

2023

ANNUAL REPORT



BOSTON MEDICAL CENTER
BOSTON UNIVERSITY
CHOBANIAN & AVEDISIAN SCHOOL OF MEDICINE
DEPARTMENT OF MEDICINE

FACULTY

- **400+** full-time faculty members
- **57%** of faculty are women



CLINICAL

Clinical volume **increased to 959,000** wRVUs, including outpatient **volume growth to over 360,000 visits**, as we see a sustained increase in demand for services post-pandemic

EDUCATION

- There were **49** publications by senior residents in AY23
- **95%** of Medicine Clerkship Students rate the clerkship educational experience good to excellent

RESEARCH

In AY23, BU Chobanian & Avedisian School of Medicine had \$140,275,335 in new research awards compared to \$112,036,985 in the previous year

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Dear Colleagues and Friends:



It is a pleasure to welcome you to our new Annual Report that highlights the accomplishments of the Department of Medicine at Boston University Chobanian & Avedisian School of Medicine and Boston Medical Center. The Department remains dedicated to its missions, which are centered around clinical care, diversity and health equity, biomedical research, and education.

In this report you will find an overview of activities that span the 2023 academic year. In particular, you will find a detailed look at our Sections within the Department and a look at some of our unique programs. The report includes some metrics, awards, and leadership biographies. Our Department has emerged from the middle of the Covid pandemic with growth of our clinical and research programs. We celebrate our many accomplishments that are detailed within and look forward to a bright future. While we undoubtedly will face many additional challenges going forward to better serve our patients and communities, the strength of the faculty, staff, and trainees in the Department of Medicine has allowed us to continue to move forward and to succeed. Overtime, this annual report will serve to highlight our accomplishments and share them with our colleagues on campus and outside.

A handwritten signature in black ink, appearing to read 'A. Hollenberg'.

Anthony Hollenberg, MD
John Wade Professor
Chair and Physician-in-Chief



LEADERSHIP

ANTHONY HOLLENBERG, MD

CHAIR OF MEDICINE



Dr. Anthony Hollenberg serves as Physician-in-Chief at Boston Medical Center and the John Wade Professor and Chair of the Department of Medicine at Boston University Chobanian & Avedisian School of Medicine. Dr. Hollenberg received his M.D. from the University of Calgary in Canada in 1986. He completed his residency at the Beth Israel Hospital in 1989. In 1993, Dr. Hollenberg completed a fellowship in Endocrinology, Diabetes & Metabolism at Massachusetts General Hospital. As a specialist in Endocrinology, Dr. Hollenberg's work focuses on thyroid disorders.

EMELIA J. BENJAMIN, MD, SCM

VICE CHAIR, FACULTY DEVELOPMENT & DIVERSITY



Emelia J. Benjamin, MD, ScM, FACC, FAHA, serves as the Vice Chair of Faculty Development & Diversity and is a Robert Dawson Evans Distinguished Professor of Medicine. She received an Epidemiology ScM at Harvard School of Public Health. Additionally, she is a Professor of Epidemiology and is a cardiologist at Boston Medical Center.

RANIA OMAR BURKE, MPH, DRPH

VICE CHAIR, FINANCE & ADMINISTRATION



Rania Omar Burke, MPH, DrPH serves as the Vice Chair of Finance and Administration for the Department of Medicine. In this key leadership role, Rania directs administrative and business activities within the department, including finance, accounting, research administration, clinical operations, capital planning, academic appointments, and education. Rania works collaboratively with the Chair, Vice Chairs, Section Chiefs, BUMG, Chobanian & Avedisian School of Medicine, and BMC leadership.



ALICE JACOBS, MD
VICE CHAIR, CLINICAL AFFAIRS

Alice K. Jacobs, MD, FACC, FAHA, MSCAI served as the Vice Chair of Clinical Affairs until July 2023. She served as the Director of the Cardiac Catheterization Laboratories & Interventional Cardiology for 20 years until 2011. Her major research interest is in coronary revascularization strategies and sex-based difference in ischemic heart disease.



JAY ORLANDER, MD
VICE CHAIR, VETERAN AFFAIRS

Jay D. Orlander, MD, MPH serves as Vice Chair for Veteran Affairs and is a Professor of Medicine. He received his BA from Northwestern University and his MD from New York University School of Medicine. He did his clinical training at Boston City Hospital and a GIM Fellowship, obtaining an MPH from Boston University School of Public Health during that time. He is a practicing General Internist Educator and serves as Associate Chief of the Medical Service at the VA Boston Healthcare System.



DAVID SALANT, MD
VICE CHAIR, RESEARCH

David Salant, MD serves as the Vice Chair for Research and is a Professor of Medicine. He received his MD from University of the Witwatersrand in South Africa and completed his clinical training at Johannesburg General Hospital. He received his research training at Boston University with Dr. William G. Couser and joined BU's nephrology faculty in 1979. Dr. Salant is an internationally renowned physician-scientist and an acclaimed educator.



JEFFREY SAMET, MD, MA, MPH

VICE CHAIR, PUBLIC HEALTH

Jeffrey Samet, MD, serves as the Vice Chair of Public Health. He is the John Noble, MD Professor in General Internal Medicine and Professor of Public Health at Boston University. He is a practicing primary care physician at Boston Medical Center, with expertise treating substance use disorders in general healthcare settings and researching the impact of substance use on HIV infection.



GOPAL YADAVALLI, MD

VICE CHAIR, EDUCATION

Gopal Yadavalli, MD, serves as the Vice Chair of Education and previously served as the Program Director for the Internal Medicine Residency in the Department of Medicine. Dr. Yadavalli completed medical school at Thomas Jefferson University, pursued a residency in Internal Medicine, followed by a fellowship in Infectious Diseases from Case Western Reserve University. His clinical interests are in inpatient medicine, HIV care, and general infectious diseases.

