



Third Annual International Symposium on the

FETAL BRAIN

SYMPOSIUM PROGRAM



November 1-2, 2018

Fairmont Washington, DC in Georgetown

FetalBrainSymposium.com



Children's National

Fetal Medicine Institute

Part of the Children's National Health System



Dear Friends,

Welcome to Washington! We are delighted to have you join us at our third International Symposium for the Fetal Brain. We are confident that this, our third annual Symposium, will be even more successful and stimulating than the previous two events. At the heart of the *International Symposium on the Fetal Brain* is the gathering of caretakers like you, from across the specialty spectrum of providers striving to ensure the best possible brain health for the unborn and newborn babies of tomorrow. We aim to break down the current subspecialty silos of this emerging field, to encourage the trans-disciplinary flow of ideas, and develop a 360-degree perspective on the challenges and opportunities moving forward. The goal is to create an interactive environment for 'cross-pollination' and the development of collaborative thinking and long-lasting academic partnerships.

We encourage you all to continue to be active participants through your engagement in the discussion, your ideas for its future direction, and your commitment to keep returning every year.

ISFB is your conference and we look forward to your feedback as we continue on this path of collaboration and innovation.

May this be a memorable and rewarding few days in the nation's capital.

Yours,

Adré J. du Plessis, MBChB, MPH
Director, Fetal Medicine Institute
Director, Fetal Brain Program
Division Chief, Fetal and Transitional Medicine

Want to become a member of an International Consortium for the Fetal Brain?

The Fetal Medicine Institute and Institute for the Developing Brain at Children's National is developing a global consortium of clinicians and scientists with interest in the fetal and transitional brain. In the near future, we will be inviting anyone interested in this unique network to visit our website, which is currently in production.

The goals of the Consortium are

- 1) to develop a forum for ongoing multi-disciplinary discussion around issues affecting the developing brain;
- 2) to develop a site for collaborative research that sustains discussions and partnerships formed at the ISFB meetings

- 3) to develop a program of quarterly interactive video-conferences that focus on important challenges in the field; and
- 4) to develop a messaging board for events of interest to the network, and for difficult clinical cases.

During the ISFB conference we will be collecting information about

- 1) your interest in being part of the consortium;
- 2) your interest in being part of the steering committee; and
- 3) your video-conferencing accessibility.

We look forward to a vibrant and enduring collaboration.



Fairmont

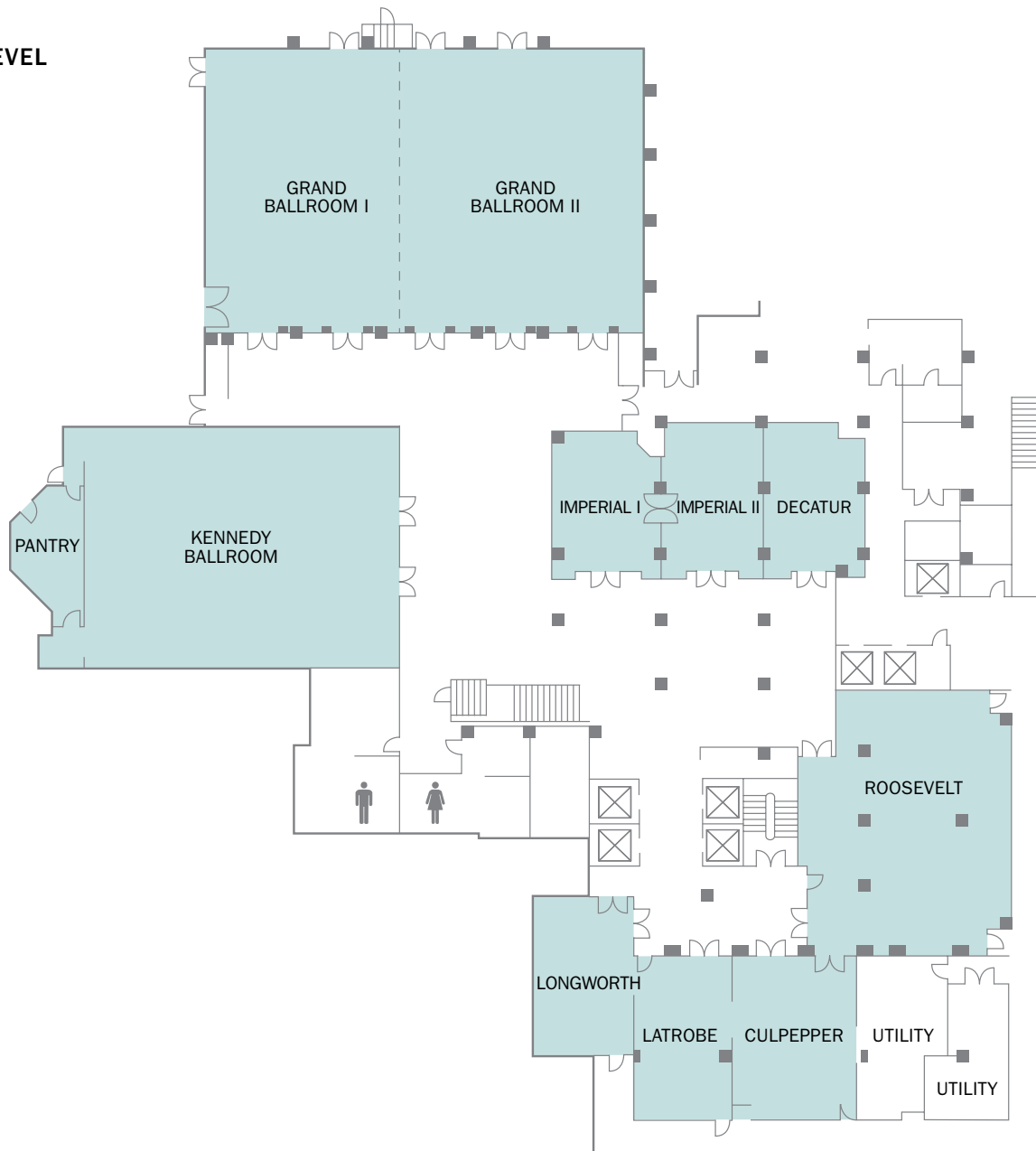
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FLOOR PLAN

