

2024 ATLANTIS External Advisory Board Meeting Program

Sponsored by the *National Institute of Diabetes, Digestive and Kidney Diseases* via
TL1DK136047 and U2CDK129501

Wednesday, March 13, 2024

12:00PM – 6:00PM

Woodruff Memorial Research Building (WMB) 1109
101 Woodruff Cir Atlanta, 30322



ATLANTIS

Atlanta Network For Training In KUH Scientific Research



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UNIVERSITY
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MEDICINE



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2024 ATLANTIS External Advisory Board Meeting

AGENDA

March 13, 2024 | WMB 1109 | 12:00pm – 6:00pm

12:00 – 1:15pm	Introduction and Lunch
1:15 – 1:45pm	Overview and Administrative Core Presentation
	Susan M. Wall, M.D. <i>ATLANTIS Director, Administrative Core</i> Professor of Medicine and Physiology Renal Division Emory University School of Medicine
1:45 – 3:15pm	Pre- and Postdoctoral ATLANTIS Trainee Presentations
1:45 – 1:55pm (7-min presentation & 3-min Q&A)	Dana Battle <i>Predoctoral ATLANTIS Trainee</i> PhD Candidate, Morehouse School of Medicine Research Title: Lipotoxic Tubular Injury in Diabetic Kidney Disease
1:55 – 2:05pm (7-min presentation & 3-min Q&A)	Ryan Allen, PhD <i>Postdoctoral ATLANTIS Trainee</i> Postdoctoral Fellow, Georgia Institute of Technology Research Title: Detection of Heme Storage and Trafficking Proteins and Pathways Throughout Erythropoiesis
2:05 – 2:15pm (7-min presentation & 3-min Q&A)	Elizabeth Iffrig, MD, PhD <i>Postdoctoral ATLANTIS Trainee</i> Postdoctoral Fellow, Emory University Research Title: Red Blood Cell Aggregation in Sepsis - Not an Innocent Bystander
2:15 – 2:25pm (7-min presentation & 3-min Q&A)	Melissa McGranahan, PhD <i>Postdoctoral ATLANTIS Trainee</i> Postdoctoral Fellow, Emory University Research Title: Impact of Comorbid Post-traumatic Stress Disorder on Sympathetic Activity in Chronic Kidney Disease
2:25 – 2:35pm (7-min presentation & 3-min Q&A)	Tyrome Sweet, PhD <i>Postdoctoral ATLANTIS Trainee</i> Postdoctoral Fellow, Emory University Research Title: Pilot Study for the Role of Bacteriophages in Viral Infections Among Kidney Transplant Patients

<p>2:35 – 2:45pm (Pre-recorded 7-min presentation)</p>	<p>Carter Brzezinski <i>Predoctoral ATLANTIS Trainee</i> PhD Candidate, Emory University Research Title: Repurposing of Approved Pharmaceuticals to Discovery Novel Antibacterial Drugs</p>
<p>2:45 – 2:55pm (Pre-recorded 7-min presentation)</p>	<p>Matthew Gillen, PhD <i>Postdoctoral ATLANTIS Trainee</i> Postdoctoral Fellow, Emory University Research Title: Post-operative Acute Kidney Injury in Surgical Neonates</p>
<p>2:55 – 3:05pm (Pre-recorded 7-min presentation)</p>	<p>Ryan Zenhausern <i>Predoctoral ATLANTIS Trainee</i> PhD Candidate, Georgia Institute of Technology Research Title: Identifying Novel Lipid Nanoparticles that Deliver mRNA to Hematopoietic Stem Cells in Vivo</p>
<p>3:05 – 3:45pm</p>	<p>BREAK</p>
<p>3:45 – 4:15pm</p>	<p>Network Core Presentation</p>
	<p>Stacy S. Heilman, PhD <i>ATLANTIS Director, Network Core</i> Associate Professor Associate Vice Chair for Research Emory Department of Pediatrics and Children's Healthcare of Atlanta</p>
<p>4:15 – 4:45pm</p>	<p>Professional Development Core Presentation</p>
	<p>Lou Ann Brown, PhD <i>ATLANTIS Director, Professional Development Core</i> Division of Neonatal-Perinatal Medicine Assistant Dean, Emory University School of Medicine Director, Emory Office of Postdoctoral and Mentored Trainee Education</p>
<p>4:45 – 5:15pm</p>	<p>Training Core Presentation</p>
	<p>Nael A. McCarty, PhD <i>ATLANTIS Director, Training Core</i> Marcus Professor of Cystic Fibrosis PACS Division, Dept. of Pediatrics, Emory University School of Medicine Director, Molecular and Systems Pharmacology doctoral program Director, Emory + Children's Cystic Fibrosis Center of Excellence</p>
<p>5:15pm</p>	<p>Closing Remarks</p>
<p>5:15 – 6:00pm</p>	<p>External Advisory Board Only Meeting</p>
<p>6:00 – 6:30pm</p>	<p>Leadership/EAB Discussion</p>
<p>7:00 – 9:00pm</p>	<p>Dinner at Double Zero Restaurant – 1577 N Decatur Rd NE, Atlanta, GA 30307</p>

