in this system have identified mechanisms of hearing loss, which include virus-induced inflammation.

Additional studies aim to improve understanding of fundamental aspects of virus replication and virus-host interactions, including several projects directed at dissecting the role of the functional components of the infected cell in the efficient production of infectious virus from an infected cell—a project that can be translated into the identification of novel targets for antiviral agents. In addition, these studies have developed a new and previously unknown function of novel modes of regulation of cellular function, viral micro RNA molecules.

Shannon Ross, M.D., leads research centered around identifying markers of hearing outcome in congenital CMV. Utilizing next-generation sequencing technologies and informatics, Dr. Ross is investigating the contribution of genetic heterogeneity of viruses shed in different compartments (mouth, blood, urine, etc.), to identify biomarkers for the development of hearing loss. In addition, she is investigating the role of neuroimaging in identifying infants with congenital CMV that are at risk for hearing loss.

ANTIVIRAL THERAPIES PROGRAM

Major clinical trials of the treatment of life-threatening viral infections have been performed by **David Kimberlin, M.D.**, and **Richard Whitley, M.D.** Building upon their previous body of work that had established early initiation of intravenous ganciclovir or oral valganciclovir as the standard of care for the management of babies with symptomatic congenital CMV disease, Drs. Kimberlin and Whitley are now assessing whether starting antiviral therapy later in childhood for children with hearing loss provides the same benefit. They also are determining the appropriate dose of these medications to use in babies born extremely premature. A study of the treatment of babies with asymptomatic congenital CMV infection has been funded by the NIH and began in 2019.

Additionally, studies assessing new diagnostic tests in neonatal herpes simplex virus (HSV) infections seek to establish biomarkers that will be of value in determining degrees of risk from this life-threatening disease. All of these studies are conducted through their multicenter, NIH-funded network known as the Collaborative Antiviral Study Group (CASG), and both CMV and HSV trials are being conducted nationally and internationally (South America and Europe). The Peru site is also participating in the NIH-funded Zika in Pregnancy (ZIP) study.

Scott James, M.D., utilizes next generation sequencing to identify and characterize viral subpopulations with diminished susceptibility to antiviral drugs from treated babies. New studies have been initiated by Dr. Kimberlin through funding to evaluate the natural history of the acute flaccid paralysis syndrome and a grant to assess rare disease attributed to cytomegalovirus, among others.

ANTIVIRAL DRUG DEVELOPMENT AND DISCOVERY PROGRAM

Scott H. James, M.D., leads an interdisciplinary team of investigators to help select molecules with optimal antiviral activity against a broad array of DNA viruses. In addition, his group provides preclinical data to support human clinical trials. The expertise of his laboratory has been expanded from herpesviruses and poxviruses to all the DNA viruses including the adenoviruses, polyomaviruses, and papillomaviruses. This was made possible by investments in new instrumentation to increase efficiency and analytical capacity into highly automated 384-well assays that greatly increased the productivity of the laboratory while lowering research costs. Under the guidance of the late Mark N. Prichard, Ph.D., and continuing under the current leadership of Dr. James, preclinical work performed in this laboratory has helped to support the advance of five drugs for the treatment of viral infections into clinical trials: maribavir (for CMV), brincidofovir (for CMV), tecovirimat (for smallpox), and most recently, filomiclovir (for CMV), N-Methanocarbathymidine (for VZV), and ABI-1968 (for HPV).

Dr. James' antiviral program employs the study of antiviral drug resistance to help understand the molecular mechanisms of action of novel compounds and to help manage their clinical use. Molecular biology and reverse genetic techniques are used to identify the molecular targets of antiviral drugs in DNA viruses and to describe the essential functions of these enzymes in viral replication. For example, a seminal contribution of Dr. Prichard was in defining the function of the CMV UL97 protein kinase, establishing its critical role in lytic replication, and demonstrating that it acts to phosphorylate ganciclovir.

Dr. James led preclinical studies of the novel compounds cyclopropavir and brincidofovir, including mechanism of action studies, in vitro efficacy and toxicity assays, and genomic studies of laboratory-generated resistant strains of CMV. In partnership with the

Collaborative Antiviral Study Group, our team also investigates the emergence of resistance to antiviral therapies during clinical trials in infants and children with viral infections and has characterized the rates of resistance in pediatric patients.

MOLECULAR DIAGNOSTIC VIROLOGY LABORATORY

Under the leadership of Dr. William Britt, the Molecular Diagnostic Virology Laboratory provides an essential service for the University of Alabama Hospital and Clinics and Children's of Alabama.

- Same-day diagnostic services of infections of the central nervous system (CNS) and respiratory system allows for targeted therapeutic approaches and the institution of relevant hospital infection control policies for hospitalized patients, resulting in improved patient care.
- Same-day turn around for CNS viral infections is not available either commercially or at hospital laboratories other than the services provided by the Diagnostic Virology Laboratory.
- In addition, specialized testing is available upon request for investigation of hospital-acquired infections.

EMERGING INFECTIONS PROGRAM

Stephanie Moore, Ph.D., and Dr. Whitley and have built a team of experienced scientists in virology, viral immunology, pathogenesis and medicinal chemistry from eight partnering academic institutions, plus Southern Research, to develop small molecule therapeutics for the treatment of emerging viral infections under the umbrella of the Antiviral Drug Discovery and Development Center (AD3C). Members of several genera of RNA viruses that are major causes of human disease, bioterrorist threats or emerging infectious diseases are being studied. Projects focus on coronaviruses that cause SARS and MERS, alphaviruses cause Venezuelan equine encephalitis virus and chikungunya, flaviviruses (dengue, West Nile virus, and Zika) and influenza A virus.

The team utilizes the existing data and compounds to perform proof of principal studies in animal models, thereby delivering potential small molecule therapeutics to the government.

The group has also evaluated a limited number of additional, novel compounds provided by collaborators at the Emory Institute for Drug Discovery (EIDD) and Gilead Sciences. Expertise exists in the AD3C for IND preparation and filing as well as Phase I studies with adequate resources. The projects are supported by three Cores: Administrative, the Assay, and the Medicinal Chemistry and Lead Development. The organization and interaction between all projects and Cores is monitored by the Administrative Core. This collaboration has already contributed significant data to an IND filed for MERS and two patents and proof of principle data for chikungunya.

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PARTICIPATION IN NATIONAL AND REGIONAL RESEARCH COLLABORATIVES, QUALITY IMPROVEMENT PROJECTS AND LEARNING NETWORKS

ANTIMICROBIAL STEWARDSHIP PROGRAM (ASP)

The Antimicrobial Stewardship Program (ASP) team includes co-medical directors, a pharmacist, a data analyst, six physicians that represent the various specialties within the department representation from Children's of Alabama (COA) performance improvement and administration.

- The ASP team works to develop hospital-wide interventions to measure and improve appropriate use of antimicrobial agents with the overarching goal of improving patient care.
- The ASP team participates in the Solutions for Patient Safety ASP collaborative with the goal of reducing antimicrobial use in the hospital and infections with multi-drug resistant organisms (MDRO).
- The COA ASP is in full compliance with the Joint Commission antimicrobial stewardship standards. The ASP monitors monthly hospital antimicrobial use and reports this back to prescribers.
- In addition, in January 2019, the ASP began reporting antimicrobial use and MDRO data to the National Healthcare Safety Network (NHSN).
- The ASP also monitors daily bug-drug mismatches, duplicate antimicrobials, high-risk antimicrobial use, and all positive sterile site cultures and makes an average of 30 interventions based on this monitoring that results in antibiotic changes.
- The ASP prepares and publishes the Children's of Alabama hospital antibiogram yearly to help guide practitioners on appropriate antibiotic use, and added a *Candida* and *Helicobacter pylori* antibiogram to this report in the past year.
- Following the implementation of indication specific order sets based on evidence based criteria for therapy, the ASP has documented a reduction in high risk antimicrobial use in the hospital, with meropenem use down 5% and vancomycin use down 14%.

INFECTION CONTROL

The Infection Control and Prevention team, that includes the medical director, the nurse manager, and three infection prevention nurses, work together to identify, investigate and develop processes to prevent infections acquired in the hospital.

- Over the past three years, they have worked closely with multi-disciplinary Solutions for Patient Safety teams to develop and educate the hospital staff about process bundles to prevent four of the hospital acquired conditions that are a focus of this nation-wide collaboration, CLABSI, SSI, CAUTI, and VAP.

EXTRAMURAL AWARDS, RECOGNITION & LEADERSHIP ROLES

Suresh Boppana, M.D., William Britt, M.D., Karen Fowler, Ph.D., David Kimberlin, M.D., and Shannon Ross, M.D., were appointed to the Center for Women's Reproductive Health (CWRH). The mission of the CWRH is to conduct research aimed at improving the reproductive health and survival of all women, especially minority and under-served women and offspring, and their families, and to facilitate interdisciplinary collaboration between UAB researchers and others and developing scholars interested in women's reproductive health.

Swetha Pinninti, M.D., was selected as one of two recipients of the 2019 Early Career Research Awards from the National CMV Foundation.

Shannon Ross, M.D., is a member of the American Pediatric Society. She is a member of the inaugural Infectious Disease Society of America (IDSA) Leadership Institute. As the first program of its kind, designed exclusively for infectious diseases and HIV specialists, attendees built upon existing leadership skills common to the ID professional and developed new tools to enhance their leadership capacity.

David Kimberlin, M.D., received the 2019 Pediatric Infectious Diseases Society (PIDS) Distinguished Service Award. He was named chair of the newly established Human Research Advisory committee (HRAC) at UAB. He will serve a two-year term.

Stephanie Moore, Ph.D., was named the new associate director of the Alabama Drug Discovery Alliance (ADDA).

Scott James, M.D., currently holds a national leadership role for the Pediatric Infectious Diseases Society Training Program Committee beginning in 2018 to present date.

Richard Whitley, M.D., was selected as the recipient of the 2020 National Foundation for Infectious Diseases (NFID) John P. Utz Leadership Award. This award recognizes Dr. Whitley's leadership in the field of clinical virology and infectious diseases.

PEDIATRIC INFECTIOUS DISEASES FELLOWSHIP PROGRAM

2019–2020 Fellows

Joshua Cooper, M.D.
First Year Fellow
Combined Infectious Diseases/Critical Care Fellow
Residency: UAB

Audrey Lloyd, M.D.
First Year Fellow
Combined Adult and Pediatric Infectious Diseases Fellow
Residency: Ohio State University

Nicole Samies, D.O.
Second Year Fellow
Residency: Geisinger Medical Center

Connie Trieu, M.D.
Second Year Fellow
Residency: Mercer University

Abdulasalam Alsulami, M.D.
Third Year Fellow
Residency: Miami Children's Health System

Nazia Kabani, M.D.
Third Year Fellow
Combined Pediatric Infectious Disease and Neonatology
Residency: UAB

Program Directors

Scott James, M.D.
Program Director

Claudette Poole, M.D.
Associate Program Director

The mission of the Pediatric Infectious Disease Fellowship Program is to train, educate and mentor fellows to become exceptional clinicians and researchers in the field of pediatric infectious diseases. We strive to prepare our trainees to be future leaders in health care who will advance the field of pediatric infectious diseases as innovative physician-scientists. Our trainees are immersed in a learning environment that values excellence in clinical care, scholarly activity and professionalism. All of our former fellows over the past decade have easily passed their pediatric infectious diseases boards. During their training, our fellows gain experience in a wide variety of clinical conditions and settings, participate in quality improvement and patient safety initiatives, and are provided with close mentorship and guidance for the development of successful research careers.

Neonatology

PEDIATRIC FACULTY

Dr. Namasivayam Ambalavanan	Co-Director Professor
Dr. Waldemar A. Carlo	Co-Director Professor
Dr. Nitin Arora	Assistant Professor
Dr. Terry Bied	Associate Professor
Dr. Allison Black	Associate Professor
Dr. Dean Bruce	Associate Professor
Dr. Kathryn Buchan	Assistant Professor
Dr. Carl Coghill	Professor
Dr. Samuel Gentle	Assistant Professor
Dr. Hannah Hightower	Assistant Professor
Dr. Tamas Jilling	Associate Professor
Dr. Jegen Kandasamy	Assistant Professor
Dr. Andrea Kane	Assistant Professor
Dr. Virginia Karle	Professor
Dr. Charitharth Vivek Lal	Associate Professor
Dr. Albert Manasyan (Zambia)	Assistant Professor
Dr. Joseph Philips	Professor
Dr. Manimaran Ramani	Associate Professor



Dr. Ariel Salas	Assistant Professor
Dr. Brian Sims	Associate Professor
Dr. Christine Stoops	Assistant Professor
Dr. Thanh Summerlin	Assistant Professor
Dr. Colm Travers	Assistant Professor
Dr. Lindy Winter	Associate Professor

FEATURED RESEARCH

The UAB Division of Neonatology is a founding member of the NIH Eunice Kennedy Shriver National Institute of Child Health and Human Development (NICHD) Neonatal Research Network (NRN). Over its 30 years of existence, the NRN has defined the standards of multi-institutional collaborative research that has directly resulted in the increased survival and decreased morbidity rates of extremely low birth weight infants and other critically ill infants in the United States.

UAB Neonatology is consistently one of the top centers in developing, leading, enrolling and analyzing the important randomized controlled trials and clinical studies conducted by the NRN. Division members have led three major innovative NRN studies: the SAVE Factorial Trial, the Cytokine Study and the SUPPORT Factorial Trial. A fourth innovative trial, led by UAB neonatologists that tests the effects of caffeine late in the neonatal course and at home to shorten hospitalization and decrease apparent life-threatening events, has been funded by the NIH and started enrollment in early 2019. So far, UAB has the highest enrollment of all NRN sites in this trial. The UAB NRN grant was renewed for the cycle ending in 2021.

The division is also funded by the Eunice Kennedy Shriver NICHD Global Network for Women's and Children's Health Research. Division researchers led seminal investigations of resuscitation and essential newborn care in 100 communities in six countries, which included almost 200,000 infants. These trials established the effectiveness of the interventions in reducing stillbirths and neonatal mortality and led to worldwide implementation of training, including the globally implemented Helping Babies Breathe Program and the Essential Care for Every Baby Program introduced in 2014. This year, we successfully competed for the next five-year cycle and will be funded through 2023. In addition, the major trial during this next cycle will be led by UAB. This will be a randomized clinical trial to test the efficacy and safety of azithromycin in women during labor to reduce maternal and neonatal death/infections in 5,500 pregnant women at high risk for infection. The Bill and Melinda Gates Foundation has given UAB an additional grant that will fund an extension of this trial to randomize 28,500 low-risk women to conduct a second trial simultaneously.

The Division of Neonatology at UAB is the only one site in the country funded to lead both NICHD neonatal networks (NRN and Global).

Members of the division also conduct groundbreaking basic science research in control of breathing in preterm infants. **Namasivayam Ambalavanan, M.D.**, is the principal investigator of the UAB Research Center, which comprises one of the five research centers in NIH National Heart, Lung and Blood Institute (NHLBI) PreVENT consortium. This consortium collects and analyzes high-resolution cardiorespiratory data from a large cohort of very preterm infants to determine how abnormalities in control of breathing contribute to suboptimal outcomes following preterm birth. Dr. Ambalavanan is also the co-PI with Dr. Myriam Peralta, UAB Division of

Developmental and Behavioral Pediatrics, of the Outcomes of Babies with Opioid Exposure (OBOE) project, a NICHD-funded multicenter project to evaluate long-term neurodevelopmental outcomes and structural brain changes by MRI in infants exposed to opioids in the perinatal period. Additionally, Dr. Ambalavanan is a co-PI, with Dr. David Askenazi, UAB Division of Pediatric Nephrology, on an U34 on acute kidney injury in neonates and is an investigator on multiple other NIH-funded projects, including a R44 on a lab-on-chip project for multiple acute kidney injury biomarkers.

There are many ongoing extramurally funded projects with a research focus on bronchopulmonary dysplasia (BPD). **Vivek Lal, M.D.**, is funded by an American Heart Association Scientist Development Grant and a new K08 to evaluate the role of the neonatal airway microbiome in the development of BPD. **Jegen Kandasamy, M.D.**, has been awarded a research grant by the American Thoracic Society (ATS) to evaluate the role of mitochondria in hyperoxia-induced lung injury and BPD. **Sam Gentle, M.D.**, and Rakesh Patel, Ph.D., UAB Department of Pathology, are to receive R21 funding to evaluate the oral microbiome in preterm infants in relation to nitric oxide metabolism.

In collaboration with the UAB Department of Anesthesiology, the division also conducts research funded by the CounterACT Network of the NIH. The CounterACT network operates under the oversight of the Office of Biodefense Research and Surety (OBRS), and its main goal is to bolster medical readiness to care for victims of mass casualties by chemical threat agents. **Tamas Jilling, M.D.**, is co-principal investigator, along with Sadis Matalon, Ph.D., UAB Department of Anesthesiology, of a U01 grant awarded by the CounterACT Program to perform preclinical studies in multiple animal models, to test the therapeutic efficacy of tadalafil (Cialis) as a countermeasure against pregnancy-specific toxicity of bromine gas inhalation.

SIGNIFICANT PUBLICATIONS

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EXTRAMURAL AWARDS & LEADERSHIP ROLES

Namasivayam Ambalavanan, M.D., Waldemar Carlo, M.D., Charitharth Lal, M.D., and Brian Sims, M.D., were appointed to the Center for Women's Reproductive Health (CWRH). The mission of the CWRH is to conduct research aimed at improving the reproductive health and survival of all women, especially minority and under-served women and offspring, and their families, and to facilitate interdisciplinary collaboration between UAB researchers and others and developing scholars interested in women's reproductive health.

Namasivayam Ambalavanan, M.D., was named the first recipient of the Virginia Walker Jones Endowed Chair in Neonatology. The chair honors the outstanding contribution of Dr. "Ambal." both locally and nationally, as well as the long-standing service of Virginia Walker Jones to the Children's of Alabama Board of Trustees.

Wally Carlo, M.D., was elected as council member of the American Pediatric Society. He will serve a term from May 2019–May 2024.

Vivek Lal, M.D., recently completed the Young Physicians Leadership Alliance presented by the Section on Early Career Physicians of the American Academy of Pediatrics.

Ariel Salas, M.D., was the recipient of the SSPR Young Faculty Travel Award.

NEONATOLOGY FELLOWSHIP PROGRAM

2019–2020 Fellows

Anisha Bhatia Attawala, M.D.

Third Year Fellow

Residency: Emory University School of Medicine

Andrew Klinger, M.D.

Third Year Fellow

Residency: University of South Alabama (USA)

Sara Staples, M.D.

Third Year Fellow

Residency: Virginia Medical School

Nazia Kabani, M.D.

Second Year Fellow

Combined Pediatric Infectious Disease/Neonatology

Residency: University of Alabama at Birmingham (UAB)

Snehashis Hazra, M.D.

Second Year Fellow

Residency: Brookdale University Hospital Medical Center, Brooklyn, New York

Bianca Vamesu, M.D.

Second Year Fellow

Residency: Driscoll Children's Hospital, Corpus Christi, Texas

Amelia Freeman, M.D.

First Year Fellow

Residency: UAB

Vivek Shukla, M.D.

First Year Fellow

Residency: SUNY (The State University of New York), Downstate, New York

Mary Silverberg, M.D.

First Year Fellow

Residency: UAB

Program Directors

Namasivayam Ambalavanan, M.D.

Program Director

Manimaran Ramani, M.D.

