

# 2018 Academic Annual Report



**UAB MEDICINE**  
PEDIATRICS



Children's  
of Alabama®

# Department of Pediatric Medicine



Dear Friends and Colleagues,

In the midst of busy clinics, complex medical and surgical inpatient care, teaching the next generation of care providers, pursuing discovery 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 where we have been and where we are going. This Academic Annual Report, which highlights accomplishments for the past year, is an opportunity to do just that. This has been a year of growth and discovery 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 discoveries 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 2018, the Department of Pediatrics faculty had 358 publications, research funding from the National Institutes of Health (NIH) totaling \$15.8 million and total research funding of \$29.5 million.

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

We aim 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, neonatal and rheumatology outcomes—but also in newer areas where the recruitment of talented young researchers will ensure continued and expanded success. We recruited 38 new faculty members, who will bring innovative patient care opportunities and new research discoveries to the Department and to the children of Alabama. This year we have compiled a [history of the Department](#), and I invite you to browse it to see where we started and the tremendous accomplishments of those on whose shoulders we stand.

The Kaul Pediatric Research Institute (KPRI) has continued to support investigators at Children's and remains an important edge in helping our faculty achieve extramural funding through initial pilot and feasibility funding. In addition, this past year, Children's added to its support of two new research funds that will further bolster our research efforts in the Pediatric Enterprise.

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

# Content

The UAB Department of Pediatrics at Children's of Alabama is comprised of 19 Subspecialty Divisions, each with a research, educational, and clinical focus. This Academic Annual Report includes information about research initiatives, areas of clinical excellence, educational efforts and faculty.

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Russell Cunningham Memorial Research Program  
Founder's Fund Grants  
Pediatric Research Office  
Office of Faculty Development





# Academic General Pediatrics

## PEDIATRIC FACULTY

### Dr. Terry Wall

Dr. Jennie Andresen  
Dr. Heather Relyea Ashley  
Dr. Cason Benton  
Dr. Courtney Campbell  
Dr. Jennifer Chambers  
Dr. Candice Dye  
Dr. Crayton Fargason  
Dr. Jason Hartig  
Dr. DeeAnne Jackson  
Dr. Angela King  
Dr. Carin Richard Kiser  
Dr. Morissa Ladinsky  
Dr. Jaime McKinney  
Dr. Susan Powell  
Dr. Stewart Hill

### Director | Professor

Associate Professor  
Instructor  
Associate Professor  
Assistant Professor  
Assistant Professor  
Associate Professor  
Professor  
Associate Professor  
Associate Professor  
Instructor  
Associate Professor  
Associate Professor  
Assistant Professor  
Assistant Professor  
Assistant Professor



## FEATURED RESEARCH

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

Elizabeth Cason Benton, M.D., director of the Alabama Child Health Improvement Alliance (ACHIA), leads this quality improvement through partnerships with practitioners, payers, families and organizations that deliver care to improve health outcomes of children in the state. In 2018, 14 participating practices that have approximately 10% of the children in Alabama with asthma improved delivery of Optimal Asthma Care from 23% to above 80%.

Morissa Ladinsky, M.D., is working with Dr. Shawn Galin 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.

Morissa Ladinsky, M.D., 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.

Dee Anne Jackson, M.D., is working with Dr. Mark Powell and Dr. 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. She completed a quality improvement project this year 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 in the newborn nursery and is collaborating with the Division of Neonatology in the VON Network antibiotic stewardship project.

## SIGNIFICANT PUBLICATIONS

*Ann Pediatr Child Health* (2018) 6(2): 1145. *Newborn Nursery Emergencies: Simulating the First Five Minutes*. **Jackson D**, Chilukuri P, Rutledge C, Gaither S, Sawyer K, et al.

### DIVISION AWARDS & RECOGNITION | EXTRAMURAL AWARDS & LEADERSHIP ROLES

**Cason Benton, M.D.**, was selected by the American Board of Pediatrics to receive the 2018 Paul V. Miles (PVM) Fellowship Award. The award is given annually to an accomplished mid-career pediatrician dedicated to improving the quality of health care for children.

**Cason Benton, M.D.**, 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).

**Morissa Ladinsky, M.D.**, was awarded the Inclusive Research & Initiative Award at the Lavender Celebration. The Lavender Celebration is an annual event in the spring of each academic year wherein LGBTQ undergraduate, graduate and professional students receive recognition for both their contribution to campus and their success in graduating. During the celebration, awards are given out to students, faculty and staff. Dr. Ladinsky was honored for her work on a project to make UAB medicine, and our trained physicians and healthcare providers, better at serving transgender patients.

**Morissa J. Ladinsky, M.D.**, was awarded the American Academy of Pediatrics (AAP) Special Achievement Award, Alabama Chapter of AAP, for distinguished service to the missions and goals of the Academy.

**Morissa Ladinsky, M.D.**, serves on Mayor Randall Woodfin's LGBTQ+ Advisory Board for the city of Birmingham.

**Morissa Ladinsky, M.D.**, serves on the Board of Directors for the Children's Policy Council of Jefferson County.

**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.

**Morissa Ladinsky, M.D.**, received the Hope for Tomorrow Award at the first annual LGBTQ+ Community Service Awards and Gala. She was honored for her work in caring for and advocating for all youth.

**Jaime McKinney, M.D.**, was appointed to the Admissions Selection Committee for the UAB School of Medicine. The Admissions Selection Committee reviews candidates and determines who will be accepted to join the School of Medicine.

**Jaime McKinney, M.D.**, was selected for the Dean's Excellence Award in Diversity Enhancement, Junior Faculty. The Dean's Excellence Awards recognize exceptional contributions made by School of Medicine faculty in service, teaching, research, diversity enhancement and mentorship.



# Adolescent Medicine

## PEDIATRIC FACULTY

### Dr. Tamera Coyne-Beasley

Dr. Heather Austin

Dr. Krista Casazza

Dr. Nefertiti Durant

Dr. Tina Simpson

Dr. Stephenie Wallace

**Director** | Professor

Assistant Professor

Associate Professor

Associate Professor

Professor

Associate Professor



## FEATURED RESEARCH

The UAB Division of Adolescent Medicine performs an array of investigations that includes behavioral science and outcomes research, as well as assessments of physiologic changes during growth and development. Specific highlights include:

SHINE Clinic continued enrolling patients in the Pediatric Obesity Weight Evaluation Registry (POWER) Study in 2018 (3rd cycle). The POWER study is a national collaborative involving 32 clinical sites. The goal is to better understand and improve the health outcomes of children and adolescents with overweight and obesity who are participating in multi-component weight management programs. During the last nine months of our participation, we have enrolled over 100 participants.

Tina Simpson, M.D., MPH, examined individual and peer risk factors and their relationship with family attachment for African American adolescent males. These data will guide the implementation of an evidence-based youth school-based prevention program.

Tina Simpson, M.D., MPH, examined barriers and facilitators affecting adolescent sexual health outcomes and individual and community factors influencing the future trajectories of black adolescent males.

Krista Casazza, Ph.D., was awarded a five-year Leadership Education in Maternal and Child Health (MCH) Nutrition grant.

Krista Casazza, Ph.D., serves as Co-Investigator with Dr. Sylvie Mrug, UAB Department of Psychology, on an Institute of Education Sciences grant: "The Impact of Diet on Behavior and Academic Outcomes in Middle School Students." This project will examine the role of dietary factors in behavior and academic outcomes in middle school students.

Tamera Coyne-Beasley, M.D., serves as Co-Principle 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.)

## SIGNIFICANT PUBLICATIONS

*American Academy of Pediatrics*, Chicago, IL. 2018. *Healthy Sexual Development and Sexuality. in Promoting Mental Health Care in Children and Adolescents Primary Care Practice and Advocacy*. Garwood S, **Coyne-Beasley T**.

*American Journal of Preventive Medicine*. 2018; 55(5), S59 - S69. *Community Readiness to Adopt the Communities That Care Prevention System in an Urban Setting*. Parker, CJ, Winston III, W, **Simpson, T**, & Brady, SS.

*American Journal of Preventive Medicine*. 2018; 55(5), S70 – S81. *Implementing Communities That Care: Challenges, solutions, and opportunities in an urban setting*. Brady, SS, Parker, CJ, Jeffries, EF, **Simpson, T**, Brooke-Weiss, BL, & Haggerty, KP.

*American Journal of Preventive Medicine*. 2018; 55(5), S82 – S87. *Parents Speak: A Needs Assessment for Community Programming for Black Male Youth*. Phillips JM, Branch CJ, Brady SS, **Simpson T**.

*Cochrane Database Syst Rev*. 2018 Jan 18;1:CD003941. doi: 10.1002/14651858.CD003941.pub3. Review. *Patient reminder and recall interventions to improve immunization rates*. Jacobson Vann JC, Jacobson RM, **Coyne-Beasley T**, Asafu-Adjei JK, Szilagyi PG.

*Glob Pediatr Health*. 2018 May 30;5:2333794. *Development and evaluation of a social media health intervention to improve adolescents' knowledge about and vaccination against the human papilloma virus*. Ortiz RR, Shafer A, Cates J, **Coyne-Beasley T**

*Int J Eat Disord*. 2018 Nov 27. doi: 10.1002/eat.22973. *Recurrent hyponatremia in a young adult woman with anorexia nervosa and the effects of insufficient communication*. Boyd ED, **Durant NH**.

*Journal of Adolescent Health*. 63(Aug 2018)257-261. Position Statement (co-author); *Racism and its harmful effects on non-dominant racial-ethnic youth and youth-serving providers. A position paper of the Society for Adolescent Health and Medicine*. **Coyne-Beasley T**

*J Asthma*. 2018 Sept. 25; 1:12. *Asthma dissemination around patient-centered treatments in North Carolina (ADAPT-NC): a cluster randomized control trial evaluating dissemination of an evidence-based shared decision-making intervention for asthma management*. Ludden T, Shade L, Reeves K, Welch M, Taylor YJ, Mohanan S, McWilliams A, Halladay J, Donahue K, **Coyne-Beasley T**, Dolor RJ, Bray P, Tapp H.

*J Pediatr Adolesc Gynecol*. 2018 Jul 13. pii: S1083-3188(18)30258-4. doi: 10.1016/j.jpag.2018.07.006. *A Qualitative Study Exploring Contraceptive Practices And Barriers To Long-Acting Reversible Contraceptive Use In A Sample Of Adolescents Living In The Southern United States*. Coates C, Gordon CM, **Simpson T**.

*Pediatrics*. 2018 Oct;142(4). pii: e20182162. doi: 10.1542/peds.2018-2162. *Ensuring Comprehensive Care and Support for Transgender and Gender-Diverse Children and Adolescents*. Rafferty J; Committee on Psychosocial Aspects of Child and Family Health; Committee on Adolescence; Section on Lesbian, Gay, Bisexual, and Transgender Health and Wellness **Wallace S**.

*Pediatrics*. 2018 Oct;142(4). pii: e20182163. doi: 10.1542/peds.2018-2163. PMID: 30249622. *The Teen Driver*. Alderman EM, Johnston BD; Committee on Adolescence; Council on Injury, violence, and poison prevention, **Wallace S**.

*2018 Red Book*: Report of the Committee on Infectious Diseases. 31st Edition American Academy of Pediatrics. 2018. *Reviewed and updated chapter on: Active Immunization, Vaccine Ingredients, Children with Chronic Diseases, and American Indian/Alaska Native Children*. **Coyne-Beasley T**.

*Vaccine*. 2018 Jan 20. pii: S0264-410X(18)30038-0. doi: 10.1016/j.vaccine.2018.01.014. *Determinants of the receipt of the 9-valent human papillomavirus vaccine in the first year after introduction in North Carolina*. Trogdon JG, Shafer P, Lindsay B, **Coyne-Beasley T**.

*Vaccine*. 2018 Jan 29. pii: S0264-410X(18)30037-9. doi: 10.1016/j.vaccine.2018.01.013. *Impact of introduction of the 9-valent human papillomavirus vaccine on vaccination coverage of youth in North Carolina*. Trogdon JG, Shafer P, Lindsay B, **Coyne-Beasley T**.

*Vaccine*. 2018 May 21. pii: S0264-410X(18)30605-4. doi: 10.1016/j.vaccine.2018.04.085. *Barriers and facilitators to HPV vaccination among rural Alabama adolescents and their caregivers*. Boyd ED, Phillips JM, Schoenberger YM, **Simpson T**.

#### **DIVISION AWARDS & RECOGNITION | EXTRAMURAL AWARDS & LEADERSHIP ROLES | PARTICIPATION IN NATIONAL RESEARCH, QUALITY IMPROVEMENT & LEARNING NETWORKS**

**Tamera Coyne-Beasley, M.D.**, is the immediate past president of the Society for Adolescent Health and Medicine, where she also serves as a member of the Executive Team, Board of Directors and chair of the Nominations Committee.

**Tamera Coyne-Beasley, M.D.**, serves on the External Evaluation Committee for the Prevention of Lower Urinary Tract Symptoms (PLUS) Research Consortium, National Institute of Diabetes and Digestive and Kidney Diseases.

**Tamera Coyne-Beasley, M.D.**, serves on the Adolescent and Young Adult Health National Resource Center National Advisory Board. The Center aims to promote adolescent and young adult health by strengthening the abilities of State Title V MCH programs, to better service those populations (10-25).

**Tamera Coyne-Beasley, M.D.**, 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.

**Tamera Coyne-Beasley, M.D.**, is a member of the Committee on Pediatric Research, American Academy of Pediatrics (AAP) as the Society for Adolescent Health and Medicine liaison.

**Tamera Coyne-Beasley, M.D.**, is an NIH Study Section Member, NICHD, Health Behavior and Context Committee.

**Tamera Coyne-Beasley, M.D.**, is a member of the Advisory Committee for Immunization Practices working groups: human papilloma virus, adult immunizations and provider workgroup.

**Tamera Coyne-Beasley, M.D.**, is the founding and current director of the North Carolina Child Health Research Network.

**Tamera Coyne-Beasley, M.D.**, is a network director of the North Carolina Network Consortium (NCNC). The NCNC is a diverse statewide consortium of providers, academic institutions and partners whose mission is to address pressing questions related to the delivery of primary care health services and the management of primary care problems.

**Tamera Coyne-Beasley, M.D.** is a member of the Diversity and Inclusion Committee of the American Pediatric Society.

**Tamera Coyne-Beasley, M.D.**, participated in the Leadership Development for Physicians in Academic Health Centers Program at the Harvard T. H. Chan School of Public Health.

**Stephanie Wallace, M.D.**, serves as a member of the American Academy of Pediatrics (AAP) Committee of Adolescence. Dr. Wallace has co-authored publications with this committee.

**Tina Simpson, M.D., M.P.H.**, was elected to the American Pediatric Society.

**Tina Simpson, M.D.**, was named the first recipient of the "Dr. Tina Simpson Invisible Warrior Award" at the inaugural Birmingham Black Pride banquet. The award, named in her honor, recognizes Dr. Simpson as the longest serving African American physician caring for children, adolescents and young adults with HIV in the Birmingham area. In the future, this award will recognize those who have made contributions to advance equality and create strong connections in the lives of LGBTQ Alabamians.

**Tina Simpson, M.D.**, was accepted into the UAB Healthcare Leadership Academy (HLA). The HLA is a collaboration between the Collat School of Business and the School of Medicine. The program offers training opportunities and develops leadership skills essential to academic healthcare. The program began in October 2018 and will conclude in May 2019.

**Heather Austin, Ph.D.**, serves as a State Public Education Coordinator (PEC) for the Alabama Psychological Association (APA). PECs work at the state level in conjunction with American Psychological Association (APA) to educate the public how the science and application of psychology benefits society and improves lives. Duties have included participation and assistance with statewide volunteer activities and community presentations by psychologists.

**Heather Austin, Ph.D.**, is a member of the Division of Maternal and Child Health Workforce Development (DMCHWD) and participates in monthly meetings to organize a leadership program for MCH grantee virtual meeting.



# Pediatric Allergy & Immunology

## PEDIATRIC FACULTY

<b>Dr. Prescott Atkinson</b>	<b>Director   Professor</b>
Dr. Amy CaJacob	Assistant Professor
Dr. Kathleen Grisanti	Assistant Professor
Dr. Suthida Kankirawatana	Assistant Professor



## FEATURED RESEARCH

The Division of Pediatric Allergy & Immunology faculty are dedicated to research in the field of allergy and immunology, advancing knowledge in the diagnosis and treatment of patients with primary immunodeficiencies and in the care of patients with allergic diseases such as drug allergy, food allergy, asthma and atopic dermatitis. 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.

## SIGNIFICANT PUBLICATIONS

*Am J Med Genet A*. 2018 Sep 14. doi: 10.1002/ajmg.a.40492. *A previously unrecognized 22q13.2 microdeletion syndrome that encompasses TCF20 and TNFRSF13C*. Upadia J, Gonzales PR, **Atkinson TP**, Schroeder HW, Robin NH, Rudy NL, Mikhail FM.

*J Allergy Clin Immunol*. 2018 Aug 6. pii: S0091-6749(18)31128-X. doi: 10.1016/j.jaci.2018.07.021. *Allergic Airway Sensitization Impairs Anti-Bacterial IgG Antibody Responses During Bacterial Respiratory Infections*. Totten AH, Xiao L, Luo D, Briles D, Hale JY, Crabb DM, Schoeb TR, Alishlash AS, Waites KB, **Atkinson TP**.

*J Allergy Clin Immunol*. 2018 Aug 28. pii: S0091-6749(18)31201-6. doi: 10.1016/j.jaci.2018.08.013. *Hypomorphic CARD11 mutations associated with diverse immunologic phenotypes with or without atopic disease*. Dorjbal B, Stinson JR, Ma CA, Weinreich MA, Miraghazadeh B, Hartberger JM, Frey-Jakobs S, Weidinger S, Moebus L, Franke A, Schäffer AA, Bulashevskaya A, Fuchs S, Ehl S, Limaye S, Arkwright PD, Briggs TA, Langley C, Bethune C, Whyte AF, Alachkar H, Nejentsev S, DiMaggio T, Nelson CG, Stone KD, Nason M, Brittain EH, Oler AJ, Veltri DP, Leahy TR, Conlon N, Poli MC, Borzutzky A, Cohen JI, Davis J, Lambert MP, Romberg N, Sullivan KE, Paris K, Freeman AF, Lucas L, Chandrasakan S, Savic S, Hambleton S, Patel SY, Jordan MB, Theos A, Lebensburger J, **Atkinson TP**, Torgerson TR, Chinn IK, Milner JD, Grimbacher B, Cook MC, Snow AL.

*PLoS One*. 2018 Jan 19;13(1):e0189423. doi: 10.1371/journal.pone.0189423. eCollection 2018. *Analysis of the tonsillar microbiome in young adults with sore throat reveals a high relative abundance of Fusobacterium necrophorum with low diversity*. **Atkinson TP**, Centor RM, Xiao L, Wang F, Cui X, Van Der Pol W, Morrow CD, Ratliff AE, Crabb DM, Totten AH, Estrada CA, Faircloth MB, Waites KB.

*The Microbiome in Rheumatic Diseases and Infection*. 2018. Springer. Chapter 4. pp 45-54. *Immunodeficiency and Autoimmunity*. **Atkinson TP**, Ragab G, Stoll ML (ed).

*The Microbiome in Rheumatic Diseases and Infection*. 2018. Springer. Chapter 10. pp 103-111. *Mollicutes: Mycoplasma pneumoniae*. **Atkinson TP**, Ragab G, Stoll ML (ed).

## EXTRAMURAL AWARDS & LEADERSHIP ROLES

**Prescott Atkinson, M.D. Ph.D.**, 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 and is participating in the screening of infants for Severe Combined Immune Deficiency (SCID), which began on October 1, 2018.

**Amy CaJacob, M.D.**, is 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.



# Pediatric Cardiology & Cardiac Critical Care

## PEDIATRIC FACULTY

### PEDIATRICS CARDIOLOGY

#### Dr. Yung R. Lau

Dr. Wally F. Carlo  
Dr. Edward Colvin  
Dr. Camden Hebson  
Dr. Walter Johnson  
Dr. Mark Law  
Dr. William McMahon  
Dr. Bennett Pearce  
Dr. Robb Romp

### CARDIAC CRITICAL CARE

Dr. Santiago Borasino  
Dr. Ahmed Asfari  
Dr. Erika Mendoza  
Dr. Leslie Rhodes  
Dr. Hayden Zaccagni

**Director** | Professor  
Associate Professor  
Professor  
Assistant Professor  
Professor  
Associate Professor  
Professor  
Professor  
Associate Professor

Professor  
Assistant Professor  
Assistant Professor  
Assistant Professor  
Assistant Professor



## FEATURED RESEARCH

In 2018, the Division of Cardiology & Cardiac Intensive Care saw the finalization of the data collection for the Neonatal Cardiac Surgery Induced Acute Kidney Injury (CS-AKI) Consortium, now called NEPHRON (Neonatal and Pediatric Heart and Renal Outcomes Network). UAB is leading this 21-center collaborative, with a total enrollment of 2,251 neonatal patients, the largest multicenter collaboration to date. UAB continued its work with Cincinnati Children's Hospital Medical Center and Children's National Medical Center in a multicenter quality improvement collaborative aimed at reducing cardiac arrest in the CICU. The cardiac arrest bundle created by this collaborative has been initiated in CICUs across the country and data collection is well underway.

