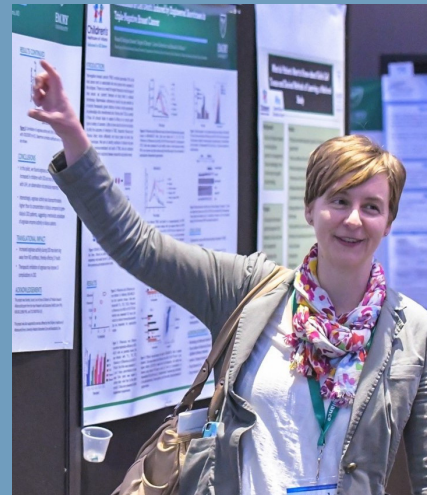




# 2019 ANNUAL SOUTHEASTERN PEDIATRIC RESEARCH CONFERENCE

**Spotlighting Metabolomics and Child Health**

**MONDAY, JUNE 10, 2019 - GEORGIA AQUARIUM**



An Atlanta-Based Research Alliance





## 2019 Annual Southeastern Pediatric Research Conference

# Welcome!

Dear Colleagues,

We would like to officially welcome you to the 2019 Annual Southeastern Pediatric Research Conference. Over the last nine years, this conference has evolved from a small local event to a major regional conference bringing together clinicians, scientists, and engineers to highlight cutting edge child health research. We are pleased to welcome colleagues this year from throughout the United States, including Colorado State University, University of Alabama at Birmingham, University of Tennessee Health Science Center, University of South Florida and University of California, San Diego, as well as our colleagues throughout Georgia from institutions including Georgia State University and Mercer University.

Our theme this year is "Spotlighting Metabolomics and Child Health," examining how metabolic "set points" developing during childhood, and worsening with age, are adversely impacted by the childhood obesity epidemic. Our keynote speakers will explore both the known and unknown of metabolomics in children's health, and focus on the ways in which metabolic research can support personalized and preventative medicine in the improvement of child health. We hope the combination of presentations from local researchers and colleagues from institutions throughout the country will facilitate discussion in the area of metabolomics research and encourage transformative approaches to child health.

We encourage you to take every opportunity to connect with fellow researchers today, forge new collaborations and continue pushing the field of metabolomics and child health forward.

Sincerely,



Facundo M. Fernández, PhD

Professor and Vasser-Woolley Chair  
in Bioanalytical Chemistry, School  
of Chemistry and Biochemistry

Professor, Petit Institute for  
Bioengineering & Bioscience (IBB)

Director, IBB Systems Mass  
Spectrometry Center (SyMS-C),  
Georgia Institute of Technology



Yasmin Tyler-Hill, MD, FAAP

Associate Professor and Chair,  
Department of Pediatrics,  
Morehouse School of Medicine  
(MSM)

Medical Director, Children's  
Healthcare of Atlanta at Hughes  
Spalding

Chief of Service, MSM Pediatric  
Services, Grady Health Systems



Miriam B. Vos, MD, MSPH

Associate Professor, Pediatrics,  
Division of Pediatric  
Gastroenterology, Hepatology, and  
Nutrition, Emory University School  
of Medicine

Director of Graduate Studies,  
Nutrition and Health Sciences  
Program, Emory University

Attending Hepatologist and  
Director, The Mason Transplant and  
Wellness Program, Children's  
Healthcare of Atlanta

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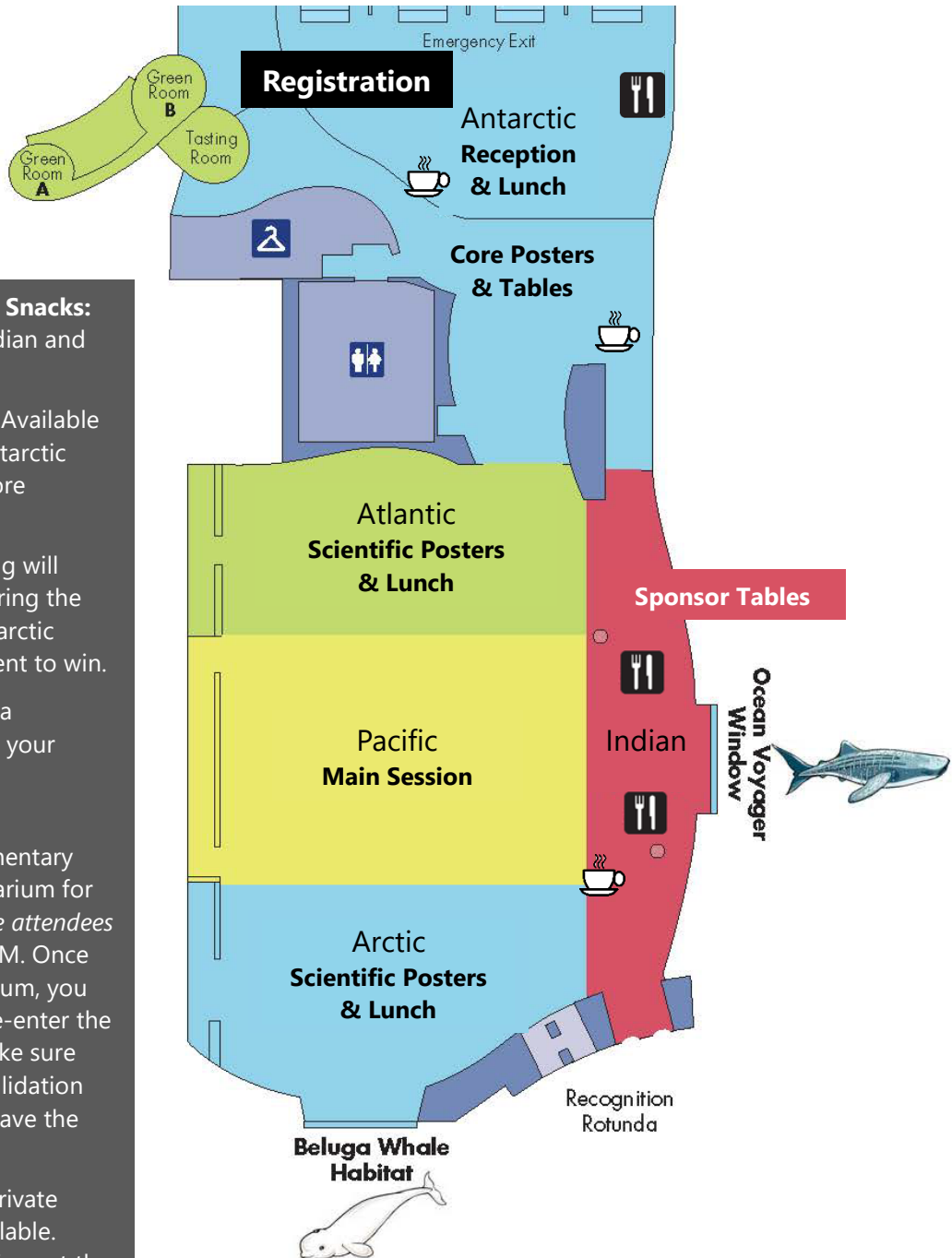


