



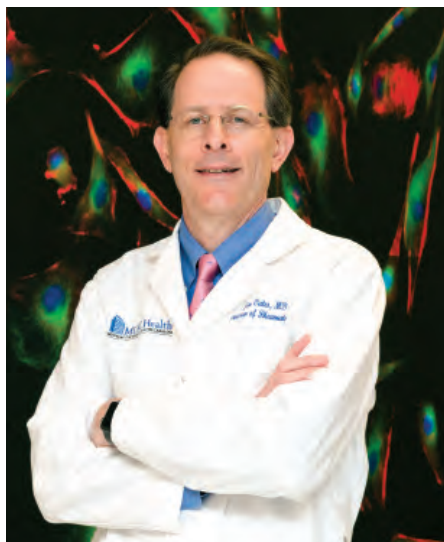
Department of Medicine

2021 RESEARCH SYMPOSIUM

Friday, April 30 | Virtual Conference



From the Vice Chair for Research



We would like to thank all of the participants for sharing their innovative research, as well as those who coordinated and attended this event. Your support for our research mission is greatly appreciated.

Many thanks to the judges who contributed their time and effort to make the 14th Annual Department of Medicine Research Symposium a successful event.

Ruth Adekunle, M.D.
Emily Brennan, MLIS
Thomas Di Salvo, M.D., MBA
Gary Gilkeson, M.D.
Hamza Hashmi, M.D.
Joshua Lipschutz, M.D.

Diane Kamen, M.D., MSCR
Margaret Markiewicz, M.D.
Paul McDermott, Ph.D.
William Moran, M.D., MS
Zengdun Shi, M.D.
Charlie Strange, M.D.

Sincerely,

Jim Oates, M.D.
Professor and Director
Division of Rheumatology & Immunology
Vice Chair for Research, Department of Medicine
Medical University of South Carolina

Schedule of Events

2021 VIRTUAL RESEARCH SYMPOSIUM

Friday, April 30 | Live Streaming: Microsoft Teams

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|---------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 8:00 AM - 8:30 AM | Welcome and Opening Remarks
<i>Jim Oates, M.D., Vice Chair for Research</i> |
| 8:30 AM - 11:00 AM | Poster Presentations |
| 11:30 AM - 12:30 PM | Oral Abstract Presentations |
| 12:30 PM - 1:15 PM | Keynote Presentation by Jeremy Reiter, M.D., Ph.D.
<i>Professor & Chair, Department of Biochemistry and Biophysics, University of California, San Francisco</i> |
| 1:15 PM - 1:45 PM | Research Day Poster Award Ceremony
Awards recognizing the best research day presentations will be given in the following categories: <ul style="list-style-type: none">• Oral Presenters• Junior Faculty• Postdoctoral Fellows• Residents/Fellows• Graduate Students• Medical Students |

Keynote: Jeremy Reiter, M.D., Ph.D.



Jeremy Reiter, M.D., Ph.D.
Professor & Chair, Department
of Biochemistry and Biophysics
University of California, San
Francisco

“How Cilia Signal, and How I Got so Fascinated by this Organelle”

Dr. Jeremy Reiter is a professor and chair of the Department of Biochemistry and Biophysics at the University of California, San Francisco. His lab investigates how cilia form, signal and function in intercellular communication. Their achievements include:

- The discovery that Smoothened, a critical component of the Hedgehog pathway, localizes to and works in cilia. This was the first demonstration that the Hedgehog signal transduction machinery functions at cilia.
- They were the first to show that cancers can be ciliated and that cancers can require cilia for growth.
- They helped show that the region at the base of the cilium called the transition zone is a gate that controls ciliary composition. For example, the transition zone regulates the ciliary localization of Smoothened and, therefore, is required for Hedgehog signaling.
- They identified many transition zone components and discovered that some ciliopathies are caused by inherited human mutations in these transition zone components.
- They found a phosphoinositide that marks the ciliary membrane and helps direct which proteins localize to cilia. This was the first identification of a specific cilia-enriched lipid.
- They investigated how cilia regulate adult tissue homeostasis. Recently, they have shown how cilia of hypothalamic neurons signal to regulate satiety and how cilia restrict adipogenesis.