Important innovations/novel findings from our research in 2018:

- Publication of the first multicenter manuscript describing the methods of the NEPHRON collaborative.
- Publication of the impact of hemolysis on acute kidney injury and mortality in children supported on ECMO.
- Publication of the effects of positive airway pressure versus high-flow nasal cannula for prevention of extubation failure in infants after congenital heart surgery.
- Publication of a successful Angiojet® aortic thrombectomy of an ECMO related thrombus in a newborn
- Publication of furosemide response being used to predict acute kidney injury after cardiac surgery in infants and neonates.
- Publication from our collaboration with Children's of Colorado reporting the use of acute kidney injury biomarkers to predict an increase in serum milrinone concentration earlier than serum creatinine-defined acute kidney injury in infants after cardiac surgery.
- Publication of the epidemiology of healthcare-associated infections in pediatric CICUs using the PC4 database.
- Completed our enrollment of patients in a prospective study of intraoperative adrenal insufficiency undergoing cardiopulmonary bypass surgery with and without preoperative steroids.
- Received funding from Octapharma USA, Inc to review our data of patients who received pooled plasma during cardiopulmonary bypass versus those who received standard hospital issued single-donor plasma. We are currently enrolling patients in phase 3 trial into the use of L-citrulline to prevent pulmonary injury after cardiopulmonary bypass surgery.
- Currently enrolling in a phase 3 trial randomizing subjects to edoxaban tosylate versus standard of care therapy for prevention of thromboembolic events children with heart disease.
- We are 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.

- We initiated enrollment in the first ever national collaboration looking at standardizing immunosuppressant therapy six months post-cardiac transplantation.
- We have initiated the process for participation in a new device trial for total artificial heart implantation.
- We are in the process of finalizing the process to initiate a post-approval study implanting the SAPIEN XT Transcatheter Heart Valve.
- We are completing the process for our participation in a phase 4 trial randomizing subjects to apixaban to standard of care therapy for treatment of venous thromboembolism.
- We participated in a collaborative collecting data on pediatric cardiac transplant patient whos also had BARTH syndrome.
- Continue to collect specimens for our biorepository, now with more than 500 individual patient samples.
- Completed data collection in a collaborative trial with Children's of Colorado looking at acute kidney injury after the Norwood procedure.
- Contributed data to the national collaborative looking at coronary artery fistula.
- Our division had nine poster research presentations at scientific conferences in 2018: three of these were accepted as oral presentations as well.

## SIGNIFICANT PUBLICATIONS

*Am J Med.* 2018;131(6):e261-e262. *To reduce stroke with PFO Closure, Respect the Shunt.* Chatterjee A, **Law MA.**

*Ann Pediatr Cardiol.* 2018 Sep-Dec;11(3):300-303. doi: 10.4103/apc.APC\_26\_18. *Successful Angiojet® aortic thrombectomy of extracorporeal membrane oxygenation-related thrombus in a newborn.* Gutierrez ME, Alten JA, **Law MA.**

*Congenit Heart Dis.* 2018 Oct 20. doi: 10.1111/chd.12685. *Frontiers in Fontan failure: Innovation and improving outcomes: A conference summary.* Ephrem G, **Hebson C,** John A, Moore E, Jokhadar M, Ford R, Veldtman G, Dori Y, Gurvitz M, Kogon B, Kovacs A, Roswick M, McConnell M, Book WM, Rodriguez F 3rd.

*Congenit Heart Dis.* 2018 Nov 28. doi: 10.1111/chd.12720. *Pediatric dysautonomia: Much-maligned, often overmedicated, but not as complex as you think.* **Hebson CL,** McConnell ME, Hannon DW.

*JACC Cardiovasc Interv.* 2018;11(16):e129-e130. *Transcatheter Repair of Pulmonary Venous Baffle Stenosis.* Chatterjee A, Miller NJ, Cribbs MG, **Law MA.**

*JACC Cardiovasc Interv.* 2018;11(6):e45-e46. *Transcatheter closure of pulmonary arteriovenous malformation to facilitate treatment of pulmonary arterial hypertension.* Chatterjee A, Jackson AE, Acharya D, **Law MA.**

*JACC Cardiovasc Interv.* 2018;11(1):98-99. *Multimodality imaging of rare adult presentation of ALCAPA treated with Takeuchi repair.* Chatterjee A, Watts TE, Mauchley DC, Iskandrian AE, **Law MA.**

*J Extra Corpor Technol.* 2018;50(4):217-224. *Impact of Hemolysis on Acute Kidney Injury and Mortality in Children Supported with Cardiac Extracorporeal Membrane Oxygenation.* **Borasino S,** Kalra Y, Elam AR, Carlisle O'Meara L, Timpa JG, Goldberg KG, Collins Gaddis JL, Alten JA.

*J Pediatr Gastroenterol Nutr.* 2018;67(1):e12-e13. *Aortitis with an aneurysm at initial presentation of Crohn's Disease.* Talathi S, Mannion M, **Colvin E,** Beck A, Dabal R, Maclin J, Dimmitt R, Jester T.

*J Pediatr Gastroenterol Nutr.* 2018 Mar 5. doi: 10.1097/MPG.0000000000001945. *Cardiovascular involvement at initial presentation of Crohn's Disease.* Talathi S, Mannion M, **Colvin E,** Beck A, Dabal R, Maclin J, Dimmitt R, Jester T.

*Pediatr Cardiol.* 2018;39(3):644-645. *Correction to: Routine Sildenafil Does Not Improve Clinical Outcomes After Fontan Operation.* Collins JLG, **Law MA, Borasino S,** Erwin WC, Cleveland DC, Alten JA.

*Pediatr Cardiol.* 2018. *The case for cardiac xenotransplantation in neonates: Is now the time to reconsider xenotransplantation for hypoplastic left heart syndrome?* Cleveland D, Adam Banks C, Hara H, **Carlo WF,** Mauchley Dc, Cooper DKC.

*Pediatr Crit Care Med.* 2018 XX:00-00. Doi:10.1097/PCC.0000000000001783. *Positive Airway Pressure Versus High-Flow Nasal Cannula for Prevention of Extubation in Infants After Congenital Heart Surgery.* Richter RP, Alten JA, King RW, Gans AD, AKM FR, Kalra Y, **Borasino S.**

*Pediatr Crit Care Med.* 2018 Apr;19(4):310-317. doi: 10.1097/PCC.0000000000001478. *Furosemide Response Predicts Acute Kidney Injury After Cardiac Surgery in Infants and Neonates.* **Borasino S,** Wall KM, Crawford JH, Hock KM, Cleveland DC, Rahman F, Martin KD, Alten JA.

*Pediatr Infect Dis J.* 2018;37(8):768-772. *The Epidemiology of Healthcare-associated Infections in Pediatric Cardiac Intensive Care Units.* Alten JA, Rahman AKMF, **Zaccagni HJ,** Shin A, Cooper DS, Blinder JJ, Retzlaff L, Aban IB, Graham Em, Zampi J, Domnina Y, Gaies MG.

*PLoS One.* 2018 Nov 7;13(11):e0205925. doi: 10.1371/journal.pone.0205925. eCollection 2018. *Catecholaminergic polymorphic ventricular tachycardia patients with multiple genetic variants in the PACES CPVT Registry.* Roston TM, Haji-Ghassemi O, LaPage MJ, Batra AS, Bar-Cohen Y, Anderson C, **Lau YR,** Maginot K, Gebauer RA, Etheridge SP, Potts JE, Van Petegem F, Sanatani S.

*Thromb Haemost.* 2018 Dec 31. doi: 10.1055/s-0038-1676794. *Platelet Glycoprotein VI Haplotypes and the Presentation of Paediatric Sepsis.* **Asfari A,** Dent JA, Corken A, Herington D, Kaliki V, Sra N, Hefley G, Pasala S, Proadhan P, Ware J.

## PARTICIPATION IN NATIONAL RESEARCH AND QUALITY IMPROVEMENT

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





# 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., is 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 is co-principal investigator. This is an extensive analysis of the findings of 574 children examined for sexual abuse from 1991-2004. This is the first study of medical findings on children being assessed for potential sexual abuse from Alabama.

*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 gonorrhoea*, *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.

## DIVISION AWARDS & RECOGNITION | EXTRAMURAL AWARDS & LEADERSHIP ROLES

**Michael Taylor, M.D.**, is a member of the Alabama Child Death Review System State Child Death Review Team.

**David Bernard, M.D.**, serves as the medical director of Children's of Alabama Sexual Assault Nurse Examiner (SANE) Program and serves on the Shelby County Multidisciplinary Team and the Shelby County Child Death Review Committee.

**Melissa Peters, M.D.**, serves both the Child Death Review Committees and the Multidisciplinary Teams for the city of Bessemer and for Jefferson County. She also serves on the 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

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



## FEATURED RESEARCH

The 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 has NIH funding to delineate the role and impact of protease dysregulation in the pathogenesis of Respiratory Syncytial Virus (RSV)-induced respiratory failure in children, and is the PI of a randomized controlled trial (RCT) of azithromycin treatment in severe pediatric RSV infection. Dr. Kong is also 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; and 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).

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 Pediatric Critical Care quality improvement efforts with two major projects this year, including early mobility and delirium screening. In addition, her team manages 10 ongoing quality improvement projects within the PICU. These inter-professional projects range from reduction in length of stay for post-operative adolescent spinal fusion patients to standardization in management of patients with severe neurologic injury or shock. 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., is leading 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 Dr. 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

*Academic Medicine*. July 2018; 93(7):1014-20. *Gamification in action: theoretical and practical considerations for medical educators*. **Rutledge C**, Walsh CM, Swinger N, Auerbach MA, Castro D, Dewan M, et al.

*Am J Respir Crit Care Med*. 2018 Aug 16. doi: 10.1164/rccm.201804-0678OC. *Early 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, Alkhouli MF, Ratiu AE, McKenzie AV, McQuillen PS, Dvorak CC, Calfee CS, Matthay MA, Sapru A.

*Ann Pediatr Child Health* (2018) 6(2): 1145. *Newborn Nursery Emergencies: Simulating the First Five Minutes*. Jackson D, Chilukuri P, **Rutledge C**, Gaither S, Sawyer K, et al.

*Clin Pediatr (Phila)*. 2018 Sep 27:9922818803402. doi: 10.1177/0009922818803402. *Legionnaire's Disease in an Immunocompetent Host: An Unlikely Diagnosis*. Sims AN, Lewis BS, **Prabhakaran P**.

*Front Pediatr*. 2018 Sep 18;6:252. doi: 10.3389/fped.2018.00252. eCollection 2018. *Viral Sepsis in Children*. Gupta N, **Richter R**, Robert S, **Kong M**.

*JAMA Pediatr*. 2018; Oct 29; doi: 10.1001/jamapediatrics.2018.3774. *Sensory Processing Challenges in Children*. **Kong M**, Moreno MA.

*JMIR Med Inform*. 2018 Jun 4;6(2):e10264. doi: 10.2196/10264. *Health Information Technology in Healthcare Quality and Patient Safety: Literature Review*. Feldman SS, Buchalter S, **Hayes LW**.

*J of Pediatric Nursing*. 2018;44(3):111-115. *Tracheostomy education for parents utilizing simulation: a new paradigm in parental education*. **Tofil NM**, Schier S, Benningfield B, Cooper A, Sloane PA, Zinkan JL, Norwood C, Wise K, **Rutledge C**.

*Medical Science Educator*. 2018 December; 28(4). 601-607. doi: 10.1007/s40670-018-0586-6. *A Simulation-Enhanced Curriculum to Improve Resident Knowledge and Skills in Smoking Cessation Treatment*. Walley, S.C., Schaefer, S., Tyner, T., Walker, K., Powell, J., Tarn, V., Troxler B, Aban I, **Tofil, N**.

*Minerva Pediatr*. 2018 Jul 23. doi: 10.23736/S0026-4946.18.05338-0. *Clinically relevant cardiopulmonary interactions for the pediatric intensivists*. **Sasser WC**, Sims AN, Loberger JM, **Tofil NM**, **Prabhakaran P**.

*Pediatr Crit Care Med*. 2018 Mar;19(3):266-267. doi: 10.1097/PCC.0000000000001434. *Renal Replacement Therapy in the United Kingdom: The Devil Is in the Details*. **Richter RP**, **Prabhakaran P**, **Tofil NM**.

*Pediatr Crit Care Med*. 2018 XX:00-00. Doi:10.1097/PCC.0000000000001783. *Positive Airway Pressure Versus High-Flow Nasal Cannula for Prevention of Extubation in Infants After Congenital Heart Surgery*. **Richter RP**, Alten JA, King RW, Gans AD, AKM FR, Kalra Y, Borasino S.

*PQS*. 2018. *Quality improvement initiative to improve time to antibiotics for pediatric patients with fever and potential neutropenia*. Monroe K, Cohen CT, Whelan K, King A, Mahoney L, Deason L, Nichols JC, Friedman G, Kutny M, **Hayes LW**.

*Resuscitation*. 2018 Jul 3;130:111-117. doi: 10.1016/j.resuscitation.2018.06.035. *Impact of a CPR feedback device on healthcare provider workload during simulated cardiac arrest*. Brown LL, Lin Y, **Tofil NM**, Overly F, Duff JP, Bhanji F, Nadkarni VM, Hunt EA, Bragg A, Kessler D, Bank I, Cheng A; International Network for Simulation-based Pediatric Innovation, Research, Education CPR Investigators (INSPIRE).

*Resuscitation*. 2018 Aug 24. pii: S0300-9572(18)30797-4. doi: 10.1016/j.resuscitation.2018.08.021. *Optimizing CPR Performance with CPR Coaching for Pediatric Cardiac Arrest: A Randomized Simulation-based Clinical Trial*. Cheng A, Duff JP, Kessler D, **Tofil NM**, Davidson J, Lin Y, Chatfield J, Brown LL, Hunt EA; International Network for Simulation-based Pediatric Innovation, Research and Education (INSPIRE) CPR Investigators. Collaborator Nye M, Gaither S, Collier H, MacKinnon L, Lowe K, Lambert V.

*Shock*. 2018 Oct 4. doi: 10.1097/SHK.0000000000001267. *Plasma Angiotensin-2/-1 Ratio is Elevated and Angiotensin-2 Levels Correlate with Plasma Syndecan-1 Following Pediatric Trauma*. **Richter RP**, Russell RT, Hu PJ, Uhlich RM, Swain TA, Kerby JD, Pittet JF, Richter JR.

*Simul Healthc*. 2018 Jan 25. doi: 10.1097/SIH.0000000000000281. *Leveraging Quick Response Code Technology to Facilitate Simulation-Based Leaderboard Competition*. Chang TP, Doughty CB, Mitchell D, **Rutledge C**, Auerbach MA, Frisell K, Jani P, Kessler DO, Wolfe H, MacKinnon RJ, Dewan M, Pirie J, Lemke D, Khattab M, **Tofil N**, Nagamuthu C, Walsh CM; INSPIRE In-Hospital Q CPR Leaderboard Investigators.

*Transpl Infect Dis*. 2018 Mar 23:e12882. doi: 10.1111/tid.12882. *A multicenter investigation of respiratory syncytial viral infection in children with hematopoietic cell transplantation*. Rowan CM, Gertz SJ, Zinter MS, Moffet J, Bajwa RP, Barnum JL, **Kong M**; Hematopoietic Cell Transplant group of the Pediatric Acute Lung Injury Sepsis Investigator (PALISI) network.

### DIVISION AWARDS & RECOGNITION | EXTRAMURAL AWARDS & LEADERSHIP ROLES | PARTICIPATION IN NATIONAL RESEARCH, QUALITY IMPROVEMENT & LEARNING NETWORKS

**Nancy Tofil, M.D., M.Ed.**, was elected to membership in the Society for Pediatric Research (SPR). The goal of SPR is to create a network of multidisciplinary researchers to improve child health.

**Michele Kong, M.D.**, was chosen as a 2018 Woman of Distinction for the Girl Scouts of North-Central Alabama. The Girl Scouts have been honoring Women of Distinction in Alabama since 1993. The Women of Distinction Award honors women who have made special contributions to their communities through civic, academic, or professional efforts and who are exemplary role models for today's girls. She was also selected to participate in Leadership Birmingham and completed the program in 2018. Leadership Birmingham programs explore our community's critical issues in education, government, health care, social services, diversity, criminal justice, economic development and quality of life.

**Chrystal Rutledge, M.D.**, was chosen as one of Birmingham Magazine's 2018 Women Who Shape the State.

**Leslie Hayes, M.D.**, serves as the UAB Medicine Associate Quality Education Officer. She is also an associate professor in the School of Health Professions, Department of Health Services Administration with the Healthcare Quality and Safety (HQS) Graduate Programs. She is the associate medical director for the UAB Medicine Quality Academy, teaching four graduate courses at the School of Health Professions. She has created a new course within the HQS Master's Degree Program, "Advanced Data Use in Quality Improvement and Patient Safety, HQS 613." She additionally oversees HQS Master's Degree students' capstone projects. At the Health System level, she is one of two instructors for the UAB Medicine Mini-Quality Academy, which is offered monthly for residents, fellows and other frontline providers across the health system.



# Developmental & Behavioral Pediatrics

## PEDIATRIC FACULTY

**Dr. Myriam Peralta-Carcelen** Interim Director | Professor  
Dr. Allison Cavender Assistant Professor  
Dr. Snehal Khatri Associate Professor  
Dr. Justin Schwartz Assistant Professor  
Dr. Kimberly Stringer Associate Professor



## FEATURED RESEARCH

The UAB Division of Developmental and Behavioral Pediatrics is an active participant in the Eunice Kennedy Shriver National Institute of Child Health and Human Development (NICHD) Neonatal Research Network (NRN). Myriam Peralta-Carcelen, M.D., is the follow-up PI for the center at UAB. Developmental-Behavioral Pediatrics works with UAB Neonatology and other investigators to assess the long-term outcomes among infants who participate in the Eunice Kennedy Shriver National Institute of Child Health and Human Development Neonatal Research Network. Recent completed studies include the NICHD NRN SUPPORT Neuroimaging and Neurodevelopmental Outcomes and research on the impact of prematurity on behavioral and socio-emotional outcomes.

## SIGNIFICANT PUBLICATIONS

*Clin Perinatol*. 2018 Sep;45(3):529-546. doi: 10.1016/j.clp.2018.05.003. Epub 2018 Jun 18. *Behavioral and Socioemotional Development in Preterm Children*. **Peralta-Carcelen M, Schwartz J**, Carcelen AC.

*J Pediatr*. 2018 Oct 3. pii: S0022-3476(18)31233-2. doi: 10.1016/j.jpeds.2018.08.059. *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. Carlo WA, Ambalavanan N, Biasini FJ, et al.

*Neonatology*. 2018 Jan 24;113(3):256-262. doi: 10.1159/000484399. *Dose-Response Effects of Early Vitamin D Supplementation on Neurodevelopmental and Respiratory Outcomes of Extremely Preterm Infants at 2 Years of Age: A Randomized Trial*. Salas AA, Woodfin T, Phillips V, **Peralta-Carcelen M**, Carlo WA, Ambalavanan N.

*Pediatrics*. 2018 Jun 26. pii: e20174058. doi: 10.1542/peds.2017-4058. *Preterm Neuroimaging and School-Age Cognitive Outcomes*. Hintz SR, Vohr BR, Bann CM, Taylor HG, Das A, Gustafson KE, Yolton K, Watson VE, Lowe J, DeAnda ME, Ball MB, Finer NN, Van Meurs KP, Shankaran S, Pappas A, Barnes PD, Bulas D, Newman JE, Wilson-Costello DE, Heyne RJ, Harmon HM, **Peralta-Carcelen M**, Adams-Chapman I, Duncan AF, Fuller J, Vaucher YE, Colaizy TT, Winter S, McGowan EC, Goldstein RF, Higgins RD; SUPPORT study group of the Eunice Kennedy Shriver National Institute of Child Health and Human Development Neonatal Research Network.

*Res Dev Disabil*. 2018 Aug 6;83:18-27. doi: 10.1016/j.ridd.2018.07.012. *Measuring the involvement in family life of children with autism spectrum disorder: A DBPNet study*. **Schwartz J**, Huntington N, Toomey M, Laverdiere M, Bevans K, Blum N, Bridgemohan C.

## DIVISION AWARDS & RECOGNITION | EXTRAMURAL AWARDS & LEADERSHIP ROLES | PARTICIPATION IN NATIONAL RESEARCH, QUALITY IMPROVEMENT & LEARNING NETWORKS

**Justin Schwartz, M.D.**, and **Snehal Khatri, M.D.**, joined the Innovation's Academy's "Train the Trainer" program. This program is a unique, inter-professional approach to analyze and develop solutions for current challenges in healthcare delivery. The program hopes that participants will return to their respective units armed with new knowledge and a thorough understanding of the process of innovating at UAB Medicine. A key goal of this academy is the creation of a cohort of innovation coaches dispersed throughout our organization.

**Snehal Khatri, M.D.,** and **Justin Schwartz, M.D.,** were named among Birmingham Parent's Favorite Kids' Docs 2018. Doctors were nominated by Birmingham Parent readers for providing the best care for their children. They were recognized along with other honorees in the December issue of Birmingham Parents.

The Division of Developmental and Behavioral Pediatrics is home to the Newborn Follow-up Program, which participates as a follow-up site in the NICHD neonatal research network. Dr. Waldermar Carlo from Neonatology is the PI for the UAB center of the NEONATAL RESEARCH NETWORK, and Dr. Myriam Peralta is the follow-up PI for the UAB center of the NRN.

**Myriam Peralta, M.D.,** is executive member of the Section of Developmental and Behavioral pediatrics from the American Academy of Pediatrics. Dr. Peralta 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 also 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.,** is 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 regards to early childhood development and achieve policy change and sustainability based on the novel system developed.