@ATLPedsResearch  
**#kidomics19**



**Facebook.com/ATLPedsResearch**

# CONFERENCE MAP



**Breakfast, Lunch & Snacks:** Buffets are in the Indian and Antarctic rooms.

**Beverage Stations:** Available in the Indian and Antarctic rooms and by the core posters.

**Door Prizes:** Drawing will occur at 4:30 PM during the reception in the Antarctic room. Must be present to win.

**Parking:** Please get a validation sticker for your parking ticket at the registration desk.

**Aquarium:** Complimentary entrance to the aquarium for *registered conference attendees only* opens at 5:00 PM. Once you enter the aquarium, you will not be able to re-enter the ballroom. Please make sure you get a parking validation sticker before you leave the ballroom.

**Nursing Room:** A private nursing room is available. Please ask for directions at the registration desk.

# AGENDA

## MORNING SESSION

<b>7:00 – 8:00 AM</b>	<b>Registration and Continental Breakfast</b>
<b>8:00 – 8:10 AM</b>	<p><b>Opening Remarks by Co-Chairs</b></p> <p><b>Facundo M. Fernández, PhD</b> Professor and Vasser-Woolley Chair in Bioanalytical Chemistry, School of Chemistry and Biochemistry; Professor, Petit Institute for Bioengineering &amp; Bioscience (IBB); and Director, IBB Systems Mass Spectrometry Center (SyMS-C), Georgia Institute of Technology</p> <p><b>Yasmin Tyler-Hill, MD, FAAP</b> Associate Professor and Chair, Department of Pediatrics, Morehouse School of Medicine (MSM); Medical Director, Children’s Healthcare of Atlanta at Hughes Spalding; and Chief of Service, MSM Pediatric Services, Grady Health Systems</p> <p><b>Miriam B. Vos, MD, MSPH</b> Associate Professor, Pediatrics, Division of Pediatric Gastroenterology, Hepatology, and Nutrition, Emory University School of Medicine; Director of Graduate Studies, Nutrition and Health Sciences Program, Emory University; and Attending Hepatologist and Director, The Mason Transplant and Wellness Program, Children’s Healthcare of Atlanta</p>
<b>8:10 – 8:30 AM</b>	<p><b>Welcome</b></p> <p><b>Donna Hyland</b> President and Chief Executive Officer Children’s Healthcare of Atlanta</p> <p><b>Lucky Jain, MD, MBA</b> George W. Brumley, Jr. Professor and Chair, Department of Pediatrics, Emory University School of Medicine; and Chief Academic Officer, Children’s Healthcare of Atlanta</p> <p><b>Chaouki T. Abdallah, PhD, MS</b> Executive Vice President for Research; Professor School of Electrical and Computer Engineering; and Chief Research Officer, Georgia Institute of Technology</p>
<b>8:30 – 8:45 AM</b>	<p><b>State of Pediatric Research</b></p> <p><b>Clinton H. Joiner, MD, PhD</b> Vice Chair for Research, Department of Pediatrics; Aflac Children’s Chair for Hematology; Director, Section of Hematology, Aflac Cancer and Blood Disorders Center; and Professor of Pediatrics, Emory University School of Medicine; and Chief Research Officer, Children’s Healthcare of Atlanta</p>
<b>8:45 – 9:25 AM</b>	<p><b>Power and Potential of Metabolomics in Child Health</b></p> <p><b>Dean Jones, PhD</b> Professor, Division of Pulmonary, Allergy, Critical Care and Sleep Medicine, Department of Medicine; and Professor, Department of Biochemistry, Emory University School of Medicine</p>