BALLROOM LEVEL



PROGRAM AGENDA | NOVEMBER 1 - 2, 2018

▶ THURSDAY, NOVEMBER 1, 2018

Time	Activity	Speaker
7:30 – 8:30 a.m.	Coffee/Continental Breakfast	
SESSION 1	The Placenta and Prematurity	
8:30 – 8:37 a.m.	Opening Remarks.....	Adré du Plessis
	• Session 1 Introduction.....	Larry Maxwell
	• Preterm Birth, Inflammation, and Cerebral Palsy: Molecular Imaging and Nanotechnology.....	Roberto Romero
	• Placental Failure: Causes and Consequences.....	George Saade
10:40 – 11 a.m.	<i>BREAK</i>	
	• When You Can't Prevent Prematurity.....	Alan Flake
11:50 a.m. – 1 p.m.	<i>LUNCH</i>	
SESSION 2	Functional Imaging of the Fetal Brain and Placenta	
1 – 4 p.m.	• Session 2 Introduction	Catherine Limperopoulos
	• Advanced in vivo Functional Imaging: Interrogating the Placenta-brain Connection.....	Antonio Frias
	• Emerging Functional Brain Connectivity in the Fetus.....	Moriah Thomason
2:45 – 3:15 p.m.	<i>BREAK</i>	
	• Cortical Development in the ex-utero Fetus	Jeff Neil
4 – 6:00 p.m.	<i>RECEPTION</i>	



BREAKFAST BREAKOUT SESSIONS: 8 – 9:30 a.m.

Session Topics	Room Name
<ul style="list-style-type: none"> Management of the Complicated Transitional Period Dan Licht and Gil Wernovsky 	Decatur
<ul style="list-style-type: none"> Neurogenetic Counseling of the Fetal Patient Meg Menzel and Paul Kruszka 	Imperial II
<ul style="list-style-type: none"> Fetal Infectious Encephalopathies Sarah Mulkey and Roberta DeBiasi 	Culpeper
<ul style="list-style-type: none"> Fetal MRI as a Neurodiagnostic Tool Gilbert Vezina and Matthew Whitehead 	Grand Ballroom

FRIDAY, NOVEMBER 2, 2018

Time	Activity	Speaker
8 – 9:30 a.m.	Breakfast Breakout Sessions	
SESSION 3	Monitoring Brain Wellbeing in the High Risk Newborn	
9:30 a.m. – 12:20 p.m.	<ul style="list-style-type: none"> Session 3 Introduction..... Monitoring the Immature Brain in Crisis: Targeting the Relevant Pathophysiology..... Hacking the fetal brain: Confessions of EEG and ECG..... EEG in the Perterm Infant: Windows on Neuronal Connectivity..... 	Robin Steinhorn Adré du Plessis Martin Frasch Mark Scher
12:20 – 1:20 p.m.	<i>LUNCH</i>	
SESSION 4	The Opioid Epidemic and the Fetal Brain	
1:20 – 4:35 p.m.	<ul style="list-style-type: none"> The Opioid Epidemic: An Overview..... Neurobiology of Addiction..... Poretti Award Presentation..... 	Coleen Boyle Aaron White Sarah Mulkey
2:25 – 2:40 p.m.	<i>BREAK</i>	
	<ul style="list-style-type: none"> The Opioid Exposed Dyad and Neonatal Abstinence Syndrome 	Lauren Jansson
	Closing Remarks	Adré du Plessis