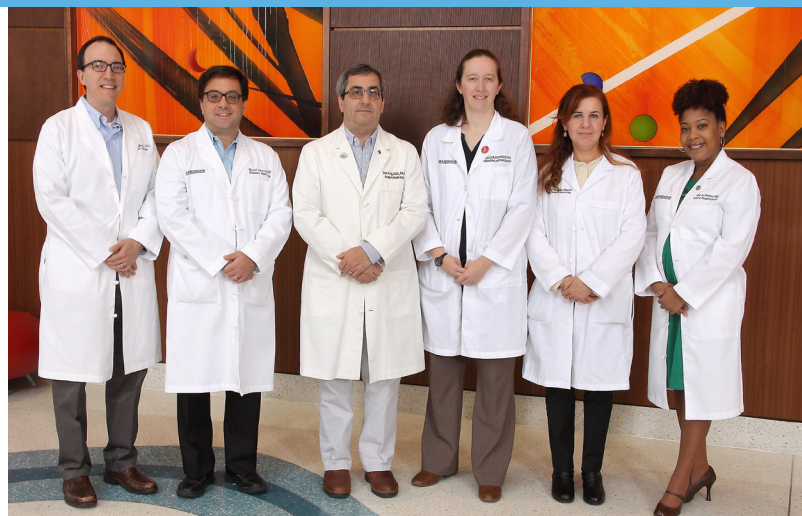
Associate Program Director

The UAB Neonatology Fellowship Program provides an excellent educational, clinical and research experience to help train the next generation of academic neonatologists. Our program provides ample experience and instruction to enable our fellows to develop special competence in the management of critically ill neonates. Fellows are also provided with instruction in the psychosocial implications of disorders of the fetus, neonate and young infant, as well as in the family dynamics surrounding the birth and care of a sick neonate. As part of their training, fellows are also involved in a regional program that includes outreach education, patient consultation, and transport of ill neonates. The program also places an emphasis on excellence in basic science and clinical research with up to two-thirds of the fellowship time dedicated to research. The program offers a robust curriculum of educational conferences and seminars opportunities for fellows. These include: Neonatal Patient Management Conferences, Perinatal Grand Rounds, and Developmental Physiology and Pathophysiology Seminars that are held weekly and Perinatal Mortality Conferences, perinatal journal clubs and research seminars that are held monthly.

Pediatric Nephrology

PEDIATRIC FACULTY

Dr. Daniel Feig	Director Professor
Dr. David Askenazi	Professor
Dr. Erica Bjornstad	Assistant Professor
Dr. Sahar Fathallah-Shaykh	Professor
Dr. Michael Seifert	Associate Professor
Dr. Tennille Webb	Assistant Professor
Dr. Megan Yanik	Assistant Professor



FEATURED RESEARCH

The UAB Division of Pediatric Nephrology leads research efforts in drug discovery and pharmacokinetics, as well as the assessment, progression and treatment of acute and chronic kidney disease in children.

David Askenazi, M.D., MPH is the director of the Pediatric and Infant Center for Acute Care Nephrology (PICAN). PICAN seeks to develop novel management options for pediatric patients with renal impairment and includes translation from bedside to bench and back again. For example, PICAN studied a new dialysis device called Aquadex. We adapted the Aquadex to treat neonates and premature infants with kidney failure who were too small for hemodialysis. As a result of this work, children as small as one kg can now receive this lifesaving therapy. With the publication of these results, this technology is now being used at other major children's hospitals across the country, including Cincinnati Children's Hospital Medical Center, Boston Children's Hospital and Seattle Children's. Dr. Askenazi is the founder and chair of the Neonatal Kidney Cooperative, which studies the causes and outcomes of acute kidney injury in neonates. In collaboration with **Daniel Feig, M.D., Ph.D.**, and members of the Hematology Section of the UAB Division of Pediatric Hematology/Oncology, Dr. Askenazi is also investigating the causes of renal impairment in patients with sickle cell disease.

Dr. Feig leads the Childhood Hypertension Program, which has identified critical mechanisms involved in the development of adolescent onset essential hypertension, as well as the risk factors associated with hypertensive target organ damage. Previous clinical trials have demonstrated that elevated serum uric acid causes vascular damage and activation of the renin angiotensin system, resulting in high blood pressure that can be mitigated by uric acid-lowering therapy.

The SURPHER (Serum Uric acid Reduction to Prevent HypERTension) trial is an ongoing study to assess the effectiveness of uric acid reduction in lowering blood pressure in young adults. This study found that even mild hyperuricemia results in increased risk for hypertension and chronic kidney disease in patients with type 2 diabetes through vascular injury associated mechanisms. It has also shown that reduction of serum uric acid causes improvement in the function of the endothelium, the lining of blood vessels.

A new branch of research, in collaboration with faculty in the School of Public Health, is the evaluation of the impact of early life stress on the development of vascular dysfunction that leads to hypertension and renal disease.

Sahar Fathallah, M.D., serves as medical director of dialysis and is the site investigator for nearly a dozen nationwide studies aimed to improve the care of children with chronic kidney disease and those requiring dialysis. She works tirelessly to improve the care of children with renal disease.

Michael Seifert, M.D., investigates ways to improve long-term kidney function in children who receive kidney transplants. In a study that will alter how children with kidney transplants are evaluated, he has demonstrated that early immunologic activation, seen on surveillance renal transplant biopsies, predicts long-term complications even before changes in laboratory values. His current NIH-funded studies are aimed at identification of biomarkers of chronic transplant dysfunction and new therapeutic targets to mitigate chronic allograft nephropathy. He also leads the research efforts of a national quality improvement network (Improve Renal Outcomes, IROC) for pediatric renal transplantation. His efforts have resulted in the use of standardized protocols to control blood pressure and to reduce late cellular allograft rejection in renal transplant patients.

Tennille Webb, M.D., is collaborating with investigators in the Cardiac Intensive Care Unit to better understand the alterations in perfusion, cytokines and inflammation that lead to acute kidney injury in patients undergoing cardiac surgery. The goal of her program is to reduce complications, hospital time, and morbidity and improve survival in these critically ill children.

Erica Bjornstad, M.D., Ph.D., joined the Division of Nephrology in August 2019. Her research adds a global health dimension to the division portfolio. Dr. Bjornstad studies the risk factors for kidney injury in trauma patients in low-resource settings, including Malawi and Zambia.

Megan Yanik, M.D., focuses on research that bridges the fields of renal transplantation, genetics and pharmacology. Her studies evaluate individual variations in metabolism that can predictably alter the body's handling of both diet and medications. These findings can be leveraged to more accurately and effectively prescribe immune suppression for transplant recipients, increasing longevity and reducing complications.

In addition to these programs, the Division of Pediatric Nephrology has a robust portfolio of quality improvement efforts. On a local level, we have projects that address two of the most severe complications of dialysis, anemia, hyperparathyroidism and important aspects of renal transplantation, including immune suppression medication titration, management of opportunistic viral infections and pre-clinic planning to improve efficiency and medication adherence.

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PARTICIPATION IN NATIONAL AND REGIONAL RESEARCH COLLABORATIVES, QUALITY IMPROVEMENT PROJECTS AND LEARNING NETWORKS

We are also involved in leadership of national quality improvement efforts.

IROC (IMPROVED RENAL OUTCOMES)

IROC is a national consortium of 17 pediatric renal transplantation programs. Generous donations have allowed us to both participate and lead aspects of this program. We have automated data collection that is now monitoring more than 30 benchmark issues. We have initiated intervention programs aimed at improving blood pressure (BP) control after transplant, which is critical for organ longevity, and standardization of immune suppression induction. Upcoming projects include standardization of post-transplant biopsy schedules and therapy of asymptomatic acute rejection episodes that may presage graft dysfunction.

Michael Seifert, M.D., leads the IROC Research Committee and is on the governance board.

SCOPE (STANDARDIZATION CARE TO IMPROVE OUTCOMES IN PEDIATRIC END STAGE RENAL DISEASE)

SCOPE is a collaborative of 78 pediatric nephrology programs to prevent infections in peritoneal and hemodialysis patients using large-scale collaboration to identify and disseminate effective interventions across pediatric care settings. In the past year, since we have joined SCOPE, our dialysis associated infection rates have fallen over 25%. This represents substantial cost savings and prevention of numerous infection-related hospitalizations.

Sahar Fathallah, M.D., medical director of the Pediatric Renal Dialysis Unit, leads the local chapter.

NINJA (NEGATION OF RENAL INJURY BY JUST-IN-TIME ACTION)

NINJA is a collaboration between Children's of Alabama and Cincinnati Children's Hospital in which hospitalized patients receiving medications that can cause kidney injury are automatically identified by using the electronic medical record system and scheduled for dose adjustments and increased renal function surveillance. The rate of acute renal injury in inpatients has been decreased by more than 60%, resulting in substantially decreased morbidity across the hospital and reduced hospitalization duration. A very recent application of this program in the Neonatal Intensive Care Unit, a project only done at Children's of Alabama, has nearly eliminated medication associated acute kidney injury in our most vulnerable premature infants. The NINJA program has been so successful that in 2018, it was the first new program added to the Solutions of Patient Safety consortium and instituted at 147 children's hospitals worldwide.

David Askenazi, M.D., MPH, leads our site.

EXTRAMURAL AWARDS, RECOGNITION & LEADERSHIP ROLES

David Askenazi, M.D.

- Dr. Askenazi is section editor for Acute Kidney Injury, Pediatric Nephrology, the Journal of the International Pediatric Nephrology Association.
- He received a U34 Grant from the National Institute for Digestive, Diabetes and Kidney Diseases to establish a consortium to study outcomes following acute kidney injury in neonates.
- He is the founder and chair of the Neonatal Kidney Cooperative, which studies the causes and outcomes of acute kidney injury in neonates.

Daniel Feig, M.D.

- Dr. Feig was elected to the American Academy of Pediatrics Section on Nephrology Executive Council.
- He serves as chair of the American Board of Pediatrics, Nephrology Sub-Board Chairman. His two-year term will end Dec. 2019.
- He was chair of the International Congress on Hypertension in Children and Adolescents in Warsaw, Poland, on May 24–26, 2019.
- He was the T.L. Perumallu Endowed Lecturer at the Medical College of Wisconsin on Oct. 4, 2019.

Tennille Webb, M.D.

- Dr. Webb received a Loan Repayment Program award from the National Institutes of Health. She receives her award through the National Institute of Diabetes and Digestive and Kidney Diseases.

PEDIATRIC NEPHROLOGY FELLOWSHIP PROGRAM

2019–2020 Fellow

Priyanka Ameta, M.D.

First Year Fellow

Residency: University of Florida, Pensacola

Program Directors

Daniel Feig, M.D.

Program Director

Michael Seifert, M.D.

Associate Program Director

The UAB Pediatric Nephrology Fellowship Program has been fully accredited for over 20 years. Our program combines an interdisciplinary experience in clinical training and collaborative research opportunities to train the next generation of academic pediatric nephrologists. The first year of fellowship concentrates on clinical training offering fellows exposure to a variety of patient experiences with intensive research training in the second and third years.

Our available research collaborations across UAB encompass basic science and adult and pediatric nephrology. Fellows have access to additional program training resources at the O'Brien Center, the UAB Comprehensive Transplant Institute, Health Disparities Research Center, and the Pediatric and Infant Center for Acute Nephrology (PICAN), along with the possibility of obtaining a master's in public health.

Pediatric Neurology

PEDIATRIC FACULTY

Dr. Leon Dure	Director Professor
Dr. Matthew Alexander.....	Assistant Professor
Dr. Amitha Ananth	Assistant Professor
Dr. Emily Gantz.....	Assistant Professor
Dr. Monisha Goyal.....	Professor
Dr. Katherine Hammond	Assistant Professor
Dr. Krisztina Harsanyi-Jilling	Assistant Professor
Dr. Samuel Hopper	Assistant Professor
Dr. Pongkiat Kankirawatana	Professor
Dr. Kathryn Lalor	Assistant Professor
Dr. Michael Lopez.....	Assistant Professor
Dr. Lydia Marcus.....	Assistant Professor
Dr. Jan Mathisen	Professor
Dr. Tony McGrath	Associate Professor
Dr. Ismail Mohamed.....	Associate Professor
Dr. Jayne Ness	Professor
Dr. Sarah Novara	Assistant Professor



Dr. Alan Percy	Professor
Dr. Han Phan.....	Associate Professor
Dr. Salman Rashid	Assistant Professor
Dr. Scott Turner.....	Assistant Professor

FEATURED RESEARCH

Alan Percy, M.D., has maintained funding and serves as the principal investigator for the multi-site Natural History Study (NHS) that initially addressed three aligned epigenetic disorders: Rett Syndrome (RTT), Prader-Willi Syndrome and Angelman Syndrome. This study continued for 11 years, and upon its second renewal in 2014, the focus shifted to RTT, MECP2 Duplication disorder, males and females with MECP2 mutations, but failing to meet the consensus diagnostic criteria for RTT and other genetic disorders, specifically, FOXG1 and CDKL5, meeting some features of RTT. The RTT NHS has continued to enroll and has expanded now to 14 sites, covering a broad sweep of geographic regions in the US. This expansion resulted from the concerted efforts of colleagues and the parent advocacy group, rettsyndrome.org.

Presently, the total group of participants represents the largest single study of individuals with classic or atypical RTT examined directly by qualified physicians and followed successively for up to at least 12 years. Over the past dozen years, numerous cross-sectional and longitudinal studies have emerged from the NHS covering a wide range of clinically relevant topics, including but not limited to growth, development, phenotype-genotype correlation, seizures, awake breathing dysfunction, gastrointestinal dysfunction, scoliosis, puberty, diagnostic improvements, quality of life, clinical severity criteria, survival and emergence of parkinsonian features. Additional studies in the current iteration include neurophysiologic analysis of auditory brain stem and visual evoked responses, biomarker analyses, development of a reliable behavioral outcome measure and utilization of wearable device to assess specific modalities, including heart rate, blood pressure, respiratory patterns, stereotypic hand movements and skin temperature. The Rett Syndrome Center of Excellence has also recruited **Amitha Ananth, M.D.**, to serve as an investigator and clinician. It is anticipated that Dr. Ananth will gradually assume Dr. Percy's overall role, as he prepares for retirement.

In 2016, **Matthew Alexander, Ph.D.**, joined the division as a basic science investigator. The major focus of his laboratory is to study the epigenetic (non-DNA modifications) and genetic (DNA modifications) factors that regulate human neuromuscular diseases and to develop novel therapeutics for the treatment of these debilitating disorders. The laboratory takes a multi-systematic translational approach in using a combination of zebrafish and mouse disease modeling, along with using primary human samples to better understand the etiologies of these disorders and determine any potential avenues for therapeutic treatment. Duchenne Muscular Dystrophy (DM.D.) is the most prevalent muscular dystrophy that is studied, although there are additional projects in myotonic dystrophy type 1 (DM1) and limb-girdle muscular dystrophy 2I (LGM.D.2I). Zebrafish are an excellent translational tool for use as they have low maintenance costs, high numbers of offspring (200-300 embryos per mating pair), ex vivo (outside of the womb) development and most importantly can rapidly uptake small molecules through their gills and skin during development. The laboratory performs important pre-clinical mouse testing of "hit" compounds for eventual opportunity for translational (e.g. DM.D. patient) use and applications (e.g. bench to bedside).

The success of Dr. Alexander's lab is evidenced by the awarding by the NIH of two extramural grants: an R01 titled "A miR-486/Dock3 axis modulates dystrophin-deficient pathology," funded through 2023, and a R21 titled "MicroRNAs as biomarkers and therapeutic targets for myotubular myopathy."

In addition, Dr. Alexander was joined by **Michael Lopez, M.D., Ph.D.**, who will be developing a collaborative research program in pediatric neuromuscular disease. Dr. Lopez has assumed the role of the primary neuromuscular specialist within the division.

To address the needs of clinical care, the division has also recruited **Han Phan, M.D.**, to develop a recognized Center of Excellence in Muscular Dystrophy. Dr. Phan is also charged with helping to develop infrastructure and processes to enable the clinic to serve as a site for multicenter therapeutic trials in both Duchenne Muscular Dystrophy and Spinal Muscular Atrophy.

Drs. Alexander, Lopez, and Phan all represent a nidus of basic science and clinical research expertise that is unique to the region, and we anticipate ongoing growth and success in the area of pediatric neuromuscular disease as a result.

Leon Dure, M.D., continues to serve as the pediatric neurology resource for the multisite clinical trials consortium, NeuroNEXT. In this role, he responds to queries from clinical trial investigators regarding the suitability of UAB as a site. Few NeuroNEXT studies have been developed that address childhood neurologic disorders, and UAB has not been selected as a site.

In a similar role, **Tony McGrath, M.D.**, now serves as the pediatric resource for the national Stroke Consortium, which will be recruiting patients for a natural history study of childhood arterial ischemic stroke. Dr. McGrath was recently named the UAB site investigator for the I ACQUIRE study, which will be examining the potential benefits of constraint therapy for infants with perinatal acquired arterial ischemic stroke.

In 2014, the state of Alabama enacted legislation to decriminalize the use of cannabidiol (CBD) for individuals with refractory epilepsy. As part of this law, money was set aside to carry out an observational study of the effect of CBD in known epileptics. Dr. Dure is a member of the steering committee for this effort, which involved a number of administrative and logistical issues in order to carry out the study. This study ended in late 2019.

In 2017, Dr. Dure was named the site investigator for two industry-sponsored trials and continues as the site investigator for an open-label extension of an agent to treat Niemann-Pick Type C1. In 2018, TEVA Pharmaceuticals recruited Dr. Dure to serve as one of two coordinating investigators for a multi-site, international study of the efficacy of deutetrabenazine in the treatment of dyskinetic cerebral palsy. UAB/Children's of Alabama will serve as an investigational site for the study, with **Emily Gantz, M.D.**, serving as site investigator. This study has begun and is enrolling patients in Europe, with Dr. Dure engaged in ensuring appropriate enrollment practices.

Dr. McGrath functions as a consultant on the U01 HD052102-02 research cooperative addressing disease burden for HIV-infected children and as a sub-investigator for U01 HL078787-05S1, a trial examining features of cerebrovascular events in children with sickle-cell disease. He is a sub-investigator with **Jayne Ness, M.D., Ph.D.**, on two industry-sponsored multiple sclerosis (MS) therapy trials. Finally, he is a medical monitor for a phase 1 clinical trial of a modified herpesvirus vector to treat childhood brain tumors.

As the head of the only pediatric MS center in the South, Dr. Ness has accumulated a large panel of children with a variety of demyelinating disorders. She is currently the site investigator for two industry-sponsored clinical trials, one examining the safety and efficacy of tocilizumab in neuromyelitis optica spectrum disorders and the other addressing safety and efficacy of oral fingolimod versus intramuscular beta-interferon in MS.

Lydia Marcus, M.D., has joined the faculty and will also be a partner in the MS clinic and in MS clinical trials. In addition, she has been named a site investigator and protocol committee member for the NIAID/DMID sponsored study of acute flaccid myelitis.

In collaboration with Martina Bebin, M.D., in the UAB Department of Neurology, **Monisha Goyal, M.D.**, serves as co-PI for two NIH funded studies of tuberous sclerosis. The first involves the identification of biomarkers for autism-spectrum disorders, and the second examines EEG biomarker as well as treatment strategies in tuberous sclerosis. Dr. Goyal is the principal site investigator for three industry-sponsored studies of the efficacy and safety of cannabidiol in Dravet syndrome and Lennox-Gastaut syndrome.