# AGENDA

<b>9:25 – 9:45 AM</b>	<b>Nutritional Metabolomics for Cystic Fibrosis</b>
	<p><b>Jessica Alvarez, PhD, RD</b>  Assistant Professor of Medicine, Division of Endocrinology, Metabolism and Lipids, Emory University School of Medicine</p>
<b>9:45 – 10:30 AM</b>	<b>Break &amp; Poster Session I – Odd Numbered Posters (Voting begins)</b>
<b>10:30 – 11:20 AM</b>	<b>Short Talks on Selected Abstracts</b>
	<p><i>Molecular Signatures of Early CF Lung Damage Are Linked to Deregulated Hypochlorous Production by Myeloperoxidase</i>  <u>Presenting Author:</u> <b>Joshua D. Chandler, PhD</b>, Emory University School of Medicine</p> <p><i>Metabolomic Pathways and Biomarkers Associated with Pediatric Patient-Reported Outcomes (PRO) During Childhood Cancer</i>  <u>Presenting Author:</u> <b>Janice Withycombe, PhD, RN, MN</b>, Emory University</p> <p><i>Comparative Metabolic Profiling of Metastatic vs. Non-Metastatic Tumors in a Medulloblastoma Mouse Model</i>  <u>Presenting Author:</u> <b>Danning Huang</b>, Georgia Institute of Technology</p>
<b>11:20 AM – 12:50 PM</b>	<b>Networking Lunch and Poster Viewing</b>

## AFTERNOON SESSION

<b>12:50 – 1:00 PM</b>	<b>Afternoon Welcome</b>
	<p><b>Yasmin C. Tyler-Hill, MD, FAAP</b>  Associate Professor and Chair of Clinical Pediatrics, Morehouse School of Medicine; and Medical Director, Children’s Healthcare of Atlanta, Hughes Spalding</p>
<b>1:00 – 1:45 PM</b>	<b>Understanding the Challenges and Opportunities of Metabolomics</b>
	<p><b>Jessica Prenni, PhD</b>  Director of Research Core Facilities; Associate Professor, Department of Horticulture and Landscape Architecture; and Faculty Advisor, Proteomics and Metabolomics Facility, Colorado State University</p>
<b>1:45 – 2:35 PM</b>	<b>Short Talks on Selected Abstracts</b>
	<p><i>Metabolic Changes in Pediatric Respiratory Viral Infection</i>  <u>Presenting Author:</u> <b>Heather Smallwood, PhD</b>, University of Tennessee Health Science Center</p>

# AGENDA

	<b>Short Talks on Selected Abstracts</b> (continued)
	<p><i>Developmental Trajectories of Social Vocal Behavior as a Biomarker for Autism During the First 24 Months of Life: Risk Status vs. Diagnosis</i>  <u>Presenting Author:</u> <b>Mitra Kumareswaran</b>, Emory University</p> <p><i>A Role for the SIX1 Homeobox Gene in CALM-AF10 Leukemogenesis</i>  <u>Presenting Author:</u> <b>Waitman D. Aumann, MD, MS</b>, Emory University</p>
<b>2:35 – 3:05 PM</b>	<b>Break &amp; Poster Session II – Even Numbered Posters</b> ( <i>Voting ends</i> )
<b>3:05 – 3:50 PM</b>	<p><b>Using Mass Spectrometry to Connect The Worlds Chemistry of Life – a Big Data Strategy For Understanding Health</b></p> <p><b>Pieter C. Dorrestein, PhD</b>            Professor, Skaggs School of Pharmacy and Pharmaceutical Sciences, Departments of Pharmacology and Pediatrics; Director, Collaborative Mass Spectrometry Innovation Center; and Co-Director, Institute for Metabolomics Medicine, University of California, San Diego</p>
<b>3:50 – 4:10 PM</b>	<p><b>Bacterial Chit-Chat During Chronic Human Infection</b></p> <p><b>Marvin Whiteley, PhD</b>            Professor Biological Sciences, Georgia Tech Bennie H. and Nelson D. Abell Chair in Molecular and Cellular Biology, Georgia Research Alliance Eminent Scholar Co-Director, Emory-Children’s CF Center (CF@LANTA)</p>
<b>4:10 – 4:15 PM</b>	<b>Presentation of Poster Awards</b>
<b>4:15 – 4:20 PM</b>	<b>Closing Remarks</b>
<b>4:20 – 5:00 PM</b>	<b>Reception with Door Prize Drawing at 4:30 PM</b> ( <i>Must be present to win</i> )
<b>5:00 – 8:00 PM</b>	<b>Complimentary Aquarium Admission for Conference Participants</b>

## Accreditation Statement

Children's Healthcare of Atlanta is accredited by the Medical Association of Georgia to provide continuing education for physicians. Children's designates this live activity for a maximum of 5.5 *AMA PRA Category 1 credits™*. Physicians should claim only the credit commensurate with the extent of their participation in the activity.

Community physicians in attendance will have \$136 charged towards their non-monetary compensation for the CME credit provided. Children’s will submit this on your behalf and no further action is needed from the community physician in attendance.