POSTER PRESENTATIONS

1	Cruz, Josepheen	Children's National Health System	Thalamocortical functional organization in the developing fetal brain
2	Dugan, Elizabeth	GeneDx	Clinical Genetic Testing and Counseling in Fetuses with Brain Malformations Detected by Fetal Ultrasound
3	Foss, Sophie	Columbia University Medical Center	Fetal heart rate/movement coupling in the third trimester predicts cognitive milestone achievements at 14 months
4	Hoffman, M. Camille	University of Colorado School of Medicine	Higher maternal choline attenuates the effects of infection during pregnancy on childhood behavior
5	Keane, James	APC Microbiome Ireland, University College Cork	Identifying a Biological Signature of Vulnerability to Prenatal Maternal Stress: Implications for Infant Neurodevelopment.
6	Keane, James	APC Microbiome Ireland, University College Cork	Identifying a Biological Signature of Vulnerability to Prenatal Maternal Stress: Implications for Infant Neurodevelopment.
7	Kota, Srinivas	Children's National Health System	Cortico-Cortical Connectivity in Low-Risk Term Newborns Show Increased Global Neuronal Synchronization in Quiet State
8	Kousa, Youssef	Children's National Health System	Identifying Genetic Risk and Protective Factors in Congenital Zika Syndrome
9	Krishnamurthy, Dhineshvikram	Children's National Health System	Integrated Research Information System (IRIS) - Real-time Multi-Platform Fetal and Neonatal Brain MRI processing and visualization toolkit
10	Krishnamurthy, Dhineshvikram	Children's National Health System	Integrated Research Information System (IRIS) - Real-time Multi-Platform Fetal and Neonatal Brain MRI processing and visualization toolkit
11	Moussa, Hind	The University of Cincinnati	Contribution of Maternal Hypertension to Autism Etiology in a Murine Model; Cerebellar Gene Expression
12	Moussa, Hind	The University of Cincinnati	Parental inheritance of NOS3 and uterine environment alter cytokine levels in a murine model of autism like disorder
13	Mulkey, Sarah	Children's National Health System	Effect of Mode of Delivery on HRV and EEG in Low-Risk Term Newborns
14	Niforatos-Andescavage, Nickie	Children's National Health System	Placental diffusion in "brain-sparing" and "non-brain-sparing" fetal growth restriction
15	Obeid, Rawad	Children's National Health System	Head Ultrasound with Machine Learning Evaluation In Neonatal Hydrocephalus
16	Pradhan, Subechhya	Children's National Health System	Non-invasive Measurement of Biochemical Profiles in the Developing Fetal Brain
17	Pradhan, Subechhya	Children's National Health System	Feasibility of detecting in utero placental metabolic profile using Magnetic Resonance spectroscopy
18	Pyarali, Monika	Baylor College of Medicine	Structural Brain Abnormalities In Fetuses Undergoing Fetoscopic and Open Repair Of Neural Tube Defects (Ntds) In Utero
19	Pyarali, Monika	Baylor College of Medicine	Characterization Of Cortical And Callosal Malformations During Development Of Fetuses With Spina Bifida Undergoing In Utero Neural Tube Defect Repair
20	Sanapo, Laura	Children's National Health System	Fetal and maternal response to maternal hyperoxia in normal pregnancies
21	Schlatterer, Sarah	Children's National Health System	The Placenta-Heart-Brain Connection: Placental Pathology and Brain MRI Findings of Neonates with Congenital Heart Disease.
22	Singh Teji, Jagjit	Ann and Robert H. Lurie Children's Hospital	Premature birth associations with infertility treatment
23	Tarui, Tomo	Tufts Medical Center	Quantitative MRI analyses of regional brain growth and cerebral sulcal development in living fetuses with isolated ventriculomegaly and Down syndrome.
24	Ursini, Gianluca	Lieber Institute for Brain Development	Placenta Biology and Genetic Risk for Schizophrenia
25	van der Merwe, Hannes	KU Leuven	Premature birth neurobehavioral consequences in a non-infective and non-ischemic rabbit model
26	Wu, Yao	Children's National Health System	Impaired Global and Regional Brain Growth in Fetuses with Complex Congenital Heart Disease
27	Zhao, Li	Children's National Health System	Improved Image Resolution and Speed in Fetal MRI
28	Zun, Zungho	Children's National Health System	MR susceptibility imaging of the human placenta in vivo: Preliminary results in healthy pregnancies