**Project ECHO:** Autism has completed a cycle in 2018. Our multidisciplinary, cross-organizational team connected with primary care providers in pediatrics and family medicine to promote best practices in autism care. Project ECHO® (Extension for Community Healthcare Outcomes) is a live videoconferencing model that hosts educational events between the subspecialists 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



# Pediatric Emergency Medicine

## PEDIATRIC FACULTY

<b>Dr. Peter Glaeser</b>	<b>Director</b>   Professor
Dr. Mark Baker	Associate Professor
Dr. Steven Baldwin	Professor
Dr. Judson Barber	Professor
Dr. David Bernard	Professor
Dr. Christine Campbell	Assistant Professor
Dr. Christina Cochran	Assistant Professor
Dr. Teresa Coco	Associate Professor
Dr. Valerie Davis	Associate Professor
Dr. Matt Digman	Assistant 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. Christopher Pruitt	Associate Professor
Dr. James Sedlis	Assistant Professor
Dr. Annalise Sorrentino	Professor
Dr. Marjorie Lee White	Professor

## FEATURED RESEARCH

Researchers in the 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 of Pediatric Emergency Medicine has additional important research focus areas including:

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

## SIGNIFICANT PUBLICATIONS

*Am J Emerg Med* 2018 Mar; 36(3):446-9. Doi: 10.1016/j.ajem.2017.08.057. *Predictors of emergency department discharge following pediatric drowning.* Cantu RM, **Pruitt CM**, Samuy N, Wu CL.

*Hosp Pediatr*. 2018 Jun 28. pii: hpeds.2018-0002. doi: 10.1542/hpeds.2018-0002. *Time to Pathogen Detection for Non-ill Versus Ill-Appearing Infants ≤60 Days Old With Bacteremia and Meningitis.* Aronson PL, Wang ME, Nigrovic LE, Shah SS, Desai S, **Pruitt CM**, Balamuth F, Sartori L, Marble RD, Rooholamini SN, Leazer RC, Woll C, DePorre AG, Neuman MI; Febrile Young Infant Research Collaborative.

*Journal of Pediatrics*. 2018 Oct 5. pii: S0022-3476(18)31240-X. doi: 10.1016/j.jpeds.2018.08.066. PMID 30297292. *Factors Associated with Adverse Outcomes among Infants ≤60 Days of Age with Invasive Bacterial Infections.* **Pruitt CM**, Neuman MI, Shah SS, Woll C, Wang ME, Alpern ER, Shabanova V, Williams DJ, Sartori L, Desai S, Leazer RC, Marble RD, McCulloh RJ, DePorre AG, Rooholamini SN, Lumb C, Balamuth F, Shin S, Aronson PL, for the Febrile Young Infant Research Collaborative.

*J Pediatr*. 2018 May 18. pii: S0022-3476(18)30587-0. doi: 10.1016/j.jpeds.2018.04.033. *Epidemiology and Etiology of Invasive Bacterial Infection in Infants ≤60 Days Old Treated in Emergency Departments.* Woll C, Neuman MI, **Pruitt CM**, Wang ME, Shapiro ED, Shah SS, McCulloh RJ, Nigrovic LE, Desai S, DePorre AG, Leazer RC, Marble RD, Balamuth F, Feldman EA, Sartori LF, Browning WL, Aronson PL; Febrile Young Infant Research Collaborative.

*Pediatrics*. 2018 Jan 3. pii: e20171688. doi: 10.1542/peds.2017-1688. *Herpes Simplex Virus Infection in Infants Undergoing Meningitis Evaluation.* Cruz AT, Freedman SB, Kulik DM, Okada PJ, Fleming AH, Mistry RD, Thomson JE, Schnadower D, Arms JL, Mahajan P, Garro AC, **Pruitt CM**, Balamuth F, Uspal NG, Aronson PL, Lyons TW, Thompson AD, Curtis SJ, Ishimine PT, Schmidt SM, Bradin SA, Grether-Jones KL, Miller AS, Louie J, Shah SS, Nigrovic LE; HSV Study Group of the Pediatric Emergency Medicine Collaborative Research Committee.



*Pediatrics*. 2018 Aug 30. pii: e20182460. doi: 10.1542/peds.2018-2460. PMID: 30166368 *Child Passenger Safety*. Durbin DR, Hoffman BD; COUNCIL ON INJURY, VIOLENCE, AND POISON PREVENTION (**Monroe K**).

*Pediatrics*. 2018 Oct;142(4). pii: e20182163. doi: 10.1542/peds.2018-2163. PMID: 30249622 *The Teen Driver*. Alderman EM, Johnston BD; COMMITTEE ON ADOLESCENCE; COUNCIL ON INJURY, VIOLENCE, AND POISON PREVENTION (**Monroe K**).

*Pediatrics*. 2018 Nov 13. pii: e20181879. doi: 10.1542/peds.2018-1879. *Risk Stratification of Febrile Infants  $\leq 60$  Days Old Without Routine Lumbar Puncture*. Aronson PL, Wang ME, Shapiro ED, Shah SS, DePorre AG, McCulloh RJ, **Pruitt CM**, Desai S, Nigrovic LE, Marble RD, Leazer RC, Rooholamini SN, Sartori LF, Balamuth F, Woll C, Neuman MI; Febrile Young Infant Research Collaborative.

*Pediatr Emerg Care*. 2018 Jul 24. doi: 10.1097/PEC.0000000000001559. *Certified Child Life Specialists Lessen Emotional Distress of Children Undergoing Laceration Repair in the Emergency Department*. Hall JE, Patel DP, Thomas JW, Richards CA, Rogers PE, **Pruitt CM**.

*Pediatr Qual Saf*. 2018 Aug 9;3(4):e095. doi: 10.1097/pq9.000000000000095. eCollection 2018 Jul-Aug. PMID: 30229205. *Quality Initiative to Improve time to Antibiotics for Febrile Pediatric Patients with Potential Neutropenia*. **Monroe K**, Cohen CT, Whelan K, King A, Maloney L, Deason J, Nichols JC, Friedman GK, Kutny M, Hayes L.

*Simul Healthc*. 2018 Apr 18. doi: 10.1097/SIH.0000000000000311. *Concepts for the Simulation Community: Development of the International Simulation Data Registry*. Calhoun AW, Nadkarni V, Venegas-Borsellino C, **White ML**, Kurrek M.

*Simul Healthc*. 2018 Sep 13. doi: 10.1097/SIH.0000000000000326. *Simulation Faculty Development: Continuing the Dialogue*. Peterson DT, Watts PI, Epps CA, **White ML**.

### EXTRAMURAL AWARDS & LEADERSHIP ROLES

**Kathy Monroe, M.D.**, is an elected member of the Executive Council for Injury, Violence, and Poison Prevention for the American Academy of Pediatrics (AAP) nationally.

**Marjorie Lee White, M.D., MPPM, MA**, is active in the international simulation community. She serves on the executive committee of the International Simulation Data Registry, the executive committee of the American Academy of Pediatrics' provisional Section on Simulation and Innovative Learning and a board subcommittee of the International Pediatric Simulation Society.

**Chris Pruitt, M.D.**, was elected to the Executive Committee of the National Pediatric Emergency Medicine Clinical Research Network and also to the SSPR Council.

**Annalise Sorrentino, M.D.**, is an elected member of the national American College of Emergency Physicians (ACEP) Steering Committee and the Education Chair of the Alabama chapter of American College of Emergency Physicians. She is also the medical director of an annual 9-state regional conference sponsored by ACEP.

**Steve Baldwin, M.D.**, is an elected member of the board of the Alabama chapter of American College of Emergency Physicians (ACEP).

**Mark Baker, M.D.**, 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.**, 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.**, is on the Business Model Committee of the National Association of Program Directors and also served as a moderator for the annual meeting of the Injury Free Coalition for Kids.

**Terri Coco, M.D.**, is a member of the national American Academy of Pediatrics (AAP) Urgent Care Committee and the subcommittee responsible for writing a fellowship curriculum.



# Pediatric Endocrinology

## PEDIATRIC FACULTY

<b>Dr. Kenneth McCormick</b>	<b>Director</b>   Professor
Dr. Hussein Abdul-Latif	Professor
Dr. Ambika Ashraf	Professor
Dr. Joycelyn Atchison	Professor
Dr. Giovanna Beauchamp	Assistant Professor
Dr. Pallavi Iyer	Associate Professor
Dr. Rose James	Instructor
Dr. Gail Mick	Professor
Dr. Mary Lauren Scott	Associate Professor
Dr. Michael Stalvey	Associate Professor



## FEATURED RESEARCH

The Division of Pediatric Endocrinology research encompasses cystic fibrosis, type 1 diabetes, lipoprotein metabolism, congenital hypothyroidism and the effect of pyridine nucleotides on both endoplasmic reticulum redox and calcium uptake.

### Cystic Fibrosis

Research in cystic fibrosis (CF) assessed the frequency of endocrine comorbidities in CF patients. Specifically, the reduced growth and osteoporosis seen in CF patients are multifactorial but interrelated. Reduced growth in CF is associated with reduced lung health and life expectancy. In addition, poor bone health and CF-related bone disease can lead to increased fractures and decrease the likelihood for lung transplantation. Ongoing research suggests an intrinsic defect exists in CF that predisposes to problems with bone metabolism and normal growth. These pathogenic abnormalities can be noted even in the absence of other CF complications.

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)" and "PROMISE-Endocrine Sub-study". This prospective, multicenter 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.

### Type 1 Diabetes

The pathogenesis of type 1 diabetes mellitus (T1DM) involves autoimmune destruction of pancreatic beta cells. Once hyperglycemia appears, more than 70% of islet beta cell mass has been destroyed; surviving beta cells represent the only reservoir for potential regeneration. Recent studies suggest that gamma aminobutyric acid (GABA) plays important metabolic roles in the pancreas through: promotion of insulin secretion by beta cells, suppression of glucagon secretion by alpha cells, activation of cell survival pathways protection against apoptosis and decrease in inflammation. GABA has been shown both to prevent and to reverse diabetes in animal models.

About 2.5 years ago, Kenneth McCormick, M.D., Gail Mick, M.D., and Heather Choat, M.D. (Endocrinology Fellow) initiated an investigator-hypothesized, double-blind, placebo-controlled intervention trial of GABA in children with new onset T1DM. Patient enrollment (n=105) was completed in June, 2018. Statistical data analysis will be completed by July, 2019. Notably, this is the first clinical trial of oral GABA in children with T1DM. To date, the vast majority of animal studies aiming to cure T1DM have focused on immune suppression to halt autoimmune pancreatic destruction. Studies of GABA avoid the toxicities and risks associated with immunosuppressive regimens, thus potentially improving the quality of life for T1DM patients. GABA has an excellent safety profile, with no serious side effects noted in our study.

### Lipoprotein Metabolism

Ambika Ashraf, M.D., is currently working on a research study of low carbohydrate diet in children with dyslipidemia and metabolic syndrome. Along with Bhavana Sunil, M.D. (Endocrinology Fellow), they will assess the aforesaid lipid lowering dietary outcome using NMR spectroscopy and vascular measures. In collaboration with Dr. McCormick, the cortisone / cortisol ratios in these patients will also be studied. 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- $\beta$  hydroxysteroid dehydrogenase in hepatocytes and adipocytes. Therefore, a low CHO diet will improve the disordered peripheral glucocorticoid metabolism characteristic of obesity.

## Congenital Hypothyroidism

As pertains to congenital hypothyroidism, the efficacy, cost and practicality of a second Alabama newborn screen measurement has been analyzed; a manuscript has been submitted for publication by Dr. Mick. Few states mandate second (follow-up) screening tests for congenital hypothyroidism.

## Effect of Pyridine Nucleotides

In rat hepatic endoplasmic reticulum (ER), a new pathway through which cortisol promotes glucose production was described. By reducing the pyridine nucleotide redox in the ER lumen via bidirectional 11- $\beta$  hydroxysteroid dehydrogenase, cortisol expands the lumen pool size of glucose-6-phosphate, thereby favoring hydrolysis. Moreover, steady-state Michaelis kinetic analysis confirms that the facilitated transport across the ER membrane preferentially delivers G6P to the terminal gluconeogenic enzyme (G6Pase). Another study addressed the dysregulation of adrenal glucocorticoid production as an etiology of the metabolic obesity syndrome. The endoplasmic adrenal P450 enzymes, CYP17 and CYP21, are essential for glucocorticoid synthesis. The polyunsaturated omega-3 and omega-6 fatty acids (PUFA) may ameliorate metabolic syndrome but it is unknown whether they have direct actions on CYP steroidogenic enzymes. Cortisol production was measured in a cell-free reaction and endoplasmic membrane lipid composition following arachidonic acid (20:4) exposure was determined by sequential window acquisition theoretical fragment ion spectra. Porcine adrenal microsomal CYP21 and CYP17 activities with cytosolic orientation were attenuated by an array of PUFA; the inhibition correlated with the number of the PUFA double bonds and carbon atoms. Endoplasmic enzymes with intraluminal activity were unaffected by PUFA. Finally, reciprocal enzyme velocity (Dixon) plots confirmed uncompetitive inhibition, that is, inhibitor binds only to the enzyme-substrate complex, not the free enzyme.

## SIGNIFICANT PUBLICATIONS

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*Curr Pediatr Rev*. 2018 Jan 16. doi: 10.2174/1573400514666180117092707. *Hospital Management of Severe Hypertriglyceridemia in Children*. **Ashraf A**, Valaiyapathi B.

*Curr Diabetes Rev*. 2018 Jun 7. doi: 10.2174/1573399814666180608074510. *Pathophysiology of Type 2 diabetes in Children and Adolescents*. Valaiyapathi B, Gower B, **Ashraf AP**.

*Endocr Pract*. 2018 Aug 7. doi: 10.4158/EP-2018-0106. PMID: 30084679. *Clinical Characteristics and Sequelae of Severe Hypertriglyceridemia in Pediatrics*. Trey Richardson, Stella Aslibekyan, **Ambika Ashraf**.

*Horm Res Paediatr*. 2018; 89:31-37. *Correlation of cosyntropin stimulation test and disease severity among children with fluid and catecholamine refractory shock in the pediatric and cardiovascular ICU*. **Iyer P**, Harrington B, Sibinga E, Fadrowski J, Amankwah EK.

*J Clin Lipidol*. 2018 Apr 3. pii: S1933-2874(18)30194-6. doi: 10.1016/j.jacl.2018.03.089. *Dyslipidemia is associated with pediatric nonalcoholic fatty liver disease*. Dowla S, Aslibekyan S, Goss A, Fontaine K, **Ashraf AP**.

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*J Clin Transl Endocrinol*. 2018 Nov 30;15:30-34. doi: 10.1016/j.jcte.2018.11.006. eCollection 2019 Mar. *Higher hemoglobin A1C and atherogenic lipoprotein profiles in children and adolescents with type 2 diabetes mellitus*. Pelham JH, Hanks L, Aslibekyan S, Dowla S, **Ashraf AP**.

*JMIR Diabetes*. 2018 Nov 5;3(4):e10909. doi: 10.2196/10909. *Transition Education for Young Adults With Type 1 Diabetes: Pilot Feasibility Study for a Group Telehealth Intervention*. Albanese-O'Neill A, **Beauchamp G**, Thomas N, Westen SC, Johnson N, Schatz D, Haller MJ.

*Journal of Theology and Sexuality*, volume 24, 2018- issue 3,pgs157-173. Published online: Feb 2018. *Same-Sex Unions in Islam*. Junaid Jahangir & **Hussein Abdul-Latif**

*Delayed Puberty, Endocrinology and Diabetes: a Problem-Oriented Approach*. Springer, ISBN 978-1-4614-8684-9. Second edition 2018. Colvin C., Devineni G., **Ashraf A**.

*Global Perspectives on Childhood Obesity* (2nd Ed) Elsevier/Academic Press. *Non Alcoholic Fatty Liver Disease in Children*. Shima Dowla, Amy Goss, **Ambika Ashraf**.

## DIVISION AWARDS & LEADERSHIP RECOGNITION

### Michael Stalvey, M.D.

- North American Cystic Fibrosis Conference—Symposium Co-Chair 2018
- Cystic Fibrosis Foundation—Physician Training Program Evaluation Working Group
- Cystic Fibrosis Foundation—Strategic Planning Group
- Cystic Fibrosis Foundation—Research and Research Training Grants Review Committee
- Cystic Fibrosis Foundation, Alabama Chapter—Board of Directors
- Cystic Fibrosis Foundation—Clinical Research Advisory Board
- 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
- National Sub-study PI: "Prospective Study to Evaluate Biological and Clinical Effects of Significantly Corrected
- CFTR Function (PROMISE) and PROMISE-Endocrine Sub-study (2018-2023)".

**Ambika Ashraf, M.D.**

- Co-chair, Education Council, Pediatric Endocrine Society (PES)
- Established Lipid Special Interest Group (SIG) within the Pediatric Endocrine Society (PES). Co-chair of the PES Lipid SIG.
- Chair Person for AAP National Conference and Exhibition (NCE), Section on Endocrinology (SOEn) the 2019 Annual NCE conference

**Ken McCormick, M.D.**

- Visiting professor in Endocrinology at the Department of Pediatrics, Shandong Provincial Hospital, Shandong University, Jinan, PR China

**Hussein Abdul-Latif, M.D.**

- Recipient of the UAB School of Medicine Argus Award for Best Clinical Instructor
- Recipient of the UAB School of Medicine Argus Award Best Clerkship: Department of Pediatrics

**Pallavi Iyer, M.D.**

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

### PARTICIPATION IN QI AND LEARNING NETWORKS

**Gail Mick, M.D. and Giovanna Beauchamp, M.D.-** The pediatric endocrine ECHO team was organized in November 2016. Project ECHO® (Extension for Community Healthcare Outcomes) is a live videoconferencing model that hosts educational events between the subspecialists 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. We worked with the American Academy of Pediatrics (AAP) to develop our Endo-ECHO and obtain formal certification in ECHO from the AAP ECHO super-hub (Chicago, IL). Our first Project ECHO "Pediatric Growth Disorders" ran during the summer 2017. The second Endo-ECHO was 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. Moreover, many rural healthcare providers are inadequately prepared and supported to deliver best-practice care of these disorders and their complex comorbidities. The Endo-ECHO team developed an innovative, best-practice curriculum and was able to recruit 59 providers from 16 Alabama counties to participate in the six-month, 12-session series. 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.



# Pediatric Gastroenterology, Hepatology, & Nutrition

## PEDIATRIC FACULTY

### Dr. Reed Dimmitt

Dr. Margaux Barnes

Dr. Nick CaJacob

Dr. Mitch Cohen

Dr. David Galloway

Dr. Marissa Gowey

Dr. Traci Jester

Dr. Rachel Kassel

Dr. Claire Keith

Dr. Mike Leonis

Dr. Jeanine Maclin

Dr. Jose Mestre

Dr. Gillian Noel

Dr. Janaina Nogueira

Dr. Amanda Soong

Dr. Neelesh Tipnis

Dr. Carter Wallace

**Director** | Professor

Assistant Professor

Assistant Professor

Professor

Assistant Professor

Assistant Professor

Assistant Professor

Assistant Professor

Instructor

Professor

Associate Professor

Professor

Assistant Professor

Associate Professor

Assistant Professor

Professor

Instructor



## FEATURED RESEARCH

The Division of 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 Gastrointestinal Eosinophilic Disease Program 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 are 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 U.S.
- Marissa Gowey, Ph.D., has developed a novel study to understand pediatric obesity. The program is a family-based program focusing on executive function. Since last year, she has begun enrolling families and collecting data for future research projects and funding.
- We have established our new Pediatric Liver Care Center. Mike Leonis, M.D., Ph.D., has joined our group and is leading this Center. We are involved in several multi-center collaborative projects involved in acute liver disease and liver transplantation.
- Michelle Mastin, Ph.D., and Margaux Barnes, Ph.D., 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.

- Neel Tipnis, M.D. is well known in the area of pediatric gastrointestinal motility. He has established a robust program at UAB/Children's of Alabama. He is currently studying motility issues associated with the esophagus.
- We are expanding our portfolio of clinical care, education and research in 2018 with the recruitment of new faculty and the development of the new Pediatric Liver Care Center.

## SIGNIFICANT PUBLICATIONS

*Am J Clin Pathol*. 2018 Oct 24. doi: 10.1093/ajcp/aqy146. *Optimization of Laboratory Ordering Practices for Complete Blood Count With Differential*. Shen JZ, Hill BC, Polhill SR, Evans P, **Galloway DP**, Johnson RB, Reddy VVB, Bosarge PL, Rice-Jennings LA, Lorenz RG.

*BMJ Case Rep*. 2018 Jul 24;2018. pii: bcr-2018-224536. doi: 10.1136/bcr-2018-224536. *Small intestine polypoid arteriovenous malformation: a stepwise approach to diagnosis in a paediatric case*. Molina AL, **Jester T, Nogueira J, CaJacob N**.

*Clin Gastroenterol Hepatol*. 2018 Apr 30. pii: S1542-3565(18)30455-5. doi: 10.1016/j.cgh.2018.04.050. *A Learning Collaborative Approach Increases Specificity of Diagnosis of Acute Liver Failure in Pediatric Patients*. Narkewicz MR, Horslen S, Hardison RM, Shneider BL Rodriguez-Baez N, Alonso EM, Ng VL, **Leonis MA**, Loomes KM, Rudnick DAO, Rosenthal P, Romero R, Subbarao GC, Li R, Belle SH, Squires RH; Pediatric Acute Liver Failure Study Group.

*Ethn Health*. 2018 Jul 2:1-13. doi: 10.1080/13557858.2018.1493435. *Similar weight loss and maintenance in African American and White women in the Improving Weight Loss (ImWeL) trial*. Kinsey AW, **Gowey MA**, Tan F, Zhou D, Ard J, Affuso O, Dutton GR.

*Int J Obes (Lond)*. 2018 Dec 5. doi: 10.1038/s41366-018-0270-3. *Depressive symptoms, perceived stress, and metabolic health: The REGARDs study*. **Gowey MA**, Khodneva Y, Tison SE, Carson AP, Cherrington AL, Howard VJ, Safford MM, Dutton GR.

