

Tufts Medical
Center

DEPARTMENT OF MEDICINE

2018 Annual Report



DIVISIONS AND INSTITUTES



The Divisions

- » **Cardiology**
James Udelson, MD
- » **Clinical Care Research**
Harry Selker, MD
- » **Clinical Decision Making**
John Wong, MD
- » **Clinical Nutrition**
Edward Saltzman, MD
- » **Endocrinology, Diabetes and Metabolism**
Ron Lechan, MD
- » **Gastroenterology**
Joel Weinstock, MD
- » **Geographic Medicine and Infectious Diseases**
David Snyderman, MD
- » **Hematology/Oncology**
Rachel Buchsbaum, MD
- » **Internal Medicine and Adult Primary Care**
Deborah Blazey-Martin, MD
- » **Nephrology**
Andrew Levey, MD
- » **Palliative Care**
Tamara Vesel, MD
- » **Pulmonary, Critical Care and Sleep Medicine**
Nicholas Hill, MD
- » **Rheumatology, Allergy and Immunology**
Timothy McAlindon, MD

The Institutes

- » **Institute for Clinical Research and Health Policy Studies**
Harry Selker, MD
- » **Molecular Cardiology Research Institute**
Iris Jaffe, MD, PhD

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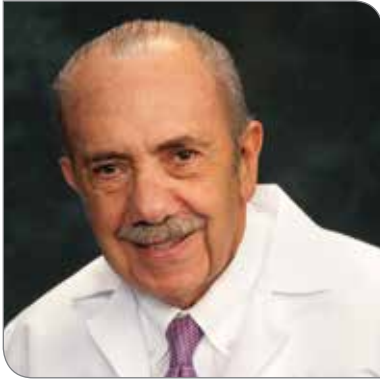
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152

CHAIRMAN'S MESSAGE



Deeb N. Salem, MD, FACP, FACC, FACCP—
The Sheldon M. Wolff Professor and
Chairman, Department of Medicine

2018 saw a major leadership change at Tufts Medical Center. The longtime CEO, Michael Wagner, MD, transitioned to the Chief Physician Executive and eventually Interim CEO role at our parent corporation, Wellforce, which has grown recently with the addition of several new hospitals. During the national (and, as it turned out, international) search for a new CEO, I was asked to serve as interim co-CEO of the medical center for several months. It was a truly gratifying experience, but I was also very happy to return to my regular role in the department of medicine. In November, Dr. Michael Apkon, an accomplished physician and leader who was CEO of the Toronto Children's Hospital, was named CEO of Tufts Medical Center.

In the Department of Cardiology and the affiliated Center for Cardiovascular Research, there was continued high volume and outstanding outcomes in cardiac transplantation and ventricular assist devices. Tufts Medical Center also enjoyed the highest volume in the world of new patient referrals for hypertrophic cardiomyopathy, as well as a growing volume of myomectomies and surgical ablations. The transcatheter aortic valve replacement program grew and the Watchman left atrial occlusion device program was initiated.

The expertise of the Division of Clinical Decision-Making was recognized by the membership of its Chief, Dr. John Wong, on multiple prestigious panels to evaluate the utility of various disease-preventive measures, cardiac imaging procedures and liver disease.

The Division of Endocrinology, Diabetes and Metabolism continued its landmark NIH-supported studies of the effects of vitamin D supplementation on the risk of diabetes, cancer and cardiovascular disease and on muscle performance in older adults.

Under the leadership of the Division of Geographic Medicine and Infectious Diseases, the Antimicrobial Stewardship Program was initiated and was one of 20 institutions given an Antimicrobial Stewardship Center of Excellence Award by the CDC. For her leadership in this effort, Dr. Gabriela Andujar was recognized by an award from the IDSA and CDC. Tufts University School of Medicine and Tufts Medical Center jointly founded the Center for the integrated Management of Antimicrobial Resistance under the leadership of Helen Boucher, MD and Ralph Isberg, PhD.

Dr. Rachel Buchsbaum was named the Dr. Jane DesForges Chair in Hematology/Oncology and became the new chief of the division.

The Division of Internal Medicine and Adult Primary Care added a new primary care physician, 3 new Physician's Assistants, 2 community health workers, and 2 case managers to the academic medical center practice.

Members of the William B. Schwartz Division of Nephrology received teaching awards from the National Kidney Foundation, the Massachusetts Medical Society, Tufts Medical Center house staff and fellows and from the medical school.

A new faculty member joined the Division of Palliative Care, expanding its ability to care for patients with serious illnesses.

In the Division of Pulmonary, Critical Care and Sleep Medicine, Dr. Nick Hill chaired the search committee for a new Executive Director of the American Thoracic Society. Eric Garpestad was appointed Associate Chief Medical Officer in addition to his role as Associate Chief of the division. Several clinical faculty joined the division.

In the Division of Rheumatology, Allergy and Immunology, five members received the Boston Magazine's 'Top Doctors' award. Dr. Timothy McAlindon received a prestigious Distinguished Clinical Research Award from the Clinical Research Foundation. Dr. Chenchen Wang received the 2020 Innovative Research Award from the American College of Rheumatology. Dr. Michelle Park received the Outstanding Young Investigator Award at the 2018 NIH International Congress on Integrative Medicine.

Although the two institutes are not formally a part of Tufts Medical Center, there is great overlap between members of the institutes and members of clinical divisions, fostering useful collaborations between current clinical needs and basic research. The Molecular Cardiology Research Institute (MCRI) celebrated its twentieth anniversary and its chief, Iris Jaffe, was elected to the Association of University Cardiologists. The Institute for Clinical Research and Health Policy Studies (ICRHPS) received over \$7 million in new funding for research projects and currently is overseeing 80 research projects; Its CTSA Award from the NIH was renewed with grant awards of \$56 million.

I am grateful to these clinician, teachers, administrators, and investigators, who, once more, have demonstrated their commitment and talent to further the missions of Tufts Medical Center.

Sincerely yours,



Deeb Salem



DIVERSITY AND INCLUSION EFFORTS WITHIN THE DEPARTMENT OF MEDICINE—2018-19

The Department through its administrative activities and the faculty within the Department are involved in a number of activities in promote diversity and inclusion efforts within the Department.

1. Efforts to change the culture of inclusion

The Department's annual review form asks each faculty member to reflect on his or her contribution to a culture of inclusion and diversity. This addition to the annual review form was intended to emphasize diversity and inclusion as a core value within the Department. Faculty reflect upon their role in the care of an increasingly diverse patient population. Many are in a position to expand on the training efforts across the spectrum of trainees.

2. Efforts at the Student level

Faculty report a number of activities to increase and support diversity in our students and trainees, including participation on the TUSM admissions committee, and serving as mentors to URM medical students and high school students as part of pipeline programs.

3. Efforts at the resident/fellowship level

Our residency program and fellowship programs are developing specific outreach activities in conjunction with the Dean for Multicultural Affairs to increase the diversity of their applicant pool. We are tracking our recruitment efforts including the number of URM trainees invited for interviews, those we rank to join us, and those who rank us sufficiently highly to match with our programs.

4. Efforts at the faculty level

Women in Medicine Committee - The Department provided the initial support to the formation of this committee, which is now a TMC-wide committee, to promote the career advancement of women within the Department and entire faculty at TMC. This Committee now sponsors 3 - 5 women yearly to attend external faculty development programs, and sponsors monthly seminars and activities to engage and advance the careers of women. The committee has already written one white paper and published one academic article.

Diversity Committee - Members of the Department are

active in the new PO Diversity Committee and their efforts to increase and retain a diverse faculty.

5. Expansion of research on health disparities

The Program on Equity in Science and Health, led by Dr. Freund, currently has two NIH research grants and several training grants addressing health disparities research. These activities have attracted a number of new URM trainees, and resulted in new collaborations with URM faculty from other Tufts Institutes and Schools.

6. Faculty Training

The Department of Medicine will embark in this year on a R25 funded faculty development program, entitled BRIM - Bias Reduction in Internal Medicine. This program is part of an educational trial to understand the impact of two different models of faculty training on reduction bias, and its impact on both attitudes and actions toward inclusion behavior. The Department has in addition worked to offer this training across all TUSM faculty on the Boston campus, both at Tufts Medical Center, and in the TUSM employed faculty in the basic science divisions and community medicine and public health to benefit from this training opportunity. Dr. Freund was awarded a TUSM IDEAS innovation grant to implement this training.



DEPARTMENTAL LEADERSHIP



Deeb N. Salem, MD, FACC, FACCP

Dr. Salem was the founding President of the New England Affiliate of the American Heart Association. His academic accomplishments include over one hundred and eighty scientific publications. He is recognized as a national expert in coronary artery disease, valvular heart disease and congestive heart failure. Dr. Salem received a Distinguished Alumni Award from Boston University School of Medicine in 1998, a Distinguished Faculty Award from Tufts University School of Medicine in 1998, an American Heart Association Great Communicator Award in 1999 and an American Heart Association Distinguished Leadership Award in 2000. He received the Massachusetts Physician Health Service Distinguished Service Award in 2003. In 2007, Dr. Salem was the recipient of the American Heart Association's Paul Dudley White Lifetime Achievement award. In August of 2007, Dr. Salem received the Champions in Healthcare, Lifetime Achievement Award from the Boston Business Journal. He has repeatedly been listed in Boston Magazine as one of "Boston's Best" physicians. In 2010 Dr. Salem was awarded the Working Wonders Lifetime Achievement Award by Tufts Medical Center. In May of 2016, Dr. Salem received the Massachusetts Medical Society's Award for Excellence in Medical Service.

He is on the Executive Board of the Board of Trustees of Tufts Medical Center and is an emeritus member of the Board of Directors of the Northeast Affiliate of the American Heart Association. Dr. Salem is also on the Board of Director of the Wang Chinatown YMCA, Vice-Chairman of the Asian American Civic Association, the New England Quality Care Alliance (NEQCA), the Tufts Medical Center Physicians Organization and the Tufts Health Care Institute. He was elected to the Publications Committee of the New England Journal of Medicine in 2003 and became Vice Chair of that Committee in the spring of 2009. In 2010, Dr. Salem was elected Chairman of the Mass Medical Society's Committee on Sponsored Programs and Chairman of the Tufts University School of Medicine's Graduate Medical Education Committee. He currently is on the Executive Advisory Board of the New England Journal of Medicine, Chairman of the NEQCA Finance Committee and is a member of the Tufts

Medical Center's Quality of Care Committee, Finance Committee and Strategic Planning Committee. In 2014, Dr. Salem was elected to the Board of Trustees of the Massachusetts Hospital Association and in 2015 became a member of the Wellforce Finance Committee. In 2017 Dr Salem was elected to the Board of the Boston Medical Library. From May to November of 2018, he was the interim co-CEO of Tufts Medical Center.



Michael Barza, MD

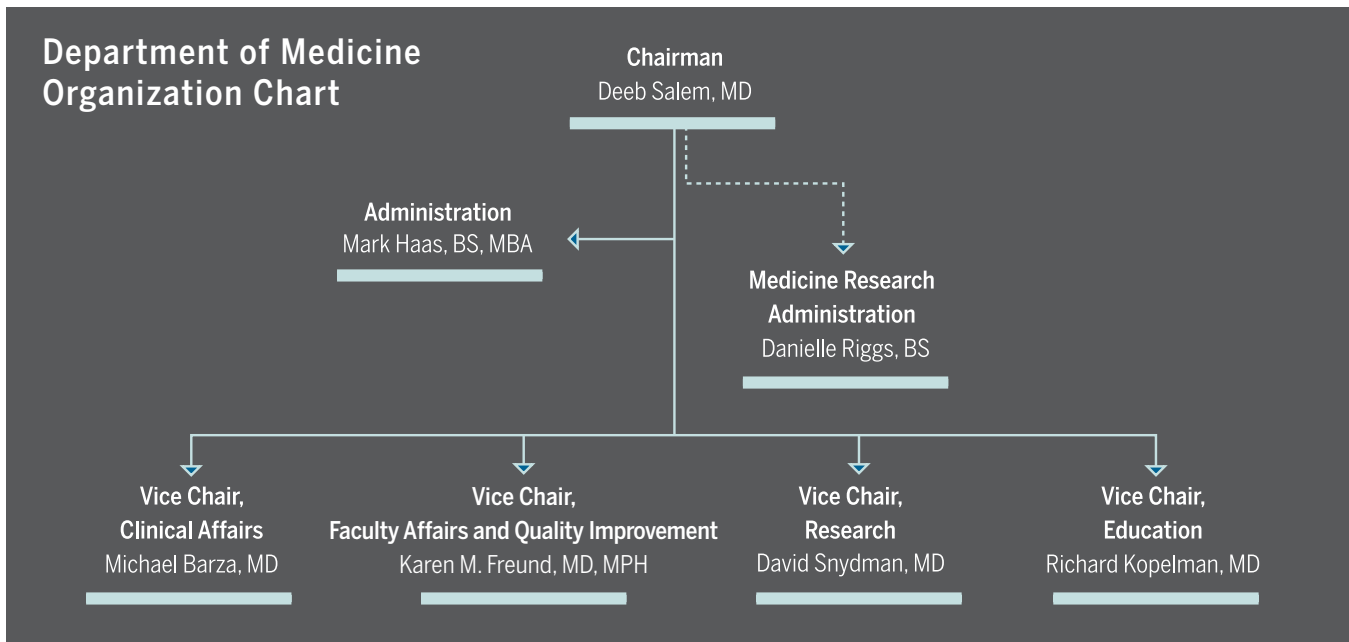
Dr. Michael Barza is Vice Chair for Clinical Affairs at Tufts Medical Center and Professor of Medicine at Tufts University School of Medicine. In

2012, he was named the Sara Murray Jordan Professor of Medicine at Tufts University School of Medicine.

Dr. Barza joined the faculty of Tufts-New England Medical Center in 1972. He served as Associate Chief of the Division of Geographic Medicine and Infectious Disease as well as hospital epidemiologist. He is a Fellow of the American College of Physicians and of the Infectious Diseases Society of America.

Dr. Barza has been an author or coauthor of over 220 peer-reviewed papers in infectious diseases. Supported by NIH grants, he undertook a number of fundamental studies of the pharmacology of antibiotics in the eye. He also became known as a superior clinician and teacher with a special interest in complex infections. He is named in all recent editions of the national compendium of "Best Doctors". In 1998, Dr. Barza left T-NEMC to go to the Carney Hospital where he served as Chief of Medicine through 2014. In 2008, while retaining his positions at Carney Hospital, he returned to Tufts Medical Center to assume his current positions.

Having a longstanding interest in the publication of scientific information, Dr. Barza has served as Editor of Antimicrobial Agents and Chemotherapy, Associate Editor for the Yearbook of Infectious Diseases and Senior Editor of Infectious Diseases in Clinical Practice, and was a member of the Institute of Medicine scientific panel on Human Health Risks with Penicillin or Tetracyclines in Animal Feed. He served as Deputy Editor of Clinical Infectious Diseases, a premier infectious disease journal, from 2000-2016.



Dr. Barza has made major teaching contributions to the School of Medicine. He has taught for over 25 years in the Infectious Disease Pathophysiology course and has consistently received outstanding evaluations by students. He is the recipient of the Distinguished Faculty Award for 2007, the Zucker Clinical Teaching Prize for Outstanding Accomplishment in 2008 and Outstanding Tufts University School of Medicine Lecturer for 2009-2010. In October, 2017, he received the Clinical Teacher award from the Infectious Diseases Society of America.



Karen M. Freund, MD, MPH

Dr. Karen M. Freund is the Vice Chair of Faculty Affairs and Quality Improvement in the Department of Medicine at Tufts Medical Center and a Professor of Medicine at Tufts University

School of Medicine. She holds secondary appointments at the Tufts Clinical and Translational Science Institute, Public Health and Community Medicine, and the Sackler School of Graduate Biomedical Sciences. She is also an American Cancer Society Harry and Elsa Jiler Clinical Research Professor.

Dr. Freund has broad translational science expertise in clinical trials, comparative effectiveness and health policy research. Her clinical areas of expertise include women's health, cancer prevention, and health disparities, with over 25 years of continuous federal funding. She is nationally recognized from her research in patient navigation to reduce

cancer health disparities. She is currently funded to analyze the impact of Massachusetts health reform on stability of insurance coverage and quality of care for cancer, diabetes, and other chronic conditions, and on implementation science in care coordination and patient navigation.

Dr. Freund has extensive expertise in the development of interdisciplinary team science, and in oversight of institutional training programs. She has mentored over 40 trainees, including 10 underrepresented minority faculty members, in their pursuit of independent funding. She has directed a number of highly effective research training programs, including ten years of expertise with interdisciplinary institutional K programs. She is PI of the Tufts CTSI KL2, and dual PI of the Tufts BIRCWH (Building Interdisciplinary Research Careers in Women's Health) institutional career development programs. Her prior NIH funding has included understanding the predictors of academic career advancement for minority and women faculty, utilizing a 17-year longitudinal follow-up of the National Faculty Survey.

Dr. Freund is a member of the AHRQ Health Care Research Training study section. She is on the editorial boards of Women's Health Issues, Women's Health and Gender Based Medicine, Journal of Cancer Survivorship, and Cancer Epidemiology, Biomarkers and Prevention.

Dr. Freund holds an AB from Harvard College, MD from Stanford University School of Medicine, and an MPH from Boston University.



Jerome P. Kassirer, MD

Dr. Kassirer has been a member of the faculty of Tufts University School of Medicine for more than five decades and served as Vice Chairman of the Department of Medicine for 20 years.

His research has encompassed diverse fields including acid-base balance, medical decision-making, and cognitive science. Dr. Kassirer has served as a governor and regent of the American College of Physicians, chair of the American Board of Internal Medicine, and from 1991 to 1999, as Editor-in-Chief of the *New England Journal of Medicine*. He currently serves on the Human Factors Subcommittee of the National Commission on Forensic Science.

He is the recipient of numerous awards, several honorary degrees including one from the Universite Rene Descartes in Paris and is a Master of the American College of Physicians. He is a member of the Institute of Medicine of the National Academy of Sciences, the Association of American Physicians, and the American Academy of Arts and Sciences.

He is currently a Special Assistant to the Dean and Distinguished Professor at Tufts University School of Medicine. He is also a Consultant to the Department of Medicine at Stanford University and the Center for Outcomes Research and Evaluation at Yale University.

Dr. Kassirer has written extensively about health care, for-profit medicine, and financial conflict of interest.

He is the author of the Oxford University Press book, "On the Take: How Medicine's Complicity with Big Business Can Endanger Your Health." and a co-author of the Lippincott book "Learning Clinical Reasoning." His new book, "Unanticipated outcomes: A Medical Memoir" is available at jeromekassirer.com.



Richard Kopelman, MD

Richard Kopelman, MD, is the Vice-Chairman for Education in the Department of Medicine. He is the Louisa C. Endicott Professor of Medicine at Tufts University School of

Medicine. Dr. Kopelman began his academic career at Tufts as one of the first faculty members in the newly created Division of General Medicine in the early 1980s. He has been acting chief of that division on several occasions. He has been Director of the Medical House Staff Training Program since 1981, overseeing the growth of the house staff from 30 members to its current total of

75 interns and residents. He has been an active member of the Association of Program Directors in Internal Medicine and is a past Council member and participant in numerous committees and task forces. For the past several years he has been the leader of the Assembly of University Program Directors in that organization.

His academic pursuits have been in the areas of hypertension and clinical problem solving. With Dr. Kassirer he was the co-editor of the Clinical Problem Solving series in *Hospital Practice* for many years and subsequently co-authored two editions of *Learning Clinical Reasoning* with Drs. Kassirer and Wong. In addition to his administrative responsibilities Dr. Kopelman maintains an active practice in general internal medicine and for the past several years has been regularly listed in the *Best Doctors in America* and by *Boston Magazine* in its lists of top physicians. He recently received the Dema Daley Founders Award from the Association of Program Directors of Internal Medicine.

Dr. Kopelman received his undergraduate degree magna cum laude in economics from Harvard College in 1970 and his medical school degree from Duke University School of Medicine in 1974. He did his house staff training at Tufts- New England Medical Center followed by a fellowship in hypertension at Massachusetts General Hospital.



David R. Snyderman, MD

David R. Snyderman, MD was named as the Vice-Chairman for Research for the Department of Medicine in October 2016. He earned an MD degree from the University of Pennsylvania School Of

Medicine. After internship and residency at New England Medical Center, he spent two years in the Epidemic Intelligence Service of the Centers for Disease Control, following which he returned to New England Medical Center to complete a fellowship in infectious diseases.

Dr. Snyderman joined the faculty of Tufts Medical Center in 1979 as a Teaching and Research Scholar of the American College of Physicians, one of only a handful of physicians selected nationally. He was appointed Chief of the Division in 1998. He has been an outstanding investigator, clinician, mentor and administrator. He has also been the Hospital Epidemiologist for more than two decades. Dr. Snyderman developed an interest in the immunocompromised host and is an internationally recognized expert in transplantation infectious diseases in general and cytomegalovirus infections in particular. He developed Cytomegalovirus Immune Globulin for licensure in

collaboration with the Massachusetts Biologic Public Health Laboratory, the first non-HIV treatment IND biologic product approved by the FDA. For his seminal work he was awarded a citation from the Commonwealth of Massachusetts in 1994.

In 1998, Dr. Snyderman was the recipient of the Natalie V. and Milton O. Zucker Prize from TUSM for outstanding faculty research. He has been on the advisory council of the NIH-sponsored Collaborative Antiviral Study Group and has been a consultant to the FDA. In 2004 he received a Distinguished Faculty Award from TUSM. In recognition of his mentorship program for both faculty and fellows, Dr. Snyderman was recognized by the Infectious Diseases Society of America as the recipient of the 2015 Walter E. Stamm mentor award. He has been continuously supported in research by the NIH for over 20 years and by foundations, not-for-profit entities, and industry.

His current research interests are primarily in *C. difficile* associated infections, the microbiome in *C. difficile* associated disease, and cytomegalovirus infections. He is the author of 221 peer reviewed original papers and has been an editor of 21 books.



Mark Haas, BS, MBA

Mark Haas joined the Department of Medicine as the Executive Director in 2016. Mark returns to Tufts Medical Center after having worked as the Business Operations Manager for

General Medical Associates (now Primary Care of Boston) more than a dozen years ago. In the interim he has held leadership positions at Massachusetts General Hospital and South Shore Hospital. Mark also brings more than a dozen years of practice management experience after spending time at Brigham & Women's Hospital, the Upham's Corner Community Health Center, and the Cleveland Clinic. Mark has always maintained a close relationship with the Tufts community, serving the past 17 years as an Instructor for the School of Medicine in the Public Health and Professional Degree programs. He teaches the required Budgeting and Management class to all MPH, MD/MPH, and DVM/MPH candidates. He also started a popular elective offered in the medical school on health information technology and healthcare informatics. Mark received his BS and his MBA from Boston University.



Danielle Riggs, BS

Danielle Riggs joined the Department of Medicine administrative leadership team in the fall of 2008 as the Director of Research Administration & Finance. She oversees the pre- and post-award administration for all federal,

foundation and industry grant funds and clinical trials throughout the Divisions of Medicine. In addition, she serves as Tufts Medical Center's Executive Director of Research Administration, working closely with the Vice President of Research Administration, on operations policies/procedures, and implementation. She was previously the Director of Administration and Finance for the Molecular Oncology Research Institute and was Associate Director of Finance for the Tufts Cancer Center, where she helped grow the cancer research program. Danielle holds a bachelor's degree from Stonehill College.





CLINICAL ACTIVITY

The Department's clinical revenue is derived from several sources: inpatient daily care and consults, outpatient care, procedures, and certain off-site revenue for clinical activities. The Department is organized as part of the Tufts Medical Center Physician Organization as Pratt Medical Group.

The table below summarizes the inpatient activity for the Department of Medicine for FY18 versus FY17. Discharges for the department decreased by 6% in FY18.

Inpatient Activity at Tufts Medical Center

Attending Service	Fiscal Year 2017 Actual	Fiscal Year 2018 Actual	% Change
Cardiology	1,757	1,770	+0.74%
Gastroenterology	594	499	-16.0%
Internal Medicine and Adult Primary Care	911	878	-3.6%
Geographic Medicine and Infectious Disease	537	510	-5.0%
Hematology/Oncology	995	837	-15.9%
Nephrology	1,029	997	-3.1%
Pulmonary, Critical Care and Sleep Medicine	754	712	-5.6%
Geriatrics	584	528	-9.6%
Grand Totals	7,161	6,731	-6.0%

The table below shows the outpatient visit volumes for the different divisions in the Department of Medicine. Overall the ambulatory visit volume increased in FY18 by +2.7% versus FY17.

Outpatient Activity at Tufts Medical Center

Division	Fiscal Year 2017 Actual	Fiscal Year 2018 Actual	% Change
Cardiology	13,806	13,556	-1.8%
Endocrinology, Diabetes and Metabolism	8,121	7,723	-4.9%
Gastroenterology	6,418	6,036	-6.0%
Primary Care – Boston (GMA)	74,356	73,145	-1.6%
Geographic Medicine and Infectious Disease	5,593	5,331	-4.7%
GI/Nutrition-Obesity Clinic	119	149	+25.2%
Hematology/Oncology	7,276	8,785	+20.7%
Nephrology	5,874	5,962	+1.5%
Pulmonary, Critical Care and Sleep Medicine	5,349	5,884	+0.9%
Rheumatology, Allergy, & Immunology *	6,345	10,262	+61.7%
Grand Totals	133,257	136,833	+2.7%

* Rheumatology, Allergy, & Immunology volume reflects the first year these divisions were combined into one.

Net patient services professional revenue grew by 4.6% in FY18 versus FY17.

Clinical Professional Revenue

Division	Fiscal Year 2017 Actual	Fiscal Year 2018 Actual	% Change
Cardiology	\$7,335,837	\$6,962,481	-5.1%
Endocrinology, Diabetes and Metabolism	\$1,400,536	\$1,407,581	+0.5%
Gastroenterology	\$3,004,567	\$3,001,180	-0.1%
General Internal Medicine	\$8,554,504	\$8,953,446	+4.7%
Geographic Medicine and Infectious Disease	\$2,525,325	\$2,428,453	-3.8%
GI/Nutrition-Obesity Clinic	\$16,004	\$16,751	+4.7%
Hematology/Oncology	\$3,015,639	\$3,794,137	+25.8%
Nephrology	\$3,462,592	\$3,339,024	-3.6%
Pulmonary, Critical Care and Sleep Medicine	\$3,097,586	\$3,728,767	+20.4%
Rheumatology, Allergy, & Immunology *	\$1,007,322	\$1,324,907	+31.5%
Grand Totals	33,419,912	\$34,956,727	+4.6%

*Rheumatology, Allergy, & Immunology volume reflects the first year these divisions were combined into one.



RESEARCH ACTIVITY

The Department of Medicine has a wide variety of clinical and basic research programs. Basic research is conducted in the Tupper Research Institute, whereas clinical and outcomes research programs are based primarily at 35 Kneeland Street and in Tufts Medical Center. Many members of the Department of Medicine conduct their research within the Molecular Cardiology Research Institute (located in Tupper Building), and the Institute

for Clinical Research and Health Policy Studies (located at 35 Kneeland Street). Each of these research-focused institutes has close ties with the Department of Medicine.

The table below summarizes the grant and contract activity across the Divisions and Institutes in FY 2018. Further specific details are shown in the individual Division/Institute reports.

2018 Research Awards¹

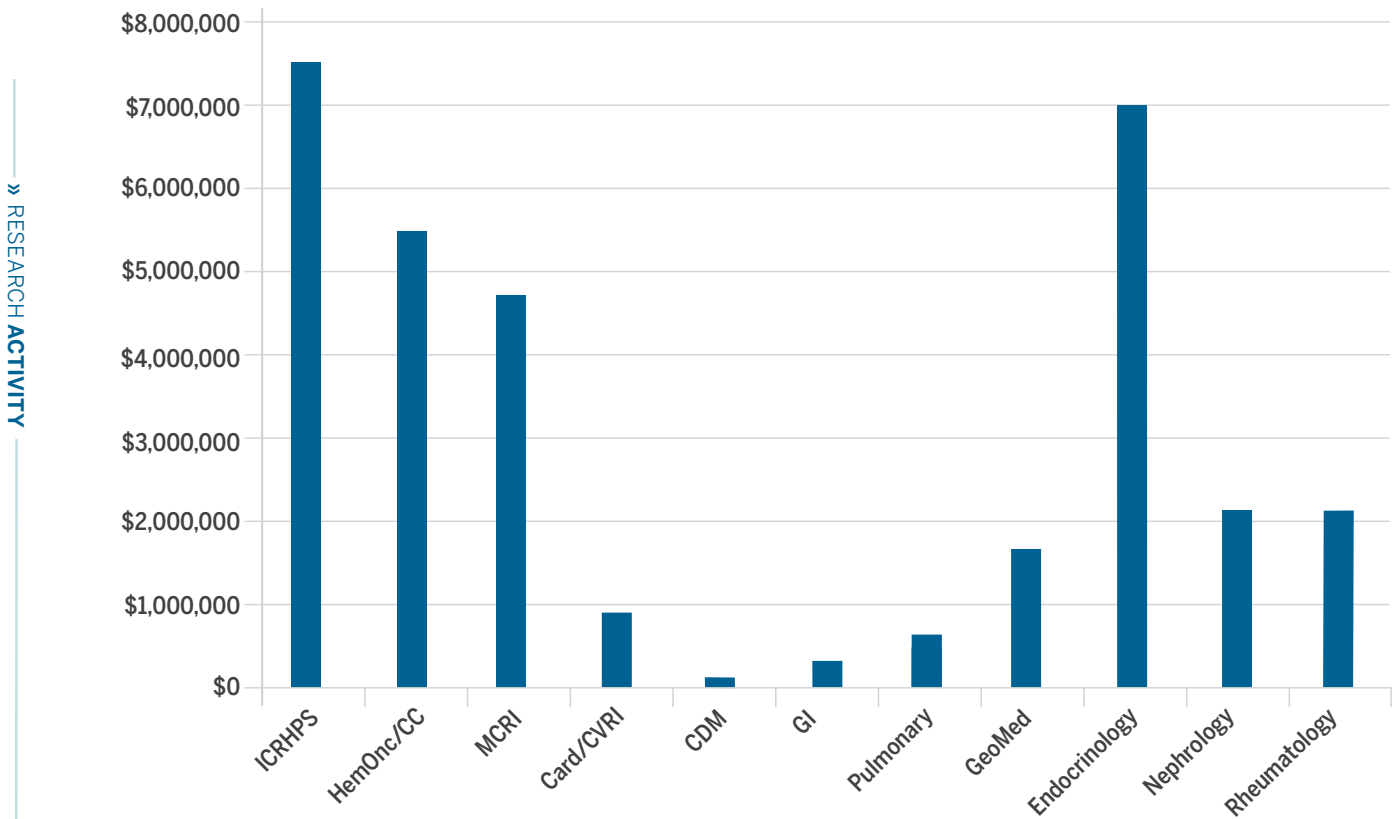
Division	R Series (incl. supplements)	K Series	U Awards (incl. supplements)	Training Grants	Contracts & Sub-contracts	Foundation & Internal Grants	Clinical Trials ²
Cardiology/CVCRI	0	0	0	0	7	4	30
Clinical Decision Making	0	0	0	0	5	0	N/A
Endocrinology, Diabetes and Metabolism	4	0	1	0	0	0	1
Gastroenterology	0	1	0	0	4	1	17
Geographic Medicine and Infectious Disease	5	1	0	1	17	2	14
Hematology/Oncology & Cancer Center	7	0	0	0	14	4	58
Nephrology	3	1	1	1	12	9	15
Pulmonary, Critical and Sleep Medicine	0	1	0	0	10	3	28
Rheumatology	4	1	1	0	3	5	17
Institute for Clinical Research and Health Policy Studies	6	1	3	0	61	25	N/A
Molecular Cardiology Research Institute	7	1	0	1	19	5	1

¹ Support from the National Institutes of Health constitutes the major source of funding for the Department of Medicine. The table above is a summary of the number of individual active Grants & Contracts and Clinical Trials awards for the Department of Medicine as of the close of FY 2018.

