



MUSC
Medical University
of South Carolina

Changing What's Possible

Department of Medicine

2024 ANNUAL REPORT

DEPARTMENTAL LEADERSHIP

Administration

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Chair, Department of Medicine

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FACHE, FACMPE
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Elisha Brownfield, M.D.
Vice Chair, Leadership Development

Kimberly Davis, M.D., FACP
Vice Chair, Clinical Affairs

Aundrea Loftley, M.D.
Vice Chair, Health Equity

Jim Oates, M.D.
Vice Chair, Research

Cassandra Salgado, M.D., MS
Vice Chair, Wellness

Richard Silver, M.D.
Vice Chair, Development

Gerard Silvestri, M.D.
Senior Vice Chair, Faculty Development

Divisions

CARDIOLOGY

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Division Director

Bill Stalvey, MHA
Division Administrator

ENDOCRINOLOGY

Marc-Andre Cornier, M.D.
Division Director

Elizabeth Swan
Division Administrator

GASTROENTEROLOGY AND HEPATOLOGY

Garth Swanson, M.D.
Division Director

Richard “Mac” Houck, MBA
Division Administrator

GENERAL INTERNAL MEDICINE

Kimberly Davis, M.D., FACP
Division Director

Brian Collins, MHA
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HEMATOLOGY AND ONCOLOGY

A. Craig Lockhart, M.D., MHS
Division Director

Lee Putney, MHA
Division Administrator

HOSPITAL MEDICINE

Marc Heincelman, M.D., MPH
Division Director

Susanne Jaques, MHA
Division Administrator

INFECTIOUS DISEASES

Cassandra Salgado, M.D., MS
Division Director

Laura Sublett, MHA
Division Administrator

NEPHROLOGY

Joshua Lipschutz, M.D.
Division Director

Adam Greene, MHA
Division Administrator

PULMONARY AND CRITICAL CARE

Dee Ford, M.D., MSCR
Division Director

Richard “Mac” Houck, MBA
Division Administrator

RHEUMATOLOGY AND IMMUNOLOGY

Jim Oates, M.D.
Division Director

Melanie Puckhaber
Division Administrator

Acknowledgments:

The Department of Medicine would like to thank the many individuals, especially our leadership, whose collective efforts have helped to complete this year’s annual progress report. Additionally, we would like to thank those who are featured within these pages for their continued service to MUSC and contributions to this publication.

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COVER:

Top Image: IM Residency Program Director Ashley Duckett, M.D. (3rd from left) and residents in clinic.

Middle Image: View of MUSC campus.

Bottom Image: Carol Feghali-Bostwick, Ph.D. (right) and Joe Mouawad (left).



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MESSAGE FROM THE CHAIR



E. B. Clyburn, M.D.

Ben Clyburn, M.D.
Chair, Department of Medicine
Medical University of South Carolina

As I reflect on my four years as Chair of the Department of Medicine, I am both humbled and inspired by the growth and accomplishments we've achieved together. Over this time, we have welcomed six new division chiefs, three vice chairs, and more than 60 new faculty members—each bringing unique expertise and leadership that strengthen our mission.

This past year has been one of remarkable progress. We celebrated the advancement or appointment of 61 faculty members, including 12 promoted to professor, and launched innovative clinical programs such as the expansion of palliative care ambulatory services, a weight management clinic, and the integration of AI and machine learning to enhance patient care. These advancements, coupled with transformative philanthropic contributions, are shaping the future of healthcare delivery in our department.

In this report, we honor the accomplishments of our exceptional faculty, staff, and trainees, whose unwavering dedication and commitment are the foundation of our continued success.

Our scientists continue to lead groundbreaking research, securing extramural funding and addressing critical challenges, while our education programs have flourished with the addition of new fellowship opportunities.

Recent leadership transitions reflect our commitment to sustained excellence. Dr. Kimberly Davis now serves as Director of the General Internal Medicine Division, Dr. Marc Heincelman leads the Hospital Medicine Division, and Dr. Garth Swanson joined as Director of Gastroenterology and Hepatology.

This year's successes highlight the extraordinary work of our people. As we move forward, I am excited about the unparalleled opportunities to transform patient care, education, and discovery.

INNOVATION | IMPACT | INFLUENCE

FY 2024

BY THE NUMBERS

Our commitment to providing the highest level of compassionate patient care, best-in-class training for the next generation of surgical leaders, and cutting-edge clinical, basic science and translational research are Changing What's Possible for our patients.



CLINICAL ACTIVITY



44,180

NEW PATIENTS



1,281,894

wRVU
GENERATION



394,693

OUTPATIENT
ENCOUNTERS



RESEARCH ACTIVITY



110

NEW AWARDS



\$45.9

MILLION
in research awards

44

PI's with Active Corporate
Clinical Research

26

PI's with Active Federal Awards
and Clinical Research



FACULTY, STAFF AND TRAINEES



320

FACULTY



108 Residents

103 Fellows

26 Post Docs

137

Research Staff

102

Management and Support Staff

122

Advanced Practice Providers

VISIONARY LEADERSHIP

This year, several of our talented faculty members assumed key leadership roles in the Department of Medicine and across the broader university and health system. Each of these individuals brings invaluable expertise and exceptional dedication to their new positions.



Kimberly Davis, M.D.

Division Director, General Internal Medicine, Geriatrics and Palliative Care

Kimberly Davis, M.D., has been named Director of the Division of General Internal Medicine, Geriatrics, and Palliative Care. Serving as Interim Director since 2022, Dr. Davis has made significant strides in clinical care, education, and health informatics throughout her 26-year tenure. She pioneered University Internal Medicine as a faculty practice and clinic site for IM residents, now serving over 43,000 patients annually, and led its certification as one of MUSC's first Patient-Centered Medical Homes. A leader in health informatics, she played a pivotal role in implementing Epic. Her dedication to patient care and education has earned her widespread respect and numerous accolades.



Marc Heincelman, M.D., MPH

Division Director Hospital Medicine

Marc Heincelman, M.D., MPH, has been appointed Director of the Division of Hospital Medicine. Serving as Interim Director since the division's inception in 2020, Dr. Heincelman has significantly advanced hospitalist care with his exceptional leadership.

Assistant Dean for Career Advising College of Medicine

Dr. Heincelman has been appointed Assistant Dean for Career Advising in the College of Medicine, joining the Careers in Medicine team. In this role, he will leverage his extensive experience to support students in choosing their medical specialties and navigating the residency application process.



Edward Kilb, M.D.

Assistant Dean for Graduate Medical Education (GME), College of Medicine

Edward Kilb, M.D., has been appointed Assistant Dean for Graduate Medical Education (GME) in the College of Medicine, where he chairs the Education Subcommittee. In this role, Dr. Kilb will enhance educational strategies for the GME community, encompassing residents, fellows, program directors, coordinators, and core faculty, while collaborating with the MUSC Regional Health Network and the Office of Faculty Development and Wellness. An associate professor and Program Director of the Pulmonary and Critical Care Medicine Fellowship, Dr. Kilb trains 15 fellows annually and has spearheaded initiatives such as a stand-alone critical care fellowship, a fourth-year critical care rotation, and a research training curriculum.

VISIONARY LEADERSHIP



Cassandra Salgado, M.D., MS

Vice Chair for Wellness

Cassandra Salgado, M.D., MS, has been named the inaugural Vice Chair for Wellness in the Department of Medicine. A faculty member since 2004 and Director of Infectious Diseases since 2016, Dr. Salgado also serves as Senior Associate Dean for Faculty Affairs, Development, and Wellness in the College of Medicine. She brings vast experience to her new role, where she will lead wellness initiatives to enhance the well-being of faculty, staff, and trainees. Her impact includes launching the MUSC Well-Being Collective and leading the Division of Infectious Diseases, recognized for excellence in patient satisfaction and engagement, while addressing physician burnout and promoting holistic wellness.



Erik Summers, M.D., FACP

*Chief Medical Officer
MUSC Health – Charleston Division*

Erik Summers, M.D., FACP, has been selected as MUSC Health's new Chief Medical Officer (CMO) for Charleston. As CMO, Dr. Summers is responsible for clinical care delivery, including inpatient and ambulatory (outpatient) services, at the MUSC Health-Charleston Division. His other responsibilities include optimizing resource use, improving performance, improving quality and improving clinical operations. With over 20 years of clinical and teaching experience, he brings a patient-centered, collaborative approach to health care. Previously, at Atrium Health Wake Forest Baptist, he established key services, including patient flow operations and specialized inpatient services.



Meghan Thomas, M.D., MPH, MS

Clerkship Director

Meghan Thomas, M.D., MPH, MS, has been appointed Director of the Internal Medicine Clerkship. She joined MUSC's Division of Hospital Medicine in 2020 after serving as an Internal Medicine Chief Resident and is currently an associate professor. Dr. Thomas has excelled as a clinician, educator, and mentor, developing an acclaimed point-of-care ultrasound (POCUS) curriculum for residents and medical students. Her work has earned national recognition, a Faculty Innovation Fellowship Grant, and the role of Medical Director for the MUSC Health Butterfly Project. Previously the Associate Clerkship Director, Dr. Thomas is also a Master Clinical Skills Teacher and Associate Program Director.



NEW FACULTY FY24



Robert Biederman, M.D.
Professor
Cardiology



Ian Laxina, M.D.
Assistant Professor
Cardiology



Sergio Pinski, M.D.
Professor
Cardiology



Vishal Rao, M.D.
Assistant Professor
Cardiology



Chau Vo, M.D.
Assistant Professor
Cardiology



Kelly Engle, M.D.
Assistant Professor
Endocrinology



Emily Rosenberg, M.D.
Assistant Professor
Endocrinology



Vishnu Naravadi, M.D.
Assistant Professor
Gastroenterology & Hepatology



Shantae Jenkins, M.D.
Assistant Professor
General Internal Medicine



Sofia Arango Mendoza, M.D.
Assistant Professor
General Internal Medicine



Sophia Urban, M.D.
Assistant Professor
General Internal Medicine



Steven Akman, M.D.
Assistant Professor
Hematology & Oncology



Thai Ho, M.D.
Associate Professor
Hematology & Oncology



Abi Sivapiragasam, M.D.
Associate Professor
Hematology & Oncology



Kimberly Youkhana, M.D.
Assistant Professor
Hematology & Oncology



Caitlyn Gallagher, M.D.
Assistant Professor
Hospital Medicine



Cameron Mitro, M.D.
Assistant Professor
Hospital Medicine



Andres Ospina, M.D.
Assistant Professor
Hospital Medicine



Alan Turner, M.D.
Assistant Professor
Hospital Medicine



Mason Walgrave, M.D.
Assistant Professor
Hospital Medicine



Courtney Harris, M.D.
Assistant Professor
Infectious Diseases



Anna Brady, M.D.
Associate Professor
Pulmonary & Critical Care



Abigail Dy, M.D.
Assistant Professor
Pulmonary & Critical Care



Travis Ferguson, M.D.
Assistant Professor
Pulmonary & Critical Care



Derlis Fleitas Sosa, M.D.
Assistant Professor
Pulmonary & Critical Care

NEW FACULTY FY24



Marri Horvat, M.D.
Assistant Professor
Pulmonary & Critical Care



Howard Li, M.D.
Associate Professor
Pulmonary & Critical Care



James Sincebaugh, M.D.
Assistant Professor
Pulmonary & Critical Care



Samantha Minkin, M.D.
Assistant Professor
Rheumatology & Immunology



Jennifer Schmidt, M.D.
Assistant Professor
Rheumatology & Immunology



Ludivine Renaud, Ph.D.
Research Instructor
Rheumatology & Immunology

PROMOTIONS

- Nicholas Amoroso, M.D.**, Associate Professor, Cardiology
Prince Anand, M.D., Professor, Nephrology
Graham Beattie, M.D., Assistant Professor, Hospital Medicine
Andrew Brock, M.D., Professor with Tenure, Gastroenterology & Hepatology
Theresa Cuoco, M.D., Associate Professor, Hospital Medicine
Scott Curry, M.D., Associate Professor, Infectious Diseases
Puja Elias, M.D., Professor, Gastroenterology & Hepatology
Adam Fox, M.D., Assistant Professor, Pulmonary & Critical Care
Natalie Freidin, M.D., Associate Professor, Nephrology
Caitlin Green, M.D., Associate Professor, Gastroenterology & Hepatology
Jan Griffin, M.D., Associate Professor, Cardiology
Brian Hess, M.D., Associate Professor, Hematology & Oncology
Brian Houston, M.D., Professor, Cardiology
Chakradhari Inampudi, M.D., Associate Professor, Cardiology
Benjamin Kalivas, M.D., Associate Professor, Hospital Medicine
Edward Kilb, M.D., Associate Professor, Pulmonary & Critical Care
Cara Litvin, M.D., Professor, General Internal Medicine
Tamara Nowling, Ph.D., Professor with Tenure, Rheumatology & Immunology
Luca Paoletti, M.D., Professor, Pulmonary & Critical Care
Roberto Pisoni, M.D., MSCR, Professor, Nephrology
Pamela Pride, M.D., Professor, Hospital Medicine
Richard Rissmiller, M.D., Professor, Pulmonary & Critical Care
Samuel Schumann, M.D., Associate Professor, General Internal Medicine
Zemin Su, MAS, MS, Research Assistant Professor, General Internal Medicine
Meghan Thomas, M.D., Associate Professor, Hospital Medicine
Thomas Todoran, M.D., Professor, Cardiology
Jeffrey Winterfield, M.D., Professor, Cardiology
Jingwen Zhang, MS, Research Assistant Professor, General Internal Medicine



MESSAGE FROM THE VICE CHAIR FOR HEALTH EQUITY

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As Vice Chair for Health Equity, I am inspired by the progress we have made together to address health inequities and champion a culture of inclusivity and respect. Over the past year, our focus has been on building community partnerships, laying a strong foundation for long-term engagement. By actively listening to our community's needs, we have tailored our clinical, educational, and research initiatives to meet those needs. These partnerships are the cornerstone of our mission to foster meaningful change and improve outcomes for our most vulnerable populations.

Education remains key to our efforts. Our collaboration with the internal medicine residency program has been particularly impactful. The health disparities curriculum provides residents with essential clinical exposure to community-based clinics serving vulnerable populations in the Charleston area. This rotation deepens their understanding of social determinants of health and their influence on health outcomes. In addition, we have diversified grand rounds content to enhance learning and promote discussions on health disparities. We are proud to equip our trainees with the skills to address these disparities and ensure our care is equitable and compassionate.

This coming year, we are committed to strengthening these existing relationships while seeking opportunities to forge new ones. In addition, we are completing plans for our inaugural staff support group, further emphasizing our commitment to fostering an inclusive and supportive environment for our department members.