*JSM Arthritis*. 2017 Oct 5. *The Use of Concomitant Immunomodulators with Adalimumab Therapy in Pediatric Crohn's Disease*. Benkov KJ, Russell GH, Samson CM, Steiner SJ, King EC, Pratt J, Eichner SF, Colletti RB, and the Improve Care Now Network (additional contribution by **Traci Jester, M.D.** and others).

*J Pediatr*. 2018 Mar;194:109-115.e4. doi: 10.1016/j.jpeds.2017.10.066. *Frailty in Children with Liver Disease: A Prospective Multicenter Study*. Lurz E, Quammie C, Englesbe M, Alonso EM, Lin HC, Hsu EK, Furuya KN, Gupta NA, Venkat VL, Daniel JF, **Leonis MA**, Miloh T, Telega GW, Yap J, Menendez J, Book LS, Himes RW, Sundaram SS, Parekh R, Sonnenday C, Bucuvalas J, Ng VL, Kamath BM.

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*JPEN J Parenter Enteral Nutr*. 2018 Jul 23. doi: 10.1002/jpen.1316. *Serum Unconjugated Bile Acids and Small Bowel Bacterial Overgrowth in Pediatric Intestinal Failure: A Pilot Study*. **Galloway D**, Mezoff E, Zhang W, Byrd M, Cole C, Aban I, Kocoshis S, Setchell KD, Heubi JE.

*J Pediatr Gastroenterol Nutr*. 2018 Mar 5. doi: 10.1097/MPG.0000000000001945. *Cardiovascular involvement at initial presentation of Crohn's Disease*. Talathi S, Mannion M, Colvin E, Beck A, Dabal R, **Maclin J, Dimmitt R, Jester T**.

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## EXTRAMURAL AWARDS & LEADERSHIP ROLES

**Traci Jester, M.D., R.D.**, was invited to join the National Scientific Advisory Committee Cabinet of the Crohn's and Colitis Foundation to serve as co-chair of the Pediatric Affairs Committee. This is a three-year term from June 2018 to May 2021. Dr. Jester has served on the Pediatric Affairs Committee since June 2015.

**Margaux Barnes, Ph.D.**, was accepted into the Clinical Investigator Training Program at UAB. This program is a first of its kind at UAB, a collaborative effort of UAB's School of Medicine, Center for Clinical and Translational Science, Comprehensive Cancer Center and Department of Medicine and supported by funding from the Health Systems Foundation, General Endowment Fund and the Center for Clinical and Translational Science. The program is a pragmatic and hands-on program focused on preparing new investigators to plan and implement human subject investigation in a good clinical practice compliant manner.



# Pediatric Hematology & Oncology

## PEDIATRIC FACULTY

<b>Dr. Kim Whelan</b>	<b>Interim Director</b>   Associate 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	Associate Professor
Dr. Jeffrey Lebensburger	Associate Professor
Dr. Wayne Liang	Assistant Professor
Dr. Laura Metrock	Assistant Professor
Dr. Donna Murdaugh	Assistant Professor
Dr. Brandi Pernell	Assistant Professor
Dr. Purnima Singh	Assistant Professor
Dr. Avi Madan-Swain	Professor



Dr. Erik Westin	Instructor
Dr. Hope Wilson	Assistant Professor
Dr. Julie Wolfson	Assistant Professor
Dr. Ana Xavier	Associate Professor

## FEATURED RESEARCH

The Division of Pediatric Hematology & Oncology is committed to advancing research and taking findings from the bench to the bedside and then to the community. The division works in close collaboration with members of the UAB Comprehensive Cancer Center, the 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.

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 U.S. in 2016. To date, seven 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 bone and 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.

Matthew Kutny, M.D., serves as UAB's institutional Principal Investigator and is a member of the myeloid disease steering committee within the Children's Oncology Group. 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 auto or allo stem cell transplant as upfront consolidation therapy or for chemotherapy sensitive relapsed disease have resulted in improved survival for some patients 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 adolescents and young adults (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 rexinoids 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.

The 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 out of four of adults with sickle cell anemia. One recent pathway that he studies, 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 Pernell, 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 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.

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 Hope Wilson are collaborating with the 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 has also joined the ITP Consortium of North America to improve the care for children with Immunemediated thrombocytopenia.

Smita Bhatia, M.D., MPH, is the Bew and Gay White Endowed Chair in Pediatric Oncology and the founding director of the Institute for Cancer Outcomes and Survivorship (ICOS); several members of the division collaborate with and 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 12 faculty members with a primary research focus on cancer outcomes, with the total funding in FY 2018 of \$3.5M. Dr. Bhatia has published over 260 peer-reviewed publications and has 17,835 citations (10,674 since 2013), her Google Scholar H-INDEX is 71 (57 since 2013) and her i10-index is 198 (179 since 2013). She 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. She also received funding to understand the pathogenesis of therapy-related leukemia in patients with lymphoma receiving autologous stem cell transplantation. She continues to follow a cohort of 10,000 BMT survivors, attempting to determine the burden of morbidity borne by the survivors. Finally, she is working closely with Wendy Landier, Ph.D., to evaluate the efficacy of an adherence intervention to improve adherence to oral chemotherapy in children with acute lymphoblastic leukemia.

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 adolescents and young adults (AYAs) with acute lymphoblastic leukemia (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.

Wendy Landier, Ph.D., RN, 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. Dr. Bhatia has received funding from the Leukemia Lymphoma Society (LLS) to construct a cohort of 10,000 BMT survivors and understand the burden of morbidity borne by the survivors. This cohort of survivors 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. Funded by NIH, she has a multi-institutional study at >100 institutions to understand the molecular pathogenesis of treatment-related complications. Using this resource of >4,000 DNA samples, she has identified genomic variants that modify radiation-subsequent neoplasm and anthracycline-cardiac dysfunction association. This has led to improved models that identify survivors most at risk for radiation-related brain subsequent neoplasms. Dr. Bhatia is also developing FDA-approved and NIH-funded strategies to reduce the risk of radiation-related breast cancer in survivors of Hodgkin's lymphoma. Finally, Drs. Bhatia and Landier serve as co-PIs on a national trial funded by the NIH to improve adherence to oral chemotherapy in children with acute lymphoblastic leukemia treated at 85 institutions, which has led to recommendations regarding 6-mp intake during maintenance therapy for childhood ALL that are aimed to simplify administration in hopes of improving compliance and decreasing risk of relapse.

## SIGNIFICANT PUBLICATIONS

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## DIVISION AWARDS & RECOGNITION | EXTRAMURAL AWARDS & LEADERSHIP ROLES

**Smita Bhatia, M.D.**, was named to the National Academies of Sciences, Engineering and Medicine ad hoc Committee on National Strategy for Cancer Control in the United States.

**Smita Bhatia, M.D.**, was named a Fellow of the American Society of Clinical Oncology. The Fellow of the American Society of Clinical Oncology (FASCO) distinction recognizes ASCO members for their extraordinary volunteer service, dedication, and commitment to ASCO.

**Smita Bhatia, M.D., MPH**, received an Outstanding Investigator Award from the National Cancer Institute. The highly competitive award will enable Dr. Bhatia and her team to continue making promising advancements in pediatric oncology. Dr. Bhatia received a seven-year, \$6.2 million grant to continue her research into how personalized treatment of childhood cancer can further minimize toxicity. The award provides funding to investigators with exceptional records of productivity in cancer research to continue or embark upon new projects of unusual potential in cancer research. Award recipients are cancer researchers who have served as principal investigators on an NCI grant for the last five years and have demonstrated outstanding productivity.

**Jeffrey Lebensburger, D.O.**, was selected to lead a national panel for the FDA/American Society of Hematology (ASH) on end-organ complication of sickle cell disease. He also serves on the ASH Sickle Cell Clinical care guidelines committee and the ASH Clinical Research Training Institute.

**Jeffrey Lebensburger, D.O.**, has been selected to serve as the Incoming Clinical Research Training Institute (CRTI) Co-Director for the American Society of Hematology. Dr. Lebensburger will serve as Incoming Co-Director for a one-year term beginning July 1, 2019.

**Smita Bhatia, M.D.**, is a Leukemia Lymphoma Scholar, a recipient of the Frank H Oski award, and an elected member of the American Society of Clinical Investigation and the Association for American Physicians. Her service includes elected membership on the Executive Committee of the Children's Oncology Group and Board of Directors of the American Society of Clinical Oncology, appointment as Associate Chair of the Children's Oncology Group, appointment as a member of the Pediatric Cancer Working Group for the NCI Cancer "Moonshot" initiative, and appointment as a member of the National Academy of Science, Engineering and Medicine to develop a national strategy for Cancer Control.



# Pediatric Hospital Medicine

## PEDIATRIC FACULTY

<b>Dr. Robert Pass</b>	<b>Director</b>   Professor
Dr. Stephanie Berger	Assistant Professor
Dr. Emily Casey	Assistant Professor
Dr. Teresa Cornelius	Assistant Professor
Dr. Stewart Hill	Assistant Professor
Dr. Meghan Hofto	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	Assistant Professor
Dr. Erinn Schmit	Assistant Professor
Dr. Cassi Smola	Assistant Professor
Dr. Susan Walley	Professor
Dr. Chang Wu	Assistant Professor
Dr. Mark Anthony Zanni	Instructor



## FEATURED RESEARCH

The Division of Pediatric Hospital Medicine seeks to improve the system of care and care delivery to inpatients. Division faculty are prominently involved in training and education of medical students, resident physicians and pediatric hospital medicine fellows. Overall, faculty members in Pediatric Hospital Medicine devote over 80% of their professional time to patient care and medical education. Most research efforts of the division address questions related to those areas. A number of new studies have been completed late this year and have been submitted for publication.

In August 2015, Pediatric Hospital Medicine changed the system for admission of patients to the inpatient service with the goal of achieving a better match between patient load and physicians available to evaluate new patients. Prior to that date, patients were admitted to one of four inpatient hospital medicine teams during an on-call day (bolus system), which occurred every fourth day, a system commonly used in academic hospital settings for decades. Because the number of patients admitted during the day often exceeded the ability of the on-call team to provide timely evaluations and complete the process of admission we changed to a system in which patients are admitted to each team in rotation every weekday (drip system), which created a four-fold increase in the number of physicians available to evaluate new admissions each day. A retrospective study was conducted to assess the effects of this change on distribution of patients among teams and its impact on measures of resident education. Results of this study were presented at the annual Pediatric Hospital Medicine Meeting in July 2018 and have been submitted for publication, (*Continuous Rotation System for Admissions to Inpatient Teams: Impact on Workload and Education*, Berger, S, Nassetta, L, Hofto, M, Pass, RF).

Meghan Hofto, M.D., studied community-acquired pneumonia, one of the leading causes of hospitalization of children. Dr. Hofto's work has focused on the antibiotics that hospitalized children receive for this diagnosis. The results of a study based on data from Children's of Alabama were presented at the national Pediatric Hospital Medicine Meeting in May 2015, after which the study was expanded to include data on community-acquired pneumonia in over 28,000 patients from 46 U.S. children's hospitals. A key finding of that study was that there is wide variability across 46 children's hospitals in the proportion of patients treated with the important anti-staphylococcal antibiotics vancomycin and clindamycin, ranging from 2.9% to 29%, even though the average proportion of community-acquired pneumonia attributed to staph was 0.8% for the 46 children's hospitals. Results of that investigation are being reported in a manuscript submitted December 2018. (*Anti-staphylococcal Antibiotic Use in Hospitalized Children with Community Acquired Pneumonia*, Hofto ME, Samuy N, Huang MZ, McLeod M, Pass RF)

During fellowship, Erinn Schmit, M.D., worked on a multi-institution study of medical school clinical faculty that sought to identify characteristics of students that faculty members considered most important in scoring student performance on clinical rotations. Among 319 faculty members from five medical schools surveyed, the most valued characteristics in identifying high-performing medical students were professionalism, clinical reasoning and curiosity. The results were presented at a national meeting (International Association of Medical Science Educators, 2018) and will be published in 2019 in *Academic Medicine*. During fellowship, Adolfo Molina, M.D., studied outcomes of children who required inpatient treatment of asthma. He found that among children hospitalized with status asthmaticus, severity of chronic asthma and black race were significant predictors of hospital readmission within 12 months, while prescription refill history for asthma medications was not. The paper reporting his results (Molina, AL, Magruder, TG, Immaculada, A, Ward, L, Narayanan, S, Walley, S, *Predictors of hospital re-utilization among publicly insured children hospitalized for status asthmaticus*) has been accepted for publication in 2019 in *Hospital Pediatrics*. Both Drs. Schmit and Molina joined our faculty after completing their pediatric hospital medicine fellowship in July 2018.

## SIGNIFICANT PUBLICATIONS

*Am J Emerg Med* 2018 Mar; 36(3):446-9. Doi: 10.1016/j.ajem.2017.08.057. *Predictors of emergency department discharge following pediatric drowning.* Cantu RM, Pruitt CM, **Samuy N, Wu CL**

*BMJ Case Rep.* 2018 Jul 24;2018. pii: bcr-2018-224536. doi: 10.1136/bcr-2018-224536. *Small intestine polypoid arteriovenous malformation: a stepwise approach to diagnosis in a paediatric case.* **Molina AL**, Jester T, Nogueira J, CaJacob N.

*Clin Infect Dis.* 2018 Dec 31. doi: 10.1093/cid/ciy1129. *Prenatal Cytomegalovirus Infection: Timing is Everything.* **Pass RF**.

*F1000Research* 2018 Mar 1; 7. doi: 10.12688/f1000research.12517.1. *Maternal and fetal cytomegalovirus infection: Diagnosis, management, and prevention.* **Pass RF**, Arav-Boger R.

*J Virol.* 2018 Dec 5. pii: JVI.01695-18. doi: 10.1128/JVI.01695-18. *Intrahost dynamics of human cytomegalovirus variants acquired by seronegative glycoprotein B vaccinees.* Nelson CS, Cruz DV, Su M, Xie G, Vandergrift N, **Pass RF**, Forman M, Diener-West M, Koelle K, Arav-Boger R, Permar SR.

*Medical Science Educator.* 2018 December; 28(4). 601-607. doi: 10.1007/s40670-018-0586-6. *A Simulation-Enhanced Curriculum to Improve Resident Knowledge and Skills in Smoking Cessation Treatment.* **Walley, S.C.**, Schaefer, S., Tyner, T., Walker, K., Powell, J., Tarn, V., Troxler B, Aban I, Tofil, N.

*Pediatrics.* 2018 Jan 10. pii: e20170830. doi: 10.1542/peds.2017-0830. *Multisite Emergency Department Inpatient Collaborative to Reduce Unnecessary Bronchiolitis Care.* Mussman GM, Lossius M, Wasif F, Bennett J, Shadman KA, **Walley SC**, Destino L, Nichols E, Ralston SL.

*Pediatrics.* 2018 May 16. pii: e20173072. doi: 10.1542/peds.2017-3072. *Implementing Parental Tobacco Dependence Treatment Within Bronchiolitis QI Collaboratives.* **Walley SC**, Mussman GM, Lossius M, Shadman KA, Destino L, Garber M, Ralston SL.

*Proc Natl Acad Sci U S A.* 2018 Apr 30. pii: 201800177. doi: 10.1073/pnas.1800177115. *HCMV glycoprotein B subunit vaccine efficacy mediated by nonneutralizing antibody effector functions.* Nelson CS, Huffman T, Jenks JA, Cisneros de la Rosa E, Xie G, Vandergrift N, **Pass RF**, Pollara J, Permar SR.

## DIVISION AWARDS AND RECOGNITIONS | EXTRAMURAL AWARDS & LEADERSHIP ROLES

**Susan Walley, M.D.**, received the Becky Trigg Outstanding Woman UAB Faculty Member Award for 2018. The award is given out by the UAB Commission on the Status of Women to honor women in the UAB and Birmingham community who have mentored and served other women and taken a courageous stance or overcome adversity to achieve a goal.

**Susan Walley, M.D.**, was accepted into the UAB Healthcare Leadership Academy (HLA). The HLA is a collaboration between the Collat School of Business and the School of Medicine. The program offers training opportunities and develops leadership skills essential to academic healthcare. The program began in October 2018 and will conclude in May 2019.

**Susan Walley M.D.**, was elected Chair of the American Academy of Pediatrics Executive Committee for the Section on Tobacco Control.

**Stephanie Berger, M.D.**, received the 2018 Dean's Excellence Award for Excellence in Teaching. The Dean's Excellence Awards are an honor recognizing exceptional contributions made by School of Medicine faculty in service, teaching, research, diversity enhancement and mentorship.

**Adolfo Molina, M.D.**, received an award in November 2018 from the UAB Center for Clinical and Translational Science Research Voucher Program in support of his work titled "Residential Instability and Neighborhood Deprivation Associated with Worse Asthma Severity and Hospital Readmissions."

## PARTICIPATION IN NATIONAL RESEARCH, QUALITY IMPROVEMENT AND LEARNING NETWORKS

**Lauren Nassetta, M.D.**, is participating in a multi-institution research project, Pediatric Resident Burnout-Resilience Study Consortium, sponsored by the Association of Pediatric Program Directors. Dr. Nassetta is Associate Director of the UAB Pediatric Residency program and the site principal investigator for this project.

**Nichole Samuy, M.D.**, and Paul Scalici, M.D. are the site co-leads for a multi-institution study, Kawasaki Disease Comparative Effectiveness Trial (KIDCARE), a randomized clinical trial for patients who fail to improve significantly with the initial IVIG treatment. Clinical trial participants will be randomized to receive a second dose of IVIG or treatment with infliximab.

**Meghan Hofto, M.D.**, is participating in a multi-institution collaborative research project, Short Course vs Standard Course Outpatient Therapy of Community Acquired Pneumonia in Children. The project is funded by the National Institutes of Allergy and Infectious Diseases, Division of Microbiology and Infectious Diseases through a grant to Vanderbilt; UAB is subcontracted study site and Dr. Hofto is a co-investigator.



# Pediatric Infectious Diseases

## PEDIATRIC FACULTY

<b>Dr. Richard Whitley</b>	<b>Co-Director</b>   Professor
<b>Dr. David Kimberlin</b>	<b>Co-Director</b>   Professor
Dr. Suresh Boppana	Professor
Dr. William Britt	Professor
Dr. Maaïke Everts	Professor
Dr. Karen Fowler	Professor
Dr. Cecelia Hutto	Professor
Dr. Scott James	Assistant Professor
Dr. Larisa Pereboeva	Assistant Professor
Dr. Swetha Pinninti	Assistant Professor
Dr. Claudette Poole	Assistant Professor
Dr. Mark Prichard	Professor
Dr. Shannon Ross	Associate Professor
Dr. Veronica Sanchez	Assistant Professor
Dr. Sergio Stagno	Professor Emeritus



## FEATURED RESEARCH

The 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 decades, its programs have defined the basic science, natural history, diagnosis, and treatment of viral infections in infants and children. 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. These research programs were begun 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 five Ph.D.s. Collectively, these investigators are responsible for \$14.9 in NIH grant and contract support in FY2018, representing approximately 50% of all research funding for the UAB Department of Pediatrics. Division faculty currently hold seven R awards, 14 NIH contracts, one U award, two P awards, and two K awards, 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 major effort, led by Suresh Boppana, M.D., Karen Fowler, Ph.D., and Shannon Ross, M.D., is the completion of patient follow-up and data analyses of the National Institute on Deafness and Other Communication Disorders (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 include the development of a highly sensitive and specific PCR-based assay for testing newborn saliva samples to identify babies infected with CMV, lack of sensitivity of newborn blood spots collected for routine screening to detect CMV infected babies, 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.

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.), with the aim of identifying biomarkers for the development of hearing loss. 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. Boppana, Britt and Ross all lead robust laboratory research programs as well, with studies in basic molecular virology and of virus-host interactions. A significant effort 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.

### **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 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 will begin 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 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 subjects enrolled on the CASG studies of congenital CMV and neonatal HSV.

### **Antiviral Drug Development and Discovery Program**

Mark Prichard, Ph.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 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. Preclinical work performed in his laboratory 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, filociclovir (for CMV), N-Methanocarbathymidine (for VZV), and ABI-1968 (for HPV). More importantly, he applied the study of antiviral drug resistance to help understand the molecular mechanisms of action and to help manage their use in the clinic. He used molecular biology and reverse genetic techniques to identify the molecular targets of antiviral drugs in cytomegalovirus, herpes simplex virus and vaccinia virus, and went on to describe some of the essential functions of these enzymes in the replication of virus infection. Specifically, the CMV UL97 protein kinase was known to phosphorylate ganciclovir, and his basic research efforts over many years have helped to define its function by demonstrating that it was critical for lytic replication and also that it hyperphosphorylates the retinoblastoma protein. He also identified the CMV UL114 uracil DNA glycosylase as a critical component of the DNA replication complex. The UL114 open reading frame was also shown to encode a miRNA important for the control of the host immune response. Collaborative efforts with the Cooperative Antiviral Studies Group documented the development of resistance to antiviral therapies that arose during clinical trials and characterized the rates of resistance in pediatric patients.

### **Emerging Infections Program**

Maaiké Everts, 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 causing 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 principle studies in animal models, thereby delivering potential small molecule therapeutics to the government. The group will also evaluate 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 for chikungunya.

## SIGNIFICANT PUBLICATIONS

*Annu Rev Virol.* 2018 Sep 29;5(1):407-425. doi: 10.1146/annurev-virology-092917-043457. *Antiviral Approaches for the Treatment of Herpes Simplex Virus Infections in Newborn Infants.* **Poole CL, Kimberlin DW.**

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#### **DIVISION AWARDS & RECOGNITION | EXTRAMURAL AWARDS & LEADERSHIP ROLES | PARTICIPATION IN NATIONAL RESEARCH, QUALITY IMPROVEMENT & LEARNING NETWORKS**

**William Britt, M.D.**, was appointed as a Distinguished Professor in the School of Medicine in recognition of his outstanding academic accomplishments and peer recognition.