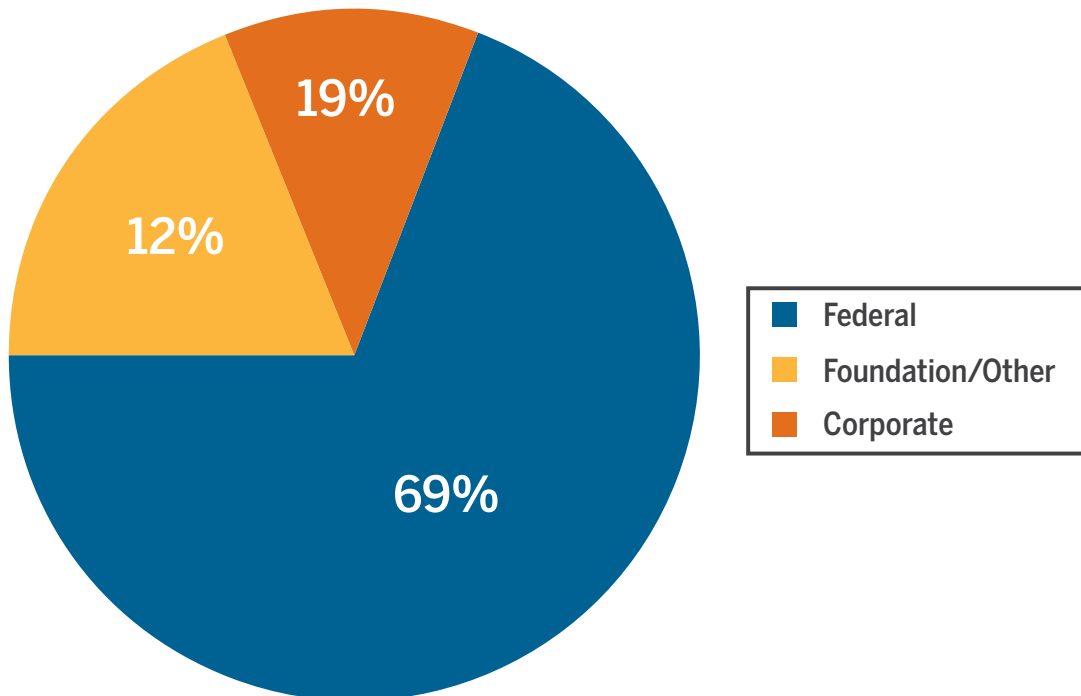
² Clinical Trial numbers reflect trials with activity during the fiscal year (not # of executed agreements).

RESEARCH ACTIVITY (continued)

FY 18 Total Grants and Contracts Revenue (\$33M)



FY 18 Sources (Medicine Divisions & Institutes)



THE INTERNAL MEDICINE TRAINING PROGRAM

The internal medicine training program at Tufts Medical Center attracts superior applicants from medical schools across the United States. Each year, 24 interns are recruited from a pool of over 2,000 applicants with diverse backgrounds, talents and aspirations. The program is unusual for the configuration of the ward services along subspecialty lines. The hospital has a strong primary care referral base as well as many well-known subspecialists, which results

in a diverse population of patients with unusual as well as common illnesses. House officers are supervised and taught by attending physicians with exceptional expertise in the subspecialties of interest. Many graduates become primary care physicians. Others, who seek subspecialty training, match with excellent fellowship programs. Over the upcoming year, the program will add a combined medical education track in conjunction with the pediatric residency program.





Tufts
UNIVERSITY



THE DIVISIONS

The Department of Medicine is organized in 13 divisions. Although most fall into traditional categories, the Division of Clinical Care Research and the Division of Clinical Decision Making are unusual in their scope. The Division of Geographic Medicine and Infectious Diseases signals its international interests by its name. Many of the divisions have impressive histories as can be seen in their introductory overviews.

DIVISION OF

CARDIOLOGY



James Udelson, MD

The Division of Cardiology and the CardioVascular Center are world-wide leaders in patient care, research and education in cardiology. Under the guidance of its first chief, Dr. Herbert Levine, the Division of Cardiology developed into a Center of Excellence in each of the major subdivisions of cardiology, including clinical cardiology, cardiac catheterization and intervention, noninvasive cardiac imaging, and electrophysiology. Later, under the direction of Deeb Salem MD, and subsequently Marvin Konstam MD, Tufts Medical Center began a program in advanced heart failure and cardiac transplantation, which has become a top national program in volumes, outcomes and research. Today, under the leadership of James Udelson MD, the Division of Cardiology continues to progress. The advanced heart failure and cardiac transplantation program is the largest in New

England, the Hypertrophic Cardiomyopathy (HCM) Center remains among the most active in the world, and the cardiac catheterization, electrophysiology and cardiovascular imaging laboratories show steady growth in the number of patients served and in the use of advanced techniques. Research activities have grown substantially.

The Division of Cardiology maintains outreach programs across New England. Attending physicians provide cardiovascular expertise to numerous regional sites. Many former trainees work closely with our staff, and work here in the areas of heart failure and electrophysiology for their most complex cases. Cardiology fellows spend time at neighboring institutions to complement their training. In addition, visiting students, residents, fellows and attending staff from other institutions spend time at Tufts Medical Center to learn the latest techniques in cardiovascular care.

Cardiologists at Tufts Medical Center participate in a wide variety of clinical, translational and basic science research sponsored by the NIH, industry, and other sources. There is extensive collaboration and shared faculty with the Molecular Cardiology Research Institute under the direction of the MCRI's Executive Director Dr. Iris Jaffe and with the CardioVascular Center. Clinical trials are underway to study improved techniques for structural and percutaneous interventions, durable and percutaneous ventricular assist devices, new configurations of automated external defibrillators, imaging to assess pathophysiology and guide procedures, approaches to the assessment of vascular function, and novel therapies for atherosclerosis among many others.

Teaching at all levels remains a strong part of the Division's academic mission. All faculty are involved in bedside and didactic teaching as well as serving as education and research mentors. The Division of Cardiology faculty is consistently rated amongst the highest for teaching Tufts University students and house officers.

Highlights of 2018

- » Continued high volume and outstanding outcomes in the advanced heart failure procedures of cardiac transplantation and ventricular assist devices
- » Incorporation of the new transplant list status determinations
- » Along with our HCM satellite center at Morristown Medical Center in New Jersey, the highest volume of new HCM patient referrals in the world
- » A growing volume of surgical myectomies and septal ablations for HCM
- » Growing referral network for complex catheter-based coronary, structural, heart failure and electrophysiology procedures
- » Continuing growth of multi-disciplinary transcatheter aortic valve replacement (TAVR) program with evolution in the care and workflow for these patients
- » Beginning of the Watchman left atrial occlusion device program
- » Growth of PFO/ASD closure procedures

- » Outpatient community outreach within the model of the distributed academic medical center, including new sites for electrophysiology
- » Numerous Tufts Medical Center cardiologists listed as Boston Magazine’s 2018 Top Doctors
- » Growth of the CardioVascular Center Research and Innovation structure
- » Opening of new Cath, EP and HCM facilities
- » Growth of the Cardio-Oncology program
- » Almost 150 faculty and fellow publications
- » Superior graduate medical education training in all disciplines of cardiovascular medicine
- » Creation of the HCM Research Center within the HCM program, to focus on basic mechanisms of disease
- » Growth of the Cardio-Oncology program

Faculty

Name	Academic Rank	Title and Special Interest
James Udelson, MD	Professor	Chief, Division of Cardiology Director, Nuclear Cardiology Heart Failure, Cardiac Imaging
Marvin Konstam, MD	Professor	Chief Physician Executive, Cardiovascular Center; Heart Failure
Hanna Ahmed, MD	Assistant Professor	General Cardiology; Cardiovascular Imaging
James Alderman, MD	Assistant Clinical Professor	Interventional Cardiology, Heart Center of MetroWest
Elizabeth Ascher, MD	Assistant Clinical Professor	General Cardiology, Heart Center of MetroWest
Robert Blanton, MD	Assistant Professor	Molecular Cardiology Research Institute Associate Program Director, Cardiovascular Education and Fellowship Training Director, General Cardiology Clinic
Patrick Blomberg, MD	Assistant Professor	Electrophysiology, Heart Center of MetroWest
William Castelli, MD	Assistant Clinical Professor	General Cardiology, Heart Center of MetroWest
Michael Chin, MD	Professor	Research Director of the Hypertrophic Cardiomyopathy (HCM) Center and Research Institute
Laurence Conway, MD	Assistant Professor	Interventional Cardiology
David Criss, MD	Assistant Professor	Interventional Cardiology
Eric Davidson, MD	Assistant Clinical Professor	Cardiovascular Imaging, Heart Center of MetroWest
David DeNofrio, MD	Associate Professor	Medical Director, Cardiac Transplantation Program Medical Director, Cardiomyopathy Center Program Director, Advanced Heart Failure Fellowship
Brian Downey, MD	Assistant Professor	General Cardiology, Cardiovascular Imaging
Mohamad El-Zaru, MD	Assistant Professor	Interventional Cardiology; General Cardiology, Norwood
Jonas Galper, MD, PhD	Professor	Molecular Cardiology Research Institute
Christopher Gange, MD	Assistant Clinical Professor	Interventional Cardiology, Heart Center of MetroWest

Faculty (continued)

Name	Academic Rank	Title and Special Interest
Ann Garlitski, MD	Assistant Professor	Co-Director, Cardiac Electrophysiology
Harvey Goldfine, MD	Assistant Clinical Professor	Cardiovascular Imaging, Heart Center of MetroWest
Edward William Grandin, MD	Assistant Professor	Heart Failure
Jessica Haffajee, MD	Assistant Professor	General Cardiology, Norwood Hospital
Munther Homoud, MD	Associate Professor	Director, Electrophysiology Fellowship Program; Director, Cardiac Monitoring Center
Gordon Huggins, MD	Associate Professor	Molecular Cardiology Research Institute; Director, CardioVascular Fellowship Program
Iris Jaffe, MD, PhD	Professor	Executive Director, Molecular Cardiology Research Institute
Navin Kapur, MD	Associate Professor	Executive Director, CardioVascular Center for Research and Innovation
Michael Kiernan, MD	Assistant Professor	Medical Director, Ventricular Assist Device Program
Carey Kimmelstiel, MD	Associate Professor	Director, Cardiac Catheterization Laboratory; Director, Interventional Cardiology Fellowship Program
George Kinzfohl III, MD	Assistant Clinical Professor	General Cardiology, Cardiovascular Imaging, Heart Center of MetroWest
Alan Kono, MD	Assistant Professor	Heart Failure
Douglas Laidlaw, MD	Assistant Professor	Cardiac Electrophysiology
Donald Love, MD	Assistant Clinical Professor	General Cardiology, Cardiovascular Imaging, Heart Center of MetroWest
Christopher Madias, MD	Assistant Professor	Co-Director, Cardiac Arrhythmia Center
Martin Maron, MD	Assistant Professor	Director, Hypertrophic Cardiomyopathy Center; Co-Director, Cardiovascular CT and MRI
Barry Maron, MD	Professor	Director of Clinical Research, Hypertrophic Cardiomyopathy Center
Michael Mazzini, MD	Assistant Professor	Cardiac Electrophysiology
Shweta Motiwala, MD	Assistant Professor	Heart Failure
Nicole Orr, MD	Instructor	General Cardiology, Norwood
Natesa Pandian, MD	Professor	Echocardiography
Ayan Patel, MD	Professor	Director, Cardiovascular Imaging Center; Director, Echocardiography Laboratory; Director, Women's Heart Center
Pranitha Reddy, MD	Assistant Professor	Echocardiography
Ethan Rowin, MD	Assistant Professor	Associate Director, Hypertrophic Cardiomyopathy Center; Director, Cardiac MRI
Yuheng Ruan, MD	Assistant Professor	General Cardiology, Cardiovascular Imaging
Marwa Sabe, MD	Assistant Professor	Heart Failure
Deeb Salem, MD	Professor	Chairman of the Department of Medicine
Sushil Singh, MD	Assistant Professor	Cardiac Electrophysiology
Jeffrey Shih, MD	Assistant Professor	Heart Failure
Howard Sussman, MD	Assistant Clinical Professor	General Cardiology, Heart Center of MetroWest

Name	Academic Rank	Title and Special Interest
Jenica Upshaw, MD	Assistant Professor	Director, Cardio-Oncology Program; Heart Failure
David Venesy, MD	Assistant Professor	Heart Failure
Amanda Vest, MBBS MPH	Assistant Professor	Medical Director, Cardiac Transplantation Program
Jonathan Weinstock, MD	Assistant Professor	Director, Cardiac Rhythm Management Devices
Andrew Weintraub, MD	Assistant Professor	Medical Director, Cardiac Care Unit Medical Director, Valve and Structural Heart Health Center Associate Director, Cardiac Catheterization Laboratory Associate Director, Vascular Medicine Center
Sophie Wells, MD	Assistant Professor	General Cardiology; Cardiovascular Imaging
Benjamin Wessler, MD	Assistant Professor	Director, Valve Clinic; General Cardiology; Cardiovascular Imaging
David Young, MD	Assistant Clinical Professor	General Cardiology, Heart Center of MetroWest
Ryan Yousefzai, MD	Assistant Professor	Heart Failure

Major Clinical Programs

The Division of Cardiology at Tufts Medical Center remains committed to the academic missions of excellence in patient care, research and teaching. The following are the major clinical programs in Cardiology:

- » The Interventional Cardiology Program
- » The New England Cardiac Arrhythmia Center
- » The Heart Failure and Cardiac Transplant Center
- » The Comprehensive Cardiovascular Imaging Center
- » The Hypertrophic Cardiomyopathy (HCM) Center
- » The Preventive Cardiology Center
- » The Women’s Heart Center
- » The Heart Station

These clinical programs are among the premier cardiovascular programs in the country. This report summarizes the Division’s clinical activities and recent program developments, as well as the academic growth.

The Interventional Cardiology Program

Carey Kimmelstiel, MD – Director

The nationally-renowned Interventional Cardiology Program provides advanced technologies and therapies for patients with cardiovascular disease. The Interventional Cardiology staff regularly perform state-of-the-art procedures such as transcatheter aortic valve replacement (TAVR), septal ablation for hypertrophic cardiomyopathy (HCM), percutaneous mechanical support for high risk coronary intervention and advanced heart failure. The program also offers transcatheter treatment of a variety of congenital defects such as patent

foramen ovale, and atrial septal defects, as well as endovascular treatment of peripheral arterial disease and aortic coarctation.

The Interventional Cardiology Program participates in major multi-center clinical trials as well as in investigator-initiated research. The laboratory has continued to recruit patients into trials of newer-generation drug-eluting stents, as well as pharmacologic studies examining the impact of adjunctive therapies on platelet function.

The lab routinely collaborates with other specialties to investigate the impact of cardiovascular therapies in patients with extracardiac syndromes. An example of collaboration is the cath lab’s involvement with the Department of Neurology, which has led to data documenting the effects of PFO closure on the incidence of stroke within several large multicenter trials in which the Tufts catheterization laboratory are leaders in enrollment. Collaboration between the Tufts Molecular Oncology Research Institute and Drs. Kimmelstiel, Weintraub and Kapur has led to multiple mechanistic studies focusing on pharmacologic approaches to platelet inhibition during coronary intervention. This collaboration currently is studying the effects of a cell-penetrating pepducin—a trial where the drug being studied was invented by the Tufts basic scientists.

The Tufts Cardiac Catheterization Laboratory is a national leader in the implantation of ventricular support devices, several of which have been initially developed in Dr. Kapur’s Surgical Research Laboratory.

The Hypertrophic Cardiomyopathy Center provides a large number of physiologic studies for HCM and alcohol septal ablation. Dr. Navin Kapur directs the acute circulatory support program at Tufts, which focuses on the clinical application of percutaneous mechanical support devices (pMSD) for cardiogenic shock and advanced heart failure. As a dual board-certified interventional cardiologist and advanced heart failure/transplant specialist, Dr. Kapur has developed a combined training pathway option for fellows to become Interventional Heart Failure (IHF) specialists. Since 2009, this IHF pathway has grown in reputation and Tufts Medical Center has established an international presence through the SCAI, AHA, TCT, CRF, ACC, and ESC as a leader in the field of interventional therapies for heart failure.

Tufts Medical Center was one of only 15 sites in the US involved in the Recover Right Trial investigating a pMSD designed for right ventricular failure. Tufts is also the only site in Boston participating in the PARACHUTE IV Trial evaluating a novel interventional device for apical left ventricular aneurysms and participates in the COAPT trial evaluating the Mitra-clip devices for functional mitral regurgitation in heart failure. Through collaborations with the division of Cardiac Surgery, Heart Failure, and several industry partners, the catheterization laboratory is developing novel approaches to diagnosis and management of percutaneously and surgically implanted cardiac assist devices. The Kapur Lab also has established important funded research projects with several industry leaders in the field of pMSDs (Cardiac Assist, Heartware, Thoratec, and Abiomed).

The Interventional Cardiology Training Program at Tufts Medical Center has received consecutive Fellow in-Training Grant Awards from the SCAI and Abbott Industries for excellence in fellow education since 2009. The laboratory participates in benchmarking outcomes with the American College of Cardiology and the National Catheterization Data Registry.

Dr. Andrew Weintraub, Associate Director of the Cardiac Catheterization Laboratory, supervises the diagnostic and therapeutic services offered to patients with lower and upper extremity vascular disease, carotid artery disease, and hypertension secondary to renal artery stenosis.

The interventional cardiology service also participates in the multi-disciplinary Valvular and Structural Heart Health Center. This service evaluates patients with valvular and structural heart disease who are considered high risk for conventional surgical procedures. It

integrates multi-modality testing and state of the art therapies for these exceptional risk patients.

Dr. Weintraub is director of the Tufts TAVR program, a high-volume program which has received accolades for excellent outcomes in the field of percutaneous aortic valve replacement.

The New England Cardiac Arrhythmia Center

Christopher Madias MD – Director

The New England Cardiac Arrhythmia Center offers outpatient consultative services for patients with arrhythmias and conducts research on arrhythmias.

The Center is staffed by four full time and four visiting board-certified electrophysiologists. Physicians and staff provide comprehensive evaluation and management of patients with cardiac arrhythmia with an emphasis on communicating timely with patients and members of the health care team. Nurse practitioners respond to routine patient clinical inquiries and educational needs. Daily outpatient pacemaker and implantable cardioverter defibrillator clinics are available for those with implantable devices. The Center provides trans-telephonic monitoring of pacemakers and loop monitors.

Three cardiac electrophysiology laboratories provide the full spectrum of invasive electrophysiology studies, cryoblation, radiofrequency ablation, defibrillator and pacemaker implantations, tilt table tests, and cardioversions. Two ablation laboratories provide advanced imaging and mapping capabilities to address supraventricular arrhythmias and man ventricular arrhythmias. With the advanced mapping system, more radiofrequency ablation cases are being referred for cure of supraventricular and ventricular arrhythmias as well as atrial fibrillation.

The staff electrophysiologists oversee a fellowship program consisting of three fellows in clinical cardiac electrophysiology. Members of the Arrhythmia Center have served on guidelines writing groups and held leadership positions in national and international professional organizations. The fellows routinely present abstracts at national meetings and the attending physicians serve as invited faculty at the major national and international meetings.

Staff electrophysiologists participate extensively in clinical research. The EP attendings have participated on the Executive Committees and as Principal Investigators on the major cardiac rhythm device trials including the CABG Patch, DEFINITE, MADIT II,

MADIT-CRT, MADIT-RIT, and MADIT S-ICD as well as the NIH-funded “Multidisciplinary Study of Right Ventricular Dysplasia” (ARVD). Dr. Madias currently serves as the principle investigator of the MADIT-SICD Trial evaluating the ability of the subcutaneous ICD to reduce mortality in high risk diabetic patients with cardiac sarcoid. Dr. Weinstock’s interests are in prevention of sudden death with ICD and AED. He has served as the principal investigator of the REPLACE Trial and VEST Trial.

The Heart Failure and Cardiac Transplant Center

David DeNofrio, MD – Director

The Heart Failure and Cardiac Transplant Center is nationally renowned for its clinical and research activities. The Center is a national leader in therapies for severe heart failure, including cardiac transplantation and mechanical ventricular assist device therapy.

The Center’s cardiac transplantation program performed 55 transplant procedures in the 2018 calendar year. This was the highest volume program of any heart transplant center in the region and one of the top 10 centers in the country. Following approval by the Center for Medicare and Medicaid Services (CMS) in 2001, the transplant program has met or exceeded CMS thresholds each year for both transplant volume and outcomes. With a steady stream of new referrals for transplantation, the program performed approximately 150 formal transplant evaluations in 2018. In addition, the center has been recognized as one of only 8 other programs in the US to obtain a 5 star rating for outcomes based on Scientific Registry of Transplant Recipient (SRTR) data. The Center also maintains a vibrant mechanical ventricular assist device program to support patients with Stage D heart failure. Since 1998 over 450 patients have been supported using ventricular assist devices for both “bridge-to-transplantation” and “destination therapy” indications. Following the approval by CMS of the left ventricular assist device (LVAD) program in 2003, a steadily increasing number of procedures have been performed for this specific indication. The two main LVADs that are employed at this institution are the Thoratec HeartMate II and the HeartWare HVAD devices.

The Center maintains heart failure outreach programs at Lahey Clinic, Rhode Island Hospital, the University of Massachusetts Medical Center and Dartmouth Hitchcock Medical Center. In addition, cardiologists from Lahey Clinic, Dartmouth-Hitchcock, Beth Israel Deaconess Medical Center, University of Massachusetts Medical Center, Rhode Island Hospital and Cape Cod Hospital

participate in the inpatient and outpatient services at Tufts Medical Center. Cardiovascular fellows from a variety of neighboring institutions spend time at Tufts Medical Center to learn more about the management of advanced heart failure. The Advanced Heart Failure and Transplant Cardiology Fellowship Program was one of the first programs in the country to receive ACGME accreditation for its expertise in heart failure training.

The Center participates in several clinical research investigations of new therapies for the treatment of all stages of heart failure as well as new immunosuppressive agents for heart transplantation. The Center has been an active study site for the National Heart and Lung

Institute’s Heart Failure Clinical Trials Network. The Center continues to participate in multiple national and international device technologies, including LVADs, for the treatment of end-stage heart failure.

The CardioVascular Imaging Center: The Cardiovascular Imaging and Hemodynamic Laboratory (Echocardiography Lab)

Ayan R. Patel, MD – Director

This laboratory is nationally known for its innovative approaches to cardiac diagnosis and has made major advances in the echocardiographic and Doppler assessment of myocardial, valvular, congenital, and ischemic heart disease.

The Laboratory provides a unique array of advanced services including: three-dimensional transthoracic and transesophageal imaging; stress echocardiography for specialized evaluation of heart failure, valvular disease, cardiac hemodynamics and assessment of ischemia; it also has extensive experience in the use of myocardial contrast imaging for evaluation of cardiac function.

In addition, a growing part of the imaging program provides imaging guidance for non-coronary structural interventions, such as transcatheter aortic valve replacement and percutaneous mitral valve repair.

The clinical research activities of the laboratory include three-dimensional assessment of cardiac chambers and the relationship with hemodynamics, investigation of three-dimensional speckle tracking for evaluation of cardiac disease, the use of imaging for evaluation of valvular disease, and vascular ultrasound assessment of peripheral vascular endothelial function. Fellows play an integral role in the clinical and research activities of the laboratory.

Nuclear Cardiology Laboratory

James Udelson, MD – Director

Clinical imaging interpretation in this laboratory routinely is performed using 4DM-SPECT software, providing readers with fully quantitative analysis to support image interpretations. The lab is accredited by ICANL (Intersocietal Commission on the Accreditation of Nuclear Laboratories).

The service performs exercise and pharmacologic stress studies along with rest and stress perfusion imaging in approximately 1500 patients annually. Reading sessions occur daily and involve cardiology fellows, radiology residents and students the opportunity to grow interpretive skills, while the cases also enable discussions of management scenarios. Growth areas include radionuclide imaging to assess cardiac amyloidosis and sarcoidosis, and ongoing efforts to optimize assessment of Emergency Department patients with chest pain and suspected acute coronary syndromes.

Cardiac Magnetic Resonance Imaging and Cardiac Computed Tomography

Ethan Rowin, MD – Director, Cardiac MR,; Martin Maron, MD, Y. Kent Yucel, MD and Neil Halin, DO – Co-Directors. Martin Maron' MD, Director Cardiac CT

Tufts Medical Center has the most advanced cardiac magnetic resonance imaging available with two Phillips magnets that are cardiac MRI capable. The cardiac MRI program focuses on imaging for cardiomyopathies as well as structure/function analysis and myocardial viability. In addition, a complete non-invasive assessment of the coronary arteries is performed with a 10- second breath hold without the need for beta-blockers with the use of the 64-slice Siemens Definition dual source scanner for CT angiography. Fellows participate in all aspects of advanced imaging, including image acquisition and analysis.

The Hypertrophic Cardiomyopathy Center

Martin S. Maron, MD – Medical Director; Barry J. Maron, Director Clinical Research; Ethan Rowin, MD, – Co-Director

2018 marks the 15th year of the first comprehensive Hypertrophic Cardiomyopathy (HCM) Center in the Northeast. The Center provides state-of-the-art diagnostic and therapeutic modalities for patients with HCM, the most common genetic cardiovascular disease. The HCM team sees over 500 new patient evaluations annually. Surgeons working with the HCM center perform over 100 surgical myectomies per year for relief of left ventricular outflow obstruction. The Division's interventional

cardiology team was the first in the Boston area to perform an alcohol septal ablation for relief of heart failure symptoms in patients with obstructive HCM and is a leader in this area with over 25 alcohol ablations performed each year. The HCM Center's cardiologists provide multidisciplinary patient care for problems as diverse as heart failure, syncope, arrhythmias and prevention of sudden death.

The Center is a major research center for patients with HCM. The group has also recently defined to the natural history of HCM to demonstrate that this disease is now associated with low mortality disease in the contemporary era of cardiovascular treatments and management. Other areas of focus are the use of implantable cardioverter defibrillators (ICD) to prevent sudden death, the role of left ventricular outflow tract obstruction to prognosis, and the use of cardiac MRI in diagnosis and prognosis. To date, almost 200 manuscripts have been published from the HCM Center at Tufts. The Center has become established as one of the top HCM centers in the world. With the recent recruitment of Michael Chin the HCM Research Center has now been formalized to address basic and translational projects with the aim of identifying mechanisms of the disease that can be therapeutically targeted. Two members of the HCM team – Drs. Martin Maron and Carey Kimmelstiel – are members of the national group revising the ACC/AHA HCM Guidelines.

The Preventive Cardiology Center

Robert M Blanton, MD – Director

The General Cardiology Clinic (GCC), formerly termed the Preventative Cardiology Clinic (PCC) provides cardiovascular care for patients with heart disease and intensive risk factor management for those at an increased risk for cardiovascular disorders. The staff is composed of a multi-disciplinary team of cardiologists, fellows, and other health professionals. Staff members have instituted a number of new measures to enhance medication compliance.

The Center also functions as the primary outpatient training experience for cardiovascular fellows at Tufts Medical Center. Fellows have a longitudinal experience and serve as the primary cardiologist for these patients, with a team of Cardiovascular Division faculty serving as preceptors. Further, a number of clinical trials are based in GCC. The group also participates in multi-center research projects focused on lipids and other novel prevention therapies. The team was one of the top enrolling centers for the IMPROVE-IT Study, a



multi-center, multi-national study examining ultra-low LDL levels in patients at risk for atherosclerosis, and STABILITY, a study focusing on a novel anti-inflammatory mechanism to treat coronary artery disease. The group has also participated in novel lipid-altering research with PCSK9 Inhibition, having participated in the landmark ODYSSEY OUTCOMES study to test the effect of additional lipid lowering with the PCSK9 Inhibitor alirocumab in patients with prior acute coronary syndrome.