It is truly an honor to work alongside such a passionate and committed group of colleagues as we continue advancing health equity within the Department of Medicine.

Aundrea Loftley, M.D.

Vice Chair for Health Equity
Department of Medicine



PGY-3 residents see patients at the Shifa Clinic - a free, community-based clinic - as part of their health disparities rotation.



MESSAGE FROM THE VICE CHAIR FOR WELLNESS



This past year has been an incredible journey as we've prioritized well-being across the Department of Medicine. As the inaugural Vice Chair for Wellness, I have been truly inspired by your dedication to fostering a culture of care and resilience. Together, we've taken significant strides in understanding and addressing the stressors that affect our professional and personal lives.

Stress is a common part of healthcare—it helps us stay focused during high-demand situations but can become harmful if it builds up over time, impacting both mental and physical health. Recognizing this, we introduced the **Stress First Aid (SFA)** framework in 2024 to create a shared understanding of stress reactions. This approach uses the stress continuum chart as a practical tool to evaluate and communicate stress levels, empowering each of us to recognize and manage stress more effectively.

As part of this effort, we conducted a brief survey to assess current stress levels among our staff, faculty, and trainees. These findings will guide the development of much-needed wellness resources tailored to our team's needs.

To further support these efforts, **Heather Farley, M.D.**, Chief Wellbeing Officer and Professor of Emergency Medicine, has partnered with **Nicole Mullinax Bernier, MAT, CPXP, CWWS, MCHC**, Wellness and Resiliency Manager, to provide actionable recommendations for each color on the stress continuum. These resources, along with additional tools, are now available on the **MUSC Well-Being Collective** employee website.

Looking ahead, we will focus on recognizing stress in others and providing meaningful support. By fostering empathy and understanding, we can create a thriving, resilient community that prioritizes well-being. Together, let's continue to champion a culture where self-care and mutual support are integral to our mission.

Thank you for your trust and dedication as we navigate this important journey together.

Cassandra Salgado, M.D., MS

Vice Chair for Wellness
Department of Medicine



Women IN MEDICINE

Four Endowed Chairs Named in the Department of Medicine

*This past year, four distinguished faculty members in the Department of Medicine were honored with endowed chair appointments, the highest distinction the University can bestow upon a faculty member. The honorees are **Ruth Campbell, M.D., MSPH**, **Kimberly Davis, M.D., FACP**, **Jyotika Fernandes, M.D.**, and **Cassandra Salgado, M.D., MS**.*

Recognized for their significant contributions to their fields, these exceptional faculty members will continue to impact lives for generations. Endowed chairs bring prestige and honor to the recipients, establish a legacy for those they are named after, and serve as enduring tributes to the generous donors who help establish them.

*The appointments of Drs. Campbell, Davis, Fernandes, and Salgado also represent a meaningful increase in the number of female endowed chairs within the Department of Medicine. Over the past two years, five women, including **Erin Forster, M.D., MPH**, who was named the Marvin Jenkins Family Endowed Chair for IBD, have received this distinguished honor. Currently, the Department of Medicine has nine female endowed chairs.*



Ruth Campbell, M.D., MSPH
Dialysis Clinic, Inc. (DCI) Nephrology Chair

Dr. Campbell, a professor in the Division of Nephrology, has been appointed the DCI Nephrology Chair. Nationally recognized for her clinical expertise and research in chronic kidney disease (CKD) and continuous renal replacement therapy (CRRT), Dr. Campbell also excels as an educator. She serves as the clinical director for the Division of Nephrology and the medical director of the DCI West Ashley Hemodialysis Unit. She has led the MUSC CRRT program and remains an active member of the CRRT Practice Council. A dedicated mentor, Dr. Campbell directed the MUSC Nephrology Fellowship Program from 2011 to 2023 and currently serves on the ACGME Executive Committee for Internal Medicine. Her research interests include CKD progression, hypertension, and outcomes-based care for CKD patients. She has also maintained a strong portfolio of clinical trials and published extensively.



Kimberly Davis, M.D., FACP

Allen H. Johnson Endowed Chair in General Internal Medicine, Geriatrics, and Palliative Care

Dr. Davis, professor of medicine and director of the Division of General Internal Medicine, Geriatrics, and Palliative Care, has been appointed the Allen H. Johnson Endowed Chair. A nationally recognized leader in academic medicine, Dr. Davis has made significant strides in clinical care, education, and healthcare informatics throughout her 26-year tenure at MUSC. She led the development of University Internal Medicine (UIM) as a faculty practice and clinic site for all IM residents and led UIM's certification as one of MUSC's first Patient-Centered Medical Homes. As the Associate Chief Medical Information Officer and Informatics Medical Director for MUSC, Dr. Davis has been at the forefront of health care informatics, overseeing the successful implementation of Epic. She also serves as Vice Chair for Clinical Affairs in the Department of Medicine.



Jyotika Fernandes, M.D.

Wendy and Keith S. Wellin Distinguished Endowed Chair in Endocrinology

Dr. Jyotika Fernandes has been appointed as the inaugural Wendy and Keith S. Wellin Distinguished Endowed Chair in Endocrinology. As a professor in the Division of Endocrinology and the endocrine section chief at the Ralph H. Johnson VA Medical Center, Dr. Fernandes specializes in endocrine neoplasia (thyroid, parathyroid, pituitary, and adrenal). She leads the multidisciplinary Endocrine Neoplasia and Hormonal Disorder Clinic at Hollings Cancer Center, the only clinic of its kind in South Carolina dedicated to endocrine tumors. Her leadership has guided the clinic's growth over the past two decades. Dr. Fernandes has also led numerous clinical trials and maintains a robust research portfolio.



Cassandra Salgado, M.D., MS

J. Michael Kilby, M.D. Endowed Chair in Infectious Diseases

Dr. Salgado has been named the inaugural holder of the J. Michael Kilby, M.D. Endowed Chair in Infectious Diseases. A professor of medicine and public health and director of the Division of Infectious Diseases, Dr. Salgado is a national leader in hospital epidemiology and infection prevention. Since 2004, she has served as MUSC's hospital epidemiologist and medical director of infection prevention, guiding the institution through significant challenges, including the COVID-19 pandemic. Her commitment to mentoring and significant contributions to quality improvement underscore her impact. Notably, she serves as PI for funding that supports the Trident HIV/AIDS Care Coalition, which now cares for over 1,200 patients annually. In 2024, Dr. Salgado was appointed the inaugural Vice Chair for Wellness for the Department of Medicine.

The selection of Drs. Campbell, Davis, Fernandes, and Salgado marks a significant advancement toward gender equality in leadership within the Department of Medicine. Their appointments acknowledge their exceptional leadership, service, and contributions across all mission areas at MUSC and beyond.

MUSC Champions Women in Medicine Through Mentorship, Entrepreneurship, and Innovation



From left: Rachel Simmons, STEM-CREW coordinator; Angela Passarelli, Ph.D., coaching director; Carol Feghali-Bostwick, Ph.D., principal investigator; Jesse Goodwin, Ph.D., chief innovation officer; Tammy Loucks, DrPH, SCTR science development officer

MUSC is a leader in advancing gender equity and fostering professional growth in science and medicine through its impactful institutional resources. Central to these efforts is the Advancement, Recruitment, and Retention of Women (ARROW) program, directed by **Carol Feghali-Bostwick, Ph.D.** ARROW provides fellowships, awards, workshops, and networking opportunities to support the professional success of women in academia and medicine. The program thrives on the collaborative efforts of faculty and trainees dedicated to creating an inclusive and supportive environment.

In addition to promoting equity in academia, MUSC addresses the underrepresentation of women in entrepreneurship through the Coaching and Resources for Entrepreneurial Women (CREW) program. Directed by Dr.

Feghali-Bostwick, CREW is now entering its third year and has empowered women from 14 states with resources that include mentoring, coaching, and skill-building activities. The program is particularly focused on supporting women from underserved minority groups, helping them establish and sustain successful careers in biomedical entrepreneurship. By fostering an entrepreneurial mindset among junior faculty and senior postdoctoral fellows, CREW continues to drive innovation and leadership nationwide.

Through ARROW and CREW, MUSC demonstrates its commitment to mentorship, inclusive excellence, and empowering women in medicine and science. These initiatives exemplify the institution's leadership in fostering professional growth and creating opportunities that drive transformative change.

DOM Faculty Honored with Advancement of Women Faculty Award



L-R: Cassandra Salgado, M.D., Ben Clyburn, M.D., and Richard Silver, M.D. at the ARROW award ceremony

The MUSC ARROW Darlene Shaw Award for the Advancement of Women Faculty is given out annually to recognize a member of the MUSC community who made outstanding contributions to the university through championing the advancement and promotion of women faculty at MUSC.

Two Department of Medicine faculty members were honored with this award in 2023-24:

Cassandra Salgado, M.D., MS, Professor and Director of the Division of Infectious Diseases and Vice-Chair of Wellness for the Department of Medicine

Richard Silver, M.D., Distinguished University Professor in the Division of Rheumatology and Immunology, and Vice Chair for Development, Department of Medicine

CLINICAL CARE



The Department of Medicine’s clinical programs are recognized for excellence across a broad spectrum of subspecialty patient care services for the treatment of highly complex diseases and are comprised of dedicated clinical innovators who are committed to advancing discoveries that transform patient care and health outcomes.

MESSAGE FROM THE VICE CHAIR FOR CLINICAL OPERATIONS



The Department of Medicine continues to lead in delivering compassionate, innovative, and personalized care. Over the 2023-2024 year, we expanded our clinical operations both in volume and geographic reach.

The demand for both MUSC’s specialty and primary care expertise continues to grow, as evidenced by an 8% increase in ambulatory visits year-over-year. Meeting this rising demand requires innovative strategies, including the recruitment of additional clinical faculty paired with advanced practice providers, as well as the expansion of ambulatory care locations. Our inpatient primary teams provided care for 235,925 patients, with our consulting teams providing expert guidance to many more.

Key challenges include addressing the growing health care needs of an aging population, navigating space limitations, and mitigating the effects of health care disparities. Telehealth, which expanded significantly during the pandemic, remains a vital component of our care delivery and allows providers to deliver care where the patient chooses.

To enhance patient care and provider efficiency, the Department of Medicine has implemented online scheduling, MyChart Direct Scheduling, and the Fast Pass waitlist across all divisions. Providers now offer e-consults—billable, asynchronous electronic medical consultations between clinicians—reducing unnecessary appointments and improving access while reducing out-of-pocket costs for patients. Additionally, innovative Epic features like an AI-powered in-basket and the DAX Co-Pilot for automated documentation are being piloted. These initiatives reflect the department’s dedication to operational efficiency, improved patient and provider satisfaction, and addressing the growing demand for specialized care.

As we look ahead to a new year filled with challenges and opportunities, we remain confident in the exceptional clinical faculty and advanced practice providers who drive our success. It is a privilege to work alongside such a dedicated and skilled team, ready to tackle whatever the future holds.

Kimberly Davis, M.D., FACP

Vice Chair for Clinical Operations
Department of Medicine

CLINICAL GROWTH



The Department of Medicine has achieved remarkable clinical expansion in the post-COVID era, driven by advanced clinical and research capabilities that set us apart among academic medical centers.

In FY24, the department focused on strategic growth and recruitment, welcoming **33 new faculty members** and **16 advanced practice providers (APPs)** to our team. This growth supported the expansion of our clinical footprint across the state, resulting in significant progress across nearly all divisions.

BY THE NUMBERS

394,693

Outpatient Encounters

126

Physical Locations

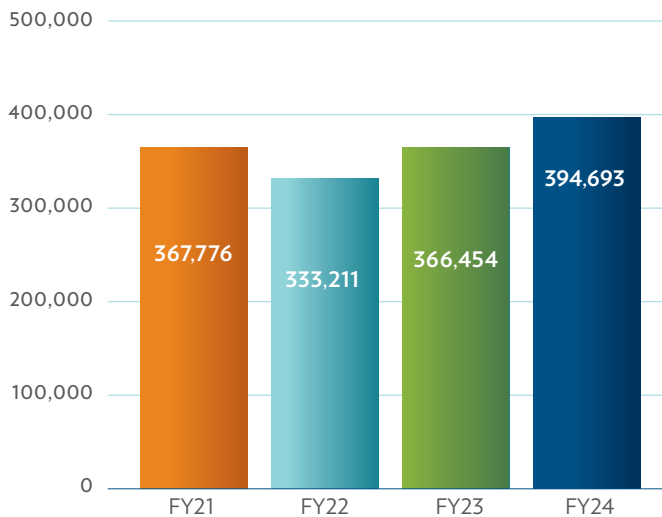
8%

Increase over FY23

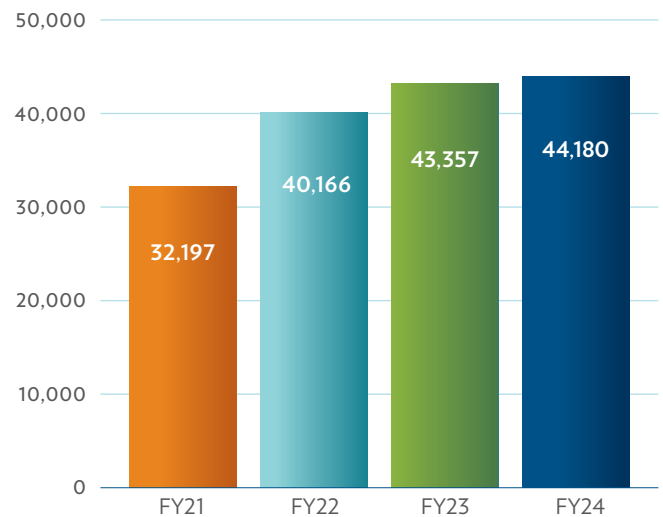
235,925

Inpatients

Outpatient Encounters



New Patient Visits



Changing What's Possible in South Carolina



2016 → **2024**

MUSC Health's footprint has expanded from **one hospital in 2016** to **16 hospitals within 4 regional health networks, covering all 46 counties in the state in 2024.**

Department of Medicine clinics served patients in **25 counties** across South Carolina this year.

CLINICAL CARE HIGHLIGHTS

Advancing Comprehensive Sickle Cell Care and Transition Services



Shantae Jenkins, M.D., Ph.D., has joined MUSC as the new medical director of the Rena Grant Sickle Cell Medical Home. Dr. Jenkins and her team are dedicated to enhancing sickle cell care by fostering seamless transitions for pediatric patients into the adult sickle cell

program and closely collaborating with hematology to optimize disease-modifying therapies. Their approach emphasizes comprehensive, patient-centered care, including acute pain management and a multidisciplinary support system that integrates palliative care, behavioral health, and art therapy.

