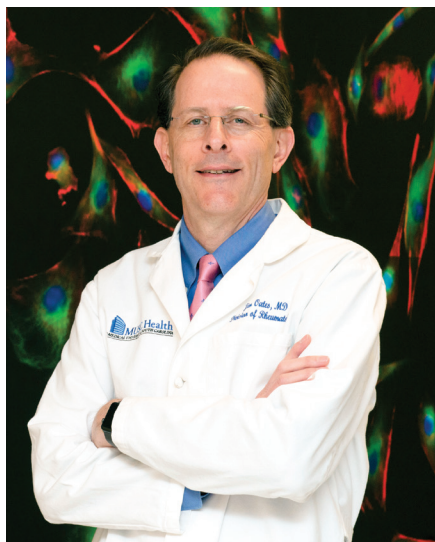




# From the Vice Chair for Research

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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 appreciate.

Many thanks to the judges who contributed their time and effort to make the 15th Annual Department of Medicine Research Symposium a successful event.

Prince Anand, M.D., FACP

Galina Bogatkevich, M.D., Ph.D.

Marc-Andre Cornier, M.D.

Melissa Cunningham, M.D., Ph.D.

Toros Dincman, M.D., Ph.D.

Thomas Di Salvo, M.D., MBA

Susan Dorman, M.D.

Dee Ford, M.D., MSCR

Gary Gilkeson, M.D.

Andrew Goodwin, M.D., MSCR

Hamza Hashmi, M.D.

Harsha Karanchi, M.D.

Joshua Lipschutz, M.D.

Margaret Markiewicz, M.D.

Paul McDermott, Ph.D.

William Moran, M.D., MS

Justin Van Beusecum, Ph.D.

Xian Zhang, Ph.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

## 2022 VIRTUAL RESEARCH SYMPOSIUM

Friday, April 29 | Live Streaming: Microsoft Teams

8:00 AM - 8:30 AM

### Welcome and Opening Remarks

*Jim Oates, M.D., Vice Chair for Research*

*Ben Clyburn, M.D., Chair, Department of Medicine*

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 Ellen Gravallese, M.D.

*Chief of the Division of Rheumatology, Inflammation and Immunity, Brigham and Women's Hospital*

*Theodore Bevier Bayles Professor of Medicine at Harvard Medical School*

1:15 PM - 1:45 PM

### Research Day Poster Award Ceremony

Awards recognizing the best research day presentations

*Jim Oates, M.D., Vice Chair for Research*

*Ben Clyburn, M.D., Chair, Department of Medicine*



# Keynote: Ellen Gravallesse, M.D.



## Ellen Gravallesse, M.D.

Chief, Division of Rheumatology,  
Inflammation and Immunity,  
Brigham and Women's Hospital  
Theodore Bevier Bayles Professor of  
Medicine, Harvard Medical  
School

## “Bones of Contention: Controversies in Rheumatic Diseases and Bone”

Dr. Ellen M. Gravallesse is Chief of the Division of Rheumatology, Inflammation and Immunity at Brigham and Women's Hospital and is the Theodore Bevier Bayles Professor of Medicine at Harvard Medical School. His lab investigates how cilia form, signal and function in intercellular communication. She served nationally as the 83<sup>rd</sup> President of the American College of Rheumatology, 2019-2020.

Dr. Gravallesse received her MD degree from Columbia College of Physicians and Surgeons and completed a residency in both Internal Medicine and Pathology, followed by a fellowship in Rheumatology, all at the Brigham and Women's Hospital. She is nationally recognized as an expert in the pathogenic mechanisms of inflammatory arthritis and her basic science laboratory studies fundamental mechanisms of inflammation and joint destruction in rheumatic diseases, with a focus on rheumatoid arthritis. Through pathologic and molecular techniques, murine models of disease and clinical investigation, her research has provided an understanding of key pathways by which inflammation impacts bone in the rheumatic diseases. Her current studies also focus on innate immune pathways in inflammation and bone remodeling in rheumatic disease, including the cytosolic DNA sensing pathways.