The Women's Heart Center

Ayan R. Patel, MD – Director

The goal of the Women's Heart Center is to provide consultative support to primary physicians and cardiologists, regarding prevention, diagnosis, and management of cardiovascular diseases in women. The center provides expertise in the management of lipid disorders and other cardiovascular risk factors, management of cardiac disease in women, and cardiovascular imaging/diagnostic testing in women. Nutritional counseling is also available in collaboration with the Frances Stern Nutrition Center.

Teaching Activities

Gordon Huggins, MD-Director, Cardiovascular Education and Fellowship Training

The Division of Cardiology is dedicated to the highest level of teaching and training of medical, dental, nursing and PA students, house staff and fellows. Members of the Division participate in all aspects of teaching, including lectures, bedside diagnosis, small group discussions, and other interactive methods of teaching at all levels.

Cardiology faculty are involved with individual preceptorships and "selectives" with first year medical students. In addition, cardiologists teach small group lecture series on topics in cardiology. Faculty provide didactic education on the cardiovascular physical examination and also provide research mentorship to students throughout their medical school years. Cardiology fellows work with students as they learn physical diagnosis.

Gordon Huggins, MD serves as the director of the Cardiovascular Pathophysiology Course for second year medical students. The course for Tufts medical students is a comprehensive series of lectures, clinical-pathology

conferences and small group discussions teaching the fundamentals of cardiovascular health and disease. Cardiology staff and fellows are involved in teaching third students and fourth year medical sub-interns on inpatient ward services and in the outpatient setting. Cardiology fellows also teach electrocardiography and mentor students on clinical rotations.

Bedside and didactic teaching of internal medicine house officers occurs daily during attending rounds as well as dedicated teaching conferences. Numerous attending cardiologists and fellows have received recognition for outstanding teaching by the house staff. Numerous house officers present research at national research meetings and publish articles in the field.

Cardiovascular fellowship training and education at Tufts Medical Center is also under the direction of Gordon Huggins, MD. Dr. Huggins is also the Co-Director of the Tufts MD PhD Combined Degree program and he directs an active translational medicine research program in the Molecular Cardiology Research Institute. Dr. Robert Blanton is the Associate Director of the Fellowship Program and Candace Scanlon is the Education Coordinator.

Fellowship positions remain highly competitive. The three-year general cardiology fellowship program, plus subspecialty training programs, provide advanced training in all aspects of cardiovascular disease. Fellows participate in research within the Division, from basic science to translational and clinical projects. All fellows participate in an annual research proposal competition. In addition, fellows present findings at regional and national meetings and publish their work in peer-reviewed journals. Fellows are also active in quality improvement. Graduating fellows from the Division of Cardiology move on to successful careers in all aspects of academic and clinical cardiology.

Research Grant Support

Recipient	Funding Source	Purpose of award
Robert Blanton	NIH	Novel Protein Kinase G1 Substrates in Cardiac Remodeling and Blood Pressure Control*
	NIH (sub from Tufts University)	Cardiac Cell Entry-Inhibition and Protection Therapy for Chronic Chagas Disease*
	Merck	Pre-clinical Study*
	Cardurion	Pre-clinical Study*
	NIH Research Award	NIH R01HL131831, "Novel Protein Kinase G1 Substrates in Cardiac Remodeling and Blood Pressure Control."
Michael Chin	American Heart Association	Pathological Pathway Activation at Single Cell Resolution and Biomarker detection in Human Hypertrophic Cardiomyopathy*
	NIH	Intracellular mitochondrial enzyme replacement therapy for heart and skeletal myopathy in Barth Syndrome*
Gregory Couper	Abbott	PREVENTion of Non-Surgical Bleeding by Management of HeartMate II Patients without Antiplatelet Therapy (PREVENT II)
Gordon Huggins	NIH	Heart Failure Network: New England, New York and Quebec Regional Clinical Center*
	NIH (sub from Miriam Hospital)	Salivary Amylase Gene (AMY 1) as Predictor of Weight and Diet in LookAhead & DPP*
	NIH (sub from Ohio State University)	Precision Medicine for Dilated Cardiomyopathy in European and African Ancestry*
	NIH (sub from Tufts University)	Diagnosis of Heart Failure Status using Epidermal Metabolomics*
	NIH	Subcutaneous Furosemide in Acute Decompensated Heart Failure: The SUBQ-HF Study (SUBQ-HF)
	NIH	Characterizing HIV-related Diastolic Dysfunction (HFN_HIV)
	Tufts University Russo Award	Diagnosis of Heart Failure Status using Metabolomics*
Iris Jaffe	American Heart Association	Extra-Renal Mineralocorticoid Receptors in Hypertension*
	NIH	The Role of Vascular MR-Regulated Genes in Vascular Function and Disease
	NIH	Smooth Muscle Mineralocorticoid Receptors in Vascular Aging and Hypertension
	NIH (sub from Michigan State University)	Cerebral parenchymal arteriole dysfunction and cognitive decline in a life-long high fat feeding model*
	NIH (sub from University of Missouri)	Mineralocorticoid receptor-dependent coronary vascular dysfunction in obesity*
	NIH (sub from University of Missouri)	Mechanisms for Sex Differences in CVD Pathology and Development of a Targeted Therapeutic*
Iris Jaffe/Karen Freund	NIH	Tufts Building Interdisciplinary Research Careers in Women's Health (BIRCWH) Program K12*

Research Grant Support (continued)

Recipient	Funding Source	Purpose of award
Navin Kapur	Abbott	HeartMate PHP™ Coronary Interventions in High-Risk Patients using a Novel Percutaneous Left Ventricular Support Device (SHIELD II)
	Abiomed	Door To Unloading with Impella® CP System with Acute Myocardial Infarction to Reduce Infarct Size (DTU) : A Prospective Feasibility Study
	Abiomed	Changing the Paradigm of AMI Therapy: The Bench to Bedside Approach*
	Abiomed	CVAD Registry Protocol Agreement*
	Evalve, Inc.	Cardiovascular Outcomes Assessment of the MitraClip Percutaneous Therapy For Heart Failure Patients with Functional MR (The COAPT Trial)
	NIH	Endoglin: A New Target of Therapy for Heart Failure
	NIH	Mechanical Unloading and Delayed Reperfusion Promotes Myocardial Recovery after Acute Myocardial Infarction*
	Precardia	Pre-clinical Study*
	Second Heart Assist	Pre-clinical Study*
Michael Kiernan	LivaNova	ANTHEM-HFrEF Pivotal Study
	Medtronic	A Prospective, Single-Arm, Multi-Center Study in Collaboration With the Intermacs to Evaluate the Thoracotomy Implant Technique of the HeartWare™ HVAD™ System in Patients With Advanced Heart Failure
	Medtronic	A Clinical Trial to Evaluate the HeartWare™ Ventricular Assist System (ENDURANCE SUPPLEMENTAL TRIAL) (DT2)
	NIH (sub from Northwestern)	Mechanical circulatory support: measures of adjustment and quality of life
	NIH	Heart Failure Clinical Research network: Entresto™ (LCZ696) in Advanced Heart Failure (LIFE study)
Carey Kimmelstiel	Boston Scientific	EVOLVE II: A Prospective Multicenter Trial to Assess the Safety and Effectiveness of the SYNERGY™ Everolimus-Eluting Platinum Chromium Coronary Stent System (SYNERGY™ Stent System) for the Treatment of Atherosclerotic Lesion(s)
	Boston Scientific	A Prospective, Multicenter, Single-arm Study Designed to Assess the Safety of 3-month Dual Antiplatelet Therapy (DAPT) in Subjects at High Risk for Bleeding Undergoing Percutaneous Coronary Intervention (PCI) With the SYNERGY Everolimus-Eluting Platinum Chromium Coronary Stent System
	Eisai Pharmaceuticals	A Randomized, Double-blind, Placebo-controlled, Parallel-group Study to Evaluate the Effect of Long-term Treatment with BELVIQ (Iorcaserin HCl) on the Incidence of Major Adverse Cardiovascular Events and Conversion to Type 2 Diabetes Mellitus in Obese and Overweight Subjects with Cardiovascular Disease or Multiple Cardiovascular Risk Factors
	Precardia	Clinical Study
	Sanofi Pharmaceuticals	A Randomized, Double-Blind, Placebo-Controlled, Parallel- Group Study to Evaluate the Effect of SAR236553/REGN727 on the Occurrence of Cardiovascular Events in Patients who have Recently Experienced an Acute Coronary Syndrome (Odyssey).

Recipient	Funding Source	Purpose of award
Martin Maron	NIH (sub from ICON)	HCMR- Novel Predictors of Outcome in Hypertrophic Cardiomyopathy
	NIH (sub from Yale)	Exercise in Genetic Cardiovascular Conditions (Lifestyle and Exercise in Hypertrophic Cardiomyopathy "LIVE-HCM"/Lifestyle and Exercise in the Long QT Syndrome "LIVE-LQTS
Jenica Upshaw	Charlton Grant	Cardioprotective Utilization Patterns During Treatment with Anthracycline Chemotherapy
	Merck, Sharpe & Dohme	A Randomized Parallel-Group, Placebo-Controlled, Double-Blind, Event-Driven, Multi-Center Pivotal Phase III Clinical Outcome Trial of Efficacy and Safety of the Oral sGC Stimulator Vericiguat in Subjects With Heart Failure With Reduced Ejection Fraction (HFrEF) - VeriCiguaT Global Study in Subjects With Heart Failure With Reduced Ejection Fraction (VICTORIA)
	Merck, Sharpe & Dohme	VICTORIA Heart Failure (HF) Registry
	Zaniboni	Personalized Shared Decision Making in Breast Cancer Therapy – Balancing the Risks of Cardiotoxicity with the Benefits of Adjuvant Chemotherapy
James Udelson	Ironwood Pharmaceutical	A Multicenter, Randomized, Double-blind, Placebocontrolled, Phase 2 Study Evaluating the Safety and Efficacy of Different Doses of IW-1973 over 12 Weeks in Patients with Heart Failure with Preserved Ejection Fraction
Amanda Vest	AHA	Scientist Development Grant: Is Sarcopenia Reversible in Systolic Heart Failure?
	Boehringer & Engelheim	A phase III, randomized, double-blind trial to evaluate efficacy and safety of once daily empagliflozin 10 mg compared to placebo, in patients with chronic Heart Failure with preserved Ejection Fraction (HFpEF) (REDUCED)
	Corvia Medical, Inc.	REDUCED-LAP HF Randomized Trial II: A study to evaluate the Corvia Medical, Inc. IASD® System II to Reduce Elevated Left Atrial Pressure in Patients with Heart Failure
	ISHLT	The Impact of Pre-Transplant Diabetes or Post-Transplant New onset Diabetes on Outcomes After heart Transplantation
Jonathan Weinstock	Hamilton Health Sciences	Apixaban for the reduction of thrombo-embolism in patients with device-detected sub-clinical atrial fibrillation (ARTESIA)
	NIH (sub from CCHMC)	Genetics, Mechanisms and Clinical Phenotypes of Arrhythmogenic Cardiomyopathy
	St Jude Medical	CRT Implant Strategy Using the Longest Electrical Delay for Non-Left Bundle Branch Block Patients (ENHANCE CRT)
	St Jude Medical	Safety and Effectiveness Trial for the Nanostim LEADLESS pacemaker
	UCSF	Vest Prevention of Early Sudden Death Trial (VEST) and VEST Registry
Andrew Weintraub	Cardiovascular Research Foundation	TAVR UNLOAD

Honors and Awards

Robert Blanton, MD

- » NIH research award: NIH R01HL131831, "Novel Protein Kinase GI Substrates in Cardiac Remodeling and Blood Pressure Control"; PI: Robert M. Blanton, MA, MD; Total Costs: \$2,125,000; 2016-2021
- » Member, American Physiological Society, 2018
- » Abstract Captain, American College of Cardiology 2018 Scientific Meeting: Heart Failure and Cardiomyopathies: Basic
- » Invited reviewer, Department of Defense: Congressionally Directed Medical Research Program, cardiovascular focused program awards.

David DeNofrio, MD

- » Heart Failure Society of America, Education Committee Member
- » American College of Cardiology, Heart Failure and Transplant Section Leadership Council
- » Boston Magazine's Top Doctors List for Cardiology
- » Biocardia, Inc., CardiAMP Heart Failure Trial, Clinical Events Committee Member

Jonas Galper, MD, PhD

- » Editorial Board Journal of Biological Chemistry
- » Patient Care assessment committee, Tufts Medical Center
- » MCRI training grant committee, vice chair
- » ESTA Study Section NIH Ad hoc Reviewer

Ania Garlitski MD

- » Recognition in Boston magazine "Top Doctors" issue
- » Member, ESC Congress Abstract Reviewing Committee
- » Member, HRS Membership Committee
- » Member, ACC NCDR ICD Registry Research & Publications Subcommittee
- » Member, ACC SQOC Data Governance Subcommittee
- » Invited Faculty at the Biotronik EPIC Alliance Program, New York, June 2018
- » Invited Faculty at the 13th Annual EP 101 course, Boston, June 2018

Munther Homoud, MD

- » The Leonard Tow Humanism in Medicine Award - from the Arnold P. Gold Foundation
- » Boston Magazine's "Top Doctors" List
- » Reviewer; American Journal of Cardiology

Gordon Huggins, MD

- » Director, Cardiovascular Disease Fellowship Program at Tufts Medical Center
- » Chair, Scientific Review Committee for non-cancer studies at Tufts Medical Center
- » Vice Chair, Institutional Review Board Tufts Medical Center
- » Co-Director, Tufts University School of Medicine MD PhD Program
- » Director, Tufts University School of Medicine Cardiac Pathophysiology Course
- » Chair, Tufts CTSI CV/Nephrology Thematic Panel

Iris Zamir Jaffe, MD, PhD

- » Elisa Kent Mendelsohn Professor of Medicine and Molecular Cardiology, Tufts University School of Medicine
- » Interurban Clinical Club, Elected Member
- » Association of University Cardiologists (AUC), Elected Member
- » Chair, NIH Study Section: Vascular Cell and Molecular Biology (VCMB)
- » Editorial Board: Hypertension
- » American Society of Clinical Investigation Elected Member
- » American Heart Association Established Investigator Award
- » AHA High Blood Pressure Research Council Mid-Career Award for Research Excellence
- » Milton O. and Natalie V. Zucker Prize for Research
- » Charter Member NIH Study Section: Vascular Cell and Molecular Biology

Navin Kapur, MD

- » 2017-2020 Associate Editor, *Circulation Heart Failure*
- » 2018 Invited Editorial Board Member, *European Heart Journal, Acute Cardiovascular Care*
- » 2018 Invited Editorial Board Member, *Cardiovascular Revascularization Medicine*
- » 2018 Nomination, The American Society for Clinical Investigators (ASCI)
- » 2018-2020 Invited Faculty, ACC Interventional Cardiology Board Review Course
- » 2017-2020 Elected Co-Chair, Devices for Heart Failure Global Meeting
- » 2017-2020 Elected Co-Chair, Acute Cardiac Unloading and Recovery Global Meeting



- » 2019-2020 Invited Faculty, Gordon Research Conference: Mechanical Circulatory Support Research
- » 2019-2020 Elected Member, Tufts Medical Center Industry Partnership Task Force
- » 2018-2020 Elected Member, Steering Committee, CVAD Registry
- » 2018-2020 Elected Associate Director, Transcatheter Therapeutics (TCT) Scientific Sessions, Cardiovascular Research Foundation
- » 2018-2020 Elected Member, ACC/SCAI/HFSA Consensus Statement Committee: Cardiogenic Shock
- » 2018-2020 Elected Member, Cardiac Safety Research Consortium: Cardiogenic Shock Think Tank
- » 2018-2020 Elected Co-Chair, Cardiovascular Revascularization Therapies (CRT) Program Planning Committee
- » 2018 Executive Director, The National Cardiogenic Shock Working Group
- » 2018 Chair, Tufts CVCRI Scientific Advisory Board

Michael Kiernan, MD

- » Medical Director, Ventricular Assist Device Program, Tufts Medical Center
- » Executive MBA in Physician Leadership and Healthcare Management, Brandeis University (May 2020)
- » Heart Failure Society of America Development Committee
- » Co-Chair: American Heart Association writing group: Evaluation and Management of Right Heart Failure
- » Regional Program Director, Medtronic Peer-to-Peer HVAD LVAS training
- » Circulation Heart Failure: Editorial Board
- » Journal of Cardiac Failure: Editorial Board
- » Heart Brothers Foundation Advisory Board
- » Research Chair, Evolving Mechanical Support Research Group (EMERG)
- » Reviewer: Circulation, Journal of the American College of Cardiology, Journal of Heart and Lung Transplantation, Journal of Cardiac Failure
- » INTERMACS Right Ventricular Failure Working Group
- » Abstract Reviewer: Heart Failure Society of America, International Society of Heart and Lung Transplantation, American College of Cardiology, American Heart Association

- » American Heart Association: GTOE Peer Review Committee
 - » NIH Heart Failure Clinical Trials Network: Heart Failure with Reduced Ejection Fraction Working Group and Co-Chair of Diuretic Resistance Working Group
 - » American Heart Association, Council on Clinical Cardiology: Heart Failure and Transplantation and Fellow in Training/Early Career Subcommittee
 - » Conference on Antibody Mediated Rejection in Heart Transplantation & Conference on Antibodies in Heart Transplantation, Invited Participant
 - » American Heart Association, Council on Clinical Cardiology Committee on Heart Failure / Transplantation
 - » American Heart Association, Council on Clinical Cardiology Committee: Fellow in Training / Early Career Subcommittee
 - » AHA Writing Group: Biomarkers for the prevention, assessment, and management of heart failure: a consensus statement from the American Heart Association.
 - » AHA Writing Group: Cardiovascular function and treatment in β -thalassemia major: a consensus statement from the American Heart Association.
 - » AHA Writing Group: Recommendations for the Use of Mechanical Circulatory Support
 - » AHA Writing Group: Antibody Mediated Rejection in Cardiac Transplantation

Carey Kimmelstiel, MD

- » Editorial Board: Journal of Thrombosis and Thrombolysis Editorial Board - Catheterization and Cardiovascular Interventions
- » Abstract Grader: American College of Cardiology; American Heart Association; Transcatheter Therapeutics
- » Manuscript reviewer: Cardiology, Journal of Investigative Medicine, Journal of Thrombosis and Thrombolysis, Journal of Interventional Cardiology, Circulation, American Heart Journal, Catheterization and Cardiovascular Interventions, Journal of the American College of Cardiology, New England Journal of Medicine, Circulation: Cardiovascular Interventions
- » Grant reviewer/grader – SCAI FIT (Fellowship in Training) Grant
- » Named in “Best Doctors in America” and Best of Boston Magazine
- » National Co-PI of ION Drug-Eluting Stent Trial
- » Abbott Fellow in Training Grant
- » Abstract Captain – Interventional Cardiology Poster Session-American College of Cardiology Scientific Sessions 2016

Marvin Konstam, MD

- » Distinguished Faculty Award, Tufts University School of Medicine
- » Member, Association of University Cardiologists
- » Member, American Clinical and Climatological Association
- » Member, American College of Cardiology, Health Affairs Committee
- » Former President, Heart Failure Society of America
- » Former President, Association of Professors of Cardiologists
- » Lifetime Achievement Award, Heart Failure Society of America, 2018
- » Chair, Publications Committee, Heart Failure Society of America
- » Top Doctors Award, Boston: 2004-2019
- » AHA Founders Region, Paul Dudley White Award: 2019

Barry Maron MD

- » American College of Cardiology Distinguished Lifetime Achievement Award
- » State of New Jersey Senate and General Assembly. Joint Legislative Resolution— Acknowledging Lifetime Work
- » Honoree. Hypertrophic Cardiomyopathy Association Gala
- » Heart Rhythm Society Distinguished Scientist Award for Clinical Science

Martin Maron, MD

- » Editorial Board: American Journal of Cardiology
- » Editorial Board: Journal of the American College of Cardiology

Natesa Pandian, MD

- » Invited Lectures at ACC Sci Sessions, Orlando, Florida, March 2018
- » Invited Lectures at Society of Cardiac Anesthesiologists Annual Sci Sessions, Phoenix, Arizona April 2018
- » Invited Lectures at ASE Annual Sci Sessions, Nashville, TN, June 2018
- » Invited Lectures at “Heart Beat Echo” conference, Bangalore, India, July 2018
- » Program Co-Director and Lectures at 35rd Advanced Echo Conference, Newport Beach, California, Sep 2018
- » Invited Lecture at Hoag CV Nursing Conference, Nov 2018

Ayan Patel, MD

- » American Society of Echocardiography Abstract Review Committee
- » American Heart Association abstract reviewer
- » American College of Cardiology CardioSurve Panel
- » Associate Editor: Circulation Heart Failure
- » FASE, American Society of Echocardiography
- » Listed, Top Doctors, Boston Magazine

Ethan Rowin MD

- » Publications committee, Society of Cardiovascular Magnetic Resonance Imaging

Deeb Salem, MD

- » Massachusetts Hospital Association Trustees Advisory Council Service Award
- » Wang YMCA of Chinatown Legacy Award
- » Chairman, Tufts University School of Medicine Continuing Education Committee
- » Vice Chairman of the Asian American Civic Association Board of Trustees
- » Member of Board of Trustees Boston Medical Library
- » Member Wellforce Chief Executive Officer Search Committee
- » Co-Interim Tufts Medical CEO 2018

James Udelson, MD

- » Founding Editor-in-Chief, Circulation: Heart Failure
- » Editorial Board – JACC, JACC Imaging, Journal of Nuclear Cardiology, Current Cardiovascular Imaging Reports, Heart Failure Reviews, US Cardiology, Trends in Cardiovascular Medicine
- » Guest Editor: JACC, JACC CV Imaging
- » U.S. Food and Drug Administration, Special Government Employee
- » Member, Association of University Cardiologists
- » Member, Association of Professors of Cardiology
- » Newly Elected Member, American Clinical and Climatological Association
- » Ad-hoc Member, Cardiovascular and Renal Drugs Advisory Panel, Center for Drug Evaluation and Research, United States Food and Drug Administration
- » Best Doctors in Boston, Boston Magazine
- » Associate Editor, Practice Update in Cardiology
- » Co-Chair, ASNC/SNMMI Think Tank on Cardiovascular Molecular Imaging

Jenica Upshaw, MD, MS

- » Director, Cardio-Oncology Program
- » Heart Failure Society of America Clinical Research Grand Awardee
- » Natalie V. Zucker Research Grant Awardee
- » Reviewer, Circulation, Journal of the American College of Cardiology

Amanda Vest, MD

- » Heart Failure Society of America (HFSA) Guideline Committee
- » Fellow of the Heart Failure Society of America (FHFA), April 2017
- » International Society of Heart and Lung Transplantation (ISHLT) 2018 Transplant Registry Early Career Award, February 2018
- » 2018 'Top Reviewer' for *Circulation Heart Failure*
- » R21 Diagnosis of Heart Failure Status Using Epidermal Metabolomics in Sept 2018

Jonathan Weinstock, MD

- » US News and World Report, Top Doctor
- » Abstract Reviewer, American Heart Association Scientific Sessions
- » Manuscript Reviewer, Heart Rhythm, Journal of Interventional Cardiac Electrophysiology, Heart Rhythm Case Reports

Andrew Weintraub, MD

- » Listed, Best Doctor in America
- » Listed, Best Doctors in Boston
- » Manuscript Reviewer, Circulation Heart Failure, Circulation Interventional Cardiology

Benjamin Wessler, MD

- » Received: K23 award from NIH
- » Member: Heart Team Working Group, American College of Cardiology, OptumLabs Visiting Fellow
- » Reviewer: study sections for NIH/NHLBI and NIH/NIA

DIVISION OF

CLINICAL CARE RESEARCH



Harry Selker, MD

The Division of Clinical Care Research has no clinical programs of its own. Physician-researcher Division members have appointments in Medicine and Pediatrics, where they are active participants in clinical activities.

Those with primary appointments in clinical divisions of the Department of Medicine are the following:

- » **Harry Selker, MD**
Internal Medicine and Adult Primary Care, Pratt Diagnostic Center
- » **Elena Byhoff, MD**
Internal Medicine and Adult Primary Care
- » **Karen Freund, MD**
Internal Medicine and Adult Primary Care
- » **David Kent, MD**
Internal Medicine and Adult Primary Care
- » **Susan Parsons, MD**
Hematology-Oncology Adult and Pediatric
- » **Robert Sege, MD, PhD**
Floating Hospital for Children
- » **Benjamin Wessler, MD**
Cardiology

For further details regarding their clinical, teaching and research responsibilities, please see the reports of those divisions and of the Institute for Clinical Research and Health Policy Studies.



Tufts Medical Center

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DIVISION OF

CLINICAL DECISION MAKING



John Wong, MD

“Tufts Medical Center has the only unit in the world that ties the principles of logical decision analysis to the care of individual patients.

It is concerned with identifying strategies of patient care that minimize unnecessary tests and procedures, increase patients’ participation in decisions affecting their care, and decrease the cost of medical care.” — **The Best Hospitals in America: The Authoritative Reference Guide for Patients, Their Families and Medical Professionals.**”

The Division of Clinical Decision Making began as collaboration between computer scientists at the Massachusetts Institute of Technology and physicians at Tufts Medical Center and Tufts University School of Medicine. Under the guidance of Drs. Stephen Pauker and Jerome

Kassirer, the Division was formally established in 1980 to conduct research, teach students, train physicians and provide consultations. The Clinical Consultation Service responds to requests from physicians who are uncertain as to the optimal management strategy for a patient and provides advice based on literature review and formal decision analysis explicitly weighing the risks, harms and benefits of the alternatives. The Division has become a critical component of sophisticated medical systems and a crucial element of lifetime medical education. Many would agree that there is simply too much information available now for even subspecialists to master in their own field. The student, the practitioner and the research scientist must learn how to efficiently access the huge volume of information available, how to digest it critically, and how to use the information to make clinical decisions.

Highlights of 2018

- » Invited Member, United States Preventive Services Task Force (Dr. Wong)
- » Co-chair, American Medical Association Physician Consortium for Performance Improvement Work Group on Preventive Care (Dr. Wong)
- » Task Force Member, American College of Cardiology Foundation Appropriate Use Criteria for Multi-modality Imaging in Cardiac Structure and Function in Valvular and Non-valvular heart Disease (Dr. Wong)
- » Invited Member, American Association for the Study of Liver Disease (AASLD), Hepatitis B Guidance (Dr. Wong)

Faculty

Name	Academic Rank	Title and Special Responsibility
John B Wong, MD	Professor	Division Chief
Brian J Cohen, MD	Assistant Professor	Medical Director, Pratt Diagnostic Center
Jerome P Kassirer, MD	Distinguished Professor	Senior Advisor
Stephen G Pauker, MD	Professor	Division Chief Emeritus

Major Clinical Programs

Clinical Decision Consultation Service

Division provides consultations to physicians who are uncertain as to the optimal management strategy for an individual patient. The service provides advice based on literature review and formal decision analysis. The process explicitly weighs the harms and benefits of the alternatives and often the preferences of the specific patient. Typical consultations involve complex clinical problems or problems that entail uncertainty, difficult tradeoffs, combinations of medical conditions that make traditional strategies of care problematic, conflicting information (tests, treatments or evidence), and preference-sensitive decisions that hinge strongly on individual patient values.

Teaching Activities

Clinical Decision Making

In this elective course, 4th year Tufts medical students learn the rudiments of clinical decision-making, including the interpretation of clinical data and test results using Bayes' rule, the analysis of the risks, harms and benefits of clinical decisions, the estimation and use of probabilities and of prognosis, and the evaluation of outcomes. Students also review the cognitive processes involved in clinical reasoning, exploring the steps used by expert clinicians and identifying potential pitfalls in solving clinical problems. The student participates in clinical consultations and learns how to critically evaluate the medical literature.

Research

The Division focuses its research on clinical decision analysis, comparative effectiveness research, and health policy analysis. The studies examine clinical and policy questions involving the information content of the medical history, physical examination and diagnostic tests, determination of the optimal diagnostic test or test sequence, selection of the best therapy, and evaluation of new medical technologies (tests, devices or drugs). It uses the tools of decision analysis, utility assessment, literature review and synthesis (meta-analysis), medical informatics, Markov model development, Monte Carlo simulation, Bayesian interpretation of diagnostic tests, measurement of patient preferences, cost-effectiveness analysis, and discrete event simulation. Over the past three decades, the Division has sought to make the lessons learned from decision analysis accessible directly to patients through the development of decision aids for shared decision making to help them make better health care decisions in partnership with their clinicians.

Members of the Division are familiar with the use of techniques for assessing patient preferences and incorporating them into clinical decision making. Current research projects include assessments of coronary heart disease treatments, nutrition policies for reducing cancer, heart disease and diabetes incidence and mortality, colon cancer screening, HIV and hepatitis C screening and treatment, screening for hypercholesterolemia, decision aids for shared decision making, interventions for alcohol intake, cost-effectiveness of Tai Chi for osteoarthritis and fibromyalgia, guideline evaluation, and methodological recommendations for performing decision analysis modeling.