Expanding Precision Oncology Efforts at MUSC Hollings Cancer Center

Thai Ho, M.D., Ph.D., leads Hollings Cancer Center's new precision oncology program and tumor board, integrating clinical and molecular data to personalize cancer treatment. This approach tailors therapies based on patients' DNA or tumor genetics, aiming for more effective treatments with fewer side effects. The multidisciplinary team includes bioinformaticians, molecular biologists, and ethicists. Dr. Ho, an expert in kidney cancer, focuses on immune therapy resistance and the SETD2 gene mutation.



MUSC Health Transplant: Mid-Carolinas Program Improves Quality and Access to Care in the Midlands

In March 2022, MUSC Health added a Transplant Program to the Lancaster area, making it one of three kidney transplant programs in the state. The MUSC Health Transplant - Mid-Carolinas Program, led by **Prince Anand, M.D.**, director of transplant services, has experienced significant growth and success. The program has an impressive volume per hospital bed and is dedicated to delivering outstanding patient care. In FY24, the program performed **96 kidney transplants**; since its inception, they have completed **over 200 transplants**.



MUSC's New Intestinal Ultrasound allows Pediatric and Adult Patients to Extend Time Between Colonoscopies

MUSC Health is among the first academic medical centers in the United States to offer intestinal ultrasound (IUS) for inflammatory bowel disease (IBD), providing real-time imaging without patient prep or anesthesia. **Erin Forster, M.D., MPH**, director of the MUSC Health IBD Medical Home, highlights its role in monitoring Crohn's disease and ulcerative colitis, reducing the need for colonoscopies and MRIs. Already used for pediatric patients, IUS is now available for adults, advancing seamless, lifelong IBD care. Division director **Garth Swanson, M.D.**, emphasizes its value in MUSC's IBD Home, where immediate results support personalized treatment and patient engagement.



Read More about the Advances in Patient Care across our divisions in the Division profile sections beginning on page 30.

RESEARCH HIGHLIGHTS



FOSTERING INNOVATION

The Department of Medicine is dedicated to advancing human health through pioneering research and scientific discovery. Spanning 10 divisions and four research centers, our basic, translational, and clinical research programs are driven by highly skilled investigators across all medical specialties.

MESSAGE FROM THE VICE CHAIR FOR RESEARCH



The Department of Medicine has a proud legacy of conducting rigorous and innovative biomedical and clinical research. During the past academic year, the Department of Medicine's research portfolio totaled **\$316 million** with **\$76 million** in active federal awards, **\$30 million** in foundation awards, **\$162 million** in corporate awards, **\$16 million** in College of Medicine funding, and **\$31 million** in South Carolina state funding. Active VA funding totaled **\$9.1 million**. Research expenses, reflecting funds spent from awards, reached over **\$59 million**.

As one of the most well-funded departments in the College of Medicine, we continue to excel in areas such as clinical trials in Pulmonary and Critical Care, Cardiology, Gastroenterology and Hepatology, and Rheumatology and Immunology, as well as federally funded translational research in Cardiology, Pulmonary and Critical Care, Nephrology, Rheumatology and Immunology, and General Internal Medicine.

Core centers in Gastroenterology and Hepatology, Rheumatology and Immunology, and the Hollings Cancer Center provide essential infrastructure for advancing translational research. Training grants in Pulmonary and Critical Care, Rheumatology and Immunology, and Hematology and Oncology further support the development of the next generation of investigators.

Expanding health disparities research is a key priority for the Department, with significant initiatives in Hematology and Oncology, and Rheumatology and Immunology aimed at addressing these critical challenges to improve the health of our state.

Jim Oates, M.D.

Vice Chair for Research
Department of Medicine

AT A GLANCE

FY24 RESEARCH FUNDING & ACTIVITY



NOTABLE RESEARCH AWARDS & ACHIEVEMENTS



Carol Feghali-Bostwick, Ph.D., Recognized for Pioneering Work in Fibrosis and Scleroderma

Carol Feghali-Bostwick, Ph.D., an internationally recognized translational researcher in the field of fibrosis and systemic sclerosis, has been named a fellow of the National Academy of Inventors (NAI), the highest professional distinction awarded to academic inventors. Additionally, in 2024, Dr. Feghali-Bostwick received the Lifetime Achievement Award from the National Scleroderma Foundation and the American Thoracic Society (ATS) Recognition Award for Scientific Accomplishments.



Clinical Trial of "Purified" CAR-T Cell Therapy Awarded \$3.2M NCI Grant to Expand

A clinical trial at MUSC Hollings Cancer Center that has shown success with the first two patients has now received \$3.2 million in funding from the National Cancer Institute to expand. **Brian Hess, M.D.**, hematologist and oncologist, and **Shikhar Mehrotra, Ph.D.**, have partnered on a project to develop "purified" CAR-T cells to treat people with certain B-cell non-Hodgkin lymphomas who have already tried other therapies. By engineering the CAR-T cells locally, in the MUSC Center for Cellular Therapy, the Hollings team can eliminate the need to freeze and transport the product, which reduces viability, and can lower the cost of the treatment.



Brian Hess, M.D., and Shikhar Mehrotra, Ph.D., Honored with the Zucker Institute Technology Breakthrough Award

The Zucker Institute Technology Breakthrough Award recognizes an MUSC Innovation that represents a significant leap forward in its respective field. **Brian Hess, M.D.** (far right) and **Shikhar Mehrotra, Ph.D.** (far left) and were selected for their innovative basic research and efforts leading to the first home-grown CD19 CAR-T cell therapies to treat lymphoma patients at the Hollings Cancer Center.

ENHANCING ACCESS TO CANCER CLINICAL TRIALS

Hollings Opens New Dedicated Cancer Clinical Trials Unit

In May 2024, MUSC Hollings Cancer Center inaugurated the **Summer and Clyde Anderson Advanced Cancer Therapy Clinic**, its first dedicated unit for phase I cancer clinical trials. This specialized facility enables the center to offer a broader range of early-stage clinical trials, enhancing patient access to cutting-edge treatments.

The clinic features state-of-the-art infusion areas and a dedicated nursing team trained in chemotherapy, immunotherapy, and clinical trial protocols. By participating in these early-phase trials, patients gain access to novel therapies, and clinicians acquire experience with new treatments prior to FDA approval. This initiative underscores Hollings' commitment to advancing cancer care through research and providing patients with the latest therapeutic options.



Dorothy Heath, R.N., works with Robert Hokum in the new Anderson Advanced Cancer Therapy Clinic at MUSC Hollings Cancer Center.

Partnership Between VA, Hollings Brings Cancer Clinical Trial Opportunities to Veterans



Johann Herberth, M.D., Ph.D., assistant chief of medicine at the Ralph H. Johnson VA Health Care System, Kathy Jeter, R.N., Oleksandra Lupak, M.D., and Shannon Elam, R.N. Photo provided by Ralph H. Johnson VA HCS

The partnership between the Ralph H. Johnson VA Health Care System and MUSC Hollings Cancer Center, established in 2019, has enhanced cancer clinical trial access for veterans. Managed by **Oleksandra Lupak, M.D.**, and Stephen Savage, M.D., both of whom see patients at the VA and at Hollings, the collaboration has developed efficient processes to integrate clinical trials into patient care, serving as a model for other VA sites.

The Charleston VAMC continues to be the top-enrolling NCI Community Oncology Research Program (NCORP) affiliate, with **Oleksandra Lupak, M.D.**, earning a Silver certificate for exceptional accrual achievement, having contributed significantly to the CC005 Forte GI trial.

FUNDING HIGHLIGHTS

FY24 NIH AWARDS

Adegboyega Timothy Adewale, Ph.D. candidate – Mentor: Dr. Carol Feghali-Bostwick

- F31 – “The role of BHLHB2 in Scleroderma-Associated Lung Fibrosis,” NHLBI (new in FY24)

Alexa Corker, Ph.D. candidate – Mentor: Dr. Kristine Deleon-Pennell

- F31 – “PTSD-Induced Alterations on Cardiac Homeostasis,” NHLBI (new in FY24)

Melissa Cunningham, M.D., Ph.D., Rheumatology & Immunology

- R01 – “The Role of Estrogen Receptor Alpha Variant Size and Localization in Modulating TLR7-Induced Inflammation,” NIAMS

Federica Del Monte, Ph.D., Cardiology

- R01 – “Red Blood Cells shuttle beta amyloid between brain and heart: implications for the pathogenesis and the progression of Alzheimer’s and Cardiomyopathy,” NHLBI (new in FY24)

Kristine Deleon-Pennell, Ph.D., Cardiology

- R01 – “Temporal effects of CD8 T-cells post-MI,” NHLBI

Carol Feghali-Bostwick, Ph.D., Rheumatology & Immunology

- TL1 – “NRSA Training Core,” NCATS
- R25 – “STEM-Coaching and Resources for Entrepreneurial Women (CREW),” NIGMS
- T32 – “Pulmonary Focused Foundations in Innovation and Scholarship (PuFFInS),” NHLBI
- R01 – “IGF-II regulates lung fibrosis in scleroderma,” NHLBI
- R21 – “Development of proteomic-based ECM signatures for lung fibrosis,” NIAMS

Gary Gilkeson, M.D., Rheumatology & Immunology

- U01 – “A Phase II Controlled Trial of Allogeneic Mesenchymal Stem Cells for the Treatment of Refractory Lupus,” NIAID
- T32 – “Training Grant in Inflammatory and Fibrosing Diseases,” NIAMS

Brian Hess, M.D., Hematology & Oncology

- R01 – “Assessing Metabolically Reprogrammed and Purified CD19-CAR-T in NHL and CLL,” NCI (new in FY24)

Jim Oates, M.D., Rheumatology & Immunology

- P30 – “Improving Minority Health in Rheumatic Disease (IMHeaRD),” NIAMS

Oleg Palygin, Ph.D., Nephrology

- R01 – “Role of basolateral K channels in renal salt handling and BP control,” NIDDK

Don Rockey, M.D., Gastroenterology & Hepatology

- P30 – “MUSC Digestive Disease Research Core Center,” NIDDK
- R01 – “A Molecular Approach to the Pathogenesis of Portal Hypertension,” NIDDK
- UE5 – “Medical University of South Carolina Mentoring Program in Digestive and Liver Diseases,” NIDDK (new in FY24)

Andrew Schreiner, M.D., General Internal Medicine

- R03 – “Improving the Diagnosis and Fibrosis Risk Assessment of Nonalcoholic Fatty Liver Disease in Primary Care Patients with Abnormal Liver Chemistries,” NIDDK

Garth Swanson, M.D., Gastroenterology & Hepatology

- R01 – “The Impact of Circadian Misalignment on Colonic Barrier Homeostasis in Ulcerative Colitis,” NIDDK
- R01 – “Chronotherapy of 5-Aminosalicylic Acid in Ulcerative Colitis: A Randomized Crossover Trial,” NIDDK

Betty Tsao, Ph.D., Rheumatology & Immunology

- R21 – “The role of human SLE causal variant NCF1.pR90H in promoting kidney damage,” NIAMS (new in FY24)

John Wrangle, M.D., Hematology & Oncology

- R21 – “Exploiting Lineage-Specific Dependencies in Solid Tumors: Using Transcription Factors to Drive Therapeutic Effect In Situ,” NCI (new in FY24)
- R01 – “Lymphocyte and inflammatory cytokine markers of response in the first-in-human combination of anti-PD-1 mAb and IL-15/IL-15Ra complexes and investigation of mediators of anti-tumor immune responses,” NCI

FUNDING HIGHLIGHTS *Continued*

FY24 ACTIVE NIH K AWARDS

Deanna Baker Frost, M.D., Ph.D., *Rheumatology & Immunology*

- K08 – “The Role of Hormonal Dysregulation in Systemic Sclerosis,” NIAMS

Carol Feghali-Bostwick, Ph.D., *Rheumatology & Immunology*

- K24 – “Scleroderma Twin Study and analysis of Estrogen in patients with dcSSc,” NIAMS

Ludivine Renaud, Ph.D., *Rheumatology & Immunology*

- K01 – “Epigenetic Regulation of KLF4 in SSc-associated lung fibrosis,” NIAMS (new in FY24)

FY24 ACTIVE SCTR COLLEGE OF MEDICINE K12 AWARDS

Charles Terry, M.D., *Pulmonary & Critical Care*

- K12 – “Prospective Identification and Characterization of ARDS Using Computational Phenotypes.” (new in FY24)

Michele Esposito, M.D., *Cardiology*

- K12 – “Mechanisms of Skeletal Muscle Microvascular Dysfunction in Systolic Heart Failure.” (new in FY24)

FY24 ACTIVE VA AWARDS

Robert Axon, M.D., *General Internal Medicine* – “Charleston, Providence and Iowa Evidence Based Evaluation Center (CPIC)”

Justin Van Beusecum, Ph.D., *Nephrology* – “A Role of GAS6/Axl Signaling in the Development of Essential Hypertension”

Amy Bradshaw, Ph.D., *Cardiology* – “Cellular Mechanisms of Cardiac ECM Structure and Function”

Kristine DeLeon-Pennell, Ph.D., *Cardiology* – “Innate-Like CD8+ T-Cells Facilitate in Cardiac Remodeling Post-MI” and “T-Cell Regulation of Cardiac Remodeling”

Josh Lipschutz, M.D., *Nephrology* – “The Exocyst in Ciliogenesis and Acute Kidney Injury” and “The Role of Beta Agonists in the Treatment of Chronic Kidney Disease”

Donald Menick, Ph.D., *Cardiology* – “Regulatory Role of HDAC in Post-MI Ventricular Remodeling”

Jim Oates, M.D., *Rheumatology & Immunology* – “Targeting Pathogenic Endothelial Dysfunction in Lupus Nephritis”

Don Rockey, M.D., *Gastroenterology & Hepatology* – “Pathobiology of Hepatic Fibrosis and Cirrhosis”

Michael Zile, M.D., *Cardiology* – “Middleton Award 2019B”

MUSC and Zucker Institute Drive Innovation Through SBIR/STTR Awards and Commercialization Leadership

Recent STTR Awards include the following:



Galina Bogatkevich, M.D., Ph.D., and Richard Silver, M.D.
Fibrobiologics, LLC

- “Preclinical Development of a Novel Therapeutic Agent for Idiopathic Pulmonary Fibrosis” – NHLB/NIH
- “Development of a Novel Therapeutic Agent for Skin Fibrosis” – NIAMS



Stanley Hoffman, Ph.D. | Fibrotherapeutics, Inc.