Dr. Reiter graduated magna cum laude in biochemistry from Yale College and completed his PhD and MD in the combined program at UCSF. In 1993, as a young scientist at UCSF, he was an ARCS Scholar; since then, he has mentored many young scientists, including other ARCS Scholars. He has received multiple academic awards, including the Presidential Early Career Award for Scientists and Engineers, the R.R. Bensley Award in Cell Biology and the ARCS Distinguished Scholar Alumni Award. His current research focuses on how cilia sense cues from other cells to pattern tissues during embryonic development.

Oral Abstract Presenters



Krutika Kuppalli, M.D.

Assistant Professor, Division of Infectious Diseases

Category: Junior Faculty

Mentor: Cassandra Salgado, M.D., MS

Title: Epidemiology of COVID-19 Illness among Employees, Trainees, and Faculty (ETF) of an Academic Health System (AHS)



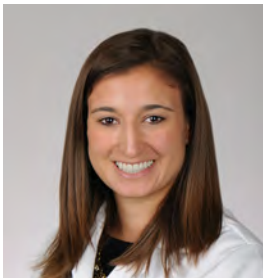
Denisha Spires, Ph.D.

Postdoctoral Scholar, Division of Nephrology

Category: Postdoctoral Fellow

Mentor: Daria Ilatovskaya, Ph.D.

Title: The Role of Atrial Natriuretic Peptide in Glomerular Damage in Salt-Sensitive Hypertension



Christina Mingora, M.D.

Fellow, Division of Pulmonary, Critical Care, Allergy & Sleep Medicine

Category: Resident/Fellow

Mentors: Patrick Flume, M.D., and Susan Dorman

Title: Time-to-detection as a pre-treatment predictor for culture conversion in patients with non-tuberculous mycobacterial pulmonary disease



Nour Hijazi

Category: Graduate Student

Mentor: Don Rockey, M.D.

Title: The role of paxillin in hepatic stellate cell activation and fibrogenesis



Sarah Smith

4th Year Medical Student

Category: Medical Student

Mentor: Paula Ramos, Ph.D.

Title: Genome-wide DNA Methylation and Gene Expression Signatures in Classical Monocytes from African Ancestry Patients with Systemic Sclerosis

Poster Participants

Junior Faculty Category

Ruth Adekunle, M.D.

Mentor: Jessica Lewis, M.D.

Title: Clinical Outcomes of Solid Organ Transplant Recipients with Severe Acute Respiratory Syndrome Coronavirus 2

Krutika Kuppalli, M.D.

Mentor: Cassandra Salgado, M.D., MS

Title: Epidemiology of COVID-19 Illness among Employees, Trainees, and Faculty (ETF) of an Academic Health System (AHS)

Meghan Thomas, M.D.

Mentors: William Moran, M.D., MS, Marc Heincelman, M.D., Ben Kalivas, M.D., Patrick Mauldin, Ph.D., and Jingwen Zhang, MS

Title: Understanding the Association between Admission Source and In-Hospital Delirium: A Retrospective Cohort Study

Xiaofeng Zuo, Ph.D.

Mentor: Joshua Lipschutz, M.D.

Title: Role of the Exocyst, Primary Cilia, and Mitochondria in Acute Kidney Injury

Postdoctoral Fellow Category

Halim Bou Daher, M.D.

Mentor: Don Rockey, M.D.

Title: Development of a risk scoring system to predict in-hospital mortality in patients with cirrhosis admitted with upper gastrointestinal bleeding

Kareem Marrache, M.D.

Mentor: Don Rockey, M.D.

Title: The Relationship Between the Severity of Portal Hypertensive Gastropathy and Portal Hypertension

Denisha Spires, Ph.D.