A hand holding a pen is positioned over a document containing a table of commodity prices. The table has columns for 'Commodity No.', 'Wholesale Price', 'Retail Price', and 'Packaging'. The background is a blue gradient with a faint grid pattern.

FEATURED STORIES

DEPARTMENT OF MEDICINE

Commodity No.	Wholesale Price	Retail Price	Packaging
1-103-0298	21	27	ONLINE PD
1-103-0299	21	27	ONLINE PD
1-103-0271	25	27	PDR
1-103-0292	21	27	PD
1-103-0261	21	27	KRC
1-103-0256	21	27	KRC
1-103-0222	45	27	28
1-103-0300	50	27	23
1-103-0269	27	27	23
1-103-0276	27	27	50
1-103-0294	27	27	23

Affinity Research Collaboratives



The Evans Center for Interdisciplinary Biomedical Research (ECIBR) and the Affinity Research Collaboratives (ARC) continues its trajectory to successful innovation. The ARCs is was founded and is led by Katya Ravid, Barbara Corkey Professor of Medicine. At platform level, Dr. Ravid recently developed a new Biotechnology Innovation ARC (BIT-ARC), in collaboration with the Office of Technology Development, BU Clinical & Translational Science Institute, and Department of Medicine Office of Associate Chair for Research. The program seeks to develop new technology relevant to biomedicine. Of seven applications received in 2023, three BIT-ARCs were selected as finalists, of which 1-2 will be funded. Further, two new ARCs were selected to promote translational research: Tuberculosis Interdisciplinary Approach to Research Alliance (TIARA) ARC and Musculoskeletal Health (MHet) ARC. These ARCS are joining six active ARC programs focused on various lines of innovative biomedical research. The program is led by 71 core faculty, tens more as affiliates, and with the participation of 144 pre and post docs.

Through 2023, these ARCs succeeded in generating 350 collaborative publications, 85 collaborative grants (out of 179 grant applications; nearly 48% success rate) totaling \$82,319,015, and 232 presentations in national and international conferences. Finally, the ECIBR continues to facilitate the assembly of researchers within a newly established Researchers Forum, for which Drs. Katya Ravid and David Salant serve as mentors. New plans are underway for developing a yearly Department of Medicine Research Retreat.

Internal Medicine Residency



The Internal Medicine Residency Program's goal is to train and educate physicians who excel in patient care, education, and discovery. Paramount to everything we do is a focus on providing excellent care without exception to the patients at Boston Medical Center. Our 146 residents serve as the primary clinicians providing care in a variety of settings, including primary care clinics, inpatient wards, and intensive care units at Boston Medical Center, The West Roxbury VA, and multiple community health centers. In addition to providing exceptional clinical care, our residents are engaged in scholarly pursuits across education and research, presenting their work at multiple local, regional, and national conferences over the last year. Many of our residents participate in our six pathways, which provide individualized additional training in areas of expertise and distinction such as medical education and health equity. Our Primary Care track continues to be a shining star, far outpacing most peer programs in its graduation rate of primary care residents choosing primary care careers.

The 2022-2023 academic year has been a year of growth and transition in personnel in the residency office. Over the last 12 years, under the leadership of Dr. Gopal Yadavalli, the residency program has transformed into a premier training program, producing leaders in clinical medicine, education, and biomedical research. As of AY 2023-2024, Dr. Yadavalli will be transitioning into an expanded role as the Department of Medicine Vice Chair for Education where he will oversee fellow, resident, and student education and work on faculty development for clinician educators. Dr. Craig Noronha will serve as the Interim Program Director while a national search for Dr. Yadavalli's replacement is ongoing. Dr. James Hudspeth is also ending his tenure in the residency office but will continue to be involved in residency education, overseeing inpatient operations and leading the

Global Health Equity pathway. In addition to the current associate program directors Dr. Catherine Rich, Dr. Katherine Modzelewski and Dr. Alex Bachorik, we are excited to announce the promotion of Dr. Tom Ostrander to Associate Program Director, Dr. Margot Rogers's selection as an Associate Program Director, and Dr. Alexandra Pipilas's selection as Assistant Program Director.

We proudly celebrated the graduation of 45 senior residents in June. 35 of our current or recent graduates matched into many of the most competitive fellowship programs nationally. 15 of our graduates entered into hospitalist or primary care positions, most choosing major academic medical centers and those providing care to underserved populations.

Finally, we welcomed a diverse class of 49 new interns in July 2023, including eight Chobanian & Avedisian School of Medicine students. We have been engaged in efforts to improve recruitment of a diverse intern class that reflects the diversity of our patient population, and we are proud that 20% of our incoming intern class self-identify as under-represented in medicine (UiM). Applicants from prestigious medical schools are attracted to our mission as a safety net institution, strong and varied clinical training, diverse patient population, our focus on education, and opportunities to engage in innovative research.

The Center For Excellence in Sickle Cell Disease



The Center for Excellence in Sickle Cell Disease (SCD) at Boston University and Boston Medical Center, the largest treatment center in New England, strives to deliver the highest quality clinical care while advancing research and education. Under the directorship of Dr. Elizabeth Klings, the center has 14 core faculty members, three post-doctoral fellows, and nine collaborating members. During AY23, in partnership with BMC Development, we raised over \$1.2 million to support our programs and patients including establishment of the Hale Foundation endowment fund.

Dr. Klings, an international leader in the pulmonary complications of SCD, is a member of the Medical and Research Advisory Council for the Sickle Cell Disease Association of America and was recently named the Co-Chair of the Research/Mentoring Committee of the New England Sickle Cell Consortium. Her clinical opinion is sought out on challenging SCD patients with cardiopulmonary complications throughout the US.