- “Novel Therapeutics for Heart Failure: Modified, Water-Soluble Caveolin-1 Scaffolding Domain Peptides with Improved Characteristics for Drug Development” – NHLBI/NIH
- “Novel Therapeutic for Kidney Failure: A Modified, Water-Soluble Orally-Active Caveolin-1 Scaffolding Domain Peptide with Improved Characteristics for Drug Development” – NIDDK/NIH



FEATURED PUBLICATIONS

CARDIOLOGY:

- Neff LS, Biggs RM, Zhang Y, Van Laer AO, **Baicu CF**, Subramanian S, Berto S, **DeLeon-Pennell K**, **Zile MR**, **Bradshaw AD**. Role of macrophages in regression of myocardial fibrosis following alleviation of left ventricular pressure overload. *Am J Physiol Heart Circ Physiol*. 2024 May 1;326(5):H1204-H1218.
- Grewal J, Tripathi N, Bortner B, Gregoski MJ, Cook D, Britt A, Hajj J, Rofael M, Sheidu M, Montovano MJ, Mehta M, Hajduczuk AG, Rajapreyar IN, Brailovsky Y, Genuardi MV, Kanwar MK, Atluri P, Lander M, Shah P, Hsu S, Kilic A, **Houston BA**, Mehra MR, Sheikh FH, **Tedford RJ**. A multicenter evaluation of the HeartMate 3 risk score. *J Heart Lung Transplant*. 2024 Apr;43(4):626-632.
- **Payne JE**, Woods C, **Elshazly MB**, Matthews A, **Kroman A**, Feng Z, Rabinkova A, Ghadban R, **Dhokal B**, **Winterfield J**. A novel automated peak frequency annotation algorithm for identifying deceleration zones and ventricular tachycardia ablation sites. *Heart Rhythm*. 2024 Jan;21(1):27-33.
- **Keck C**, Gregoski M, **Litwin S**, Borlaug BA, Fudim M, **Tedford RJ**, **Houston BA**. Decoupling of Hemodynamics and Congestive Symptoms in Obese Patients With Heart Failure. *J Card Fail*. 2023 Sep;29(9):1249-1256.

ENDOCRINOLOGY:

- Peters JC, Breen JA, Pan Z, Nicklas J, **Cornier MA**. A Randomized, Crossover Trial Assessing Appetite, Energy Metabolism, Blood Biomarkers, and Ad Libitum Food Intake Responses to a Mid-Morning Pecan Snack vs. an Equicaloric High-Carbohydrate Snack in Healthy Volunteers with Overweight/Obesity. *Nutrients*. 2024 Jun 29;16(13):2084.
- Kelly CB, **Karanchi H**, **Yu JY**, Leyva MJ, Jenkins AJ, Nankervis AJ, Hanssen KF, Garg SK, Scardo JA, Hammad SM, Aston CE, Beisswenger PJ, **Lyons TJ**. Plasma AGE and Oxidation Products, Renal Function, and Preeclampsia in Pregnant Women with Type 1 Diabetes: A Prospective Observational Study. *J Diabetes Res*. 2023 Aug 10;2023:8537693.
- Dodd K, Legget KT, **Cornier MA**, Novick AM, McHugo M, Berman BD, Lawful BP, Tregellas JR. Relationship between functional connectivity and weight-gain risk of antipsychotics in schizophrenia. *Schizophr Res*. 2024 May;267:173-181.

GASTROENTEROLOGY & HEPATOLOGY:

- **Koch DG**, **Rockey DC**, **Litwin SS**, **Tedford RJ**. H2FPEF Scores Are Increased in Patients with NASH Cirrhosis and Are Associated with Post-liver Transplant Heart Failure. *Dig Dis Sci*. 2024 Aug;69(8):3061-3068.
- **Swanson GR**, Garg K, Shaikh M, Keshavarzian A. Increased Intestinal Permeability and Decreased Resiliency of the Intestinal Barrier in Alcoholic Liver Disease. *Clin Transl Gastroenterol*. 2024 Apr 1;15(4):e00689.
- **Elmunzer BJ**, Foster LD, Serrano J, et al. Indomethacin with or without prophylactic pancreatic stent placement to prevent pancreatitis after ERCP: a randomised non-inferiority trial. *Lancet*. 2024 Feb 3;403(10425):450-458.

GENERAL INTERNAL MEDICINE:

- **Axon RN**, Ward R, Mohamed A, Pope C, Stephens M, **Mauldin PD**, Gebregziabher M. Trends in Veteran hospitalizations and associated readmissions and emergency department visits during the MISSION Act era. *Health Serv Res*. 2024 Oct;59(5):e14332.
- Taber DJ, Ward RC, Buchanan CH, **Axon RN**, Milfred-LaForest S, Rife K, Felkner R, Cooney D, Super N, McClelland S, McKenna D, Santa E, Gebregziabher M. Results of a multicenter cluster-randomized controlled clinical trial testing the effectiveness of a bioinformatics-enabled pharmacist intervention in transplant recipients. *Am J Transplant*. 2023 Dec;23(12):1939-1948.
- **Schreiner AD**, **Zhang J**, **Moran WP**, **Koch DG**, Livingston S, Bays C, Marsden J, **Mauldin PD**, Gebregziabher M. Real-World Primary Care Data Comparing ALT and FIB-4 in Predicting Future Severe Liver Disease Outcomes. *J Gen Intern Med*. 2023 Aug;38(11):2453-2460.

FEATURED PUBLICATIONS

HEMATOLOGY & ONCOLOGY:

- **Dincman TA**, Karam JAQ, Giordano A, Li H, Drusbosky LM, **Gourdin TS**, Howe PH, **Lilly MB**. Genomic amplifications identified by circulating tumor DNA analysis guide prognosis in metastatic castration-resistant prostate cancer. *Front Oncol*. 2024 Feb 21;13:1202277.
- Koelbel C, Ruiz Y, Wan Z, Wang S, **Ho T**, Lake D. Development of tandem antigen capture ELISAs measuring QSOX1 isoforms in plasma and serum. *Free Radic Biol Med*. 2024 Jan;210:212-220.
- **Djulgovic B**, **Boylan A**, Kolo S, **Scheurer DB**, Anuskiewicz S, Khaledi F, **Youkhana K**, Madgwick S, Maharjan N, Hozo I. Converting IMPROVE bleeding and VTE risk assessment models into a fast-and-frugal decision tree for optimal hospital VTE prophylaxis. *Blood Adv*. 2024 Jun 25;8(12):3214-3224.

HOSPITAL MEDICINE:

- Schafer KR, **Heincelman M**, Adams W, Abraham RA, Kwan B, Sebasky M, Foster JG, Fitz M. Internal Medicine Applicants' Experiences With Program Signaling and Second Looks: A Multi-Institutional Survey. *Am J Med*. 2024 Aug;137(8):784-789.
- Cipriani AL, **Petz CA**, **Nielsen EM**, Marsden J, **Schreiner AD**. Statin prescribing patterns in patient-centered medical home patients with NAFLD. *Am J Manag Care*. 2023 Aug;29(8):408-413.
- **Nielsen EM**, **Zhang J**, Marsden J, Bays C, **Moran WP**, **Mauldin PD**, **Lenert LA**, Toll BA, **Schreiner AD**, **Heincelman M**. Hospitalization as an opportunity to improve lung cancer screening in high-risk patients. *Cancer Epidemiol*. 2024 Jun;90:102553.

INFECTIOUS DISEASES:

- Xie YL, Eichberg C, Hapeela N, Nakabugo E, Anyango I, Arora K, Korte JE, Odero R, van Heerden J, Zemanay W, Kennedy S, Nabeta P, Hanif M, Rodrigues C, Skrahina A, Stevens W, Dietze R, Liu X, Ellner JJ, Alland D, Joloba ML, Schumacher SG, McCarthy KD, Nakiyingi L, **Dorman SE**. Xpert MTB/RIF Ultra versus mycobacterial growth indicator tube liquid culture for detection of Mycobacterium tuberculosis in symptomatic adults: a diagnostic accuracy study. *Lancet Microbe*. 2024 Jun;5(6):e520-e528.
- Sonawane K, Garg A, **Meissner EG**, Damgacioglu H, Hill E, Nyitray AG, Deshmukh AA. Human Papillomavirus Vaccination Among Young Adults Before and During the COVID-19 Pandemic. *JAMA Netw Open*. 2024 Feb 5;7(2):e2356875.
- **Curry SR**, Hecker MT, O'Hagan J, et al. Natural History of Clostridioides difficile Colonization and Infection Following New Acquisition of Carriage in Healthcare Settings: A Prospective Cohort Study. *Clin Infect Dis*. 2023 Jul 5;77(1):77-83.

NEPHROLOGY:

- de la Visitación N, Chen W, Krishnan J, **Van Beusecum JP**, et al. Immunoproteasomal Processing of IsoLG-Adducted Proteins Is Essential for Hypertension. *Circ Res*. 2024 May 10;134(10):1276-1291.
- Bohovyk R, Khedr S, Levchenko V, Stefanenko M, Semenikhina M, Kravtsova O, Isaeva E, Geurts AM, Klemens CA, **Palygin O**, Staruschenko A. Protease-Activated Receptor 1-Mediated Damage of Podocytes in Diabetic Nephropathy. *Diabetes*. 2023 Dec 1;72(12):1795-1808.
- Wolf B, Blaschke CRK, Mungaray S, Weselman BT, Stefanenko M, Fedoriuk M, Bai H, Rodgers J, **Palygin O**, Drake RR, **Nowling TK**. Metabolic Markers and Association of Biological Sex in Lupus Nephritis. *Int J Mol Sci*. 2023 Nov 18;24(22):16490.
- Arif E, Medunjanin D, Solanki A, **Zuo X**, Su Y, Dang Y, Winkler B, Lerner K, Kamal AI, **Palygin O**, **Cornier MA**, Wolf BJ, Hunt KJ, **Lipschutz JH**. β_2 -Adrenergic receptor agonists as a treatment for diabetic kidney disease. *Am J Physiol Renal Physiol*. 2024 Jan 1;326(1):F20-F29.

FEATURED PUBLICATIONS

PULMONARY & CRITICAL CARE:

- Long KJ, Pitcher T, Kurman JS, Pritchett MA, **Silvestri GA**. Using a Blood Biomarker to Distinguish Benign From Malignant Pulmonary Nodules: A Subgroup Analysis Comparing Screen Detection, Sex, Smoking History, and Nodule Size. *Chest*. 2023 Dec;164(6):1572-1575.
- Choate R, Holm KE, Sandhaus RA, Mannino DM, **Strange C**. Health-related Quality of Life in Alpha-1 Antitrypsin Deficiency-associated Chronic Obstructive Pulmonary Disease. *Am J Respir Crit Care Med*. 2023 Nov 15;208(10):1132-1134.
- **Silvestri GA**, Goldman L, **Tanner NT**, Bureson J, Gould M, Kazerooni EA, Mazzone PJ, Rivera MP, Doria-Rose VP, Rosenthal LS, Simanowith M, Smith RA, Fedewa S. Outcomes From More Than 1 Million People Screened for Lung Cancer With Low-Dose CT Imaging. *Chest*. 2023 Jul;164(1):241-251.

RHEUMATOLOGY & IMMUNOLOGY:

- **Bogatkevich GS**, Atanelishvili I, Bogatkevich AM, **Silver RM**. Critical Role of LMCD1 in Promoting Profibrotic Characteristics of Lung Myofibroblasts in Experimental and Scleroderma-Associated Lung Fibrosis. *Arthritis Rheumatol*. 2023 Mar;75(3):438-448.
- **Baker Frost D**, Savchenko A, Takamura N, Wolf B, Fierkens R, King K, **Feghali-Bostwick C**. A Positive Feedback Loop Exists between Estradiol and IL-6 and Contributes to Dermal Fibrosis. *Int J Mol Sci*. 2024 Jun 30;25(13):7227.
- Yuan X, Qin X, Takemoto K, Zhao J, Sanderson M, Xu X, Zhang Y, Helke KL, Jacobs Wolf B, Guthridge JM, James JA, Zhou X, Assassi S, **Feghali-Bostwick C**, Wang D, Sun L, **Tsao BP**. Human hypofunctional NCF1 variants promote pulmonary fibrosis in the bleomycin-induced mouse model and patients with systemic sclerosis via expansion of SPP1+ monocytes-derived macrophages. *Ann Rheum Dis*. 2024 Sep 24:ard-2024-226034.

MEDICAL EDUCATION



The Department of Medicine continues its intensive investment in advancing educational programs at both the graduate and undergraduate levels. Department faculty contribute extensively to medical student education in both the basic science and clinical clerkship years and directly supervise the training of over 200 residents and fellows each year.

UNDERGRADUATE MEDICAL EDUCATION



The Department of Medicine faculty remain strongly engaged in medical student training and serve as mentors and teachers, contributing countless hours of teaching time to over 300 third- and fourth-year medical students each year. The internal medicine residency match was yet again incredibly successful with 18% of students choosing categorical internal medicine, med-peds, or med-psych specialties.

New Leadership



M. Thomas



T. Cuoco

Maggie Thomas, M.D., MPH, MS, was named director of the Internal Medicine Clerkship, and **Theresa Cuoco, M.D., FACP**, was appointed associate clerkship director. Dr. Thomas replaces Marc Heincelman, M.D., who was named Assistant Dean for Career Advising for the College of Medicine.

NEW INITIATIVES

Moving forward, the Department of Medicine has set goals to continue to increase the number of students entering internal medicine to meet the shortage of IM-trained physicians in primary care and certain subspecialties. Our faculty has already helped support over 35 students applying to categorical and combined IM specialties this interview cycle. Additionally, the 3rd-year clerkship is transitioning to an Academic Half-Day schedule to allow students to return to the clinical environment in the afternoons, providing them with more meaningful patient care experiences.

Leadership

Ashley Duckett, M.D.
Program Director, IM Residency

Benjamin Kalivas, M.D.
*Program Director,
Medicine/ Psychiatry Residency*

Sarah Mennito, M.D., MSCR
*Program Director,
Medicine/ Pediatrics Residency*

Maggie Thomas, M.D., MPH
*Clerkship Director and
Associate Program Director*

Kathryn Anderson, M.D.
Associate Clerkship Director

Theresa Cuoco, M.D.
Associate Clerkship Director

Brad Keith, M.D.
Associate Program Director

Aundrea Loftley, M.D.
Associate Program Director

Eric Palecek, M.D.
Associate Program Director

Chelsey Petz, M.D., FACP
Associate Program Director

Skip Schumann, M.D., MSCR
Associate Program Director

William Shelley, M.D.
Associate Program Director

GRADUATE MEDICAL EDUCATION



The Internal Medicine Residency Program led by **Ashley Duckett, M.D.**, enjoyed many successes and continued to innovate during the 2023-2024 academic year. These achievements reflect our steadfast commitment to excellence in residency and fellowship training and our dedication to preparing the next generation of healthcare leaders. In FY24, the residency program trained 108 residents, including 16 medicine-pediatrics residents, and 10 medicine-psychiatry residents.