Dr. Gravallesse has served on numerous boards and committees, including the Board of Scientific Directors at the National Institutes of Health (NIDCR), the Board of Directors of the American College of Rheumatology (ACR) and the Board of Directors of the Rheumatology Research Foundation of the ACR. Dr. Gravallesse is the recipient of the Sandoz Award for medical research, the Marion Ropes Award from the Arthritis Foundation, the Steven Krane Award from the American Society for Bone and Mineral Research (2017) and the international Carol Nachman Prize for exceptional contributions to research (2019). She lectures nationally and internationally and currently also serves as an Associate Editor for the New England Journal of Medicine.

## Keynote Objectives:

1. Understand the role of the RANKL/OPG pathway in bone loss in rheumatoid arthritis.
2. Be able to discuss the major cell types that regulate bone mass in health and disease.
3. Understand the cytosolic DNA sensing pathways and their role in inflammatory arthritis and bone.

# Oral Abstract Presenters



## **Ehtesham Arif, Ph.D.**

Assistant Professor, Division of Nephrology

Category: Junior Faculty

Mentors: Joshua Lipschutz, M.D. and Kelly Hunt, Ph.D.

Title: Role of B2-adrenergic receptor agonists in the treatment of diabetic nephropathy



## **Samuel Friedman, M.D.**

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

Category: Resident/Fellow

Mentor: Rahul Argula, M.D., MPH

Title: Is systemic sclerosis-associated pulmonary arterial hypertension a distinct phenotype?



## **Lily Neff**

Ph.D. Candidate, MUSC College of Graduate Studies

Category: Graduate Student

Mentor: Amy Bradshaw, Ph.D.

Title: Incomplete Regression and Persistence of Interstitial Fibrosis Following Removal of Left Ventricular Pressure Overload



## **Ashley Golbus**

Medical Student, MUSC College of Medicine

Category: Medical Student

Mentor: Blaitin McMahon, Ph.D., MBBCh

Title: Assessment of the Nature of Acute Kidney Injury Post Adult Orthotopic Heart Transplantation: A Single Tertiary Referral Center Experience

# Poster Participants

## Junior Faculty Category

### DeAnna Baker Frost, M.D., Ph.D.

Mentor: Carol Feghali-Bostwick, Ph.D.  
Title: A Positive Feedback Loop Between Estrogen and IL-6 Induces Fibrosis in Human Skin

### Scott Curry, M.D.

Mentor: Cassandra Salgado, M.D., MS  
Title: Epidemiology of COVID-19 Illness among Faculty, Students, and Care Team Members (FSC) of an Academic Health System (AHS)

### Charles Terry, M.D., MSCR

Mentors: Dee Ford, M.D., MSCR, Andrew Goodwin, M.D., MSCR  
Title: Higher Driving Pressure and Elastance are Associated with an Increased Risk of Mortality Among a Heterogeneous Population in a Real-World Clinical Setting: A Bi-Center Analysis of EHR Data

### Meghan Thomas, M.D.

Mentors: Marc Heincelman, M.D., William Moran, M.D., MS  
Title: The Effect of Delirium on Interhospital Transfer Outcomes: A Retrospective Cohort Study

## Postdoctoral Fellow Category

### Sara Hatoum, M.D.

Mentor: Don Rockey, M.D.  
Title: The natural history of autoimmune hepatitis induced cirrhosis

### Kareem Marrache, M.D.

Mentor: Don Rockey, M.D.  
Title: Racial Disparities and Outcome in Patients with Cirrhosis

## Resident/Fellow Category

### George Adly, M.D.

Mentors: Ryan Tedford, M.D., Brian Houston, M.D.  
Title: Right Ventricular Contractility and RV-PA Coupling after LVAD Implantation: Significant Differences between Conventional Median Sternotomy and Less Invasive Approaches