Meet our External Advisory Board Members

Michael J. Ross, MD, Albert Einstein College of Medicine

Dr. Michael Ross earned his MD from NYU in 1995. He completed his internal medicine training at Duke University, followed by a nephrology fellowship at Mount Sinai, which he finished in 2001. Dr. Ross joined the faculty in the Division of Nephrology at the Icahn School of Medicine at Mount Sinai in 2001 and served as the Nephrology Fellowship Program Director from 2004 to 2015. He assumed the role of Chief of Nephrology at the James J. Peters VA Medical Center from 2014 to 2017, during which he played a key role in establishing the only VA Kidney Transplant Program in the northeastern US. In 2017, Dr. Ross became the Chief of the Division of Nephrology at the Albert Einstein College of Medicine/Montefiore Medical Center, where he currently holds the position of Chief of Nephrology and Professor of Medicine and Developmental and Molecular Biology.



Dr. Ross has held several national/international leadership positions, including Chair of the ASN Fellowship Match Taskforce and Deputy Editor of Kidney International from 2012 to 2017. He currently serves as the Nephrology Section Editor of the American College of Physicians Medical Knowledge and Self-Assessment Program (MKSAP). Additionally, Dr. Ross recently assumed the role of contact PI for the NIH-funded New York Consortium for Interdisciplinary Training in Kidney, Urological, & Hematological Research. His primary research focus is to identify novel pathomechanisms of HIV-induced kidney diseases and other forms of kidney injury. He is also actively involved in clinical and translational research studies in kidney disease.

James Zimring, MD, PhD, University of Virginia

Dr. Zimring holds a Ph.D. in immunology and an M.D., both obtained from Emory University. He is board-certified in Clinical Pathology, a diplomate of the American Board of Pathology, and an elected member of the American Society of Clinical Investigation. Dr. Zimring has previously held professorships at Emory University and the University of Washington. Currently, he occupies the Thomas W. Tillack chair in experimental pathology at the University of Virginia. For over 20 years, Dr. Zimring has maintained an NIH-funded laboratory, publishing over 185 research articles, and focusing his research on transfusion medicine and blood-related diseases. He also teaches graduate-level coursework in critical thinking in the practice of science and has authored two books: "What Science Is and How It Really Works" (Cambridge University Press, 2019) and "Partial Truths: How Fractions Distort Our Thinking" (Columbia University Press, 2022).



Gregory E. Tasian, MD, MSc, MSCE, University of Pennsylvania



Dr. Tasian holds a tenured position as Associate Professor of Surgery and Epidemiology at the University of Pennsylvania Perelman School of Medicine. His research is centered at the Children's Hospital of Philadelphia (CHOP), where he practices as a pediatric urologist specializing in the surgical and medical management of children with kidney stone disease. Dr. Tasian obtained his M.D. from Baylor College of Medicine, an MSc in Neuroscience from the University of Oxford, and an MS in Clinical Epidemiology from the University of Pennsylvania. He completed his urology residency at UCSF and a pediatric urology fellowship at CHOP.