SYMPOSIUM FACULTY: Research Faculty



Prof. Geraldine Boylan

Prof. Boylan is Director of the INFANT Research Centre and Professor of Neonatal Physiology in the Department of Paediatrics & Child Health, University College Cork, in Ireland. Her PhD thesis from Kings College London focused on EEG and cerebral blood flow velocity during neonatal seizures. She is recognized internationally for her work in neonatal neurophysiology, a field she helped pioneer and in which she has been a leader for more than two decades. She is a Science Foundation Ireland and Wellcome Trust funded Principal Investigator. At the INFANT Research Centre, she leads the neonatal brain research group, a multidisciplinary team that has established an international reputation in the area of neonatal neurological monitoring, particularly for seizure detection and early diagnosis of brain injury. Researchers on her team are developing automated algorithms for monitoring brain activity and novel monitoring tools for physiological data acquisition in the neonatal intensive care unit. At ISFB III, Prof. Boylan will discuss exciting advances aimed at accessing brain monitoring signals within the first minutes after birth, a critical period that remains a clinical 'blind spot' in management of the high-risk newborn. The title of her presentation is *"Lost in transition: Monitoring brain well-being at birth."*



Roberta Lynn DeBiasi, M.D., M.S.

Dr. DeBiasi is Chief of the Division of Pediatric Diseases and Co-Director of the Congenital Zika Program at Children's National Health System. She holds appointments as tenured Professor of Pediatrics and Microbiology, Immunology and Tropical Medicine at George Washington University School of Medicine & Health Sciences as well as Principal Investigator in the Center for Translational Science at Children's Research Institute. She completed her fellowship in Pediatric Infectious Diseases at the University of Colorado/Denver Children's Hospital. She leads the CNHS Ebola and Emerging

Infections Task Force. As co-director of the CNHS Congenital Zika Program, she interfaces with regional, national and international authorities, while directing research protocols in the US and Colombia focused on prenatal imaging, testing, genetics and virologic aspects of congenital Zika infection. Dr. DeBiasi's research expertise includes basic science as well as clinical/translational research. She serves as Principal Investigator for research and clinical trials focusing on severe and emerging viral infections affecting pregnant women, neonates, immunocompromised hosts, and normal children.



Adré du Plessis, MBChB, MPH

As a fetal-neonatal neurologist Dr. du Plessis efforts have focused on the immature brain, understanding it's normal development, as well as the causes and consequences of abnormal brain development. Embracing its clinical, research and training aspects, he has been at the forefront of developing this unique emerging discipline. More than 20 years ago, Dr. du Plessis was a founding director of the first-ever dedicated clinical program for neonatal (and later fetal-neonatal) neurology at Boston Children's Hospital and Harvard's Longwood-area medical centers. Since assuming his current position as chief of Fetal and Transitional Medicine and director of the Fetal Medicine Institute at Children's National Dr. du Plessis has overseen the development of a multidisciplinary clinical, research, and training program, that has a unique focus on the developing brain. Over the past 25 years that team has developed multimodal neuromonitoring devices that allow an unprecedented depth of continuous bedside inquiry into both the systemic support systems as well as autoregulatory systems intrinsic to the brain. This approach has allowed unique insights into the immature brain's responses to critical illness, and has provided an invaluable framework for the training of young clinical investigators into the complex neuropathophysiology of the immature human.





Alan Flake, MD

Dr. Flake holds the Ruth M. and Tristram C. Colket, Jr. Endowed Chair in Pediatric Surgery at The Children's Hospital of Philadelphia (CHOP), where he is Director of the Center for Fetal Research. He is a professor of Surgery, and of Obstetrics and Gynecology at the Perelman School of Medicine at the University of Pennsylvania. He leads a highly active research laboratory focused on fetal stem cell and gene therapy, and has been at the forefront of treating genetic disorders before birth. This includes moving toward a human clinical trial for sickle cell disease, utilizing *in utero* fetal transplantation of maternal cells to enhance tolerance for neonatal bone marrow transplant. Dr. Flake is a leader in performing minimally invasive surgery, mostly on neonates, including thoracoscopic and laparoscopic procedures. He continues to refine and develop these delicate surgical techniques for the unique requirements of pediatric patients. His presentation at ISFB III focuses on another major area of innovation emanating from his laboratory, namely the development an artificial placenta for support of the premature infant, or *ex utero* fetus.