## KEYNOTE SPEAKERS



**Jessica A. Alvarez, PhD, RD** is an Assistant Professor in the Division of Endocrinology, Metabolism and Lipids of the Department of Medicine at Emory University School of Medicine. Dr. Alvarez is a registered dietitian with a Master's in Clinical Nutrition and a PhD in Nutrition Sciences from the University of Alabama at Birmingham. Dr. Alvarez's research focuses on the role of nutrition and body composition on metabolism in chronic diseases, including cystic fibrosis and obesity-related cardiometabolic diseases, in order to improve standard of care and long-term quality of life. Her research integrates state-of-the-art metabolomics with many aspects of human nutrition and endocrine research including rigorous clinical trials of dietary supplements, nutritional status assessment, body composition and fat distribution analysis, glucose tolerance, and cellular energetics. Dr. Alvarez's research is currently supported by grants from the National Institutes of Health and the Cystic Fibrosis Foundation. Dr. Alvarez is an active member of the Emory+Children's Center for Cystic Fibrosis and Airways Disease Research, the Emory HERCULES Exposome Center, and the Winship Cancer Institute. Dr. Alvarez also serves as Associate Director of the Georgia Clinical and Translational Science Alliance Certificate Program in Translational Research.



**Pieter C. Dorrestein, PhD** is a Professor at the University of California, San Diego (UCSD). He is the Director, Collaborative Mass Spectrometry Innovation Center and a Co-Director, Institute for Metabolomics Medicine, Skaggs School of Pharmacy & Pharmaceutical Sciences, as well as Departments of Pharmacology and Pediatrics. Since his arrival to UCSD in 2006, Prof. Dorrestein has been pioneering the development of mass spectrometry methods to study the chemical ecological crosstalk between populations of microorganisms, including host interactions for agricultural, diagnostic and therapeutic applications. He participated in panels for the White House Science and Technology, Office of President, on the launch of a national microbiome initiative and has been on panels for the National Academy of Sciences on the Chemistry of the Microbiome. He has co-authored over 220 publications and his work has been featured by the Wall Street Journal, CNN, New York Times, Fox, BBC and hundreds of other news outlets. He has been recognized with several awards, among them are awards from the Beckman Foundation, V Foundation for Cancer Research, EUREKA Award for Unconventional and Enabling research, Hearst Foundation, Pharmaceutical Research and Manufacturing Association Research Award and the John J. Abel Award in Pharmacology.



**Dean Jones, PhD** is Professor of Medicine and Director of the Clinical Biomarkers Laboratory at Emory University. He is trained in chemistry, medical biochemistry, nutrition and molecular toxicology, and has more than 35 years directing an academic research program on physiological chemistry, redox biology, and environmental health. Over the past decade, he advanced the use of ultra-high resolution mass spectrometry for clinical metabolomics. This research showed that modern instrumentation with contemporary computational methods has sufficient resolution and sensitivity to measure tens of thousands of small molecules in plasma and other biological specimens. This includes endogenous metabolites, as well as metabolites from diet, intestinal microbiome, environment, drugs, dietary supplements, and personal use products, detected in human plasma, biopsies and other biological materials. Through development of advanced computational methods, this now provides an affordable approach for precision medicine to support prevention, and improve diagnosis, management, and cure of disease.

## KEYNOTE SPEAKERS



**Jessica Prenni, PhD** received her PhD in Analytical Chemistry from the University of Colorado, Boulder followed by postdoctoral training at the Scripps Research Institute in La Jolla, CA. She has over 16 years of experience in biological mass spectrometry and served for over ten years as the Director of the Proteomics and Metabolomics Core Facility at Colorado State University (CSU). During this time, her group developed novel approaches in metabolomics for analytical methods and data analysis including the RAMClustR algorithm for metabolite clustering and annotation. Presently, Dr. Prenni is an Associate Professor in the Department of Horticulture at CSU where the overall theme of her research is the application of mass spectrometry to address important issues in food/crop safety and quality.

Current projects are focused on the use of mass spectrometry to (1) investigate the impact of abiotic and biotic stress on plant metabolism, (2) explore the impact of rhizosphere microbial communities on plant metabolism, (3) develop novel approaches using ambient ionization for characterization of food quality, (4) quantify drug and chemical residues in food products, and (5) develop a novel approach for rapid and robust subtyping of bacterial pathogens.



**Marvin Whiteley, PhD** received his BS degree in Zoology in 1995 from the University of Texas at Austin and his PhD in Microbiology from the University of Iowa in 2001. His doctoral research involved quorum sensing and biofilm formation in the bacterium *Pseudomonas aeruginosa*. Following a postdoctoral fellowship at Stanford University in 2002, Dr. Whiteley accepted a position as an Assistant Professor at the University of Oklahoma, Oklahoma Health Sciences Center. In 2006, Dr. Whiteley moved to the University of Texas at Austin where he was promoted to Professor of Molecular Biosciences and Director of the Center for Infectious Disease. In 2017, he accepted the roles of Bennie H. & Nelson D. Abell Chair, and Georgia Research Alliance Eminent Scholar in Molecular and Cellular Biology at Georgia

Institute of Technology. He currently serves as Director of the Center for Microbial Dynamics and Infection at Georgia Tech, and as Co-Director of the Emory-Children's CF Center (CF@LANTA). He has received numerous awards including the Merck Irving S. Sigal Memorial Award for national research excellence, the Burroughs Wellcome Investigators in Pathogenesis of Infectious Disease award, recognition as a Kavli Fellow of the National Academy of Sciences, the Dean's Teaching Excellence Award at UT-Austin, and election to the American Academy of Microbiology.

# POSTER COMPETITION FINALISTS



Ten posters have been selected as finalists for this year's poster competition. Winners will be selected based on audience voting. **Vote for your top three choices by using the QR code. Submit your votes by 3:05 PM!** Winners will be announced during the Presentation of Poster Awards at 4:10 PM.