### Jake Altier, M.D.

Mentor: Jim Oates, M.D.  
Title: Hydroxychloroquine use and heart failure with preserved ejection fraction in patients with systemic lupus erythematosus and rheumatoid arthritis

### Sarah Barbina, M.D.

Mentors: Erin Forster, M.D., MPH, John Romano, M.D.  
Title: Challenges in the Management and Biologic Use in Vulnerable, Incarcerated Patients with Inflammatory Bowel Disease

### Garrett Cole, M.D.

Mentor: David Koch, M.D., MSCR  
Title: The Prognostic Value of Pre-transplant QT Interval on One Year Outcomes after Liver Transplantation

### William Dungan, M.D.

Mentors: Puja Elias, M.D., MPH, Jonathan Reichstein, M.D.  
Title: Uphill and Downhill Esophageal Varices Secondary to Pulmonary Hypertension

### Sean Durkin, M.D.

Mentors: Milos Budisavljevic, M.D., Anand Achanti, M.D.  
Title: IgA Nephropathy after treatment with TNFa inhibitor for Ankylosing Spondylitis

### Justin Durland, M.D.

Mentor: Gregory Jackson, M.D.  
Title: Left ventricular assist device resolving central sleep apnea

### Margaret Hay, M.D.

Mentor: Charlie Strange, M.D.  
Title: COVID-19 Impact on the Health of Alpha-1 Antitrypsin Deficient Patients in a Disease Management Program

### Jessica Lozier, M.D.

Mentor: Gerard Silvestri, M.D., MS  
Title: Lung Cancer is just different: Comparing the social determinants and baseline health of patients with lung, colon, and breast cancer

### Alexandra Lopez, M.D.

Mentors: Edward Kilb, M.D., Michelle Spiegel, M.D.  
Title: Wrong or Write? Evaluating Internal Medicine Program Director Adherence to AAIM Guidelines for Standardized Letters of Recommendations

# Poster Participants

## Resident/Fellow Category

### Joseph Moore, M.D.

Mentors: David Koch, M.D., MSCR, Andrew Schreiner, M.D., MSCR  
Title: Utilization of Statins in Primary Care Patients with Chronic Liver Disease

### Tejaswi Nadig, MBBS

Mentors: Gerard Silvestri, M.D., MS, Nichole Tanner, M.D., MSCR  
Title: A decade later and we have not improved our diagnostic yield with guided bronchoscopy for the evaluation of the pulmonary lesions: An updated meta-analysis

### Syed Quadri, MBBS

Mentor: Blaitin McMahon, Ph.D., MBBS  
Title: Reduction of intra-operative nephrotoxic antimicrobial exposure can improve renal recovery in patients undergoing heart transplantation

### Nihar Shah, MBBS

Mentors: Andrew Goodwin, M.D., Alyssa Rheingold, Ph.D.  
Title: Burnout Rates and Contributing Factors Among MUSC Healthcare Workers

### Caroline Spitznagel, M.D.

Mentors: Diane Kamen, M.D., MSCR, Jim Oates, M.D.  
Title: Risk Factors for Herpes Zoster among Patients with Systemic Lupus Erythematosus (SLE)

### Romik Srivastava, M.D.

Mentors: Meghan Thomas, M.D., Bill McManigle, M.D., Terrill Huggins, M.D., Marc Heincelman, M.D.  
Title: Ultrasound Education via Simulation and Resident Led Workshops Can Lead to Improved Knowledge and Confidence Amongst Medical Students

### Elena Vlachos, D.O.

Mentor: Rahul Argula, MBBS, MPH  
Title: Kidney Transplant Outcomes in Patients with Echocardiographic Evidence of Pre-Transplant Pulmonary Hypertension

### Laurel Wolf, M.D.

Mentor: Diane Kamen, M.D., MSCR  
Title: Patterns of Breastfeeding among Women with and without Systemic Lupus Erythematosus

## Graduate Student Category\*

### Alexa Corker

Mentor: Kristine Deleon-Pennell, Ph.D.  
Title: Innate like T-cells correlate with functional changes post-myocardial infarction