Mentor: Daria Ilatovskaya, Ph.D.

Title: The Role of Atrial Natriuretic Peptide in Glomerular Damage in Salt-Sensitive Hypertension

Ashish Solanki, Ph.D.

Mentor: Joshua Lipschutz, M.D.

Title: HGF induced activation of Nephron and Neph1, a novel mechanism that participates in podocytes recovery from injury

Resident/Fellow Category

Nnamdi Azih, M.D.

Mentors: Brian Houston, M.D. and Ryan Tedford, M.D.

Title: Indirect Fick and Thermodilution Cardiac Output Measurements Have Significant Variance Compared to Direct Fick in LVAD Patients

H. Jencie Burton, M.D.

Mentor: Eric Meissner, M.D., Ph.D.

Title: Barriers to Hepatitis C Treatment: An Observational Retrospective Study

Avery Chisholm, M.D.

Mentor: Wing-Kin Syn, MBChB, Ph.D.

Title: Utility of the FAST score in identifying US Veterans with high risk nonalcoholic steatohepatitis (NASH): a validation study

William Dungan, M.D.

Mentors: Puja Elias, M.D. and John Romano, M.D.

Title: Tics In The Small Intestine, An Unusual Case of Jejunal Diverticulitis

Travis Ferguson, M.D.

Mentor: Nicholas Pastis, M.D. and Gerard Silvestri, M.D., MS

Title: Clinical Evaluation of the Thin TCP-EBUS Bronchoscopy System

Poster Participants

Resident/Fellow Category

Adam Fox, M.D.

Mentor: Gerard Silvestri, M.D., MS
Title: Coordination of Biomarker Testing for Targeted Therapies in Non-Small Cell Lung Cancer

Megan Goff, D.O.

Mentor: Blaithin McMahon, MB.BCh. BAO, Ph.D.
Title: Continuous Renal Replacement Therapy: a reversible cause of thrombocytopenia

Zain Gowani, M.D.

Mentor: Jeffrey Winterfield, M.D.
Title: Utility of Cardiac Computed Tomography for Scar Assessment in Patients with Cardiac Sarcoidosis Undergoing Catheter Ablation

Sarah Huse, D.O.

Mentors: Diane Kamen, M.D., MSCR, Gary Gilkeson, M.D., and Jim Oates, M.D.
Title: Malignancy Risk in Patients with Systemic Lupus Erythematosus

Prarthana Jain, D.O.

Mentor: Diane Kamen, M.D., MSCR
Title: Factors that Impact Medication Adherence in Hospitalized Patients with Lupus

Carson Keck, M.D.

Mentors: Marc Heincelman, M.D. and Andrew Schreiner, M.D.
Title: POCUS Curriculum for Internal Medicine Residents: using Sound Waves to Amplify the Exam

Ahmadreza Karimianpour, D.O.

Mentor: Jeffrey Winterfield, M.D.
Title: Accessing the inaccessible: epicardial mapping and ablation of ventricular tachycardias from the coronary venous system in post-CABG patients.

Monica Klaybor, M.D.

Mentor: Jennifer Bracey, MD
Title: Off Target Effects of CFTR Modulators on Serum Vitamin Levels

Jessica Lozier, M.D.

Mentors: Gerard Silvestri, M.D., MS, and Stacey Fedewa, Ph.D.
Title: Demographic Differences in Those Being Screened for Lung Cancer and Implications for Mass Screening in the U.

Christina Mingora, M.D.

Mentors: Patrick Flume, M.D. and Susan Dorman, M.D.
Title: Time-to-detection as a pre-treatment predictor for culture conversion in patients with non-tuberculous mycobacterial pulmonary disease

Tejaswi Nadig, M.D.

Mentors: Patrick Flume, M.D. and Bryan Garcia, M.D.
Title: Factors associated with health-related quality of life in patients with pulmonary nontuberculous mycobacterium

Shaurya Prakash, M.D.