SUCSESSES AND HIGHLIGHTS

Enhanced Community Engagement

Continued expansion of the Health Disparities elective and sustained collaboration with the Shifa Clinic, providing longitudinal learning opportunities and meaningful service to underserved populations.

Faculty Growth

Increased core faculty support for the residency program, strengthening mentorship and educational resources.

Recruitment Success

Sustained initiatives for the recruitment of individuals representing various backgrounds and multicultural experiences.

Comprehensive POCUS Training

Our curriculum integrates Point-of-Care Ultrasound (POCUS) across rotations, offering hands-on experience in ICUs, wards, pulmonary consults, and ambulatory blocks. Training is enhanced by an Ultrasound Elective and state-of-the-art CAE Vimedix simulators.

Innovative Clinical Electives

Our residents collaborate with faculty to design unique electives tailored to their interests, including new opportunities in Ultrasound, Hospitalist, and Cardiovascular ICU rotations.

Dedicated Research Opportunities

Residents with a mentor and specific project can pursue a research block, often leading to presentations at MUSC Research Day, conferences, or publications.

2024 Residency Match Day

The Internal Medicine Residency program celebrated a highly successful 2024 Match. This rising class of 37 candidates will join MUSC for the 2024-2025 academic year.

Eric Palacek, M.D., was named Associate Program Director



2024 RESIDENCY MATCH DAY

BY THE NUMBERS

2,400 → 435
Applications Interview Spots

INCOMING CLASS

27
Medical Schools Represented

15
States Represented

3
International Candidates

8
MUSC COM Graduates

GRADUATE MEDICAL EDUCATION *Continued*

POST RESIDENCY CAREER PATHS

Our residents continue to succeed in academic careers, successfully competing for the most prestigious and rigorous fellowships or preparing for life as general internists. The 2023 fellowship match (for the July 2024 start) successfully matched **19 residents** into many of the most competitive and premier fellowship programs in the country, including six who continued their training at MUSC.



2023-2024 Resident Graduating Class

To see our list of graduates and learn about the next steps in



their careers, scan the QR Code or visit <https://bit.ly/CareerPaths25>



POST RESIDENCY CAREER PATHS 2023-2024 GRADUATING CLASS

- 13 Entered Clinical Practice
10 Hospitalists/2 Primary Care/1 Nocturnist
- 16 Entered Fellowships | 6 at MUSC



WOMEN IN INTERNAL MEDICINE, SCIENCE, AND EDUCATION (WISE)

Our **WISE program** hosts quarterly social events for female residents and faculty in the Department of Medicine, emphasizing leadership, career development, and collegiality. These events foster mentorship and strengthen connections within the Internal Medicine community.

RESIDENT RESEARCH

RESIDENTS RECEIVE TOP RECOGNITIONS AT THE 2024 ACP SOUTH CAROLINA CHAPTER MEETING

At the 2024 ACP South Carolina Chapter Annual Scientific Meeting, many of our internal medicine residents showcased their work through poster and oral presentations, with several earning prestigious awards.

Congratulations to the following residents who won awards:

- Vince Bolus, M.D., 1st Place Research and Overall Resident Winner
- Ruth Bishop, M.D., 2nd Place Research
- Andrew Dorsey, M.D., 1st Place Clinical Vignette



FELLOWSHIP TRAINING



Erin Forster, M.D., MPH and IBD Fellow
Stephen Fuller, M.D.

The Department of Medicine offers fellowship programs across nine divisions to provide extraordinary subspecialty training with a focus for clinical, clinician-educator, and research careers. Department faculty trained **103 fellows** in **17 accredited fellowship programs** in FY24. Our fellows are trained as future opinion leaders who will advance clinical care and push the boundaries of scientific knowledge.

Program Expansion: This year, we expanded our training programs with the introduction of four new fellowships in **Diabetes, Inflammatory Bowel Disease (IBD), Interventional Pulmonology, and Transplant Infectious Diseases**, enhancing opportunities in critical areas of patient care and specialty education.

NOTABLE AWARDS AND HONORS

GOLDEN APPLE AWARD WINNERS



Pranav Shah, M.D.
Clinical Preceptor Excellence in Teaching Award (Faculty)



Thomas Brenzel, M.D.
Clinical Preceptor Excellence in Teaching Award (Resident)



Drew Stone, M.D.
Clinical Preceptor Excellence in Teaching Award (Resident)

DEPARTMENT OF MEDICINE AWARDS CEREMONY



The Department of Medicine recognizes our exceptional faculty, trainees, and staff for their outstanding achievements in education, patient care, and research during our annual awards ceremony.

To see the full list of scholarly activity, scan the QR Code or visit <https://bit.ly/AwardsDay24>



CARDIOLOGY

*Under the direction of **Thomas Di Salvo, M.D., MPH, MBA**, the Division of Cardiology has enjoyed continued expansion across its clinical, research, and educational programs. In FY24, the division welcomed five new physicians: Vishal Rao, M.D. (Heart Failure); Chau Vo, M.D., and Sergio Pinski, M.D., (Electrophysiology); Ian Laxina, M.D., and Robert Biederman, M.D., (General Cardiology) and has recruited an additional four new physicians to start in FY25. As one of the top-rated centers for cardiovascular care in the Southeast, the MUSC Health Heart & Vascular Center offers quality, comprehensive, patient-centered cardiovascular care by a team of renowned physicians integrating leading-edge technology.*

Professor and Division Director
Thomas Di Salvo, M.D., MBA, MPH

Distinguished University Professors
Michael Gold, M.D., Ph.D.
Michael Zile, M.D.

Professors
Jan Basile, M.D.
Robert Biederman, M.D.
Amy Bradshaw, Ph.D.
Valerian Fernandes, M.D.
David Gregg, M.D.
Daniel Judge, M.D.
Sheldon Litwin, M.D.
Paul McDermott, Ph.D.
Donald Menick, Ph.D.
Pamela Morris, M.D.
Christopher Nielsen, M.D.
Terrence O'Brien, M.D., MS
Sergio Pinski, M.D.
Eric Powers, M.D.
Daniel Steinberg, M.D.
Ryan Tedford, M.D.
Thomas Todoran, M.D., MSc
Adrian Van Bakel, M.D., Ph.D.
John Wharton, M.D.
Jeffrey Winterfield, M.D.
Federica del Monte, M.D., Ph.D.

Associate Professors
Nicholas Amoroso, M.D.
Kristine Deleon-Pennell, Ph.D.
Brian Houston, M.D.
Chakradhari Inampudi, M.B.B.S.
Anbukarasi Maran, M.D.

Research Associate Professor
Catalin Baicu, Ph.D.

Assistant Professors
Jessica Atkins, M.D.
Isabel Balachandran, M.D. (FY25 Recruit)
Travis Benzing, M.D. (FY25 Recruit)
Anthony Carnicelli, M.D.
John Ciccone, M.D.
Bishnu Dhakal, M.D.
Parinita Dherange, M.D.
William Edwards, M.D.
Michele Esposito, M.D.
James Glenn, M.D.
Jan Griffin, M.D.
Kenneth Hanger, M.D.
Gregory Jackson, M.D.
Rachel Kaplan, M.D.
Fred Krainin, M.D.
Anne Kroman, D.O., Ph.D.
Ian Laxina, M.D.
Amanda Northup, M.D.
Anil Purohit, M.D.

Assistant Professors (continued)
Vishal Rao, M.D., MPH
Daniel Silverman, M.D.
Graham Smith, M.D. (FY25 Recruit)
Chau Vo, M.D.
Ashley Waring, M.D.
Ramsey Wehbe, M.D.
Jeffrey Yourshaw, M.D.

Instructors
Rory Dowd, MBBS (FY25 Recruit)
Steve Vinciguerra, MBA

ADVANCES IN CLINICAL CARE

Jeffrey Winterfield, M.D., and the division’s cardiac electrophysiologists continue to pioneer novel non-catheter-dependent ablation techniques in collaboration with Radiation Oncology. In 2024, the team performed its first pulsed field ablation (PFA), a safer and more efficient treatment for atrial fibrillation.

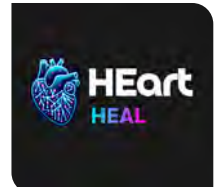
.....
 Led by Medical Director **Anthony Carnicelli, M.D.**, the division opened a new, dedicated **12-bed Coronary Intensive Care Unit**, expanding patient access to cardiac intensive care services.



Jeffrey Winterfield, M.D., and Team

RESEARCH

The Heart Artificial Intelligence Lab (HEAL), led by primary investigator **Ramsey Wehbe, M.D.**, is advancing cardiovascular research through cutting-edge AI and machine learning. The lab’s research team is focused on innovative projects that leverage advanced algorithms to analyze unstructured data aimed at transforming the diagnosis and management of heart failure.



Daniel Judge, M.D., and co-investigators for the ATTRibute-CM phase 3 trial reported in the New England Journal of Medicine that the novel drug acoramidis showed promise in the treatment of transthyretin amyloid cardiomyopathy (ATTR-CM) and is safe. If approved, this innovative medication holds the potential to revolutionize the treatment landscape by significantly reducing the financial burden for patients.

Michele Esposito, M.D., received a SCTR College of Medicine K12 Clinician Scientist Award from the NIH for her project “Mechanisms of Skeletal Muscle Microvascular Dysfunction in Systolic Heart Failure.”



EDUCATION

Fellowship Program Growth: Our **five** cardiology fellowship programs, led by outstanding directors, continue to attract top applicants nationwide. To meet growing demand, the division has expanded its **general cardiology fellowship** with **two additional funded slots** (supporting 21 fellows total) and the **electrophysiology fellowship program** received **one additional allotment** to support five fellows annually.

BY THE NUMBERS

7,839

New Patient Visits

\$4M

Total Research Funding Received (FY24)

5

ACGME Fellowship Programs

56

Heart Transplants (CY23)

ENDOCRINOLOGY, DIABETES, AND METABOLIC DISEASES

Led by Marc-André Cornier, M.D., the Division of Endocrinology, Diabetes, and Metabolic Diseases is renowned for its patient-centered care, groundbreaking research, and commitment to education. Our multidisciplinary clinics provide comprehensive diagnostic and treatment services for a wide range of endocrine disorders, including diabetes, obesity, and thyroid, pituitary, adrenal and lipid disorder, reaching patients across South Carolina.

Focused on strategic growth, the division has welcomed new faculty and advanced practice providers in the past year, expanding clinics across the state and enhancing services in cardiometabolic health. For over five decades, our internationally recognized faculty have driven transformative research, setting new standards in endocrine, diabetes and metabolic care and continuing to lead advancements on a global scale.

Professor and Division Director

Marc-Andre Cornier, M.D.

Professors

Jyotika Fernandes, M.D.
Kathie Hermayer, M.D., MS
Yan Huang, M.D., Ph.D.
Timothy Lyons, M.D.

Clinical Professor

Soon ho Kwon, M.D., MS

Associate Professors

Harsha Karanchi, M.D.
Aundrea Loftley, M.D.

Assistant Professors

Rashmi Dhakal, M.D.
Kelly Engle, M.D.
Colleen Gavigan, M.D.
Joshua Neal, M.D. (FY25 Recruit)
Emily Rosenberg, M.D.
Rani Shayto, M.D.
Zi Tan, M.D. (FY25 Recruit)

Emerita

Maria Lopes-Virella, M.D., Ph.D.



ADVANCING PATIENT CARE

Over the past year, the division’s clinical programs have continued to evolve to provide the best possible patient-centered approach. To meet the high demand for endocrine-related clinical services, the division hired two new endocrinologists and several advanced practice providers in the past year.



Additional highlights include:

- Opened a new **Weight Management Clinic** and expanded clinical services.
- Continued expansion of the **IDEAL Diabetes Education clinic**, which cares for patients with diabetes who need more intensive multidisciplinary care.
- Enhanced access to **fine needle aspiration services** for patients with thyroid nodules.
- Expanded our **inpatient diabetes management team** with the addition of two faculty members who specialize in this area.

RESEARCH

FY24 saw the continued expansion of division’s clinical and translational research portfolio with several new multicenter trials.

MUSC’s EDIC study site received the **Julio Santiago Diabetes Research Clinic Achievement Award** at the 2024 EDIC meeting. MUSC is among 27 medical centers contributing to the EDIC study. The MUSC site team, including **Harsha Karanchi, M.D.**, as principal investigator, and co-investigators **Drs. Kathie Hermayer, Jyotika Fernandes, and Timothy Lyons**, and **Lori Spillers, RN**, oversees 50 participants originally enrolled the DCCT study from 1983 to 1988. Over four decades, DCCT/EDIC research has significantly shaped diabetes care and public health.



EDUCATION

The division has expanded its Endocrinology Fellowship Program to include an **additional funded slot**, now supporting five ACGME fellows annually. Additionally, through a grant from the American College of Diabetology, the division launched a **new one-year Diabetes Fellowship Program**, which will enroll one fellow each year.

BY THE NUMBERS

22,781

Outpatient Encounters

3,413

New Patient Visits

5

ACGME Fellows

1

New Diabetes Fellowship Program Launched

GASTROENTEROLOGY AND HEPATOLOGY

*Under the leadership of **Garth Swanson, M.D.**, the MUSC Division of Gastroenterology and Hepatology has seen remarkable growth and success. In his first year, Dr. Swanson led efforts to expand faculty and staff to meet the demands of a rapidly growing community, resulting in unprecedented increases in clinical visits and colon cancer screenings. The Liver Transplant Program has flourished, with a significant rise in transplants, and the division has expanded its fellowship offerings in Inflammatory Bowel Disease (IBD), Hepatology, and General Gastroenterology.*

The division's research accomplishments are bolstered by collaborations with the Department of Regenerative Medicine and Cell Biology, advancing projects like the COBRE in Digestive and Liver Disease. Additionally, the prestigious P30-funded Digestive Disease Research Core Center plays a vital role in advancing research in digestive and liver diseases.

Professor and Division Director

Garth Swanson, M.D., MS

Distinguished University Professors

B. Joseph Elmunzer, M.D., M.Sc.

Don Rockey, M.D.

Professors

Andrew Brock, M.D.

Puja Elias, M.D., MPH

Thomas Faust, M.D. MBE (FY25 Recruit)

Brenda Hoffman, M.D.

David Koch, M.D., MSCR

Mark Payne, M.D.

Ira Willner, M.D.

Associate Professors

Erin Forster, M.D., MPH

Robert Moran, M.D.

Heather Simpson, M.D.

Clinical Associate Professors

Amit Agrawal, M.D.

Michael Rajala, M.D., Ph.D.

Thomas Werth, M.D.