**Rich Whitley, M.D.**, received the Alexander Fleming Award for lifetime achievement by the Infectious Diseases Society of America. According to the IDSA, the Alexander Fleming Award for lifetime achievement is given "in recognition of a career that reflects major contributions to the acquisition and dissemination of knowledge about infectious diseases." Dr. Whitley also was awarded an Honorary Fellowship of the Royal College of Physicians of Ireland in recognition of his significant contribution to medicine. Honorary Fellowship is the highest honor that the College can bestow, and previous recipients have included presidents of Ireland, Nobel laureates, international philanthropic figures, and international royalty. It is reserved for world leaders in medical science and those who have made an exceptional contribution to society.

**Shannon Ross, M.D.**, was elected to the American Pediatric Society. Membership in the American Pediatric Society is reserved for individuals who are child health leaders, teachers, scholars, policymakers and/or clinicians who make important contributions to pediatrics. Dr. Ross's membership will begin on January 1, 2019.

#### **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, and COA and representation from Children's of Alabama 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 multi-drug resistant organisms. The team has worked to assure compliance with the Joint Commission antimicrobial stewardship standard that went into effect January 1, 2017. The ASP monitors monthly hospital antimicrobial use and reports this back to prescribers in the hospital. In addition, we monitor daily bug-drug mismatches, duplicate antimicrobials and high-risk antimicrobial use and make 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 twice yearly to help guide practitioners on appropriate antibiotic use. In November, the Children's of Alabama ASP, led by April Yarbrough, Pharm.D., BCPS, and Drs. Ross and Boppana, was featured in the Pew Charitable Trust's Antimicrobial Resistance Project.

#### **Infection Control**

The Infection Control and Prevention team, which 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 multidisciplinary 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 nationwide collaboration, CLABSI, SSI, CAUTI, and VAP.

#### **Molecular Diagnostic Virology Laboratory**

Under the leadership of Dr. Mark Prichard, 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, resulting in improved patient care. Same-day turnaround for CNS viral infections is not available either commercially or at hospital laboratories other than the services provided by Dr. Prichard.

# Neonatology

## PEDIATRIC FACULTY

<b>Dr. Namasivayam Ambalavanan</b>	<b>Co-Director</b>   Professor
<b>Dr. Waldemar A. Carlo</b>	<b>Co-Director</b>   Professor
Dr. Nitin Arora	Assistant Professor
Dr. Terry Bierd	Associate Professor
Dr. Allison Black	Associate Professor
Dr. Roger 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. Virginia Karle	Professor
Dr. Charitharth Vivek Lal	Assistant Professor
Dr. Albert Manasyan (Zambia)	Assistant Professor
Dr. Gaston Ofman	Assistant Professor
Dr. Joseph Philips	Professor
Dr. Manimaran Ramani	Assistant Professor
Dr. Ariel Salas	Assistant Professor



Dr. Brian Sims	Associate Professor
Dr. Christine Stoops	Assistant Professor
Dr. Trent Tipple	Associate Professor
Dr. Rune Toms	Associate Professor
Dr. Lindy Winter	Associate Professor

## FEATURED RESEARCH

The 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. The UAB Division of 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 will start enrollment in early 2019. The UAB NRN grant was again renewed for the 2016–2021 cycle.

The UAB Division of Neonatology 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. The Division of Neonatology at UAB is the only one in the country funded to lead sites for both NICHD neonatal networks.

The division also conducts groundbreaking basic research in the LungMAP project. Namasivayam Ambalavanan, M.D., is the principal investigator of the UAB Research Center, which comprises one of the four research centers in NIH National Heart, Lung and Blood Institute (NHLBI) LungMAP consortium. LungMAP seeks to improve lung health by providing the research community with a web-based resource to support investigations into the processes that regulate lung development. The use of cutting-edge technologies for analysis of the developing mouse and human lung will generate a novel map of where and when the lung cells differentiate and the alveoli form. LungMAP is making this knowledge accessible and freely available to the public through novel imaging and web-based tools ([www.lungmap.net](http://www.lungmap.net)). Dr. Ambalavanan is also principal investigator of the UAB Research Center in the NHLBI PreVENT Consortium comprising five research centers, which studies control of breathing in preterm infants.

There are many ongoing extramurally funded projects with a research focus on bronchopulmonary dysplasia (BPD). Dr. Ambalavanan is funded by the NHLBI for "STOP BPD" (Signature of Top Omic Profiles in BPD) to prospectively define and validate clinical and "omic" signatures associated with resilience against or risk for development of BPD. Trent Tipple, M.D., is funded by the NHLBI to determine mechanisms of oxygen-induced lung injury and evaluate novel strategies, such as thioredoxin reductase-1 inhibition to attenuate

BPD in animal models. Vivek Lal, M.D., is funded by an American Heart Association Scientist Development Grant to evaluate the role of the neonatal airway microbiome in the development of BPD and we are expecting his K08 to be funded before the end of 2018.

The Division of Neonatology at UAB, in collaboration with the UAB Department of Anesthesiology, also conduct 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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## DIVISION AWARDS & RECOGNITION | EXTRAMURAL AWARDS & LEADERSHIP ROLES | PARTICIPATION IN NATIONAL RESEARCH, QUALITY IMPROVEMENT & LEARNING NETWORKS

**Namasivayam Ambalavanan, M.D.**, was accepted into the UAB Healthcare Leadership Academy (HLA). The HLA is a collaboration between the Collat School of Business and the School of Medicine. The program offers training opportunities and develops leadership skills essential to academic healthcare. The program will begin in October 2018 and conclude in May 2019.

**Namasivayam Ambalavanan, M.D.**, was appointed as a member to the Scientific Advisory Committee for Innovation and Business Development (SACIB) with University of Alabama at Birmingham.

**Nitin Arora, M.D., M.PH.**, received the Society of Pediatric Research Clinical Research Award for Fellows at the Pediatric Academic Societies annual meeting for his work titled, "Zika virus infection of human fetal brain microvascular endothelial cells."

**Allison Black, M.D.**, was accepted as an elected member of the inaugural class of Women in Neonatology into the American Academy Pediatrics Neonatal-Perinatal Medicine Section.

**Allison Black, M.D.**, was elected as an executive committee member for the board of Camp Smile-A-Mile.

**Allison Black, M.D.**, was selected as one of Top Four poster presentations at the 2018 Children's Hospital Neonatal Consortium Annual Meeting.

**Allison Black, M.D.**, received a Golden Collaborative Award STEPP IN project from Children's Hospital Neonatal Consortium.

**Waldemar Carlo, M.D.**, was elected to the Association of American Physicians. The Association of American Physicians is a professional organization founded in 1885 by seven physicians, including Drs. William Osler and William Henry Welch, for "the advancement of scientific and practical medicine." The Association is composed of members who are leading senior physician scientists and are competitively selected.

**Waldemar Carlo, M.D.**, was appointed as a Distinguished Professor in the School of Medicine in recognition of his outstanding academic accomplishments and peer recognition.

**Waldemar Carlo, M.D.**, was invited to be a New Century Scholars Reviewer for Academic Pediatric Association (APA).

**Samuel Gentle, M.D.**, received the David Oelberg M.D. Trainee Travel Award from the Southern Society for Pediatric Research.

**Samuel Gentle, M.D.**, was appointed as a committee member for the Alabama Infant Mortality Reduction Initiative, Alabama Perinatal Quality Collaborative, UAB Neonatal-Perinatal Medicine Fellowship and RPAC.

**Jegen Kandasamy, M.D.**, was selected for an award under the Perinatal Research Society Young Investigator program to attend the Perinatal Research Society Annual Meeting and the NIH Abbott Nutrition Pre-Meeting Workshop. Selection into this program is highly competitive. This is the third year in a row that one of our neonatal junior faculty have been selected to attend the pre-meeting workshop.

**Charitharth Vivek Lal, M.D.**, was invited to be an abstract reviewer for Southern Society of Pediatric Research.

**Joseph Philips III, M.D.**, received the Albert Nelson Marquis Lifetime Achievement Award from Marquis Who's Who.

**Manimaran Ramani, M.D.**, was selected as a winner of the 2018 Souther Society for Pediatric Research Young Faculty Award. The award program was established to honor and support travel of junior faculty.

**Manimaran Ramani, M.D.**, was invited as a member of the UAB School of Medicine Admission Committee.

**Ariel Salas, M.D.**, Neonatology, was selected as a finalist of the 2018 Souther Society for Pediatric Research Clinical Science Young Investigator Award.

**Ariel Salas, M.D.**, was awarded the Samuel J. Fomon Young Physician Award endowed by the Nestlé Nutrition Institute. This award is one of the National Scientific Achievement Awards given out by the American Society of Nutrition Foundation. These awards are given in honor of scientists, clinicians and scholars for significant achievements in nutrition research and practice.

**Christine Stoops, M.D., M.PH, FAAP**, was awarded the Southern Society for Pediatric Research (SSPR) 2018 Travel Award.

**Christine Stoops, M.D., M.PH, FAAP**, Neonatology, was awarded AKI and CRRT 2018 Best Abstract Award, 2018 First Place Poster Award and Fellow in Training Registration Grant.

**Christine Stoops, M.D., M.PH, FAAP**, received the Pediatric Academic Society (PAS) 2018 Travel Grant Award.

**Trent Tipple, M.D.**, was invited to join the editorial board of the American Journal of Physiology – Lung Cellular and Molecular Physiology, for a three-year appointment. The editorial board is a critically important element of the journal, serving as the primary source of reviewers of submitted manuscripts. It ensures the veracity of the reports that they publish and serves multiple important functions to support the workings and reputation of the journal.

**Trent Tipple, M.D.**, accepted the position of Vice-Chair for the Neonatal and Developing Lung Interest Group Steering Committee, Respiratory Cell Molecular Biology Assembly, American Thoracic Society.

**Trent Tipple, M.D.**, was an invited moderator for the session titled "BPD and Other Congenital Lung Disease" RAPiD Poster Discussion Session at the 2018 American Thoracic Society International Conference in San Diego, California.

**Lindy Winter, M.D.**, received the Top Neonatologist in Birmingham Award from International Association of Healthcare Professions.

# Pediatric Nephrology

## PEDIATRIC FACULTY

<b>Dr. Daniel Feig</b>	<b>Director   Professor</b>
Dr. David Askenazi	Professor
Dr. Sahar Fathallah-Shaykh	Associate Professor
Dr. Michael Seifert	Associate Professor
Dr. Tennille Webb	Assistant Professor
Dr. Megan Yanik	Assistant Professor



## FEATURED RESEARCH

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

The Pediatric and Infant Center for Acute Care Nephrology (PICAN), directed by David Askenazi, M.D., MPH, seeks to develop novel management options for pediatric patients with renal impairment, and includes translation from bedside to bench and back again. As an 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. In collaboration with Daniel Feig, M.D., Ph.D., and members of the Hematology Section, Dr. Askenazi is also investigating the causes of renal impairment in patients with sickle cell disease.

Sahar Fathallah, M.D., who serves as medical director of dialysis, 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 tirelessly works to improve the care of children with renal disease.

Daniel Feig, M.D., Ph.D., 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. 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.

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.

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.

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 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 and 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.

## SIGNIFICANT PUBLICATIONS

*Am J Transplant*. 2018 Jan 15. doi: 10.1111/ajt.14663. *Decreasing Deceased Donor Transplant Rates among Children (≤ 6 years) under the New Kidney Allocation System*. Shelton BA, Sawinski D, Ray C, Reed RD, MacLennan PA, Blackburn J, Young CJ, Gray S, **Yanik M**, Massie A, Segev DL, Locke JE.

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## EXTRAMURAL AWARDS & LEADERSHIP ROLES | PARTICIPATION IN NATIONAL RESEARCH, QUALITY IMPROVEMENT AND LEARNING NETWORKS

**Daniel Feig, M.D.**, was elected to the American Academy of Pediatrics Section on Nephrology Executive Council. Dr. Feig will serve on the council beginning November 1, 2018, and the term will extend through October 31, 2021.

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

**IROC** (Improved Renal Outcomes) 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 over 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 future 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) 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. Sahar Fathallah, M.D., medical director of the Pediatric Renal Dialysis Unit, leads the local chapter. In the past year, since we have joined SCOPE, our dialysis associated infection rates have fallen more than. This represents substantial cost savings and prevention of numerous infection-related hospitalizations.

**NINJA** (Negation of Renal Injury by Just-In-Time Action) is a collaboration between Children's of Alabama (led by Dr. Askenazi) 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 over 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 will be the first new program added to the Solutions of Patient Safety consortium and instituted at 147 children's hospitals worldwide.

# Pediatric Neurology

## PEDIATRIC FACULTY

<b>Dr. Leon Dure</b>	<b>Director</b>   Professor
Dr. Matthew Alexander	Assistant Professor
Dr. Amitha Ananth	Assistant Professor
Dr. Emily Gantz	Instructor
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. Michael Lopez	Assistant Professor
Dr. Lydia Marcus	Instructor
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, FOXP1 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., was recruited as a basic science investigator in the division. 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. A RO1 titled "A miR-486/Dock3 axis modulates dystrophin-deficient pathology," funded through 2023 and a R21 entitled "MicroRNAs as biomarkers and therapeutic targets for myotubular myopathy." In addition, Dr. Alexander will be joined by Michael Lopez, M.D., who will be developing a collaborative research program in pediatric neuromuscular disease. Dr. Lopez recently completed training at Stanford University and 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., who will be commuting from Atlanta, Georgia, to participate in the effort 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. He will be collaborating with Dr. Toby Gropen of UAB Department of Neurology, as well as pediatric faculty in neonatology, pediatric critical care, and pediatric rehabilitation medicine.

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. Besides taking a major role in the development of the study, Dr. Dure continues as a records analyst to determine if patients meet inclusion criteria for this study.

In 2017, Dr. Dure was named the site investigator for two industry-sponsored trials. The first is a phase 3 assessment of the efficacy and safety of triheptanoin for the treatment of movement disorders in Glucose Transporter Type 1 Deficiency, and is not yet active. Similarly, Dr. Dure will serve as the site investigator for an open-label extension of an agent to treat Niemann-Pick Type C1, and this study is awaiting regulatory approval. These studies are ongoing, and an additional patient was enrolled as a part of an expanded use protocol. 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. In addition, UAB/COA will serve as an investigational site for the study, with Emily Gantz, M.D. serving as site-investigator.

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 chairs the selection committee for the UAB CBD study, and 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.

In collaboration with Dr. Martina Bebin 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 biomarkers 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.

## SIGNIFICANT PUBLICATIONS

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# Pediatric Pulmonology & Sleep Medicine

## PEDIATRIC FACULTY

<b>Dr. Hector Gutierrez</b>	<b>Director</b>   Professor
Dr. Jennifer Guimbellot	Assistant Professor
Dr. Tom Harris	Assistant 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
Dr. Ammar Saadon Alishlash	Assistant Professor
Dr. Valerie Tarn	Assistant Professor
Dr. Brad Troxler	Associate Professor
Dr. Brett Turner	Assistant Professor



## FEATURED RESEARCH

The 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 the role of individual- and neighborhood-level social determinants of health for clinical outcomes in cystic fibrosis and other pulmonary diseases. She investigates the contribution of tobacco smoke exposure for pulmonary decline in cystic fibrosis, the impact of unmet social needs for child respiratory health, and leads studies on adherence and self-management in chronic conditions. Dr. Oates is the UAB site PI for the CF Foundation Successful Therapies Research Consortium (STRC), where she also leads the Community Input Project.

Tom Harris, M.D., investigates mechanisms of disease progression in cystic fibrosis (CF) and the identification of novel targets for disease intervention. He specifically focuses on genetic modifiers of disease, as these might provide clues to improved treatment strategies. His work focuses on the genetic modifier transforming growth factor beta (TGF- $\beta$ Dr.). Dr. Harris has identified the specific micro RNA (miRNA) that mediate TGF- $\beta$  inhibition of F508del cystic fibrosis transmembrane conductance regulator (CFTR) correction. miRNA are small (~22 base pair) non-coding RNA that destabilize mRNA transcripts and inhibit protein translation. miR-145 mimics destabilize CFTR mRNA, protein synthesis and channel function in airway and nasal epithelia. In 2018, Dr. Harris investigated the use of oligotherapeutics to improve CFTR correction. Specifically, Dr. Harris is pursuing the benefit of anti-sense oligonucleotides to block the miR-145 binding site on CFTR as a novel approach to overcome TGF- $\beta$  inhibition of CFTR directed therapeutics. His work in CF-related miRNA recently has won him 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 also leads several pharmaceutical trials of CFTR correction at UAB, including one trial that for the first time evaluates the benefit of CFTR potentiation in infants and toddlers with CF and another that brings next generation CFTR modulators to young school-aged children.

Jennifer Guimbellot, M.D., Ph.D., and colleagues have 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) and the National Institutes of Health (NIH) to develop these models. Because of the significant interest in these personalized, cell-based models made from human tissues, Dr. Guimbellot also has an interest in understanding drug distribution and metabolism into the tissues. Her CFF-supported research also involves individualized pharmacokinetic analysis and pharmacogenomics approaches to gain insights into further tailoring modulator therapy to provide maximal therapeutic benefit for every CF patient.

Hector Gutierrez, M.D., leads the Cystic Fibrosis Clinical Center. His research objectives are to implement and investigate quality improvement, outcome measurement and management of both clinical and non-clinical processes using CF care as a model to improve the quality and value of clinical care, which ultimately results in longer 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. The CFF recently awarded funding to continue his work in Chile and extend it to Mexico and Argentina, in collaboration with the Pediatric CF Center at Baylor University.

## Sickle Cell Disease

In collaboration with the Division of Hematology/Oncology, Ammar Saadon Alishlash, M.D., 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

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### DIVISION AWARDS & RECOGNITION | EXTRAMURAL AWARDS & LEADERSHIP ROLES | PARTICIPATION IN NATIONAL RESEARCH, QUALITY IMPROVEMENT AND LEARNING NETWORKS

**Tom Harris, M.D.**, was awarded 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). In this project, Dr. Harris investigates the utility of oligotherapeutics to improve F508del CFTR correction. Dr. Harris has previously shown that the genetic modifier TGF- $\beta$  decreases CFTR expression through miR-145. This project will now test if oligonucleotides that block miR-145 binding to CFTR can amplify the benefit of recently FDA-approved small molecule correctors. To conduct his experiments, Dr. Harris will utilize preclinical cell culture and animal models available through the UAB Gregory Fleming James Cystic Fibrosis Research Center.

**Jennifer Guimbellot, M.D., Ph.D.**, won the prestigious Cystic Fibrosis Foundation's Harry Shwachman Clinical Investigator Award. With this award, she will examine the importance of genetic variants of drug metabolism enzymes in the CF population and measure association with clinical efficacy; measure intracellular concentrations of ivacaftor and effect on CFTR activity in a novel in vitro biomarker; and conduct a pilot study in people to combine pharmacogenetics of CYPs with CFTR activity and in vivo drug response. Ivacaftor is a significant component of many combination therapies, so understanding its variation in metabolism and impact on efficacy as monotherapy is the first key step to understanding pharmacogenetics in complex combinations, as well as expanding these concepts to other systemically administered modulator drugs.

**Jennifer Guimbellot, M.D., Ph.D.**, through a CFF-funded grant, is developing cell-culture based models derived from individual patients, which are three-dimensional organoid models, and are capable of measuring fluid transport (via changes in organoid size). Her lab is optimizing methodology to use these models to determine the efficacy of CFTR modulator activity and its impact on fluid transport and mucus clearance, providing a comprehensive assessment of pharmacological activity that will be implemented in an individualized fashion.

**Gabriela Oates, Ph.D.**, gained admission to the NIH 18th Annual Summer Institute on Randomized Behavioral Clinical Trials and became a graduate fellow of this research training program sponsored by the NHLBI/OBSSR.

**Hector Gutierrez, M.D.**, is the site PI for the Cystic Fibrosis Learning Network (CFLN). The overall goal of the CFLN is to achieve a care model that reliably improves clinical and patient-reported outcomes for people with CF. The objective of this implementation phase is to accelerate and spread improvement of outcomes by maturing the CFLN and developing real-world research capabilities.

**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 aimed to train multidisciplinary CF teams in Latin America in three critical aspects: delivery of evidence-based CF care that is adapted to local healthcare settings; 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.



# Pediatric Rehabilitation Medicine

## PEDIATRIC FACULTY

**Dr. Drew Davis**

Dr. Paola "Lala" Mendoza-Sengco

Dr. Erin Swanson-Kimani

**Director** | Professor

Assistant Professor

Assistant Professor



## FEATURED RESEARCH

The 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 has served to further the research goals of the collaborative and resulted in creation of the Lakeshore Foundation Pediatric Rehabilitation Ph.D. Postdoctoral Fellowship. As well, Drew Davis, M.D., and Erin Swanson-Kimani, M.D., are members of the Children's of Alabama Concussion Work Group, collaborating 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

*International Journal of Applied Sports Sciences*, Vol. 30, No. 1, p.1. (6/2018). *Interaction of factors affecting vibration transmission to skeleton during standing: A narrative review*. Harshvardhan Singh, William R. Reed, Donald H. Lein, Shannon L. Mathis, **Richard D. Davis**.