Clinical Research Support

Recipient	Funding source	Purpose of award
John Wong, MD	NIH/NCAAM	Mentoring and Research in Patient-Oriented Integrative Medicine
	NIH/NCRR	Clinical and Translational Science Institute Award
	NIH/NHLBI	Economic Analyses of Policy Strategies to Improve Diet and Reduce CVD
	NIH/NIAA	RCT of an integrated Treatment of Persons with Co-Occurring HCV and Alcohol Abuse
	NIH/NIAAA	Value of Personalized Risk Information
	NIH/NIDA	Strategies to Improve the HIV Care Continuum among Key Populations in India
	NIH/NIMHD	Comparative and Cost-Effectiveness of Population Strategies to Improve Diet and Reduce Cancer
	PCORI	Making Better Use of Randomized Trials: Assessing Applicability & Transporting Causal Effects
	PCORI	Funded Clinical Research Network Project with the Chicago Community Trust

Health Care Policy and Clinical Practice

The Division has been involved with numerous consensus conferences, guideline development processes and appropriateness of care assessment for the National Institutes of Health (NIH), Office of Medical Applications Research (OMAR), Institute of Medicine (IOM), US Preventive Services Task Force, American College of Cardiology (ACC), American Heart Association (AHA), American College of Chest Physicians (ACCP), American College of Physicians (ACP), Outcome Measures in Rheumatology (OMERACT), American Association for the Study of Liver Disease, (AASLD), Centers for Disease Control and Prevention (CDC), Medicare Evidence Development Advisory Committee (MedCAC), the CDC Working Group Evaluating Genetic and Genomic Testing (EGAPP), European League Against Rheumatism (EULAR), World Health Organization (WHO), and US Food and Drug Administration (FDA).

The Division has also translated guidelines into quality improvement and performance measures through the Physician Consortium for Performance Improvement Work Group (AASLD/AGA/AHA/ACC/AMA) on Hepatitis C, Coronary Artery Disease, Hypertension, Heart Failure, Cardiac Imaging, and Preventive Health. In addition, the Division has been engaged in Patient Outcome Research Teams (PORTs) sponsored by the then Agency for Health Care Policy and Research (AHCPR) on Chronic Ischemic Heart Disease and Diabetes Mellitus. Lastly, the Division has developed decision aids for shared decision making through the non-profits Informed Medical Decisions Foundation and Healthwise to increase patient knowledge and help patients understand the critical role that their preferences may play in their care decisions.



Honors and Awards

John Wong, MD, FACP

- » Task Force Member, United States Preventive Services Task Force
- » Task Force Member, American College of Cardiology Foundation Appropriate Use Criteria for Multi-modality Imaging in Cardiac Structure and Function in Non-Valvular Heart Disease
- » Task Force Member, American College of Cardiology Foundation Appropriate Use Criteria for Multi-modality Imaging in Valvular Heart Disease
- » Co-chair, American Medical Association Physician Consortium for Performance Improvement. Work Group on Preventive Care
- » Chair, Hepatitis C: Diagnostics, Epidemiology, Natural History Abstract Review Committee for Association for the Study of Liver Disease and for Digestive Disease Week
- » Invited Panel Member, American Association for the Study of Liver Disease and Infectious Diseases Society of America, Recommendations for Testing, Managing, and Treating Hepatitis C, 2014-

- » Invited Member, American Association for the Study of Liver Disease (AASLD), Hepatitis B Guidance
- » Invited Member, Awards Committee, Society for Medical Decision Making
- » Invited Member, Working Towards a Repository of Shareable Cost Effectiveness Analysis Models, Duke-Margolis Center for Health Policy

Stephen Pauker, MD, MACP, FACC, FACMI, ABMH

- » Member, National Academy of Medicine

Brian Cohen, MD

- » Castle Connolly/Boston Magazine Top Doctor

DIVISION OF

CLINICAL NUTRITION



Edward Saltzman, MD

Nutrition plays a key role in disease risk as well as in healing.

There is increasing evidence for novel roles of nutrients in inflammation, immune function, carcinogenesis, and cognitive decline. Members of the Division of Clinical Nutrition are nationally known nutrition researchers and clinicians who provide an array of consultative nutrition services to acutely and chronically ill patients.

Tufts University is a national and international leader in nutrition care, education and research. Tufts Medical Center and Tufts University School of Medicine have long had a strong focus on the clinical, training, and research aspects of human nutrition. The campus features a remarkable array of resources, including the Division of Clinical Nutrition at Tufts Medical

Center, the Frances Stern Nutrition Center (FSNC), the Jean Mayer USDA Human Nutrition Research Center on Aging at Tufts University (HNRCA), and the Friedman School of Nutrition and Science and Policy.

Faculty

Name	Academic Rank	Title and Special Responsibility
Edward Saltzman, MD	Associate Professor	Chief
Johanna Dwyer, PhD	Professor	Director, Frances Stern Nutrition Center
Joel Mason, MD	Professor	Director, GI Nutrition Clinic
Irwin Rosenberg, MD	University Professor	



Major Clinical Programs

Adult Nutrition Support Service

The adult Nutrition Support Service (NSS), under the direction of Dr. Saltzman and with the assistance of the inpatient dietitians, provides expert nutritional consultation for inpatients who require enteral or parenteral nutrition support and for patients who require continued nutrition support after discharge. The attending staff also provides interpretation of indirect calorimetry (metabolic cart) studies.

GI Nutrition Clinic

Under the supervision of Dr. Mason, a nationally recognized expert in nutritional management of malabsorptive disorders, this clinic provides care for patients with complex nutritional disorders, as well as for routine gastroenterological conditions.

Tufts Medical Center Committee on Nutrition

To ensure that nutrition practices at Tufts Medical Center are uniform and consistent with current best practices, the Nutrition Committee monitors provision of nutrition care throughout the medical center and contributes to development of policies and procedures.

Teaching Activities

Division members participate extensively in the education of students at Tufts University School of Medicine. Dr. Saltzman directs the second-year course in Nutrition and Medicine. Residents and Fellows in multiple medical subspecialties have the option of rotating through the inpatient Nutrition Support Service and GI Nutrition clinic. Dietetic interns who are training to become Registered Dietitians in the Frances Stern Nutrition Center have required rotations on the inpatient Nutrition Support Service.

Members of the division are also active in the Friedman School of Nutrition and Science Policy, where Dr. Saltzman is Academic Dean for Education. Division members provide classroom teaching and serve as mentors for doctoral students and post-doctoral fellows.



Research Activity

Basic Research

Recipient	Funding Source	Purpose of Award
Joel Mason	National Institute of Food and Agriculture (NIFA)	To examine, within the context of a mouse model, the potential utility of using supplementation with vitamin B6 and curcumin to prevent obesity-promoted colorectal cancer

Several members conduct research at the HNRCA, one of six USDA supported national Human Nutrition Research Centers. Dr. Mason directs the Vitamins and Carcinogenesis Laboratory. Dr. Saltzman is Medical Director of the Metabolic Research Unit, the HNRCA's in- and outpatient metabolic unit, and is a member of the Energy Metabolism laboratory at the HNRC. Dr. Dwyer serves a Senior Nutrition Scientist in the Office of Dietary Supplements, National Institutes of Health.

Honors and Awards

Johanna Dwyer, RD, PhD

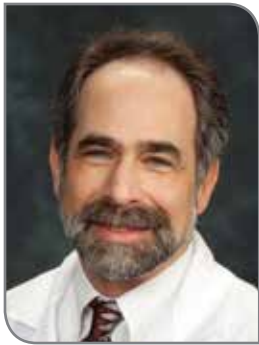
- » Editor, Nutrition Today
- » Institute of Medicine, National Academy of Sciences

Joel Mason, MD

- » Board of Directors, American Society for Nutrition, 2016-18
- » Co-chair of the national annual conference, Advances and Controversies in Clinical Nutrition, 2015, 2016
- » Mary Swartz Rose Senior Investigator Award, American Society for Nutrition, 2010
- » E.V. McCullom Award, American Society for Nutrition, 2014
- » Associate Editor, American Journal of Clinical Nutrition
- » Co-chair for 2019 workshop on metabolic interactions between excess folate and vitamin B12 deficiency

DIVISION OF

ENDOCRINOLOGY, DIABETES AND METABOLISM



Ronald Lechan, MD

The Division of Endocrinology at Tufts Medical Center offers clinical services ranging from comprehensive diabetes management to subspecialty outpatient clinics devoted to pituitary, bone, thyroid, adrenal disorders and endocrine neoplasia. In addition to a wide variety of teaching activities for medical students, residents and endocrinology fellows, the Division offers selective courses in clinical endocrinology and endocrine research for medical students.

The division has a distinguished history dating to the 1940's when Dr. Edwin B. Astwood became its first chief. During his tenure, a number of advances were made including the introduction of drugs for the treatment of hyperthyroidism, the use of thyroid hormone therapy for the treatment of thyroid nodules, the isolation and preparation of ACTH for clinical use and the purification of human growth hormone, allowing the first treatment for pituitary dwarfism.

In 1972, Dr. Seymour Reichlin, a world-renowned leader in the field of neuroendocrinology and disorders of the thyroid gland, became chief of the division. Outstanding achievements made during his tenure included the development of the first radioimmunoassay for thyrotropin-releasing hormone (TRH), identification of the origin of the hypothalamic tuberoinfundibular system, elucidation of the somatostatin and TRH genes and studies on the mechanisms of action of somatostatin, TRH and prolactin secretion, demonstration of the role of the immune system in neuroendocrine regulation, studies on the evaluation and treatment of hyperprolactinemia, and the diagnosis and treatment of patients with MEN II syndrome.

With the formation of the Human Nutrition Research Center on Aging, the Endocrinology Division gained prominence for its studies of disorders of lipids, calcium metabolism and obesity. In 1990, Dr. A.E. Boyd, III became chief and brought expertise in diabetes mellitus and molecular biology. The division grew rapidly when Dr. Boyd merged the Division of Molecular Medicine with the Division of Endocrinology. After Dr. Boyd's untimely death in 1995, Dr. Ronald Lechan assumed leadership of the division. During this time, the division has continued its research interests in bone metabolism, diabetes, neuroendocrinology, obesity and adipocyte function, and has substantially grown its clinical program to involve offsite programs in Quincy, Norfolk and the Merrimack Valley. Division members have received numerous grants, awards, prestigious lectureships and committee memberships..

Highlights of 2018

- » Vitamin D and type 2 diabetes (D2d) study, a NIH-supported multi-center clinical trial coordinated by the Division of Endocrinology, will determine whether vitamin D supplementation lowers risk of diabetes as well as cancer and cardiovascular disease.
- » Completion of a large clinical trial designed to determine the effect of supplemental vitamin D on muscle performance in older adults with low-normal serum 25(OH)D levels.
- » Ongoing efforts to establish satellite endocrinology subspecialty clinics in local communities outside of the Boston area and telemedicine consult program with Patient Advocates in Maine
- » Development of a pathway for prescribing medication with positive cardiovascular outcome trials for patients with CVD, CKD and heart failure.
- » Implementation of a hyperglycemia pilot program dedicated to improved inpatient management of diabetes at Tufts Medical Center
- » Twelfth year of successful outcomes in the Diabetes Reversal Program
- » Eight new grants awarded to Division Faculty members
- » Forty-five peer reviewed papers, book chapters and reviews published in 2018

Faculty

Name	Academic Rank	Title and Special Responsibility
Ronald M. Lechan, MD, PhD	Professor	Chief of Division Director, Fellowship Program Director, Neuroendocrine Clinic Co-director, Neuroendocrine & Pituitary Program
Lisa Ceglia, MD, MS	Assistant Professor	Director, Bone Clinic Medical Director, Metabolic Research Unit, HNRCA
Michael Dansinger, MD	Assistant Professor	Director, Diabetes Reversal Program
Paula Dabenigno, RN		Certified Diabetes Educator
Bess Dawson-Hughes, MD	Professor	Director, Bone-Metabolism Laboratory, HNRC
Csaba Fekete, MD, PhD	Adjunct Professor	Professor of Neurobiology, Hungarian Academy of Science
Andrew S. Greenberg, MD	Professor	Dr. Robert C and Veronica Atkins Professor in Metabolism and Nutrition Director, Obesity and Metabolism Laboratory at Jean Mayer USDA Human Nutrition Research Center at Tufts University
Julie Howe, NP		Nurse Practitioner and Certified Diabetes Educator
Robin Koshy, MD	Assistant Professor	General Endocrinologist Consultant for Tufts Medical Center Primary Care
Jacqueline Kung, MD	Assistant Professor	Director, Thyroid Clinic and Ultrasound and Fine Needle Aspiration Thyroid Clinic Consultant, Tufts Merrimack Valley Endocrinology Clinic
Anastassios G. Pittas, MD, MS	Professor	General Endocrinologist Consultant, Tufts Norfolk Specialty Care Center
Aruna Saraswat, MD	Assistant Professor	General Endocrinologist Consultant for Tufts Medical Center Primary Care Norfolk Specialty Care Center
Seymour Reichlin, MD	Professor Emeritus	
Richard Siegel, MD	Associate Professor	Director, Diabetes Clinic Director, Internal Medicine Residency Endocrine Rotation Director, 4th Year Medical Student Endocrine Elective Co-Director, From Health To Disease III: 2nd Year Medical Student Endocrine Course
Jeffrey Tatro, PhD	Associate Professor	Researcher
Roberto Toni, MD, PhD	Adjunct Professor	Professor of Human Anatomy, University of Parma School of Medicine
Jeffrey Vercollone, MD	Assistant Professor	General Endocrinologist Consultant for Tufts Medical Center Primary Care-Quincy

Major Clinical Programs

The Division of Endocrinology offers complete diagnostic and therapeutic services for common and complex endocrine disorders. A variety of subspecialty outpatient clinics provide expert and investigational treatments, namely:

- » Bone Disease (Dr. Lisa Ceglia, Dr. Robin Koshy)
- » Diabetes and Metabolism (Drs. Richard Siegel, Anastassios Pittas, Lisa Ceglia, Aruna Saraswat, Jeffrey Vercollone)
- » Diabetes Reversal Program (Dr. Michael Dansinger)
- » General Endocrinology (Drs. Robin Koshy, Jacqueline Kung, Aruna Saraswat, Richard Siegel, Jeffrey Vercollone)
- » Neuroendocrinology and Endocrine Neoplasia (Dr. Ronald Lechan)
- » Obesity (in collaboration with the Obesity Consultation Center, Dr. Richard Siegel)
- » Thyroid Disease and Thyroid Cancer (Dr. Jacqueline Kung)
- » Telemedicine (Dr. Richard Siegel)
- » Transgender Medicine (Dr. Aruna Saraswat)

The inpatient consultation team offers management for diabetes and all endocrine disorders for hospitalized patients. In addition, under the direction of Dr. Jeffrey Vercollone, a new, inpatient hyperglycemia/hypoglycemia service was piloted on North 7 in which an automated consult is generated for any patient with two, consecutive blood glucose levels exceeding 200 or hypoglycemia. Under the direction of Dr. Richard Siegel, protocols for insulin management in the intensive care units and insulin order forms have been developed and implemented on medical and surgical floors to improve diabetes management in the hospital. Dr. Siegel offers a novel telemedicine consultation program with Patient Advocates in Maine, focused on the care of patients with diabetes mellitus.

Under the direction of Dr. Michael Dansinger, the Diabetes Reversal Program at Tufts Medical Center was introduced, now into its 12th year, in which diet and exercise has achieved remission in approximately a third of patients with type 2 diabetes. Julie Howe, NP have overseen the insulin pump program as well as an Asian Outreach Screening Program to identify patients in the local community with diabetes mellitus. Under the direction of Dr. Jacqueline Kung, the thyroid cancer program includes mutational testing and gene expression classifier testing on fine needle biopsy aspirates of thyroid nodules.

In collaboration with the Departments of Neurosurgery, Radiology and Ophthalmology, a multidisciplinary neuroendocrine pituitary program was developed under the direction of Drs. Ronald Lechan and Carl Heilman to facilitate the evaluation and care of patients with hypothalamic and pituitary disorders. Drs. Lisa Ceglia, Jeffrey Vercollone and Robin Koshy have been working collaboratively with the Division of Internal Medicine and Adult Primary Care to improve the care of patients with type 1 and type 2 diabetes mellitus, and, under the direction of Dr. Lisa Ceglia, with the Department of Orthopedics, to improve bone health for patients with recent bone fractures. The Division has established satellite clinics in Quincy and Norfolk, overseen by Dr. Aruna Saraswat and Dr. Jeffrey Vercollone, and in the Merrimack Valley, overseen by Dr. Jacqueline Kung, to assist NEQCA physicians with the care of their patients with diabetes and other endocrine disorders.

Teaching Activities

The Division offers fellowship training in Endocrinology, Diabetes and Metabolism, accepting two new Fellows each year into a 2-year clinical or 3 year clinical/research program. One new Fellow each year is supported by a grant from The Gerald J. and Dorothy R. Friedman New York Foundation for Medical Research. Included in the teaching activities are formal lectures on topics in endocrinology, instruction in thyroid ultrasound and fine needle aspiration biopsy of thyroid nodules, interpretation of bone densitometry studies, and interpretation of continuous glucose monitoring data.

The Division is also active in teaching house staff and medical students. Among the offerings are the following:

- » Selective courses in clinical endocrinology and endocrine research for medical students, supervised by Drs. Richard Siegel and Ronald Lechan
- » Formal instruction in the endocrine pathophysiology course to second year medical students in the From Health to Disease III: Endocrine Course, co-directed by Dr. Richard Siegel
- » Lectures at Noon Conference and participation in Morning Report for Internal Medicine Residents
- » A series of didactic lectures for first year Fellows in the endocrinology training program
- » Electives in the endocrinology clinics and on the endocrinology consultation services for both medical students and Internal Medicine Residents.
- » One-on-one mentoring in lifestyle coaching to medical residents and medical students who rotate through the lifestyle-based Diabetes Reversal Program.

Faculty members have also been mentors, served on PhD and MS Thesis Committees, and participated in teaching in the Medical School, Sackler School of Graduate Biomedical Sciences, USDA Human Nutrition Center, Dental School, Friedman School of Nutrition and Health Policy, University of Parma and Hungarian Institute of Science.

Dr. Ceglia lectured for the Core Physiology, Core Pathology course on skeletal homeostasis and metabolic bone disease. Dr. Greenberg directed the predoctoral training program for nutrition students at the Friedman School. Dr. Saraswat volunteered as a faculty evaluator for medical student Objective Structure Clinical Exam (OSCE) encounters, lectured for the medical student clerkship series and was an Instructor for the Introduction to Clinical Reasoning course for second year medical students. Dr. Siegel directs the 4th year Medical Student Endocrine Elective and preceptor for 1st year Medical Student Endocrinology selective, Co-Director of From Health to Disease III Endocrine course for 2nd year medical students, precepts of the Medicine III rotation in Endocrinology for Tufts School of Dental Medicine, participated in the Clinical Pathology Core Lecture Series and Noon Conference for the Internal Medicine Residents. Dr. Dansinger was involved in overseeing evidence-based didactic training of dietitians in lifestyle coaching at Boston Heart Diagnostics and provided one-on-one mentoring in lifestyle coaching to medical residents and students rotating through the Diabetes Reversal Program in the Endocrinology Clinic. Dr. Kung served as a preceptor for Tufts Medical Student Free Clinic Sharewood Project and practicum preceptor for the Endocrine Society Introductory Hands-On Thyroid Ultrasound Workshop in Chicago, IL. Division members were also involved in teaching at the American Thyroid Association Annual meeting, lecturing to PhD students in the Janos Szentagothai Neuroscience Department at Semmelweis University and at the University of Parma. In addition, Dr. Roberto Toni gave a courses on Regenerative Medicine in Endocrinology and on Human Embryology and Anatomy at the University of Parma School of Medicine, and developed a series of multimedia web lectures on human anatomy of the head and neck taken from the Tenchini Collection at the Museum of Biomedicine-BIOMED at Parma University. The lectures can be found at www.anfamedmuseo.unipr.it.

Research Activities

The commitment to research by the faculty continues to be a major focus of the Division. Success in this endeavor is indicated by the publication record of the faculty that includes 45 peer reviewed papers, book chapters and reviews in 2018.

Support for faculty research is derived from 15 NIH grants, 2 grants from the USDA, 1 grant from the ADA, 1 grant from Hungarian Scientific Research Fund, 3 grants from the European Union, grants from the Boston Heart Diagnostics and a variety of industry and institutional grants. Eight new grants were awarded to Division members this year.

Highlights of recent research accomplishments include:

- » Discovery that the adipocyte protein, ACSL4, regulates diet-induced obesity and associated metabolic complications.
- » Demonstration that lower serum 25-hydroxyvitamin D status may be associated with greater fat mass and impaired glucose metabolism independent of BMI and other risk factors for diabetes
- » Demonstration that urine citrate may not be a suitable alternative to urinary net acid excretion (NAE) when assessing acid-base status in relation to bone turnover in older adults
- » Demonstration that KHC03 supplementation does not demonstrate strong evidence for muscle/nitrogen sparing during diet-induced weight loss in overweight adults
- » Evidence for age-adjusted increased prevalence of osteoporosis and low bone mass in Puerto Rican men living in the US
- » Demonstration that nitric oxide and endocannabinoid transmitter system of the hypothalamic paraventricular nucleus play a crucial role in mediating the effects of NPY on parameters of energy homeostasis
- » Demonstration that perifornical urocortin/TRH neurons innervate and exert opposite effects on anorexigenic POMC neurons in the arcuate nucleus
- » Development and patenting of a thyroid hormone indicator mouse strain (THAI)
- » Demonstration of a dynamic, spatiotemporal pattern of high and low Prss56 expression in tanycytes
- » Evidence that tanycytes can give rise to mature, POMC neurons that integrate into the normal satiety circuitry and associated with weight loss
- » Evidence to suggest that inhibition of CDK4/6 may induce regression of nonfunctioning pituitary macroadenoma

- » Design and promotion of Boston Heart Beta Cell function and Sensitivity Index for early identification and treatment of beta cell dysfunction
- » Evidence to suggest that national trends toward annual reductions in LDL-cholesterol stopped after initiation of the 2013 guidelines that removed LDL targets
- » Evidence that Boston Heart Diagnostics Lifestyle Program reduced excess body weight and improved cardiovascular risk factors in a 1-year randomized controlled trial of 160 firefighters and police officers, and in a longitudinal cohort of 20,000 patients compared to 20,000 closely matched control patients without the program
- » Development of a mass spectrometry method to quantify collagen types 1-5 in the rat thyroid lobe matrix
- » Evidence for presence of neuroectodermal and mesodermal populations of adult stem cells in human nasal septal cartilage
- » Evidence that endocrine-disrupting chemicals modify thyroid hormone receptor distribution in the hypothalamic paraventricular nucleus in female but not male rats

Basic Research

Recipient	Funding source	Purpose of award
Csaba Fekete, MD	EU Program for Research	Role of GLP-1-NH3 conjugates in regulation of thyroid hormone action
	*Hungarian National Brain Research Program (PI)	Role of endocannabinoid and nitric oxide systems of the hypothalamic paraventricular nucleus in mediation of NPY-induced effects on energy homeostasis
	NIH (Co-Investigator)	Tanycytes and hypothalamic inflammation associated with obesity
Andrew Greenberg, MD	NIDDK/USDA (Co-PI)	Drug-vitamin interactions mediated by the thiamine transporter, SLC19A3 Regulation of White Fat Browning disease
	*NIDDK (Co-Investigator)	ACSL4 on the interface of metabolism and mental health
	NIDDK (Co-Investigator)	Role of tumor progression locus (TPL2) in the pathogenesis of clostridium difficile infection (CDI)
	NIH (Co-director)	Boston Nutrition Obesity Research Center
	USDA (PI)	Regulation of Adipocyte and Adipose Tissue Metabolism in Obesity Related Inflammation and Metabolic Disorders
Ronald M. Lechan, MD, PhD	NIH (PI)	Tanycytes and hypothalamic inflammation associated with obesity
	NIH (PI)	Role of Parasubthalamic Nucleus (PSTN) in Appetite Regulation
	*NIH (PI)	Characterization of Tanycytes Undergoing POMC Neurogenesis
Roberto Toni, MD	Museum Network System, University of Parma	Morphology and endocrinology in art (MORPHENDO)
	*European Union Horizon	Multistage model of thyroid gland function for screening endocrine-disrupting chemicals in a biologically sex-specific manner
	Horizon 2020 European Consortium on Bioartificial Endocrine Organs (PI)	Development of biotechnology and bioengineering strategies to develop ex situ bioartificial organs by 3D bioprinting
	Italian Ministry of Research and University of Parma School of Medicine	Molecular mechanisms regulating growth and differentiation of neuroendocrine cells

* New Award in 2018

Clinical Research

Recipient	Funding source	Purpose of award
Lisa Ceglia, MD	*NIH (PI)	Impact of protein and alkali supplementation on skeletal muscle in older adults
	DSM Nutritional Products (PI)	Effects of 25(OH)D supplementation on vitamin D receptor concentration and skeletal muscle fiber size in younger postmenopausal women
	NIH (Co-Investigator)	Vitamin D and type 2 diabetes (D2D study) (with Dr. Pittas)
	Biophytis S.A./ICON (Co-Investigator)	Characterizing Sarcopenia and sarcopenic obesity in patients aged 65 years and over at risk of mobility disability. An observational clinical trial.
	Astellas Pharmaceuticals (Co-Investigator)	Phase 1b study to assess the anti-fatigability effect of CK-2127107 in elderly male and female subjects with limitations immobility
Michael Dansinger, MD	*Boston Heart Diagnostics (PI)	Dietary Quality Photo Navigation: A preliminary biomarker validation study and comparison with a food frequency questionnaire
	Boston Heart Diagnostics	Development and Validation of a new tool for early identification of beta cell dysfunction
Bess Dawson-Hughes, MD	USDA (PI)	Studies of nutrition and the aging skeleton
	NIH (PI)	Bone Material Strength in Normoglycemic and Hyperglycemic Adults
	*NIH (Co-Investigator)	The effect of protein with or without potassium bicarbonate on muscle in older adults (with Dr. Ceglia)
	*NIH (Co-Investigator)	Bone microarchitecture, diabetes and change in bone mineral density in Puerto Rican adults
	NIH (Co-Investigator)	Vitamin D and Type 2 Diabetes (D2D) (with Dr. Pittas)
	NIH (Co-Investigator)	Vitamins D and K and Neuropathologically-Defined Alzheimer and Other Dementias in Older Patients
NIH (Co-Investigator)	Diet and Health Behavior Change to Improve Bone Health	
Jacqueline Kung, MD	Roche Diagnostics (PI)	Evaluation of a New Thyroglobulin Assay in Subjects with Differentiated Thyroid Cancer
Ronald Lechan, MD, PhD	Gerald J. and Dorothy R. Friedman Foundation for Medical Research (PI)	Clinical and research training in Endocrinology, Diabetes and Metabolism
	A5 Adrenal Research Network (Investigator)	A5 SDHB Paraganglioma Genetics Study
Richard Siegel, MD	NIH (Co-Investigator)	Assessment of Coagulation Factors in Nonalcoholic Fatty Liver Disease (NAFLD) and Related Conditions
	Tufts Health Plan Foundation	Care Coordination in Asian Elders
Anastassios Pittas, MD	American Diabetes Association (PI)	D2d Co-Support Award
	NIDDK (PI)	Multi-center randomized trial of vitamin D supplementation for prevention of type 2 diabetes
	NIDDK (PI)	Role of vitamin D in established type 2 diabetes
	Department of Defense (Co-Investigator)	Development of more effective approaches to sustain weight loss
Roberto Toni, MD, PhD	Center for Sport and Exercise Medicine, University of Parma (PI)	Role of obesity in working performance of military personnel and amateur cyclists

*New Award in 2018



Honors and Awards

Dr. Lisa Ceglia

- » Boston Magazine 2018 list of Top Doctors
- » Medical Director, Metabolic Research Unit, HNRCA at Tufts
- » Recipient of new R01

Dr. Michael Dansinger

- » Council of Directors, True Health Initiative
- » Member of the Expert Panel, CDC Worksite Health ScoreCard
- » Selected as panelist for annual Best Diets rankings by US News & World Reports

Dr. Bess Dawson-Hughes

- » Editorial Board, Bone
- » Editorial Board, Osteoporosis International
- » Editorial Board, Calcified Tissue International
- » Speaker, IOF-ESCEO Annual Meeting on Osteoporosis and Sarcopenia, Krakow, Poland
- » Speaker, ISCD Annual Conference
- » Speaker, Grand Forks USDA Research Center
- » Speaker, Vitamin D Conference, Sienna IT

- » Speaker, Chinese Medical Assn Conference, Soochow, China
- » Speaker, Taiwan Osteoporosis Society, Taipei
- » Speaker, IOF Geneva meeting
- » Speaker, IOF Regional Osteoporosis meeting, Sydney, Australia

Dr. Csaba Fekete

- » Head, Neuroscience Section of the Hungarian Association of Endocrinology and Metabolism
- » Editorial Board, Frontiers in Endocrinology Systems and Translational Endocrinology
- » Member, Neuroscience Study Section, Hungarian National Research, Development and Innovation Office

Dr. Andrew Greenberg

- » Associate Director of Boston Nutrition Obesity Center (BNORC)
- » Jean Mayer 25 Year Scientific Leadership and Service Award

Dr. Jacqueline Kung

- » Co-Chair, American Thyroid Association Trainees and Career Advancement Committee
- » Outstanding Tufts University School of Medicine Lecturer 2017-2018
- » Volunteer Attending Physician, Tufts Medical Student Free Clinic Sharewood Project

Dr. Ronald Lechan

- » Editorial Board, Acta Biomedica
- » Boston Magazine 2018 list of Top Doctors
- » Castle Connolly America's Top Doctors
- » America's Most Honored Professionals 2018 Top 1%
- » External Expert, PhD Program in Molecular Medicine, University of Parma School of Medicine
- » Member, International FIPA Consortium to study familial pituitary adenomas
- » Member, International Consortium to study bilateral pheochromocytomas

Dr. Anastassios Pittas

- » Boston Magazine 2018 list of Top Doctors
- » Member, NIH Special Emphasis Panel
- » Member, American Diabetes Association Research Grant Review Committee
- » Speaker, Second International Conference on Controversies in Vitamin D, Sienna, Italy
- » Speaker, Universita Campus Bio-Medico, Rome, Italy

Dr. Aruna Saraswat

- » Division Representative, Tufts Medical Center Quality Improvement Committee
- » Division Representative, Tufts Medical Center Gender-Related Medicine Committee

Dr. Richard Siegel

- » Boston Magazine Best Doctors 2018
- » Outstanding Tufts University School of Medicine Lecturer, 2017-2018
- » Speaker, Janssen Pharmaceuticals, Diabetes Management 2018

Dr. Jeffrey Tatro

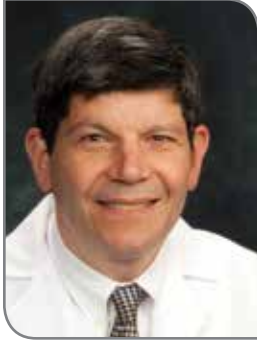
- » Inventor on licensing agreement pertaining to worldwide sales of D-MSH antiserum

Dr. Roberto Toni

- » Member, International PhD Programs Review Boards, Board of Biological Sciences, National Institute of Science, Education and Research, Bhubaneswar, Odisha, India
- » Nominee, Italian Ministry of Foreign Affairs for Scientific Attache at the General Consulate of Italy in San Francisco
- » Head, Endocrinology, Diabetes and Eating Disorders Clinic, Medical Center "Galliera", San Venanzio, University of Parma, Parma, Italy
- » Member, National Committee on Ethno-Anthropology Standards and Rules, Italian Central Institute of Archiving and Records, Italian Ministry of Cultural Heritage, Rome, Italy
- » Recognition by Editor in Chief as Leader Section Editors of Journal of the Italian Society of Endocrinology, L'Endocrinologist

DIVISION OF

GASTROENTEROLOGY



Joel Weinstock, MD

The Division of Gastroenterology was established in the 1960s under the direction of Dr. James Patterson, a dermatologist who became a gastroenterologist as a result of his interest in the skin manifestations of digestive diseases.