Pongkiat Kankirawatana, M.D., has focused exclusively on industry-sponsored epilepsy studies. He is currently the site investigator for two studies examining lacosamide as an adjunctive therapy for partial onset seizures, as well as an intravenous equivalency study of lacosamide. He is also recruiting patients with new onset epilepsy to compare safety and tolerability of topiramate vs. levetiracetam. One study of an investigational drug for super-refractory epilepsy has recently closed enrollment, and an open label study of lacosamide safety and tolerability is in the development/regulatory stages.

Ismail Mohamed, M.D., is our representative to the Pediatric Epilepsy Research Consortium and has taken over our recruitment for a multicenter study of treatment and outcomes in infantile spasms. He is also a participant in the Experimental Program to Stimulate Competitive Research initiative examining the dynamics of seizure and memory networks.

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Neurology. 2019 Apr 10. pii: 10.1212/WNL.0000000000007353. *How should we normalize regional volume abnormalities in childhood neurodegenerative disorders?* Waugh JL, **Dure LS**.

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Neurol. 2019. *Hand stereotypies: lessons from the Rett syndrome natural history study.* Stallworth JL, Dy ME, Buchanan CB, Chen C-F, Scott AE, Glaze DG, Lane JB, Lieberman DN, Oberman LM, Skinner SA, Tierney AE, Cutter GR, **Percy AK**, Neul JL, Kaufmann WE.

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Pediatr Neurol. 2019 Jul;96:58-63. *Tuberous sclerosis complex genotypes and developmental phenotype.* Farach LS, Pearson DA, Woodhouse JP, et al. TACERN Study Group (incl. **Goyal M**).

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Research. 2019 June 9 (3). *Minding the gap in pediatric headache care can a focus on quality measures improve outcomes?* **Turner S**, Foss-Barratt S, Malmberg J, Disabato.

EXTRAMURAL AWARDS & LEADERSHIP ROLES

Matthew Alexander, Ph.D., was selected as Pittman Scholar in the UAB School of Medicine. As a Pittman Scholar, Dr. Alexander will receive funding to support his research or scholarly enrichment.

Michael Lopez, M.D., Ph.D., received a Loan Repayment Program award from the National Institutes of Health. Dr. Lopez receives his award through the National Institute of Neurological Disorders and Stroke. These awards are for a period of two years.

Monisha Goyal, MD., was elected to the National Professional Advisory Board Committee of the Epilepsy Foundation of America. In collaboration with the American Academy of Pediatrics and the Alabama Department of Public Health she is also working to expand telemedicine in Alabama to children with epilepsy.

Leon Dure, M.D., was selected to chair the Match Committee for the Child Neurology Society and also will serve on the joint Program Committee for the 2020 International Child Neurology Congress.

Tony McGrath, M.D., was appointed to the State of Alabama Medical Cannabis Study Commission. This group is comprised of a variety of stakeholders who are charged with creating a report and suggesting a legislative process to appropriately regulate medical cannabis.

CHILD NEUROLOGY RESIDENCY PROGRAM

2019–2020 Residents/Fellows

Completing Child Neurology Portion of Training

Matthew Lustig, M.D.

PGY 3

Medical School: Medical College of Georgia

Katie Thaggard, M.D.

PGY 3

Residency: Pediatrics, University of Mississippi Medical Center

Brittney Jones, M.D.

PGY 4

Medical School: Howard University

Rachel Bass, D.O.

PGY 5

Medical School: University of North Texas

Neal Sankhla, M.D.

PGY 5

Medical School: Drexel University

Completing Training in General Pediatric Residency Program

Khaled Al-Robaidi, M.D.

PGY 1

Medical School: University of Jordan

Sarah Grace Engel, M.D.

PGY 1

Medical School: Medical University of South Carolina

Erin McLeod, M.D.

PGY 2

Medical School: University of Alabama at Birmingham

Program Directors

Tony McGrath, M.D.

Program Director

Sarah Novara, M.D.

Assistant Program Director

The UAB Child Neurology Residency Program is a five-year categorical residency program designed to educate and empower our residents to be well-trained, patient-centered child neurologists. As the largest pediatric referral center in the state of Alabama, our residents are exposed to a wide array of neurologic disorders in our general pediatric neurology clinics and in other clinic settings, which include: the Center for Pediatric Onset Demyelinating Disorders Clinic, Tourette Syndrome Clinic/CBIT, Neurogenetics Clinic, Rett Syndrome Clinic, UAB Tuberous Sclerosis Clinic in collaboration with UAB Genetics, Ketogenic Diet Clinic, and MDA Clinic. We utilize a state-of-the-art simulation center at Children's of Alabama to provide simulation education for our residents. Our program believes in the power of mentorship and lifelong learning, and strives to ensure that our residents are well-rounded and ready for autonomous practice upon graduation.

Pediatric Pulmonology & Sleep Medicine

PEDIATRIC FACULTY

Dr. Hector Gutierrez	Director Professor
Dr. Ammar Saadoon Alishlash	Assistant Professor
Dr. Jennifer Guimbellot.....	Assistant Professor
Dr. Tom Harris.....	Associate Professor
Dr. Wyn Hoover.....	Professor
Claire Lenker, LICSW.....	Associate Professor
Dr. Isabel Lowell	Professor
Dr. Mary Halsey Maddox	Associate Professor
Dr. Teri Magruder.....	Associate Professor
Dr. Gabriela Oates	Assistant Professor
Valerie Tarn, MS, RD, LD	Assistant Professor
Dr. Brad Troxler.....	Associate Professor
Dr. Brett Turner	Assistant Professor



FEATURED RESEARCH

The UAB Division of Pediatric Pulmonology and Sleep Medicine maintains a broad research portfolio that complements the clinical programs with focus areas in cystic fibrosis (CF), asthma, primary ciliary dyskinesia (PCD), neuromuscular disorders (NM.D.), sleep medicine, and sickle cell disease (SCD).

CYSTIC FIBROSIS

Gabriela Oates, Ph.D., is conducting research on social determinants of health in chronic diseases. She investigates the contribution of tobacco smoke exposure for pulmonary decline in cystic fibrosis and leads studies on adherence, self-management and patient-centered care. Dr. Oates is the site PI for the CF Foundation Successful Therapies Research Consortium (STRC).

Tom Harris, M.D., currently is supported by a Clinical Investigator Award (K08) from the NIH's National Heart Lung and Blood Institute to study the novel therapeutic opportunities in cystic fibrosis (CF). He investigates novel targets for therapeutic intervention in cystic fibrosis (CF) with a recent focus on microRNA (miRNA), which are small (~22 base pair) non-coding nucleotide sequences that destabilize messenger RNA transcripts and inhibit protein translation. Dr. Harris discovered that miR-145 impedes CFTR expression and response to CFTR directed therapeutics. miR-145 antagonists improve efficacy of CFTR modulators. With the miR-145 binding sequence on CFTR known, Dr. Harris is now pursuing the refined approach of utilizing antisense oligonucleotides (ASOs) to block the miR-145 target on F508del CFTR. He is now extending these investigations to additional genotypes and therapeutic approaches, including nonsense mutations for which no FDA-approved therapies are currently available. His work in CF-related miRNA recently have attracted support from the Cystic Fibrosis Foundation (CFF) and National Institutes of Health (NIH) support to trial miRNA antagonists and miRNA target site blockers in CF animal models. Dr. Harris has also led several pharmaceutical trials of CFTR correction at UAB that have led to FDA approval in the pediatric population.

Jennifer Guimbellot, M.D., Ph.D., studies personalized medicine for cystic fibrosis. Her CFF-supported research involves individualized pharmacokinetic analysis and pharmacogenomics approaches to gain insights into tailoring modulator therapy to provide maximal therapeutic benefit for every CF patient. Her team has also developed multiple personalized models for predicting the effectiveness of CFTR modulators in CF patients and those with acquired CFTR dysfunction. Using cells from the nose, lower airway and sweat gland, her laboratory continues to develop minimally invasive, personalized models for individuals with pulmonary disease. She has had support from the Cystic Fibrosis Foundation (CFF), the National Institutes of Health (NIH) and the Kaul Pediatric Research Institute to develop these models.

Hector Gutierrez, M.D., leads the Cystic Fibrosis Clinical Center. His research objectives are to implement and investigate quality improvement, outcomes measurement and management of both clinical and non-clinical processes, using CF as a model to improve the quality and value of clinical care, which ultimately results in greater survival. By applying quality improvement methodologies, assessment and optimization of care processes and team functioning, his work has demonstrated significant improvement in key measures of clinical outcomes in CF. He was awarded funding to continue his research in several Latin American countries, including Chile, Mexico and Argentina.

Gabriela Oates, Ph.D., received two-year pilot funding from the UAB Cystic Fibrosis Research Center (P30 DK072482) for her project, "Impact of second-hand smoke on response to CFTR correction in cystic fibrosis." The project will define the consequences of second-hand smoke exposure on CFTR modulator response and CF respiratory decline in pediatric patients with CF using both self-reported measures and urine biomarkers of exposure (cotinine, NNAL, and 3-HPMA).

She also received two-year pilot funding from the Kaul Pediatric Research Institute for her project, Technology-enabled Patient Support System for Self-Management of Pediatric Cystic Fibrosis. This project will refine and test a technology-enabled patient support system as a self-management tool for children with CF and their caregivers.

SICKLE CELL DISEASE

Ammar Saadoon Alishlash, M.D., in collaboration with the UAB Division of Pediatric Hematology/Oncology, launched the Sickle Cell Pulmonary Program at Children's of Alabama, which encompasses both basic research and clinical components. Dr. Alishlash's lab investigates the pathogenesis and management of pulmonary complications of Sickle Cell Disease (SCD). He uses SCD mouse model to investigate the mechanisms and therapeutic approaches of acute chest syndrome and SCD-associated pulmonary hypertension. The clinical component involves screening, developing protocols and treating SCD patients for pulmonary complications such as asthma, pulmonary hypertension, acute chest syndrome and sleep disordered breathing. Dr. Alishlash has a designated clinic for SCD patients with pulmonary disorders.

SIGNIFICANT PUBLICATIONS

Cystic Fibrosis. Book. Ed. Rosenfeld, M; Davis, SD; Chmiel, J. 2019. **Guimbellot JS**, Rowe SM. Chapter 21. *Targeting the underlying defect in CFTR with small molecule compounds*.

Biomedical Optics Express. 10(10), 5414-5430 (2019). *Co-cultured microfluidic model of the airway optimized for microscopy and micro-optical coherence tomography imaging*. **Guimbellot JS**, Mackay S, Liu Z, Fortinberry HK, Solomon GM, Gordon D, Garson C, Haithcock D, Ramsey D, Tearney G, Pant K, Pandian P, Rowe SM.

ADDITIONAL PUBLICATIONS

Am J Respir Crit Care Med. 2019 Feb 27. *Reply to: Enhancing the Expression of CFTR Using Antisense Molecules Against MicroRNA miR-145-5p*. Lutful Kabir F, **Harris WT**.

Am J Respir Crit Care Med. 2019 Dec 16. *Females with Cystic Fibrosis Demonstrate a Differential Response Profile to Ivacaftor Compared to Males*. Secunda KE, **Guimbellot JS**, Jovanovic B, Heltshe SL, Sagel SD, Rowe SM, Jain M.

Genet Med. 2019 Apr;21(4):887-895. *An immune tolerance approach using transient low-dose methotrexate in the ERT-naïve setting of patients treated with a therapeutic protein: experience in infantile-onset Pompe disease*. Kazi ZB, Desai AK, **Troxler RB**, Kronn D, Packman S, Sabbadini M, Rizzo WB, Scherer K, Abdul-Rahman O, Tanpaiboon P, Nampoothiri S, Gupta N, Feigenbaum A, Niyazov DM, Sherry L, Segel R, McVie-Wylie A, Sung C, Joseph AM, Richards S, Kishnani PS.

J Cardiopulm Rehabil Prev. 2019 Jul 24. *Adherence to Pulmonary Rehabilitation in COPD: A Qualitative Exploration of Patient Perspectives on Barriers and Facilitators*. **Oates GR**, Niranjan SJ, Ott C, Scarinci IC, Schumann C, Parekh T, Dransfield MT.

J Cyst Fibros. 2019 Apr 30. pii: S1569-1993(19)30061-X. *An open-label extension study of ivacaftor in children with CF and a CFTR gating mutation initiating treatment at age 2-5 years (KLIMB)*. Rosenfeld M, Cunningham S, **Harris WT**, Lapey A, Regelman WE, Sawicki GS, Southern KW, Chilvers M, Higgins M, Tian S, Cooke J, Davies JC; KLIMB study group.

J Psychol. 2019;153(1):67-88. *Perinatal Maternal Stress and Susceptibility to Infections in Later Childhood: An Early Life Programming Perspective*. Stepanikova I, Baker E, **Oates GR**, Acharya S, Uddin J, Thon V, Svancara J, Kukla L.

Lancet Respir Med. 2019 Sept 28. *The Future of Cystic Fibrosis Care: A Global Perspective*. Bell S, Mall M, **Gutierrez HH**, Madge S, Davies J, Burgel PR, Macek M, Tullis E, Castaños D, Castellani C, Byrnes C, Cathcart F, Chotrimall S, Cosgriff R, Eichler I, Fajac I, Goss CH, Drevinek P, Farrell PM, Gravelle A, Havermans T, Hamblett N, Kashirskaya N, Kerem E, Mathew J, McKone E, Naehrlich L, Nasr S, **Oates GR**, O'Neill C, Pypops U, Raraigh K, Rowe SM, Southern KW, Sivam S, Stephenson A, Zampoli M, Ratjen F.

Physiol Rep. 2019 Feb;7(4):e13977. *CFTR dysfunction increases endoglin and TGF-β signaling in airway epithelia*. Nicola T, Kabir FL, Coric T, Wall SB, Zhang W, James M, MacEwen M, Ren C, Halloran B, Ambalavanan N, **Harris WT**.

Pediatrics. 2019 Sep 5. pii: e20191642. *Mycoplasma pneumoniae Carriage With De Novo Macrolide-Resistance and Breakthrough Pneumonia*. **Alishlash AS**, Atkinson TP, Schlappi C, Leal SM Jr, Waites KB, Xiao L.

Pediatr Infect Dis J. 2019 Sept 17; 10.1097/INF. *Area deprivation as a risk factor for methicillin resistant staphylococcus aureus infection in pediatric cystic fibrosis*. **Oates GR**, **Harris WT**, Rowe SM, Solomon GM, Dey S, Zhu A, **Hoover WC**, **Gutierrez HH**.

Respir Care. 2019 Feb;64(2):176-181. *Objective vs. Self-Reported Adherence to Airway Clearance Therapy in Cystic Fibrosis*. **Oates GR**, Stepanikova I, Rowe SM, Gamble S, **Gutierrez HH**, **Harris WT**.

PARTICIPATION IN NATIONAL AND REGIONAL RESEARCH COLLABORATIVES, QUALITY IMPROVEMENT PROJECTS AND LEARNING NETWORKS

Hector Gutierrez, M.D., and Gabriela Oates, Ph.D., are co-PIs of the Cystic Fibrosis Foundation-funded CF Training Network: Latin America, a quality-improvement initiative. It is aimed to train multidisciplinary CF teams in Latin America in three critical aspects: delivery of evidence-based CF care adapted to local health care settings, the establishment of a CF patient registry, and data infrastructure to support such care, and engagement and education of the local CF patient community and stakeholders. The network will develop and implement a structured, sustainable training program for CF centers in Latin America.

Dr. Gutierrez is also the site PI for the Cystic Fibrosis Learning Network (CFLN), a 30+ academic CF clinical center consortium, sponsored by the CFF. This initiative is a network-based learning health system. It aims to share purposes and outcomes, build community, facilitate the effective use of technology (with enhanced registries, commons, social media) and enriches a learning system combining science, quality improvement, outcomes and clinical research.

Dr. Oates will serve as a co-PI of Healthy Alabama 2030, after being selected for the inaugural UAB Grand Challenge. Led by PI Mona Fouad, M.D., Preventive Medicine, the project aims to elevate our state out of the bottom 10 in national health rankings by the year 2030 through changes in policy, systems and environment. Dr. Oates will co-lead the Environment Team, which focuses on neighborhoods, schools and workplaces.

Dr. Oates serves as the site PI of the Cystic Fibrosis Foundation Success with Therapies Research Consortium, which tests interventions that enhance adherence to therapies and self-management of cystic fibrosis. She also is the site PI of the CF Foundation/Boston Children's Hospital study, Feasibility of a Mobile Medication Plan Application in CF Patient Care.

EXTRAMURAL AWARDS, RECOGNITION & LEADERSHIP ROLES

Jennifer Guimbellot, M.D., Ph.D., was elected to serve as a member of the American Academy of Pediatrics Section on Clinical Pharmacology and Therapeutics (SOCPT) Executive Committee. Her three-year term began on November 1, 2019 and runs through 2022.

Tom Harris, M.D., co-chaired the "New Therapies" workshop at the 2019 North American Cystic Fibrosis Conference (NACFC).

Gabriela Oates, Ph.D., was invited to serve on the CF Foundation Food Insecurity Committee. She chaired the NACFC Workshop on Health Policy and Social Determinants of Health. She is a NIH Early Career Reviewer. She was invited as a grant reviewer for the UK-Australia Built Environment and Prevention Research Scheme, funded by the UK Medical Research Council/Economic and Social Research Council/Australian National Health and Medical Research Council.

PEDIATRIC PULMONOLOGY & SLEEP MEDICINE FELLOWSHIP PROGRAM

2019–2020 Fellows

Mohini Gunnett, M.D.
First Year Fellow
Residency: Children's Hospital at Sacred Heart

C. Miles Fowler, M.D.
Second Year Fellow
Residency: Palmetto Health Children's Hospital/University of South Carolina

Vignesh Nayak, M.D.
Second Year Fellow
Residency: University of Florida

Pedro Anis Nourani, M.D.
Third Year Fellow
Residency: Driscoll Children's Hospital

Program Directors

Wynton Hoover, M.D.
Program Director

Brett Turner, M.D.
Associate Program Director

Jennifer Guimbellot, M.D.
Assistant Program Director

The UAB Pediatric Pulmonary Fellowship Program strives to train highly competent physician-educators and scientists. Our program provides the clinic knowledge necessary to diagnose and manage pediatric patients with acute and chronic respiratory disorders, including those that are life-threatening. Training in our program is complemented by our UAB Pediatric Pulmonary Center, which is one of five educational programs funded through a competitive federal grant through MCHB and HRSA that focuses on building leadership skills and promotes awareness of childhood respiratory disease. Clinical training is designed to develop the subspecialty resident's competence in the clinical diagnosis, pathophysiology and medical treatment of respiratory disorders in pediatric patients within an interprofessional health care team. Clinical care is provided for children with a remarkable variety of lung diseases and breathing disorders, such as asthma, sleep-disordered breathing, apnea, central hypoventilation, cystic fibrosis, ciliopathies, bronchiectasis, interstitial lung diseases, bronchopulmonary dysplasia, bronchiolitis, pneumonia, chronic respiratory insufficiency, thoracic tumors and congenital lung anomalies. A significant portion of training consists of scholarly activity, during which fellows develop and hone skills necessary to be successful as effective subspecialists, advocates, clinical investigators and pulmonary scientists.