- 1 Clustering of Metabolomics, Clinical Biomarkers, and Ectopic Liver Fat in Children/Adolescents: An Integrated Network Analysis**  
*Cioffi, Catherine E.; Narayan, K. M. Venkat; Uppal, Karan; Pierpont, Bridget; Caprio, Sonia; Santoro, Nicola; and Vos, Miriam B.*
- 2 Participant Behavioral Response Patterns and Outcomes in a Parent-Mediated Intervention to Address Food Selectivity in Children with ASD**  
*Cohenour, Jessica; Burrell, T. Lindsey; Gillespie, Scott; McCracken, Courtney; Nuhu, Nadratu; Wawrzonek, Addam; Scahill, Larry; and Sharp, William*
- 3 Menstrual Function and Biological Aging in People Exposed to Polybrominated Biphenyl (PBB) Before Puberty**  
*Curtis, Sarah; Kilaru, Varun; Terrell, Metrecia; Marcus, Michele; Conneely, Karen; and Smith, Alicia*
- 4 Associations Between Changes in Social Visual Engagement and White Matter Microstructure During the First 6 Months of Life**  
*Ford, Aiden; Li, Longchuan; Jones, Warren; Klin, Ami; and Shultz, Sarah*
- 5 Metabolome Wide Association Study of Serum DDT and DDE in Pregnancy and Early Postpartum**  
*Hu, Xin; Li, Shuzhao; Cirrilo, Piera; Krigbaum, Nickilou; Tran, ViLinh; Ishikawa, Tomoko; La Merrill, Michele; Jones, Dean P.; and Cohn, Barbara*
- 6 Untargeted Lipidomics Reveals New Connectivity Between Lipids, Environmental Exposome, and Pregnancy Outcomes for African American Women**  
*Ivanova, Anna; Maner-Smith, Kristal; Boyd Barr, Dana; Dunlop, Anne L.; and Ortlund, Eric A.*
- 7 Teaching an Old Dog New Tricks: Engineering Drug Synergy in Cocktail Chemotherapy for Pediatric ALL**  
*Kelvin, James M.; Perdue, Lacey A.; Du, Yuhong; DeRyckere, Deborah; Graham, Douglas K.; and Dreaden, Erik C.*
- 8 Associations Between Socio-Behavioral Phenotypes and Genotypes of Relevance for Autism Spectrum Disorder (ASD) in Juvenile Rhesus Macaques (Macaca Mulatta)**  
*Kovacs Balint, Zsofia; Gunter, Chris; Harris, Alan; Raveendran, Muthuswamy; Michopoulos, Vasiliki; Bachevalier, Jocelyne; Raper, Jessica; Sanchez, Mar; and Rogers, Jeffrey*

## POSTER COMPETITION FINALISTS

**9 Critical Role of ASCT2-Mediated Amino Acid Metabolism in Promoting Leukemia Development and Progression**

**Ni, Fang;** Yu, Wen-Mei; Li, Zhiguo; Graham, Douglas K.; Jin, Lingtao; Kang, Sumin; Rossi, Michael R.; Li, Shiyong; Broxmeyer, Hal E.; and Qu, Cheng-Kui

**10 Postnatal Zika Virus Infection Causes Persistent Abnormalities in Brain Structure, Function, and Behavior in Infant Macaques**

**Raper, Jessica;** Mavinger, Maud; Kovacs-Balint, Zsofia; Gumber, Sanjeev; Sanchez, Mar; Alvarado, Maria; and Chahrودي, Ann

# PEDIATRIC RESEARCH ALLIANCE CENTERS

Please visit [www.pedsresearch.org/research/centers](http://www.pedsresearch.org/research/centers) for more information.

## [Aflac Cancer and Blood Disorders Center](#)

**Director:** Douglas K. Graham, MD, PhD

## [Center for Childhood Infections and Vaccines \(CCIV\)](#)

**Director:** Ann Chahroudi, MD, PhD

## [Center for Clinical and Translational Research \(CTTR\)](#)

**Interim Director:** Clint Joiner, MD, PhD

## [Center for Cystic Fibrosis and Airways Disease Research \(CF-AIR\)](#)

**Director:** Nael McCarty, PhD

## [Center for Drug Discovery \(CDD\)](#)

**Director:** Baek Kim, PhD

## [Children's Center for Neurosciences Research \(CCNR\)](#)

**Interim Director:** Susan Margulies, PhD

## [Clinical Outcomes Research and Public Health \(CORPH\)](#)

**Interim Director:** Stacy Heilman, PhD

## [Children's Center for Pediatric Cellular Therapies \(CPCT\)](#)

**Directors:** Edwin M. Horwitz, MD, PhD and H. Trent Spencer, PhD

## [Center for Transplantation and Immune-mediated Disorders \(CTID\)](#)

**Directors:** Subra Kugathasan, MD and Greg Gibson, PhD

## [Children's Heart Research and Outcomes Center \(HeRO\)](#)

**Director:** Mike Davis, PhD

## [Marcus Autism Center \(MAC\)](#)

**Directors:** Ami Klin, PhD and Gordan Ramsay, PhD

**Director of Research:** Warren Jones, PhD

**Director of Communication Operations:** Chris Gunter, PhD

## [Pediatric Technology Center \(PTC\)](#)

**Director:** M.G. Finn, PhD

# PEDIATRIC RESEARCH ALLIANCE CORES

Please visit [www.pedsresearch.org/research/cores](http://www.pedsresearch.org/research/cores) for more information.