The primary focus of Greg's career is to generate and apply knowledge to enhance the health outcomes of individuals with kidney stone disease. His research group employs a combination of clinical trials, prospective observational studies, and large data analytics to identify determinants of and optimal management strategies for kidney stones throughout life. Initially, his group discovered the association between antibiotics and kidney stone disease. Subsequently, they elucidated the causal pathway of nephrolithiasis by identifying perturbations in the gut microbiome and metabolome among individuals with early-onset calcium oxalate kidney stone disease, particularly noting a lower abundance of oxalate-degrading and butyrate-producing bacteria. He serves as the Director of the 30-site PCORI-funded Pediatric KIDney Stone (PKIDS) Care Improvement Network, a multi-PI in the Urinary Stone Disease Research Network (USDRN), and Director of the Center for Outcomes REsearch in Surgery (CORES) at CHOP.

Dr. Tasian's research program has received continuous support from the NIH and PCORI since completing his fellowship, and he has published over 100 research articles in leading peer-reviewed journals. His research has garnered extensive media coverage, including features in The New York Times, NBC News, The Guardian, and CNN.

Meet our ATLANTIS Core Directors & Leadership

ATLANTIS Administrative Core

The Administrative Core provides oversight for overall core resource use and sets the overall direction for the ATLANTIS Program. It is responsible for prioritization of Program resources (both federal and institutional), undertaking internal and external review of Program and trainee progress, and organizing enrichment activities. A major function of the Administrative Core is to increase the engagement of trainees at all levels at Emory, MSM, and GaTech in KUH research.

Susan M. Wall, MD, ATLANTIS PI, Director, Administrative Core

Susan M. Wall, MD, is Professor of Medicine as well as the Research Director of the Emory Renal Division and MPI of the NIDDK-funded Renal T32 Program. Her laboratory, which has made major discoveries in the regulation of blood pressure by renal intercalated cells, has had uninterrupted NIDDK-KUH funding for 27 years. She is the recipient of several research awards. Most recently, she was the American Heart Association's 2020 Donald Seldin Lecturer. Dr. Wall has mentored 6 postdoctoral fellows, many of whom have gone on to receive their own independent funding.



ATLANTIS Training Core

The TL1 Core builds on the considerable strengths and outstanding resources amongst the partner institutions to provide focused, mentored research training supplemented with rigorous didactic training. KUH trainees will be selected by U2C TL1 leadership. The TL1 Core will have the capacity to fund 7 post-doctoral and 5 pre-doctoral trainees and will provide 2-3 years of research training and support for postdocs and 2 years for predocs.

Nael A. McCarty, PhD, ATLANTIS PI, Director, Training Core

Nael A. McCarty, PhD, is Professor of Pediatrics and Director of the Emory+Children's Cystic Fibrosis Center of Excellence. He is co-Director of the innovative CF Scholars Program that ties pre-doctoral and post-doctoral trainees from both PhD and MD tracks. He is former Director of the GDBBS, and former Director of the Atlanta Broadening Experiences in Scientific Training (BEST) Program at Emory and GaTech, funded by an NIH DP7 award, which included both pre- and post-doctoral trainees. For 9 years he directed the Molecules-to-Mankind (M2M) doctoral pathway within the LGS, which sought to train students at the intersection of laboratory and population-based sciences. He is a co-founder of the Atlanta Society of Mentors, which provides mentorship training to faculty. Dr. McCarty's research focuses on epithelial ion channels.



Vivien Sheehan, MD, PhD, ATLANTIS Associate Director, Training Core

Vivien Sheehan, PhD, MD, is an Associate Professor of Hematology & Oncology in the Department of Pediatrics at Emory University. She is Director of Translational Sickle Cell Research at Emory. The Sheehan lab uses genomics to unravel the mechanisms of globin switching and the pharmacogenomics of hydroxyurea in SCD, in order to develop new fetal hemoglobin inducing agents to treat people with sickle cell disease. Dr. Sheehan was Director of the Kaward Workshop at Baylor College of Medicine for four years before moving to Atlanta in 2020.