PEDIATRIC SLEEP MEDICINE FELLOWSHIP PROGRAM

2019–2020 Fellow

Abhishek Reddy, M.D.
First Year Fellow
Residency: UAB

Program Director

Krisztina Harsanyi-Jilling, M.D.
Program Director

The UAB Sleep Medicine Fellowship Program offers fellows clinical teaching and formal didactics provided by faculty with diverse backgrounds and expertise, evenly spanning faculty with primary training in adult/pediatric pulmonary medicine and adult/pediatric neurology. The sleep disorder centers of UAB and Children's of Alabama attract patients with a broad spectrum of sleep disorders, from the state and beyond, offering fellows the opportunity of first-hand experience with common and rare disorders.

Pediatric Rehabilitation Medicine

PEDIATRIC FACULTY

Dr. Drew Davis Director | Professor
Dr. Erin Swanson-Kimani Assistant Professor



FEATURED RESEARCH

The UAB Division of Pediatric Rehabilitation Medicine seeks to generate new knowledge related to disabling conditions of childhood. Through close collaboration with the UAB/Lakeshore Research Collaborative, our division is working to develop interventions to improve the health and wellness of children with physical impairments through sports, fitness, recreation and lifestyle interventions. The expansion of division clinical services on the campus of Lakeshore Foundation in 2018 served to further the research goals of the collaborative.

In September 2019, Dr. Byron Lai began the first Lakeshore Foundation Pediatric Rehabilitation Ph.D. Postdoctoral Fellowship.

Drew Davis, M.D., and **Erin Swanson-Kimani, M.D.,** continued to collaborate with other UAB researchers to identify biomarkers and risk factors for prolonged concussion recovery in children and adolescents, and to assess safety for returning to drive in adolescents who have received a mild traumatic brain injury through collaboration with the UAB Translational Research for Injury Prevention Laboratory (TRIP Lab). This work is at the forefront of efforts nationally to learn more about the serious consequences of traumatic brain injury. The division also continues collaboration with leaders in the UAB Constraint Induced (CI) Therapy Research Group to develop new applications for CI therapy in the pediatric population.

SIGNIFICANT PUBLICATIONS

Disabil Health J. 2019 Aug 1:100826. doi: 10.1016/j.dhjo.2019.100826. *Lessons learned from a blended telephone/e-health platform for caregivers in promoting physical activity and nutrition in children with a mobility disability.* Wingo BC, Yang D, **Davis D**, Padalabalanarayanan S, Hopson B, Thirumalai M, Rimmer JH.

EXTRAMURAL AWARDS & LEADERSHIP ROLES

Drew Davis, M.D., is an item writer for the American Board of Physical Medicine and Rehabilitation.

Pediatric Rheumatology

PEDIATRIC FACULTY

Dr. Randy Cron.....	Director Professor
Dr. Tim Beukelman.....	Associate Professor
Dr. Courtney Crayne.....	Instructor
Dr. Melissa Mannion	Assistant Professor
Dr. Emily Smitherman.....	Assistant Professor
Dr. Matthew Stoll	Associate Professor
Dr. Peter Weiser	Associate Professor



FEATURED RESEARCH

Members of the UAB Division of Pediatric Rheumatology excel in research of macrophage activation syndrome (MAS) in the pediatric population. **Randy Cron, M.D., Ph.D.**, co-led with Dr. Angelo Ravelli, University of Genoa, Italy, a group of experts who developed and published novel diagnostic criteria (MS Score) for MAS complicating systemic juvenile idiopathic arthritis (sJIA). The division as a whole recently published their positive experience in treating pediatric MAS with interleukin-1 (IL-1) blockade. This study included 44 patients, which is the largest cohort reported to date to be treated with recombinant human IL-1 receptor antagonist (anakinra). Children's of Alabama and UAB are currently conducting the first-ever randomized, double-blinded placebo controlled trial to explore IL-1 blockade for treating children and adults with MAS and the related condition, secondary hemophagocytic lymphohistiocytosis (sHLH).

In his lab, Dr. Cron researches the pathophysiology of MAS/sHLH by demonstrating that identified mutations in familial HLH genes contribute to the pathology of MAS/sHLH in children and adults by disrupting white blood cell function. Recently, in collaboration with Dr. Winn Chatham, UAB Division of Clinical Immunology and Rheumatology, Dr. Cron conducted an investigator-initiated clinical trial to study the role of anakinra in treating children and adults with MAS/sHLH. As part of this trial, Dr. Cron, in collaboration with Dr. Devin Absher, HudsonAlpha, is funded by the Histiocytosis Association and the UAB Center for Genomic Medicine, to explore potential genetic contributions to the development of MAS/sHLH in these patients. From these studies, Dr. Cron and colleagues have identified a novel gene associated with MAS/sHLH.

Dr. Cron's lab also continues to explore transcriptional regulation of the HIV-1 virus (cause of AIDS) as it relates to viral latency as part of an NIH-funded project in collaboration with Dr. Olaf Kutsch, UAB Division of Infectious Diseases. He also continues his clinical research in the arena of temporomandibular joint (TMJ) arthritis in children with juvenile idiopathic arthritis (JIA).

Tim Beukelman, M.D., MSCE, serves as the scientific director of the Childhood Arthritis and Rheumatology Research Alliance (CARRA) Registry. The CARRA Registry, a multicenter prospective observational registry for children with arthritis became operational in 2015 and currently has more than 40 clinical sites enrolling patients. The primary aim of the registry is to evaluate the safety of therapeutic agents used to treat pediatric rheumatic diseases, and the secondary aim is to evaluate clinical outcomes and their determinants, including treatment. Dr. Beukelman has worked closely with other members of the registry executive committee to bring the registry to fruition and encourage the performance of Phase IV safety surveillance studies that satisfy FDA requirements. Current work is focused on expanding the capabilities of the registry to allow investigator-initiated observational and interventional sub-studies to be layered on the existing registry infrastructure.

Dr. Beukelman is also the principal investigator of a pharmacoepidemiology project as part of the Agency for Healthcare Research and Quality (AHRQ) funded UAB Center for Education and Research on Therapeutics (CERTs). This project aims to use administrative claims data, such as Medicaid billing data, to further evaluate the safety of medications used to treat JIA with emphasis on serious infection and malignancy risk. These studies build upon this team's prior successful publications and will allow for longer-term follow-up of patients, as well as the examination of newer biologic agents. Recently, Dr. Beukelman, in collaboration with Dr. Jeffrey Curtis, UAB Division of Clinical Immunology and Rheumatology, was awarded a grant from PCORI to compare the effectiveness and safety of novel biologic therapies.

Matthew Stoll, M.D., Ph.D., MSCS, explores the role of the microbiota in children and adults with spondyloarthritis. He has identified various bacterial species in patients with spondyloarthritis that are protective for disease and others which contribute to the pathology. Recently, Dr. Stoll has evaluated the metabolic diversity and functions in the gut microbiomes and shown diminished function in arthritis patients versus controls, as well as alterations in tryptophan metabolism that may alter immune function to allow for autoimmunity.

Dr. Stoll, along with Dr. Cron, is also an expert in temporomandibular joint (TMJ) arthritis in children with juvenile idiopathic arthritis, and Drs. Cron and Stoll continue to explore the diagnosis and treatment of this common problem in children with chronic arthritis.

Melissa Mannion, M.D., MSPH, conducts research using epidemiologic analysis related to juvenile idiopathic arthritis (JIA). Specifically, she is interested in the use of medications to treat juvenile idiopathic arthritis (JIA), the outcomes of JIA in adulthood and the comparative effectiveness of treatment modalities. Her specific research topics include the risk of malignancy associated with biologic treatments and the transition of pediatric arthritis patients in adult rheumatologic care.

Dr. Mannion also employs the pediatric rheumatology national quality improvement network, PR-COIN, to address related research questions by exploring this large database.

Emily Smitherman, M.D., MSCTR, studies patient-centered outcomes with an emphasis on developing and implementing health care system interventions to drive improvement in outcomes.

To these ends, Dr. Smitherman was awarded grants in 2019 from the Lupus Foundation of America and from the Childhood Arthritis and Rheumatology Research Alliance. Dr. Smitherman also employs the pediatric rheumatology national quality improvement network, PR-COIN, to address related research questions by exploring this large database.

Courtney Crayne, M.D., MSPH, is studying safety and efficacy of vaccines in children with rheumatic diseases on immunosuppressive therapy. She also has explored through a literature review the benefit of tumor necrosis factor inhibition in treating intravenous immunoglobulin-refractory Kawasaki disease.

SIGNIFICANT PUBLICATIONS

ACR Open Rheumatol. 2019. *Lack of B cell repletion following rituximab therapy in a pediatric rheumatology cohort.* Mitchell C, **Crayne CB, Cron RQ.**

J Rheumatol. 2019 Sep 1. pii: jrheum.190295. *Quality of care in childhood-onset systemic lupus erythematosus: Report of an intervention to improve cardiovascular and bone health screening.* **Smitherman EA**, Huang B, Furnier A, Taylor J, Burns MB, Brunner HI, Morgan EM.

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J Rheumatol. 2019;46:1006-1013. *Establishing an updated core domain set for studies in juvenile idiopathic arthritis: a report from the OMERACT 2018 JIA Workshop.* Morgan EM, Munro J, Horonjeff J, Horgan B, Shea B, Feldman B, Clairman H, Bingham CO 3rd, Thornhill S, Strand V, Alongi A, Magni-Manzoni S, van Rossum MAJ, Vesely R, Vojinovic J, Brunner HI, Harris JG, Horton DB, Lovell DJ, **Mannion M**, Rahimi H, Ravelli A, Ringold S, Ruperto N, Schrandt MS, Shenoi S, Shiff NJ, Toupin-April K, Tzaribachev N, Weiss P, Consolaro A.

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ADDITIONAL PUBLICATIONS

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Arthritis Care Res (Hoboken). 2019;71:482-491. Childhood Arthritis and Rheumatology Research Alliance Consensus Treatment Plans for Juvenile Idiopathic Arthritis-Associated and Idiopathic Chronic Anterior Uveitis. Angeles-Han ST, Lo MS, Henderson LA, Lerman MA, Abramson L, Cooper AM, Parsa MF, Zemel LS, Ronis T, **Beukelman T**, Cox E, Sen HN, Holland GN, Brunner HI, Lasky A, Rabinovich CE; Juvenile Idiopathic Arthritis Disease-Specific and Uveitis Subcommittee of the Childhood Arthritis Rheumatology and Research Alliance.

Arthritis Care Res (Hoboken). 2019; Feb 4. The Association of Short-term Ultraviolet Radiation Exposure and Disease Severity in Juvenile Dermatomyositis. Neely J, Long CS, Sturrock H, Kim S; CARRA Registry Investigators (**Beukelman T**).

Arthritis Rheumatol. 2019;71:864-877. 2019 American College of Rheumatology/Arthritis Foundation Guideline for the Screening, Monitoring, and Treatment of Juvenile Idiopathic Arthritis-Associated Uveitis. Angeles-Han ST, Ringold S, **Beukelman T**, Lovell D, Cuello CA, Becker ML, Colbert RA, Feldman BM, Holland GN, Ferguson PJ, Gewanter H, Guzman J, Horonjeff J, Nigrovic PA, Ombrello MJ, Passo MH, **Stoll ML**, Rabinovich CE, Sen HN, Schneider R, Halyabar O, Hays K, Shah AA, Sullivan N, Szymanski AM, Turgunbaev M, Turner A, Reston J.

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J Oral Maxillofac Surg. 2019 Jan 23. pii: S0278-2391(19)30092-8. Primary Oral Presentation of Sarcoidosis in a Pediatric Patient. Dammeling C, Waite P, **Beukelman T**.

J Rheumatol. 2019;46:124-126. Juvenile Idiopathic Arthritis: An Idea Whose Time Has Gone? **Beukelman T**, Nigrovic PA.

Paediatr Drugs. 2019 Nov 16. Macrophage Activation Syndrome and Secondary Hemophagocytic Lymphohistiocytosis in Childhood Inflammatory Disorders: Diagnosis and Management. Henderson LA, **Cron RQ**.

Pediatr Rheumatol Online J. 2019;17:51. Demographic, clinical, and treatment characteristics of the juvenile primary fibromyalgia syndrome cohort enrolled in the Childhood Arthritis and Rheumatology Research Alliance Legacy Registry. Weiss JE, Schikler KN, Boneparth AD, Connelly M; CARRA Registry Investigators (**Beukelman T**).

PARTICIPATION IN NATIONAL AND REGIONAL RESEARCH COLLABORATIVES, QUALITY IMPROVEMENT PROJECTS AND LEARNING NETWORKS

Timothy Beukelman, M.D., serves as the scientific director of the North American Childhood Arthritis and Rheumatology Research Alliance (CARRA) disease registry.

Melissa Mannion, M.D., MSPH, and **Emily Smitherman, M.D., MSCTR**, serve on the national quality improvement network, Pediatric Rheumatology Care and Outcomes Improvement Network Quality Improvement (PR-COIN).

EXTRAMURAL AWARDS & LEADERSHIP ROLES

Randy Cron, M.D., Ph.D.

- Dr. Cron was invited to serve as a visiting professor at the University of Colorado and to give invited lectures to the state rheumatology societies of Arkansas and of New Mexico.
- He was also chosen to serve as a visiting professor at Louisiana State University for the American College of Rheumatology Rheumatology Research Foundation.
- He was invited to speak at the American College of Rheumatology (ACR) Annual Scientific Meeting in 2019 on the topic of "IL-1 Blockade for Macrophage Activation Syndrome."
- In addition, Dr. Cron moderated two study group sessions at the annual ACR meeting and co-organized the first North American meeting of TMJaw in advance of the meeting in Atlanta.
- He also serves on the editorial boards of *Frontiers in Immunology*, *Genes & Immunity*, and *Pediatric Rheumatology* peer-reviewed journals.
- Dr. Cron and his former trainee, Dr. Ed Behrens (University of Pennsylvania), co-edited the first-ever textbook devoted to "Cytokine Storm Syndrome."
- He also was selected as a working group participant in the Development of Clinical Practice Recommendations for "MAS/HLH Early Recognition and Management" held at the National Institutes of Health.
- Dr. Cron and Dr. Charles Spencer (University of Mississippi) co-founded Pediatric Rheumatology of the South (PROS), a collaborative educational and research organization of Pediatric Rheumatologists located in the southeastern United States.

Timothy Beukelman, M.D., MSCE

- Dr. Beukelman is an editorial board member for the journals *Arthritis Care & Research* and *Journal of Rheumatology*.

Matthew Stoll, M.D., Ph.D., MSCS

- Dr. Stoll was an invited speaker on the topic of the gut microbiome in the offspring of patients with ankylosing spondylitis at the American College of Rheumatology Annual Scientific Meeting.
- He was also an invited speaker on the topic of temporomandibular joint arthritis at the Clinical and Scientific Innovations for Oral and Maxillofacial Surgeons Conference.
- Dr. Stoll was named to the Spondyloarthritis Research and Treatment Network (SPARTAN) Board of Directors. He will serve a three-year term from May 2019 through May 2022.

Melissa Mannion, M.D., MSPH

- Dr. Mannion serves as the medical director for CampMASH, a summer camp for children in Alabama with rheumatic diseases held in Mobile, Alabama.

Emily Smitherman, M.D., MSCTR

- Dr. Smitherman was awarded research grants from the Lupus Foundation of America and from the Childhood Arthritis and Rheumatology Research Alliance.

Courtney Crayne, M.D., MSPH

- Dr. Crayne was elected to the Alpha Omega Alpha Honor Medical Society.

PEDIATRIC RHEUMATOLOGY FELLOWSHIP PROGRAM

2019–2020 Fellow

John Bridges, M.D.

First Year Fellow

Combined Adult & Pediatric Rheumatology Fellow

Residency: University of Mississippi

Program Directors

Randy Cron, M.D., Ph.D.

Program Director

Melissa Mannion, M.D.

Associate Program Director

The Pediatric Rheumatology Fellowship Program at UAB was ACGME-approved in 2009, two years after the Division of Pediatric Rheumatology was created in 2007. The faculty has grown to six board-certified pediatric rheumatologists with four nurse practitioners, making it the largest program in the southeastern United States. The program is designed for extensive clinical experience in the first year followed by protected time for fellow-directed scholarly activity in the second and third years with the flexibility to address the specific needs of each fellow. Our fellows have opportunities to participate in research training programs sponsored by the UAB Rheumatology Division in addition to the opportunities available to all pediatric fellows through the UAB Department of Pediatrics. Fellows not working in a basic science laboratory are strongly encouraged to get an advanced degree at UAB in public health, clinical epidemiology or a related field of interest. At graduation, our fellows are well-prepared clinically in all aspects of pediatric rheumatology.

Pediatric Residency Program



The UAB Pediatric Residency Program is a resident-driven program that provides diverse general pediatric training through extensive hands-on experience and scholarly activities. During their training, residents have the opportunity to explore every aspect of pediatrics from outpatient to critical care medicine and every subspecialty within the field. Additionally, residents are able to participate in a variety of research projects with department faculty and community outreach and advocacy.

The residency program consists of 70 categorical pediatric residents. We also have three combined programs that participate in pediatric training. Our combined programs include Combined Internal Medicine/Pediatric Residency Program (16 residents), Child Neurology Residency Program (three residents) and Combined Medical Genetics/Pediatrics Residency Program (four residents).

2019 GRADUATES

Matthew Adams, M.D.
Hilary Anderson, M.D.
A. Reid Burks, M.D.
Joshua K. Cooper, M.D.
Eunice E. A. Dixon, M.D.
Austin Doss, M.D.
Madeline Eckenrode, M.D.
Emily Foreman, M.D.
Amelia B. Freeman, M.D.
Jane Marie F. Freeman, M.D.
Maria Gutierrez, M.D.
Spandana Induru, M.D.
Kristyn Jeffries, M.D.
Eric Jorge, IV, M.D.
Ashley Love, M.D.
Anna Magliolo, M.D.
Margaret Marks, M.D.
Leen Matalka, M.D.
S. Taylor McClanahan, M.D.
Nathan Menaker, M.D.
Christa R. Nevin, M.D.
Jamie Oakley, M.D.
Nicholas Rockwell, M.D.
Victoria Sivils, M.D.
Colm Travers, M.D.
Alicia Webb, M.D.
David W. Windler, M.D.

Fellowship, Cardiology
 General Pediatrics
 Chief Resident 2019–2020
 Fellowship, Critical Care/ID
 Chief Resident 2019–2020
 General Pediatrics
 Faculty, Medicine & COA Nocturnist
 Fellowship, Critical Care
 Fellowship, Neonatology
 Fellowship, Allergy Immunology
 Fellowship, Cardiology
 Chief Resident 2019–2020
 Fellowship, Hospital Medicine
 Fellowship, Emergency Medicine
 General Pediatrics
 General Pediatrics
 Fellowship, Endocrinology
 Fellowship, Endocrinology
 General Pediatrics
 Residency, Adult Emergency Medicine
 Faculty, Adolescent & Adult HIV Care
 Fellowship, Hematology Oncology
 Fellowship, Critical Care
 General Pediatrics
 Faculty, Neonatology
 Fellowship, Emergency Medicine
 Fellowship, Palliative Care

University of Indiana
 Birmingham, Alabama
 UAB
 UAB
 UAB
 Auburn, Alabama
 UAB
 University of California-San Diego
 UAB
 UAB
 Baylor College of Medicine
 UAB
 Children's Mercy of Kansas City
 UAB
 Auburn, Alabama
 Birmingham, Alabama
 UAB
 UAB
 Birmingham, Alabama
 University of Texas
 UAB
 Emory University
 UAB
 Birmingham, Alabama
 UAB
 UAB
 UAB

Our program provides residents with a stimulating, challenging, yet nurturing environment for learning. Our dedicated and bright faculty are critical elements in fulfilling this goal. They are dedicated to our program and residents, serving as teachers, role models, advisors and friends. Residents are trained to treat and diagnose a wide range of pediatric illnesses and diseases from common conditions to rarer “zebras” due to the large volume, high acuity and variety of patients seen at Children’s of Alabama. During their training, residents have the opportunity to participate in simulation education that greatly enhances their hands-on education.