Dr. Marshall Kaplan, who had established a reputation at the NIH as an investigator of liver disease, succeeded Dr. Patterson as Division Chief in 1972. During Dr. Kaplan's thirty-year tenure, the Division became widely known for the management of primary biliary cirrhosis and sclerosing cholangitis and developed an academic and research focus. Dr. Kaplan also was an Associate Editor of the *New England Journal of*

Medicine. In 2005, Dr. Joel Weinstock, who was well known for basic investigations of intestinal immunology, became Chief of the Division. His appointment brought novel approaches to the treatment of inflammatory bowel disease and a strong basic science interest in the mechanisms of immune regulation in the gut.

In 1984, the Division became one of the first awardees of an NIH Silvio O. Conte Digestive Disease Research Center grant. This basic research program, known as the GRASP Center, formed the central link among digestive disease researchers throughout the medical center, the medical school and the veterinary school. The founding director of the GRASP Center was Mark Donowitz MD; Andrew Plaut became director in 1987.

Many former members of the Division have made major contributions to the field of gastroenterology and three have been presidents of the American Gastroenterological Association.

The members of the Division combine clinical and basic research talents. Members receive funding from the NIH and pharmaceutical industry and patients are referred from a network of internists and gastroenterologists throughout New England. Aside from the particular strengths in cholestatic liver disease and inflammatory bowel disease, the Division offers advanced endoscopic procedures for a variety of gastrointestinal disorders. The liver transplant program has merged with the program at Lahey Clinic so that the surgical procedures are now done at Lahey Clinic but the identification of candidates and the pre-and post-operative care remain at Tufts Medical Center.

Highlights of 2018

- » Joel Weinstock, MD – Best Doctors 2017 – “Boston Magazine”
- » Moises Guelrud, MD – Boston Doctors 2017 – “Boston Magazine”
- » Joel Mason, MD – Boston Doctors 2017 – “Boston Magazine”
- » Lori Olans, MD – Boston Doctors 2017 – “Boston Magazine”

Faculty

Name	Academic Rank	Title and Special Responsibility
Joel V. Weinstock, MD	Professor	Division Chief
Harmony Alison, MD	Assistant Professor	Director, GI Clinic
Martin Beinborn, MD, PhD	Assistant Professor	
Peter Bonis, MD	Adjunct Professor	
Aaron Dickstein, MD	Clinical Assistant Professor	
Raffi Karagozian	Assistant Professor	
Alan Kopin, MD	Professor	Director, Molecular Pharmacology Research
John, Leung, MD	Assistant Professor, Medicine & Pediatrics	Director, Food Allergy Center Co-Director, Food Allergy Center at Floating Hospital for Children Affiliated Faculty, Tufts Innovation Institute
Joel B. Mason, MD	Professor	Professor of Medicine and Nutrition; Director, Vitamins & Carcinogenesis Laboratory, USDA Human Nutrition Research Center at Tufts University
Nikola Natov, MD	Assistant Professor	
Lori Olans, MD	Assistant Professor	
Andrew Plaut, MD	Professor	
Jatin Roper, MD	Assistant Professor	
Mark J. Sterling	Instructor of Medicine	
Mary Beth Sweeney	Nurse Practitioner (Hepatology)	
Robert Yacavone, MD	Assistant Professor	Director, Therapeutic Endoscopy Unit

Major Clinical Programs

The clinical activities of the Gastroenterology Division of Tufts Medical Center include outpatient and inpatient management of gastrointestinal disorders and liver diseases. The Division has an international reputation in chronic cholestatic liver diseases and in inflammatory bowel disease, leading to referrals from worldwide.

The Division has special expertise in:

- » Esophageal motility studies and 24-hour pH monitoring of the esophagus
- » Endoscopic treatment of Barrett's esophagus
- » Peptic ulcer disease
- » Gastrointestinal endoscopy, including transduodenal bile duct and advanced pancreatic endoscopic therapy

- » Colonoscopy and colonoscopic polypectomy, chromoendoscopy and magnification endoscopy
- » Management of patients with chronic liver disease including chronic hepatitis, cirrhosis, gallstones, primary sclerosing cholangitis and primary biliary cirrhosis.
- » Chronic cholestatic liver disease
- » Inflammatory bowel disease

Physicians in the Division of Gastroenterology have pioneered innovative medical treatments for primary biliary cirrhosis and primary sclerosing cholangitis. These therapies appear to induce remission in some patients with previously untreatable disease.



Other interests include malabsorption disorders, and the clinical evaluation of nutritional disorders and weight loss; sexually transmitted intestinal and liver disease, including hepatitis and parasitic infections; and chronic secretory diarrhea. The inflammatory bowel disease clinic applies an interdisciplinary approach for the care of complex diseases including faculty from the Departments of Colorectal Surgery, Radiology and Pathology. There is expertise in a wide spectrum of inflammatory disorders including ulcerative colitis, Crohn's disease, lymphocytic colitis, collagenous colitis and many others.

The GI motility service offers the latest techniques for the study of motility problems of the gastrointestinal tract. Physician experts applying this advanced technology aid in the evaluation of non-cardiac chest pain, gastroesophageal reflux disease, defecation disorders and more.

The Food Allergy Center at Tufts Medical Center and Floating Hospital for Children was established in 2013 in collaboration with the pediatric and adult GI Division. It provides integrative, patient-oriented, multidisciplinary care for both adults and children with known or suspected food allergies/intolerances. Division members treat diverse conditions like food anaphylaxis, eosinophilic esophagitis and eosinophilic gastroenteritis.

Teaching Activities

The Division of Gastroenterology is extensively involved in the education of medical students. In the preclinical years, the division is responsible for the GI pathophysiology course. In the clinical years the division teaches students on both the Gastroenterology subspecialty floor and on the inpatient consultation service.

Interns and residents at Tufts Medical Center rotate through the GI subspecialty ward and may also choose an elective on the GI consultation service. These experiences expose residents to a wide variety of gastrointestinal disorders.

The Gastroenterology Fellowship Program is a joint fellowship program between Tufts Medical Center and St. Elizabeth's Medical Center of Boston, both of which are affiliates of Tufts University School of Medicine. This collaboration has significantly enriched the educational experience of the teaching program. Most of the trainees seek academic careers.

Residents from the internal medicine training program rotate through the Allergy Division. Those with a particular interest in Allergy and Clinical Immunology are given opportunities to participate in extra clinical sessions and are encouraged to do literature surveys and extended evaluations of patients with complicated illnesses. House staff expressing interest in Allergy and Clinical Immunology have been supported in applications for fellowship training in Allergy and recent house staff members have been accepted to such fellowships in well-recognized programs including Scripps Clinic, Brigham and Women's Hospital, Baylor College of Medicine and University of Virginia College of Medicine.

Divisional staff regularly conduct consultations with physicians within the New England Quality Care Alliance, and educate dietary interns rotating through the Food Allergy Center on management of food allergies and food intolerances.



Clinical Research

Recipient	Funding Source	Purpose of Award
Aaron Dickstein, MD	Unfunded Study	IRB 12706 Assessing the yield of screening colonoscopies in LVAD patients: A retrospective study.
John Leung, MD	National Institutes of Health (NIH)	A prospective, multi-center, longitudinal and exploratory pediatric and adult study are to determine the correlation of clinical outcome measures with the established biomarker of peak mucosal eosinophil count (Phase 1), and to compare the transcriptomes with their respective peak mucosal eosinophil counts and respective clinical outcome measures.
	National Institutes of Health (NIH)	The primary objective of this proposal is to conduct a prospective, non-blinded randomized trial comparing rates of remission of novel empiric elimination dietary therapies in eosinophilic esophagitis (EoE) in order to assess the therapeutic viability of empiric elimination diet. Moreover, we aim to assess the response to topical swallowed steroids in those who were non-responders to empiric six food dietary therapy regimens and the response to 6FED in 1FED non-responders.
	Patient-Centered Outcomes Research Institute (PCORI)	The primary objective of this proposal is to conduct a prospective, non-blinded randomized trial comparing patient reported outcomes scores in novel empiric elimination dietary therapies in eosinophilic esophagitis (EoE) in order to assess the therapeutic viability of minimally restrictive empiric elimination diets as related to measures of patient's symptoms, quality of life, and pathology. Moreover, we aim to assess the response to topical swallowed steroids in those who were non-responders to empiric dietary therapy regimens used during the initial phases of this study

Clinical Research (continued)

Recipient	Funding Source	Purpose of Award
John Leung, MD (continued)	Merck Sharp & Dohme Corp., a subsidiary of Merck & Co., Inc.	This is a randomized, placebo-controlled, parallel-group, multi-site, double-blind trial of MK-3641 in children with ragweed pollen-induced allergic rhinoconjunctivitis, with or without asthma, to be conducted in conformance with Good Clinical Practices.
	Shire ViroPharma Incorporated (Shire)	This is a Phase 3, randomized, double-blind, multicenter, parallel-group, placebo-controlled study to evaluate the efficacy, safety, and tolerability of twice daily administration of OBS (qAM, pc, and hs) in adolescents and adults aged 11-55 years, inclusive, with EoE and dysphagia.
	Shire ViroPharma, Incorporated (Shire)	This is a Phase 3, Multicenter, Double-blind Extension Study to Evaluate Maintenance of Efficacy of Oral Budesonide Suspension (OBS) and Long-term Treatment Effect of OBS in Adolescent and Adult Subjects (11 to 55 Years of Age, Inclusive) with Eosinophilic Esophagitis (EoE).
	Allakos, Inc.	A Phase 2, Multicenter, Randomized, Double-Blind, Placebo-Controlled Study to Evaluate the Efficacy, Safety, Tolerability, and Pharmacodynamic Effect of AK002 in Patients with Eosinophilic Gastritis and/or Eosinophilic Gastroenteritis
	Adare Pharmaceuticals	Randomized, double-blind, placebo-controlled dose-ranging study of 4 total daily doses of APT-1011 versus placebo in 100 adult subjects (>18 years of age) diagnosed with EoE.
	NA TIGER Fund when necessary	Molecular characterization of esophageal lichen planus
	NA TIGER Fund when necessary	Natural History of Food Allergy
	NA TIGER Fund when necessary	Natural History of Eosinophilic Esophagitis
Joel Weinstock	NA	Aphthous Ulcers and IBD

Basic Research

Recipient	Funding Source	Purpose of Award
Joel Weinstock, MD	The Schneider Family The Gilman Family	Inflammatory Bowel Disease
Jatin Roper, MD	National Cancer Institute	The study of cancer stem cell function in colorectal cancer

Honors and Awards

Aaron Dickstein, MD

- » OEA/CELT Mutual Mentoring Program Tufts University School of Medicine. Grant Recipient

John Leung, MD

Invited Lectures

- » 2018: Knowing Constipation, Community Bilingual Lecture, Wang YMCA
- » 2018: Food Allergy and Intolerance, Staff Training, Digestive Disease Associates
- » Food Allergy and Intolerance, Residents Conference, American Gastroenterological Association Postgraduate Course, BCNC, Washington, DC AGA Conference



DIVISION OF

GEOGRAPHIC MEDICINE AND INFECTIOUS DISEASES

» DIVISION OF GEOGRAPHIC MEDICINE AND INFECTIOUS DISEASES



David Snyderman, MD

The Division of Geographic Medicine and Infectious Diseases at Tufts Medical Center is known for its excellence in clinical care, teaching, and research.

The Division was created in 1957. Its first Chief, Dr. Louis Weinstein, was an internationally renowned clinician and teacher whose clinical acumen and charismatic teaching style attracted many young physicians to the relatively new subspecialty of infectious diseases. Graduates of his training program have occupied significant positions in academia. During the tenure of his successor (1975-1986), Dr. Sherwood Gorbach, in conjunction with Dr. John Bartlett, and Te-wen Chang discovered the cause of antibiotic associated diarrhea and colitis,

namely *C. difficile*. In 2007, Dr. Gorbach was awarded the Alexander Fleming Prize, a lifetime achievement award, from the Infectious Diseases Society of America. In 1986, the Divisions of Geographic Medicine, Experimental Medicine, and Infectious Diseases were merged into the Division of Geographic Medicine and Infectious Diseases, headed by Dr. Gerald Keusch, who was well known for his work on the pathogenesis of enteric infections, the effects of malnutrition on the immune response, and vaccine development. He, too, has been awarded the Fleming Prize by IDSA.

From 1977 through 1994, Dr. Sheldon Wolff, was the Chairman of Medicine at Tufts- New England Medical Center. He was an internationally recognized infectious disease expert (and Fleming Prize recipient), who together with Charles Dinarello of the Experimental Medicine Division, discovered interleukin-1 (the first cytokine).

Dr. David R. Snyderman became chief of the Division in 1998. Dr. Snyderman is known for the first clinical description of Lyme disease, the first isolation of an organism consistent with *B. burgdorferi* from the joint of a patient with chronic Lyme arthritis, and the development of Cytomegalovirus Immune Globulin, which is used to prevent cytomegalovirus disease in transplantation. Dr. Snyderman expanded the division's expertise in transplantation infectious disease, HIV care, and clinical research while maintaining the international programs and basic science focus in research which had been developed under Dr. Keusch. Under his leadership, the Division secured its' fourth NIH training grant, this one for clinical research training in infectious diseases. In addition, the faculty has obtained 10 research career development awards from the NIH and 3 faculty career mentor awards, and trains 3-5 new fellows each year. Tufts University School of Medicine and Tufts Medical Center was the site for the editorial offices of *Clinical Infectious Diseases*, a journal of the Infectious Disease Society of America from 2000-2016, with Sherwood L. Gorbach, MD and Michael Barza, MD as Editor and Deputy Editor, respectively.

Highlights of 2018

- » The Antimicrobial Stewardship Program at Tufts Medical Center was one of 20 institutions given an Antimicrobial Stewardship Center of Excellence award by the Centers for Disease Control and IDSA
- » Gabriela Andujar, MD was awarded a Leadership in Antimicrobial Stewardship and Public Health Award (LEAP) from the IDSA and Centers for Disease Control, one of four awarded nationally
- » Tufts University School of Medicine and Tufts Medical Center jointly founded the Center for the Integrated Management of Antimicrobial Resistance Institute (CIMAR). Helen Boucher, MD was named as the co-director with Ralph Isberg, PhD from the Department of Microbiology (TUSM)
- » Geneve Allison, MD, MS was awarded membership in Alpha Omega Alpha Society by Tufts University School of Medicine as a faculty member
- » Geneve Allison MD, Helen Boucher, MD, Jose Caro, MD, and Laura Kogelman, MD were each named Best Doctors in Boston by Castle Connolly
- » Helen Boucher, MD was reappointed as Treasurer of IDSA for another 3 year term
- » Ram Subbaraman, MD, Andrew Strand, MD, Mary Hopkins, MD and Roberto Viau Colindres, MD joined the division as new faculty members
- » Kira Beaulac, Pharm D was promoted to senior pharmacist
- » Teena Kohli, MD, MS, Laura Kogelman, MD and Linden Hu, MD were rated among the top 10% of lecturers among the medical students in their second year pathophysiology courses
- » Steven Hong resigned from the division to join the Centers for Disease Control. Victor Boyartchuk, PhD resigned from the division as well as Xin Li, PhD

Faculty

Name	Academic Rank	Title and Special Responsibility
David R. Snyderman, MD, FACP, FIDSA, FAST	Professor	Chief of Division Hospital Epidemiologist Vice Chair for Research Department of Medicine
Genève Allison, MD, MSc, FACP	Assistant Professor	Director of OPAT (OutPatient Intravenous Antibiotic Therapy) Program MERGE ID program clinical director
Gabriela Andujar Vazquez, MD	Assistant Professor	Antimicrobial Stewardship
Robert Arbeit, MD	Professor	Consultation Attending, Consultant
Michael Barza, MD	Professor	Vice Chair for Clinical Affairs, Department of Medicine
Helen W. Boucher, MD, FACP, FIDSA	Professor	Fellowship Program Director Director, Heart Transplant and Ventricular Assist Device Infectious Diseases Program Co-Director, CIMAR
José A. Caro, MD	Assistant Professor	HPV Clinic, Course Director for the Infectious Diseases Rotation for 4th Year Medical Students
Brian D.W. Chow, MD	Assistant Professor	Associate Program Director, ID Fellowship
Jennifer K.L. Chow, MD, MS	Assistant Professor	Intercity Conference Director, Associate Director, Ventricular Assist Device and Heart Transplant Infectious Disease Program
Shira Doron, MD, MS, FIDSA	Associate Professor	Antimicrobial Steward, Antimicrobial Management Program Associate Hospital Epidemiologist
Yoav Golan, MD, MS, FIDSA	Associate Professor	
Jeffrey K. Griffiths, MD, MPH & TM	Professor	
James Hellinger, MD, MSc	Assistant Professor	

Faculty (continued)

Name	Academic Rank	Title and Special Responsibility
Mary Hopkins, MD*	Assistant Professor	
Linden T. Hu, MD, FIDSA	Professor and Vice Dean for Research, TUSM	Molecular Biology and Microbiology, Tufts University School of Medicine. Principal Investigator Microbial Pathogenesis Training Grant, and Vice Dean for Research, TUSM
Michael R. Jordan, MD, MPH	Assistant Professor	Consultant to WHO
Anne V. Kane, MD	Assistant Professor	Director, Phoenix Lab
Laura Kogelman, MD, FIDSA	Associate Professor	Director of ID Clinic and Traveler's Health Services
Rakhi Kohli, MD, MS	Assistant Professor	Pathophysiology Course Director, Morbidity and Mortality Conference Director
Natalie E. Nierenberg, MD, MPH	Assistant Professor	Director, Inpatient Skin Management and Risk Reduction Team Center for Vascular, Wound Healing & Hyperbaric Medicine
Debra D. Poutsiaka, MD, PhD, FIDSA	Associate Professor	
David R. Stone, MD	Associate Professor	Co-director Mycobacterial Treatment Unit – Tufts MC Attending Physician, Tufts Medical and Lemuel Shattuck Hospital
Cheleste Thorpe, MD	Associate Professor	Institutional Biosafety Committee Chair
Edouard Vannier, PhD	Assistant Professor	
Tine Vindenes, MD, MPH	Assistant Professor	Global Care Medical Group, PC HIV Consulting at Greater Lawrence Family Health Center HBV/HCV Tufts Gastroenterology Clinic
Roberto Viau Colindres, MD*	Assistant Professor	
Honorine D. Ward, MD	Professor	Program Director, Tufts-CMC Framework Program for Global Health Innovation, Student Advisor, Immunology Graduate Program, Tufts Sackler School; Chair, Programs and Faculty Committee, Tufts Sackler School.
Simone Wildes, MD, FACP	Assistant Clinical Professor Assistant Professor	Attending Physician, South Shore Hospital HIV/HCV co-infection clinic
Alysse Wurcel, MD, MS	Assistant Professor	Infectious Disease Physician at Bristol, Essex, Middlesex and Suffolk County Jails

* *Joined the faculty*

** *Left the institution*

Teaching Activities

The Division provides comprehensive teaching for all levels of the medical school and for postgraduate education.

Dr. Teena Kohli is the director of the Infectious Disease pathophysiology course for the second-year medical school curriculum.

Drs. Kohli, Kogelman, and Wurcel were recognized as top lecturers by Tufts University School of Medicine.

The fellowship program is comprehensive and includes training in transplant infectious diseases. From three to five fellows are recruited each year. The training program is considered by the Infectious Disease Society of America to be a model for such programs.



The goal of the fellowship program is to train the next generation of academic infectious diseases specialists. The clinical training comprises 12 months of inpatient consultation and a weekly clinic supervised by infectious disease physicians. A rigorous didactic curriculum encompasses HIV medicine, nosocomial and community acquired infections, transplantation-related infections and infections acquired during travel abroad. The second program year is devoted partly to research. Trainees can elect to acquire additional expertise in one of four tracks, namely infection control, antimicrobial stewardship, transplant infectious diseases, or HIV. Research fellowships are available in global health with an NIH sponsored D 43, or in microbial pathogenesis (T 32) or as part of an endowed fellowship in infectious diseases named after a former faculty member, Frank Tally, MD. (the Tally fellowship).

Graduates of the program hold faculty positions at major academic medical centers, as well as at the United States FDA, CDC, and in the pharmaceutical industry.

Research Activities

State of the art research conducted by divisional faculty in bacterial, HIV, other viral and parasitic diseases spans basic science, clinical research, outcomes, and translational research in the US and abroad. The annual research budget for the division exceeds \$4 million.

The tables below provide an indication of the scope of these awards.

Anne Kane, MD, manages the Phoenix Lab, a microbial products and services core facility for the Tuft community. The core services are all based on the growth of micro-organisms and include large and small-scale bacterial culture, protein expression and purification, preparation of complex bacterial media, and preparation of competent cells and plasmid maxipreps by the cesium gradient technique. In response to the Human Microbiome Project, Drs. Kane and Ward founded the Microbiota Working Group to encourage microbiota projects in the Division. Dr. Kane has added services to the core which are designed to facilitate research such as DNA extraction from clinical samples and the subsequent generation and purification of PCR amplicons of 16S ribosomal DNA for deep sequencing. She has for several years lectured to graduate students in the Friedman School on the role of the intestinal microbiota in human health.

Clinical Research Awards

Recipient	Funding Source	Purpose of grant
Helen Boucher, MD	NIH – 1UM1AI104681	Antibacterial Resistance Leadership Group Member, Gram-positive subcommittee
	Shire Protocol 620-302	A Phase 3, Multicenter, Randomized, Double-blind, Double-dummy, Active-controlled Study to Assess the Efficacy and Safety of Maribavir Compared with Valganciclovir for the Treatment of Cytomegalovirus (CMV) Infection in Hematopoietic Stem Cell Transplant Recipients Member, Data Monitoring Committee
	Shire Protocol 620-303	A Phase 3, Multicenter, Randomized, Open-label, Active- controlled Study to Assess the Efficacy and Safety of Maribavir Compared with Investigator-assigned Treatment in Transplant Recipients with Cytomegalovirus (CMV) Infections that are Refractory or Resistant to Treatment with Ganciclovir, Valganciclovir, Foscarnet or Cidofovir, Member, Data Monitoring Committee
José A. Caro, MD	5UM1 AI1041681-05 NIH/NIAID	EVADE – MEDI3902 Effort to Prevent Nosocomial Pneumonia caused by <i>Pseudomonas aeruginosa</i> in Mechanically Ventilated Subjects, Site Investigator
Shira Doron, MD, MS	Tufts One Health Committee	Resistance Development in Antibiotic – Treated Pet Dogs and their Owners
	Diatherix Clinical Diagnostics	Phenotypic Vs Genotypic Antimicrobial Resistance Profiles: Testing Characterized Samples Collected At Tufts Medical Center on Diatherix ABRx And TEM-PCR Panels Period: 6/1/17-12/31/18 Role: Principal Investigator
Yoav Golan, MD, MS	Allergan	Dalbavancin in prosthetic joint infections: a prospective study
	Forest Labs	Trends of Ceftaroline (CPT) Activity Among Consecutive Methicillin-resistant Staphylococcus aureus (MRSA) Blood Isolates and Correlation with Vancomycin (VAN) Activity
	Forest Labs	Mortality and Hospital Length of Stay (HLOS) among Patients with Community-Acquired Pneumonia (CAP): A Propensity Score-Matched Analysis of Ceftaroline fosamil (CPT-F)-Treated vs. Ceftriaxone-treated patients.
	Merck & Co.	Validation of a simple clinical rule to predict recurrence of infection by C. difficile . Step 2: Defining risk factors for multiple recurrences of C. difficile infection.
	Cubist Pharmaceuticals	A risk of recurrence-stratified comparison of fidaxomicin vs. vancomycin in adults with Clostridium difficile infection (CDI) and the cost-effectiveness of fidaxomicin vs vancomycin or metronidazole in the treatment of infection by Clostridium difficile

Recipient	Funding Source	Purpose of grant
Laura Kogelman, MD	NIH/NCI, R43 CA221482-01A1	Mhealth for Cancer Prevention among HIV+ African Americans Role: Clinical consultant Period:3/18-3/19
		Expanding PrEP Awareness and Access Through Providing Patient Education Pamphlets in Various Settings at an Academic Medical Center, QI Project Role: PI June 2017-ongoing
	NIH/NIMH, R43MH11222	Mhealth for Pre-exposure Prophylaxis Adherence by Young Adult MSM Role: Clinical consultant Period: 6/17-5/19
	BioFire Diagnostics, LLC	Pilot Evaluation of the FilmArray Travel-Related/Vector-Borne Febrile Illness Panel Role: PI Period: July 2017-ongoing
David R Snyderman, MD	Seres	Testing of Susceptibility of Isolates
Cheleste M. Thorpe, MD	NIH/NIAID U19AI131126 Center for Enteric Diseases in Engineered Tissues 04/07/17-03/31/22 \$20,000 total costs	Role: Co-Principal Investigator (with John Leong) Title: Shiga toxin-mediated damage to human colonoids
Alysse Wurcel, MD, MS	Industry - BMS clinical research study	A Multi-arm, Phase 3, Randomized, Placebo Controlled, Double Blind Clinical Trial to Investigate the Efficacy and Safety of BMS-663068 in Heavily Treatment Experienced Subjects Infected with Multi-drug Resistant HIV-1
	HRSA-16-074, HRSA	Health Services grant to increase care for persons with hepatitis C virus (HCV) as a comorbid condition of substance abuse through a program of patient co-management between Duffy Health Center in Hyannis and Tufts Medical Center in Boston
	5U01HL123336-04, NIH/NHLBI,	Randomized Trial to Prevent Vascular Events in HIV-REPRIEVE Role Study Site Co-Investigator
	KL2-TRO02545-01	Unlocking HCV Testing in Jails: Stakeholder Engagement is the Key

Basic Research Support

In addition to clinical research, Division faculty carry out basic research in Lyme disease and babesiosis, cryptosporidiosis, and Shiga toxin.