Mentor: Don Rockey, M.D.
Title: Fibrosis Regression after Direct Acting Antiviral Therapy in Patients with Chronic Hepatitis C Virus Infection and Cirrhosis

Syed Quadri, M.D.

Mentor: Ruth Campbell, M.D.
Title: Reduction of intraoperative nephrotoxic antimicrobial exposure can decrease the severity of stage of Acute Kidney Injury and improve renal recovery in patients undergoing heart transplantation

Jacob Read, M.D.

Mentors: Ryan Tedford, M.D. and Brian Houston, M.D.
Title: Hemodynamic Reserve Predicts Early Right Heart Failure After LVAD Implantation

Harrison Smith, M.D.

Mentor: Nichole Tanner, M.D., MSCR
Title: Patient demographics and outcomes of a large national cohort of patients undergoing lung cancer screening

Michelle Spiegel, M.D.

Mentor: Andrew Goodwin, M.D.
Title: Work Smarter, Not Harder: Innovative Re-Design of Computerized Provider Order Entry to Drive Evidence-Based Fluid Prescribing

Poster Participants

Resident/Fellow Category

Molly Stone, M.D.

Mentor: Erin Forster, M.D., MPH
Title: Adherence to Recommended Healthcare Maintenance Guidelines by IBD Providers in a Tertiary Care Center

Michael Sutton, D.O.

Mentor: Don Rockey, M.D.
Title: Overuse of Intravenous Proton-Pump Inhibitors in the Treatment of Low to Moderate Risk Peptic Ulcer Bleeding

Emily Vara, D.O.

Mentor: Diane Kamen, M.D., MSCR, Dulaney Wilson, Ph.D., John Pearce, Ph.D., and Jim Oates, M.D.
Title: Perfluoroalkyl Compound Serum Concentrations and Community Vulnerability: Associations with Lupus-Related Autoantibodies and Disease

Graduate Student Category*

Thelma Amoah

Mentor: Daria Ilatovskaya, Ph.D.
Title: Effect of Atrial Natriuretic Peptide on Mitochondrial Bioenergetics in Cortical Collecting Duct Cells

Callie Clarke

Mentor: Daria Ilatovskaya, Ph.D.
Title: Differential Expression of Histaminergic System Components in Renal Cortex during Salt-Sensitive Hypertension

Mikhail Fomin, MS

Mentor: Daria Ilatovskaya, Ph.D.
Title: Establishing the expression of renal histamine receptors and associated enzymes in the human kidney: a literature review

Nour Hijazi

Mentor: Don Rockey, M.D.
Title: The role of paxillin in hepatic stellate cell activation and fibrogenesis

Richa Jaiswal

Mentor: Don Rockey, M.D.
Title: Utility of the world association of sarcoidosis and other granulomatosis disease (wasog) criteria for the diagnosis of hepatic sarcoidosis

Cameron Leyers

Mentor: Melissa Cunningham, M.D.
Title: Altered ER α localization differentially modulates immune cell subsets

Ryan Schibalski

Mentor: Daria Ilatovskaya, Ph.D.
Title: Sex differences in renal mitochondrial function of young healthy rats

Morgan Spicer

Mentor: Daria Ilatovskaya, Ph.D.
Title: The implications of salt-deficiency in autosomal recessive polycystic kidney disease

**Participants were placed in the category that most closely fit their current title.*

Medical Student Category

Wayne Bauerle

Mentor: Heather Evans, M.D.
Title: Improving antibiotic stewardship in acute appendicitis through risk-based empiric treatment selection.