The adult clinical program, under the direction of Dr. Jean-Antoine Ribeil, provides high quality care to approximately 400 adults. His goal of improving lifelong management of SCD patients includes expanding our transition program for young adults. In AY23, we invited the international experts in transition, Drs. Jane Hankins from St. Jude Children's Research Hospital and Mariane de Montalembert from the Universite de Paris to BMC.

The adult clinical team consists of Charlene Sylvestre, NP and Drs. Ribeil and Lillian McMahon. In AY23, Dr. McMahon received the BMC

“Lifetime Nursing Achievement Award” for her compassionate care, advocacy, and participation in research. Charlene, a national leader in SCD nursing education, developed the SCD Boot Camp training with nurses from across the US. Her national roles include: 1) Panelist at the International Association of SCD Nurses and Professional Associates Conference; 2) Keynote speaker at the Foundation for SCD Research Nursing Conference; and 3) Instructor/coordinator at the SCD Nursing Intensive in Brazil this fall.

We are leading the nation with innovative clinical programs targeting the adult population. New programs launched include a one year advanced adult SCD fellowship to expand the qualified workforce (one of two in the US). Our first fellow, Dr. Galia Pollock, joined us in October 2022 after completing Hematology training in Canada. On the inpatient service, we implemented nocturnal non-invasive ventilation for the prevention of acute chest syndrome. The outpatient program features a unique multi-disciplinary clinic with Hematology, Primary Care, Pulmonary, Nephrology, and Behavioral Health evaluating patients twice monthly. We utilize our Infusion Center for provision of intravenous and transfusion therapies, clinical trials, and treatment of uncomplicated vaso-occlusive crises.

We are excited by the promise of gene therapy as a potential cure for Sickle Cell Disease. Dr. Ribeil, an international expert in gene therapy for hemoglobinopathies, helped to launch the clinical trial of one therapy currently under review at the FDA. In AY23, he presented this work locally and internationally in France and Bahrain. He is leading the BMC team that will become one of the first commercial hemoglobinopathy gene therapy centers in the US in AY24. The center’s clinical and translational research program continues to grow. Drs. Klings and Ribeil lead the clinical trials program with six open interventional trials and registry studies. They plans to add two more studies shortly. Dr. Klings is the principal investigator for the MA Sickle Cell Clinical Trials Unit (MASCOT), a collaboration between BMC, Brigham and Women’s Hospital, and Boston Children’s Hospital in the American Society of Hematology (ASH) Clinical Trials Network. We are collaborating with the ASH Research Collaborative, The Sickle Cell Clinical Research and Intervention Program at St. Jude, and the Globin Regional Data and Discovery databases with the goal of using multi-center data to increase understanding of SCD and its complications.

Dr. Klings’ research interests include understanding the epidemiology and clinical outcomes of venous thromboembolism in SCD. She presented her research at the American Thoracic Society Conference and co-authored six publications in AY23. She established a new collaboration with Dr. Najibah Galadanci at University of Alabama to study the implementation

and clinical utility of a cardiopulmonary symptom screening tool for SCD adults (funded by the American Heart Association).

Dr. Shuaying Cui's lab identified the role the transcription factor PGC-1 α in activation of the fetal globin gene and investigated potential fetal hemoglobin inducing therapeutics. These data were published in the *British Journal of Hematology*. He received the Doris Duke SCD/Advancing Cure Award, the Wing Tat Lee Award, and a recently funded RO1. His trainees Dr. Yanan Sun and Eric Fu received the Cooley's Anemia Foundation research fellowship and the UROP Student Research Award.

Dr. Kim Vanuytsel started her independent research laboratory focused on using our SCD-specific induced pluripotent stem cell platform as a preclinical screening tool for drug discovery with the goal of treating patients with their own edited stem cells in the future.

Here at the Center for Excellence in SCD, our combined efforts work together, like parts of a complex machine, to form an entity that serves as a beacon of hope for patients while we maintain and extend our international reputation for excellence.

A person in a white lab coat is shown from the chest down, writing on a clipboard. The background is a solid blue color with a white horizontal band at the top and bottom. The text is centered in the blue area.

HONORS & AWARDS

DEPARTMENT OF MEDICINE

Honors & Awards

Evans Days

Annual Faculty Awards

Outstanding Citizenship Award

Frederick Ruberg, MD - Cardiovascular Medicine

Clinical Quality Improvement Award

Nicholas Bosch, MD, MSc – Pulmonary, Allergy, Sleep & Critical Care

Clinical Innovation Award

Pablo Buitron de la Vega, MD, MSc – General Internal Medicine

Junior Faculty Mentoring Award

Deepa Gopal, MD, MS – Cardiovascular Medicine

Excellence in Education Scholarship Mentoring Award

Lindsay Demers, MS, PhD – Geriatrics

Research Mentoring Award

Renda Wiener, MD, MPH – Pulmonary, Allergy, Sleep & Critical Care

Special Recognition Teaching Award

Ashish Upadhyay, MD – Nephrology

Clinical Excellence Award

Ramon Bonegio, MD – Nephrology

Faculty Diversity Award

Elizabeth Klings, MD – Pulmonary, Allergy, Sleep & Critical Care

Evans Clinician Designation

Ashvin Pande, MD – Cardiovascular Medicine

Christine Reardon, MD – Pulmonary, Allergy, Sleep & Critical Care

Michael York, MD – Rheumatology

Sandhya Rao, MD – General Internal Medicine

Evans Center/IBRO Outstanding Research Collaborator Award

David Sherr, MD – Environmental Health

Honors & Awards (Cont.)