Antonio Frias, MD

Dr. Frias is Professor in the Division of Maternal Fetal Medicine at the Oregon Health & Science University. His medical school training was at the Mayo Clinic, followed by a residency in Obstetrics & Gynecology, and fellowship in Maternal Fetal Medicine at the University of Utah. Dr. Frias has developed one of the leading laboratories for advanced imaging of placental function *in vivo*. His work has been supported by funding from both the NIH and the Gates Foundation. He is a principal investigator and co-investigator on multiple grants from the NICHD Human Placenta Project (HPP). He serves on the HPP Technology Development Committee, and the NICHD Strategic Planning Working Group. In addition to multiple teaching awards, he is also the recipient of the OHSU Faculty Mentorship Award. He is a research mentor for young faculty investigators through the NIH Reproductive Scientist Development Program

(RSDP) and the Women's Reproductive Health Research (WRHR) Career Development Program. His ISFB III presentation focus on the use of advanced functional imaging of the placenta-brain connection.



Lauren Jansson, MD

Dr. Jansson is an Associate Professor of Pediatrics at Johns Hopkins University School of Medicine. She is a developmental pediatrician and has been the director of Pediatrics at the Center for Addiction and Pregnancy, a comprehensive treatment program for pregnant and parenting women with addictions, since the program's inception in 1991. In that capacity she provides comprehensive health care to substance exposed infants, children and adolescents in the context of maternal addiction, mental health concerns, and the dyad's environment. Dr. Jansson's principal areas of research involve exploring the effects of *in utero* exposures to opioids and other substances of abuse on the developing fetus and infant, optimizing treatment for women with opioid use disorders and opioid exposed infants, and lactation among women with substance use disorders. Dr. Jansson's presentation at ISFB III is titled "*The opioid exposed dyad and neonatal abstinence syndrome*".



Paul S. Kruszka, MD, MPH

Dr. Paul S. Kruszka, MD, MPH, is a board-certified family physician and clinical geneticist at the National Human Genome Research Institute, National Institutes of Health (Bethesda, MD). His research interests include early embryonic errors in brain, craniofacial, and heart development. Additionally, Dr. Kruszka is a Captain in the Commissioned Corps of the U.S. Public Health Service.





Barry Lester, Ph.D.

Dr. Lester is Professor of Psychiatry & Human Behavior and Pediatrics and Director of the Brown Center for the Study of Children at Risk at the Brown Alpert Medical School and Women &

Infants Hospital. His research has been federally funded throughout his illustrious career, which has included membership on the NIH National Advisory Council on Drug Abuse, the NIH Director’s Pioneer Award Program, and the College of the Center for Scientific Review. He is an internationally recognized authority on the neuropsychological consequences of fetal environmental exposures, especially those related to maternal substance abuse. His presentation at ISFB III will be the long-term *neurodevelopmental consequences of prenatal opioid exposure*.



Daniel J. Licht, MD

Dr. Licht is a child neurologist who is an expert in the neurological consequences of medical and surgical care for infants with severe congenital heart defects. Dr. Licht also directs the Fetal Neurology

program at the Children’s Hospital of Philadelphia. Dr. Licht received his BA in biochemistry at NYU and his medical degree from the New Jersey Medical School (UMDNJ) in Newark NJ. He did his pediatrics and neurology residencies at the Children’s Hospital of Philadelphia and the University of Pennsylvania. Dr. Licht has specialty training in neurocritical care and MR and Optical imaging.



Margaret Menzel, MS, GCG

Ms. Menzel is a genetic counselor within Children’s National Fetal Medicine Institute with more than 14 years of prenatal genetic counselor experience. She holds certifications from the

American Board of Medical Genetics and the American Board of Genetic Counseling.

Ms. Menzel’s background is in psychology and medical genetics, and her current interests include biomedical ethics, research of sexual development disorders, and the psychological effects of stress due to prenatal diagnoses. In addition to serving as the clinical program director for Fetal Genetic Counseling, she serves as a care coordinator for referred patients and serves on the Children’s National Ethics Committee.



Sarah Mulkey, MD, PhD

Dr. Mulkey is a fetal-neonatal neurologist in the Division of Fetal and Transitional Medicine at Children’s National Health System. Dr. Mulkey earned her medical degree from the Florida State

University College of Medicine in 2005 and completed a residency in Child Neurology at the University of Arkansas for Medical Sciences in Little Rock, Arkansas.

Following completion of her residency, she became the first and only dedicated neonatal neurologist in Arkansas, providing state-of-the-art neurologic care to newborns with a variety of complex neurologic conditions. She was the Site-principal Investigator at Arkansas Children’s Hospital for the Phase II clinical trial for erythropoietin as a neuroprotective agent for neonatal hypoxic-ischemic encephalopathy led by UCSF (Dr. Yvonne Wu).