**DIVISION AWARDS & RECOGNITION | EXTRAMURAL AWARDS & LEADERSHIP ROLES | PARTICIPATION IN NATIONAL RESEARCH, QUALITY IMPROVEMENT & LEARNING NETWORKS**

**Drew Davis, M.D.**,—Item Writer for the American Board of Physical Medicine and Rehabilitation



# Pediatric Rheumatology

## PEDIATRIC FACULTY

### Dr. Randy Cron

Dr. Tim Beukelman

Dr. Melissa Mannion

Dr. Emily Smitherman

Dr. Matthew Stoll

Dr. Peter Weiser

**Director** | Professor

Associate Professor

Assistant Professor

Assistant Professor

Associate Professor

Associate Professor



## FEATURED RESEARCH

Members of the Division of Pediatric Rheumatology excel in research into macrophage activation syndrome (MAS) in the pediatric population. This includes the novel recognition that a group of patients with fatal H1N1 flu died after their viral infections triggered this serious hyperinflammatory disorder. Randy Cron, M.D., Ph.D., led a group of investigators from across the country to determine that the reason for this increased mortality was related to gene mutations in susceptible individuals. His data suggest that people with other types of infections and identical gene mutations may also be prone to the disorder, known as reactive HLH (rHLH), or hemophagocytic lymphohistiocytosis. Perhaps more importantly, these findings raise the question of whether to screen for HLH gene mutations (potentially 10% or more of the population) at birth to identify those carrying risk alleles for developing severe H1N1 or other infections. Dr. Cron's research laboratory is also exploring the pathophysiology of this disease by demonstrating that identified mutations in HLH genes contribute to the pathology of MAS in children and adults by disrupting white blood cell function. His recent work identified a mutation that disrupts the level of protein expression (rather than directly altering the protein), a new region of genetic interest leading to human disease.

Dr. Cron's work in the field of MAS also includes a retrospective re-analysis of the results from a large clinical trial of IL-1 blockade using the drug anakinra for the treatment for sepsis. When sepsis patients were divided based on the presence of MAS, it was found that anakinra doubled survival of those sepsis patients with features of MAS. Anakinra had no effect on survival of sepsis patients without MAS. In recognition of his leadership in this area, Dr. Cron co-led (with Dr. Angelo Ravelli, University of Genoa, Italy) a group of experts who developed and published classification criteria for MAS complicating systemic juvenile idiopathic arthritis (sJIA). Recently, in collaboration with Dr. Winn Chatham (UAB), Dr. Cron is conducting an investigator initiated clinical trial to study the role of anakinra in treating children and adults with MAS. As part of this trial, Dr. Cron, in collaboration with Dr. Devin Absher (HudsonAlpha) is funded by the Histiocytosis Association, as well as the UAB Center for Genomic Medicine, to explore potential genetic contributions to the development of MAS in these patients. 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). Dr. Cron 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), 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 healthcare system interventions to drive improvement in outcomes. Dr. Smitherman also employs the pediatric rheumatology national quality improvement network, PR-COIN, to address related research questions by exploring this large database.

## SIGNIFICANT PUBLICATIONS

*Arthritis Care Res (Hoboken)*. 2018 May 28. doi: 10.1002/acr.23610. *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 Uveitis Subcommittee of Childhood Arthritis Rheumatology Research Alliance.

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*Arthritis Rheumatol*. 2018 Sep 18. doi: 10.1002/art.40727. *Serum S100A8/A9 and S100A12 Levels in Children with Polyarticular Forms of Juvenile Idiopathic Arthritis: Relationship to Maintenance of Clinical Inactive Disease During and Flare after Discontinuation of Anti-TNF Therapy*. Hinze CH, Foell D, Johnson AL, Spalding SJ, Gottlieb BS, Morris PW, Kimura Y, Onel K, Li SC, Grom AA, Taylor J, Brunner HI, Huggins JL, Nocton JJ, Haines KA, Edelheit BS, Shishov M, Jung LK, Williams CB, Teshler MS, Costanzo DM, Zemel LS, Dare JA, Passo MH, Ede KC, Olson JC, Cassidy EA, Griffin TA, Wagner-Weiner L, Weiss JE, Vogler LB, Rouster-Stevens KA, **Beukelman T**, **Cron RQ**, Kietz D, Schikler K, Mehta J, Ting TV, Verbsky JW, Eberhard AB, Huang B, Giannini EH, Lovell DJ.

*Arthritis Rheumatol*. 2018 Feb 6. doi: 10.1002/art.40438. *Novel UNC13D intronic variant disrupting a NFκB enhancer in a patient with recurrent macrophage activation syndrome and systemic juvenile idiopathic arthritis*. Schulert GS, Zhang M, Husami A, Fall N, Brunner H, Zhang K, **Cron RQ**, Grom AA.

*Arthritis Rheumatol*. 2018 Mar 31. doi: 10.1002/art.40509. *Risk, Timing and Predictors of Disease Flare after Discontinuation of Anti-Tumor Necrosis Factor (TNF) Therapy in Children with Polyarticular Forms of Juvenile Idiopathic Arthritis (JIA) in Clinical Inactive Disease*. Lovell DJ, Johnson AL, Huang B, Gottlieb BS, Morris PW, Kimura Y, Onel K, Li SC, Grom AA, Taylor J, Brunner HI, Huggins JL, Nocton JJ, Haines KA, Edelheit BS, Shishov M, Jung LK, Williams CB, Teshler MS, Costanzo DM, Zemel LS, Dare JA, Passo MH, Ede KC, Olson JC, Cassidy EA, Griffin TA, Wagner-Weiner L, Weiss JE, Vogler LB, Rouster-Stevens KA, **Beukelman T**, **Cron RQ**, Kietz D, Schikler K, Mehta J, Ting TV, Verbsky JW, Eberhard BA, Spalding S, Chen C, Giannini EH.

*Ann Rheum Dis*. 2018 Feb 9. pii: annrheu.M.D.is-2017-212613. doi: 10.1136/annrheu.M.D.is-2017-212613. *Risk of malignancy associated with paediatric use of tumour necrosis factor inhibitors*. **Beukelman T**, Xie F, Chen L, Horton DB, Lewis JD, Mamtani R, **Mannion MM**, Saag KG, Curtis JR.

*Clin Trials*. 2018 Mar 1:1740774518761367. doi: 10.1177/1740774518761367. *Bayesian comparative effectiveness study of four consensus treatment plans for initial management of systemic juvenile idiopathic arthritis: FiRst-Line Options for Systemic juvenile idiopathic arthritis Treatment (FROST)*. Nigrovic PA, **Beukelman T**, Tomlinson G, Feldman BM, Schanberg LE, Kimura Y; Childhood Arthritis and Rheumatology Research Alliance Systemic Juvenile Idiopathic Arthritis Consensus Treatment Plan Workgroup.

*Genes Immun*. 2018 Mar 24. doi: 10.1038/s41435-018-0024-1. *Akkermansia muciniphila is permissive to arthritis in the K/BxN mouse model of arthritis*. **Stoll ML**, Pierce MK, Watkins JA, Zhang M, Weiss PF, Weiss JE, Elson CO, **Cron RQ**, Kumar R, Morrow CD, Schoeb TR.

*JAMA Intern Med.* 2018 Jul 30. doi: 10.1001/jamainternmed.2018.2859. *Association of Statin Exposure With Histologically Confirmed Idiopathic Inflammatory Myositis in an Australian Population.* Caughey GE, Gabb GM, Ronson S, Ward M, **Beukelman T**, Hill CL, Limaye V.

*J Pediatr Gastroenterol Nutr.* 2018 Jul;67(1):e12-e13. doi: 10.1097/MPG.0000000000001945. *Aortitis With an Aneurysm at Initial Presentation of Crohn Disease.* Talathi S, **Mannion M**, Colvin E, Beck A, Dabal R, Maclin J, Dimmitt R, Jester T.

*J Pediatr Gastroenterol Nutr.* 2018 Mar 5. doi: 10.1097/MPG.0000000000001945. *Cardiovascular involvement at initial presentation of Crohn's Disease.* Talathi S, **Mannion M**, Colvin E, Beck A, Dabal R, Maclin J, Dimmitt R, Jester T.

*J Pediatr Genet.* 2018 June. eFirst. DOI: 10.1055/s-0038-1657760. *A Familial Case of Multicentric Carpometacarpal Osteolysis Syndrome and Treatment Outcome.* Upadia J, Gomes A, **Weiser P**, Descartes M.

*J Rheumatol.* 2018 May 15. pii: jrheum.171306. doi: 10.3899/jrheum.171306. *Risk Factors for Intraarticular Heterotopic Bone Formation in the Temporomandibular Joint in Juvenile Idiopathic Arthritis.* **Stoll ML**, Amin D, Powell KK, Poholek CH, Strait RH, Aban I, **Beukelman T**, Young DW, Cron RQ, Waite PD.

*J Rheumatol.* 2018 Mar;45(3):411-418. doi: 10.3899/jrheum.170598. *Adiposity in Juvenile Psoriatic Arthritis.* Samad A, **Stoll ML**, Lavi I, Hsu JJ, Strand V, Robinson TN, Mellins ED, Zisman D; CARRA Legacy Registry Investigators.

*J Rheumatol.* 2018 Jan;45(1):107-114. doi: 10.3899/jrheum.170251. *Comparative Effectiveness of Tumor Necrosis Factor Agents and Disease-modifying Antirheumatic Therapy in Children with Enthesitis-related Arthritis: The First Year after Diagnosis.* Weiss PF, Xiao R, Brandon TG, Pagnini I, Wright TB, **Beukelman T**, Morgan-DeWitt E, Feudtner C.

*J Rheumatol Suppl.* 2018 Jun;94:11-16. doi: 10.3899/jrheum.180131. *Juvenile Psoriatic Arthritis: A Report from the GRAPPA 2017 Annual Meeting.* Zisman D, **Stoll ML**, Butbul Aviel Y, Mellins ED.

*Pediatr Clin North Am.* 2018 Aug;65(4):657-674. doi: 10.1016/j.pcl.2018.03.005. *Juvenile Idiopathic Arthritis: Oligoarthritis and Polyarthritis.* Crayne CB, **Beukelman T**.

*Pediatr Rheumatol Online J.* 2018 Jan 24;16(1):8. doi: 10.1186/s12969-018-0223-3. *Defining the normal appearance of the temporomandibular joints by magnetic resonance imaging with contrast: a comparative study of children with and without juvenile idiopathic arthritis.* **Stoll ML**, Guleria S, **Mannion ML**, Young DW, Royal SA, **Cron RQ**, Vaid YN.

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*Pediatr Rheumatol Online J.* 2018 Apr 25;16(1):32. doi: 10.1186/s12969-018-0244-y. *Temporomandibular joint arthritis in juvenile idiopathic arthritis, now what?* **Stoll ML**, Kau CH, Waite PD, **Cron RQ**.

*Pediatr Rheumatol Online J.* 2018 Nov 14;16(1):71. doi: 10.1186/s12969-018-0285-2. *Rituximab treatment for chronic steroid-dependent Henoch-Schönlein purpura: 8 cases and a review of the literature.* Crayne CB, Elloseily E, **Mannion ML**, Azerf SP, **Weiser P**, **Beukelman T**, **Stoll ML**, Feig DI, Prescott Atkinson T, **Cron RQ**.

*Virology.* 2018 Jan 8;516:21-29. doi: 10.1016/j.virol.2017.12.036. *Regulatory CD4 T cells inhibit HIV-1 expression of other CD4 T cell subsets via interactions with cell surface regulatory proteins.* Zhang M, Robinson TO, Duverger A, Kutsch O, Heath SL, **Cron RQ**.

#### DIVISION AWARDS & RECOGNITION | EXTRAMURAL AWARDS & LEADERSHIP ROLES

**Randy Cron, M.D., Ph.D.**, was selected to chair the American College of Rheumatology (ACR) Rheumatology Research Foundation (RRF) Pediatric Rheumatology Visiting Professorship Selection Committee. The committee matches up selected pediatric rheumatologists with pediatric programs across the United States that do not have a pediatric rheumatology presence for a three- to four-day educational visit. Dr. Cron will serve a three-year term. At the American College of Rheumatology Annual Scientific Meeting in 2018 (Chicago, IL), Dr. Cron moderated four scientific sessions and spoke on the topic Temporomandibular Joint Arthritis. Dr. Cron was also selected to the editorial board of *Frontiers in Immunology*.

**Timothy Beukelman, M.D., M.S.C.E.**, was selected as a visiting professor to Niklaus Children's Hospital in Miami, Florida.

**Matthew Stoll, M.D., Ph.D., M.S.C.S.**, was selected to the review section editorial board of *Frontiers in Immunology*. Dr. Stoll also served as a moderator on the topic of the Microbiome in Rheumatic Disease at the American College of Rheumatology Annual Scientific Meeting (Chicago, IL). Dr. Stoll was also honored as the Distinguished Alumnus presenter at the State University of New York Upstate Medical University (Syracuse, New York). Dr. Stoll also serves as the President of the Alabama Society for Rheumatic Diseases.

**Melissa Mannion, M.D., M.S.P.H.**, serves on the national quality improvement network, Pediatric Rheumatology Care and Outcomes Improvement Network Quality Improvement (PR-COIN).

**Emily Smitherman, M.D., M.S.C.T.R.**, received the Rheumatology Research Foundation Pediatric Research Award at the American College of Rheumatology Annual Scientific Meeting. Dr. Smitherman also serves on the national quality-improvement network, Pediatric Rheumatology Care and Outcomes Improvement Network Quality Improvement (PR-COIN).



# Kaul Pediatric Research Institute (KPRI) Awards

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). 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, seven grants are now awarded each year, and the funding has increased to \$35,000 each for five new investigators and two awards at \$50,000 each for established investigators.

The program is competitive and peer-reviewed in an NIH format. Up to 2018, 129 grants have been awarded to 93 investigators for a total investment of \$7,937,000. The return on the investment has been outstanding with 42 awardees remaining on faculty at UAB and a total of \$37.79 million in extramural funding to these investigators.

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, education and quality improvement enterprise.

## 2018 AWARDEES

### NEW INVESTIGATOR AWARDS

**Ismail S. Mohamed, M.D.**

Associate Professor  
Pediatric Neurology  
*Computational Neurology for  
Non-invasive Delineation of the  
Epileptogenic Zone*



**Robert T. Russell, M.D.**

Associate Professor  
Pediatric General Surgery  
*Coagulopathy Following Head Injury  
in Pediatric Trauma:  
From Bedside to Bench*



**Robert P. Richter, M.D.**

Assistant Professor  
Pediatric Critical Care  
*Heparanase and Endotheliopathy  
in Pediatric Sepsis*



**Ariel A. Salas, M.D.**

Assistant Professor  
Neonatology  
*Effect of Increased Enteral Protein  
on Body Composition of Preterm  
Infants: A Randomized Trial*



## ESTABLISHED INVESTIGATOR AWARDS

### **Daniel I. Feig, M.D.**

Professor

Pediatric Nephrology

*ESTaBLISH: Impact of **E**arly life **ST**ressors on the **BL**ood pressure and vascular function In adole**Sc**ents and **cH**ildren*



### **Wendy Landier, Ph.D., RN**

Associate Professor

Pediatric Hematology & Oncology

*Integrating Technology to Enhance Patient/Family Education in Pediatric Oncology*



### **Gregory K. Friedman, M.D.**

Associate Professor

Pediatric Hematology & Oncology

*Immunovirotherapy to Target Pediatric Brain Tumors*



# Pediatric Education Programs



## PEDIATRIC RESIDENCY PROGRAM

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 Pediatric Residency Program, the majority of our residents have either ongoing research projects, extensive involvement in quality improvement projects, and/or experience in clinical case presentations. There are 70 pediatric residents who participate in scholarly efforts. We have three combined programs that also participate in research. Our programs include: Combined Internal Medicine/Pediatric Program (16 residents), Child Neurology (two residents) and Combined Medical Genetics/Pediatrics (three residents).

For the past 10 years, 50% of our graduates have continued into academic fellowships.

## CLASS OF 2018 POST-GRADUATION PLANS

<b>Baani Bawa, M.D.</b>	Hospital Medicine, Nashville, TN
<b>Megan E. Boothe, M.D.</b>	Genetics Fellowship, UAB
<b>John Mark Bouchillon, M.D.</b>	2018–2019 Chief Resident, UAB
<b>Stephen T. Clark, M.D.</b>	Pediatric Cardiology Fellowship, UAB
<b>Adam W. Cohen, M.D.</b>	Pediatric Gastroenterology Fellowship, UAB
<b>Orlando Esparza, M.D.</b>	Pediatric Hematology/Oncology Fellowship, University of Colorado
<b>Anna L. Hoppmann, M.D.</b>	Pediatric Hematology/Oncology Fellowship, UAB
<b>Claire S. Keith, M.D.</b>	Gastroenterology Instructor followed by Pediatric GI Fellowship, UAB
<b>Angela J. King, M.D.</b>	General Pediatrics, Clinical Instructor, UAB
<b>Tiffany D. Moore, M.D.</b>	General Pediatrics, Birmingham, AL
<b>Anastasia T. Nelson, M.D.</b>	General Pediatrics, Trussville, AL
<b>Jamie L. Powell, M.D.</b>	General Pediatrics, Homewood, AL
<b>Robert D. Sellers, IV, M.D.</b>	2018–2019 Chief Resident, UAB
<b>Mary E. Silverberg, M.D.</b>	Research at UAB, Pursuing NICU Fellowship
<b>Karlene D. Walker, M.D.</b>	2018–2019 Chief Resident, UAB
<b>Carter D. Wallace, M.D.</b>	Gastroenterology Instructor followed by Pediatric GI Fellowship, UAB
<b>Timothy A. Wang, M.D.</b>	Neonatology Fellowship, Cincinnati Children's
<b>Anna P. White, M.D.</b>	General Pediatrics, Health Department, Birmingham, AL
<b>Sara E. Williams, M.D.</b>	Developmental and Behavioral Pediatrics Fellowship, University of Colorado
<b>Andrea M. Wolf, M.D.</b>	General Pediatrics, Dallas, TX
<b>Taylor A. Woodfin, M.D.</b>	Pediatric Gastroenterology Fellowship, UAB
<b>Sarah E. Bagwell, M.D.</b>	General Medicine/Pediatrics, UAB
<b>K. Shannon Booker, M.D.</b>	Medicine/Pediatrics Hospitalist, Minneapolis, MN
<b>Sarah E. Bragg, M.D.</b>	General Medicine/Pediatrics, UAB
<b>Teresa B. Cornelius, M.D.</b>	Medicine/Pediatrics, Hospitalist, UAB
<b>Sarah Joy Dean, M.D.</b>	Medical Biochemical Genetics Fellowship, UAB

## 2017–2018 CHIEF RESIDENTS

<b>Bryauna S. Lewis, M.D.</b>	General Pediatrics, Birmingham, AL
<b>T. Spencer Poore, M.D.</b>	Pediatric Pulmonary Fellowship, University of Colorado
<b>Michelle Udine, M.D.</b>	Pediatric Cardiology Fellowship, Children's National

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 PGY-3 Pediatric and PGY-4 MedPeds and Peds/Genetics resident presents a 30-minute research topic at a Noon Conference throughout the year. Below are examples of topics that have been presented in 2018.

- "Wilderness Medicine"—Dr. Jamie Oakley
- "Vaccine Hesitancy"—Dr. JaneMarie Freeman
- "Early Learning and Literacy"—Dr. Anna Magliolo
- "Pediatric Organ Donation"—Dr. Emily Foreman
- "I Am New at this, Information for The New Parent and New Inter" – Drs. Spandana Induru & Leen Matalka

**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. Below is a sampling of resident QI projects.

- "Back to Boot Camp: Procedural Competence of Pediatric Residents"
- "Adolescent Depression Screening in Primary Care"
- "Using Quality Improvement Process to Increase Influenza Vaccination in Pediatric Inflammatory Bowel Disease Patients"
- "Bridging the Gap: Improving Transition from Pediatric to Adult Care"
- "Standardizing Inpatient Admissions for Patients Admitted to Children's of Alabama on the Asthma Clinical Pathway"
- "Smoking Cessation Counseling: A Simulated Enhanced Curriculum for Residents to Promote Smoking Cessation Counseling"
- "Reducing Checkout Errors by Implementing Handoff Tool in iConnect"

**Annual UAB Pediatric Science Day:** Pediatric residents can attend or present at this all-day departmental conference.

**RIME (Research and Innovation in Medical Education):** 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.

- "Improving Firearm Safety in Primary Care Clinic"
- "Procedural Competence of Pediatric Residents"
- "All-Terrain Vehicle (ATV) Injury Prevention through Education in Schools"
- "Pediatric Research Academic Program"
- "Creating a Medical Home for Children with Medical Complexity within Primary Care Clinic"

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)—25 residents presented at 2018 conference.
- American Society of Nephrology
- American Academy of Pediatrics National Conference and Exhibition (AAP-NCE)
- North American Society for Pediatric Gastroenterology, Hepatology and Nutrition (NASPGHAN)
- Crohn's and Colitis Congress
- Vermont Oxford Network Quality Congress
- American College of Rheumatology Annual Meeting

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



# Pediatric Fellowship Programs



The UAB Pediatric Fellowship Programs encompass 18 fellowship programs (16 ACGME and two non-ACGME programs), representing more than 60 pediatric fellows who participate in scholarly efforts.

## ACGME–APPROVED PEDIATRIC FELLOWSHIP PROGRAMS

Adolescent Medicine	Allergy-Immunology	Cardiology	Child Neurology
Critical Care	Emergency Medicine	Endocrinology	Gastroenterology
Hematology-Oncology	Hospice-Palliative Care	Infectious Disease	Neonatology
Nephrology	Pulmonary	Rheumatology	Sleep Medicine

## NON-ACGME–APPROVED PEDIATRIC FELLOWSHIP PROGRAMS

Cardiac Critical Care	Hospital Medicine
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Research and research scholarship are of utmost importance to our pediatric fellowship programs. Research activities are a requirement of the American 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. These efforts during fellowship are further supported by the fact that 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.).