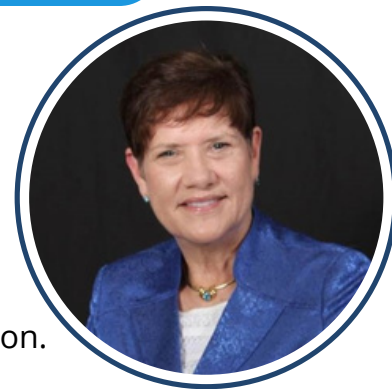


ATLANTIS Professional Development Core

The overarching goals of the Professional Development Core are to help KUH TL1 trainees whether there are from Emory, Morehouse, or Ga Tech refine their career plans, identify the technical and professional skills they need to learn, and prepare for success in their individualized career plans. Through the opportunities provided by routine meetings with career counselors, career workshops, and executive training, trainees will learn the leadership and management skills necessary to plan, develop, and navigate their careers through a constantly changing research landscape.

Lou Ann Brown, PhD, ATLANTIS Director, Professional Development Core

Lou Ann S. Brown, Ph.D., is an Emory Professor of Pediatrics in the Neonatal-Perinatal Medicine Division and School of Medicine Assistant Dean and Director of the Office of Postdoctoral and Mentored Trainee Education. She is an elected member of the Association of American Medical Colleges (AAMC) Graduate Research and Teaching (GREAT) Group Steering Committee and the 2019-2020 Chair of the Postdoctorate Leaders Section. Through GREAT, she interacts with graduate and postdoctoral programs across the nation. In 2018, Dr. Brown became PI of the NIGMS funded Emory FIRST grant, the oldest IRACDA K12 grant in the nation with continued funding since 2000. Recently renewed for years 21 - 25, In FIRST, postdoctoral fellows have mentored research and mentored teaching experiences at an Atlanta Minority Serving Institution. She is also a member of the Research Education Executive Committee of the Georgia Clinical and Translational Science Alliance (Ga CTSA). She and Dr. David Guidot, a former K08 mentee, have been MPIs on an NHLBI T32 Acute Lung Injury Training Grant since 2013. Dr. Brown has mentored or co-mentored 11 high school students, 24 undergraduates, 17 medical students, 6 graduate students, 21 postdoctoral trainees (Ph.D. and M.D.), and 15 junior faculty members (Ph.D. and M.D.) where 87% were women and/or from underrepresented groups with many now funded tenured faculty.



**Douglas C. Eaton, PhD, ATLANTIS Associate Director,
Professional Development and Training Cores**



Douglas C. Eaton, PhD, is an Emory Professor Emeritus of Medicine and former Chair of Physiology who has served as co-PI of the Emory Nephrology T32 from its inception (1990 –2021) and co-PI of the R25 SUPERR program. He also directed the NIGMS funded IRACDA K12Program (2005-2018) and has been crucial in the program’s sustained success. Drs. Brown and Eaton have collaborated for 20+ years and will work closely with ATLANTIS leadership to build a robust model that promotes the professional development of all trainees and compliments the rigorous TL1 KUHresearch training. He will continue offering career guidance and research support to TL1 trainees as he has done through the renal T32, NIDDK R25, and IRACDA K12.

ATLANTIS Network Core

The ATLANTIS Network Core supports the formation of diverse and vibrant networked learning communities as an overall strategy to enhance the training experience for emerging biomedical researchers in KUH-related disciplines, provide an additional framework to unite the institutions in our city-wide network, and stimulate new collaborations across non-traditional KUH disciplines. The Network Core complements traditional face-to-face meetings and activities with interactions in a digital platform to bring together in new ways a community of established, emerging, and future KUH health researchers.