### Cameron Leyers

Mentor: Melissa Cunningham, M.D., Ph.D.  
Title: Effects of ERα isoform expression and localization on immune cell function

### Mariia Stefanenko

Mentor: Oleg Palygin, MSc, Ph.D., FAHA  
Title: RAS-mediated crosstalk between calcium and nitric oxide in podocytes

## Staff Scientist, Research Specialist, or Program Coordinator

### Philip Broughton, MS

Mentor: Kristine Deleon-Pennell, Ph.D.  
Title: Use of Electrocardiography to Confirm Myocardial Infarction in Mouse Models

### Alex Colvert

Mentor: Justin Van Beusecum, Ph.D.  
Title: The Role of Hypertensive Stimulation on the Regulation of the Immunological Synapse Interface by Renal Endothelial Cells

### Elizabeth Moise

Mentors: Don Rockey, M.D., Paul Nietert, Ph.D.  
Title: Outcomes in Patients with Gastric Variceal Hemorrhage

### Kristy Waldrep

Mentor: Carol Feghali-Bostwick, Ph.D.  
Title: IGF-II induces Sox9, Egr1, and Nedd9 via the IGF1R/IR hybrid receptor to promote a profibrotic environment

### Jamila Williams

Mentor: Eric Meissner, M.D., Ph.D.  
Title: At-home Versus In-Clinic Administration of Injectable HIV Treatment: Interim Analysis of an Implementation Science Trial

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

# Poster Participants

## Medical Student Category

### Kyle Crawford

Mentor: Ruth Adekunle, M.D.

Title: Transplant Candidacy for Persons Living with HIV and End-Stage Renal Disease at MUSC

### John DeStefano

Mentor: Valerian Fernandes, M.D.

Title: The Effect of Impella Placement on Morbidity and Mortality in Cardiogenic Shock

### Hannah Gaulden

Mentors: John Romano, M.D., William Dungan, M.D., Ira Willner, M.D.

Title: Case Report: Biopsy Confirmed Doxycycline Induced Gastric Mucosal Injury

### Azalfa Lateef

Mentors: Valerian Fernandes, M.D., Cory Jackson, M.D.

Title: COVID-19 Effects on STEMI outcomes in MUSC Patients

### Nathan Leaphart

Mentor: Marcelo Guimaraes, M.D., MBA

Title: Impact of Delayed VIR Operations in Hospital Length of Stay at MUSC in 2020: An Analysis of Causation, Length, and Cost

### Megan Minchak

Mentors: Val Fernandes, M.D., Matthew Evans, M.D., William Mostertz, M.D.

Title: Rotational Atherectomy without the use of temporary transvenous pacemaker: a 10-year Veterans Affairs Experience

### Ryan Moore

Mentors: Valerian Fernandes, M.D., Molly Silkowski, D.O., Christopher Nielson, M.D.

Title: Assessing arrhythmia burden in patients undergoing alcohol septal ablation for hypertrophic obstructive cardiomyopathy

### Emily Ramsayer

Mentor: Valerian Fernandes, M.D.

Title: Unprotected left main coronary artery PCI without temporary mechanical circulatory support: a single-center Veterans Affairs experience

### David Wilson

Mentors: Raymond DuBois, M.D., Ph.D., Dingzhi Wang, Ph.D., Jie Wei, MS, Bo Cen, Ph.D.

Title: Prostaglandin E2 promotes increased PD-1 expression on CD8+ T-cells and THP-1-derived macrophages

### Nestor Worobetz

Mentors: Mary Mauldin, EdD, Erik Modrzyński, CHSP, CEDP

Title: Academic redesign utilizing inter professional student participation to improve course outcomes: a retrospective quality-improvement study

### Gabrielle Young

Mentors: Nicholas Honko, M.D., William Dungan, M.D., Bradley Collins, D.O.

Title: Clostridioides difficile-induced rhabdomyolysis associated with chronic liver disease





## 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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