Annual Staff Awards

David “Aaron” Freed Award

Jennifer Fosbroke – General Internal Medicine

Maria Antoinette Evans Award

Inel Ferrara – Hematology & Medical Oncology

Amanda Tran, MPH – Geriatrics

Evans Days Research Awards

Clinical Science Oral Presentation Awardees

Ioanna Yiannakou, RDC, MS, PhD Candidate – 1st Place

Samantha Siskind, MD – 2nd Place

Ross Okazaki – 3rd Place

Basic Research Oral Presentation Awardees

Kiloni Quiles – 1st Place

David Bean – 2nd Place

Fatima Rizvi, PhD – 3rd Place

Clinical Science Poster Awardees

Dylan Steiner – 1st Place

Najia Idress – 2nd Place

Divya Shankar, MD – 3rd Place

Basic Research Poster Awardees

Liang (Martin) Ma, MD, PhD Candidate – 1st Place

Anna McGregor – 2nd Place

Mehmed Taha Dinc, MD – 3rd Place

Visiting Professors

Wilkins Visiting Professor

William Kaelin, MD

2019 Nobel Prize Winner

Dana-Farber Cancer Institute

Sidney Farber Professor of Medicine

Harvard Medical School

Honors & Awards (Cont.)

Ingelfinger Visiting Professor

Kathleen Cooney, MD

George Barth Geller Distinguished Professor of Medicine

Chair - Department of Medicine

Duke University School of Medicine

STARDoM

The “STARDoM” Employee Recognition Program, sponsored by the Boston University Department of Medicine, seeks to recognize outstanding non-faculty employees who work in all areas, including administration, clinical care and research.

August Awardees

Casaundra Knight – Administrative Director (Hematology & Medical Oncology)

Alexis Parry – Administrative Coordinator (GIM)

July Awardees

Amanda Fitzpatrick – Project Coordinator (GIM)

Natasha Yancey – ASR (Hematology & Medical Oncology)

June Awardees

Donna Gibson – Administrative Director (Computational Biomedicine)

Minu Mohan – Clinical Research Coordinator (Gastroenterology)

May Awardees

Fowzia Abdi – Patient Care Coordinator (GIM)

Katherine Romain – Residency Program Coordinator (GME)

Sharon Tomlinson – Research Programs Manager (Rheumatology)

April Awardees

Laura Anastasi – Administrative Director (Geriatrics)

Guerline Andre – Nurse Practitioner (GIM)

Takiesha Brooks – Research Operations Coordinator (Central Research)

Dennis Chow – Director (Central Finance)

Jen Fosbroke – Senior Administrative Director (GIM)

Johana Ingles – Medical Assistant (5A)

Kiana Mahdaviyani – Program Manager (Hematology & Medical Oncology)

Kelsey Norman – Pharmacologist (Cardiology)

Emily Scarbo – Nurse Practitioner (Geriatrics)

Sarah Pinchinat – Fellowship Coordinator (Gastroenterology)

Honors & Awards (Cont.)

Faculty Promotions

Professor

Tracy Battaglia, MD, MPH
Elizabeth Klings, MD
Lynn Moore, DSc
Gustavo Mostoslavsky, MD, PhD

Clinical Professor

David Lichtenstein, MD

Associate Professor

Sabrina Assoumou, MD, MPH
Sarah Bagley, MD
Joshua Campbell, PhD
Naomi Ko, MD, MPH, AM
Vijaya Kolachalama, PhD, FAHA
Giovanni Ligresti, PhD
Karsten Lunze, MD, MPH, DrPH, FACPM, FAAP
Seppo Rinne, MD, PhD

Clinical Associate Professor

Uri Avissar, MD
Ramon Bonegio, MD
Daniel Chen, MD, MSc
Ryan Chippendale, MD
James Hudspeth, MD, FACP
Ansu Noronha, MD
Christine Pace, MD
Christopher Shanahan, MD, MPH, FACP
Lauren Stern, MD
Horst Weber, MD
Megan Young, MD

Assistant Professor

Dylan Clemens, MS, PA-C
Tracy Joshi, CNP
Emily Mann, MD
Ayse Sahin Efe, MD
Justin Lui, MD, MS



SECTION PROFILES

DEPARTMENT OF MEDICINE



Biomedical Genetics



Lindsay Farrer, PhD

Chief, Section of Biomedical Genetics

Distinguished Professor of Genetics

Professor of Medicine

Faculty, staff, and trainees in the Biomedical Genetics Section have been highly successful in their application of computational and molecular approaches to identify genes and genetic mechanisms underlying many complex diseases affecting children, adults, and the elderly.

Current NIH-funded research areas within the Genetics section include Alzheimer disease and cognitive decline, age-related macular degeneration, substance use disorders, chronic traumatic encephalopathy, post-traumatic stress disorder, and cancer.

Programs directed by section faculty include the Framingham Heart Study Brain Aging Program and several large-scale whole genome and transcriptome sequencing projects in AD, AMD and SUDs that focus on multiple ethnic populations. Collectively, these projects seek to identify disease-causing mechanisms, diagnostic/predictive markers, and therapeutic targets to facilitate precision medicine.

The Genetics section frequently collaborates with investigators in other sections and departments, given the fundamental nature of genetics to a wide spectrum of diseases. Much of the research conducted within the section requires skills and experiences integrating from multiple disciplines including genetic epidemiology, biostatistics, molecular genetics, systems biology, and information technology, as well as collaborations with clinicians and neurobiologists.

Cardiology



Wilson Colucci, MD

Chief, Section of Cardiovascular Medicine

Professor of Medicine

The Cardiology Section has enjoyed great success this year through the expansion of existing clinical programs and implementation of new ones. Section members have published 107 manuscripts and obtained significant new research funding.

The CardoMems Program provided continuous ambulatory monitoring of pulmonary artery pressures for patients with heart failure, while the invasive cardiopulmonary exercise testing laboratory provided hemodynamic assessments that guide the choice of therapies.

A standardized protocol to use urinary sodium for the optimization of diuretic dosing in heart failure patients was initiated hospital-wide, while the Cardiovascular Genetics Program offered a novel drug therapy (mavacamten) for patients with obstructive hypertrophic cardiomyopathy.