Visit core posters during Poster Session I.

## **Animal Physiology Core**

**Director:** Joshua Maxwell, PhD; [jtmaxwe@emory.edu](mailto:jtmaxwe@emory.edu)

**Contact:** Ming Shen; [mshen@emory.edu](mailto:mshen@emory.edu)

**Location:** Emory University

The Animal Physiology Core provides pediatric researchers with services and equipment to develop and characterize animal models relevant to investigating pediatric diseases. We perform acute and survival surgery for small animals such as rats and mice. Surgical services include pulmonary and aortic banding, myocardial infarction, hindlimb ischemia, and ultrasound guided injection for targeted drug delivery or cell therapy. Our Visualsonics Vevo 2100 High Frequency Ultrasound system provides high-resolution small animal ultrasound examinations for noninvasive measurement of *in vivo* structure and function. Comprehensive cardiac exams, characterization of liver and kidney blood flow, measures of arterial stiffness, and imaging of tumor growth are some examples of available services. Additionally, the Vevo LAZR add-on system incorporates photoacoustic imaging into high-resolution ultrasound allowing for anatomical, functional, and molecular imaging. The directors also work with investigators to develop new surgical and imaging techniques to meet their needs.

## **Pediatric Biomarkers Core**

**Director:** Lou Ann Brown, PhD; [lbrow03@emory.edu](mailto:lbrow03@emory.edu)

**Contact:** Frank Harris; [fharris@emory.edu](mailto:fharris@emory.edu)

**Location:** Emory University

The Pediatric Biomarkers Core provides the equipment and technical expertise for sample analysis that combines the features of gas/liquid chromatography and mass spectrometry. These core services are applicable to a wide variety of sample types and will allow small-molecule metabolite profile identification. The Core has a Thermo Liquid Chromatograph/Triple Quadrupole Mass Spectrometer, an Agilent Gas Chromatograph/Mass Spectrometer and three Waters High Performance Liquid Chromatographs with Fluorescence, UV/Vis and Electrochemical Detectors. Analyses have included oxidative stress biomarkers, amino acids, bile acids, polyunsaturated fatty acids, fatty acid ethyl esters, chemotherapy drugs, and benzene metabolites. The core is in the Emory Children's Center.

## **Cystic Fibrosis Discovery Core**

**Director:** Arlene Stecenko, MD; [astecen@emory.edu](mailto:astecen@emory.edu)

**Contact:** Julie Flores; [jkozars@emory.edu](mailto:jkozars@emory.edu)

**Location:** Emory University

The Cystic Fibrosis Discovery Core utilizes the Cystic Fibrosis Biospecimen Registry (CF-BR) which is a storage bank of several thousand biofluids collected from patients with cystic fibrosis at varying disease states. Patients are consented from both the adult and pediatric clinics at Emory and may donate samples at outpatient clinic visits or when hospitalized. We believe that these treasured samples may be the keys that will allow our researchers to unlock the mysteries underlying the changes that occur in the lungs of CF patients as the disease progresses.

# PEDIATRIC RESEARCH ALLIANCE CORES

## Clinical and Translational Discovery Core

**Director:** Christopher Porter, MD; [chris.porter@emory.edu](mailto:chris.porter@emory.edu)

**Contact:** Bradley Hanberry, PhD; [bradley.hanberry@emory.edu](mailto:bradley.hanberry@emory.edu)

**Location:** Emory University

The Clinical and Translational Discovery Core offers support to investigators conducting basic science, epidemiologic, translational, and clinical research. The CTDC provides: clinical sample processing and storage services for their subsequent use in hypothesis-driven clinical research, access to a variety of human biological specimens from both healthy control participants and patients with a variety of diagnoses, and support and advice on the conduct of clinical trials from initial study design and planning through the implementation and interpretation of molecular assays of drug targets and genomic correlates of disease. Our mission is to support and compliment the research efforts of qualified investigators by providing laboratory research services and access to biological samples that represent a variety of diagnoses and healthy volunteers.

## Pediatric Biostatistics Core

**Director:** Courtney McCracken, PhD; [courtney.mccracken@emory.edu](mailto:courtney.mccracken@emory.edu)

**Location:** Emory University

The Pediatric Biostatistics Core provides expertise in the design and analysis of data from clinical, translational and basic science research. The core specializes in data analysis for abstracts and manuscripts, data management, sample size/power calculations, development of statistical analysis plans and more. Prioritization is based on deliverables and priority is given to projects geared towards extramural funding. To obtain support, please complete our request form at [tinyurl.com/pedsbiostat](http://tinyurl.com/pedsbiostat).

## Pediatric and Winship Advanced Flow Cytometry Core

**Director:** David Archer, PhD; [darcher@emory.edu](mailto:darcher@emory.edu)

**Technical Director:** Aaron Rae; [ajrae@emory.edu](mailto:ajrae@emory.edu)

**Contact:** Erich William; [erich.ivan.williams@emory.edu](mailto:erich.ivan.williams@emory.edu)

**Location:** Emory University

The Pediatric and Winship Flow Cytometry Core provides cytometry services for the analysis and sorting of cells as well as expert consultation for experimental design and planning. The Flow Cytometry Core offers access to several analytical flow cytometers as well as high-speed cell sorting. Training and technical expertise is available to enable our users to improve the quality and scope of their research.