Research Associate Professor

Zengdun Shi, M.D.

Assistant Professors

Ryan Beyer, M.D.

Caitlin Green, M.D.

Joseph Thomas, M.D.

Cameron Wilhoit, M.D. (FY25 Recruit)

Clinical Assistant Professors

Christian Clark, M.D.

John Corless, M.D.

Vishnu Naravadi, M.D.

Abirami Thiagarajan, M.D. (FY25 Recruit)

Research Assistant Professor

Songling Liu, M.D.

GASTROENTEROLOGY AND HEPATOLOGY HIGHLIGHTS



IBD Medical Home faculty, staff and providers

ADVANCES IN CLINICAL CARE

Record Growth in Patient Care: The division achieved significant clinical growth in FY24, with total outpatient appointments increasing by 19% compared to FY23. This was driven by a 23% rise in new patient appointments and a 20% increase in established patient appointments.

Expansion in Liver Transplant Services: Led by Medical Director **Thomas Werth, M.D.**, the division built on the success of its Liver Transplant Program, performing more transplants than ever.

Inflammatory Bowel Disease (IBD) Medical Home: Led by **Erin Forster, M.D.**, MUSC's new IBD Medical Home provides a multidisciplinary, patient-centered model of care to streamline and personalize treatment for individuals with IBD, ensuring seamless access to specialists and advanced therapies, including intestinal ultrasound.



RESEARCH

Digestive Disease Research Core Center: Led by principal investigator **Don Rockey, M.D.**, the Silvio O. Conte Digestive Diseases Research **P30 Grant** finds the MUSC Digestive Disease Research Core Center. One of only 17 nationwide, the center supports emerging investigators and fosters collaboration among 36 full members, contributing to a \$32.7 million research base, including \$15.8 million in federal grants.



Publication Highlight: **Joseph Elmunzer, M.D.**, led the SVI (Stent vs. Indomethacin) trial, which demonstrated the benefits of prophylactic stenting in preventing post-ERCP pancreatitis. The findings were published in *The Lancet* earlier this year.

EDUCATION

Fellowship Program Growth: The division launched a new **Inflammatory Bowel Disease Fellowship** alongside the existing Hepatology and General GI fellowships. This one-year, non-ACGME IBD Fellowship will welcome its first fellow in FY25.

BY THE NUMBERS

25,622

Outpatient Encounters

9,045

New Patient Visits

\$4.7M

Research Funding

12

ACGME Fellows

143

Liver Transplants (CY24)

GENERAL INTERNAL MEDICINE, GERIATRICS AND PALLIATIVE CARE

Growth and progress have been an ongoing theme this year for the Division of General Internal Medicine, Geriatrics, and Palliative Care —led by Kimberly Davis, M.D.— with notable achievements in education, clinical care, and research. The division includes over 40 clinical and research faculty who are nationally recognized leaders in the areas of medical education, ethics, clinical care, and research in health care disparities.

The division, known for its impactful teaching and leadership, plays a crucial role in training future internal medicine physicians by offering extensive inpatient and outpatient clinical experience while mentoring students and residents in research, quality, and safety. Recent successful recruitment has allowed the division to expand, adding three new physicians in FY24 with three more set to join in FY25.

Professor and Division Director
Kimberly Davis, M.D., FACP

Distinguished University Professor
Leslie Lenert, M.D., MS

Distinguished University Professor Emeritus
William Moran, M.D., MS

Professors
Robert Axon, M.D., MSCR
Elisha Brownfield, M.D.
Jay Brzezinski, M.D.
Ben Clyburn, M.D.
Cara Litvin, M.D., MS
Patrick Mauldin, Ph.D.

Clinical Professors
Elizabeth Higgins, M.D.
Leonard Lichtenstein, M.D.

Associate Professors
Brad Keith, M.D.
Edward O'Bryan, M.D., CPE
Andrew Schreiner, M.D., MSCR
Skip Schumann, M.D., MSCR
Leigh Vaughan, M.D.

Clinical Associate Professors
Eric Palecek, M.D.
Tracy Voss, M.D.
Deanna Vroman, M.D.

Assistant Professors
Kathryn Anderson, M.D.
Sofia Arango Mendoza, M.D.
Susan Evenhouse, M.D.
Kelly Graves, M.D.
Shantae Jenkins, M.D., PhD
Ellen Maher, M.D.
Nathalie Malcolm, M.D.
Harriet Mather M.D., MSc (FY25 Recruit)

Assistant Professors (continued)
Joshua Mixson, M.D. (FY25 Recruit)
Amanda Overstreet, D.O.
Chelsey Petz, M.D.
John Tucker, M.D.
Sophia Urban, M.D., MPH

Clinical Assistant Professors
Anup Bhushan, M.D.
Gregory Compton, M.D., MA
Patrick Coyne, MSN
Robert Ishak, M.D.
Matthew Kornegay, M.D.

Research Assistant Professors
Sarah Ball, Pharm.D.
Ahmed Mohamed, BVSc, MSc, Ph.D.
(FY25 Recruit)
Zemin Su, MAS
Jingwen Zhang, MS

GENERAL INTERNAL MEDICINE, GERIATRICS & PALLIATIVE CARE HIGHLIGHTS



A new fund was established to honor the career and leadership of former division director **William P. Moran, M.D.**, who retired in 2024 after 19 years at MUSC. The *William P. Moran, M.D., Fund in General Internal Medicine* will support a faculty member in GIM leadership or leadership development.



ADVANCES IN CLINICAL CARE

FY24 saw continued expansion in patient care within the division which recorded an impressive 52,004 ambulatory patient visits, with 5,736 of those being new patient visits and 5,243 delivered through telehealth. The division also added a new **Adult Palliative Care outpatient practice** location at Rutledge Tower and expanded Palliative Care telehealth services.

RESEARCH AND GRANTS

- In collaboration with neurology, the geriatrics team participated in the CMS Guiding an **Improved Dementia Experience (GUIDE) Program**, focused on transforming the care landscape for individuals with dementia and their caregivers.
- MUSC received Duke Endowment funding to pilot the **CaroNova's Comprehensive Palliative Care for Serious Illness (CPCSI)** initiative which, in collaboration with BCBS of South Carolina, aims to create a sustainable payment mechanism for high-quality palliative care in the Carolinas.
- **Sarah Ball, Pharm.D.**, and her team continue to oversee a \$4 million Medicaid contract with the SC Department of Health and Human Services for drug utilization services.

EDUCATION

New IM Residency Core Faculty



Amanda Overstreet, D.O.



Michael Tucker, M.D.



Andrew Schreiner, M.D.

New Residency Associate Program Director



Eric Palecek, M.D., was appointed IM Residency APD with a focus on the residents' ambulatory curriculum and clinical experience.

New Fellowship Program Leadership: Amanda Overstreet, D.O., was appointed Fellowship Director for Palliative Care

BY THE NUMBERS

52,004

Outpatient Encounters

5,736

New Patient Visits

5,243

Telehealth Visits

HEMATOLOGY AND ONCOLOGY

*Under the leadership of **Craig Lockhart, M.D., MHS**, the Division of Hematology and Oncology at MUSC has continued to gain national and international recognition for its significant contributions to clinical care, research, and education throughout FY24. As part of the prestigious MUSC Hollings Cancer Center—one of only 72 National Cancer Institute-designated centers in the country and the sole center in South Carolina—the division has experienced substantial growth, expanding both its faculty and the scope of its research and clinical initiatives. Over the past year, four new faculty members have joined, including **Steven Akman, M.D.**, **Thai Ho, M.D.**, **Abi Siva, M.D.**, and **Kimberly Youkhana, M.D.**, with an additional seven new faculty set to start in FY25.*

Professor and Division Director

Craig Lockhart, M.D., MHS

Professors

Frank Brescia, M.D., M.A.

Benjamin Djulbegovic, M.D., Ph.D.

Charles Greenberg, M.D.

Michael Lilly, M.D.

Associate Professors

Katherine Antel, M.D., Ph.D. (FY25 Recruit)

Theodore Gourdin, M.D.

Brian Hess, M.D.

Thai Ho, M.D., Ph.D.

John Kaczmar, M.D.

Dina Khalaf, M.D. (FY25 Recruit)

Abirami Sivapiragasam, M.D.

John Wrangle, M.D., MPH

Clinical Associate Professor

Amarendra Neppalli, M.D.

Assistant Professors

Mariam Alexander, M.D., Ph.D.

Jonathan Alexander, M.D. (FY25 Recruit)

Praneeth Baratam, M.B.B.S.

Kevin Becker, M.D. (FY25 Recruit)

Joseph Caveney, M.D. (FY25 Recruit)

Alexander Coltoff, M.D.

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

Anthony Dominick, D.O. (FY25 Recruit)

Dali Edwards, D.O. (FY25 Recruit)

Kimberly Green, D.O.

Paul O'Brien, M.D.

Christopher Rangel, M.D.

Kimberly Youkhana, M.D.

Clinical Assistant Professors

Steven Akman, M.D.

Rebecca Bechhold, M.D.

Oleksandra Lupak, M.D.

HEMATOLOGY AND ONCOLOGY HIGHLIGHTS



Brian Hess, M.D., received a \$3.2 million NCI grant to expand the clinical trial of purified CAR-T cell therapy. *Dr. Hess, second from right, chats with Shikhar Mehrotra, Ph.D., fourth from right, as the clinical and lab teams come together to sign off on the handover of the MUSC-manufactured CAR-T cells for the first patient in the clinical trial. Photo by Clif Rhodes.*

ADVANCES IN CLINICAL CARE

The Division of Hematology and Oncology saw substantial advancements in patient care throughout FY24. A significant milestone includes the opening of the **Summer and Clyde Anderson Advanced Cancer Therapy Clinic**, which provides specialized care for patients participating in phase I cancer clinical trials.

Additionally, the **Blood and Marrow Transplant (BMT) Program** celebrated the opening of its new clinic in Ashley River Tower, further improving outpatient services for transplant patients. The division performed 180 adult blood and bone marrow transplants this year, contributing to the program's impressive milestone of over 3,000 transplants since its inception.

RESEARCH



John Wrangle, M.D., received a R21 NCI grant entitled, "Exploiting Lineage-Specific Dependencies in Solid Tumors: Using Transcription Factors to Drive Therapeutic Effect in Situ."



The Ralph H. Johnson VA Medical Center continues to be the top-enrolling NCI Community Oncology Research Program (NCORP) affiliate, with **Oleksandra Lupak, M.D.** earning a Silver certificate for exceptional accrual achievement.

EDUCATION

The division launched a **new Advanced Practice Provider (APP) fellowship in hematology and oncology** which welcomed two fellows into its inaugural one-year program in 2024. This complements the robust training of 12 hematology-oncology fellows led by newly appointed Fellowship Program Director **Abi Siva, M.D.**



BY THE NUMBERS

40,091

Outpatient Encounters

3,738

New Patient Visits

180

Bone & Marrow
Transplants

\$1.2M

Research Funding (FY24)

HOSPITAL MEDICINE

*Under the leadership of **Marc Heincelman, M.D., MPH**, the Division of Hospital Medicine has advanced in patient care, education, and research, earning widespread recognition. Over 60 physicians and advanced practice providers manage five teaching and eight direct patient care services, orthopedic co-management, and a large preoperative clinic. The division also provides tele-hospitalist support to two rural hospitals with planned expansion to two more rural hospitals in the coming year. With a focus on interhospital transfers, delirium, mobility, point-of-care ultrasound, and medical training, the division continues to grow, adding new physicians and APPs to meet South Carolina's needs.*

Associate Professor and Division Director

Marc Heincelman, M.D., MPH

Professors

Danielle Scheurer, M.D., MSCR

Pamela Pride, M.D.

Associate Professors

Patrick Cawley, M.D., MBA

Ashley Duckett, M.D.

Marc Heincelman, M.D.

Keri Holmes-Maybank, M.D.

Benjamin Kalivas, M.D.

Erik Summers, M.D., FACP (FY25 Recruit)

Meghan Thomas, M.D.

Clinical Associate Professors

Theresa Cuoco, M.D.

Phillip Warr, M.D.

Kristin Wise, M.D.

Assistant Professors

Jamel Brown, M.D., MBA

Caitlyn Gallagher, M.D.

Nancy Hagood, M.D. (FY25 Recruit)

Cameron Mitro, M.D.

Ellen Nielsen, M.D.

Fletcher Penney, M.D.

Pranav Shah, M.D.

Mason Walgrave, M.D.

Leonidas Walthall, M.D.

Clinical Assistant Professors

Rahoul Ahuja, M.D.

Steliyana Bakalova-Georgieva, M.D.

Kevin Baker, M.D.

Benjamin Barnette, M.D.

Graham Beattie, M.D.

Shailesh Bhattarai, M.D. (FY25 Recruit)

Stacy Blecher, M.D.

Mark Brodie, M.D.

Taylor Christian, M.D.

Jessica Cook, M.D.

Christopher Cordeiro, M.D.

Dustin Dalton, M.D.

Bianca Farley, M.D.

Shane Fiust-Klink, M.D. (FY25 Recruit)

Nicholas Honko, M.D.

Alyson Honko, M.D.

Laura Juul, M.D.

Andy McNulty, M.D.

Lyndsay Mueller, M.D.

Ernest Murray, M.D.

Andres Ospina Zorrilla, M.D.

Yotam Papo, M.D., MPH

Roger Pons, M.D.

Emily Reams, M.D.

Christopher Tan, M.D.

D. Alan Turner, M.D.

Mason Turner, M.D.

Satya Villuri, M.D.

Taelor Weaver, M.D. (FY25 Recruit)

Abbie Zeffery, D.O.

HOSPITAL MEDICINE HIGHLIGHTS



ADVANCES IN CLINICAL CARE

- A notable advancement was the expansion of the tele-hospitalist program to a second rural hospital, **MUSC Health Black River Medical Center**, embodying MUSC's commitment to providing top-quality care within the local community.
- The division expanded its preoperative clinic to five providers daily which led to a 21% increase in patient evaluations year-over-year, significantly improving surgical safety and risk stratification.

New Clinical Leadership



K. Baker



D. Dalton



B. Barnette



E. Summers

- **Kevin Baker, M.D., and Dustin Dalton, M.D.**, Unit Medical Directors
- **Benjamin Barnette, M.D.**, Lead Nocturnist
- **Erik Summers, M.D., FACP**, Chief Medical Officer, MUSC Health – Charleston Division

RESEARCH AND EDUCATION

Faculty are leaders in medical education and active in quality improvement and research, contributing to 15 presentations at national meetings for the Society of Hospital Medicine and the Society of General Internal Medicine. Faculty and staff were also recognized at the 2024 MUSC Department of Medicine Research Symposium, with **Nancy Hagood, M.D.**, and **Leon Walthall, M.D.**, earning awards.