Recipient	Funding Source	Purpose of grant
Linden Hu, MD	R01AI122286 NIH/NIAID	Persister Cells of <i>Borrelia burgdorferi</i>
	R21AI126757 NIH/NIAID	Role of innate immune intolerance in the pathogenesis of Lyme disease
	R01AI131656 NIH/NIAID	Coping with Stress: Next Generation Approaches to <i>Borrelia burgdorferi</i> Host Adaptation
	5R01 DE024308-02	Physiological Interaction Between Probiotic Bacteria and <i>Porphyromonas gingivalis</i>
	R42AI078631 NIH	Delivery system development for a reservoir targeted vaccine
	5T32 AI007329-22	Infectious Disease Training – Pathogenesis/Host Response
	5U01 AI109656-01	Searching for persistence in Lyme Disease
Honorine D. Ward, MBBS	CTSI	Environmental Monitoring System Using Nanopore Sequencing for Detecting Antimicrobial Resistance Genes Co-Investigator
	NIH NIAID	Center for Enteric Diseases in Engineered Tissues Project 3
	NIH NIAID	Role of GAG-Binding Proteins in Cryptosporidium Infection
	NIH NIAID	A bioengineered 3D primary human intestinal model for Cryptosporidium
Edouard Vannier, PhD	NIH FIC	Tufts-CMC Framework Program for Global Health Innovation
	The Gordon and Llura Gund Family Foundation	Identification of genetic determinants of susceptibility to babesiosis in humans
	The Dorothy Harrison Egan Foundation	Characterization of novel therapeutic targets for severe babesiosis
	Global Lyme Alliance	The design of an antibody-based therapy for severe babesiosis
	Kenneth Rainin Foundation	Engaging the B7-H3 pathway to quench colonic inflammation

Honors and Awards

Geneve Allison, MD, FACP

- » Elected to Alpha Omega Alpha Medical Society as Faculty
- » Boston Best Doctors 2018 Castle Connolly
- » Chair, Medication Safety Committee, Tufts Medical Center
- » Director, Outpatient Parenteral Antibiotic Therapy, Tufts Medical Center
- » Co-chair, International Working Group on OPAT, International Society of Chemotherapy Infection and Cancer
- » Invited talk – Grand rounds Lowell General Hospital – Diabetic Foot Infections – January 2018

Helen Boucher, MD, FACP, FIDSA

- » Member, Board of Trustees, The Physicians of Tufts Medical Center
- » Member, Board of Trustees, College of the Holy Cross, Worcester, MA
- » Voting Member, Presidential Advisory Council on Combatting Antibiotic-Resistant Bacteria (PACCARB)
- » Treasurer and member of the Executive Committee, Infectious Diseases Society of America
- » Member, IDSA Clinical Practice Guidelines for Staphylococcus aureus Bacteremia
- » Chair, Academic Affairs Committee, College of the Holy Cross
- » American Board of Internal Medicine Subspecialty Board in Infectious Diseases
- » Mentor, IDWeek
- » Co-chair, PACCARB Implementation Subgroup, Infection Prevention and Stewardship Working Group
- » Member, Tufts Medical Center CEO Search Committee
- » Re-elected as Treasurer, Infectious Diseases Society of America
- » Co-chair, PACCARB Implementation Subgroup, Infection Prevention and Stewardship Working Group
- » Top Doctors in America 2009 - present; Best of Boston 2018
- » Re-elected, TMC PO Board of Trustees
- » National Academies of Sciences GAO antibiotic resistance meeting
- » Submitted CIMAR grant and NIH ARLG resubmission as innovation lead
- » Awarded CIMAR by Tufts University October, 2018

- » IDSA Clinical Fellows Meeting, Winter Course in Infectious Diseases, Annual Postgraduate Course in Clinical Pharmacology, Drug Development and Regulation, Women in Science Symposium at College of the Holy Cross
- » Tackling Antibiotic Resistance: A Global Priority, Keynote Address, 1st Annual Texas Medical Center Antimicrobial Resistance and Stewardship Conference, Houston, TX.
- » Mock Drug Development Exercise (CME), 45th Annual Postgraduate Course in Clinical Pharmacology, Drug Development and Regulation, Boston, MA.
- » Keynote Speaker, Women in Science Symposium, College of the Holy Cross
- » Nonlinear Career Paths. IDSA Clinical Fellows Annual Meeting. Naples, Florida
- » Where Do They Fit? Utility and Formulary Decisions for New Antibiotics: MDR GNR. ASM Microbe, Atlanta, GA
- » Nonlinear Careers. Tufts Physician Organization Women in Medicine Organization, Boston, MA
- » FDA Workshop on Development of Nontraditional Therapies for Bacterial Infections: A Clinician's Perspective, Washington, DC
- » How Bacteremia Strategy Trials Will Impact the Practice of Infectious Diseases IDWeek 2018, San Francisco, CA
- » Role of Ceftazidime-avibactam for MDR Gram-negative Bacteremia, IDWeek 2018, San Francisco, CA
- » Clinical Perspectives on the Future of the Antimicrobial Resistance Landscape. Keynote Address, New York Academy of Sciences

José A. Caro, MD

- » Boston Best Doctors 2019 Castle Connolly
- » IDSA Working Group: Inclusion, Equity and Diversity Task Force.
- » Tufts Medical Center Medication Safety Committee Member.
- » Tufts Medical Center Diversity and Inclusion Committee Member

Brian D.W. Chow, MD

- » American Academy of Pediatrics Red Book 2018 Collaborator
- » Pediatric Infectious Diseases Society Vaccine Advocacy Committee
- » American Academy of Pediatrics PREP: Infectious Diseases Editorial Board

Shira Doron, MD, MS, FIDSA

- » Reviewer: ID Week Abstracts
- » SHEA Antimicrobial Stewardship Committee
- » Infectious Diseases Society of America Antibiotic Stewardship & ID Leadership working group
- » Consultant, DPH for CDC grant to develop content for statewide stewardship implementation
- » Member, Massachusetts Healthcare Associated Infection/ Technical Advisory Group

Linden T. Hu, MD, FIDSA

- » Co-chair, Topics in Bacterial Pathogenesis Study Section, ZRG1 IDM-B (81) S
- » Reviewer, Exploration of Antimicrobial Therapeutics and Resistance Study section, ZRG1-IDM-Y-82
- » Reviewer, NIAID Investigator Initiated Program Project Applications ZAI1-RRS-M-M1
- » Reviewer, Clinical Research and Field Studies Study section, NIH
- » Review editor: Frontiers in Cellular and Infection Microbiology
- » Member, IDSA Research Committee
- » Top 15% of Tufts University School of Medicine Lecturers

Michael Jordan, MD, MPH

- » Bello G, Kagoli M, Wadonda-Kabondo N, Chipeta S, Nyirenda R, Jahn A, Chilima B, Phiri S, Hosseinipour M, Kathyola D, van Oosterhout J, Mwansaambo A, Matatiyo B, Yang C, Bertagnolio S, **Jordan MR**, Maxwell K, Harrigan PR, Lapointe HR. Population-based Monitoring of HIV Drug Resistance Emerging in HIV-Positive Individuals during Antiretroviral Treatment and Related Programme Factors in Sentinel ART Sites in Malawi. International Workshop on HIV Resistance and Treatment Strategies. October 2018. (Oral Presentation).
- » Inzaule S, **Jordan MR**, Parkin N, Bertagnolio S. Pretreatment HIV drug resistance in women in low- and middle-income countries. International Workshop on HIV Resistance and Treatment Strategies. October 2018. (Oral Presentation).
- » Nepolo E, Nutenda N, Tang A, Harrigan PR, Lapointe H, Hong S, **Jordan MR**. HIV drug resistance in people reinitiating non-nucleoside reverse transcriptase inhibitor-based antiretroviral therapy after treatment interruption in Namibia. International Workshop on HIV Resistance and Treatment Strategies. October 2018.

Laura Kogelman, MD, FIDSA

- » 2017: Top 15% Tufts University School of Medicine Lecturers, for lectures given as part of Medical Microbiology Course
- » Received a donation to the division for \$17,000 from a grateful patient
- » Best of Boston, Top Doctor 2018

Rakhi Kohli, MD

- » TUSM Foundations of Science Committee
- » Fallon Health Plan P and T Committee
- » Top 15% of Lecturers TUSM

Cheleste M. Thorpe, MD

- » Review Editor: Frontiers in Cellular and Infection Microbiology
- » Reviewer: Emerging Infectious Diseases, Frontiers in Microbiology
- » Tufts University School of Medicine Promotions Committee, subcommittee ad-hoc reviewer

David R. Snyderman, MD

- » Best Doctors in America Selection 2017-18
- » Abstract Reviewer for ECCMID April 2019 meeting
- » Associate editor of the Immunocompromised Host section of Clinical Infectious Diseases
- » IDSA Intra-abdominal Guidelines Committee
- » Shire Endpoints Committee for Maribavir Studies
- » Sequiris DSMB Chair for Influenza vaccine trial
- » Takeda DSMB member for vedolizumab sc trials in Crohns disease and Ulcerative Colitis
- » Chimerix DSMB member for Brincidofovir treatment of Adenovirus Infection in Hematopoietic Stem Cell Transplant Recipients

David Stone, MD

- » QI Division Leadership Committee Tufts Medical Center
- » Board of Directors Span Inc. Transitional Care Program for HIV in Boston.
- » State Pharmacy and Therapeutics Committee/ Corrections in Massachusetts

Cheleste M. Thorpe, MD

- » Review Editor: Frontiers in Cellular and Infection Microbiology, Frontiers in Sustainable Food Systems
- » 2018: Ad-hoc reviewer for Infection and Immunity, Frontiers, Journal of Antimicrobial Therapy
- » Chairman, Tufts-Boston/Medford Biosafety Committee
- » Chair of the Tufts University & Tufts Medical Center Dual Use Research Committee
- » Vice Chair of the Cummings School of Veterinary Medicine at Tufts University Dual Use Research Committee

Edouard Vannier, PhD

- » Member, IDSA Committee on Clinical Practice Guidelines for Babesiosis
- » Temporary Member, NIH Study Section, Pathogenic Eukaryotes (PTHE)
- » Reviewer for PLoS Pathogens, Scientific Reports, Ticks and Tick-borne Diseases
- » Co-chair and speaker, 1st Conference on Human Babesiosis, Yale University, Connecticut
- » Co-chair and speaker, 14th International Congress of Parasitology, Daegu, South Korea
- » Poster presentations, 15th International Conference on Lyme-Borreliosis and other Tick-borne Diseases held in Atlanta, Georgia

Tine Vindenes, MD, MPH

- » Member of National Tuberculosis Controllers Association
- » Society for Epidemiology in Tuberculosis Control – outbreak detection and response workgroup

Honorine Ward, MD

- » Program Director, Tufts-CMC Framework Program for Global Health Innovations, Student Advisor, Immunology
- » Graduate Program, Tufts Sackler School; Programs and Faculty Committee, Tufts Sackler School
- » Section Editor, Parasitology, BMC Infectious Diseases
- » Editorial Board, Infection and Immunity
- » Editorial Board, Microbes and Infection
- » Reviewer: Infection and Immunity, Journal of Infectious Diseases, Clinical Infectious Diseases, American Journal of Tropical Medicine and Hygiene, Nature, Nature Microbiology et al.
- » Member, Cryptosporidiosis/Microsporidiosis Subject Group, Guidelines for the Prevention and Treatment of Opportunistic Infections in HIV-Infected Adults and Adolescents NIH, CDC, and HIVMA/IDSA, Office of AIDS Research Advisory Council
- » Member, Programs and Faculty Committee: Tufts Sackler School of Graduate Biomedical Sciences

Alysse Wurcel, MD, MS

- » IDSA Working Group: Opioid-related research and policy issues
- » Tufts Medical Center Co-Leader: Internal Medicine Intern Support Group
- » Tufts Medical Center: Opioid Task Force

Invited Talks:

- » MGH HIV Conference (Jan 2018)
- » NEATC HIV Interprofessional Update (March 2018)
- » Health and Human Services Webinar on ID response to Opioid Epidemic (March 2018)
- » Mass Medical Society: Opioid and ID Syndemics (March 2018)
- » Harvard Infectious Diseases Course: Infections in People Who Use Drugs (May 2018)
- » Facebook Live for HIVMA/IDSA (June 2018)
- » Montana Department of Public Health Webinar (Sept 2018)
- » Tufts Medical Center Grand Rounds: January and September 2018

DIVISION OF

HEMATOLOGY/ONCOLOGY



Rachel Buchsbaum, MD

The Division of Hematology/Oncology was established in the 1940s by Dr. William Dameshek, a world-renowned hematologist and founder of the American Society of Hematology (ASH). Dr. Robert S. Schwartz, recognized internationally for his studies on the immune system and demonstration of pharmacologic immunosuppression, assumed the directorship of the Division of Hematology and oversaw its merger in 1978 with the Division of Oncology. His contributions ushered in the era of organ and bone marrow transplantation. In 1990, Dr. Schwartz was named Deputy Editor of the *New England Journal of Medicine*. His successor, Dr. Bruce Furie, together with Dr. Barbara Furie, made numerous major contributions to the fields of hemostasis, thrombosis and cell adhesion, including the discovery of P-selectin, an important platelet and vascular adhesion molecule. From 1998 to 2006, Dr. John Erban, a highly-regarded expert in breast cancer, served as Division Chief, followed in 2006 by Dr. Richard Van Etten, a recognized leader in myeloproliferative diseases. Dr. Van Etten was succeeded in 2013 by Dr. Andrew Evens, a clinical and translational researcher in lymphoproliferative malignancies. He was succeeded in 2017 by Dr. Rachel J. Buchsbaum, a leading clinician, educator, and translational researcher in breast cancer and the tumor microenvironment. Concurrent with Dr. Buchsbaum's appointment, the Molecular Oncology Research Institute, which served as the basic research arm of cancer research for the Institution, was combined with the Division of Hematology Oncology.

Collectively, the Division has trained a multitude of leaders in hematology and oncology, many of whom now head major cancer centers, divisions of hematology and oncology, and major research programs throughout the world. Many trainees of the division hold leadership positions in professional societies including the American Society of Hematology (ASH), the American Society of Clinical Oncology (ASCO), and the American Association of Blood Banks. Division faculty oversee the treatment of patients with a wide array of cancers in both ambulatory and inpatient settings and have important roles in medical education at all levels as well as clinical and translational research for the Tufts Cancer Center.

Highlights of 2018

- » Dr. Felix Mensah and Dr. Hrvoje Melinscak joined the Division in 2018.
- » Eight Division faculty members were named among *Boston Magazine's* "Top Doctors".
- » A unique Community Oncology Disparities Initiative continued with philanthropic support from the Yawkey Foundation, the Asian Healthcare Foundation of Massachusetts, and the Avon Foundation support the creation of a Patient Navigation Program, which helps the Tufts Cancer Center's Asian population navigate their healthcare.
- » The Program for Adolescents and Young Adults (AYA) with cancer and hematologic diseases received philanthropic support from the Reid R. Sacco AYA Cancer Alliance.
- » The Division has over 100 clinical trials in cancer and hematology with cumulative budgets exceeding \$5 million.
- » Faculty delivered 39 Invited Lectures and produced 50 publications.
- » Faculty received new research awards totaling 1.58 million.



Recent Cancer Center Gift Highlights

Amyloidosis and Myeloma Research Program

- » Mr. Anthony Fasone made a gift of \$5,000.
- » Ms. Carol A. Feldsher made a gift of \$10,000.
- » Demarest Lloyd Jr. Foundation made a gift of \$200,000.
- » Mr. Gary Nelson made a gift of \$25,000.
- » Mr. James E. O'Brasky made a gift of \$5,000.
- » Ms. Janis E. Brewster made a gift of over \$14,000.
- » Mr. Mark Russak made a gift of \$5,000.
- » Ms. Nancy McPherson made a gift of \$10,000.
- » The Jewish Federation of Greater Washington made a gift of \$10,000.
- » The Lymphoma Foundation made a gift of \$20,000.
- » The Sidewater Family Foundation Inc. made a gift of \$20,000.
- » Mr. William O. Wagoner made a gift of \$5,000.

Miller Research Commitment

- » Mr. & Mrs. Harvey Crosby made a gift of \$11,500.

Neuro-Oncology Patient Support Fund

- » Toots Fore Tufts made a gift of over \$42,000.

Prostate Cancer Research Fund

- » An anonymous donor made a gift of \$150,000
- » Ms. Betty J. Lawrence made a gift of \$5,000.

Reid R. Sacco Adolescent & Young Adult Clinic Fund

- » Mr. and Mrs. Gene Sacco made a gift of \$144,000.
- » Dr. Susan K. Parsons and Mr. Walter G. Armstrong, Jr made a gift of \$10,000.
- » Shades of Pink made a gift of \$3,000.
- » Gerald Allman made a gift of \$5,000.

Sandra & Gerard Moynihan Patient and Caregiver Fund

- » Sandra & Gerard Moynihan Charitable Trust made a gift of \$15,000.

Yawkey Foundation Patient Navigation Fund

- » The Yawkey Foundation made a gift of \$50,000.

Breast Cancer Research

- » Elisabeth Hershey made a gift of \$10,000.
- » Jennifer Bjercke made a gift of over \$39,000.
- » Maureen Strafford made a gift of \$5,000.
- » The Tow Foundation Inc. made a gift of \$10,000.
- » Shades of Pink, The Michael and Marci Moreau Fund made a gift of over \$12,000.
- » Avon Breast Cancer Crusade made a gift of over \$62,000 for the Avon Foundation Fund.

Zaniboni Breast Cancer Fund

- » Massachusetts Department of Transportation funds raised from the registration of the "Cure Breast Cancer" charitable license plate totaled over \$103,000.
- » The Zaniboni Scholar Award is made possible through The Massachusetts Cure Breast Cancer License Plate Initiative, established October 31, 2006.
- » Bone Marrow and Stem Cell Transplant Program Fund
- » Mr. Dana and Mrs. Rebecca Callow made a gift of \$25,000

Faculty

Name	Academic Rank	Title and Special Responsibilities
Rachel Buchsbaum, MD	Jane F. Desforges MD Chair of Hematology and Oncology	Chief, Division of Hematology/Oncology
Raymond Comenzo, MD	Professor	Medical Director, Blood Bank and Transfusion Service, Stem Cell Processing Laboratory Neely Cell Therapy and Collection Center Founding Director, John C. Davis Myeloma and Amyloid Program
Lidija Covic, PhD	Assistant Professor	Associate Director, Hemostasis and Thrombosis Research Laboratory
Keyong Du, PhD	Assistant Professor	Regulation of adipose and hepatic glucose metabolism in the content of type II diabetes and obesity
Kimberly Esham, MD**	Assistant Professor	Benign and malignant hematology, Clinical research in healthcare disparities
Julie Fu, MD	Assistant Professor	Hematology Oncology
Guofu Hu, PhD	Professor	RNA processing regulation in physiological conditions and how it is dysregulated in cancers and in neurodegenerative diseases
Miaofen Hu, MD, PhD	Assistant Professor	Role of CDK6 in Notch-mediated stem cell transformation and leukemogenesis
John K. Erban, MD	Professor	Clinical Director, Tufts Cancer Center Medical Director, Neely Center for Clinical Cancer Research
Suriya Jeyapalan, MD, MPH	Assistant Professor of Medicine and Neurology	Director, Medical Neuro-Oncology
Grace Shi Hui Kao, MD**	Associate Professor	
Andreas Klein, MD	Associate Professor	Chairman, Institutional Review Board, Tufts Health Sciences Campus Associate Chief, Division of Hematology/Oncology
Hans Klingemann, MD, PhD	Adjunct Professor of Medicine	Senior Consultant in Hematology Vice President for R&D, NantKwest, Inc
Athan Kuliopulos, MD, PhD	Professor	Director, Hemostasis and Thrombosis Research Laboratory
Anita Kumar, MD	Assistant Professor	Malignant Hematology and Health Outcomes/Survivorship
Robert Martell, MD, PhD	Associate Professor	Leader, Hepatobiliary and Head/Neck cancers
Paul Mathew, MD	Associate Professor	Prostate Cancer and Genitourinary Malignancies

Name	Academic Rank	Title and Special Responsibilities
Kenneth B. Miller, MD	Professor	Associate Chief, Division of Hematology/Oncology
Felix Mensah, MD *		Attending Physician, Division of Hematology/Oncology
Hrvoje Melinscak, MD *		Hospitalist, Division of Hematology/Oncology
Lori Pai, MD, DMD, MPH	Assistant Professor	Associate Director, Hematology/Oncology Fellowship Program Lung Cancer and Melanoma
Susan Parsons, MD, MRP	Professor	Associate Director for Population Science and Community Involvement, Tufts Cancer Center Director, Reid R. Sacco AYA Cancer Program Director, Patient Navigation Program Director, Center for Health Solutions, Institute for Clinical Research and Health Policy Studies
Wasif Saif, MD	Professor	Program Director, GI Oncology Program Leader, Experimental Therapeutics
David Schenkein, MD	Adjunct Professor of Medicine	Senior Consultant in Hematology Chief Executive Officer, Agios Pharmaceuticals
Kellie Sprague, MD	Assistant Professor	Clinical Director, Leukemia Program Clinical Director, Bone Marrow and Stem Cell Transplant Program
Gary Strauss, MD, MPH	Professor	Associate Director, Hematology/Oncology Fellowship Program Medical Director, Lung Cancer Program
Philip Tsiichlis, MD **	Jane F. Desforges Professor	Executive Director, Molecular Oncology Research Institute
Hande Tuncer, MD**	Assistant Professor	Director, Benign Hematology Program
Cindy Varga, MD	Assistant Professor	Associate Program Director, Fellowship Program

**New faculty in 2018*

***Left the institution in 2018*



Major Clinical Programs

The faculty of the Hematology/Oncology Division supervises over 25,000 outpatient visits and treatments annually and oversees three complex inpatient services: the Bone Marrow Transplant/Hematologic Malignancies service, the Inpatient Oncology Service, and the Hematology/Oncology Consultation service. Clinical laboratory services under the direction of Division members include a blood bank with stem cell processing capability and a special Hematology Laboratory that processes blood and bone marrow specimens for clinical and research purposes.

The *Neely Center Cell Processing and Collection Center* provides state of the art services in cell collection, processing, and therapy, apheresis, and transfusion support for the entire Medical Center. The 20-bed infusion center provides state-of-the-art infusion support for chemotherapy, parenteral solutions, and antibiotics, in addition to education and psychosocial services. In addition, the Center for Extracorporeal Photopheresis provides novel therapy with a nationally recognized clinical research program in allogeneic stem cell transplantation and cell processing.

The *Reid R. Sacco Adolescent and Young Adult (AYA) Program for Cancer and Blood Diseases* at Tufts Medical Center was established and launched in 2013. The AYA clinic, led by Dr. Susan Parsons, provides age-appropriate, comprehensive care in a designated physical space where the team focuses on both the clinical and transitional needs of cancer survivors ages 18-39 years. This program was started through generous support from the Reid R. Sacco AYA Alliance. This program represents one of the few such specialty programs in New England dedicated to the care of patients within this age group.

Multidisciplinary Cancer Care is the paradigm for cancer treatment offered by the Division. Physicians participate in several multidisciplinary clinics with concurrent and coordinated care by multiple cancer specialists provide multispecialty care and access to psychosocial and genetic counseling. Below are additional multidisciplinary programs at Tufts.

Multidisciplinary programs and clinics for cancer treatment in 2018 include:

- » Adolescent Young Adult Program for Cancer and Blood Diseases – Susan Parsons, MD, Director
- » Benign Hematological Disorders Clinic
- » Bone Marrow and Stem Cell Transplant Program – Kellie Sprague, MD Director
- » Brain Tumor and Neuro-Oncology Program – Suriya Jeyapalan, MD, Medical Director
- » Breast Cancer and The Breast Health Center – Roger Graham, Director and John Erban, MD, Medical Oncology Director
- » GI Oncology Clinic – Robert Martell, MD, PhD
- » Genitourinary Malignancies Tumor Board – Paul Mathew, MD, Director
- » Head and Neck Tumor Clinic – Robert Martell, MD, PhD
- » Hematologic Malignancies Program – Andreas Klein, MD, Director
- » Hepatobiliary Tumor Clinic – Robert Martell, MD, PhD, Clinical Director
- » Lung Cancer Multidisciplinary Clinic – Gary Strauss, MD, MPH, Clinical Director
- » Lymphoma Program -- Andreas Klein, M.D.
- » Leukemia Program – Kellie Sprague, MD, Clinical Director
- » Melanoma and Cutaneous Malignancies Program – Lori Pai, MD, Medical Director
- » Neely Cell Therapy Center and Extracorporeal Photopheresis Program – Raymond Comenzo, MD, Director;
- » The Neely Center for Clinical Cancer Research – John Erban, MD, Medical Director
- » Plasma Cell Neoplasms – Raymond Comenzo, MD, Director

Teaching Activities

Faculty from the Hematology/Oncology Division participate extensively in the teaching of medical students, house officers, and fellows at Tufts Medical Center. Teaching of Tufts University School of Medicine (TUSM) students includes both preclinical lectures and clinical clerkship teaching. Dr. Rachel Buchsbaum is course director for the TUSM course entitled “Introduction to Hematology and Oncology.” In 2017 she also served as the Chair of the TUSM Curriculum Committee as well as the Associate Chief Medical Officer for Graduate Medical Education. Dr. Susan Parsons is co-course director of the Public Health Integration course for first, second, and third year students in the combined MD/MPH program at TUSM. She also is course director of the Research Ethics course in the Clinical and Translational Science Graduate Program at the Sackler School of Graduate Biomedical Sciences at Tufts University (Sackler). Several faculty members are mentors and thesis advisors for PhD graduate students enrolled in Sackler programs. Currently, there are 5 PhD students doing thesis research in laboratories/research programs of Division faculty.

The Division is also the home of the Hematology/Oncology Fellowship Training Program at Tufts Medical Center that is the centerpiece of Division teaching activities. As the Institute of Medicine and the American Society of Clinical Oncology have predicted a major physician shortage in hematology/oncology in the next decade, the Fellowship Program serves a critical educational need. Five clinical fellows per year are selected from over 350 applicants. The first year is devoted to clinical training in hematology and oncology, with an intense focus on ambulatory care. Members of the Division join physicians from other specialties and ancillary services to offer fellowship training and complex therapy in a multidisciplinary environment. In the second and third years of the Program, fellows are exposed to the inpatient consultation service and the bone marrow transplant/hematologic malignancies service, both of which provide essential clinical experiences and rigorous training in managing complex diseases. Fellows maintain a continuity outpatient clinic one half-day per week. During their clinical year, fellows are exposed to the breadth of basic and translational cancer research at Tufts Medical Center through the research lecture series, Cancer Center Grand Rounds, and direct contact with clinician-scientist faculty. These experiences allow fellows to begin to plan research projects for their second year.

The research portion of the Clinical Fellowship begins in the second year. Typically, about half of the fellows in each class express an interest in basic and translational research, while the other half pursue clinical research projects. Under the supervision of an advisory committee, fellows make periodic

presentations of their research progress to Division faculty. In the third year, the writing of at least one research paper that summarizes the trainee’s data and findings is a major priority. In 2018, 10 fellows in the Division presented their research work at national meetings and international meetings, 7 fellows published papers, and 2 fellows earned achievement awards for work related to their research projects.

Over 140 Hematology/Oncology Fellows have been trained in the Division, with approximately 40% of these trainees directly supported during their research years by the Training Grant. Of Program graduates, 20 are now Division Chiefs, head major programs at NCI-designated Cancer Centers or at the National Cancer Institute, or hold leadership positions at major pharmaceutical companies. Of 23 program graduates in the last 5 years, 14 are on the faculty of academic medical centers. Under the leadership of Dr. Rachel Buchsbaum (Program Director) and Drs. Lori Pai and Cindy Varga (Associate Program Directors) the Tufts Hematology/Oncology Fellowship program received a full 5-year accreditation with commendation by the Accreditation Council for Graduate Medical Education at its last site review and continuing subsequent annual accreditation without citations under the ACGME Next Accreditation System.

Research Activities

Faculty members and fellows of the Division of Hematology/Oncology continue vibrant research endeavors in cancer. Research spans the spectrum from basic, translational, and patient-oriented research to numerous therapeutic and interventional clinical trials in cancer and blood diseases. Below is a summary of these research efforts in 2018.

Clinical Research

Clinical research in hematology and oncology takes the form of cooperative group trials, industry-sponsored trials, and investigator-initiated trials. Tufts Medical Center is a member of the Eastern Cooperative Oncology Group (ECOG), a prominent national clinical oncology research consortium. A number of the Division faculty serve in key leadership positions on ECOG committees and are principal investigators for ECOG National clinical trials.

Together, the Division and Cancer Center have over 100 active therapeutic clinical trials in cancer and hematology. Over 20 new cancer clinical studies are awaiting activation. Many of these clinical studies are “investigator-initiated trials” (IITs) and are examining novel and targeted anti-cancer treatments, including immunotherapy (see table below). The cumulative budgets for these clinical studies

total over \$5 million with the annual clinical trial funding in 2017 based on patient accrual was ~\$1,000,000. This clinical research activity supports basic and translational research within the Division.

All patients in the clinic and inpatient areas are asked to consent to donation of specimens (blood, bone marrow, biopsy material) for research purposes as part of an

IRB-approved protocol, and these specimens are de-identified and banked. The Tissue Repository, a Core Facility of the Tufts Cancer Center, is a valuable resource for meeting the translational research interests of qualified Tufts Medical Center investigators. The following is a highlight of selected clinical cancer trials, with an emphasis on IITs that are being conducted within the Division.

Clinical Research/Clinical Trials

Investigator	Sponsor/Trial number	Title
Rachel Buchsbaum, MD	Tufts Medical Center TMC/CTSI	Finding the X Factor: how breast cancers conscript the tumor microenvironment.
	Tufts Medical Center (TMC)	Biomarker Breast: Development of a minimally invasive biomarker for breast cancer.
Raymond Comenzo, MD	Janssen	An Open-label, multicenter, phase 1B study of JNJ-54767414 (HuMaxA CD38) (Anti-CD38 Monoclonal Antibody) in combination with backbone regimens for the treatment of subjects with multiple myeloma.
	Janssen	A Randomized Phase 3 Study to Evaluate the Efficacy and Safety of Daratumumab in Combination with Cyclophosphamide, Bortezomib and Dexamethasone (CyBorD) Compared With CyBorD Alone in Newly Diagnosed Systemic AL Amyloidosis
	Karyopharm Therapeutics KCP- 330-012	STORM: A Phase IIb, open-label, single arm study of Selinexor (KPT-330) plus low dose dexamethasone in patients with multiple myeloma quad-refractory to previous therapies.
	Millennium	C16021: A Phase 3, Randomized, Placebo-Controlled, Double-Blind Study of Oral Ixazomib Maintenance Therapy After Initial Therapy in Patients With Newly Diagnosed Multiple Myeloma Not Treated With Stem Cell Transplantation
	Millennium	C16011: A Phase 3, randomized, controlled, open-label multicenter safety and efficacy study of dexamethasone plus MLN9708 or physician's choice of treatment administered to patients with relapsed or refractory systemic light chain (AL) amyloidosis.
	Prothena	A Phase I, open label dose escalation study of intravenous administration of single agent NEOD001 in subjects with light chain (AL) amyloidosis.
	Prothena	PRONTO: A Phase 2b, Randomized, Double-blind, Placebo-controlled Study of NEOD001 in Previously Treated Subjects with Light Chain (AL) Amyloidosis who have Persistent Cardiac Dysfunction
	Prothena	VITAL: A phase III, randomized, multicenter, double-blind, placebo controlled, 2 arm, efficacy and safety study of NEOD001 Plus standard of care vs. placebo vs standard of care in subjects with light chain (AL) amyloidosis.
	Prothena	NEOD001-OLE001: Open-label Extension Study to Evaluate the Long-term Safety and Tolerability of NEOD001 in Subjects with Light Chain (AL) Amyloidosis
	Prothena	RAIN (Renal AL amyloid Involvement and NEOD001): A Multicenter Randomized Double-blind Phase 2b Study of NEOD001 in Previously Treated Subjects with Systemic Light-chain (AL) Amyloidosis and Persistent Renal Involvement
	Prothena	A Phase 1, Open-label, Dose Escalation Study of Intravenous PRX004 in Subjects with Amyloid Transthyretin (ATTR) Amyloidosis
	Abbvie	A Phase I Trial of Venetoclax (ABT-199) and Dexamethasone for Relapsed or Refractory Systemic AL Amyloidosis
	Tufts Medical Center (TMC)	Pre-clinical studies of Daratumumab in stem cell mobilization and transplant for patients with clonal plasma cell diseases.
	Tufts Medical Center (TMC)	Pre-clinical studies of elotuzmab in stem cell mobilization and transplant for patients with clonal plasma cell diseases.