Collaborations with Radiology led to expansion of the coronary CTA program and establishment of methods for the measurement of myocardial blood flow. A multidisciplinary ECMO team was activated and the AngioVac device was used to evacuate clots in the heart and great vessels.

Grant funding obtained this year will fund research projects including: study energetics in hypertrophic cardiomyopathy; the effect of novel myosin activation on cardiac energetics; new therapies for heart failure with pressured ejection fraction; immune checkpoint inhibition for myocarditis; and cardiovascular proteomics.

Faculty earned recognition, with Drs. Alice Jacobs and Sheilah Bernard selected as Castle Connolly Cardiovascular Disease Exceptional Women. Dr. Frederick Ruberg was elected to the Association of University Cardiologists. Dr. Emelia Benjamin was awarded the AHA Distinguished Scientist Award and the Wenger Award for Excellence in Medical Research.

Computational Biomedicine



Avrum Spira, MD, MSc

*Chief, Section of Computational Biomedicine
Alexander Graham Bell Professor in Health Care
Entrepreneurship
Professor of Medicine*

The overarching mission of the Section of Computational Biomedicine is to improve the prevention, early diagnosis, and treatment of complex medical diseases by developing and applying novel computational approaches to the analysis of high-dimensional molecular datasets. The section seeks to enhance the expertise and infrastructure for developing interdisciplinary computational approaches to high throughput genomics; create training opportunities for subspecialty fellows, graduate students, and postdoctoral trainees; and leverage emerging computational methods to develop novel diagnostic and therapeutic strategies. The section of computational biomedicine includes ten independent faculty who lead labs with a research focus that intersects with the section's mission.

The translational research impact of the section includes several biomarkers and therapeutics, as well as computational tools that are being used by the academic community or being translated into health care products by industry. The most striking example is the development of a bronchial airway gene expression biomarker for the early detection of lung cancer, a diagnostic tool that has successfully translated from bench to bedside and is being used clinically in market today (Percepta™). Faculty in the section have recently extended this biomarker from the bronchial epithelium to cells that line the nose, enabling less invasive sampling of the airway for early lung cancer detection, and they have forged an industry partnership to launch a nasal genomic biomarker in the near future. These investigators have also pioneered establishment of a multi-center consortia to build a pre-cancer atlas in order to identify novel molecular targets for lung cancer interception.

Beyond lung cancer, our section's diverse research portfolio includes: understanding the molecular underpinnings of prostate, breast, and head and neck cancer among racially diverse populations; tools for uncovering the clonal evolution of tumor formation and progression; developing airway molecular biomarkers for chronic obstructive pulmonary disease and bronchiectasis; identification of biological factors contributing to healthy aging and extreme longevity; and developing image-based machine learning algorithms to identify diagnostic markers for neurodegenerative diseases.

Center for Implementation & Improvement Sciences (CIIS)



Mari-Lynn Drainoni, PhD, MEd
Co-Director, Center for Implementation & Improvement Sciences (CIIS)
Research Professor of Medicine

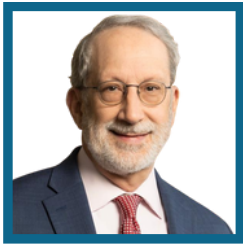


Allan Walkey, MD, MSc
Co-Director, Center for Implementation & Improvement Sciences (CIIS)
Professor of Medicine

The Evans Center for Implementation and Improvement Science (CIIS), established in 2017, has further increased the scope and impact of the research rigor and training relative to implementation science in the department. CIIS has established an effective model of (1) leading implementation and improvement research in the safety net hospital setting, (2) developing collaborative partnerships with investigators, and (3) supporting investigators at all stages of implementation with technical assistance.

A major component of the CIIS model is the CIIS Fellowship, which trains junior investigators in rigorous implementation and improvement science methods that may be applied in their home departments. Both fellows who completed the CIIS Fellowship as of June 2023 received Career Development Awards. A second major component of the CIIS model is to support investigators and projects with rigorous methods to evaluate safety net interventions. From July 2020 – June 2023, CIIS led 28 Implementation Science projects designed to improve health care delivery within a safety net setting, provided 90 consultations to support Boston University Medical Campus and external researchers with technical assistance on implementation science methods, and published nearly 50 implementation and improvement science manuscripts.

Endocrinology, Diabetes & Nutrition



Alan Farwell, MD

*Chief, Section of Endocrinology, Diabetes,
Nutrition, & Weight Management
Clinical Professor of Medicine*

The section of Endocrinology, Diabetes, Nutrition, and Weight management has achieved great successes this year in both research and the clinical sphere. Significantly, with over 45,000 ambulatory visits, this year we were the busiest ambulatory clinic at Boston Medical Center.

Clinical highlights include our diabetes program being recognized by the Type 1 Diabetes exchange for its “ambitious, equitable goals to increase the number of diabetes patients using Medicaid insurance who are using technology”. Overall, 80% of the patients with Type 1 Diabetes in our clinic are using technology, and ours is the second leading program in the county.

Dr. Beth Cohen was recruited as director of the Gender Care Center, and Dr. Kavita Sharma named as the new Clinical Nutrition director. In addition, we launched e-consult programs in Thyroid and Adrenal disorders and Diabetes (professional CGM).

In the field of research, we were excited to welcome Chair of the Department of Medicine, Dr. Anthony Hollenberg, to the lab section. The section conducted NIH-funded basic research on mechanisms of thyroid hormone action and thyroid development. Multicenter trials were conducted at the Jaeb Center for Health Research to study insulin pumps in patients with Type 2 diabetes and uses of inhaled insulin. The section continued work on the ongoing R01 CGM study in the Framingham Heart Study and investigator-initiated trial on inpatient use of the fast acting insulin Fiasp.