Stacy S. Heilman, PhD, ATLANTIS Director, Network Core



Stacy Heilman, PhD, is Associate Professor and the Associate Vice Chair for Research in the Emory Department of Pediatrics. As a trained PhD basic scientist, scientific administrator and educator, she brings a track record of connecting trainees and faculty with vital research resources including facilitating fruitful collaborations, creating and overseeing scientific cores, and directing research education programs. She serves as Director of the monthly K-Club career development symposium and also has formal ties to pediatric resident and fellow research through co-direction of a residency research track and a research course for clinical post-docs. Promoting professional and inter-institutional networking is a centerpiece of Dr. Heilman’s role in the organization and thus is easily and naturally transferable to the ATLANTIS framework. She will hold primary responsibility for planning and executing the Network Core face-to-face events and will serve as the key driver for PhD pre and postdoc outreach and recruitment into ATLANTIS programming and training.

Jason Cobb, MD, ATLANTIS Associate Director, Network Core



Jason Cobb, MD, is an Associate Professor in the Emory University Division of Renal Medicine and Associate Director of the Nephrology Fellowship Training Program. Dr. Cobb is a graduate of Morehouse College with a BS in biology. He holds a medical degree from Emory University School of Medicine and completed his internal medicine residency and nephrology fellowship at Emory University. He is board-certified in internal medicine and nephrology. He sees patients in the nephrology clinic at Emory University Hospital Midtown in the Medical Office Tower seeing patients with nephrology complaints such as chronic kidney disease due to diabetes, hypertension, vascular disease, and glomerulonephritis. Also, Dr. Cobb takes care of hemodialysis patients at Emory Dialysis Greenbriar and Emory Dialysis Northside, and home dialysis patients at Emory Dialysis Northside. He also rounds on inpatient services at Emory University Hospital Midtown and Emory University Hospital. Research and teaching interests include quality improvement and nephrology fellow clinic at Grady Memorial Hospital.



Melissa Kemp, PhD

ATLANTIS Site PI, Georgia Institute of Technology

Carol Ann & David D. Flanagan Professor

Wallace H. Coulter Department of Biomedical Engineering

Georgia Institute of Technology & Emory University

Gianluca Tosini, PhD, FARVO

ATLANTIS Site PI, Morehouse School of Medicine

Professor and Chair

Department of Pharmacology and Toxicology

Chief Scientific Research Officer

Morehouse School of Medicine



Justin Ferretti, MPH

ATLANTIS Network Core Manager, Emory University

ATLANTIS Trainees



Meet Our Trainees

**Training the Next Generation of
Kidney, Urology, and Hematology Health Scientists**



Predoctoral Trainees



Dana Battle

Predoctoral ATLANTIS Trainee

PhD Candidate, Morehouse School of Medicine

Research Title:

Lipotoxic Tubular Injury in Diabetic Kidney Disease

Dana's research is geared toward investigating the pathways through which Free Fatty Acids cause renal tubular atrophy, thereby advancing our understanding of Diabetic Kidney Disease.



Carter Brzezinski

Predoctoral ATLANTIS Trainee

PhD Candidate, Emory University

Research Title:

Repurposing of Approved Pharmaceuticals to Discovery Novel Antibacterial Drugs

Carter is actively engaged in antibiotic resistance research, combatting multi-drug-resistant infections, a crucial response to the public health crisis.



Ryan Zenhausern

Predoctoral ATLANTIS Trainee

PhD Candidate, Emory University

Research Title:

Identifying Novel Lipid Nanoparticles that Deliver mRNA to Hematopoietic Stem Cells in Vivo

Ryan is advancing mRNA delivery to blood stem cells using lipid nanoparticles (LNPs). Identifying new particles that deliver mRNA specifically to these cells opens the door for delivering gene editing reagents and other nucleic acids to treat genetic blood disorders.

Jennifer Okalova

Predoctoral ATLANTIS Trainee
PhD Candidate, Emory University



Research Title:

Optimization of ADC-Based Non-Genotoxic Conditioning Strategies for the Transplantation of Engineered Hematopoietic Stem Cells for Hemophilia A and Sickle Cell Disease

Jennifer's dissertation research focuses on hematopoietic stem cell gene therapy for Hemophilia A and Sickle Cell Disease, with a specific aim to develop a novel non-genotoxic conditioning regimen to prepare patients for hematopoietic stem cell transplantations.