Investigator	Sponsor/Trial number	Title
Raymond Comenzo, MD (continued)	Tufts Medical Center (TMC)	A Diagnostic Screening Trial: Seeking AL Amyloidosis Very Early (SAVE)
	Tufts Medical Center (TMC)	Minimal Residual Disease as a Possible Predictive Factor for Relapse in Patients with AL Amyloidosis
	Unum Therapeutics	Characterization of T-cell Distribution in Stem Cell Mobilization
John Erban, MD	Hoosier Cancer Research Network	HCRN BRE12-158: A Phase II Randomized Controlled Trial of Genomically Directed Therapy After Preoperative Chemotherapy in Patients with Triple Negative Breast Cancer
	Macrogenics	MGAH22-02: A Single Arm, open label phase II study of MGAH22 (Fc-optimized Chimeric Anti-HER2 monoclonal antibody) in patients with relapsed or refractory advanced breast cancer whose tumors express HER2 at the 2+ level by immunohistochemistry and lack evidence of HER2 gene amplification by FISH.
	Macrogenics	MGAH22-04/SOPHIA: A Phase 3, Randomized Study of Margetuximab Plus Chemotherapy vs Trastuzumab Plus Chemotherapy in the Treatment of Patients with HER2+ Metastatic Breast Cancer Who Have Received Two Prior Anti-HER2 Therapies and Require Systemic Treatment
	NRG Oncology	NRG BR003: A Randomized Phase III Trial of Adjuvant Therapy Comparing Doxorubicin Plus Cyclophosphamide Followed by Weekly Paclitaxel with or without Carboplatin for Node-Positive or High-Risk Node-Negative Triple-Negative Invasive Breast Cancer
	PrECOG	PALLAS: Palbociclib Collaborative Adjuvant Study: A Randomized Phase III Trial of Palbociclib with Standard Adjuvant Endocrine Therapy Versus Standard Adjuvant Endocrine Therapy Alone for Hormone Receptor Positive (HR+) / Human Epidermal Growth Factor Receptor 2 (HER2)-Negative Early Breast Cancer
	Tesaro	BRAVO: A phase III, randomized, open label multicenter, controlled trial of niraparib vs physician's choice in previously treated HER2 negative, germline BRCA mutation positive breast cancer patients.
	Tesaro	Combo: Phase 1/2 Trial of Niraparib in Combination with Pembrolizumab in Patients with Advanced or Metastatic Triple-Negative Breast Cancer and in Patients with Recurrent Ovarian Cancer
	Tufts Medical Center (TMC)	Inflammatory Breast Cancer Initiative: Creation of an Inflammatory Breast Cancer Research Database
Suriya Jeyapalan, MD	Alliance	Alliance NCORP Research Base
	AbbVie	M13-813: A Randomized, Placebo Controlled Phase 2b/3 Study of ABT-414 with Concurrent Chemoradiation and Adjuvant Temozolomide in Subjects with Newly Diagnosed Glioblastoma (GBM) with Epidermal Growth Factor Receptor (EGFR) Amplification (Intelligence 1)
	Dartmouth-Hitchcock Medical Center	Evaluating the Expression Levels of MicroRNA-10b in Patients with Gliomas
	Boston Biomedical, Inc	A Randomized, Multicenter, Phase 2 Study of DSP-7888 Dosing Emulsion in Combination with Bevacizumab versus Bevacizumab Alone in Patients with Recurrent or Progressive Glioblastoma following Initial Therapy
	Penn State	NeMeRe, a Multi-Institutional Retrospective and Prospective Registry of Neoplastic Meningitis in Adults
	Northwestern University	NU10C03: Phase I/II Dose Escalation Trial to Assess Safety of Intrathecal Trastuzumab for the Treatment of Leptomeningeal Metastases in HER2 Positive Cancer
	Novocure	METIS: Pivotal, open-label, randomized study of radiosurgery with or without Tumor Treating Fields (TTFields) for 1-10 brain metastases from non-small cell lung cancer (NSCLC)

Clinical Research/Clinical Trials (partial listing) continued

Investigator	Sponsor/Trial number	Title
Andreas Klein, MD	ECOG	A Randomized Phase III Study of Ibrutinib (PCI-32765)-based Therapy vs Standard Fludarabine, Cyclophosphamide, and Rituximab (FCR) Chemoimmunotherapy in Untreated Younger Patients with Chronic Lymphocytic Leukemia (CLL)
	NMDP	A multicenter access and distribution protocol for unlicensed cryopreserved cord blood units (CBUs) for transplantation in pediatric and adult patients with hematologic malignancies and other indications
	Novartis	Managed Access Program (MAP) to provide access to CTL019, for acute lymphoblastic leukemia (ALL) or large B-cell lymphoma patients with out of specification leukapheresis product and/or manufactured tisagenlecleucel out of specification for commercial release
	Northwestern University	NU14H09: A Phase I-II Trial of DA-EPOCH-R Plus Ixazomib as Frontline Therapy for Patients with MYC-aberrant Lymphoid Malignancies: The DACIPHOR Regimen
	Gilead	GS-US-339: A Phase 2, Open-Label Study Evaluating the Efficacy, Safety, Tolerability, and Pharmacodynamics of GS 9973 in Subjects with Relapsed or Refractory Hematologic Malignancies
	Karyopharm Therapeutics	KCP-330-009: A Phase 2b Open-label, Randomized Two-arm Study Comparing High and Low Doses of Selinexor (KPT-330) in Patients with Relapsed/Refractory Diffuse Large B-Cell Lymphoma (DLBCL)
	ECOG	E1A11: Randomized Phase III Trial of Bortezomib, Lenalidomide and Dexamethasone (VRd) Versus Carfilzomib, Lenalidomide, Dexamethasone (CRd) Followed by Limited or Indefinite Lenalidomide Maintenance in Patients With Newly Diagnosed Symptomatic Multiple Myeloma
	Merck	Phase Ib Trial of Pembrolizumab (MK-3475) in Combination with Dinaciclib (MK-7965) in Subjects with Hematologic Malignancies (KEYNOTE-155)
	Millennium	A Phase 1b Dose Escalation Study to Determine the Recommended Phase 2 Dose of TAK-659 in Combination with Bendamustine (+/- Rituximab), Gemcitabine, Lenalidomide, or Ibrutinib for the Treatment of Patients with Advanced Non-Hodgkin's Lymphoma After At Least 1 Prior Line of Therapy
	TG Therapeutics	A Phase 3, Randomized, Study to Assess the Efficacy and Safety of Ublituximab in Combination with Ibrutinib Compared to Ibrutinib Alone, in Patients with Previously Treated High-Risk Chronic Lymphocytic Leukemia (CLL)
	TG Therapeutics	UNITY: A Phase 3, Randomized Study to Assess the Efficacy and Safety of Ublituximab in Combination with TGR-1202 Compared to Obinutuzumab in Combination with Chlorambucil in Patients with Chronic Lympho
	Tufts Medical Center (TMC)	Collection of samples from CML patients undergoing treatment and monitoring for the development of BCR-ABL testing assays and other related diagnostic measures
	Tufts Medical Center (TMC)	Plerixafor: Pilot Study of Lymphoid Tumor Microenvironmental Disruption Prior to Autologous Stem Cell Transplantation
	Tufts Medical Center (TMC)	Characterization of a naive T-cell (CD45RA)-depleted stem cell graft for allogeneic stem cell transplant with reduced risk for graft-versus-host disease
	Tufts Medical Center (TMC)	Creation and Maintenance of a De-Identified Tissue Catalog
	Tufts Medical Center (TMC)	Pilot Study of Biological Material Collection for Research in Tumor Biology and Behavior in Subjects Undergoing Procedures at Tufts Medical Center
Tufts Medical Center (TMC)	Does Endogenous Reactivation of Varicella Virus Boost Anti-VZV Immunity After Allogeneic Bone Marrow Transplantation?	
Tufts Medical Center (TMC)	Biological Material Collection for Studies of Immune Function, and Tumor Biology and Behavior In Subjects	

Investigator	Sponsor/Trial number	Title
Paul Mathew, MD	Bayer	A Phase I Trial of Fractionated Docetaxel and Radium 223 in Metastatic Castration-Resistant Prostate Cancer
	Bayer	A randomized, double-blind, placebo-controlled Phase III study of ODM-201 versus placebo in addition to standard androgen deprivation therapy and docetaxel in patients with metastatic hormone-sensitive prostate cancer
	Investigator Initiated, Supported by Tesaro	HCRN GU14-202: Combined Targeting of the Androgen Receptor in Castrate-Resistant Prostate Cancer with Enzalutamide and the Poly (ADP- Ribose) Polymerase [PARP] Inhibitor Niraparib
	Alliance	A031201: Phase III Trial of Enzalutamide (NSC # 766085) versus Enzalutamide, Abiraterone and Prednisone for Castration Resistant Metastatic Prostate Cancer
	Roche	A Phase III, Randomized, Double-Blind, Placebo-Controlled, Multicenter Trial Testing Ipatasertib plus Abiraterone plus Prednisone/Prednisolone, Relative to Placebo plus Abiraterone Plus Prednisone/Prednisolone in Adult Male Patients with Asymptomatic or Mildly Symptomatic, Previously Untreated, Metastatic Castrate-Resistant Prostate Cancer
	NanoCarrier	A Phase 1b/2 Dose Escalation and Expansion Trial of NC-6004 (Nanoparticle Cisplatin) plus Gemcitabine in Patients with Advanced Solid Tumors or Squamous Non-Small Cell Lung, Biliary Tract, and Bladder Cancer
	Taiho Oncology	A Phase 1, Open-Label Study to Evaluate the Safety, Tolerability, and Pharmacokinetics of TAS-102 in Patients with Advanced Solid Tumors and Varying Degrees of Renal Impairment
	Tufts Medical Center (TMC)	Prostate cancer and bone metastases: Fibronectin signaling via integrin receptors
Susan Parsons, MD	PhRMA	Incorporating family spillover effects into cost-effectiveness analyses: Review of practices and magnitude of benefits
	Seattle Genetics	Systematic Review of Burden of Bleomycin
	Seattle Genetics	Evaluating treatment patterns and burden of disease in advance stage HL in community setting: 2003-2012
	Tufts Medical Center (TMC)	A Pilot Study to Assess Adherence to Oral Chemotherapy Among Vulnerable Populations
	Tufts Medical Center (TMC)	Tufts Breast Cancer Training Program to Reduce Health Disparities
	Yawkey Foundation	Utilizing Patient Navigators to Enhance Adherence to Oral Anti-Cancer Medication among Vulnerable Patients: An

Clinical Research/Clinical Trials (partial listing) continued

Investigator	Sponsor/Trial number	Title
Kellie Sprague, MD	Abbvie	A Randomized Phase 2 Study Evaluating the Safety, Pharmacokinetics and Efficacy of Venetoclax in Combination with Azacitidine Compared with Azacitidine Alone in Subjects with Treatment-Naïve Higher-Risk Myelodysplastic Syndromes (MDS)
	Astellas	A Phase 3 Multicenter, Randomized, Double-Blind, Placebo- Controlled Trial of the FLT3 Inhibitor Gilteritinib (ASP2215) Administered as Maintenance Therapy Following Induction/Consolidation Therapy for Subjects with FLT3/ITD AML in First Complete Remission
	BMTCTN/Astellas Pharma Global Development	A Multi-center, Randomized, Double-blind, Placebo-controlled Phase III Trial of the FLT3 Inhibitor Gilteritinib Administered as Maintenance Therapy Following Allogeneic Transplant for Patients with FLT3/ITD AML
	ECOG	E2906: Phase III Trial of Clofarabine as Induction and Post-Remission Therapy vs. Standard Daunorubicin & Cytarabine Induction and Intermediate Dose Cytarabine Post-Remission Therapy, Followed by Decitabine Maintenance vs. Observation in Newly-Diagnosed Acute Myeloid Leukemia in Older Adults (Age >60 Years)
	Incyte	A Randomized, Double-Blind, Placebo Controlled Phase 3 Study of Itacitinib or Placebo in Combination With Corticosteroids for the treatment of First-Line Acute Graft Versus Host Disease
	NMDP	A Research Database for Hematopoietic Stem Cell Transplantation, Other Cellular Therapies and Marrow Toxic Injuries.
	NMDP	Research Sample Repository for Allogeneic Unrelated Hematopoietic Stem Cell Transplantation
	Novartis	RADIUSX: An open-label, multi-center, Expanded Treatment Protocol of Midostaurin (PKC412) in adult patients with newly diagnosed Fms-like tyrosine kinase receptor (FLT3) mutated Acute Myeloid Leukemia (AML) who are eligible for standard induction and consolidation chemotherapy
	Onconova	A Phase III, International, Randomized, Controlled Study of Rigosertib versus Physician's Choice of Treatment in Patients with Myelodysplastic Syndrome after Failure of a Hypomethylating Agent
	Pfizer	A Phase 1b Study to Evaluate the Safety and Preliminary Efficacy of PF-04449913, an Oral Hedgehog Inhibitor, in Combination with Intensive Chemotherapy, Low Dose Ara-C, or Decitabine in Patients with Acute Myeloid Leukemia or High-Risk Myelodysplastic Syndrome
	Seattle Genetics	CASCADE: A randomized, double-blind phase 3 study of vadastuximab talirine (SGN-CD33A) versus placebo in combination with azacitidine or decitabine in the treatment of older patients with newly diagnosed acute myeloid leukemia (AML)
Lori Pai, MD	Astellas	SOLAR: An Open-label, Randomized Phase 3 Efficacy Study of ASP8273 vs Erlotinib or Gefitinib in First-line Treatment of Patients with Stage IIIB/IV Non-small Cell Lung Cancer Tumors with EGFR Activating Mutations Mirati Phase 2, Parallel-Arm Study of MGCD265 in Patients with Locally Advanced or Metastatic Non-Small Cell Lung Cancer with Activating Genetic Alterations in Mesenchymal-Epithelial Transition Factor
	Mirati	Phase 2, Parallel-Arm Study of MGCD265 in Patients with Locally Advanced or Metastatic Non-Small Cell Lung Cancer with Activating Genetic Alterations in Mesenchymal-Epithelial Transition Factor
	Novocure	LUNAR: Pivotal, randomized, open-label study of Tumor Treating Fields (TTFields) concurrent with standard of care therapies for treatment of stage 4 non-small cell lung cancer (NSCLC) following platinum failure

Basic/Translational Research

The basic and translational cancer research activities of the Division of Hematology/Oncology are located at 75 Kneeland Street, with 9 faculty members and approximately 40 FTEs. Its mission is to explore the molecular mechanisms of neoplastic transformation and to promote the translation of basic research findings into the clinic. To achieve this goal, scientists carry out research that spans the spectrum from gene discovery to target validation for drug development.

The Division also collaborates with a number of other institutes across the Tufts Health Sciences Campuses. This includes the Cummings School of Veterinary Medicine at Tufts University (TCSVM), which is the only veterinary school in New England providing high-quality clinical care services and original research. The research includes shared models to study cancer in animals that may have direct application to humans (i.e., Comparative Oncology). Researchers at TCSVM are members and active participants of the National Cancer Institute Clinical Oncology Trials Consortium. They

have contributed to numerous clinical trials utilizing dogs, cats, and other small animals with various spontaneous cancers to inform human cancer therapy. There are several ongoing translational cancer collaborations between TCSVM and the Division.

The Division of Hematology/Oncology also collaborates closely with the Jean Mayer USDA Human Nutrition Research Center on Aging (HNRC) at Tufts University. The Center is a unique national asset devoted to diseases of an aging population, including cancer. The HNRC is operated by Tufts University through a cooperative agreement with the Agricultural Research Service (ARS), and is one of six human nutrition research centers in the United States. It is supported by the United States Department of Agriculture (USDA). The interaction between nutrition and the onset and progression of cancer has been a special interest of several scientists at the HNRC. These investigators use cell and molecular biology techniques, genomics, and sophisticated animal models.

Laboratory/Translational Research Grants (partial list)

Investigator	Funding Source	Grant title
Rachel Buchsbaum, MD	NIH/NCI (R01 Subcontract)	Synthesis and Study of Complex Natural Products
Lidija Covic, PhD	NIH/NHLBI (R42 Subcontract)	A Development of PAR2 Pepducins for the Treatment of Atopic Dermatitis
	NIH/NHLBI (STTR Subcontract)	Clinical Development of a PAR2 pepducin for the Treatment of Idiopathic Pulmonary Fibrosis
	NIH/NHLBI (STTR Subcontract)	Development of a PAR2 Pepducin Inhibitor for the Treatment of Nonalcoholic Steatohepatitis
	NIH/NHLBI (STTR Subcontract)	Development of PAR4 Pepducins as a Novel Antithrombotic Treatment
Keyong Du, PhD	NIH/NIDDK (R01)	Regulation of Akt Signaling by Detergent Resistant Membrane Associated Protein ClipR-59
Guofu Hu, PhD	NIH/NHLBI (R01)	Protection and mitigation of bone marrow failure by angiogenin
	Diane Connolly-Zaniboni Research Scholarship in Breast Cancer	Targeting Angiogenin/PlexinB2 to chemosensitize breast cancer stem cells and prevent bone metastasis
	Karma Pharmaceuticals Limited	Sponsored Research Agreement
Miaofen Hu, MD, PhD	Moore/Moreau Pilot Project Grant	CDK6 as a novel therapeutic target in T-cell Acute Lymphoblastic Leukemia (T-ALL)
	Starry Pharmaceutical Co	Sponsored Research Agreement
Athanasios Kuliopulos, MD PhD	NIH/NCI (P50)	TRIP-PCI: PAR1 Pepducin-Based Interventions in Arterial Thrombosis
	NIH/ NHLBI (R01)	Matrix Metalloprotease-PAR1 Regulation of Atherosclerosis
Susan Parsons, MD	PCORI	Predictive Analytics Pilot Study: Assessment of Heterogeneity of Treatment Effects in Two Major Clinical Trials
	NIH	Identifying Pain Trajectories in Sickle Cell Disease Using Latent Class Analysis
Rajashree Rana, PhD	American Heart Association	Targeting Metalloprotease-PAR1 signaling in Atherosclerosis

Honors and Awards (partial list)

Dr. Buchsbaum

- » Boston Magazine 2018 Top Doctor, Oncology
- » Castle Connolly Exceptional Women in Medicine
- » Tufts University School of Medicine Outstanding Lecturer
- » Tufts MC Physicians Organization Physician Leadership Program
- » Invited reviewer: Department of Defense CDMRP Breast Cancer Research Program
- » Named Jane F. DesForges MD Chair of Hematology and Oncology
- » Invited member: ASCO Professional Development Committee
- » Invited member: ABIM/ASCO Learning & Assessment Pathway Project

Dr. Comenzo

- » Boston Magazine 2018 Top Doctor, Hematology

Dr. Erban

- » Boston Magazine 2018 Top Doctor, Oncology.
- » 2018 Newsweek/Castle Connolly Top Cancer Doctors
- » Member, Eastern Cooperative Oncology Group Breast Committee and Cardiooncology Working Group
- » Associated Editor, American Journal of Clinical Oncology
- » Editorial Board, Gland Surgery

Dr. Jeyapalan

- » Member, IRB Tufts Medical Center
- » Reviewer, Journal of Neuro-Oncology

Dr. Klein

- » Boston Magazine 2018 Top Doctor, Hematology
- » "Progress and promise: Surveying the future of gene therapy and immunotherapy", OMNIPREX Madrid, Spain February 2018

Dr. Kumar

- » Awarded Lymphoma Research Foundation career development award
- » Awarded NIH TL1 Fellowship to pursue doctoral studies in clinical and translational science
- » Poster presentation: American Society of Hematology Annual Meeting
- » Poster presentation: International Symposium for Hodgkin Lymphoma
- » American Society Hematology abstract review and oral abstract session moderator
- » Ad hoc reviewer, Blood Journal

Dr. Miller

- » Boston Magazine 2018 Top Doctor, Hematology

Dr. Mathew

- » Boston Magazine 2018 Top Doctor, Oncology
- » Editorial Board, Oncology (Williston Park) (Genitourinary Cancer) 2011 to present.
- » Patent – (1) PCT/US18/58146 Covering the strategy, method and composition of a bispecific antibody filed on October 30, 2018.

Dr. Pai

- » Associate Program Director of Hematology/Oncology fellowship
- » Member of PRMC (Protocol review and monitoring committee)
- » Represents the oncology division in Thoracic tumor board and Cutaneous tumor board
- » Conference chair, Morbidity and Mortality Conferences

Dr. Parsons

- » Invited speaker: International Hodgkin Lymphoma Symposium
- » Appointed member, Cancer Care Delivery Research Scientific Council, NCI
- » Appointed member, Palliative Care and Symptom Management Peer Review (Grants) Committee, American Cancer Society
- » Appointed Member, Children's Oncology Group (COG) Steering Committee for Hodgkin Lymphoma

Dr. Saif

- » Boston Magazine 2018 Top Doctor, Oncology

Dr. Sprague

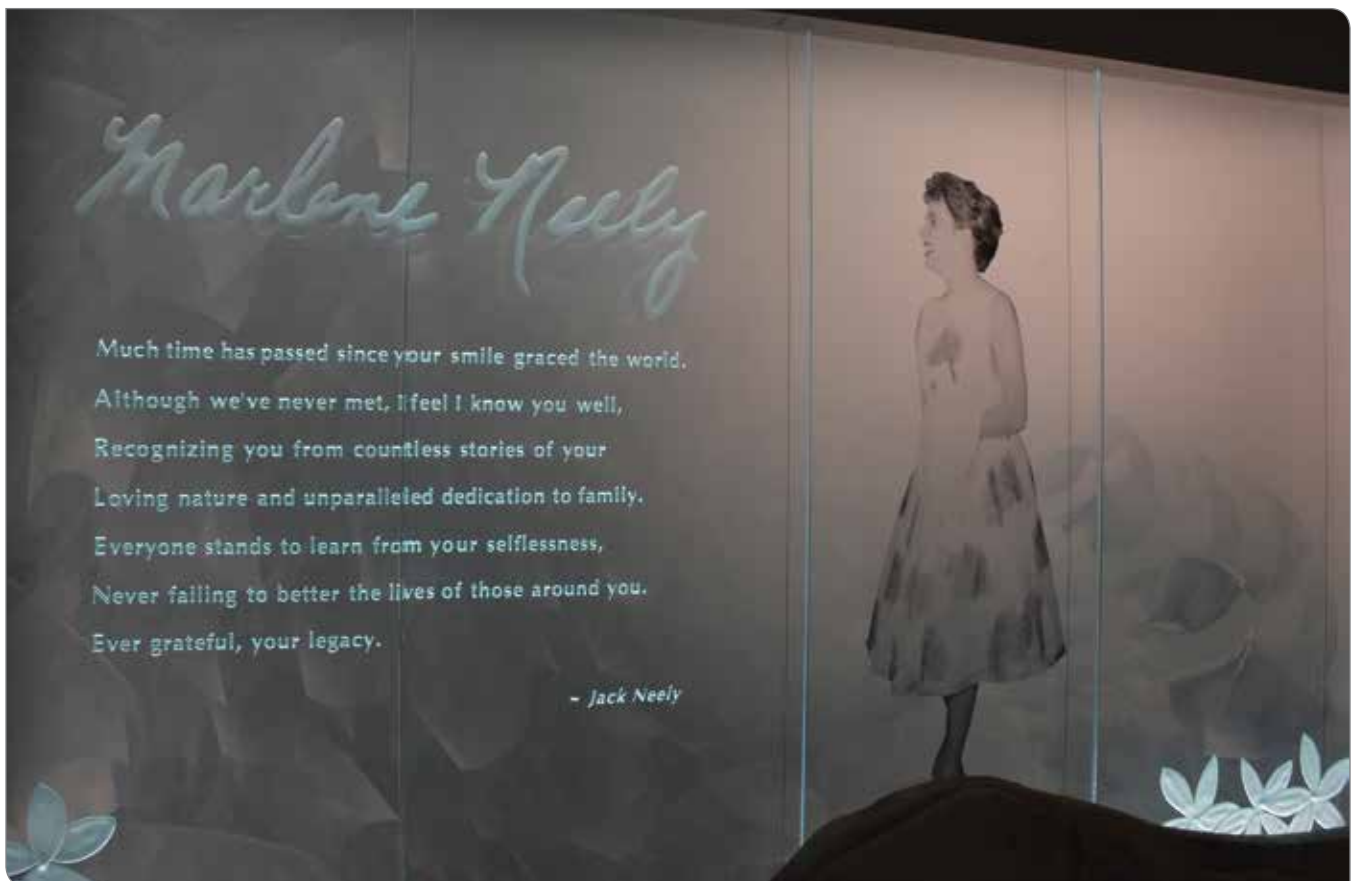
- » Boston Magazine 2018 Top Doctor, Hematology
- » Top Doctor, Hematology, Castle Connolly 2018
- » Patient Education Advisory Group: Diverse Populations, National Marrow Donor Program
- » Tufts University School of Medicine, Top Lecturer, Hematology Course

Dr. Strauss

- » Boston Magazine 2018 Top Doctor, Oncology
- » Respiratory Core Committee, Eastern Cooperative Oncology Group (ECOG)
- » LACE-Bio (Lung Adjuvant Cisplatin Evaluation-Biological) Steering Committee; in collaboration with Institut Gustave-Roussy, Villejuif Cedex, France

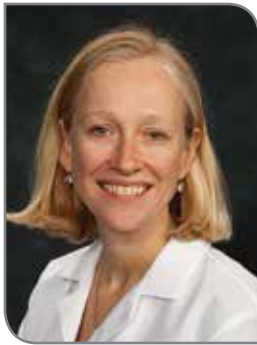
Dr. Varga

- » Member, Tufts Clinical and Translational Science Institute
- » Member, Women in Medicine and Science Committee
- » Early Career Women Faculty Professional Development Seminar
- » Chair of the Advisory Board for the Boston Multiple Myeloma Grand Rounds in 2018



DIVISION OF

INTERNAL MEDICINE AND ADULT PRIMARY CARE



Deborah Blazey-Martin, MD, MPH

The Division of Internal Medicine and Adult Primary Care at Tufts Medical Center is the principal clinical home for adult internal medicine, family medicine, geriatrics and transitional care medicine. The division contains five sections, described below.

Tufts Medical Center Primary Care – Boston comprises multiple ambulatory internal medicine practices and is the primary care teaching practice for the Tufts Medical Center Internal Medicine Residency program. All attending physicians are geriatricians, internists or family practitioners and many have a focus on research, quality or education in addition to their clinical practices at Tufts MC Primary Care - Boston.

The **Pratt Diagnostic Center** is a concierge model practice. Patients and their families are able to spend more time with their physician to discuss management of their chronic illnesses and health screening and prevention. Patients pay an annual fee for this service.

The affiliated **Tufts Medical Center Community Care Practices**, strategically located in both the South Shore and Metro West markets, opened in October of 2013, with the newest location in Woburn. Comprised of internists and family medicine physicians, these practices are dedicated to providing excellent primary care to patients in their own neighborhoods. They expose senior internal medicine residents to community practice and teach Tufts University School of Medicine Physician's Assistant students. They also host Tufts Medical Center specialists, bringing them closer to the patients who live in these communities.

The **General Medicine** and **Geriatric/Consultation Inpatient Services** are hospital ward services caring for a wide range of medical conditions. As the only generalist inpatient medical services, they serve as an important component of the resident and medical student education experience.

The **Geriatrics Section** offers inpatient geriatric teaching for residents, together with an educational program for nursing staff at Tufts Medical Center, and a polypharmaceutical and advanced care plan to address the special needs of elderly patients.

Highlights of 2018

- » Added 1 new primary care physician, 3 new Physician's Assistants, 2 community health workers, and 2 nurse case managers to the Academic Medical Center practice

Faculty

Name	Academic Rank	Title and Special Responsibilities
Deborah Blazey-Martin, MD, MPH, FACP	Assistant Professor	Chief, Internal Medicine and Adult Primary Care Medical Director, Tufts Medical Center Community Care
Dineli Ahearn, MD	Assistant Professor	Director, Primary Care Innovation
Elena Byhoff, MD, MSc	Assistant Professor	Institute for Clinical Research and Health Policy Studies
Jeanine Carlson, MD	Clinical Associate Professor	Pratt Diagnostic Center
Niamh Carroll, MD	Assistant Professor	
Daniel Chandler, MD	Assistant Professor	Director of Resident Ambulatory Education
Prianka Chawla, MD, MS	Assistant Professor	
Elaine Choi, MD	Assistant Professor	
Jaclyn Chu, MD	Assistant Professor	
Brian Cohen, MD	Assistant Professor	Medical Director, Pratt Diagnostic Center
Amy Dinitz, MD	Assistant Professor	
John Doyle, MD	Assistant Professor	Medical Director of Employee Health Services
Paul Duncan, MD	Assistant Professor	
Richard Dupee, MD	Clinical Professor	Chief of Geriatrics, Pratt Diagnostic Center
Karen Freund, MD, MPH	Professor	Vice Chair for Faculty Affairs and Quality Improvement Associate Director of Research Collaboration, CTSI
Jenny Hong Gao, MD, PhD	Assistant Professor	
Linda Kaplan, MD	Assistant Professor	
David Kent, MD	Professor	Director, Predictive Analytics and Comparative Effectiveness (PACE) Center, ICRHPS; Director, Sackler School of Graduate Biomedical Sciences, Clinical and Translational Science Program
Richard Kopelman, MD	Professor	Vice-Chair for Education; Program Director, Internal Medicine Residency Program
Diane Krause, MD, MPH	Assistant Professor	
Joan Kross, MD, MPH	Clinical Associate Professor	Tufts LCO Medical Director
Sandra Lau, MD		
Mary Lee, MD, MS, FACP	Professor	Special Advisor for Education Innovation
Cinthya Marturano, MD	Clinical Associate Professor	Associate Chief of Geriatrics Director of Continuing Medical Education
M. Brenna McNamara, MD	Assistant Professor	
Catherine Milch, MD	Assistant Professor	
Manasa Mouli, MD	Assistant Professor	
Jana Naef, MD	Assistant Professor	
Jack Naggar, MD	Assistant Professor	
Judy Pinsker, MD	Clinical Associate Professor	

Faculty (continued)

Name	Academic Rank	Title and Special Responsibilities
Fadi Ramadan, MD		Geriatrician
Joseph Rencic, MD	Professor	Associate Program Director of Internal Medicine Residency Program
Joyce A. Sackey, MD	Associate Professor, Department of Medicine and Department of Public Health and Community Medicine	Dean, Multicultural Affairs/Global Health
Kinjalika Sathi, MD	Assistant Professor	Assistant Director of Resident Internal Medicine Education
Kimberly Schelling, MD	Assistant Professor	Director Inpatient Services
Harry Selker, MD	Professor	Chief, Institute for Clinical Research and Health Policy Studies; Pratt Diagnostic Center Staff
Myron Siu, MD	Clinical Associate Professor	
Laura K. Snyderman, MD, FACP	Associate Professor	Clerkship Director
Steven Spector, MD	Assistant Professor	GMA and Pratt Diagnostic Center
Jillian Suzukida, MD	Assistant Professor	
Julie Tishler, MD	Assistant Professor	Director of Quality Improvement
Michael Wagner, MD	Associate Professor	Chief Physician Executive -Wellforce
Wei Wang, MD	Assistant Professor	
Saul Weingart, MD, PhD	Professor	Chief Medical Officer, Tufts Medical Center
Elisabeth Wilder, MD	Assistant Professor	
John B. Wong, MD	Professor	Chief, Clinical Decision Making, Informatics and Telemedicine
Irina Zilberman, MD	Assistant Professor	

**Joined the institution in 2018*

Major Clinical Programs

The Division of Internal Medicine and Adult Primary Care continues to increase its primary care services on the main campus at Tufts Medical Center. In addition, the division has expanded services in Geriatrics, inpatient medicine and collaborative programs on the main campus and has extended its services into the community in the spirit of the distributed academic medical center model.