Dr. Howard Wolpert continued to establish a program for Diabetes Technology and Care Delivery Innovation with 4 CGM-based studies funded by Abbott (~\$2 million in AY23/24). Two additional programs are in development, using CGM in sickle cell patients and a dual glucose/ketone sensor in patients in DKA, likely to be implemented in AY24.

Gastroenterology



Ansu Noronha, MD
Interim Chief, Section of Gastroenterology
Clinical Associate Professor of Medicine

The Gastroenterology Section has made significant strides in providing exceptional patient care, groundbreaking research, and innovative medical education.

The section is at the forefront of groundbreaking research initiatives, contributing to advancements in the field of Gastroenterology. The Mostoslavsky lab published two studies. Under the leadership of Dr. Arpan Mohanty, the section runs a robust clinical trial program for patients with metabolic dysfunction associated steatotic liver disease, (MASLD) formerly known as nonalcoholic fatty liver disease.

Currently, there are four active clinical trials that receive referrals from affiliated community health centers and GI offices in Massachusetts. Our observation trials aim to develop noninvasive tests for monitoring for MASLD. We are proud to bring our diverse patient population an opportunity to consider these trials, so as to improve clinical trial diversity which is critical in ensuring the generalizability of trial results.

The section continues to play a pivotal role in training the next generation of gastroenterologists through our robust fellowship program and training of internal medicine residents, and their commitment to Medical Education has been exemplary. Additionally, faculty have organized successful medical conferences and symposiums, attracting leading experts from around the world to share knowledge and insights.

The Gastroenterology team demonstrates an unwavering commitment to delivering high-quality and compassionate care to patients. The team's dedication to evidence-based practices and the latest medical advancements has resulted in improved patient outcomes and enhanced overall patient satisfaction.

General Internal Medicine



Michael Fischer, MD, MS
Chief, Section of General Internal Medicine
Professor of Medicine

The General Internal Medicine Section has built an impressive portfolio of programs aimed at improving care to underserved and marginalized patients, evidenced by current initiatives to improve equitable access to cancer screening and diabetes/hypertension management. The section includes a range of clinical, educational, and research activities focused on providing high-quality care, teaching the next generation of clinicians and leaders, and generating knowledge to advance GIM.

Our robust medical education program continues to serve residents, fellows, and students. Our focus is to stimulate and increase education innovation in multiple domains, developing the next generation of leaders in clinical care, research, and education.

Specific fellowship programs include General Internal Medicine Research, Medical Education, Addiction Medicine, and a new fellowship in Immigrant Health. In addition, the Clinical Addiction Research and Education (CARE) Unit supports over a dozen programs to inform clinical and public health practice and policy to improve the lives of people with unhealthy alcohol and other drug use.

We have a large and growing research program, with over 30 individual principal investigators and over \$58 million in research funding. The research includes a wide range of innovative studies in musculoskeletal diseases, cancer screening, disparities, and others. Research on substance use disorder is an area of particular strength; Boston Medical Center is currently leading the landmark Healing Communities study, evaluating interventions to reduce opioid overdose deaths by 40% in 67 communities across four states.

The GIM primary care practice includes over 70 faculty physicians and nurse practitioners and approximately 100 medical residents. We care for a diverse population of over 43,000 patients of whom 50% are Black and 18% LatinX. The practice is home to multiple innovative programs that serve the unique needs of our community, including Immigrant and Refugee Health, Office Based Addiction Treatment, and Women's Health, among others. Inpatient clinical services include the Hospital Medicine Unit, Palliative Care, and the Addiction Consult Service.

Geriatrics



Hollis Day, MD, MS, MHPE
Chief, Section of Geriatrics
Associate Professor of Medicine

The Geriatrics Section has continued its commitment to delivering high-quality, comprehensive, and cutting-edge care to the older adult in a variety of settings, in addition to providing innovative leadership in geriatric education, research, patient advocacy, and community outreach.

Clinically, our Section continues to care for older adults in the community by performing home visits and nursing home visits in addition to providing primary and consultative care in the clinic. Our interdisciplinary care team is composed of physicians, nurse practitioners, nurses, and a social worker. Our faculty number has grown through the recruitment of two graduating fellows in July 2023, as well as a dedicated Geriatric hospitalist position.

Faculty are involved in research and education at a national level. Several faculty members presented at the annual meetings of the American Geriatrics Society, the Society of General Internal Medicine, and the Gerontological Society of America. Faculty also hold leadership roles on the boards of national organizations, in addition to committees at Boston Medical Center, Boston University Medical Group, and the Boston University Chobanian & Avedisian School of Medicine.

Dr. Ryan Chippendale has been recognized for her work on the Geri-A-Float national curriculum for Geriatric fellows, a virtual learning platform. Dr. Thomas Perls is internationally recognized as a leader in the field of exceptional longevity, and is the Director for multiple NIH grants. Other faculty have received prestigious teaching and career development awards.

Hematology & Medical Oncology



Matthew Kulke, MD

*Chief, Section Hematology & Medical Oncology
Co-Director, BU/BMC Cancer Center
Zolton Kohn Professor of Medicine*

The Section of Hematology and Medical Oncology enjoyed success this year across its three core missions: clinical care, research, and education. Both demand and capacity for clinical services have continued to expand, as providers have focused and developed expertise on their areas of specialty and worked collaboratively with their counterparts in surgical oncology and radiation oncology in disease centers.

The amyloidosis program, under the direction of Dr. Vaishali Sanchorawala, continues to gain recognition internationally and, a new CAR-T program, under the direction of Dr. Fabio Petrocca, has brought cutting-edge therapy to our patients.

Additionally, the section has initiated a new Cancer Genetics program, staffed by both genetic counselors and physicians, to provide cancer genetic counseling to patients who have cancer diagnoses or who may have family members at risk of developing cancer. Together, with the expansion of clinical services, the cancer clinical trials program continues to expand with a rapid increase in the number of new trials opened, providing additional treatment options for our patients.