## Qualitative Research Core

**Contact:** Diana Ross, MSN, RN; [diana.ross@emory.edu](mailto:diana.ross@emory.edu)

**Location:** Emory University

The mission of the Qualitative Research Core is to advance rigorous qualitative health services research methods in the study of health conditions that affect children and their families. This core is a multi-disciplinary group of investigators who utilize rigorous qualitative methodologies in the field of health services research. We study people's

## PEDIATRIC RESEARCH ALLIANCE CORES

experiences and perceptions in the context of health and healthcare. We use a variety of qualitative research methods such as focus groups, interviews, and observations to engage a diverse range of research. We provide consultation to support investigators planning to conduct qualitative studies. We provide services at any stage of research, from development of grant to submission of journal article.

## OTHER CORES

### [Emory Comprehensive Glycomics Core](#)

**Director:** Yi Lasanajak, MS, MSPH; [ylasana@emory.edu](mailto:ylasana@emory.edu)

**Contact:** Xuezheng Song; [xsong2@emory.edu](mailto:xsong2@emory.edu)

**Location:** Emory University

The major goal of the Emory Comprehensive Glycomics Core (ECGC) is to provide glycoscience expertise to the research community at Emory and neighboring institutes. Glycoscience is more and more recognized as an indispensable area when conducting biomedical research but dealing with glycans often require special expertise. Besides providing advice relevant to research involving glycans, ECGC also provide major services on functional and analytical glycomics respectively, including glycan microarray development, binding analysis of glycan binding proteins (GBPs) including anti-glycan antibodies, and N- and O-glycan MS profiling. ECGC also hosts several instruments for studies of biomolecular interactions (Biacore X100 and MicroCal-autoiTC200) and biomolecular characterization (MALDI-MS).

### [Emory Integrated Core Facilities](#)

**Director:** Michael E. Zwick, PhD; [mzwick@emory.edu](mailto:mzwick@emory.edu)

**Location:** Emory University

The Emory Integrated Core Facilities (EICF, [www.cores.emory.edu](http://www.cores.emory.edu)) include 16 core facilities and the Division of Animal Resources that provide Emory investigators access to the latest cutting-edge platforms. These platforms support animal, big data, multi-omics, and imaging research tools used in a wide variety of research applications.

### [Emory Integrated Genomics Core](#)

**Director:** Lyra Griffiths, PhD; [lmbooke@emory.edu](mailto:lmbooke@emory.edu)

**Location:** Emory University

The Emory Integrated Genomics Core (EIGC), one of the Emory Integrated Core Facilities (EICF), is supported by the Winship Cancer Institute, the Georgia Clinical & Translational Science Alliance, and the Emory University School of Medicine. We help investigators use the latest genomics technologies in their research.



## OTHER CORES

### [Emory Integrated Lipidomics and Metabolomics Core](#)

**Director:** Eric Ortlund, PhD; [eortlund@emory.edu](mailto:eortlund@emory.edu)

**Contact:** Kristal Maner-Smith, PhD; [kmaners@emory.edu](mailto:kmaners@emory.edu)

**Location:** Emory University

The Emory Integrated Lipidomics and Metabolomics Core (EILMC) facility provides quantitative lipidomics and small metabolites analyses on samples from a wide variety of biological matrices, e.g. blood, serum, plasma, solid tissues, cell extracts, etc., to support both clinical and basic research efforts on campus. These analyses will provide insight on signalling molecules whose abundance can be monitored as biomarkers to predict and follow progression of a wide range of diseases, such as metabolic disorders (e.g., obesity, Type II diabetes, and NAFLD), neurodegenerative diseases (e.g., Alzheimer's Disease and Parkinson's Disease), and cancer (e.g., prostate cancer and breast cancer).

### [Laboratory and Pathology Clinical Research Core](#)

**Director:** Beverly Rogers, MD, [Beverly.Rogers@choa.org](mailto:Beverly.Rogers@choa.org)

**Contacts:** Bethany Watson and Cali Hulsey, [labresearchcoordinator@choa.org](mailto:labresearchcoordinator@choa.org)

**Location:** Children's Healthcare of Atlanta

The Children's Healthcare of Atlanta Laboratory and Pathology Clinical Research Core provides clinical laboratory testing, specimen processing, research histology, and de-identified tumor bank specimens to investigators conducting research at CHOA (Egleston and Scottish Rite) and affiliated organizations. The lab currently provides services for over 80 actively enrolling studies since merging with the CHOA core lab in January 2015. It has a tiered pricing schedule, which is based on individual study sponsors and the time required for processing and shipping. The clinical research technologists are all IATA and CITI trained to ensure research samples are processed accurately and shipped to laboratories around the world following federal regulations. Our Core also includes the Ian's Friends Foundation (IFF) Brain Tumor Biorepository established to collect, culture, and distribute pediatric brain tumor cell cultures for research studies with CHOA IRB approval and patient consent. The goal of IFF is to make these cultures available free of charge except for shipping to research investigators working on advancing the molecular understanding and treatment of pediatric brain tumors. Visit [www.pedsresearch.org/research/cores/laboratory-and-pathology-clinical-research-core/overview/](http://www.pedsresearch.org/research/cores/laboratory-and-pathology-clinical-research-core/overview/) for more information.