Audrey Wang

Predoctoral ATLANTIS Trainee
PhD Candidate, Georgia Institute of Technology



Research Title:

A Low-Cost, "Physics-Based" Point-of-Care Platelet Counter for Thrombocytopenic Patients

Audrey's research aims to develop a low-cost POC device to estimate platelet count using blood clot biophysics, enabling accessible and affordable monitoring for patients with low platelet count.

Postdoctoral Trainees



Ryan Allen, PhD

Postdoctoral ATLANTIS Trainee

Postdoctoral Fellow, Georgia Institute of Technology

Research Title:

Detection of Heme Storage and Trafficking Proteins and Pathways Throughout Erythropoiesis

Dr. Allen's research encompasses understanding how the large amount of potentially cytotoxic heme is trafficked and stored in developing erythrocytes.



Matthew Gillen, MD

Postdoctoral ATLANTIS Trainee

Postdoctoral Fellow, Emory University

Research Title:

Post-operative Acute Kidney Injury in Surgical Neonates

Dr. Gillen's research is focused on better understanding risk factors that contribute to post-operative acute kidney injury in surgical neonates, in addition to evaluating the utility of a pre-operative urine biomarker as a predictor of post-operative acute kidney injury.



Jamie AG Hamilton, PhD

Postdoctoral ATLANTIS Trainee

Postdoctoral Fellow, Georgia Institute of Technology

Research Title:

Delineating Vascular Endothelial Dysfunction in Transplant-Associated Thrombotic Microangiopathy Utilizing Transwell Methodology

Dr. Hamilton's research is focused on developing an in vitro model of TA-TMA to determine the key factors promoting vascular endothelial damage and delineate biomarkers for TA-TMA.



Elizabeth Iffrig, MD, PhD

Postdoctoral ATLANTIS Trainee

Postdoctoral Fellow, Emory University

Research Title:

Red Blood Cell Aggregation in Sepsis - Not an Innocent Bystander

Dr. Iffrig's research is focused on how acute critical illnesses like sepsis in adults affect changes in red blood cell biomechanics and microcirculatory fluid dynamics to cause microvascular endothelial cell damage.



Melissa McGranahan, PhD

Postdoctoral ATLANTIS Trainee

Postdoctoral Fellow, Emory University

Research Title:

Impact of Comorbid Post-traumatic Stress Disorder on Sympathetic Activity in Chronic Kidney Disease

Dr. McGranahan's research explores PTSD's effect on SNS activity in CKD patients and aims to enhance cardiovascular outcomes through sleep and exercise intervention.



Tyrome Sweet, PhD

Postdoctoral ATLANTIS Trainee

Postdoctoral Fellow, Emory University

Research Title:

Pilot Study for the Role of Bacteriophages in Viral Infections Among Kidney Transplant Patients

Dr. Sweet's research is aimed towards exploring the impact of bacteriophages on renal transplant patients through machine learning techniques.

Acknowledgements

Thank you to our presenters for generously sharing their knowledge and expertise.

ATLANTIS Core Presenters

Lou Ann Brown, PhD

Stacy S. Heilman, PhD

Nael A. McCarty, PhD

Susan M. Wall, MD

ATLANTIS Trainee Presenters

Ryan Allen, PhD

Dana Battle

Carter Brzezinski

Matthew Gillen, PhD

Elizabeth Iffrig, MD, PhD

Melissa McGranahan, PhD

Tyrome Sweet, PhD

Ryan Zenhausern

Thank you to the Planning Committee for their successful efforts.

Carter Brzezinski

Jason Cobb, MD

Douglas C. Eaton, PhD

Melanie Elder

Justin Ferretti, MPH

Stacy S. Heilman, PhD

Nael McCarty, PhD

Melissa McGranahan, PhD

Susan M. Wall, MD

Thank you to our sponsor for their support.



National Institute of
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Thank you to our institutional partners.



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