Laboratory-based investigators in the section are highly productive. Several new investigators, including Drs. Kim Vanuytsel, Raphael Szalat, and Jean-Antoine Ribeil will be opening laboratories in the coming year.

With the rapid growth of both the clinical and research enterprises, the Section of Hematology and Medical Oncology is in high demand as a training program for fellows. Led by Drs. Mark Sloan and Meredith Halpin, the fellowship program received over 500 applications in the past year with a similar number anticipated in the coming year.

Infectious Diseases



Tamar Barlam, MD

Chief, Section of Infectious Diseases

Professor of Medicine

The Section of Infectious Diseases continues to excel in inpatient and outpatient clinical care and research. We have one of the largest HIV/AIDS programs in New England. Dr. Karen Jacobson directs the largest tuberculosis clinic in Massachusetts.

The ID Clinical Research Unit led by Dr. Archana Asundi has conducted over a dozen clinical trials and research studies in the past year, and was HRSA-funded to implement the first regional integrated geriatrics-HIV clinic. In addition, Dr. Nahid Bhadelia, director of the BU Center for Emerging Infectious Diseases, was tapped by the White House to serve as the Senior Policy Advisor for the Global COVID-19 Response Team.

Notable research achievements include Dr. Benjamin Linas' U24 award to apply economic and simulation modeling to improve care and outcomes for opioid use disorder; Dr. Manish Sagar's NIH RO1 grant to investigate the impact of antibody dependent cellular cytotoxicity in HIV-1 mother to child transmission; Dr. Mari-Lynn Drainoni's R01 award to study implementation of a health screening and referral care model in the NICU; and Dr. Deborah Anderson's renewal of her P50 award studying antibody-based contraceptive vaginal films.

As leaders at the BU/Brown Center for AIDS Research (CFAR) program our faculty were instrumental in the CFAR renewal. Dr. Jacobson received funds from the Evans Center Affinity Research Collaborative for a BU/BMC tuberculosis research alliance.

Our faculty represent Boston University and Boston Medical Center on national and local panels and media outlets in Diversity, Equity and Inclusion activities. Furthermore, they mentor faculty and students from diverse backgrounds to provide leadership and leveraged funding for enrichment programming. Dr. Shana Burrowes received the SHEA Research Award to examine inequities across race and ethnicity in antibiotic prescribing and, with Drs. Pierre and Harris (GIM, BUMC), a pilot grant to study racial differences in healthcare-associated infections.

Nephrology



Sushrut Waikar, MD, MPH
Chief, Section of Nephrology
Norman G. Levinsky Professor of Medicine

The Section of Nephrology continues to provide outstanding patient care and conduct groundbreaking research on behalf of our patients with and at risk of kidney diseases. Our clinical programs have enjoyed success this year; our peritoneal dialysis unit at Davita Boston was recognized as having the smallest gap in health disparities in the nation. To increase the reach of our clinicians across Boston, we established off-site clinics at the Boston Health Care for the Homeless Program, East Boston Neighborhood Health Center, and Upham's Corner.

In recognition of the difficulties in transitioning from chronic kidney disease to end stage kidney failure, we also established Virtual Transitional Care Program to facilitate the transition to home dialysis. We have also established innovative clinical programs in Hypertension (led by Drs. Rivka Ayalon and John Forman) and sickle cell nephropathy (led by Dr. Fola Amodu).

Nephrology clinicians were recognized by a number of awards: Drs. Jasvinder Bhatia, Laurence Beck, Jean Francis, Andrea Havasi, and Lauren Stern were awarded Boston's Best Doctor; and Dr. Jean Francis received the New England National Kidney Foundation Award for Clinical Excellence.

This year's accomplishments in teaching include Drs. Aala Jaber and Herb Cohen being named the "Top Ten Teachers at BMC", and Dr. Trixie Cruz receiving a Fellow Teaching Award. Through recruitment of two new junior faculty members in basic Science (Drs. Jie Zhang and Jin Wei) and one implementation and disparities research investigator (Dr. Katherine Rizzolo) we have strengthened the research arm of our program.

In addition, Dr. Vipul Chitalia was named the director of the Department of Medicine's Center for Cross Organ Vascular Pathology to unlock the underpinnings of vascular pathophysiology across different organs. Dr. Laurence Beck was named the incumbent of the newly established David J. Salant Professorship in Nephrology.

Preventive Medicine



George O'Connor, MD
*Interim Chief, Section of Preventive Medicine
& Epidemiology
Professor of Medicine*

The Section of Preventive Medicine and Epidemiology is engaged in a broad range of research and educational activities. Our faculty members participate in leadership and research in the Framingham Heart Study, a collaboration between Boston University and NHLBI that celebrates its 75th anniversary in 2023. Our research at FHS and in other cohorts focuses on cardiovascular disease, nutrition, dementia, aging, and chronic lung disease, among other topics, and employs methods including epidemiology, genomics, machine learning, and natural language processing. Research at FHS includes participation in the NIH-sponsored Collaborative Cohort of Cohorts for COVID-19 Research (C4R), NHLBI's Trans-Omics for Precision Medicine (TOPMed), and the Cohorts for Heart and Aging Research in Genomic Epidemiology (CHARGE).

Section faculty members lead and contribute to important research training programs at Boston University Chobanian & Avedisian School of Medicine. Dr. Vanessa Xanthakis is Principal Investigator of both the BU Multidisciplinary T32 Training Program in CVD Epidemiology and the R38 Research in Residency Program, and the latter program has recently received an outstanding score on its competing renewal application. Dr. Xanthakis also leads a Research Pathway Program for internal medicine residents at Metrowest Medical Center in Framingham. Dr. Lynn Moore is the Director of the Nutrition and Metabolism graduate programs (MS and PhD) of BU Graduate Medical Sciences. Our newest faculty member, Dr. Jinying Chen, is co-instructor for the course GMS FC 721 Statistical Reasoning for the Basic Biomedical Sciences, teaching PhD/MD students. Section faculty members serve as research mentors to pre- and post-doctoral research fellows in diverse disciplines.