In 2015, Dr. Mulkey earned a PhD in Clinical and Translational Sciences to further support her development as a clinical researcher. Her research interests include brain injury in the fetus and newborn, brain growth and development, and neurodevelopmental outcomes in newborns at risk for brain injury. Dr. Mulkey’s clinical expertise and interests focus on abnormal development or injury to the developing brain.





Jeffrey Neil, MD, PhD

Jeff Neil is Professor of Neurology at Boston Children’s Hospital. He has had a longstanding clinical and research focus on neurology of the newborn and is a protégé, of Dr. Joseph Volpe, the father of neonatal neurology. He earned his MD degree and PhD in Neuroscience from the Washington University School of Medicine in St. Louis. His research has focused for more than two decades on the application of magnetic resonance imaging (MRI) to the understanding of brain development and injury in the newborn. With a strong background in physics he has made major contributions to the development of MRI advances that have paved the way for important discoveries in the neonatal neurology. Some of his most important work has been on the biophysics of tissue water diffusion (for diffusion MRI) using single cells, tissue culture, and animal models; based on this work he has developed and applied diffusion and functional MRI methods to assess cerebral white and grey matter maturation and injury in human infants. At ISFB III Dr. Neil will present his work on “Cortical development in the ex utero fetus”



Roberto Romero, MD, D.Med.Sci.

Dr. Romero is Chief of the Perinatology Research Branch of the NICHD/NIH. He trained in Obstetrics and Gynecology and Maternal-Fetal Medicine at Yale University, where he was Director of Perinatal Research, before joining NIH. Dr. Romero’s team has made seminal contributions to the diagnosis and treatment of ectopic pregnancy, prenatal diagnosis of congenital anomalies, prediction and prevention of preterm labor/delivery, and the role of infection/inflammation in preterm and term parturition. In addition, Dr. Romero is an author of over 1000 peer-reviewed publications and several books, including the medical best seller, Prenatal Diagnosis of Congenital Anomalies. He is an elected member of the National Academy of Medicine and the recipient of 14 Doctorate *Honoris Causa* and Honorary Professorships from Universities worldwide. Dr. Romero has been honored by national and international professional societies for his medical and scientific contributions, including the Ian Donald Gold Medal (International Society of

Ultrasound in Obstetrics and Gynecology), the Erich Saling Award from the World Association of Perinatal Medicine, the Maternité Prize in Obstetrics, awarded by the European Association of Perinatal Medicine, and also, is the first obstetrician to receive the prestigious Asan Award in Medicine from the Asan Foundation in South Korea. Dr. Romero is Editor-in-Chief of the oldest journal in obstetrics and gynecology, the *American Journal of Obstetrics & Gynecology*.



George Saade, MD

Dr. Saade is Professor of Obstetrics and Gynecology, Professor of Cell Biology, and Director of the Perinatal Research Division, at the University of Texas Medical Branch, where he is also Chief of Obstetrics and Maternal-Fetal Medicine. He serves on the National Advisory Child Health and Human Development Council of the National Institutes of Health, and is past president of the Society for Maternal Fetal Medicine. He is the editor-in-chief of the *American Journal of Perinatology*. His research continues to be supported by a number of NIH awards, and he has served on multiple national and international advisory committees and scientific review panels. His clinical area of expertise revolves around stillbirth and preterm birth. He has authored more than 300 peer-reviewed publications, and is the editor of the Critical Care Obstetrics textbook. His presentation at ISFB III will address the *causes and consequences of placental failure*, an issue of enormous public health impact across the globe.



Mark Scher, MD

Until recently, Dr. Scher served a 20 year tenure as Chief of Pediatric Neurology at Rainbow Babies and Children’s Hospital in Cleveland. After his training in pediatric neurology at the University of Minnesota, he underwent fellowship training in clinical neurophysiology at Stanford University as a mentee of Dr. Barry Tharp, one of the pioneers of neonatal neurology and EEG. Hereafter he joined the Division of Pediatric Neurology at the University of Pittsburgh, where he established and directed the fetal/neonatal neurology service at Magee-Women’s



Hospital. During the next phase of his career Dr. Scher established himself as a world leader in neonatal EEG. Using the recently developed technique of video-EEG, Dr Scher and others like Dr. Eli Mizrahi, was responsible for a radical rethinking of neonatal seizures and their mimics.