Research is an important part of our residents’ education and is encouraged and supported by the program. While research is not a requirement of our program, the majority of our residents have either ongoing research projects, extensive involvement in quality improvement projects, and/or experience in clinical case presentations. Several residents present at regional and national meetings. For the past 10 years, 50% of our graduates have continued into academic fellowships.

The program offers multiple opportunities for the residents to participate in research during their residency. Some of these include:

- **Pediatric Research Academic Program:** research interest group that meets monthly to discuss basic research topics, set monthly goals and network with each other as well as faculty.
- **Senior Talks:** Every graduating resident (PGY-3 Pediatric and PGY-4 MedPeds and Peds/Genetics) presents a 30-minute evidence-based medicine topic at a Resident Noon Conference throughout the year. Below are some of the topics that were presented in 2019:
 - “Dr. Strangelove or How I Learned to Stop Worrying and Love MDM & EBM” —Dr. Kevin Gutermuth
 - “Strategies for Discussing Vaccine Hesitancy” —Dr. Lisa Frees
 - “Management of Neonatal Achondroplasia: A Geosocial Approach in Alabama” —Dr. Catherine Gooch
 - “Helicobacter pylori” —Dr. Gabriel Lugo
 - “Sudden Cardiac Death in Hypertrophic Cardiomyopathy” —Dr. Ryan Sheets
 - “Neonatal Sepsis” —Dr. Ayesha Ahmed
 - “Human Trafficking” —Dr. Brittany Marlin
- **Quality Improvement Projects:** Every resident must participate in a QI project during their residency. They are able to join projects that have already been started by previous residents or create a new one, depending on their interests. Below is a sampling of resident QI projects.
 - “The Golden Week Quality Improvement to Reduce Severe Intracranial Hemorrhage and Dearth among Extremely Preterm Infants”
 - “Improving Quality of Consults on the PHM Service”
 - “Sepsis Collaborative”
 - “Bridging the Gap: Improving Transition from Pediatric to Adult Care”
 - “Improvement in Primary Care Clinic Design”
 - “Standardizing Inpatient Admissions for Patients Admitted to Children’s of Alabama on the Asthma Clinical Pathway”
 - “Reducing Checkout Errors by Implementing Handoff Tool in iConnect”
- **UAB Pediatric Science Day:** Pediatric Residents can attend or present at this all-day department conference. (See fellowship program section for more information.)
- **RIME (Research and Innovation in Medical Education) Week:** A three-day long program at UAB, where residents have the opportunity to present their research.
- **Founders’ Fund Grant:** \$1,000 research grants awarded annually to peer-selected projects to help residents accomplish research goals. Below is a list of grants awarded this year:
 - “Ingestions Injury Preventions through Cabinet Safety Locks in Primary Care Clinic”
 - “Improving Inpatient Safe Sleep Compliance through Crib Caddie”
 - “Baby Shower for Young Mothers Program”
 - “Pediatric Research Academic Program”
 - “Procedural Competence in Pediatric Residents”
- Attendance at national and regional meetings is supported by the Department of Pediatrics throughout the year. Below is a list of conferences our residents have attended this year:
 - Southern Society for Pediatric Research (SSPR)—31 residents presented at 2019 conference.
 - 23rd Annual Injury-Free Coalition for Kids Conference
 - American Academy of Pediatrics
 - American Society of Nephrology
 - American College of Allergy, Asthma & Immunology
 - North American Society for Pediatric Gastroenterology, Hepatology and Nutrition (NASPGHAN)
 - North American Symposium on Late Complications of Childhood Cancer
 - American Medical Women’s Association
 - Pediatric Academic Societies

We are very proud of the research accomplishments of our pediatric residents and grateful to the Department of Pediatrics faculty and fellows who have mentored and inspired their work.

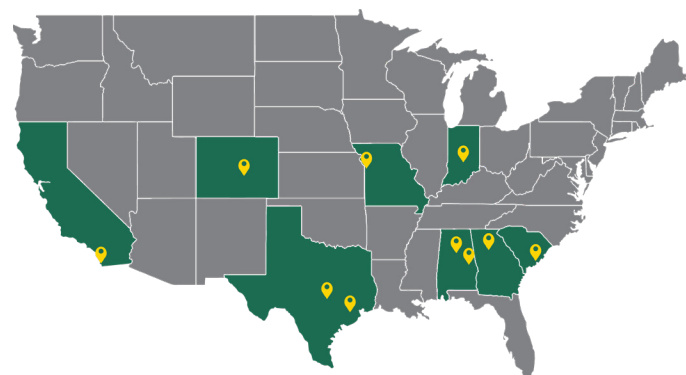
Our program also offers residents opportunities to get involved in community outreach and advocacy. In the fall of 2002, our program established the Coat of Arms, our community outreach/ advocacy organization. The **Coat of Arms Committee (Community, Outreach, and Advocacy)** helps to facilitate and organize resident's advocacy efforts by providing volunteer opportunities for residents to participate in and partnerships with community organizations.

Over half of our residents are involved in community outreach activities and advocacy. Several residents are involved with the Alabama Chapter of the American Academy of Pediatrics (AAP) and participate the state's AAP meetings in the spring and fall, as well as Pediatric Legislative Day in Montgomery. Our interns have injury-prevention and advocacy experience to help them discover ways to become involved and make a difference.

Since 2007, the residents have organized the Spring Scramble 5K in the spring to promote healthy choices among our community's youth and raise funds to directly support the health and well-being of the children in our community. The race is completely resident run and held in downtown Birmingham right by the hospital. This year's race beneficiary was Children's Harbor on Lake Martin, which provides children with serious illnesses and their families a place to have fun and relax. Proceeds from the race were used to purchase two water dispensers that were placed on the two sides of the camp for campers to have easy access to fresh water.

Additional advocacy and community outreach projects and opportunities include:

- working in free health clinics
- medical directing in pediatric camps
- volunteering at health fairs
- serving on international medical teams
- partnerships with local schools
- PCC holiday gift collection
- PCC book drive



Pediatric Fellowship Programs

The UAB Department of Pediatrics supports 18 fellowship programs (16 ACGME and two non-ACGME programs), representing more than 70 pediatric fellows. This past year, our incoming class of 30 fellows came from residency programs in 18 different states. Over the last 10 years, our graduates have gone on to practice in 31 different states and two foreign countries. Approximately 80% of our pediatric fellowship graduates go into academic medicine or seek additional training, while 20% go into private practice or other areas of interest (i.e., CDC, International Missions, etc.).

Over the last 15 years, our fellowship programs have grown from 32 total fellows to 72 fellows in 2019. This growth has brought constant change and improvements to our programs. We have assistant program directors for nearly all fellowship programs and are excited to be applying for ACGME accreditation for our Pediatric Hospital Medicine Fellowship Program this coming year.

All fellowships benefit from a high clinical volume, wide diversity of patients and world-class researchers as their mentors. Some of the unique features of our fellowship programs include:

EDUCATION

UAB Pediatric fellows enjoy strong educational opportunities at both a department and individual fellowship program level. Some of the current opportunities include:

- **Fellow's Core Educational Series**
 - A two-year curriculum for all pediatric fellows that covers a variety of topics, including research, career development, education-related topics, teaching and presenting skills, cultural competency, communication, advocacy and leadership. The entire second year is devoted to research techniques and research-related topics.
- **Chu Educational Scholarship** (see page 96)
 - A competitive scholarship, open to all fellows, for educational initiatives such as advanced degrees, simulation training or quality improvement certificates.
- Memorandum of Understanding (MOU) and Scorecards for program assessment
 - Annual assessments to allow programs to employ continuous improvement strategies.
- Day-Long Workshops
 - Educational workshops provided to programs on various ACGME topics, including most recently on our upcoming Self-Study and 10-year Site Visit.
- Simulation opportunities include crisis resources management techniques, advanced procedural training and difficult communication training in our Pediatric Simulation Center.
- Continuing education of our fellowship program directors and program coordinators through live presentations as well as frequent newsletter updates.

RESEARCH

Research and research scholarship are of utmost importance to our pediatric fellowship programs. Research activities are a requirement of the American of Board Pediatrics (ABP), as well as the Accreditation Council for Graduate Medical Education (ACGME), but many of our fellows perform at a level well above the minimum expected requirements. In the UAB Department Pediatrics, we offer some innovative opportunities and programs to assist our fellows to perform at high levels of research during their fellowship training. A few highlights include:

- **Annual Pediatric Science Day**
 - Started in 2016, this day-long conference offers fellows the opportunity to present their ongoing research. On average, 20 pediatric presentations are showcased, including presentations by pediatric fellows, pediatric residents, post-docs, medical students and others. Each year a keynote speaker is recruited as an integral, active participant during both the platform and poster sessions.
- **RIME (Research and Innovation in Medical Education) Day**
 - A three-day long program at UAB, including invited speakers, poster presentation by residents and fellows, and a one-day educational session just for fellows.
- **Dixon Fellows** (see page 95)
 - A program initiated in 1988 aimed at supporting and preparing selected fellows for careers in academia. Since its inception, this program has aided in the training and research efforts of 73 fellows, with 28 of these remaining as active faculty at UAB.
- **T-32 Fellowship Positions**
 - The ability to support our strongest research fellows on training grants, including, for example, most recently in the divisions of Pediatric Rheumatology and Pediatric Infectious Diseases.
- **Fellows' Research Roundtable**
 - A twice monthly conference to allow fellow presentations of ongoing research across all pediatric divisions. Faculty and fellows provide mentoring and feedback on all aspects of the projects.

Our fellows present at scientific conferences both nationally and regionally, including Southern Society for Pediatric Research (SSPR), American Academy of Pediatrics National Conference and Exhibition (AAP-NCE), and Pediatric Academic Society (PAS) just to name a few. Highlighting some of the grants and awards received by our pediatric fellows:

- Founders' Fund Grant for multiple fellows (i.e., Emergency Medicine and Critical Care)

- LEAH Grant (Adolescent Medicine)
- Kaul Pediatric Research Institute Grant (Hematology-Oncology)
- Pediatric Sedation Society Grant (Emergency Medicine)
- Finalist Clinical Sciences Young Investigator Award (Neonatology)
- Endowed Kennedy Fellow (Rheumatology)
- Cystic Fibrosis Foundation Fellow (Pulmonary)

To give you an idea about some of the specific projects our pediatric fellows are involved in, below you will see some selected recent publications with the fellow's name bolded:

- **Shaundra Blakemore, M.D.**—Pediatric Emergency Medicine
 - Oncologist. 2018 Jun 22. *Barriers and Facilitators to Cervical Cancer Screening, Diagnosis, Follow-Up Care and Treatment: Perspectives of Human Immunodeficiency Virus-Positive Women and Health Care Practitioners in Tanzania*. Bateman LB, **Blakemore S**, Koneru A, Mtesigwa T, et al.
- **Courtney Crayne, M.D.**—Pediatric Rheumatology
 - Pediatr Clin North Am. 2018 Aug;65(4):657-674. *Juvenile Idiopathic Arthritis: Oligoarthritis and Polyarthritis*. **Crayne CB**, Beukelman T.
 - Pediatr Rheumatol Online J. 2018 Nov 14;16(1):71. *Rituximab treatment for chronic steroid-dependent Henoch-Schonlein purpura: 8 cases and a review of the literature*. **Crayne CB**, Elovely E, Mannion ML, Azerf SP, Weiser P, et al.
- **Jeremy Loberger, M.D.**—Pediatric Critical Care
 - Minerva Pediatr. 2018 Jul 23. *Clinically relevant cardiopulmonary interactions for the pediatric intensivist*. Sasser WC, Sims AN, **Loberger JM**, Tofil NM, Prabhakaran P.
- **Aditi Dhir, M.D.**—Pediatric Hematology/Oncology
 - J Pediatr Hematol Oncol. 2019 Oct;41(7):e432-e437. *Central Venous Line Associated Deep Vein Thrombosis in Hospitalized Children*. **Dhir A**, DeMarsh S, Ramgopal A, et al.
- **Kalsang Dolma, M.D.**—Neonatology
 - JCI Insight. 2018 Mar 8;3(5). *Exosomal microRNA predicts and protects against severe bronchopulmonary dysplasia in extremely premature infants*. Lal CV, Olave N, Travers C, Rezonzew G, **Dolma K**, Simpson A, et al.
 - Am J Physiol Lung Cell Mol Physiol. 2018 Aug 16. *Early Airway Microbial Metagenomic and Metabolomic Signatures are Associated with Development of Severe Bronchopulmonary Dysplasia*. Lal CV, Kandasamy J, **Dolma K**, Ramani M, Kumar R, et al.
- **Jeb Raulston, M.D.**—Pediatric Cardiology
 - Circulation. 2019 May 28;139(22):2588-2590. *An infant with hemodynamic collapse*. Prejean SP, **Raulston J**, Kay GN.
 - Pediatr Cardiol. 2019 Aug;40(6):1296-1303. *Aspiration after congenital heart surgery*. **Raulston J**, Smood B, Moellinger A, et al.
- **Charles Schlappi, M.D.**—Pediatric Hematology/Oncology
 - Pediatrics. 2019 Oct;144(4). *Mycoplasma pneumoniae carriage with de novo macrolide-resistance and breakthrough pneumonia*. Alishlash AS, Atkinson TP, **Schlappi C**, et al.
- **Samuel Strachan, M.D.**—Pediatric Emergency Medicine
 - Traffic Inj Prev. 2018 Apr 3;19(3):225-229. *Comparison of recidivism rates for a teenage trauma prevention program after the addition of high-fidelity patient simulation*. White ML, Zinkan JL, Smith G, Peterson DT, Youngblood AQ, Dodd A, Parker W, **Strachan S**, et al.
- **Saurabh Talathi, M.D.**—Pediatric Gastroenterology, Hepatology and Nutrition
 - Pediatr Emerg Care. 2018 Jan 11. *Perforated Meckel Diverticulum: A Rare Cause of Acute Abdomen in Children*. **Talathi S**, Kelly D, Anderson S, Vaid Y, Mestre Jose.
 - J Pediatr Gastroenterol Nutr. 2018 Mar 5. *Cardiovascular involvement at initial presentation of Crohn's Disease*. **Talathi S**, Mannion M, Colvin E, Beck A, Dabal R, et al.
- **Taylor Woodfin, M.D.**—Pediatric Gastroenterology, Hepatology and Nutrition
 - Mol Genet Genomic Med. 2019 Aug; 7(8): e829. *Menkes disease complicated by concurren Koolen-de Vries syndrome (17q21.31 deletion)*. **Woodfin T**, Stoops C, Philips JB, et al.

OTHER UNIQUE FEATURES

- SWell Committee—Subspecialty Wellness Committee (SWell) is a group of energetic fellows who help plan monthly events for all fellows. Recent activities include Barons baseball game outing, pumpkin carving, painting and visits by Hand in Paw. Families are always welcome and encouraged to participate.
- Mini Quality Academy (MQA)—Half-day workshop to teach the basics of quality improvement projects.
- Health Disparities Academy—Half-day workshop focusing on health disparities and how this affects the health of our local population.

ACGME—APPROVED PEDIATRIC FELLOWSHIP PROGRAMS

Adolescent Medicine
Critical Care
Hematology-Oncology
Nephrology

Allergy-Immunology
Emergency Medicine
Hospice-Palliative Care
Pulmonary

Cardiology
Endocrinology
Infectious Disease
Rheumatology

Child Neurology
Gastroenterology
Neonatology
Sleep Medicine

NON-ACGME—APPROVED PEDIATRIC FELLOWSHIP PROGRAMS

Cardiac Critical Care

Hospital Medicine



2019–2020 UAB PEDIATRIC FELLOWS

Name	Fellowship Program	PGY
Hannah Hulsey, M.D.	Adolescent Medicine	Second Year
JaneMarie Freeman, M.D.	Allergy/Immunology	First Year
Michael Polcari, M.D.	Allergy/Immunology	Second Year
Rachel Bass, D.O.	Child Neurology	Fifth Year
Neal Sankhla, M.D.	Child Neurology	Fifth Year
Brittney Jones, M.D.	Child Neurology	Fourth Year
Matthew Lustig, M.D.	Child Neurology	Third Year
Katherine Thaggard, M.D.	Child Neurology	Third Year
Audrey Lloyd, M.D.	Combined Pediatric & Adult Infectious Diseases	First Year
John Bridges, M.D.	Combined Pediatric & Adult Rheumatology	First Year
Joshua Cooper, M.D.	Combined Pediatric Infectious Diseases & Critical Care	First Year
Nazia Kabani, M.D.	Combined Pediatric Infectious Diseases & Neonatology	First Year
Amelia Freeman, M.D.	Neonatology	First Year
Vivek Shukla, M.D.	Neonatology	First Year
Mary Silverberg, M.D.	Neonatology	First Year
Snehashis Hazra, M.D.	Neonatology	Second Year
Bianca Vamesu, M.D.	Neonatology	Second Year
Anisha Attawala, M.D.	Neonatology	Third Year
Andrew Klinger, M.D.	Neonatology	Third Year
Sara Staples, M.D.	Neonatology	Third Year
Sai Surapa Raju, M.D.	Pediatric Cardiac Critical Care	First Year
Christian Tan, M.D.	Pediatric Cardiology	First Year
Stephen Clark, M.D.	Pediatric Cardiology	Second Year
Jeb Raulston, M.D.	Pediatric Cardiology	Third Year
Nicholas Rockwell, M.D.	Pediatric Critical Care Medicine	First Year
Lece Webb, M.D.	Pediatric Critical Care Medicine	First Year
Emily Dodenhoff, M.D.	Pediatric Critical Care Medicine	Second Year

Felicia Sifers, M.D.	Pediatric Critical Care Medicine	Second Year
Veronica Godsey, M.D.	Pediatric Critical Care Medicine	Third Year
Jeremy Loberger, M.D.	Pediatric Critical Care Medicine	Third Year
Eric Jorge, M.D.	Pediatric Emergency Medicine	First Year
Emily Skoog, M.D.	Pediatric Emergency Medicine	First Year
Alicia Webb, M.D.	Pediatric Emergency Medicine	First Year
Ryan Roddy, M.D.	Pediatric Emergency Medicine	Second Year
Stephen Ruffenach, M.D.	Pediatric Emergency Medicine	Second Year
James Statler, M.D.	Pediatric Emergency Medicine	Second Year
Erika Crawford, M.D.	Pediatric Emergency Medicine	Third Year
Laura Rochford, M.D.	Pediatric Emergency Medicine	Third Year
Samuel Strachan, M.D.	Pediatric Emergency Medicine	Third Year
Margaret Marks, M.D.	Pediatric Endocrinology	First Year
Leen Matalka, M.D.	Pediatric Endocrinology	First Year
Jurhee Freese, M.D.	Pediatric Endocrinology	Second Year
Erin Greenup, D.O.	Pediatric Endocrinology	Second Year
Jessica Schmitt, M.D.	Pediatric Endocrinology	Third Year
Bhuvana Sunil, M.D.	Pediatric Endocrinology	Third Year
Claire Keith, M.D.	Pediatric Gastroenterology	First Year
Carter Wallace, M.D.	Pediatric Gastroenterology	First Year
Adam Cohen, M.D.	Pediatric Gastroenterology	Second Year
Taylor Woodfin, M.D.	Pediatric Gastroenterology	Second Year
Sasha Monteil, M.D.	Pediatric Gastroenterology	Third Year
Sara Claire Hutchins, M.D.	Pediatric Hematology/Oncology	First Year
Kathryn Six, M.D.	Pediatric Hematology/Oncology	First Year
Anna Hoppmann, M.D.	Pediatric Hematology/Oncology	Second Year
Lauren Smith, D.O.	Pediatric Hematology/Oncology	Second Year
Aditi Dhir, M.D.	Pediatric Hematology/Oncology	Third Year
Charles Schlappi, M.D.	Pediatric Hematology/Oncology	Third Year
Samantha Hanna, M.D.	Pediatric Hospital Medicine	First Year
Alexandra Healy, M.D.	Pediatric Hospital Medicine	First Year
Hannah Gardner, M.D.	Pediatric Hospital Medicine	Second Year
Jennifer Hoefert, M.D.	Pediatric Hospital Medicine	Second Year
Nicole Samies, D.O.	Pediatric Infectious Diseases	Second Year
Connie Trieu, M.D.	Pediatric Infectious Diseases	Second Year
Abdulsalam Alsulami, M.D.	Pediatric Infectious Diseases	Third Year
Priyanka Ameta, M.D.	Pediatric Nephrology	First Year
Mohini Gunnett, M.D.	Pediatric Pulmonology	First Year
C. Miles Fowler, M.D.	Pediatric Pulmonology	Second Year
Vignesh Nayak, M.D.	Pediatric Pulmonology	Second Year
Pedro Anis Nourani, M.D.	Pediatric Pulmonology	Third Year
Abhishek Reddy, M.D.	Sleep Medicine	First Year

Kaul Pediatric Research Institute (KPRI)

Initially known as the Pediatric Research Institute, the Kaul Pediatric Research Institute (KPRI) was created by the Board of Trustees of Children's of Alabama in 1989 to provide internal funding for junior faculty who were just beginning their academic careers. The initial funding came from proceeds (10%) of the Children's Miracle Network telethon, with half committed to an endowment and the other half to support grants submitted by faculty or professionals working at Children's of Alabama. The first grants were awarded in 1993. Following the donation of an initial \$5 million from the Kaul Foundation to increase the endowment, the Board of Trustees changed the name of this program to the Kaul Pediatric Research Institute (KPRI).