Educational efforts were bolstered through exceptional clinical teaching and the continued engagement of faculty members in training the next generation of physicians. New leadership appointments include the following:

- **Marc Heincelman, M.D., MPH**, appointed as Assistant Dean for Career Advising in the College of Medicine
- **Maggie Thomas, M.D., MPH**, appointed Clerkship Director
- **Theresa Cuoco, M.D.**, appointed Associate Clerkship Director

BY THE NUMBERS

147,701

wRVU Generation

11%

Increase in wRVUs

5,700

Perioperative Patients

21%

Increase in Perioperative Patients

INFECTIOUS DISEASES

*Under the leadership of **Cassandra Salgado, M.D., MS**, the Division of Infectious Diseases excels in patient-centered clinical care, research, and education. Faculty lead essential MUSC programs, including infection control, antimicrobial stewardship, vascular access, and transplant infectious diseases. For over 25 years, the division has provided comprehensive HIV care, supported by the HRSA Ryan White Program and SC DHEC. Research focuses on HIV/AIDS, tuberculosis, antimicrobial resistance, and more, while educational initiatives prepare future leaders in infectious diseases. Recent faculty recruitments further enhance clinical services, research, and global health initiatives, reinforcing the division's strong impact in public health.*

Professor and Division Director

Cassandra Salgado, M.D., MS

Professors

Joseph Cantey, M.D.

Susan Dorman, M.D.

John Gnann, M.D.

Camelia Marculescu, M.D., MSCR

Associate Professors

Scott Curry, M.D.

John Mckinnon, M.D.

Eric Meissner, M.D., Ph.D.

Clinical Associate Professors

Evgenia Kagan, M.D.

Stephanie Kirk, Pharm.D.

Assistant Professors

Ruth Adekunle, M.D.

Yosra Alkabab, M.D.

Helen Burton, M.D., MS (FY25 Recruit)

Drew Charles, D.O., MS (FY25 Recruit)

Courtney Harris, M.D.

Richard Lueking, M.D.

Alexandra Mills, M.D.

Charles Teixeira, D.O.

Clinical Assistant Professors

Kathleen Nowak, PharmD (FY25 Recruit)

Dannah Wray, M.D.

Clinical Instructor

Hayley Davis, Pharm.D.

INFECTIOUS DISEASES HIGHLIGHTS

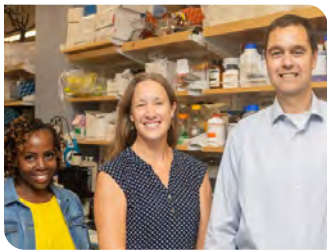


On January 22, the Department of Medicine and Division of Infectious Diseases hosted a celebration honoring Dr. Cassandra Salgado for her appointment as the inaugural chairholder of the J. Michael Kilby, M.D. Endowed Chair in Infectious Diseases. It was a wonderful evening honoring Dr. Salgado and recognizing the generosity and kindness of the Kilby family, as well as colleagues, friends, and grateful patients who contributed over the past eight years to make this endowed chair a reality.

ADVANCES IN CLINICAL CARE

- The Adult Transplant ID team launched secondary subspecialty ID clinics within primary specialties. The first to go live was the **Ventricular Assist Device Infection clinic** led by **Courtney Harris, M.D.**, nested within the adult cardiology clinic, and has achieved high patient satisfaction.
- The Ryan White team expanded services for people living with HIV (PLWH) by adding more medical case managers and outreach specialists and hiring the division's first Community Liaison, enhancing access and support for this population.

RESEARCH



New studies from **Eric Meissner, M.D., Ph.D.**, and the **HIV clinical care and research team** showed that home administration of long-acting cabotegravir and rilpivirine (CAB + RPV LA) for HIV treatment, is safe, effective, and associated with high patient satisfaction. Their findings were published in *Clinical Infectious Diseases* and *Open Forum Infectious Diseases*. The team also participated in the landmark clinical trial of twice-

yearly Lenacapavir for HIV prevention, which demonstrated a 96% reduction in HIV infections and showed superiority to daily Truvada.

EDUCATION



Led by **Courtney Harris, M.D.**, the ID education team developed several high-yield medical student learning modules to enhance teaching quality and innovation. The division also launched **South Carolina's only Transplant ID (TID) Fellowship**, one of just 20 nationwide, welcoming its inaugural fellow, **Davisha Sharma, M.D.**, in 2024.

INNOVATIONS

The Antimicrobial Stewardship Team, in collaboration with pediatrics, received OneMUSC grant funding to create the Firstline Clinical Decisions app, designed to combat antimicrobial resistance with an accessible catalog of treatment protocols.



BY THE NUMBERS

7,700+

Outpatient Encounters

10,500+

Inpatient Encounters

1,500+

Tele-ID Consults

\$11.9M

Active Research Funding (FY24)

NEPHROLOGY

*The Division of Nephrology has a distinguished legacy in advancing the understanding and treatment of kidney disease. Under the guidance of Division Director **Josh Lipschutz, M.D.**, and newly appointed Clinical Director **Ruth Campbell, M.D.**, the past year has been marked by significant accomplishments in education, research, and clinical care. With 29 faculty members recognized for their national prominence, the division continues to excel in providing top-tier patient care, groundbreaking research, and comprehensive training for future nephrologists.*

Professor and Division Director
Joshua Lipschutz, M.D.

Distinguished University Professor
David Ploth, M.D.

Professors

Milos Budisavljevic, M.D.
Ruth Campbell, M.D., MSPH
Michael Casey, M.D.
Tibor Fulop, M.D., Ph.D.
Roberto Pisoni, M.D.
Maria Aurora Posadas Salas, M.D.
Michael Ullian, M.D.

Clinical Professors

Prince Anand, M.D.
Zipporah Krishnasami, M.D.
Michael Madaio, M.D.
Rachel Sturdivant, M.D.
Harold Szerlip, M.D.

Associate Professors

Natalie Freidin, M.D.
Blaithin McMahon, Ph.D., MBBCh
Oleg Palygin, Ph.D.
Karim Soliman, Ph.D., MBBCh

Clinical Associate Professor

Anand Achanti, M.D.

Research Associate Professor

Wayne Fitzgibbon, Ph.D.

Assistant Professors

Kamal Abdelkader, M.D., Ph.D. (FY25 Recruit)
Zeeshan Azeem, M.D.
Ahmed Daoud, M.D., Ph.D.
Waleed Elsheikh-Mohammed, M.D.
Megan Goff, D.O.
Genta Uehara, M.D.
Sakshi Vaishnav, M.D.
Justin Van Beusecum, Ph.D.
Xiaofeng Zuo, Ph.D.

NEPHROLOGY HIGHLIGHTS



Natalie Freidin, M.D., received MUSC's prestigious Teaching Excellence Award: Educator Lecturer for her impactful contributions to lifelong learning, innovative teaching, and leadership in clinical education. Her initiatives have advanced educational programs, reduced clinician burnout, and improved patient care. Additionally, she launched a Hypertension Clinic in West Ashley, furthering specialty care, enhancing education, and optimizing patient outcomes.

ADVANCES IN CLINICAL CARE

A team of 13 general nephrologists and six advanced practice providers (APPs) deliver care across MUSC's Ashley River Tower, University Hospital, and the Ralph H. Johnson VA Medical Center. Outpatient nephrology services were provided to over 25,340 patients across six clinic locations, representing a 10.6% increase from the previous year. Additionally, division faculty manage seven dialysis units in partnership with Dialysis Clinic Inc. (DCI), ensuring high-quality care for approximately 325 chronic dialysis patients.



The Kidney Transplant Program, led by Transplant Nephrology Section Chief **Mike Casey, M.D.**, (left) has grown significantly, with over **380 transplants** conducted in Charleston last year. The transplant team also celebrated the milestone of **201 transplants at MUSC Lancaster** under the leadership of Transplant Director **Prince Anand, M.D.**, achieved in just 30 months.

RESEARCH

MUSC Nephrology faculty are deeply committed to research aimed at improving treatment and prevention strategies for kidney disease. In FY24, the division secured a new federal funding and 11 non-competing grants were renewed.

Funding Highlights:



Josh Lipschutz, M.D., received a four-year extension of his VA Merit grant entitled, "The Exocyst in Ciliogenesis and Acute Kidney Injury."



Oleg Palygin, Ph.D., received a R01 grant entitled, "Role of basolateral K channels in renal salt handling and BP control," NIDDK

EDUCATION

This year, **Natalie Freidin, M.D.**, was appointed as the new Program Director of the Nephrology Fellowship, which offers six first-year positions and is highly regarded for its comprehensive training. The program includes a total of 11 general nephrology fellows and one transplant nephrology fellow.



BY THE NUMBERS

25,340

Outpatient Encounters

386

Kidney Transplants

325

Chronic Dialysis Patients

\$2.5M

Research Expenditures

PULMONARY, CRITICAL CARE, ALLERGY AND SLEEP MEDICINE

Under the leadership of Dee Ford, M.D., MSCR, the Division of Pulmonary, Critical Care, Allergy, and Sleep Medicine at MUSC experienced substantial growth this past year. The division welcomed seven new faculty members in FY24 and has recruited eight more for FY25. It expanded training programs, increasing fellowship slots and launching an Interventional Pulmonology fellowship, while celebrating 40 years of the PCCM fellowship with a major alumni event. Renowned faculty continue to deliver exceptional clinical care and innovative research in pulmonary disease treatment.

Professor and Division Director Dee Ford, M.D., MSCR

Distinguished University Professors
Patrick Flume, M.D.
Gerard Silvestri, M.D., MS

Professors
Alice Boylan, M.D.
Jason Caldwell, D.O. (FY25 Recruit)
Andrew Goodwin, M.D.
John Huggins, M.D.
Chitra Lal, M.D.
Charlie Strange, M.D.
Nichole Tanner, M.D., MSCR
Timothy Whelan, M.D.

Clinical Professors
Luca Paoletti, M.D.
Richard Rissmiller, M.D.
Robert Smith, M.D. (FY25 Recruit)

Associate Professors
Rahul Argula, M.D., MPH
Rita Bakhru, M.D.
Tatsiana Beiko, M.D.
Anna Brady, M.D.
Christopher Gilbert, D.O.
Ennis James, M.D.
Young Lee, M.D. (FY25 Recruit)
Howard Li, M.D.

Clinical Associate Professor
Andrea Rinn, D.O.

Assistant Professors
George Carter, M.D.
Derlis Fleitas Sosa, M.D.
Adam Fox, M.D.
Marri Horvat, M.D., MS
Edward Kilb, M.D.
Rachana Krishna, M.D.
Jessica Lozier, M.D.

Assistant Professors (continued)
William McManigle, M.D.
Aravind Menon, M.D.
Christina Mingora, M.D.
Tejaswi Nadig, M.D. (FY25 Recruit)
Denise Sese, M.D.
Harrison Smith, M.D.
Michelle Spiegel, M.D.
Lauren Sullivan, M.D. (FY25 Recruit)
Charles Terry, M.D.

Clinical Assistant Professors
Hina Chaudhry, M.D. (FY25 Recruit)
Luke Domaleski, M.D., MA (FY25 Recruit)
Abigail Dy, M.D.
Travis Ferguson, M.D.
James Sincebaugh, M.D.

PULMONARY, CRITICAL CARE, ALLERGY AND SLEEP MEDICINE HIGHLIGHTS



Patrick Flume, M.D., was honored with the prestigious 2024 Impact Award by the Cystic Fibrosis Foundation at its annual Breath of Life Celebration in February 2024. Above: Dr. Flume (middle) and the MUSC cystic fibrosis team. Candice Adelle Photography.

ADVANCES IN PATIENT CARE

- Recruited a new telemedicine-only sleep medicine physician, **Marri Horvat, M.D., MS**, to expand access to care.
- The division **doubled the size of its lung transplant faculty** to better meet the needs for South Carolina.
- Opened a **new, 18-bed Specialty Medical ICU** to better serve organ donors in South Carolina and liver transplant patients.

RESEARCH



Adam Fox, M.D., received the American Cancer Society's Clinician Scientist Career Development grant and a CHEST Quality Improvement grant.



Aravind Menon, M.D., received the CHEST Foundation Research Grant in Pulmonary Medicine.



Carol Feghali-Bostwick, Ph.D., (PI), led the successful renewal the division's NIH-funded Pulmonary Focused Foundations in Innovations and Scholarship (PUFFINS) T-32 Training Grant for five years.



Charles Terry, M.D., received a SCTR K12 Award for his project "Prospective Identification and Characterization of ARDS Using Computational Phenotypes."

EDUCATION

Fellowship Program Growth: The division has expanded its **Pulmonary and Critical Care Fellowship** with **three additional funded slots** (supporting 18 fellows annually) and the **Sleep Medicine Fellowship** program received **one additional allotment** to support two fellows annually. Additionally, the division launched a one-year **ACGME Interventional Pulmonology fellowship**, led by **Christopher R. Gilbert, D.O., MS, FCCP**, which will welcome its first fellow in FY25.



BY THE NUMBERS

43,396

Outpatient Encounters

4,714

New Patient Visits

18

Lung Transplants

231

Active Clinical Trials

\$18.1M

Total Research Funding

RHEUMATOLOGY AND IMMUNOLOGY

Under the leadership of Jim Oates, M.D., the Division of Rheumatology and Immunology at MUSC has continued its unprecedented growth, welcoming new faculty members Drs. Samantha Minkin, Jennifer Schmidt, and Ludivine Renaud in FY24. Celebrating 50 years of clinical and academic achievements, the division has marked milestones in scleroderma and lupus research, established a vasculitis center, and created impactful outreach programs for underserved populations, including the Gullah community. The division now features 14 clinical faculty specializing in scleroderma, lupus, vasculitis, reproductive health, and telehealth, alongside eight basic science faculty. With substantial research funding and a global network of over 100 alumni, it has made significant contributions to clinical trials and collaborative research. The division honored its legacy with a special continuing education event attended by over 60 trainees, faculty, and staff, reflecting on five decades of excellence.

Professor and Division Director
Jim Oates, M.D.

Distinguished University Professors
Carol Feghali-Bostwick, Ph.D.
Gary Gilkeson, M.D.
Richard Silver, M.D.

Professors
Faye Hant, D.O., MSCR
Stanley Hoffman, Ph.D.
Diane Kamen, M.D., MSCR
Tamara Nowling, Ph.D.
Betty Tsao, Ph.D.

Associate Professors
Galina Bogatkevich, M.D., Ph.D.
Melissa Cunningham, M.D.
Kathleen Maksimowicz Mckinnon, D.O.