Dr. Scher's research focuses on subjects in fetal and neonatal neurology health and disease, applied to both diagnosis and outcome in neonatal neurointensive care as well as throughout childhood. Utilizing visual and digital analyses of EEG-Sleep, he applied this functional biomarker to the study of brain maturation and organization, comparing preterm and full term survivors. His overarching research objective has been to study developmental neuroplasticity through interdisciplinary research studies with investigators in pediatric nursing, pediatric neurology, neonatology, developmental pharmacology, engineering, epidemiology and pathology. He has participated in 13 NIH-supported studies, of which 6 he was principal investigator or co-investigator, culminating at present in 160 peer-reviewed publications and 45 book chapters.



Moriah Thomason, PhD

Dr. Thomason is Associate Professor in the Department of Child and Adolescent Psychiatry at New York University School of Medicine, as well as Research Assistant Professor at the Survey Research Center in the Institute for Social Research at the University of Michigan. She received her undergraduate training at UC Berkeley, and her graduate and postdoctoral training at Stanford and MIT in Neuroscience. She formerly served as Director of the Perinatal Neural Connectivity Unit within the intramural Perinatology Research Branch of NICHD/NIH. Her published research addresses principals of neural development beginning *in utero*. Her current NIH grants examine environmental factors with potential to influence functional neurocircuitry of the developing brain.



Gilbert Vézina MD

Gilbert Vézina MD is a Professor of Radiology and Pediatrics at George Washington University and the director of the program in Neuroradiology at Children's National Medical Center.

Dr Vézina joined the staff of CNMC in 1990. He is a graduate of McGill Medical School and did radiology and neuroradiology training at Massachusetts General Hospital (Harvard University, Boston Mass). Dr. Vézina is a fellow of the American college of Radiology and a past president of the American Society of Pediatric Neuroradiology. He has more than 200 publications on pediatric neuroradiology in journals and books. His clinical and research interests include imaging of patients with congenital anomalies, epilepsy, tumors of the brain and spinal cord, neonatal brain injury, phakomatoses and with traumatic brain injuries.



Aaron White, PhD

Dr. White is Senior Scientific Advisor to the Director of the National Institute on Alcohol Abuse and Alcoholism (NIAAA). He is a biological neuropsychologist (scientist) who has a longstanding

interest in the effect of substances abuse and development, especially during adolescence. He has a strong background in the neurobiology of addiction, and has published extensively on adolescent alcohol abuse, overdose and its effect on brain function. The focus of his presentation at ISFB III will be a review of the recent insights into the complex neurobiologic pathways of addiction.





Matthew Whitehead, MD

Dr. Whitehead is the Director of Pediatric Neuroradiology Education and Neuroradiologic MRI at Children's National Health System. A pediatric

neuroradiologist with a special interest in structural and metabolic brain abnormalities, he holds an American Board of Radiology certificate of added qualification in neuroradiology and has completed both neuroradiology and pediatric neuroradiology fellowships.

Dr. Whitehead's research encompasses many facets of fetal and pediatric central nervous system anatomy and pathology. He has a keen interest in the developing brain and works closely with the division of fetal medicine, providing fetal brain MRI interpretations and case discussions during their weekly multidisciplinary fetal conference.



Gil Wernovsky, MD

Dr. Gil Wernovsky, an internationally renowned pediatric cardiologist and cardiac intensivist, joined the Children's National Heart Institute in 2018. He is an attending physician in the Cardiac ICU

and the inpatient cardiology service. Dr. Wernovsky has held academic appointments at Cornell University, Harvard Medical School and the University of Pennsylvania School of Medicine. He has held clinical appointments at Boston Children's Hospital, the Children's Hospital of Philadelphia (CHOP) and most recently at Nicklaus Children's Hospital in Miami, where he was the medical director of patient- and family-centered care. At CHOP, he was the director of the Cardiac ICU and director of program development for The Cardiac Center, as well as associate chief of the Division of Pediatric Cardiology.

Dr. Wernovsky's clinical interests include the inpatient care of infants with critical congenital heart disease (CHD) and mechanical support of the failing circulation. For the past 30 years, he has been particularly interested in the long-term functional outcomes following surgery for complex CHD, specifically transposition of the great arteries, tetralogy of Fallot and single ventricle defects such as

hypoplastic left heart syndrome. Dr. Wernovsky's goal is to identify modifiable factors in the care of children with CHD to improve overall outcomes, longevity, school performance and quality of life. He was awarded the 2015 Newburger-Bellinger Award for his career contributions to the field of neurodevelopment in children with heart disease.