KPRI GRANT PROGRAM

Initially, four two-year grants of \$20,000 per year were awarded. With the increase of the contributions to the KPRI and the growth of the endowment, multiple awards are made each year in the amount of \$35,000 each for new investigators and \$50,000 each for established investigators.

The program is competitive and peer-reviewed in an NIH format. Since 2008, \$4,750,000 has been awarded for biomedical research. This represents 65 unique investigators receiving 75 awards, including 14 established investigator awards and 61 new investigator awards. KPRI recipients have received almost \$58 million in funding. Of these 65 investigators, 53 remain at UAB.

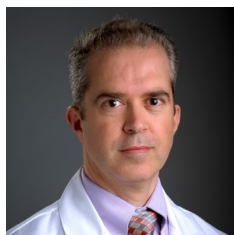
The major goal of the KPRI grant program is to allow investigators to obtain data that will advantage applications for additional extramural funding. This will bring new knowledge to the care of children, leverage the investment of the KPRI, and allow projects to be competitive for the very best science on the national stage. A second, but important, goal is to ensure that a dedicated funding source is available to unique segments of the pediatric research and education.

2019 AWARDEES

NEW INVESTIGATOR AWARDS

Ammar Alishlash, M.D.

Assistant Professor
Division of Pediatric Pulmonary & Sleep Medicine
Project title: *Prostacyclin Agonist Therapy for Acute Chest Syndrome in Sickle Cell Mouse Model*



Emily E. Johnston, M.D., MS

Assistant Professor
Division of Pediatric Hematology/Oncology
Project title: *End-of-Life Care of AL Children with Cancer: Disparities and Parent Priorities*



Michael A. Lopez, M.D., Ph.D.

Assistant Professor
Division of Pediatric Neurology
Project title: *Smad8 in Dystrophic Muscle Disease & Its Role in MicroRNA Regulation & Disease*



Donna L. Murdaugh, Ph.D.

Assistant Professor
Division of Pediatric Hematology/Oncology
Project title: *A Longitudinal Pilot Study Examining Neurocognitive Outcomes in Survivors of Acute Lymphoblastic Leukemia Before and After a Cognitive Remediation Program*



Gabriela R. Oates, Ph.D.

Assistant Professor
Division of Pediatric Pulmonary & Sleep Medicine
Project title: *Technology-Enabled Patient Support System for Self-management of Pediatric Cystic Fibrosis*

**Swetha G. Pinninti, M.D.**

Assistant Professor
Division of Pediatric Infectious Diseases
Project title: *Significance of Co-infection with CMV and STI's During Pregnancy*

**Aman Wadhwa, M.D.**

Instructor
Division of Pediatric Hematology/Oncology
Project title: *Body Composition and Adverse Outcomes in Childhood Cancer*

**ESTABLISHED INVESTIGATOR AWARD****Shannon A. Ross, M.D., MSPH**

Associate Professor
Division of Pediatric Infectious Diseases
Project title: *Neuroimaging Findings and Hearing Outcome in Asymptomatic Congenital CMV Infection*

**KPRI QUALITY AND SAFETY AWARDS**

In 2016 Children's of Alabama and the Kaul Pediatric Research Institute (KPRI) began the KPRI Quality and Safety Award Program. The major goal of the this grant program is to allow teams to identify and address specific quality and safety issues that cannot easily be addressed using existing operational resources or structures.

This year, three grants were awarded. All funded applications are directed toward the improvement of child health care.

Michael Seifert, M.D.

Division of Pediatric Nephrology
Project title: *Reducing residual cardiac risk after pediatric kidney transplantation*

**Avi Madan-Swain, Ph.D.**

Division of Pediatric Hematology and Oncology

Margaux Barnes, Ph.D.

Division of Pediatric Gastroenterology, Hepatology, and Nutrition
Project title: *Improving family centered psychosocial screening*



Dixon Pediatric Fellowship



Aditi Dhir, M.D.

Veronica Godsey, M.D.

Charles Schlappi, M.D.

Nazia Kabani, M.D.

Abdulsalam Alsulami, M.D.

The Dixon Pediatric Fellowships were endowed in 1988 by the Edwin Dixon family of Birmingham, Alabama. The Dixon Fellowships are competitive awards to assist in the training of fellows who intend to pursue an academic career with a research emphasis in pediatric subspecialties. Recipients receive salary support and a \$5,000 per year discretionary fund to support research and continuing education activities. There are five Dixon Fellow training slots, and funding for the program is shared between the Dixon Foundation and the Department of Pediatrics. Since the establishment of the fellowship, 76 awards have been given. Of the awardees, more than 50% are now active faculty within the department. Among the alumni, there are ten division chiefs, seven endowed chairs, one clerkship director, five division fellowship program directors, one residency training program co-director, one center director and one associate dean.

The selection of fellows is made by a committee composed of Dixon family members and five former Dixon Fellows who evaluate a formal proposal submitted by the fellows with letters from their future mentors and division directors. Awardees are announced at the end of May each year during the delivery of the Bradford Dean Dixon Memorial Lectureship. To date, 37 lectures have been presented at Grand Rounds by notable leaders in the field of pediatrics.

2019–2020 DIXON FELLOWS

Aditi Dhir, M.D., Third-Year Fellow: Pediatric Hematology/Oncology

Project title: *Combination of epigenetic modifiers with tyrosine kinase inhibitors in *flt3-itsd* acute myeloid leukemia*. She will be investigating the potential synergy of epigenetic molecules with tyrosine kinase inhibitors (TKIs) in FLT3- ITD mutated AML) with the eventual goal of translating the findings from the lab to clinical trials that could benefit patients in the near future.

Mentor: Dr. Ravi Bhatia, Division Director, UAB Division of Hematology/Oncology.

Veronica Godsey, M.D., Third-Year Fellow: Pediatric Critical Care

Project title: *Deliberate Practice to improve interdisciplinary communication- a pilot study*. She will be working closely with resident physicians and teaching Verbal Judo, a unique conflict management technique by using deliberate practice in a simulated environment.

Mentors: Dr. Chrystal Rutledge, Program Director, COACHES Program and Dr. Nancy Tofil, Division Director, Pediatric Critical Care.

Charles Schlappi, M.D., Third-Year Fellow: Pediatric Hematology/Oncology

Project title: *Oncolytic HSV against pediatric brain tumor*. His research involves evaluating the role of immunotherapy for highly fatal brain tumors, high grade gliomas and diffuse intrinsic pontine glioma (DIPG).

Mentor: Dr. Gregory Friedman, Director of Developmental Therapeutics, Neuro-Oncology Program

THOSE CONTINUING THEIR DIXON FELLOWSHIP ARE:

Nazia Kabani, M.D., Third-Year Fellow: Pediatric Infectious Diseases and Neonatology

Project title: *Defining the full spectrum of neuroimaging findings and determining their impact on outcome in infants with congenital cytomegalovirus infection*.

Abdulsalam Alsulami, M.D., Third-Year Fellow: Pediatric Infectious Diseases

Project title: *Impact of Different Human Coronaviruses (HCoV) on Pediatric Patients at a Tertiary Pediatric Hospital—Retrospective Study and Assessment of Interventions*.

GRADUATING DIXON FELLOWS ARE:

Neha Gupta, M.D., Pediatric Critical Care, joined Oklahoma University Children's as an assistant professor.

Samantha Hill, M.D., MPH, Adolescent Medicine, joined our Division of Adolescent Medicine in July as an assistant professor.

Cali Reynolds, M.D., Pediatric Allergy & Immunology, joined a practice in New York City.

Chu Family Educational Scholarship

In 2015, the Chu Family donated a generous gift to Children's of Alabama and the Department of Pediatrics to support educational initiatives. A portion of this donation was set aside to fund educational scholarships for pediatric fellows. The scholarship is selected on a competitive basis by a selection committee. This year the selection committee for the Chu Family Educational Scholarship selected two fellows to receive educational scholarships. These awards will provide funds for tuition, books and fees related to their educational endeavours.

2019 CHU FAMILY SCHOLARSHIP RECIPIENTS

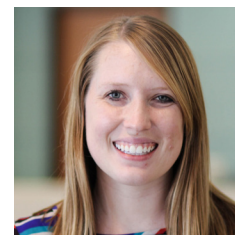
Jennifer Hoefert, M.D.,

Second-Year Fellow: Pediatric Hospital Medicine
Dr. Hoefert will use the scholarship toward completing a UAB Quality Academy Certificate Course.



Hannah Hulsey, M.D.,

Second-Year Fellow: Adolescent Medicine
Dr. Hulsey will use the scholarship toward completing an Individualized Curriculum to enhance health disparities education, which includes Community Engagement Training and conferences directed at health disparities and health equity.



Russell Cunningham Memorial Research Program

The Cunningham Scholarship was established in 2007 to honor Dr. Russell Cunningham, the former director of the Division of Endocrinology and Pediatric Clerkship Director. The goal of the program is to attract UAB medical students who are interested in academic pursuits during the summer. Students select their mentors and are tracked for ultimate career paths. Recipients are selected after a competitive selection process and each receive a \$4,000 stipend and a \$1,000 travel allowance to work with their research mentor for eight weeks during the summer. To date, 27 awards have been granted.

2019 RUSSELL CUNNINGHAM MEMORIAL RESEARCH PROGRAM SCHOLARS

Kristin Deneen

Project: *Evaluating Care and Outcomes in Childhood-Onset Systemic Lupus Erythematosus*
Faculty Mentor: Emily Smitherman, M.D., Pediatric Rheumatology.



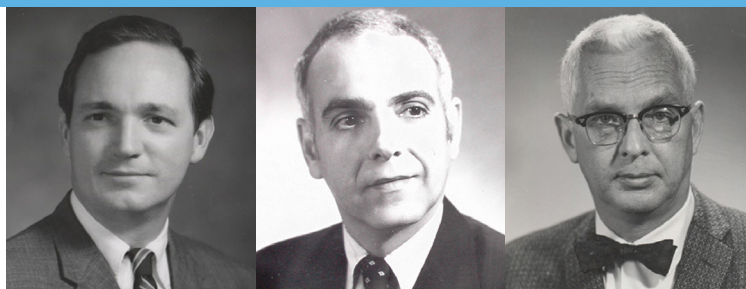
Avery Newcomb

Project: *Cardboard Cot in Neonatal Thermoregulation (CCot): A Randomized Crossover Trial*
Faculty Mentor: Wally Carlo, M.D., Neonatology.



Founder's Fund Grants

The Founder's Fund Endowment was developed in partnership with Children's of Alabama in 2006 to honor three prominent former faculty members: Drs. Ralph Tiller, Paul Palmisano, and Bill Benton. This program was designed to specifically benefit the Pediatric Residency Program. The monies raised are held in an endowed account by Children's of Alabama in the Kaul Pediatric Research Institute. Founder's Fund grants are available every May for innovative education initiatives, clinical research, quality improvement or outcomes research that focus on residency education and advocacy. Approximately 10 to 12 grants are awarded each year in the amount of approximately \$1,000 per year. It is a competitive process under the direction of the residency program directors.



Dr. Bill Benton

Dr. Paul Palmisano

Dr. Ralph Tiller

Several of Founder's Fund projects have resulted in significant advances in the manner by which we care for patients, patient and family education, training for medical students and residents and advocacy. At least 10 projects have led to presentations by residents and their mentors at national and regional academic meetings (SPR/APS, SSPR, AAP).

2019 Founder's Fund Grants—Project Titles and Investigators

Ingestions Injury Preventions through Cabinet Safety Locks in Primary Care Clinic

Brad Anding (PI)
Candice Dye
David Galloway

Spanish Classes
Michele Nichols (PI)
Nancy Tofil
Candice Dye
Lauren Nassetta
Will Sasser

Resilience Film Showing & Advocacy

Aubrey Coleman (PI)
Sarah Spencer
Susan Walley

The Use of an Infant Airway Simulator to Help Improve Pediatric Residents Ability to Intubate Infants

Joshua Cooper (PI)
Chrystal Rutledge
Nancy Tofil

Use of Mental Health Simulation to Improve Pediatric Primary Care, Resident Reflections on Suicide Prevention, and Development of Support Groups

Candice Dye(PI)
Hilary Anderson
Cason Benton
Nancy Tofil

Improving inpatient safe sleep compliance through crib caddie

Meghan Harrison (PI)
Adolfo Molina
Erinn Schmit
Adria Luk

Educational Support Groups to Address Chronic Illness among Adolescents in the Black Belt

Hannah Hulsey (PI)
Krista Casazza
Pamela Payne-Foster

Pediatric Research Academic Program (Pediatric RAP)

Rashmi Patil (PI)
Kathy Monroe
Michele Nichols
Brad Troxler
Chang Wu

Baby Shower for Young Mothers Program

Rashmi Patil (PI)
Elena Bryant
Allison Ellis
Lisa McDivitt
Terri Coco
Kathy Monroe

Procedural Competence in Pediatric Residents

Jeremy Ruhlmann (PI)
Alexis Ricci
Jordan Ashcraft
Erika Crawford
Michele Nichols
Nancy Tofil
Erinn Schmit

Implementation of the 5 Senses Program to Augment Resident Education in the Pediatric Intensive Care Unit

Emily Walroth (PI)
Allison Davis
Johanna Robbins
Amanda Rogers
Stephanie Wilson
Leslie Hayes

Pediatric Research Office

The UAB Department of Pediatrics established the Pediatric Research Office (PRO) in 2015 to renew its commitment to the generation of new knowledge in the diagnosis, treatment and sequelae of pediatric diseases. The PRO seeks to “lower the energy of activation” in the design, conduct and analysis of research conducted within the Department of Pediatrics.

The PRO is led by David W. Kimberlin, M.D., Vice-Chair for Clinical and Translational Research in the Department of Pediatrics. PRO personnel and associated partners provide assistance with the following:

- Administrative Matters—items such as process issues related to UAB Administration or the UAB/Children’s of Alabama interface, meetings with research faculty and tracking of departmental productivity
- Biostatistics and Research Design—study design, biostatistical analysis planning, sample size assessment, DSMB reports, final analyses at end of study, and final study report generation for use on manuscripts and grant applications
- Grant Development—meetings with investigators to discuss funding opportunities, assistance with funding organization guidelines, non-scientific editing of applications, assembly of pre-submission review panels, and setting of timelines; special expertise in the formulation of training plans for federal and private career development applications
- Informatics—retrieval of data from the EHR for feasibility assessments, preliminary data and research protocols while ensuring proper oversight of data requests

- Data Management—assistance with database development and management (TeleForm, SAS, EpiInfo, REDCap), data analysis and modeling, and training related to data management
- Regulatory—assistance with IRB applications and regulatory documents
- Research Coordination—budget development and negotiation for industry studies and assistance securing help with study implementation, site management, quality control and Good Clinical Practice (GCP) training

From Nov. 2018 through Oct. 2019, the PRO assisted investigators and their study teams with 420 projects, which included 469 services (projects can have more than one service if, for example, one project requested help with both biostatistics and informatics). There were 209 unique users. Since 2016, there has been an increase of 19% in projects and 15% in services.

Services were used by all 19 Department of Pediatrics divisions.

Services were also used by those doing pediatric research within 13 other departments .

- Departments included: Anesthesiology and Perioperative Medicine; Cell, Developmental and Integrative Biology; Genetics; Medicine; Microbiology; Neurology; Neurosurgery; Obstetrics and Gynecology; Orthopaedic Surgery; Otolaryngology; Psychiatry and Behavioral Neurobiology; Sociology; and Urology

The breakdown of projects by type of user (not unique users) is as follows:

9 project requests from Students (2%)

6 project requests from Residents (1%)

42 project requests from Fellows (10%)

6 project requests from Instructors (1%)

130 project requests from Assistant Professors (31%)

63 project requests from Associate Professors (15%)

85 project requests from Professors (20%)

23 project requests from Administrators (5%)

56 project requests from Others (typically researchers, study coordinators or study team members) (13%)

CHILD HEALTH RESEARCH UNIT

The PRO also manages the Child Health Research Unit (CHRU), which is a partnership between the UAB Department of Pediatrics, Children's of Alabama and the UAB Center for Clinical and Translational Science (CCTS). It provides outpatient space for pediatric research to reduce barriers to the conduct of scientifically rigorous clinical and translational research. The CHRU opened in 2017 in a newly renovated, 2,547-square-foot facility. This space includes:

- A reception/registration area
- A triage room with scales and a stadiometer
- Six well-equipped exam rooms
- Office and conference space
- Workspace with monitors and locked storage
- A lab with centrifuge and freezer for short-term storage
- An equipment storage room

In the FY19, the CHRU was used by 19 unique investigators for 27 studies and had over 595 visits.

- Most users were from Pediatrics (from six divisions: Allergy & Immunology; Gastroenterology, Hepatology & Nutrition; Hematology-Oncology; Infectious Diseases; Nephrology; and Neurology)
- Others were from the Departments of Genetics, Obstetrics and Gynecology, Neurology, Neurosurgery and Urology

Office of Faculty Development

The UAB Office of Pediatric Faculty Development (OFD) exists to support the individual career development of our faculty and to advance institutional and departmental goals in the areas of teaching and service. The OFD is led by Tina Simpson, M.D., Vice Chair of Faculty Development. The OFD offers individual consultations and group-level career development programming.