Noah Blaker

Mentors: Valerian Fernandes, M.D., Katrina Bidwell, M.D., and Christopher Nielsen, M.D.
Title: Practical Differences Between the Biradial and Femoral Approach for Alcohol Septal Ablation Nephritis

Poster Participants

Medical Student Category

Daniel Cook

Mentors: Valerian Fernandes, M.D. and Christopher Nielsen, M.D.
Title: Long-Term Changes in Diastolic Function in HOCM Patients Treated with Alcohol Septal Ablation

Jonathan Hill

Mentor: Stephen Savage, M.D.
Title: Pretreatment Prostate-Specific Antigen Velocity Is Associated with Biochemical Recurrence and Failure of Prostate Cancer in African-Americans and Low Risk Patients

Morgan Hill

Mentor: Taufiek Konrad Rajab, M.D., and Steven Kubalak, Ph.D.
Title: Partial Heart Transplantation: a New Operation for Children Requiring Valve Replacement

Andraia Li

Mentors: John Kaczmar, M.D. and Terry Day, M.D.
Title: Safety of novel targeted therapies and immunotherapy in recurrent or metastatic head and neck squamous cell cancer: a meta-analysis

Veena Mehta

Mentor: Vinayak Rohan, M.D.
Title: Patients' Perspective Regarding Perceived Risk and Transplantation During the Early Period of COVID-19 Pandemic: Results of a Cross-Sectional Survey

Ian O'Connor

Mentors: Don Rockey, M.D. and Anand Mehta, Ph.D.
Title: NAFLD/NASH induces fucosylation and mannose N-linked glycan modifications

Julia Rodes

Mentors: Kelly Barh, D.O. and Taylor Crouch, Ph.D.
Title: Gender Differences in Outcomes of Interdisciplinary Pain Rehabilitation

Dayvia Russell

Mentor: Jim Oates, M.D.
Title: Changes in Gene Expression After Sepiapterin Treatment in Lupus Nephritis Stimulated Human Glomerular Endothelial Cells

Sarah Smith

Mentor: Paula Ramos, Ph.D.
Title: Genome-wide DNA Methylation and Gene Expression Signatures in Classical Monocytes from African Ancestry Patients with Systemic Sclerosis

Mary Kate Sullivan

Mentor: Don Rockey, M.D.
Title: Normal or near normal aminotransferase levels in patients with alcoholic cirrhosis

Eric Taylor

Mentors: Valerian Fernandes, M.D. and Katrina Bidwell, M.D.
Title: Effect of the COVID-19 Pandemic on Incidence of Patients Presenting with STEMI at MUSC

Peyton Tharp

Mentors: Valerian Fernandes, M.D., Katrina Bidwell, M.D., and Christopher Nielsen, M.D.
Title: Immediate impact of alcohol septal ablation on left ventricular diastolic pressure in patients with hypertrophic obstructive cardiomyopathy

Brian Troyer

Mentor: Tamara Nowling, Ph.D.
Title: Urine Biomarkers of Lupus Nephritis

Andrew Wortham

Mentor: Don Rockey, M.D.
Title: Prognosis and outcomes in compensated and decompensated cirrhosis in correlation to hepatic venous pressure gradient

Brandon Xavier

Mentor: Don Rockey, M.D.
Title: Appropriateness of pre-endoscopic evaluation in patients referred for iron deficiency anemia



DEPARTMENT OF MEDICINE

As the largest Department in the MUSC College of Medicine, the Department of Medicine provides essential leadership to numerous programs across the university, MUSC Health, and South Carolina.

Our Department—made up of ten divisions engaged in care at two hospital systems and multiple ambulatory practices—is guided by our vision to provide superior patient care, to educate the next generation of physicians, and to perform seminal discovery research. Our divisions are home to numerous NIH-funded, internationally renowned investigators, master clinicians, and award-winning educators who are leaders in their specialized fields of medicine:

- > Cardiology
- > Endocrinology, Diabetes & Metabolic Diseases
- > Gastroenterology & Hepatology
- > General Internal Medicine
- > Hematology & Oncology
- > Hospital Medicine
- > Infectious Diseases
- > Nephrology
- > Pulmonary, Critical Care, Allergy & Sleep Medicine
- > Rheumatology & Immunology

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