Assistant Professors
DeAnna Baker Frost, M.D., Ph.D.
Jessica English M.D., MSCR (FY25 Recruit)
Samantha Minkin, M.D.
Jennifer Schmidt, M.D.
Katherine Silver, M.D.
Celine Ward, M.D.

Clinical Assistant Professors
Sean Carter, M.D. (FY25 Recruit)
Grace Suppa, D.O.

Research Instructor
Ludivine Renaud, Ph.D.

RHEUMATOLOGY & IMMUNOLOGY HIGHLIGHTS



CELEBRATING 50 YEARS OF CLINICAL & ACADEMIC EXCELLENCE

In 2024, the Division of Rheumatology and Immunology celebrated its 50th anniversary with a special continuing medical education event attended by more than 60 people, including past and present trainees, faculty and staff.

ADVANCES IN CLINICAL CARE

- The division launched a new **Reproductive Health in Autoimmunity Clinic**, led by **Jessica English, M.D.**, to provide specialized care, including contraceptive counseling, pregnancy planning, and management of rheumatic conditions during pregnancy.
- The division has introduced new **referral triage process** to improve patient access by prioritizing urgent cases and directing non-urgent conditions to appropriate providers.
- **Grace Suppa, D.O.**, and **Jennifer Schmidt, M.D.**, are leading the division's new remote telemonitoring program, launching in FY25 in collaboration with the MUSC Center for Telehealth, to improve disease control and patient experience for individuals with recently diagnosed or poorly controlled rheumatoid arthritis.



RESEARCH HIGHLIGHTS

- **Ludivine Renaud, Ph.D.**, received an NIH-K01 award for her project "Epigenetic Regulation of KLF4 in SSc-associated Lung Fibrosis." Dr. Renaud's application received a perfect score of 10.
- **Jessica English, M.D.**, received the 2024 Gary S. Gilkeson Career Development Award, Lupus Foundation of America.
- **Gary Gilkeson, M.D. (PI)** led the successful renewal of the NIH-funded **T32 Training Grant** in Inflammatory and Fibrosing Diseases.
- **Jim Oates, M.D. (PI)** led the successful renewal of the NIH-funded **P30 grant** "Improving Minority Health in Rheumatic Diseases (IMHeaRD)", the foundation of the **Core Center for Clinical Research (CCCR)**, which provides unique resources to advance clinical and translational research improving health outcomes in rheumatic diseases.
- **Patent: Galina Bogatkevich, M.D., Ph.D.**, "Alignate-based delivery of M10 peptide for patients with fibrosing diseases," MUSC-FRD File No. P25005

BY THE NUMBERS

16,027

Outpatient Encounters

3,060

New Patient Visits

6

ACGME Fellows

\$7.1M

New Research Funding Received (FY24)

FACULTY AWARDS & DISTINCTIONS



FY24 was an exceptional year for the Department of Medicine faculty. Many members received recognition at local, national, and global levels for their innovative contributions to medicine. Additionally, several members assumed new leadership roles in the department, university, and health system.



D. Baker Frost



K. Becker



E. Brownfield



R. Campbell



M. Cornier



P. Coyne



M. Cunningham



T. Cuoco



K. Davis



B. Djulbegovic



C. Feghali-Bostwick



J. Fernandes



P. Flume



N. Freidin



M. Heincelman



B. Hess



B. Hoffman



S. Hoffman

- **DeAnna Baker Frost, M.D., Ph.D.**, 2023 MUSC Developing Scholar - Applied/Clinical Science Award; appointed Associate Director of MUSC's M.D./Ph.D. Program
- **Kevin Becker, M.D.**, Director of Oncology Infusion and Ambulatory Services
- **Elisha Brownfield, M.D.**, 2023 Distinguished Faculty Service Award
- **Ruth Campbell, M.D., MSPH**, Dialysis Clinic, Inc. (DCI) Nephrology Endowed Chair
- **Marc-Andre Cornier, M.D.**, Vice President of the Obesity Society
- **Pat Coyne, MSN, ACNS-BC**, 2023 Hastings Center Cunniff-Dixon Nursing Leadership Award
- **Melissa Cunningham, M.D., Ph.D.**, College of Medicine Faculty Council; Fellow of the Southern Society for Clinical Investigation
- **Theresa Cuoco, M.D.**, Associate Clerkship Director
- **Kimberly Davis, M.D.**, Division Director, General Internal Medicine; Allen H. Johnson Endowed Chair
- **Benjamin Djulbegovic, M.D.**, Section Chief of Benign Hematology; Director, Hematology Stewardship Program
- **Carol Feghali-Bostwick, Ph.D.**, Fellow of the National Academy of Inventors; American Thoracic Society Recognition Award for Scientific Accomplishments; Lifetime Achievement Award at National Scleroderma Foundation Conference
- **Jyotika Fernandes, M.D.**, Wendy and Keith S. Wellin Distinguished Endowed Chair in Endocrinology
- **Patrick Flume, M.D.**, Cystic Fibrosis Foundation Impact Award
- **Natalie Freidin, M.D.**, 2024 Teaching Excellence Award: Educator Lecturer
- **Marc Heincelman, M.D., MPH**, Division Director, Hospital Medicine; Assistant Dean for Career Advising
- **Brian Hess, M.D.**, \$3.2M NCI grant; Technology Breakthrough Award from the Zucker Institute
- **Brenda Hoffman, M.D.**, 2024 Distinguished Faculty Service Award; Founding Mother in Endoscopy Award; American College of Gastroenterology Governor for South Carolina
- **Stanley Hoffman, Ph.D.**, Annual Admiral Albert J. Baciocco Innovator of the Year Award

FACULTY AWARDS & DISTINCTIONS



- **Keri Holmes-Maybank, M.D.**, Paul B. Underwood Chapter of the Gold Humanism Honor Society
- **Shantae Jenkins, M.D., MSCR**, Medical Director, Rena Grant Sickle Cell Medical Home
- **Edward Kilb, M.D.**, Assistant Dean for Graduate Medical Education
- **David Koch, M.D.**, Section Chief for Hepatology
- **Zip Krishnasami, M.D.**, Population Health Provider Partner Award
- **Aundrea Loftley, M.D.**, Outstanding Service Award in Medicine, College of Charleston
- **Eric Palecek, M.D.**, Internal Medicine Residency Associate Program Director
- **Oleg Palygin, Ph.D.**, KCVD Mid-Career Achievement Award
- **Cassandra Salgado, M.D., MS**, J. Michael Kilby, M.D. Endowed Chair in Infectious Diseases; MUSC Advancement of Women Faculty Award; Vice Chair for Wellness, Department of Medicine
- **Andrew Schreiner, M.D., MSCR**, Section Head for Health Systems Research and Policy
- **Skip Schumann, M.D., MSCR**, University Internal Medicine Medical Director; Associate CMP, MUSC Physicians
- **Pranav Shah, M.D.**, Golden Apple Award - Clinical Preceptor Excellence in Teaching Award; Faculty Award
- **Abi Sivaparagasam, M.D.**, Director of Medical Oncology at Hollings Cancer Center
- **Richard Silver, M.D.**, MUSC ARROW Advancement of Women Faculty Award
- **Garth Swanson, M.D.**, Division Director, Gastroenterology and Hepatology; Fellow for the Southern Society for Clinical Investigation
- **Harold Szerlip, M.D.**, Master of the American College of Physicians
- **Nichole Tanner, M.D., MSCR**, 2023 MUSC Population Health Award
- **Ryan Tedford, M.D.**, Deputy editor for the Journal of Heart and Lung Transplantation
- **Meghan Thomas, M.D., MPH, MS**, 2023 MUSC Teaching Excellence - Developing Teacher Award; Clerkship Director
- **Justin Van Beusecum, Ph.D.**, Endothelin Young Investigator Award
- **Thomas Werth, M.D.**, Medical Director for Liver Transplantation



K. Holmes-Maybank



S. Jenkins



E. Kilb



D. Koch



Z. Krishnasami



A. Loftley



E. Palecek



O. Palygin



C. Salgado



A. Schreiner



S. Schumann



P. Shah



A. Siva



R. Silver



G. Swanson



H. Szerlip



N. Tanner



R. Tedford



M. Thomas



J. Van Beusecum



T. Werth



2024 DEPARTMENT OF MEDICINE AWARDS CEREMONY



Each year, faculty, staff, and trainees are nominated for the Department of Medicine annual awards in recognition of their outstanding contributions to their divisions, the department, the College of Medicine, and MUSC.

These honorees were recognized for their achievements in education, patient care, and research on **June 6** at the **2024 Department of Medicine Awards Ceremony**. After three years of virtual events, the return to an in-person gathering made this year's celebration especially meaningful, with over 100 attendees joining in person and more than 50 cheering virtually via Zoom.

To see the **Full List of Honorees**, Scan the QR code below or visit <https://bit.ly/AwardsDay24>



Department of Medicine

2024 RESEARCH SYMPOSIUM

On **April 19**, the Department of Medicine held its 17th Annual Research Symposium. A total of 46 abstracts were presented at this year's event, including three from junior faculty, 22 from residents/fellows, three from graduate students, four from postdoctoral scholars, six from staff scientists or research specialists and eight from medical students.

Of those abstracts, four were selected for oral presentation awards. Additionally, our keynote speaker, **Garth Swanson, M.D., MS**, gave a wonderful presentation titled "It's About Time: Bringing Circadian Rhythms from the Bench to Bedside in Inflammatory Bowel Disease."

Oral Abstract Presenters



Hayden Braun
Medical Student, MUSC College of Medicine

Category: Medical Student

Mentor: Valerian Fernandes, M.D.

Title: Outcomes for Different ST-Elevation Myocardial Infarction Activation Criteria in the Pre-COVID vs Post-COVID Era



Helen (Jensie) Burton, M.D.
Infectious Diseases Fellow, Co-Chief Fellow

Category: Resident/Fellow

Mentor: Krutika Hornback, PharmD

Title: Limited Impact of Streptococcus pneumoniae Urinary Antigen Testing



Laura Novotny, Ph.D.
Staff Scientist, Division of Infectious Diseases

Category: Staff Scientist, Research Specialist, Program Coordinator

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

Title: Expression of interferon lambda receptor-1 isoforms shapes the hepatocellular response to interferon lambda

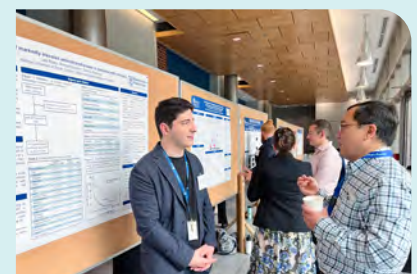
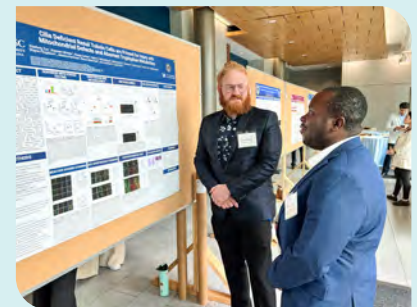


Michelle Spiegel, M.D.
Assistant Professor, Division of Pulmonary & Critical Care

Category: Junior Faculty

Mentor: Andrew Goodwin, M.D., MSCR

Title: Development and Implementation of Electronic Health Record-embedded Clinical Decision Support to Reduce Central Line-associated Bloodstream Infections



To see the Full List of this year's winners, Scan the QR code or visit <https://bit.ly/ResearchWinners24>



PHILANTHROPY HIGHLIGHTS



HEART AND VASCULAR CENTER

Event Spotlight: *An Affair of the Heart Gala*

The inaugural *An Affair of the Heart* gala, hosted by the MUSC Health Heart & Vascular Center (HVC) at The Charleston Place, was a resounding success, raising over \$1 million through generous pledges, gifts-in-kind, and outright donations. Guests were captivated by an exciting live auction and deeply moved by a patient's inspiring journey, illustrating the life-changing impact of HVC's work. The evening highlighted the expertise and achievements of HVC's physicians, whose research, treatments, and care are redefining cardiovascular health. Thanks to the generosity of our supporters, these funds will drive advancements in education, research, and patient care—transforming lives and shaping the future of heart and vascular medicine.



Photos from the inaugural An Affair of the Heart Gala, hosted by the MUSC Health Heart & Vascular Center. Photography by Zheng Chia



PHILANTHROPY

Andrew Schreiner, M.D., Honored with the Jay Brzezinski, M.D., General Internal Medicine Endowed Chair

Jay Brzezinski, M.D., and Andrew Schreiner, M.D., MSCR

Thanks to the generous support of many loyal donors including Charlie and Kay Wendell, the Department of Medicine reached its goal to fully fund the **Jay Brzezinski, M.D., General Internal Medicine (GIM) Endowed Chair** and appointed **Andrew Schreiner, M.D., MSCR**, as the inaugural chair holder.

Endowed Chairs are prestigious academic honors recognizing exceptional contributions to teaching, research, and service. The Jay Brzezinski GIM Chair honors Dr. Brzezinski's legacy of clinical and educational excellence.

Dr. Schreiner, a distinguished educator and mentor, has advanced MUSC's academic mission through innovative programs in ambulatory care, personal finance for medical residents, and scholarship skills. He excels in patient care and maintains an active clinical practice. As a researcher, Dr. Schreiner leads multiple studies with significant funding, including projects from the VA and NIDDK. He also mentors for the National Cancer Institute's K08 award.

This appointment acknowledges Dr. Schreiner's leadership in education and clinical care, empowering him to further MUSC's mission of academic excellence and innovation. The Department of Medicine thanks the donors whose generosity made this endowed chair possible.

Hollings Celebrates New Dedicated Outpatient Bone Marrow Transplant Clinic

On August 2, MUSC leaders, former patients, donors and the blood cancers team gathered to **celebrate the ribbon cutting** of the new outpatient **Robert K. Stuart, M.D., Blood and Marrow Transplant Center** in Ashley River Tower on MUSC's peninsular Charleston campus. The clinic is named in honor of MUSC Hollings Cancer Center researcher and physician Robert Stuart, M.D., who built the oncology program at MUSC that eventually became MUSC Hollings Cancer Center and retired in 2021.

The new outpatient clinic includes 16 infusion chairs, including an open day room; semi-private rooms; private rooms for patients with low white blood cells, which makes it harder for them to fight infections; a blood draw area so that patients can get lab work done on-site; and two negative pressure rooms to care for patients with an airborne illness.

The Blood and Marrow Transplant Program is the only FACT-accredited combined adult and pediatric BMT program in South Carolina. In June 2024, the BMT team celebrated a big milestone – 3,000 patients treated since the program offered the first transplants in South Carolina in 1987.



Bone Marrow Transplant Center Ribbon Cutting Ceremony

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Changing What's Possible

Department of Medicine
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Charleston, SC 29425-5500

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