Individual Faculty Development Consultation

- CV Preparation Education and Assistance
- Promotion Readiness Consultation
- Faculty Development Issues and Guidance
- Mentorship Identification and Education

Faculty Training Seminars (CME credit)

The OFD sponsors the 4th Fridays Lunch and Learn Series, a monthly seminar for focused faculty development.

Our 2019 Pediatric **4th Fridays Series** schedule:

Date	Presentation	Presenter
January 2019	Wellness	Riley Thorton, R.D. UAB HR
February 2019	Managing Conflict	Heather Austin, Ph.D. UAB Adolescent Medicine
March 2019	The Teaching Portfolio for UASOM Promotion	Annalise Sorrentino, M.D. UAB Pediatric Emergency Medicine
April 2019	Preparing Your Request for Promotion	Nancy Tofil, M.D., Med UAB Pediatric Critical Care
May 2019	Implicit Bias	Evelyn Jones UAB Office of Diversity, Equity & Inclusion
June 2019	Setting Expectations	Lisa Willett, M.D. UAB Department of Medicine
July 2019	Saying No, and Preserving the Relationship	Gerriann Fagan UAB Organizational Learning & Development
August 2019	Mentoring Speed Dating	Senior and Junior Faculty
September 2019	SMART GOALS & The UAB CV	Tina Simpson, M.D., MPH & Clare Mallette UAB Pediatric Office of Faculty Development
October 2019	The Art of Feedback	Kristina Panizzi-Woodley Blackwell, Ph.D. UAB Medical Education

Speed Mentoring Session

Sponsored in August for Department of Pediatrics junior faculty to meet and develop mentoring relationships with senior UAB and Pediatric faculty members.

Coaching Circles

October 2019–April 2020

Through partnership with the UAB Office of Learning and Development (L&D), the department sponsors an annual Coaching Circles Program for DOP faculty. The program provides six months of facilitated group coaching sessions for 12 to 15 participants. Participating faculty have the opportunity to complete a series of self-assessments, such as the DISC assessment and a 360-degree

assessment. Following a series of group consultations with an executive coach, individual group members decide upon a focus area of growth and are assigned to a small group of other DOP faculty members who have shared goals. These groups then meet monthly for facilitated group coaching sessions led by trained executive coaches from L&D. This year's cohort includes nine faculty members at junior and mid-career level.

Pediatric Faculty Excellence Awards

The OFD leads the nomination and voting process to select and recognize outstanding pediatric faculty. Recipients of this year's awards are listed below:

Community Educator Award

Vera Egorshin, M.D.
Jefferson County Department Of Health

Research Achievement Award

Senior
Randy Cron, M.D.
Pediatric Rheumatology

Junior
Vivek Lal, M.D.
Neonatology

Diversity And Inclusion Award

Brian Sims, M.D.
Neonatology

Educational Achievement Award

Senior
Ann Klasner, M.D.
Pediatric Emergency Medicine

Junior
Sarah Novara, M.D.
Pediatric Neurology

Service Achievement Award

Senior
Joe Chewning, M.D.
Pediatric Hematology/Oncology

Junior
Erin Swanson, M.D.
Pediatric Rehab Medicine

Mentoring Achievement Award

David Bernard, M.D.
Pediatric Emergency Medicine

Model of Team Excellence Award

Division Of Pediatric Nephrology—Drs. David Askenazi, Erica Bjornstad, Sahar Fathallah-Shaykh, Daniel Feig, Michael Seifert, and Tennille Webb.

Lifetime Achievement Award in Pediatric Healthcare

Carden Johnston, M.D.
Pediatric Emergency Medicine

Tom Howard, M.D.
Pediatric Hematology/Oncology

Leadership Development Presentations (CME credit)—for faculty

In conjunction with the UAB Office of Learning and Development, the OFD organizes lectures, seminars and workshops to provide resources and training, which address fundamental topics faced by all future faculty leaders. These presentations teach methods to lead collaborative teams, motivation techniques, and goal setting for teams.

May 8, 2019
Emotional Intelligence
Tina Simpson, M.D.
UAB Pediatric Office of Faculty Development

September 16, 2019
Change Style Indicator
Claire Lenker, LICSW
UAB Division of Pediatric Pulmonology

Leadership Development Journal Club

Alumni of the Coaching Circles Program meet monthly to discuss articles related to developing leadership confidence and skills.

Leadership Development Program for Division Directors

September 2018–February 2019—Five monthly, 1.5-hour training meetings led by Jean Ann Larson, UAB Leadership Development Officer. The series promoted camaraderie through stimulating leadership topics in an intimate setting. The curriculum emphasized the following:

- The Science of Leadership
- Change Management
- Team/Career Development/Coaching
- Coaching Application Workshop
- Time Management

New Faculty Orientation & Recognition

The OFD organizes the new faculty orientation, a day-long seminar covering issues relevant to new faculty in the Department of Pediatrics. In the fall, these new faculty are recognized at a faculty meeting. This year, the OFD organized the recognition of 25 new pediatric faculty at the October Department of Pediatrics Faculty Meeting.

Promotion and Tenure

Full support to faculty during their promotion and tenure process is provided by the OFD through promotion readiness consultations and other services. This year representatives from the OFD visited each pediatric division to present the UASOM promotion process and the department's internal support processes. This was a direct result of needs/concerns expressed by faculty at the Associate Professors Town Hall Meeting in April 2019.

Outreach

- Collected toys for the Holiday Drive
- Collected school supplies in August 2019

Diversity and Inclusion

The OFD helps coordinate informal meetings of the faculty and trainee members of the Diversity Council and students on visiting rotations from Meharry Medical School. The OFD also works with the Pediatric Residency Office to organize activities during the Dean's Second Look Weekend and the annual Diversity Fair.

Special Interest Groups

The OFD continues to support and promote special interest groups offered, such as the AMWA, yoga classes and running groups.

Sponsorship for Pediatric Faculty paid registration fees for participation in the Stephen Covey, The Speed of Trust, presentation, November 2019.

Wellness:

Drs. Lauren Nassetta (DOP Chief Wellness Officer) and Tina Simpson presented at the 2019 University of Alabama School of Medicine Alumni Conference in February 2019 on wellness initiatives within the department.

New this year is our **FAB Faculty Third Thursday**, a monthly social for pediatric faculty to gather away from the hospital to develop interpersonal interaction and collegiality.

Mindfulness Meditation—For faculty and staff, held the first Thursday of the month from 7:30–8:00 a.m., in the Meditation Room of the Benjamin Russell Hospital. The exercise is led by Dr. Heather Austin, Adolescent Medicine, and other pediatric psychologists.

Coordinated nomination and selection process for the following programs within the Department of Pediatrics:

- Healthcare Educators Academy
- COA Scholars
- UASOM Faculty Council
- Elections for the internal Appointment, Promotion, and Tenure Committee

PEDIATRIC SURGERY



Pediatric General Surgery

PEDIATRIC FACULTY

Dr. Mike Chen.....Surgeon in Chief/Division Director/Professor
Dr. Scott Anderson.....Associate Professor
Dr. Elizabeth Beierle.....Professor
Dr. Beverly Chaignaud.....Assistant Professor
Dr. Colin Martin.....Associate Professor
Dr. Vincent Mortellaro.....Assistant Professor
Dr. David Rogers.....Professor
Dr. Robert Russell.....Associate Professor



FEATURED RESEARCH

The Division of Pediatric Surgery is committed to advancing research in broad range of areas within pediatric surgery--pediatric oncology, necrotizing enterocolitis, pediatric trauma, and clinical outcomes research.

Dr. Elizabeth Beierle continues her research efforts focused on novel treatment strategies for pediatric solid tumors and utilizing patient-derived xenograft models of pediatric solid tumors to study these innovative therapies. This year her lab group has published important research describing certain specific tumorigenesis factors in hepatoblastoma. She continues to publish unique work with neuroblastoma and other tumor derived xenografts. Finally, several published manuscripts utilized the National Cancer Database describing outcomes in pediatric pancreatic tumors and gastric adenocarcinoma.

Dr. Mike Chen continues his leadership as the local PI for the NIH prospective observational study: Teen-Longitudinal Assessment of Bariatric Surgery (Teen-LABS) in its 8th year. This group has published an important paper this year in the New England Journal of Medicine. This paper demonstrates excellent five year outcomes following bariatric surgery in adolescents with equivalent weight loss to adults and improved remission of diabetes and hypertension among adolescent patients.

Dr. Colin Martin has established a laboratory and clinical effort, as surgical director of the Children's of Alabama/UAB Center for Advanced (CCAIR) Intestinal Rehabilitation, focused on improving outcomes in pediatric patients with necrotizing enterocolitis and short bowel syndrome. With a multidisciplinary effort, CCAIR has 5 active research protocols with two manuscripts published this year describing key determinants for enteral autonomy and development of venous thrombosis in the intestinal failure patient. His basic science focus continues to be defining the role of innate immunity in intestinal diseases of prematurity. Specifically, they are interested in how maternal psychological stress and the environment during pregnancy and shortly after birth, shapes developing neonatal immune function. The overall goal is to develop novel vaccine strategies that can protect neonates at risk for intestinal diseases.

Dr. Rob Russell continues his investigation of coagulopathy following trauma. He continues translational research evaluating animal models of trauma/hemorrhage and head injury in relation to traumatic coagulopathy. His focus has expanded to head injury as he investigates outcomes of head injury in relation to specific coagulation factors--von Willebrand factor and ADAMTS-13. In addition, he participated in a group of investigators publishing practice guidelines following blunt pediatric renal trauma.

GRANTS

Elizabeth A. Beierle has received grant funding from Cannonball Kids' Cancer, Vince Lombardi Cancer Foundation (Bart Starr Award), and UAB Department of Surgery and Biomedical Engineering.

Mike K. Chen; Role: Institutional PI. Adolescent Bariatrics: Assessing Health Benefits and Risks [Teen-Longitudinal Assessment of Bariatric Surgery (Teen-LABS)], NCT00474318; 2UM1DK072493-11.

Robert T. Russell, Role: Institutional PI. Timing of Inguinal Hernia in Premature Infants: A Randomized Trial. U01 HD076733-05.

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- Tessler RA, Dellinger M, Richards MK, Goldin AB, **Beierle EA**, Doski JJ, Goldfarb M, Langer M, Nuchtern JG, Raval MV, Vasudevan S, Gow KW. Pediatric gastric adenocarcinoma: A National Cancer Data Base review. *J Pediatr Surg*, 54:1029-1034, 2019. doi: 10.1016/j.jpedsurg.2019.01.048. Epub 2019 Feb 6.
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- Stafman LL, Williams AP, Marayati R, Aye JM, Stewart JE, Mroczek-Musulman E, **Beierle EA**. PP2A activation alone and in combination with cisplatin decreases cell growth and tumor formation in human HuH6 hepatoblastoma cells. *PLoS One*, 14(4):e0214469, 2019. doi: 10.1371/journal.pone.0214469.
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Key Determinants for Achieving Enteral Autonomy and Reduced Parenteral Nutrition Exposure in Pediatric Intestinal Failure *Journal of Parenteral and Enteral Nutrition*. Macie A. Enman Linda T. Wilkinson, Katie B. Meloni, Michelle C. Shroyer, Tracy F. Jackson, Inmaculada Aban, Reed A. Dimmitt MD, **Colin A. Martin MD**, and David P. Galloway. *Journal of Parenteral and Enteral Nutrition*-Accepted-In Press.

Depletion of dietary aryl hydrocarbon receptor ligands alters microbiota composition and function. Kyle Brawner, Venkat Yeramilli, Casey Morrow, Leslie Smythies, and **Colin A. Martin**. *Scientific Reports*. 2019 Oct 11;9(1):14724. doi: 10.1038/s41598-019-51194-w.

PEDIATRIC GENERAL SURGERY AWARDS/RECOGNITION/LEADERSHIP

Dr. Mike Chen was elected to the American Pediatric Surgical Association Board of Governors as Treasurer. He is the Liaison to the Payor Advocacy Advisory Committee and the Committee on Child Health Financing at the American Academy of Pediatrics. He serves as the Chair of the Pediatrics Committee of the Health Services Foundation and on the Board of the Health Services Foundation. Dr. Chen also serves on the Board of Trustees at Children's of Alabama.

Dr. Elizabeth Beierle was appointed Vice Chair for Faculty Development and Chair of the Promotion and Tenure Committee in the UAB Department of Surgery. She also serves on the Professional Development Committee and the Bylaws Committee for the American Pediatric Surgery Association. In addition, she serves on Surgical Forum Committee for the American College of Surgeons and the NCE Planning Group for the American Academy of Pediatrics. Finally, Dr. Beierle serves as a consultant to the American Board of Surgery developing examination questions and is a Pediatric Surgery Certifying Examiner.

Dr. Scott Anderson served as the ECMO program director at Children's of Alabama and the program was recognized with ELSO Gold Level Center of Excellence. He also serves as the Chair of the Physician Peer Review Committee.

Dr. Colin Martin was awarded the Academic Surgical Congress 10 x 10 Traveling Fellowship, the SSAT Joseph E. Fischer Travelling Fellowship, and UAB Medical Student Teaching Award in 2019. He was appointed to the Society for University Surgeons Membership Committee and the Society for Surgery of the Alimentary Tract Finance Committee. Finally, Dr. Martin was elected as a Member at Large for the Children's of Alabama Medical Executive Committee and awarded the James IV Travelling Fellowship for 2020-2021.

Dr. Rob Russell was elected as Treasurer of the Pediatric Trauma Society and will serve a two-year term on the Board of Directors. He was also elected to the Leadership Committee of the Association for Academic Surgery. Dr. Russell also served as member of the Trauma Subcommittee on the National Heart, Lung, and Blood Institute, Hemostasis Clinical Trials Outcomes Group. Finally, he was appointed as Vice Chair of the Alabama Committee on Trauma.

Pediatric Neurosurgery

PEDIATRIC FACULTY

Dr. Jeffrey P. Blount Professor
Chair-Division of Pediatric Neurosurgery

Dr. Curtis J. Rozzelle Professor
UAB Neurosurgery Residency Program Director

Dr. James M. Johnston Associate Professor
Pediatric Neurosurgery Fellowship Director

Dr. Brandon G. Rocque Associate Professor



FEATURED RESEARCH

The Division of Pediatric Neurosurgery is actively involved in a wide variety of research activities. Many of these projects are collaborative with our colleagues at the busiest and most robust academic Pediatric Neurosurgery programs in North America and beyond. Other projects are single institution programs conducted solely at Children's of Alabama/UAB. We have been regularly recognized by our peers and colleagues for the quality and breadth of research in Pediatric Neurosurgery that arises from our program. Projects performed or supervised by faculty members of our Division captured all three of the prizes that are awarded at the December 2018 meeting of the Pediatric Section of the AANS/CNS. No other program has captured all three awards in the same year since the inception of the awards.

These projects are important because they have the potential to fundamentally impact and improve the way we provide care for children with Neurosurgical problems like brain tumors, congenital anomalies (like Spina Bifida), epilepsy or trauma. Only by carefully studying the outcomes and results of our clinical experience can we improve in the care provided by making it safer, more effective, more efficient and less costly. In 2019, the faculty in the Division of Pediatric Neurosurgery produced 34 manuscripts, served on two editorial boards, three NIH RO1 awards and were invited for more than two dozen invited lectures and presentations.

COLLABORATIVE REGISTRIES

Collaborative research is the cornerstone of the best clinical research in surgery. Outcome studies no longer are small, single institutional observational reports. Rather, greater power and stronger study design is essential to truly ascertain the benefit of a procedure or course of management. Large numbers of cases are realized by participating in large registries and collaborative multi-center trials. Our Division participates in multiple such registries. We have been charter members of the collaborative and have led enrollment nationally in most.

Hydrocephalus Clinical Research Network (HCRN)—now consists of 14 North American academic Pediatric Neurosurgery programs who collaborate to design research projects that investigate hydrocephalus which is the most common condition treated in Pediatric Neurosurgery. Hydrocephalus arises when the natural circulation and re-absorption of cerebrospinal fluid is disturbed or disrupted. Traditionally, the treatment is placement of a ventricular shunt but shunts, are associated with repeated blockages that require more surgery to repair them. New endoscopic procedures with an endoscope (ETV-CPC) have shown great promise in correcting hydrocephalus without the morbidity of shunts. Dr.Curtis Rozzelle is the site P.I. and Anastasia Arynchyna MPH is the site coordinator.

Active HCRN Projects

- ETV/CPC vs Shunt RCT
- Shunt entry site RCT
- Hydrocephalus Registry
- CSF Biomarkers
- ETV/CPC vs Shunt: Cost-effectiveness analysis

National Spina Bifida Patient Registry (NSBPR)—The NSBPR is a CDC-sponsored multi-center prospective registry of patients with varied forms of Spina Bifida. A comprehensive variety of clinical variables are recorded. The Spina Bifida Program at UAB/Children's of Alabama is central to this effort and has led enrollment since the inception of the registry in 2009. There are currently 16 participating centers in North America. When a project is proposed an investigator submits a data access proposal or (DAP) to the CDC. Multi-center participation is coordinated and the registry is sampled. The NSBPR has led to more than 30 manuscripts in a variety of topics related to Spina Bifida care that are fundamentally impact the care of patients with this important congenital anomaly. Jeffrey Blount MD and Betsy Hopson MHA are the directors of the UAB/COA program. Ms. Hopson is a national expert on the NSBPR and is frequently consulted by other programs seeking to increase their activity.

Active DAPS

- Lipomyelomeningocele
- Tethered Spinal Cord in Spina Bifida
- Mortality in Spina Bifida
- Management of Hydrocephalus

Cerebral Palsy Research Network (CPRN)—The CPRN is a new initiative with independent funding that is structured like the HCRN. Dr. Brandon Rocque is the Director and Principal Investigator of this program which promises to fundamentally impact the care for children with Cerebral Palsy.

Children's Brain Tumor Tissue Consortium (CBTTC)—In 2019, the Division received approval and preliminary funding from Phillip "Jay" Storm -director of the CBTTC to participate in the CBTTC which is the world's largest collection of pediatric brain tumor tissue. This unique collection now harbors tissue from more than 600. Data from over 3,300 patients and is centrally stored at Children's Hospital of Philadelphia (CHOP). Whole genome & whole exome sequences, RNA-Seq, and miRNA-Seq is freely available to researchers from around the world.

Park-Reeves Consortium for Chiari/Syringomyelia Research—this consortium of North American centers prospectively collects clinical data on patients who harbor a Chiari malformation or syrinx. We are top enroller into the ongoing Chiari Registry. We also completed our enrollment into Bone only vs Open Dura RCT in 2019. A number of multi-institutional peer reviewed papers have arisen that have improved the care for patients with Chiari malformations around the world. Dr. James Johnston and Anastasia Arynchyna MPH direct our program's efforts in this collaborative.

COLLABORATIVE PROJECTS

In addition to formal registries, we have active ongoing projects with colleagues investigating critical clinical and molecular mechanisms of neurosurgical disease.

Viral vector treatment for high grade intrinsic brain tumors—In collaboration with Dr. Gregory Friedman in the Division of Hematology-Oncology of the UAB Department of Pediatrics Dr. James Johnston is directing an effort toward investigating the use of a genetically modified attenuated herpes viruses that are stereotactically injected via continuous infusion to kill brain tumors. Initially this work was performed in a subgroup of medulloblastomas but the early results of intra-theal delivery of modulated HSV were sufficiently promising that clinical indications have expanded to other very difficult to treat brain tumors. This work is an extension of seminal work done at UAB in adults by Dr. James Markert, Ichiro Nakano, Yancey Gillespie and Burton Nabors.