Pulmonary, Allergy, Sleep & Critical Care



David Center, MD

Chief, Section of Pulmonary, Allergy, Sleep & Critical Care Medicine

Associate Provost of Translational Research

Gordon & Ruth Snider Professor of Medicine

The Pulmonary Center is a multidisciplinary group of researchers working together to combine basic, translational, and clinical science for studying lung biology and pulmonary disease. Our faculty includes clinicians and non-clinicians from Medicine and other departments, training PhD scientists and MD scientists. We emphasize collegiality, curiosity, and team work in all of our activities. Our discoveries are improving lung health and pulmonary medicine.

The section's total grant funding is nearly \$35 million. Of note our critical care research group, led by Allan Walkey, published 50 manuscripts including five in the high impact journal JAMA network. Our junior faculty members Drs. Anica Law and Nick Bosch piloted a new, two-day, practical fellow research training module that resulted in high impact research publications. We hope to make this training module a model for introducing all prospective clinical researchers to methods and career development skills.

In the clinical realm, the section offers prominent sub-specialty Clinics in Sarcoidosis, Immune Deficiency, Genetic Lung Disease, Lung Nodule evaluation, and most recently a multi-disciplinary Interstitial Lung Disease (ILD) Clinic under the leadership of Drs. Finn Hawkins and Kostas Alysandratos.

Several of our faculty members received prestigious national and local awards and honors. Dr. Jay Mizgerd was recognized with one of the American Thoracic Society's Recognition Awards for Scientific Accomplishments, noting his contributions to lung immunology and respiratory infection research. This just one example of a few of dozens of highlights of individuals that add to the collective impact and contributions of the section as a whole.

Rheumatology



Tuhina Neogi, MD, PhD
Chief, Section of Rheumatology
Professor of Medicine

The Section of Rheumatology is recognized both nationally and internationally for excellence in clinical care and research. We excel in clinical, translational, and basic science research in partnership with the Arthritis and Autoimmune Diseases Research Center, with international recognition for our contributions in the fields of osteoarthritis, gout, and scleroderma. We also conduct clinical trials in several rheumatic diseases.

Highlighting our clinical excellence, our Scleroderma program is the largest in New England and one of the few multidisciplinary lupus clinics in the country comprising Rheumatology, Nephrology, and Dermatology care in the same clinic visit. Additional specialty clinics focused this year on spondyloarthritis, gout, and osteoarthritis, among others.

Faculty have been recognized for their contributions in leading national treatment guidelines for various rheumatic diseases, developing classification criteria and outcome measures for rheumatic diseases that are used by regulatory agencies for drug approvals, and service on international and national boards and committees of scientific organizations. Our faculty have received numerous prestigious national and international awards and other recognitions, and several were named as “Boston Top Doctors.”

Our faculty are supported by numerous NIH R01 grants and we were recently awarded a large U19 grant. Research mentorship and training is a major focus for our faculty, with a dedicated Rheumatology T32, a P30 Core Center for Clinical Research, a faculty member with a K24 grant, several early-stage investigators with career development awards, and faculty members who have received mentoring awards.

Vascular Biology



Naomi Hamburg, MD, MS
Chief, Section of Vascular Biology
Joseph A. Vita Professor of Medicine

The Vascular Biology Section is comprised of investigators focused on translational science to advance our understanding of a broad array of cardiovascular disease processes, including endothelial dysfunction, atherogenesis, aneurysm, oxidative injury, myocardial dysfunction, and cardiac development.

Dr. Angie Serrano's work builds bridges with the Center for Regenerative Medicine, studying epigenetic mechanisms that orchestrate brain and cardiovascular development using zebrafish and iPS models with a focus on rare diseases. Dr. Francesca Seta runs a laboratory that develops therapeutic strategies targeting altered vascular smooth muscle phenotype in aging and obesity-related vascular conditions.

Dr. Jingyan Han's group focuses on redox signaling in the endothelium in cardiometabolic disease to develop approaches to impede the atherosclerotic process. Dr. Jessica Fetterman directs the Integrative Cardiac Metabolism and Pathophysiology (iCAMP) laboratory that evaluates mitochondrial genetics and biology from the population to the cellular level with the overall goal of identifying how mitochondrial genetic variation contributes to cardiovascular diseases.

Dr. Naomi Hamburg's lab focuses on identifying the contribution of endothelial dysfunction in the setting of risk factors for cardiovascular diseases including novel tobacco products, diabetes mellitus, long COVID, and PAD. She has obtained new NIH-funding focused on the long-term cardiovascular impact of COVID-19 infection. These studies have important implications for the regulation of novel tobacco products to reduce youth use.

Multiple collaborations exist to enhance the translational impact of the work between section members, across the Boston University and Boston Medical Center research landscape and with other academic institutions.

In Memoriam

The Department of Medicine expresses its sincerest condolences on the passing of Dr. Jerome S. Brody. Dr. Brody was an important part of the Department and a leader at Boston University and Boston Medical Center for decades. He served many roles as a member of the Department including Pulmonary Section Chief, Director of the Pulmonary Center, and as the first Vice Chair for Research. He was one of the creators of our T32 program nearly 50 years ago. His vision of the possibilities of postnatal lung growth and repair are considered the holy grail of current lung developmental biology and regenerative medicine. Dr. Brody made many significant contributions to the Department including establishing Evans Research Days during his tenure as the Department's first Vice Chair for Research. This annual event is part of Dr. Brody's lasting legacy and brings the Department together each year to celebrate excellence in research.