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—Daylong conference with invited guest Grand Rounds speaker and moderator. Pediatric fellows, residents and medical students present their ongoing research and case presentation in platform and poster format.
- RIME (Research and Innovation in Medical Education) 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 Fellowship—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 them remaining as active faculty at UAB.
- T-32 Fellowship Positions—The ability to support our strongest research fellows on training grants, most recently in the divisions of Pediatric Rheumatology and Pediatric Infectious Disease.
- 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.
- Fellow's Core Educational Series—A two-year curriculum for all pediatric fellowship programs with an entire year devoted to research techniques and research-related topics.

Nationally and regionally our fellows present at scientific conferences, including Southern Society for Pediatric Research (SSPR), American Academy of Pediatrics National Conference and Exhibition (AAP-NCE) and Pediatric Academic Society (PAS), to name a few.

Grants and awards highlights received by our pediatric fellows:

- Founders' Fund Grant for multiple fellows (Pediatric Emergency Medicine and Pediatric Critical Care)
- LEAH Grant (Adolescent Medicine)
- Finalist Clinical Sciences Young Investigator Award (Neonatology)
- Endowed Kennedy Fellow (Rheumatology)

Below are some recent publications of the specific projects our pediatric fellows are involved in with the fellow's name bolded:

Neonatology. 2017 Jul 14;112(3):211-216. doi: 10.1159/000472247. *Short versus Extended Duration of Trophic Feeding to Reduce Time to Achieve Full Enteral Feeding in Extremely Preterm Infants: An Observational Study*. Salas AA, **Kabani N**, Travers CP, Phillips V, Ambalavanan N, Carlo WA.

Glob Pediatr Health. 2017 Dec 21;4:2333794X17749668. *Otitis Media in Fully Vaccinated Preschool Children in the Pneumococcal Conjugate Vaccine Era*. **Talathi S, Gupta N**, Sethuram S, Khanna S, Sitnitskaya Y.

Pediatr Cardiol. 2017 Dec;38(8):1703-1708. *Routine Sildenafil Does Not Improve Clinical Outcomes After Fontan Operation*. **Collins JLG**, Law MA, Borasino S, Erwin WC, Cleveland DC, Alten JA.

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, Maclin J, Dimmitt R, Jester T.

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, Halloran B, Aghai Z, Das P, Sharma N, Xu X, Genschmer K, Russell D, Szul T, Yi N, Blalock JE, Gaggari A, Bhandari V, Ambalavanan N.

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**, Sloane P, Tofil N.

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, McCree R, Lisovicz NF, Aris EA, Yuma S, Mwaeselage JD, Jolly PE.

Pediatr Clin North Am. 2018 Aug;65(4):657-674. *Juvenile Idiopathic Arthritis: Oligoarthritis and Polyarthritis*. **Crayne CB**, Beukelman T.

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, Wilson L, Aghai ZH, Barnes S, Blalock JE, Gaggari A, Bhandari V, Ambalavanan N.

Minerva Pediatr. 2018 Jul 23. *Clinically relevant cardiopulmonary interactions for the pediatric intensivist*. Sasser WC, **Sims AN, Loberger JM**, Tofil NM, Prabhakaran P.

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, Beukelman T, Stoll ML, Feig DI, Prescott Atkinson T, Cron RQ.



# Dixon Pediatric Fellowship



**Abdulsalam Alsulami, M.D.**

**Neha Gupta, M.D.**

**Samantha Hill, M.D.**

**Nazia Kabani, M.D.**

**Cali Reynolds, 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, 73 awards have been given. Of the awardees, more than 50% are now active faculty within the department. Among the alumni, there are 10 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, 36 lectures have been presented at Grand Rounds by notable leaders in the field of pediatrics.

## **2018–2019 Dixon Fellows**

**Abdulsalam Alsulami, M.D.**, Second Year Pediatric Infectious Diseases Fellow, researched the “Impact of Different Human Coronaviruses (HCoV) on Pediatric Patients at a Tertiary Pediatric Hospital—Retrospective Study and Assessment of Interventions.”

**Neha Gupta, M.D., FAAP**, Third-Year Pediatric Critical Care Fellow, worked to develop a Children’s of Alabama Delirium Scale (COADS).

**Samantha Hill, M.D., MPH**, Third-Year Adolescent Medicine Fellow, researched “Identification of Strategies That Increase PrEP Uptake for Adolescents and Young Adults in the Deep South.”

**Nazia Kabani, M.D.**, Second-Year Combined Pediatric Infectious Diseases and Neonatology Fellow, researched “Defining the full spectrum of neuroimaging findings and determining their impact on outcome in infants with congenital cytomegalovirus infection.”

**Cali Reynolds, M.D.**, Second-Year Pediatric Allergy/ Immunology Fellow, researched “Addressing Penicillin Allergies in the Inpatient Pediatric Population.”

## **Graduating Dixon Fellows Are:**

**Claudette Poole, M.D.**, Pediatric Infectious Diseases, who joined the UAB Division of Pediatric Infectious Diseases as an assistant professor.

**Jamie Aye, M.D.**, Pediatric Hematology/Oncology, who joined the UAB Division of Pediatric Hematology/Oncology as an assistant professor.

**Corey Falcon, M.D.**, Pediatric Hematology/Oncology, who joined the Tulane Medical School as an assistant professor in pediatric hematology/oncology .

**Miranda Curtiss, M.D.**, Pediatric Allergy & Immunology, who joined the UAB Department of Medicine Division of Pulmonary, Allergy, and Critical Care as an instructor.

# 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.

## **2018 Chu Family Scholarship Recipients**

**Aman Wadhwa, M.D.**—Third-Year Pediatric Hematology/Oncology Fellow, was awarded \$5,000. Dr. Wadhwa will use funds towards completing a MSPH degree in Outcomes Research at UAB.

**Jeremy Loberger, M.D.**—Second-Year Pediatric Critical Care Fellow, was awarded \$5,000. Dr. Loberger will use funds toward completing a UAB Quality Academy Certificate Course.



# 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, 25 awards have been granted.

## 2018 Russell Cunningham Memorial Research Program Recipients

### **Zachary Burns**

**Project:** Research the effects of the transition of Pediatric Cardiology from within UAB to a freestanding program on personnel and patient care.

**Faculty Mentor: Robert Dabal, M.D.,** Pediatric Cardiovascular/Thoracic Surgery

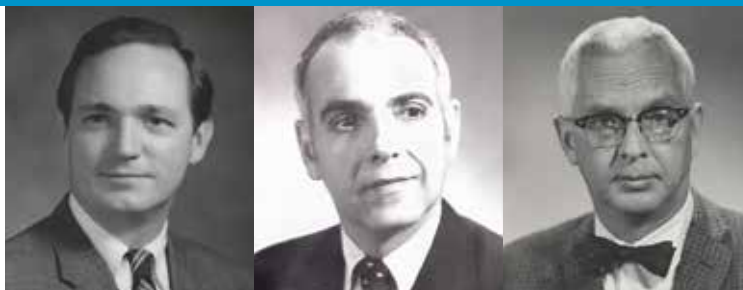
### **Meghana Gaini**

**Project:** *"The Effects of Demographic Differences in the Use of Breast Milk and Complementary Foods on the Growth of Preterm Infants"*

**Faculty Mentor: Myriam Peralta, M.D.,** Developmental & Behavioral Pediatrics

## Founders' Fund Grants

The Founders' 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. Founders' Fund Grants are awarded every May for innovative research projects in the focus areas of education, clinical practice, quality improvement or outcomes that focus on residency education and advocacy. Approximately 10–12 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 Founders' Fund projects have resulted in significant advances in the manner by which we care for patients, patient and family education, advocacy and training for medical students. At least 10 projects have led to presentations by residents and their mentors at national and regional academic meetings (SPR/APS, SSPR, AAP).

### 2018 Founders' Fund Grants-Principal Investigator and Project Titles

**Emily Bufkin, M.D.,** Med-Peds PGY-3: *"Creating a Medical Home for Children with Medical Complexity within Primary Care Clinic."*

**Eunice Dixon, M.D.,** Pediatrics PGY-3: *"Infant Safe Sleep QI: Exit Counseling to Reduce Unsafe Sleep Habits."*

**Austin Doss, M.D.,** Pediatric PGY-3: *"Procedural Competence in Pediatric Residents."*

**Eric Jorge, M.D.,** Pediatric PGY-3: *"Improving Firearm Safety Counseling in Primary Care Clinic."*

**Will Sasser, M.D.,** Pediatric Critical Care: *"Introduction of an Ultrasound Fundamentals Training Session to the Pediatric Intensive Care Education Curriculum Supplemented with a Vascular Access Training Model."*

**Kristyn Jeffries, M.D.,** Pediatric PGY-3: *"All-Terrain Vehicle (ATV) Injury Prevention through Education in Schools."*

**Sai Surapa-Raju, M.D.,** Third-Year Pediatric Critical Care Fellow: *"Teaching residents Pediatric Advanced Life Support (PALS) cardiac arrest guidelines using Rapid Cycle Deliberate Practice (RCDP)."*

**Rashmi Patil, M.D.,** Pediatric PGY-2: *"Baby Shower for Young Mothers Program."*

**Kristyn Jeffries, M.D.,** Pediatric PGY-3: *"Pediatric Research Academic Program (Pediatric RAP)."*

**Candice Dye, M.D.,** Academic General Pediatrics: *"Use of Mental Health Simulation to Improve Pediatric Primary Care, Resident Reflection on Suicide Prevention, and Development of Support Groups."*

**Michele Nichols, M.D.,** Pediatric Emergency Medicine: *"Spanish Class for Residents."*



# Pediatric Research Office (PRO)

The UAB Department of Pediatrics established the Pediatric Research Office (PRO) in 2015 to renew its commitment to the next 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 Children’s of Alabama (COA) and UAB.

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/COA 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—meeting 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
- Grants and Contracts—grant application activities related to federal and non-federal grants and contracts, including face pages and formatting through ASSIST and grants.gov, to ensure that applications are appropriately formatted for submission
- Regulatory—assistance with IRB applications and regulatory documents
- Research Coordination—provides budget development and negotiation for industry studies, study implementation, site management, quality control and Good Clinical Practice (GCP) training

The PRO also manages the Child Health Research Unit (CHRU), a partnership between COA, the UAB Department of Pediatrics and the UAB Center for Clinical and Translational Science (CCTS). It provides outpatient space for the conducting of pediatric research to reduce barriers of scientifically rigorous clinical and translational research. Opened in 2017 in newly renovated space, the 2,547-square-foot CHRU is located on the 3rd floor of Dearth Tower. This facility 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

During 2018, the 3rd floor CHRU was used by 18 unique investigators for 22 studies.

- Most users were from Pediatrics (from five divisions: Allergy/Immunology, Gastroenterology, ID, Nephrology and Neurology)
- Others were from the Departments of Medicine, Ob/Gyn, Neurology, Genetics and Neurosurgery

There were more than 835 visits in 2018.

Note: There is also a satellite CHRU on the 7th floor (the old unit). They keep their own data.

## Breakdown of 2018 Services Provided

The PRO assisted investigators and their study teams with 427 projects that utilized 491 services. Projects can use more than one service if, for example, one project requested help with both biostatistics and informatics. There has been an increase of 21% in projects and 20% in services from 2016 (the first full year PRO operated) to 2018.

Services were used by all 19 DOP divisions.

Services were also used by those doing pediatric research within five other schools and 12 other departments.

- Schools included: College of Arts and Sciences, School of Dentistry, School of Public Health, School of Nursing, and School of Health Professions
- Departments included: Neurology, Neurosurgery, Surgery, Urology, Psychiatry and Behavioral Neurobiology, Psychology, Oral and Maxillofacial Surgery, Health Care Organization and Policy, Pharmacology/Toxicology, Occupational Therapy, Genetics and Medicine

The breakdown of projects by type of user (not unique users) for 2018 is as follows:

- 14 project requests from students (3%)
- 6 project requests from residents (1%)
- 20 project requests from fellows (5%)
- 3 project requests from instructors (1%)

- 132 project requests from assistant professors (31%)
- 81 project requests from associate professors (19%)
- 99 project requests were from professors (23%)
- 27 project requests from administrators (6%)
- 45 project requests from others (typically researchers, study coordinators or study team members) (11%)

There were 195 unique users during 2018.

## 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 seeks to create an academic environment and programs that

1. support, enhance, and reward the professional activities of faculty;
2. promote recruitment, retention, and academic career advancement of all faculty;
3. enhance leadership development of a diverse faculty; and
4. improve career satisfaction and promote work/life integration among

OFD services include programs in:

Professional Development

Leadership Development

Mentorship

Work/Life Balance and Wellness

Executive Coaching

Coaching Circles

The OFD sponsors a monthly 4th Fridays Lunch and Learn Series and a year-long Faculty Scholars webinar course. Other services include providing full support to faculty during their promotion and tenure process. The office also sponsors Special Interest Groups and Departmental Days of Service. The OFD coordinates the annual New Faculty Orientation, New Faculty Reception and Faculty Awards process.

### **OFD Services Offered in 2018**

#### **Individual Faculty Development Consultation**

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

#### **Sponsored December Pediatric Grand Rounds**

*Caring for Our Own: The Second Victim Experience*

Susan D. Scott, Ph.D., RN, CPPS, FAAN

University of Alabama at Birmingham

December 6, 2018

**Coaching Circles**—provided Coaching Circles September 2018–February 2019 for nine faculty members at Junior and Mid-Career Level in conjunction with the UAB Organizational Learning and Development Office.

**Ice Cream Social**—sponsored in August for Department of Pediatrics Faculty

**Leadership Development Presentations**—for faculty

#### **Change Style Indicator**

Claire Lenker, MSW

January 23, 2018

#### **Effective Listening for Faculty and Staff**

Speaker: Jeremy Wass

HR Learning and Development Specialist

November 30, 2018

### 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

This series is designed to promote camaraderie through stimulating leadership topics in an intimate setting. The curriculum emphasizes the following:

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

### Faculty Scholars in Culturally Responsive and Family Centered Care Class

Led by Jeff Ring, Ph.D., Principal, Health Management Assoc.

The goal of the Department of Pediatrics (DOP) Faculty Scholars Program is to strengthen our cadre of teaching faculty. This is accomplished through providing training and support for the development, implementation, and evaluation of innovative curricula designed to improve pediatric graduate medical education. Our aim is to fortify your capacity to teach culturally competent and family-centered care. This type of training is critical to being responsive to the Accreditation Council for Graduate Medical Education (ACGME) directives to train residents and fellows to provide high-quality care to an increasingly diverse population in the face of health inequities. The program also aims to enhance the leadership capacity of the participants.

### Outreach

Collected toys for Christmas

Collected school supplies at Christmas

### Special Interest Groups

The Office of Pediatric Faculty Development continues to support and promote special interest groups offered, such as the AMWA, yoga classes and running groups.

### New Faculty Orientation

Day-long seminar covering issues and items helpful to new faculty in the Department of Pediatrics. Agenda attached.

### New Faculty Recognition

Recognized 46 new pediatric faculty at the October Department of Pediatrics Faculty Meeting.

### "Faculty Pals" Program

Matches new faculty hires with faculty peer support mentors. The mentors are available for questions and guidance, and touch base with their mentees at least once a quarter.

### Pediatric Faculty Excellence Awards

Led the nomination and voting process to select and recognize outstanding pediatric faculty. See attached listing.

Wellness: Mini Z—Research project survey to monitor departmental wellness and plan department activities. Sponsored by the Pediatric Office of Faculty Development and Wellbeing Committee, the goal is to create an environment that promotes healthy work/life integration, fosters physical and emotional development of our colleagues, encourages collegial interactions both within and between divisions, and role models professional and healthy behaviors and compassionate recognition of unhealthy behaviors.

### Faculty Training Seminars

Our Pediatric **4th Fridays Series** continued in 2018, often in conjunction with the Center for Teaching and Learning's Medical Educator Program. The schedule follows:

#### 2018 4th FRIDAY PRESENTATION

DATE	TITLE	SPEAKER
1/26/2018	Case-Based Learning in Large Enrollment Classes—Medical Educators Series	Will Brooks, Ph.D.
2/23/2018	Personal Development Plan—Promotion Series	Maaike Everts, Ph.D., MSc
3/23/2018	The Teaching Portfolio—Promotion Series	Marjorie Lee White, M.D.
4/27/2018	Teaching with the End in Mind—Medical Educators Series	Scott Phillips, Ph.D.
5/25/2018	Effective Team Teaching—Medical Educators Series	Tino Unlap
6/22/2018	Resilience	Kathryn Jones Ph.D., EACC
7/27/2018	Mindfulness	Heather Austin, Ph.D.
8/24/2018	Work/Life Balance	Lynne Clifton, MSW, LICSW, PIP
9/28/2018	The Clinical Portfolio	Terri Magruder, M.D.
10/26/2018	SMART Goals & The UAB CV	Tina Simpson & Clare Mallette, M.D.

# 2018 Pediatric Surgery Academic Annual Report



**UAB MEDICINE**  
PEDIATRICS



Children's  
of Alabama®

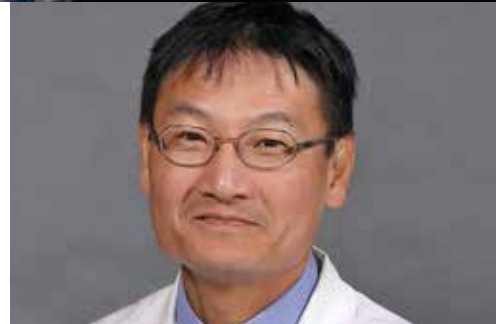


# Pediatric Surgery



Dear Friends and Colleagues,

We are pleased to provide the 2018 report for the Pediatric Surgical Subspecialties. Translational research continues to be productive with forays into novel therapies for children with solid tumors. Clinical research endeavors include national trials and multi-institutional projects that look at how we might improve the care for infants and children with uncommon surgical problems. Much of this work is made possible through the generosity of the Children's of Alabama and the children of Alabama are the principal beneficiaries.



*Mike Chen, M.D.*

Mike K. Chen, M.D.  
Farley Endowed Chair  
Professor of Surgery  
Surgeon-in-Chief, Children's of Alabama  
Director, Division of Pediatric Surgery  
Department of Surgery  
UAB School of Medicine

## CONTENT

The Pediatric Surgical Subspecialties at Children's of Alabama are comprised of 10 subspecialty divisions, each with specific interests and focus on education, research and excellent clinical care. The highlights and accomplishments of each division and its faculty in 2018 will be detailed.

### PEDIATRIC SURGICAL SUBSPECIALTIES

- |   |                                  |    |                                      |
|---|----------------------------------|----|--------------------------------------|
| 1 | Pediatric Cardiovascular Surgery | 6  | Pediatric Oral/Maxillofacial Surgery |
| 2 | Pediatric Dentistry              | 7  | Pediatric Orthopedic Surgery         |
| 3 | Pediatric General Surgery        | 8  | Pediatric Otolaryngology             |
| 4 | Pediatric Neurosurgery           | 9  | Pediatric Plastic Surgery            |
| 5 | Pediatric Ophthalmology          | 10 | Pediatric Urology                    |

# Pediatric General Surgery

## FEATURED RESEARCH

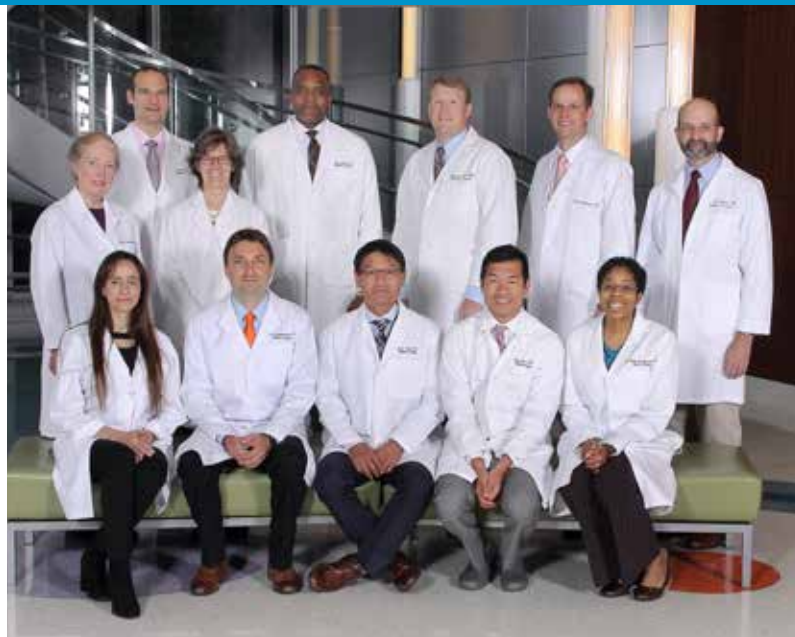
The Division of Pediatric Surgery continues to be productive in a broad range of research—pediatric oncology, necrotizing enterocolitis, pediatric trauma and clinical outcomes research. This division has garnered significant grant funding to support the research mission.

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. She continues to evaluate the utility of a novel rexinoid therapy, 9-cisUAB30, for the treatment of pediatric neuroblastoma and high-risk pediatric medulloblastoma. In addition, she will continue to evaluate the role of specific mechanisms influencing metastasis in hepatoblastoma as she mentors junior surgical residents in her lab.

Dr. Mike Chen continues his leadership as the local PI for the NIH prospective, observational study: Teen-Longitudinal Assessment of Bariatric Surgery (Teen-LABS). This project is in its 7th year, and significant metabolic changes have been observed when comparing surgical management versus medical therapy for this disease process. Notable changes include reduction in cardiovascular disease risk factors, improvement in diabetes profile and reduced renal injury. Surgical intervention in the teenage years may produce benefits that can be life-altering.