Investigation of Molecular Pathways in Neurosurgical Disease—Molecular genetic mechanisms in Myelomeningocele. Working in collaboration with Dr. M. Elizabeth Ross at Weil-Cornell Medical Center in New York we are looking for gene mutations that cause spinal dysraphism. Patient specimens are examined for polygenic and epigenetic variation that may contribute to fundamental pathogenic events in the origins of dysraphism.

Genetic Study of Neurosurgical Developmental Abnormalities & Diseases—Working collaboratively with colleagues at Yale University Department of Neurosurgery this project strives to identify genes contributory to the development of multiple neurodevelopmental conditions encountered in pediatric neurosurgical practice, including but not limited to: congenital hydrocephalus, congenital neurovascular anomalies, arachnoid cysts, Chiari malformation. We plan to examine the relationship between patient genotype and disease phenotype; and to define the functions of these genes disease genes using *Xenopus* and mouse models. This will be the first systematic, large-scale study of its kind exploring these historically—neglected, predominantly neurosurgical diseases with rigorous genetic methods. Information gained from this studies may provide information that could lead to a more refined classification scheme of disease, better diagnostic tools and more effective therapeutic strategies aimed at the underlying molecular pathophysiology.

Detection of Central Nervous System Infections—Based on research done by the pediatric neurosurgery division, in collaboration with researchers in the UAB Department of Microbiology and startup CNine Biosolutions, a lateral flow assay for rapid detection of soluble membrane attack complex (sMAC) has been developed, validated and manufactured in quantity. Patents have recently been awarded in both the United States and Europe. Multicenter FDA trials have recently begun with collaborators at UAB, Washington University and the University of Cape Town, South Africa.

Guidelines for Clinical Care in Spinal Dysraphism—Under the direction and auspices of the Congress of Neurologic Surgeons and the Pediatric Section of the AANS/CN, a series of clinical guidelines for the care of children with Spina Bifida were developed between 2016-2019 and were published in September 2019. Dr. Jeffrey Blount participated actively in each of the guidelines. Five specific topic domains were identified including the role of intra-uterine myelomeningocele closure, anti-microbial prophylaxis, neuro-cognitive development and tethered cord syndrome. Standards of evidence based medicine directed the review which were peer reviewed by colleagues in Neurology and Pediatrics prior to publication in September, 2019. The Spina Bifida Association of America also prepared a parallel set of clinical guidelines to support the network of SBA associated Spina Bifida Clinics. Dr. Blount, Dr. Rocque, Betsy Hopson,

Anastasia Arynchyna and other colleagues from UAB Pediatric (Dr. Drew Davis- Pediatric PM and R) and Surgical Specialties (Dr. David Joseph- Pediatric Urology, Dr. Michael Conklin-Pediatric Orthopedics) all contributed to these guidelines.

Transitional Care and Individual Transition Program (ITP)—Transitional care from Pediatrics to Adult care is a major challenge for all pediatric medical centers. Faculty in our Division have led work in this domain for the past decade in transitional care in Spina Bifida. Working collaboratively with colleagues from Physical Medicine and Rehabilitation and Urology at UAB a Transition/Adult Spina Bifida Clinic was initiated and developed in 2009. This was one of the first of its kind in North America and the patient experience and challenges were captured via a series of surveys in which a standardized measurement instrument was used to determine successes and failures in the clinic. The experience ultimately culminated in the development of the Individualized Transition Protocol (ITP) which is patterned after school related Individual Education Programs (IEPs). These developments are being sought by other centers and have been shared in peer reviewed manuscripts and invited lectures. Dr. Rocque was invited to give the ASPN Advocacy lecture on Transitional care at the 2019 ASPN meeting and Betsy Hopson MSHA has been invited to multiple programs to share this work.

SIGNIFICANT PUBLICATIONS

UAB/COA DIVISION OF PEDIATRIC NEUROSURGERY SELECTED PUBLICATIONS—2019

Blount JP, Durham SR, Klimo P Jr, Assassi N, Bauer DF, Beier AD, Flannery AM, McClung-Smith C, Nikas DC, Rehling P, Tamber MS, Tyagi R, Mazzola CA. Congress of Neurological Surgeons Systematic Review and Evidence-Based Guideline on the Management of Patients With Myelomeningocele: Whether Persistent Ventriculomegaly Adversely Impacts Neurocognitive Development. *Neurosurgery*. 2019 Sep 1;85(3):E414-E416. doi: 10.1093/neuros/nyz265. PubMed PMID: 31418036.

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Sherrod BA, McClugage SG 3rd, Mortellaro VE, Aban IB, **Rocque BG**. Venous thromboembolism following inpatient pediatric surgery: Analysis of 153,220 patients. *J Pediatr Surg*. 2019 Apr;54(4):631-639. doi: 10.1016/j.jpedsurg.2018.09.017. Epub 2018 Oct 10. PubMed PMID: 30361075; PubMed Central PMCID: PMC6451662.

Luciano MG, Batzdorf U, Kula RW, **Rocque BG**, Maher CO, Heiss J, Martin BA, Bolognese PA, Ashley-Koch A, Limbrick D, Poppe DJ, Esposito KM, Odenkirchen J, Esterlitz JR, Ala'i S, Joseph K, Feldman RS, Riddle R; Chiari I Malformation Common Data Element Working Group. Development of Common Data Elements for Use in Chiari I Malformation Type I Clinical Research: An NIH/NINDS Project. *Neurosurgery*. 2019 Dec 1;85(6):854-860. doi: 10.1093/neuros/nyy475. PubMed PMID: 30690581.

DIVISION AWARDS AND RECOGNITION AND EXTRAMURAL AWARDS AND LEADERSHIP

Global Neurosurgery—The Division emphasizes and has a substantial commitment to global neurosurgery. We have actively sought to build and support several collaborative practice arrangements with several developing programs in more resource constrained countries.

Vietnam—These include an ongoing bi-annual exchanges between UAB/COA and Children's Hospitals in Ho Chi Minh City and Hanoi, Peoples' Republic of Vietnam.

Dr. Johnston and Dr. Rocque visit on a recurring basis and participate in surgical procedures, clinics, ward rounds and teaching. Many other colleagues in the Department of Pediatrics have actively participated in the development of the Epilepsy program including Dr. Pongkiat Kankirawatana, Dr. Monisha Goyal and critical members of our Electrophysiology and intra-operative monitoring team.

Dr Rocque—working collaboratively with Dr. Can and his trainees developed a surgical epilepsy program in Vietnam leading to first surgical epilepsy procedures ever performed in that nation. Regular sharing of active cases goes on from week to week and the number of children in Vietnam who have received epilepsy operations now exceeds 30 and continues to grow robustly. These children had no options for treatment before these interventions.

Dr. Johnston—continues to collaborate with colleagues at the National Cancer Hospital in Hanoi, Vietnam, and the Children's Hospital #2, Ho Chi Minh City, in the development of their pediatric neurooncology clinical and research programs. Recent work includes important cooperation with Dr Girish Dhall, Chief of Pediatric Oncology at UAB/Children's of Alabama. A REDCap database has been established to follow pediatric neurooncology patients. Children's of Alabama has also hosted a neurosurgeon, anesthesiologist, neurooncologist, neuropathologist and nurse coordinator from Vietnam as part of the visiting Children's of Alabama Global Fellow Program.

Dr. Jacob Lepard—awarded a Paul Farmer Global Surgery fellowship for work in Pediatric Neurosurgery. Used this award in Uganda, South Africa and People's Republic of Vietnam under direction from faculty at Harvard School of Public Health. Coordinated and facilitated by UAB/Children's of Alabama faculty.

INVITED FACULTY- INTERNATIONAL SOCIETY OF PEDIATRIC NEUROSURGERY COURSES

Dr. Rocque—invited faculty for ISPN course in Guangzhou, China.

Dr. Blount—invited visiting faculty in ISPN courses in Dhaka, Bangladesh.

Dr Johnston

- Invited visiting professor in craniofacial surgery, King Saud Abdul Aziz University for Health Services, King Abdullah Specialized Children's Hospital, Riyadh, Saudi Arabia. October, 2019
- Invited Faculty, Kawamoto Craniomaxillofacial Symposium, Cairo, Egypt, October 2019
- Invited Faculty, National Cancer Hospital, Hanoi, Vietnam, July 2019

FIRST ANNUAL COLLABORATIVE PARTNERSHIP WITH UNIVERSITY OF CAPE TOWN DEPARTMENT OF NEUROSURGERY, CAPE TOWN, SOUTH AFRICA

1. Dr. Sean Tromp- visiting resident in Pediatric Neurosurgery (observership) – May 2019
2. Dr Hassan Akbari – (2019-20) UAB/Children's of Alabama Pediatric Neurosurgery Fellow, plans to spend 1 month at Red Cross Hospital, University of Cape Town, South Africa in summer 2020. This experience will be codified into the UAB/Children's of Alabama Pediatric Neurosurgery Fellowship educational program.

ROLES AND PARTICIPATION IN NATIONAL RESEARCH, QUALITY IMPROVEMENT & LEARNING NETWORKS

Jeffrey Blount MD FAANS

Elected -Faculty Council of UAB
Editorial Board- Journal of Neurosurgery- Pediatrics
Editorial Board- Neurosurgery
Pursuing on-line MPH at UAB School of Public Health

Curtis J. Rozzelle MD FAANS

Program Director- UAB Neurosurgery Residency
PI- Hydrocephalus Clinical Research Network
Member- AANS Board of Directors

James M Johnston MD FAANS

Member at Large, Executive Committee, Joint Pediatric Section of AANS/CNS
Fellowship Director, Pediatric Neurosurgery, UAB/COA
Elected - Neurosurgical Society of America
Board of Directors and Volunteer Coordinator- FIENS
Pursuing MSc at London School of Hygiene And Tropical Medicine, UK
Co-Founder, Executive Board, InterSurgeon.org (UK)
Director, Global Surgery Program, Children's of Alabama
Chief Medical Officer, CNine Biosolutions LLC

Brandon G Rocque MD MS FAANS

Board of Directors- FIENS
Site PI – Cerebral Palsy Research Network

Oral and Maxillofacial Surgery

PEDIATRIC FACULTY

Dr. Peter D. Waite.....Department Chair and Professor

Dr. Kathlyn K. Powell.....Assistant Professor



FEATURED RESEARCH

Drs. Waite and Powell have a large service for cleft cranio-facial patients including bone grafting reconstruction and distraction of hypoplastic maxilla and mandible. They continue to follow these patients and assess the outcomes of surgeries.

Drs. Waite and Powell collaborate with Pediatric Rheumatology in complex management of Temporo-mandibular joint disease. There are ongoing studies assessing the long-term outcomes of mandibular distraction osteogenesis in neonates.

PUBLICATIONS

Wang J, Veiszenbacher E, Waite PD, Kau CH. Comprehensive treatment approach for bilateral idiopathic condylar resorption and anterior open bite with customized lingual braces and total joint prostheses. Am J Orthod Dentofacial Orthop. 156(1):125-136, 2019.

ACTIVE IRBS

IRB-141216001 Retrospective Evaluation of Cleft Lip and Palate and Craniofacial Anomalies
PI: Powell

IRB-300000661 Long Term Outcomes of Mandibular Distraction Osteogenesis in Neonates
PI: Waite
Co-PI: Powell/Schibler

IRB-300000401 Does young age at time of ICBG for alveolar cleft make a patient more likely to require a RED in the future?
PI: Dr. Waite

Pediatric Cardiothoracic Surgery

PEDIATRIC FACULTY

Dr. Robert J. Dabal Chief
A.D. Pacifico Endowed Chair of Cardiovascular Surgery
Associate Professor of Surgery

Dr. David C. Cleveland.....Associate Professor of Surgery

Dr. Robert A. SorabellaAssistant Professor of Surgery

Dr. Luz A. PadillaAssistant Professor of
Epidemiology and Surgery



FEATURED RESEARCH

The Division of Pediatric Cardiothoracic Surgery has an interest in research in three main areas as well as in the broad area of clinical outcomes research.

In the area of xenotransplantation, Dr. David C. Cleveland has developed a world class research team in close collaboration with Dr. David CK Cooper at the University of Alabama at Birmingham. Current research efforts are primarily directed at developing a reproducible model of pediatric cardiac xenotransplantation using a baboon model. Additional areas of active investigation include the use of genetically engineered pigs as a source of bioprosthetic valves and attitudes and acceptance of xenotransplantation.

A second major area of academic investigation is in the development of a congenital heart surgery metadata base. A joint collaboration among pediatric cardiothoracic surgery, pediatric cardiology and critical care and pediatric cardiac anesthesia, efforts are well underway with the team at the Kirklin Institute for Research in Surgical Outcomes to develop a congenital database that would combine the vast number of current congenital databases into a single, easily searchable database that would be useful in quality improvement as well as with clinical outcomes research. The ultimate aim of the project is to eventually use this database as a predictive tool for individual patients through the mechanisms of machine learning.

A third area of academic investigation is in the use of umbilical cord stem cells to improve outcomes in patients with hypoplastic left heart syndrome (HLHS). Our program recently became the ninth program nationally to be selected to participate in a national clinical trial run by the Mayo Clinic and supported by the Todd and Karen Wanek Family Program for HLHS. The initial trial is exploring the utility of the intramyocardial injection of cord blood cells harvested at birth into the myocardium of HLHS patients undergoing their second stage palliation.

PUBLICATIONS

Alongi A, Kirklin J, Luqin, **Padilla L**, Pavnica J, Romp R, Mauchley D, **Cleveland D**, **Dabal R**. Surgical management of heterotaxy syndrome: Current challenges and opportunities. World Journal of Pediatric and Congenital Heart Surgery Oct 2019
Smood B, Kirklin JK, Pavnica J, Tresler M, Johnson WH Jr., Cleveland DC, Mauchley DC, and Dabal RJ. Congenitally corrected transposition presenting in the first year of life: Survival and fate of the systemic right ventricle. World J Pediatr Congenit Heart Surg. 2019 Jan;10(1):42-49.

Cleveland D, Banks AC, Hara H, Carlo WF, Mauchley DC, Cooper DKC. The case for cardiac xenotransplantation in neonates: Is now the time to reconsider xenotransplantation for hypoplastic left heart syndrome? Pediatr Cardiol. 2019 Feb;40(2):437-444

Smood B, Hara H, **Cleveland DC**, Cooper DKC. In search of the ideal valve: Optimizing genetic modifications to prevent bioprosthetic degeneration. Ann Thorac Surg. 2019 Aug;108(2):624-635.

Li Q, Hara H, Banks A, Yamamoto T, Ayares D, Mauchley DC, **Dabal RJ**, **Padilla LA**, Carlo WF, Rhodes LA, Cooper DKC, Cleveland DC. Anti-Pig antibody in infants: Can a genetically-engineered pig heart bridge to allotransplantation? Ann Thorac Surg. 2019 Sep 30.

ADDITIONAL PUBLICATIONS

Miller V, **Padilla LA**, Schuh A, Mauchley D, **Cleveland D**, Aburjania Z, **Dabal R**. Evaluation of Cardiothoracic Surgery Residency and Fellowship Program Websites. Journal of Surgical Research 2019. Volume 246, February 2020, Pages 200-206.

Mauchley DC, Stiegler JM, **Padilla LA**, Aburjania Z, Dabal R and **Cleveland D**. Repair of rare vascular ring: Circumflex aortic arch with associated hypoplasia and coarctation. World J Pediatr Congenit Heart Surg. 2019 May 19

Hurst DJ, Padilla LA, Walters W, Hunter JM, Cooper DKC, Eckhoff DM, Cleveland D, and Paris W. Paediatric xenotransplantation clinical trials and the right to withdraw. J Med Ethics. 2019 Nov 8

Cooper DKC, Hara H, Banks CA, **Cleveland D**. and Iwase H. The "Baby Fae" baboon heart transplant – potential cause of rejection. Xenotransplantation. 2019 Jul;26(4).

DIVISION LEADERSHIP ROLES AND PARTICIPATION IN QUALITY IMPROVEMENT AND LEARNING NETWORKS

Robert J. Dabal is currently a member of the Membership Committee of the Society of Thoracic Surgeons and has been invited to serve on the Congenital Database Taskforce also of the Society of Thoracic Surgeons.

The entire division also contributes to the Society of Thoracic Surgeons Congenital Database.

PEDIATRIC FACULTY

Dr. David Joseph.....Professor and Chief
 Dr. Pankaj DangleAssistant Professor
 Director of Robotic Surgery
 Dr. David KitchensAssociate Professor



FEATURED RESEARCH

Dr Dangle has a strong interest in pediatric stone disease and focuses the majority of his clinical research effort in that direction. He is currently working on a prospective assessment of pediatric demographics including gender distribution and dietary factors that influence stone metabolism. Dr. Dangle recently received recognition as the UAB PI for a multi-institutional PCORI study related to Pediatric Stone Disease-PKIDS. In addition to his interest in urinary stones, Dr. Dangle is currently analyzing the outcome of hypospadias repair and "learning curve" 3-years after completing Fellowship training.

Dr. Kitchens is completing a comparative study between local extravesical ureteroneocystostomy outcome and that of robotic extravesical ureteral repair as reported in the literature. He continues to assess the impact of suture material on the outcome of hypospadias repair particularly as it relates to urethrocutaneous fistula.

Dr Joseph received continuation funding as the PI for two CDC sponsored studies. The first is the National Spina Bifida Patient Registry, a multi-institutional study that is acquiring longitudinal patient data across the lifespan. This information is now used by all participating centers assessing various aspects of patient care and management. The second grant relates to the Urologic management of the newborn with Spina Bifida assessing the effect of a proactive treatment protocol with the goal of preserving renal function (UMPIRE). This cohort of patients from nine centers is now entering the second five years of life. Data reviewed from the first five years has already impacted changes to the original protocol.

SIGNIFICANT PUBLICATIONS

Tanaka ST, Paramsothy P, Thibadeau J, Wiener JS, **Joseph DB**, Cheng EY, Tu D, Austin C, Koh CJ, Wallis MC, Walker WO, Smith KA, Routh JC, Baum MA: Baseline Urinary Imaging in Infants Enrolled in Urologic Management to Preserve Initial Renal Function (UMPIRE) Protocol for Children with Spina Bifida J Urol 201;1193-1198, 2019.

Dangle PP, Joseph DB. Diagnosis and Medical Management of Prune Belly (Triad) Syndrome. Ed: Anthony Atala, Decker Med, May 2019.

Joseph DB. Surgical Management of the Urinary Tract for the Prune Belly (Triad) Syndrome. Ed: Anthony Atala, Decker Med, May 2019.

Joseph DB. Urological Concerns of Occult Spinal Dysraphism/Tethered Cord. Tubbs RS, Oskouian RJ, Oakes WJ, Blount J eds: Occult Spinal Dysraphism publisher Springer 2019 ISBN : 978-3-030-10993-6.

Joseph DB. Megaureter. Docimo SG, Canning D, Khoury A, Pippi Salle JL The Kelalis-King-Belman Textbook of Clinical Pediatric Urology 6th ed. 2019.

RECOGNITION AND EXTRAMURAL AWARDS LEADERSHIP ROLES

David Joseph MD is currently the President of the American Board of Urology. He has been elected to Chair the committee on Lifelong Learning at the completion of his current position to begin 2020. He was selected as a 2020 member to the ABMS Committee on Continuing Certification. Dr. Joseph is currently a member of the ACGME Urology RRC. He was selected by the ACGME to serve on the 2020 Milestone Review Committee for the Pediatric Urology Fellows.



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