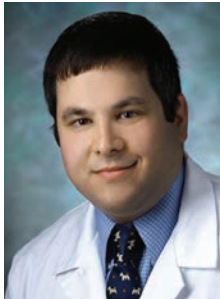
He received his medical training at Pennsylvania State University and his pediatric training at the New York Hospital. He completed additional training in pediatric cardiology and cardiac intensive care at Boston Children's Hospital.

At the Children's Hospital of Philadelphia, Dr. Wernovsky was the founder and medical director of the NeuroCardiac Care Program, one of the first in the nation. He is also a founding member of the Pediatric Cardiac Intensive Care Society and International Society for Pediatric Mechanical Cardiopulmonary Support. He was the co-chair of the perioperative working group of the Pediatric Heart Network, National Institutes of Health. Dr. Wernovsky is the co-chair of the 2021 World Congress of Pediatric Cardiology and Cardiac Surgery, to be held in Washington, D.C. He is also a prolific author and editor, writing more than 70 book chapters, reviews and editorials, and publishing over 220 articles in peer-reviewed journals. He has also edited 15 periodicals and peer reviewed journal supplements, as well as four textbooks.



ABSTRACTS

THE ANDREA PORETTI ABSTRACT AWARD



Andrea Poretti,
1977-2017

This Abstract Award is dedicated to Andrea Poretti, who was a member of our abstract selection committee.

Andrea Poretti was a world-renowned expert in pediatric cerebellar abnormalities and neurodegenerative and neurogenetic disorders. He was in charge of the research mission of pediatric neuroradiology at Johns Hopkins, which he led with enthusiasm and boundless energy.

"Andrea was the most exceptional person," said Thierry Huisman, professor of radiology and radiological science at the School of Medicine, who knew Poretti as a close personal and academic friend for more than 15 years. **"He was an extremely intelligent, hardworking, humble, and beloved scientist, clinician, and friend. His passing is an incredible loss to all people who had the privilege to know him."**

We were privileged to have crossed paths with Andrea, and we dedicate this award to his brilliance and dedication.

We encourage you to explore our abstracts on display in the Grand Ballroom.

CME CREDITS:

This activity has been planned and implemented in accordance with the accreditation requirements and policies of the Accreditation Council for Continuing Medical Education (ACCME) through the joint providership of The George Washington University School of Medicine and Health Sciences and Children's National Health System. The George Washington University School of Medicine and Health Sciences is accredited by the ACCME to provide continuing medical education for physicians.

The George Washington University School of Medicine and Health Sciences designates this live activity for a maximum of 12 AMA PRA Category 1 Credit(s)™. Physicians should claim only the credit commensurate with the extent of their participation in the activity.

Claiming your CME Credits: You will receive an email with instructions on setting up a GW account to claim CME within the next week. Once you have setup your account, you will be able to login and complete a CME survey to claim your credits.





Infant

Irish Centre for Fetal and Neonatal Translational Research



“Children must have access to innovative therapies and medicines that have been developed with the same rigour and urgency as those developed for adults.”

INFANT Director, Prof Geraldine Boylan

www.infantcentre.ie

The INFANT Centre is Ireland’s first Translational Research Centre focused entirely on pregnancy, birth and early childhood. INFANT was established in 2013 and grown rapidly to over 100 research staff, a €35M funding portfolio and delivering excellent science with impact in perinatal health.

The INFANT Centre has a proven track record in the perinatal research field with five cross-cutting thematic research areas biomarkers, biomedical engineering, connected health, nutrition and therapeutics and has conducted world leading research in biomarkers (e.g. Hypoxic ischemic encephalopathy (HIE) and preeclampsia), neonatal physiological monitoring and maternal, term and preterm nutrition.

INFANT’s research USP combines clinical research expertise in complications of pregnancy, neonatology and paediatrics with a multi-disciplinary team of scientists, engineers and researchers focussed on translational solutions for maternal and child health. INFANT is a member of international collaborations such as the c4c pan-European paediatric clinical trials network and the International Neonatal Consortium and conducts both academic and industry led Clinical Trials to the highest regulatory standards.

INFANT has developed, licensed and led a multicentre Clinical Investigation of the world’s first automated algorithm to detect seizures in newborn babies and developed the world’s first early pregnancy screening test for preeclampsia. INFANT has also led the discovery and validation of a simple test to detect HIE severity immediately after birth. With the help of donors, INFANT has opened a dedicated paediatric research unit, the first of its kind in Ireland with a major focus on long-term developmental health outcomes and their determinants.

INFANT collaborates widely with academia, industry, donors in over 40 countries and welcome new opportunities for international partnership. Contact us at: infant@ucc.ie







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Learn more about the choices Inova hospitals offer in Alexandria, Fairfax, Fair Oaks and Loudoun at [inova.org/choices](https://www.inova.org/choices).



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