Necrotizing enterocolitis continues to be a significant source of morbidity and mortality in premature infants. 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 five active research protocols with two manuscripts submitted for publication this year. His investigational focus continues to define 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. His research has become more translational—his lab is now 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 has continued to publish research characterizing important clinical outcomes surrounding pediatric surgical care with the National Surgical Quality Improvement Project-Pediatrics (NSQIP-P) and multi-institutional collaboration.



## GRANTS

1. **Elizabeth A. Beierle**; Role: Mentor. Total Award: \$35,000, Society of University Surgeons. Resident Research Award, PIM3 kinase promotes tumor metastases in hepatoblastoma.
2. **Mike K. Chen**; Role: Institutional PI. Adolescent Bariatrics: Assessing Health Benefits and Risks [Teen-Longitudinal Assessment of Bariatric Surgery (Teen-LABS)], NCT00474318; 2UM1DK072493-11.
3. **Robert T. Russell**, Role: Principal Investigator. Total Award: \$70,000, Kaul Pediatric Research Institute. Coagulopathy Following Head Injury in Pediatric Trauma: From Bedside to Bench.
4. **Robert T. Russell**, Role: Institutional PI. Timing of Inguinal Hernia in Premature Infants: A Randomized Trial. U01 HD076733-05.
5. **Colin A. Martin**, Role: Principal Investigator. Total Award: \$150,000. The American Surgical Association Fellowship Research Award. Early Microbial Influence of IgA Secretion and Immune Development.

## PUBLICATIONS

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## BOOK CHAPTERS

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## PEDIATRIC GENERAL SURGERY AWARDS/RECOGNITION/LEADERSHIP

**Dr. Mike Chen** was named as Chair of University of Alabama Health Services Foundation Pediatric Committee and elected to the American Pediatric Surgical Association Board of Governors as Treasurer. Dr. Chen was also inducted into Beta Gamma Sigma International Business Honor Society.

**Dr. Elizabeth Beierle** was awarded the Graduate Dean's Award for Excellence in Mentorship from the University of Alabama at Birmingham Graduate School. In addition, she was named to the American Academy of Pediatrics (AAP) NCE Planning Committee and served as the Program Chair for the Surgery Section at this year's AAP meeting.

**Dr. Colin Martin** was elected as a new member of the Society of University Surgeons and as the recipient of the Association for Academic Surgery Visiting Fellows Exchange with the Royal Australasian College of Surgeons. In addition, Dr. Martin was awarded the American Surgical Association Fellowship Research Award.

**Dr. Rob Russell** was awarded a grant from the Kaul Pediatric Research Institute to continue research on coagulopathy following pediatric trauma. He also participated in the Pediatric Critical Care Transfusion and Anemia Expertise Initiative (TAXI), framing important recommendations for transfusion in pediatric patients. Dr. Russell was also elected as a new member of the Society of University Surgeons and chosen to participate in the UAB Health Leadership Academy.

**Dr. David Rogers** was appointed the ProAssurance Endowed Chair for Physician Wellness, UAB School of Medicine in June 2018.

# Pediatric Neurosurgery

## PEDIATRIC FACULTY

<b>Dr. Jeffrey P. Blount</b>	<b>Professor, Chair</b>
Dr. Curtis J. Rozzelle	Associate Professor
Dr. James M. Johnston	Associate Professor
Dr. Brandon G. Rocque	Associate Professor



2018 has been a productive and banner year for the Pediatric Neurosurgery service at Children's of Alabama/UAB. One important event was recognition and promotion within UAB of the Section of Pediatric Neurosurgery to become a Division within the Department of Neurosurgery. This distinction attests to University recognition of substantial productivity and scholarship over a significant period of time.

Academic manuscripts: A total of 28 papers were published by faculty members within the Division in 2018. These are included as Appendix I. Topics range broadly and cover a full range of surgically relevant topics in Pediatric Neurosurgery, including hydrocephalus, spina bifida, tumors, spinal neurosurgery in children and epilepsy.

Research Awards Received: The Division attained a landmark accomplishment in 2018. We were awarded all four of the major awards/competitions at our major national meeting. No program in North America has previously attained this level of award dominance at the Pediatric Section meeting.

Editorial/Peer Review Positions: Faculty members provide peer review for a significant number of journals, including the major journals in Neurosurgery. Dr. Blount is on the editorial board of both major journals in Neurosurgery.

Grants Applied/Received: At present faculty members have applied for 13 grants totaling over 4.5 million dollars. Each faculty member has several applications out for which they are PI or co-PI, and the topics range broadly from hydrocephalus to spina bifida to concussive head injury. Favorable review led to a collaborative grant funded in 2018 that will enable investigation of tissue from Spina Bifida patients for expression of key genes related to growth and cell signaling pathways.

Registries (Multi-center Collaborative Clinical Research): The Division continued to uphold its excellent track record of registry collaboration by providing either the largest or second-largest number of patients in each study for every registry in which we are participating.

- Hydrocephalus Clinical Research Network (HCRN)
- Park-Reeves Syringomyelia Registry
- National Spina Bifida Patient Registry, NSBPR (funded by CDC)
- Cerebral Palsy Research Network
- Understanding Variation in Medical Care and Follow up of Pediatric Sports Concussion Patients: Bridging the Multi-Disciplinary Gap Registry

Global Neurosurgery: The division continues its commitment to global neurosurgery.

1. Founder/Co-developer of Intersurgeon-online program embraced by International Society of Pediatric Neurosurgery and American College of Surgeons to connect programs between countries of modest or moderate resources with programs in North America and Europe- J.M Johnston
2. J.M Johnston—Fellowship at WHO, Geneva- Global Neurosurgery

3. Mentor—Global Neurosurgery Fellow (Jacob Lepard, UAB Neurosurgery Resident): fellowship infolded in residency to Uganda, Vietnam and South Africa
4. Incorporation of Rotation at Red Cross Children’s Hospital into Pediatric Neurosurgery Fellowship.
5. Drs. Rocque/Johnston—McWane Fellows in Global Neurosurgery, Hanoi and Ho Chi Minh City, Vietnam.
6. Visiting Neurosurgeons and neurologists from Vietnam; active ongoing participation with pediatric epilepsy programs in Vietnam
7. International Visiting Professorships/Invited Lectures:
  - a. J Blount —Bombay Children’s Hospital, Mumbai, India.
  - b. BG Rocque —National Neurosciences Hospital, Dhaka, Bangladesh.
  - c. J.M. Johnston—Vietnam.
  - d. BG Rocque—Vietnam.
  - e. J Blount—Mumbai Neurological Society, Visiting Professor, October, 2018.
  - f. JB invited faculty—Intl Federation for Spina Bifida and Hydrocephalus; New Delhi, India, August, 2018.
  - g. J Johnston- invited faculty—International Society for Pediatric Neurosurgery Course, Dakar, Senegal.
  - h. BG Rocque—Guest lecturer: Indonesia.

## PUBLICATIONS

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## PEDIATRIC NEUROSURGERY GRANT AWARDS/RECOGNITION/LEADERSHIP:

- Recent presented/submitted analysis of Fellowship Programs in Pediatric Neurosurgery showed UAB/COA fellowship program number 2 in USA in post-fellowship academic productivity of fellows, as measured by academic paper output and academic value.
- Award funded: Risk Genes and Environmental Interactions in Neural Tube Defects CO- PI: Jeffrey Blount, MD, submission by Dr. Betsy Ross, Cornell Weil Medical College Funding source: NIH/NICHD Supplement to P01. Amount: \$194,957 for 1 year (our site), to commence 2019
- 2018 AANS/CNS Section on Pediatric Neurosurgery- Nashville, TN. December 5-7, 2018.
  - AAP/SONS Award—"Capacity building for the surgical treatment of pediatric epilepsy in Vietnam: A model for international collaboration"
  - Schulman Award—"Developing a de novo stereotactic electroencephalography (SEEG) program: A multi-institutional pediatric experience"
  - Hydrocephalus Award—"Cross-sectional evaluation of transition readiness in the interdisciplinary spina bifida clinic"
  - Top Poster Presentation—"Quality of life in Benign Tumors."



# Pediatric Oral/Maxillofacial Surgery

The Division of Pediatric Oral and Maxillo-Facial surgery has enjoyed a very successful year. Peter Waite, M.D., D.D.S., MPH, and Kathlyn Powell, M.D., D.M.D. are the primary pediatric OMS at Children's Hospital of Alabama and operate on more than 450 patients per year. They provide sub-specialty care for cleft craniofacial, trauma, benign pathology, airway obstruction, odontogenic and rheumatologic disease of the TMJ. Dr Powell is the only pediatric trained OMS in Alabama and has strong referral relationships throughout the state and region. Dr Powell frequently lectures to the pediatric dentists and the Alabama Dental Association. We provide care for special needs children that is not available in any other facility in the state. The department has more than 20 publications this year and 36 research projects, including collaboration with pediatric rheumatology of the TMJ. Dr Hassan is PI for RO1 "Epigenetic axis of bone formation" and submitted an additional RO1 titled "micro RNA based therapy for rheumatoid arthritis." Most of our research is clinical based scholarly activity directly related to patient care and involves resident projects. We have 24 residents in OMS, and they all must be involved with research activity.



# Pediatric Orthopedic Surgery

## RESEARCH HIGHLIGHTS

Participating in the following multi-institutional studies:

- International Perthes Study Group
- Congenital Pseudarthrosis Tibia BMP Multicenter study (D. of Defense, UAB lead site)
- IMPACCT (Infrastructure for Musculoskeletal Pediatric Acute Care Clinical Trials)
- AIS (Adolescent Idiopathic Scoliosis) Obesity Study

## PUBLICATIONS

1. Gutman IM, **Gilbert SR**. Trends in slipped capital femoral epiphysis: is the rate declining? *J Child Orthop*. 2018 Oct 1;12(5):428-433. PubMed PMID: 30294366.
2. Gutman IM, Niemeier TE, **Gilbert SR**. National Databases in Pediatric Orthopaedic Surgery: A Comparison of Demographics, Procedures, and Outcomes. *J Pediatr Orthop*. 2018 Jul 2. PMID: 29975293.
3. Ashley P, **Gilbert SR**. Obesity in Pediatric Trauma. *Orthop Clin North Am*. 2018 Jul;49(3):335-343. PMID: 29929715.
4. Davis WT, **Gilbert SR**. Comparison of Methicillin-resistant Versus Susceptible *Staphylococcus aureus* Pediatric Osteomyelitis. *J Pediatr Orthop*. 2018 May/June;38(5):e285-e291. PMID:29462119.
5. Griswold BG, Sheppard E, Pitts C, **Gilbert SR**, Khoury JG. The Introduction of a Preoperative MRI Protocol Significantly Reduces Unplanned Return to the Operating Room in the Treatment of Pediatric Osteoarticular Infections. *J Pediatr Orthop*. 2018 Mar 2. PMID: 29505488.
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12. **Conklin MJ**, Pearson JM. The Musculoskeletal Aspects of Obesity in Neuromuscular Conditions. *Orthop Clin North Am*. 2018 Jul;49(3):325-333 PMID: 29929714.
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15. Walters BK, Read CR, **Estes AR**. The effects of resistance training, overtraining, and early specialization on youth athlete injury and development. *J Sports Med Phys Fitness*. 2018 Sep;58(9):1339-1348. PMID: 28597618.





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19. Momaya AM, Stavrinou D, McManus B, Wittig SM, Emblom B, **Estes R**. Return to Driving After Hip Arthroscopy. *Clin J Sport Med*. 2018 May;28(3):299-303. PMID: 28708706.

#### Other Publications

Orthopaedic Basic Science Scored and Recorded Self-Assessment Examination 2018, American Academy of Orthopaedic Surgeons, **Shawn R. Gilbert, M.D.**, Editor in Chief.

Healthcare Guidelines for the Care of People with Spina Bifida. An initiative of the Spina Bifida Association Orthopedic section, **Conklin MJ**, Kishan S, Nanayakkara C, Rosenfeld SR. 2018 On line resource. Pages 1-9 section 15.

#### Other Notables

**Dr Michael Conklin** serves as committee chair for orthopedics for Spina Bifida Healthcare guidelines. He has also been selected to serve on the Committee for Science and Publication, National Spina Bifida Patient Registry by the Center for Disease Control.

**Dr. Shawn Gilbert** has continued to serve as chair of the basic science content committee for the American Academy of Orthopaedic Surgery. He also serves on the Trauma and Disaster Preparedness committee of the Pediatric Orthopaedic Society of North America and on the leadership committee of the International Perthes Study group as the IRB/regulatory chair. He is president-elect of the Alabama Orthopedic Society.



# Pediatric Plastic Surgery

## PEDIATRIC FACULTY

**Dr. John H. Grant**

Dr. Rene Myers

Dr. Timothy W. King

**Professor, Chair**

Assistant Professor

Associate Professor



The Division of Pediatric Plastic Surgery has a wide breadth of focus on specific clinical problems, global education and research involving wound healing. Our cleft and craniofacial team has received five-year recognition from the American Cleft Palate Craniofacial Association Commission on Approval of Teams. This the prestigious listing with the ACPA facilitates the improvement of team care and ensures accurate information is provided to patients and families/caregivers regarding services provided by teams that meet the Standards for Approval of Cleft Palate and Craniofacial Teams.

Dr. John Grant continues to host, mentor and educate international fellows at Children's of Alabama, with the most recent trainee from El Salvador. He continues to cultivate relationships with local surgeons in Kumasi, Ghana, Sohag, Egypt, and Ho Chi Minh City, Vietnam—this is a commitment to teaching local surgeons better surgical techniques and developing international clinical research initiatives.

Dr. Tim King continues research including cutaneous wound healing, regenerative therapies, tissue engineering, and 3D printing. His NIH K08 grant focuses on the role of Notch2 and Notch3 in cutaneous wound healing.

Dr. Myers has continued his focus developing a coordinated effort in neonatal mandibular distraction for Pierre Robin Sequence and has now treated mo 20 such patients with excellent results in the past two years. He has traveled to Guatemala and Honduras to provide cleft and general plastic surgery care to needy populations. He maintains a strong teaching portfolio and currently coordinates the maxillofacial plating lab, upcoming cadaver lab and helps with microsurgery labs at UAB.

## PUBLICATIONS

Outcome of Palate Re-repair with Radical Repositioning of the Levator Muscle Sling as a First-Line Strategy in Postpalatoplasty Velopharyngeal Incompetence Management Protocol. Elsherbiny A, Amerson M, Sconyers L, **Grant JH 3rd**. *Plast Reconstr Surg*. 2018 Apr;141(4):984-991. doi: 10.1097/PRS.0000000000004236. PMID:29595732.

The Significance of Uvula After Palatoplasty: A New Technique to Improve the Aesthetic Outcome. Elsherbiny A, Mazed AS, Saied S, **Grant JH 3rd**. *Cleft Palate Craniofac J*. 2018 Mar;55(3):451-455. doi: 10.1177/1055665617736776. Epub 2017 Dec 14. PMID: 29437501.

Time course of improvement after re-repair procedure for VPI management. Elsherbiny A, Amerson M, Sconyers L, **Grant JH 3rd**. *J Plast Reconstr Aesthet Surg*. 2018 Jun;71(6):895-899. doi: 10.1016/j.bjps.2018.01.029. Epub 2018 Feb 5.

## ABSTRACTS

**René P. Myers**. Evaluation and Management of Frontal Sinus Fractures. Alabama Society of Plastic Surgeons 2018. Birmingham, Alabama.



## BOOK CHAPTERS

Melnikoff BA, **Myers RP**. Fungal Infections: Non-candidal Fungal Infections. In: Ashley SW, ed. Scientific American Surgery. Hamilton: Decker; Forthcoming 2018. DOI: 10.2310/7800.2366. <https://www.SciAmSurgery.com>.

Melnikoff BA, **Myers RP**. Fungal Infections: Systemic Antifungal Agents. In: Ashley SW, ed. Scientific American Surgery. Hamilton: Decker; Forthcoming 2018. DOI: 10.2310/7800.2366. <https://www.SciAmSurgery.com>.

Melnikoff BA, **Myers RP**. Fungal Infections: Candidiasis. In: Ashley SW, ed. Scientific American Surgery. Hamilton: Decker; Forthcoming 2018. DOI: 10.2310/7800.2366. <https://www.SciAmSurgery.com>.

Powell KK, Elsherbiny A and **Grant JH**. LeFort I Osteotomy and Advancement. In: Chung KC, ed. Operative Techniques in Plastic Surgery. Wolters Kluwer Health. ISBN-13: 978-1496339508 ISBN-10: 1496339509 .

## PEDIATRIC PLASTIC SURGERY AWARDS/RECOGNITION/LEADERSHIP

Dr. Tim King hosted the Plastic Surgery Research Council Meeting May 17–20 in Birmingham, Alabama. He now serves as the Immediate Past Chair, Plastic Surgery Research Council. He was elected President, American Association of Pediatric Plastic Surgeons.

Dr. John Grant was invited faculty at week-long live surgical workshops in both Egypt and Ghana, where he worked with local and regional surgeons, providing lectures and hands-on teaching through live surgery to improve surgical care provided in these regions.

Dr. Rene Myers was awarded the Plastic and Reconstructive Surgery Chief Residents' Award for Excellence in Teaching in 2018. He sits on both the Nominating Committee and the Educational Grants Committee of the American Society of Maxillofacial Surgeons. He was invited by the University of Rochester Division of Plastic Surgery as a Visiting Professor, where he presented his early work after leaving residency and fellowship, as well as significant plastic surgery oral boards reviews and testing. He currently serves as the course director for Plastic Surgery and Pediatric Plastic Surgery for third- and four-year medical students. He also precepts a number of PA students. He is under consideration for active membership in the American Society of Craniofacial Surgery and associate membership in the International Society of Craniofacial Surgery.



# Pediatric Urology

## PEDIATRIC FACULTY

**Dr. David B. Joseph**

Dr. Davis M. Kitchens

**Professor, Division Director**

Associate Professor



The Section of Pediatric Urology has a wide variety of research interests including spina bifida outcomes, renal stone disease in pediatric patients, and advances and application of robotic surgery. Dr. David Joseph has significant grant funding to specifically study improving care and outcomes in the spina bifida population, and to evaluate the efficacy of BOTOX® in urinary incontinence due to neurogenic detrusor overactivity.

Dr. David Kitchens is exploring outcomes in surgical management of hypospadias and open extravesical approaches in the treatment of vesicoureteral reflux. He is also exploring innovative interactive computer-assisted learning for the enhancement of resident education. He heads the COA/UAB component of new Southeastern Research Consortium for Pediatric Urology.

Dr. Pankaj Dangle is directing the cooperative Urologic Robotic program of UAB and COA. He also directs the Multidisciplinary Pediatric Urinary Stone Clinic in conjunction with Pediatric Nephrology.

## GRANTS

1. **David Joseph, CDC** 1U01DD001080-01 The UAB Approach to Improving the Care and Outcomes of People Living with Spina Bifida—Component B. Project period 9/1/2014-8/31/2019 (\$299,715).
2. **David Joseph, CDC** 1U01DD001079-01 The UAB Approach to Improving the Care and Outcomes of People Living with Spina Bifida, Component C—Newborn Urologic Protocol to Preserve Renal Function. Project period 9/1/2014-8/31/2019 (\$99,800).
3. **David Joseph**, Allergan 191622-120 BOTOX® in the Treatment of Urinary Incontinence Due to Neurogenic Detrusor Overactivity in Patients 5 to 17 Years of Age.
4. **David Joseph**, Allergan 191622-12 Long-term Extension Study of BOTOX® in the Treatment of Urinary Incontinence Due to Neurogenic Detrusor Overactivity in Patients 5 to 17 Years of Age.

## PUBLICATIONS

1. Wiener JS, Suson KD, Castillo J, Routh JC, Tanaka ST, Liu T, Ward EA, Thibadeau JK, **Joseph DB**: Bladder Management and Continence Outcomes in Adults with Spina Bifida: Results from the National Spina Bifida Patient Registry, 2009 to 2015. J Urol. 2018 Jul;200(1):187-194. doi: 10.1016/j.juro.2017.12.051. PMID: 2958821.
2. Dudley AG, Adams MC, Brock JW, Clayton DB, **Joseph DB**, Koh CJ, Merguerian PA, Pope JC, Routh JC, Thomas JC, Tu, DD, Wallis MC, Wiener JS, Yerkes EB, Lauderdale CJ, Shannon CN, Tanaka ST: Interrater Reliability in Interpretation of Neuropathic Pediatric Urodynamic Tracings: An Expanded Multi-Center J Urol. 2018 May;199(5):1337-1343. doi: 10.1016/j.juro.2017.12.051. Epub 2017 Dec 29. PMID: 29291418.
3. Atchley TJ, **Dangle PP**, Hopson BD, Graham A, Arynchyna AA, Rocque BG, **Joseph DB**, Wilson TS: Age and factors associated with self-clean intermittent catheterization in patients with spina bifida J Pediatr Rehabil Med. 2018 Nov 19. doi: 10.3233/PRM-170518.
4. Hopson B, Rocque BG, **Joseph DB**, Powell D, McLain ABJ, Davis RD, Wilson TS3, Conklin MJ, Blount JP: The development of a lifetime care model in comprehensive spina bifida care. Pediatr Rehabil Med. 2018 Nov 20. doi: 10.3233/PRM-180548.

## PEDIATRIC UROLOGY AWARDS/RECOGNITION/LEADERSHIP

**Pankaj P. Dangle**: Elected to the COA Executive Committee; Director of Pediatric Urology Robotic Program. Director of the Multidisciplinary Urinary Stone Clinic.

**David M. Kitchens**: COA/UAB Site director for the Southeastern Pediatric Urology Research Consortium.

**David B. Joseph**: Past Chair, Section on Urology AAP, Member ACGME Urology RRC, Member National Spina Bifida Board of Directors, President-elect American Board of Urology.

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