### [MSM/RCMI Research Core Facilities](#)

**Technical Director:** Vincent C. Bond; [vbond@msm.edu](mailto:vbond@msm.edu)

**Contact:** Pamela Alexander; [palexander@msm.edu](mailto:palexander@msm.edu)

**Location:** Morehouse School of Medicine

Major support for the biomedical research infrastructure at Morehouse School of Medicine (MSM) is received through the Research Centers in Minority Institutions (RCMI) Program, sponsored by the National Institute on Minority Health and Health Disparities (NIMHD) of the National Institutes of Health (NIH), Grant number U54MD007602. With RCMI funding, state-of-the-art biomedical research technology cores, shared-use facilities, and other resources at MSM are available to our scientific investigators. RCMI support has fostered the development of areas of research focus at

## OTHER CORES

MSM (e.g., Cardiovascular Disease, HIV/AIDS, Neuroscience, Reproductive Biology, and Molecular Immunology). Morehouse School of Medicine's record of research development, and its research enterprise, is in large part due to the support received from the RCMI Program. Currently, there are five "umbrella" cores encompassing multiple labs that focus on similar technologies: Protein Profiling, Biomedical Technology Service Lab (BTSL), Biological Manipulation, Cells and Tissues Imaging and Gene Profiling.

### [Pediatric Heart Diseases Data Registry Core](#)

**Director:** Lazaros Kochilas, MD; [lazaros.kochilas@emory.edu](mailto:lazaros.kochilas@emory.edu)

**Contact:** Amanda Thomas, MSP; [amanda.thomas@emory.edu](mailto:amanda.thomas@emory.edu)

**Location:** Emory University

The Pediatric Heart Diseases Data Registry Core (PHDDR) provides access to the rich collection of data from the Pediatric Cardiac Care Consortium (PCCC). The PCCC includes outcome events from surgical, catheter-based, and electrophysiologic interventions for multiple pediatric heart diseases. Between 1982 and 2011, over 300,000 event outcomes from over 140,000 patients have been collected. This core provides consultation assistance and can run queries and compile data for research investigators wishing to perform outcome studies related to pediatric heart diseases. Forms for requests of research projects can be found at [www.pedsresearch.org/research/cores/phddcore](http://www.pedsresearch.org/research/cores/phddcore) and submitted for consideration to the staff of PHDDR.

### [Pediatric Imaging Research Core](#)

**Director:** Nadja Kadom, MD; [nadja.kadom@emory.edu](mailto:nadja.kadom@emory.edu)

**Contact:** Jack Goldberg, MS; [jack.goldberg@choa.org](mailto:jack.goldberg@choa.org)

**Location:** Children's Healthcare of Atlanta

Introducing the Pediatric Imaging Research Core (PIRC), an interdisciplinary research program that recognizes the importance of medical imaging in the diagnosis and treatment of diseases in children and young adults. PIRC gives investigators access to state-of-the-art pediatric imaging technology, pediatric radiologists, physicists, pediatric technologists, nurses and pediatric sedation providers. To get started, please visit "Medical Imaging Resources" at: [www.pedsresearch.org/research/cores](http://www.pedsresearch.org/research/cores).

### [Petit Institute Core Facilities](#)

**Director:** Steve Woodard; [steve.woodard@ibb.gatech.edu](mailto:steve.woodard@ibb.gatech.edu)

**Location:** Georgia Institute of Technology

The Petit Institute's Core Facilities serve as a shared resource for the bioengineering and bioscience community. Consultation, training and technical support are available for a variety of research projects. Users have access to over 100 pieces of instrumentation and a host of specialized services.

### [Systems Mass Spectrometry Core](#)

**Technical Director:** David Smalley; [dsmalley@gatech.edu](mailto:dsmalley@gatech.edu)

**Location:** Georgia Institute of Technology

## OTHER CORES

The System Mass Spectrometry (SyMS) Core provides state-of-the art instrumentation, resources, and technical support in both proteomics and metabolomics to Georgia Tech and the surrounding research community. Standard proteomics services include protein identification of simple and complex mixtures, relative protein quantification, and protein characterization. Standard metabolomics services include both targeted assays for various analyte classes as well as untargeted assays to evaluate metabolome alterations in biofluids and tissues-generating new hypotheses. More specialized services, such as global phosphoproteome analysis (among others), are available to examine cellular pathway activation. Customized research needs will also be met through the incorporation of new technologies.

## PEDIATRIC RESEARCH UNIT

The Pediatric Research Unit (PRU) was created to facilitate Children's Healthcare of Atlanta's vision for clinical excellence and to support the mission to make kids better today and healthier tomorrow. Inpatient and outpatient units offer core support facilities and resources including nursing, pharmacy, laboratory, and bio nutrition. The PRU supports studies of children with asthma and allergy, cardiac disease, hypertension, Crohn's disease, types 1 and 2 diabetes mellitus, kidney and hepatic disease, sickle cell, and cystic fibrosis among others. Research studies follow exacting standards for delivering the interventions and collecting the requisite data. The PRU has moved to the 5th floor of the NEW Center for Advanced Pediatrics. The research-focused 4,327 square feet of space more than doubles the previous 1,543 square feet with six dedicated exam rooms, two observational rooms, a triage room and consult room, and 10 dedicated work spaces for coordinators and PIs. Investigational Drug Services is located inside the PRU as well as a new Emory research lab. To learn more about how the PRU can support your research, please call the PRU at 404-785-0400, or email Cheryl Stone, RN, CCRP, Clinical Research Team Lead, at [cherylL.stone@choa.org](mailto:cherylL.stone@choa.org).

## DOOR PRIZE SPONSORS

**Thank you** to the generous sponsors of this year's door prizes!

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