Tufts Medical Center Primary Care - Boston (Primary Care - Boston) is the largest ambulatory practice at Tufts Medical Center, located in the Biewend building. In 2018 Primary Care - Boston hired one new physician who graduated from our own Residency program, two Nurse Case Managers, two Community Health Workers, and three Physician's Assistants.

Primary Care - Boston cares for 40,000 patients resulting in 77,134 primary care office visits per year. 2018 brought over approximately 2,500 new patients into Primary Care Boston. The division also coordinates care and is a major source of referrals to subspecialty colleagues and services within the organization. Primary Care - Boston consists of about 40 internists, some with careers primarily devoted to clinical care. Others offer clinical care and also are active in medical education, quality improvement, and administration. Still others have primary appointments in other divisions, mainly research institutes, but practice clinical medicine at Primary Care - Boston.

The Tufts Medical Center Community Care practices in *Framingham, Quincy, Woburn and Wellesley* are dedicated primarily to clinical care. From disease prevention to managing chronic illness to an urgent care appointment, these teams are focused on delivering high-quality, efficient care to their patients in their local communities. Quincy, Framingham and Woburn are in newly constructed spaces, thoughtfully designed for optimizing team-based patient care. Each practice offers same-day appointments, onsite blood drawing stations and centralized digital medical records that can connect patients to their entire healthcare team at Tufts Medical Center or MetroWest Medical Center.

In Quincy and Wellesley, Tufts Medical Center specialists rotate through the practice on a monthly basis making their services conveniently available to patients locally. Cardiologists and endocrinologists team up with their Primary Care Physician colleagues to provide comprehensive, coordinated care to patients in a patient-friendly environment.

The *Pratt Diagnostic Center* uses a concierge model to provide a high level of service coupled with expert

diagnostic care. Under the direction of Dr. Brian Cohen, the program continues to thrive since its inception over ten years ago. The Pratt Diagnostic Center markets its services and clinical practice to members of the Boston business community.

Tufts MC Primary Care Boston supports a robust Quality Improvement structure with a Change Team that meets weekly. In 2018 our Quality Improvement team focused on colon cancer screening. Using a newly created provider dashboard, we were able to easily track colon cancer screening rates by provider and the practice in addition to using this tool to do population management for patients who were not up to date with colon cancer screening. By collaborating with the Division of Gastroenterology, the Division experimented with a text based outreach to those patients not up to date with colon cancer screening. We were also able to process map the complicated stool card and colonoscopy ordering processes; we could then streamline each process to improve completion rates. We have implemented reminder letter system practice-wide when stool cards are given to patients but subsequently not returned. We have been successful with increasing the percentage of patients with completed colon cancer screening from 67% to 74% with these interventions.

Over the last few years, Primary Care - Boston has achieved the highest level of NECQA Patient Centered Medical Home Prime (PCMH) recognition, Level 3 with Distinction. The award was first received in 2013 with successful recertification starting December 2016. This is uncommon in academic medical centers. Population-based medicine with the patient at the center is the rationale behind this model of care and promotes the importance of team-based management of patients.

Care teams, composed of physicians, nurse practitioners, physician assistants, registered nurses, medical assistants and practice coordinators care for all patients in the panel. Outreach is facilitated by registries, information technology, health information exchanges and other means to assure that patients receive the indicated care in a culturally- and linguistically-appropriate manner. This robust team structure has been developed and rolled out across most of the practice, resulting in increased MHQP patient satisfaction scores.

The Division's vision for PCMH transformation has the following goals:

- » Emphasize high-quality, team-based preventive care and disease management, with care coordination across the health care continuum.

- » Invite patients to actively engage in improving their health and well-being.
- » Promote physician, nurse, and staff satisfaction by redesigning the staffing model to allow everyone to work to the top of their certifications.
- » Commit to delivering superior customer service.
- » Create and maintain an environment where trainees learn to provide primary care at the highest level and enjoy the practice of medicine and caring for their patients.
- » Establish a data-driven practice culture of continuous improvement in the quality of care provided and the safety of the environment of care based on transparency and accountability.

In an effort to provide the best and most convenient care for patients, Primary Care – Boston continues to include multidisciplinary services within the clinic. Dr. Robin Koshy joins the Clinical Diabetes Educator RN Susan Cassiani to work more rigorously with our diabetic patients. Behavioral health resources are integrated into our practice with a robust social work team. Katie Hansen, LCSW, Wil Hartigan, LICSW, and Lauren Schweitzer, LICSW provide social work services with additional behavioral services coordinated by Dr. Annette Hanson from Psychiatry.

Another service provided for the ease of our patients is the Primary Care – Boston Anticoagulation Service. This service monitors patients on warfarin and enoxaparin, and the novel oral anticoagulants. It is primarily managed by nurses in consultation with a pharmacist and the primary care physicians. Patients can have blood drawn in a variety of sites convenient for them including point of care testing in Primary Care - Boston. In 2018 the service managed over 900 patients with excellent results in terms of compliance and time in the therapeutic range.

While outpatient primary care is its main activity, Primary Care Boston maintains two physicians on inpatient services daily throughout the year. The *general medicine* inpatient service continues to be an important clinical and educational program for residents and physicians alike. Under the direction of Dr. Kimberly Schelling, Director of Inpatient Services, the general medicine ward rotation provides house staff the opportunity to have intensive exposure to patients with complex illnesses under the care of general internists and to see these physicians as potential role models for a career in general internal medicine. Dr. Schelling is in charge of the combined inpatient Geriatric Service and Medical Consultation service. In addition to managing inpatient services, Dr. Schelling is a leader in inpatient initiatives for patients struggling with opioid use disorder



and has been active in standardizing the quality of care on the inpatient services in the Department of Medicine.

Teaching Activities

The educational programs of the division consist of the following:

- » Residents' Ambulatory Medicine in Tufts Medical Center Primary Care - Boston
- » Continuity Clinic
- » Ambulatory Block Rotations
- » Geriatric Block Rotation
- » Primary Care Elective
- » General Medicine Inpatient Service (supervised by a Division attending and composed of a 3rd year resident, 2 interns, a pharmacist, and medical students).
- » Third Year Medicine Clerkship for Tufts University School of Medicine
- » General Medicine Consultation Service (overseen by a Division attending and composed of a 3rd year resident, internal medicine intern, and a psychiatry intern intermittently)

- » Geriatrics Inpatient Service (supervised by a Division attending and composed of a 3rd year resident, an internal medicine intern, a psychiatry intern intermittently, and medical students)
- » Fourth-year medicine sub-internships for Tufts University School of Medicine

As the outpatient practice site for 75 Tufts Internal Medicine Residents, the Division has made significant changes and innovations. Under the leadership of Dr. Daniel Chandler, the Director of Residency Education, and Dr. Kinji Sathi, the Assistant Director of Residency Education, we operate with a "3+1" model for the intern class and a "3+3" model for the junior and senior residents.

Interns and residents spend 3 weeks learning inpatient medicine followed by 1 and 3 weeks of ambulatory care, respectively. This separation of inpatient and ambulatory care allows house-staff to focus on clinic responsibilities and not be interrupted by inpatient demands. Several other features have further enhanced their primary care experience, including for example, higher patient panel sizes to allow for more opportunities to manage chronic illness. In addition, all house-staff rotate through a focused primary care block twice a year which includes increased time in clinic, a primary care conference series, several other lecture series, and various primary care-focused sub-specialty experiences, such as dermatology and physical therapy. There are Quality Improvement and Resident-as-Teacher curricula embedded within this rotation, as well. Regular feedback from house-staff and faculty preceptors helps guide further continuous improvement each year. Several residents have the additional opportunity to rotate through the Tufts Medical Center Primary Care-Quincy practice where they are exposed to both an academic-community practice and nursing home care.

Many of the faculty play pivotal roles in the educational programs, both for the medical school and for the residency training program. Dr. Richard Kopelman is the Program Director for the Internal Medicine Residency training program at Tufts Medical Center. Each year, the program recruits 25 new interns and has a total of 75 residents and three chief medical residents. Dr. Joseph Rencic is an Associate Program Director of the internal medicine residency, with an additional research focus in clinical decision making and development of expertise. Dr. Laura Snyderman, as the Internal Medicine Clerkship Director, provides oversight for the Tufts medical students during their third and fourth year medicine clerkships at Tufts Medical Center. Dr. Daniel Chandler is Director of

Resident Education for Internal Medicine and Adult Primary Care. He sets the overall education agenda for the 75 residents that rotate through Primary Care-Boston for their continuity and primary care experience throughout their 3 years of training. Dr. Kinjalika Sathi, as the Assistant Director of Residency Education, administers the outpatient ambulatory curriculum through the primary care clinic and associated outpatient ambulatory elective clinics. Drs. Laura Snyderman, Dan Chandler, Kinjalika Sathi, and Joseph Rencic provide a "Resident-as-Teacher" program to enhance the skills of residents in teaching medical students, colleagues, and patients. The faculty of the division are recognized annually by medical students and residents for their excellence in teaching and their fundamental contributions to the educational programs of the medical school and medical center.

Research Activities

Adult Internal Medicine acts as an important source of patients for clinical research trials at the medical center. With 40,000 patients in the practice and an electronic medical record spanning 18 years of care, this enables researchers to identify patients with specific diagnoses over time, and the Division is able to work collaboratively with institutionally-sponsored research colleagues on identifying patients for research projects.

Honors and Awards

Dineli Ahearn, MD

Awards

- » Castle Connelly Best Doctors 2018
- » Top Doctor Boston Magazine 2018

Deborah Blazey-Martin, MD, MPH

Awards

- » Castle Connelly Best Doctors 2018
- » Top Doctor Boston Magazine 2018

Committee Assignments

- » Wellforce ACO Board of Managers, 2018

Invited Meetings

- » SGIM Regional Meeting. Boston, MA 3/9/18 "Improving Hypertension Control in an Academic Primary Care Practice" Clinical Innovations Poster Presentation (Tishler, Huang, Blazey-Martin).
- » SGIM National Meeting. Denver, Colorado 4/12/2018 "Improving Hypertension Control in an Academic Primary Care Practice" Clinical Innovations Poster Presentation" (Tishler, Huang, Blazey-Martin)



Elena Byhoff, MD, MSc

- » SGIM Leader in Health Policy

Daniel Chandler, MD

- » SGIM National Meeting. Washington, DC, "An Innovative Team-Based Chronic Opioid Management Initiative for Patient Safety" Clinical Innovations Poster Presentation.
- » GE Centricity Live National Conference, Boston, MA. "The Chronic Opioid Management Initiative: A Team-Based Approach to Patient Safety and Practice Efficiency" Workshop Presentation
- » AAMC Integrating Quality Meeting: Achieving the Quadruple Aim, Rosemont, IL. "An Innovative Team-Based Chronic Opioid Management Initiative for Patient Safety" Workshop Presentation.

Brian Cohen, MD

Awards

- » Castle Connolly Best Doctors 2018
- » Top Doctor Boston Magazine 2018

Paul Duncan, MD

Awards

- » Castle Connolly Best Doctors 2018
- » Top Doctor Boston Magazine 2018

Richard Dupee, MD

Awards

- » Castle Connolly Best Doctors 2018
- » Top Doctor Boston Magazine 2018
- » Mastership in the American College of Physicians

Kristin Huang, MD

Invited Meetings

- » SGIM Regional Meeting. Boston, MA. "Improving Hypertension Control in an Academic Primary Care Practice" Clinical Innovations Poster Presentation (Tishler, Huang, Blazey-Martin).
- » SGIM National Meeting. Denver, Colorado "Improving Hypertension Control in an Academic Primary Care Practice" Clinical Innovations Poster Presentation" (Tishler, Huang, Blazey-Martin).

Karen Freund, MD

Awards

- » Castle Connolly Best Doctors 2018
- » Top Doctor Boston Magazine 2018
- » Milton O. and Natalie V. Zucker Prize, Tufts University School of Medicine

Linda Kaplan, MD

Awards

- » Castle Connolly Best Doctors 2018
- » Top Doctor Boston Magazine 2018

David Kent, MD, MS

- » "Using Group Data to Treat Individuals: Understanding heterogeneous treatment effects in the age of precision medicine and patient centered care." Florence Evidence-based Medicine Renaissance. Florence, Italy.
- » "Approaches for Studying Heterogeneity of Treatment Effect (HTE) in Comparative Effectiveness Studies." PCORI Transitional Care Evidence to Action Network (E2AN) Webinar. April 3, 2018.
- » "Predictive Analytics and Comparative Effectiveness: Toward a More Personalized Evidence-Based Medicine." April 11, 2018. Invited Lecture, Michigan State University, Lansing, MI. April 12, 2018.
- » "Special Topics in Predictive Analytics and Comparative Effectiveness in Medicine." Seminar, Michigan State University, Lansing, MI. April 12, 2018.

- » “Overview of heterogeneous treatment effects: Moving from evidence-based medicine to personalized/precision medicine.” Evidence and the Individual Patient: Understanding Heterogeneous Treatment Effects for Patient-Centered Care. PCORI-funded Conference. National Academies of Medicine, Washington DC. May 31, 2018.
- » “Is it Finally Time for Patent Foramen Ovale to be Closed in Stroke?” Keynote Address, Brooklyn Stroke Conference 2018. St. Francis College, Brooklyn, NY. June 5, 2018.
- » “Recommendations for Predictive HTE Analyses” Leiden University Medical Center, Leiden, the Netherlands, June 12, 2018
- » “Moving from evidence-based medicine to personalized medicine: understanding heterogeneous treatment effects in the era of patient-centered care.” Biostatistics Seminar. McGill University, Montreal, Canada, October 15, 2018.
- » “Using Group Data to Treat Individuals: Understanding heterogeneous treatment effects in the age of precision medicine and patient centered care.” FDA-JHU Symposium: Assessing and Communicating Heterogeneity of Treatment Effects for Patient Subpopulations: Challenges and Opportunities. Washington, DC. November 28, 2018.

Research

- » See “Institute for Clinical Research and Health Policy Studies” section

Richard Kopelman, MD

Awards

- » Castle Connelly Best Doctors 2018
- » Top Doctor Boston Magazine 2018

Joan Kross, MD

Awards

- » Castle Connelly Best Doctors 2018
- » Top Doctor Boston Magazine 2018

Cynthia Marturano, MD

Awards

- » Castle Connelly Best Doctors 2018
- » Top Doctor Boston Magazine 2018

Joseph Rencic, MD

Awards

- » Excellence in Teaching Award –Tufts University School of Medicine

Invited Lectures

- » AOA Visiting Professor University of California at Davis, March 1, 2018

Myron Siu, MD

Awards

- » Castle Connelly Best Doctors 2018
- » Top Doctor Boston Magazine 2018

Laura Snyderman, MD

- » Accepted to participate in the 2018 AAMC Mid-Career Women Faculty Leadership Development Seminar (sponsored by the Tufts Medical Center Women in Medicine and Science Committee)

Fellowships

- » Harvard Macy Institute Program for Educators in the Health Professions

Julie Tishler, MD

Invited Lectures

- » SGIM Regional Meeting. Boston, MA 3/9/18 “Improving Hypertension Control in an Academic Primary Care Practice” Clinical Innovations Poster Presentation (Tishler, Huang, Blazey-Martin).
- » SGIM National Meeting. Denver, Colorado 4/12/2018 “Improving Hypertension Control in an Academic Primary Care Practice” Clinical Innovations Poster Presentation”

Saul Weingart, MD

Awards

- » Member, Ambulatory Patient Safety Advisory Group, National Quality Forum, Washington DC

Elisabeth Wilder, MD

Awards

- » Castle Connelly Best Doctors 2018
- » Top Doctor Boston Magazine 2018

ADULT PRIMARY CARE— GERIATRICS



Richard Dupee, MD

The Geriatrics section of the Division of Internal Medicine and Adult Primary Care was established in the spring of 1998 in order to enhance the training of students and residents in the subspecialty of geriatrics.

The inpatient team consists of a geriatric attending, medical residents at all three levels of training, and medical students. The team provides daily assessment and care of the older patient, with intensive application of basic geriatric principles, including early functional return, delirium prevention, and safety. This year the Division initiated a full “geri-order set” on the electronic health record to better provide appropriate interventions for the complex older

adult, with a significant focus of maintaining and improving function, regardless of the reason for admission. The palliative care service and the ethics service also play a vital role in the care of the older patient, in conjunction with the geriatrics team. Geriatrics also plays an instrumental role in the NEQCA ACO (New England Quality Care Accountable Care Organization).

Highlights of 2018

- » Tufts Medical Center’s geriatrics service was ranked By US News as “excellent” in having very low 30 day mortality rates for patients over the age of 70.

Faculty

Name	Academic Rank	Title and Special Responsibility
Richard Dupee, MD	Clinical Professor	Chief of Geriatrics
Fadi Ramadan		Geriatrician
Cinthy Marturano, MD	Clinical Associate Professor	Associate Chief of Geriatrics
Wei Wang, MD	Assistant Professor	Geriatrician

Major Clinical Programs

Geriatrics Inpatient Service

Older persons are at disproportionate risk of becoming seriously ill and requiring hospital care. Moreover, the utilization of acute hospital care by older persons is increasing rapidly with the aging of the population.

Once hospitalized, older patients are at high risk for functional loss and institutionalization.

The inpatient geriatrics service at Tufts Medical Center is designed to prevent loss of function and other serious events and conditions common to this age group following hospitalization. The goal of the inpatient geriatric program is to provide the safest care possible, with return to full function as quickly as possible.

Geriatrics Consultation Service

The resident team, led by a geriatrician, is available to all medical and surgical services for inpatient consultation regarding issues and complications that frequently occur when an older patient is hospitalized, guiding the various subspecialty services in the care of these patients.

Geriatrics-Orthopedic Service

The “Geri-Ortho” service is a co-management program in which older patients requiring elective orthopedic surgery are provided comprehensive geriatric assessment pre-and post-operatively. The geriatrics team co-manages these complex patients in conjunction with the orthopedics service, and this approach has been shown to reduce and prevent post-operative complications, including delirium, falls and loss of function.

Geriatrics-Trauma Service

Tufts Medical Center is a level-1 trauma hospital. In 2018, a geriatrics-trauma service was developed to assist the trauma team with complex older adults that suffered severe injury. The team evaluates and co-manages these patients from the time of admission, focusing on prevention of post-operative complications, including delirium, with a focus on improving function.

Geriatrics ED

In the summer of 2018, Tufts Medical Center received level 1 certification as a Geriatric Emergency Department. Staffed with geriatric trained staff in nursing, medicine, pharmacy, and care management, the focus has been to provide a comfortable and quiet setting for the complex elderly patient, meeting with family to discuss goals of care, and making appropriate recommendations regarding hospitalization. In many cases, care can be provided in this setting, avoiding an acute hospital admission.

Geriatrics-Hematology Service

As we face an increasing number of older adults that develop hematologic malignancies, Tufts Medical Center has embarked on a pilot program to optimize care for them. Those patients deemed to be at risk for complications from chemotherapy or transplant intervention are provided a full one-day assessment by geriatrics, psychiatry, physical and occupation therapy, pharmacy, nutrition, social service and infectious disease, following which a care plan is initiated. These patients are managed by a personal navigator, with interventions by the team provided as indicated.

MedWest Center for Memory Disorders and Conditions of Older Adults

The MedWest Center for Memory Disorders and Conditions of Older Adults was established in conjunction with Tufts Medical Center. A team of specialists evaluates patients thought to have memory deficits. It identifies and treats patients with mild cognitive impairment and with various stages of Alzheimer’s disease. Specific and sensitive evaluation tools are used to provide early and accurate diagnosis and treatment. Patients come from all over New England for evaluation by this service.

Honors and Awards

Richard Dupee, MD

- » Voted “Top Doctors in Geriatrics” Boston Magazine, and by Castle-Connolly

National Professional Society Committee Appointments

- » Health and Public Policy Committee, American College of Physicians (2012-2014)
- » Editorial board, “Annals of Long-term Care” (2003-present)
- » Editorial board of Research Open World
- » MedSci Committee of the Massachusetts Alzheimer’s Association

Cynthia Marturano, MD

- » Voted “Top Doctors in Internal Medicine” Boston Magazine, and by Castle-Connolly

WILLIAM B. SCHWARTZ DIVISION OF NEPHROLOGY



Mark Sarnak, MD, MS

The William B. Schwartz Division of Nephrology is internationally known for the quality of patient care, teaching, research, and public policy contributions. In the early years of the Division, William B. Schwartz and his colleagues elucidated many basic principles of acid-base and fluid and electrolyte homeostasis which are used to this day. In recent years, the Division has carried out seminal studies in the epidemiology, progression, and treatments of chronic kidney disease and the effects of chronic kidney disease on cardiovascular disease. Members of the Division have led the development and implementation of clinical guidelines for the identification, classification, and treatment of kidney diseases.

In its research and its clinical programs, the Division has emphasized collaboration with other specialties (metabolism, neurology, cardiology, infectious disease, urology, and transplantation surgery) and disciplines (epidemiology, statistics). Division members collaborate with methods experts to use the research approaches appropriate for epidemiology, clinical trials, development of clinical practice guidelines, and outcomes. Members also collaborate with domain experts to focus on the research areas of: chronic kidney disease, assessment of kidney function, aging, nutrition, dialysis and transplantation, progression, polycystic kidney disease, acute kidney injury, and hypertension. Basic science studies involve the role of inflammation and oxidative stress in chronic kidney disease and the role of immunosuppressive regimens in predisposing to infections in dialysis and transplant patients.

The Division has established multidisciplinary clinics for polycystic kidney disease, kidney transplantation, home dialysis and the Kidney Function Evaluation Clinic.

The teaching programs emphasize basic science-clinical correlations. Fellowships are available in clinical nephrology and in research. Participants in the research fellowship program undertake formal training in research methods culminating in a Master of Science degree at the Sackler School of Graduate Biomedical Sciences at Tufts University.

Highlights of 2018

- » After 18 years as Associate Division Chief, Dr. Perrone left his leadership role, but remains an active member of the Division.
- » Drs. Gilbert, Inker, Jaber, Levey, Meyer, Perrone, Sarnak and Weiner were among Boston Magazine's Top Doctors.
- » Dr. Inker received the Garabed Eknoyan Award from the National Kidney Foundation.
- » Dr. Gilbert received the 2018 Grant V. Rodkey, MD Award for Outstanding Contributions to Medical Education from the Massachusetts Medical Society.
- » Dr. Bhalla received the Excellence in Teaching Award from Housestaff and Fellows, Dr. Wright received the Outstanding Teacher in the Clerkship Years Award from TUSM and Dr. Gilbert received the Excellence in Teaching Award for the 14th time.
- » Drs. Weiner, Drew and Gordon are the inaugural editorial team for a new online journal from the National Kidney Foundation called Kidney Medicine.

Faculty

Name	Academic Rank	Title and Special Responsibility
Mark J. Sarnak, MD, MS*	Professor	Division Chief Dr. Gerald J. and Dorothy R. Friedman Professor of Medicine Director, Research Training Program in Nephrology
Ronald D. Perrone, MD	Professor	Associate Division Chief Director, Polycystic Kidney Disease Center
Michael B. Cohen, MD	Assistant Professor	Associate Medical Director, DCI Ball Square
Taimur Dad, MD	Instructor of Medicine	Associate Director, Fellowship Training Program
David A. Drew, MD, MS	Assistant Professor	
Scott J. Gilbert, MD	Professor	Director, Fellowship Training Program
Craig E. Gordon, MD, MS*	Visiting Associate Professor	
Nitender Goyal, MD*	Assistant Professor	Director, Kidney Transplant Program
Lesley A. Inker, MD, MS	Associate Professor	Director, Quality Improvement Medical Director, Kidney and Blood Pressure Center Director, Kidney Function Evaluation Center
Bertrand L. Jaber, MD, MS	Professor	Interim Chairman of Medicine St. Elizabeth's Medical Center
Alin A. Joseph, MD, MS	Assistant Professor	Associate Medical Director, DCI Ball Square and DCI Walden Pond
Amy B. Kuhlik, MD	Assistant Professor	Dean for Student Affairs, TUSM
Eduardo Lacson, Jr., MD, MPH	Adjunct Associate Professor	
Andrew S. Levey, MD	Professor	
Nicolaos E. Madias, MD	Maurice S. Segal, MD Professor of Medicine	Academic Dean of TUSM, St. Elizabeth's Medical Center
Klemens B. Meyer, MD	Professor	Director, Dialysis Services Tufts Medical Center Medical Director, DCI Boston and DCI Walden Pond Medical Director, Home Dialysis Program at DCI Ball Square Medical Director, DCI Information Systems
Dana C. Miskulin, MD, MS	Associate Professor	
Michelle M. Richardson, PharmD	Assistant Professor	Director, DCI Outcomes Monitoring Program Director of Communications
Daniel E. Weiner, MD, MS	Associate Professor	Associate Medical Director, DCI Boston Director of Research
Seth Wright, MD, MS	Assistant Professor	Director, Continuing Medical Education

*New appointment in 2018

Major Clinical Programs Kidney and Blood Pressure Center (KBPC)

Outpatient clinical activities take place primarily in the Center, directed by Dr. Inker. The Center emphasizes a multi-disciplinary approach to kidney disease in collaboration with the Division of Transplant Surgery, Department of Urology, the DCI outpatient dialysis unit and the Frances Stern Nutrition Center. The KBPC specializes in the diagnosis and management of CKD, hypertension, glomerular diseases, kidney transplantation, and peritoneal dialysis. In 2013, the KBPC began outpatient measurements of GFR. The Center is also the home for clinical studies in outpatients with CKD.

Home Dialysis

The Division has an active home dialysis program at DCI's Ball Square facility in Somerville, comprising both peritoneal dialysis and home hemodialysis. Patients are eligible if they are able to perform the required tasks, do not live alone and have insurance adequate to cover the procedures. Because of its convenience, the program is much appreciated by patients.

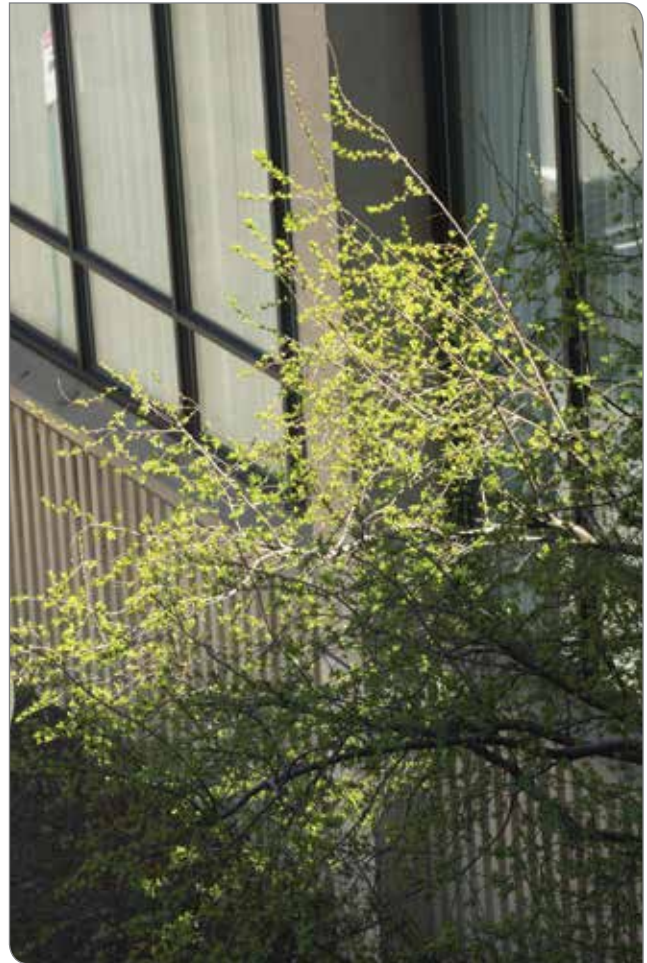
Center for Polycystic Kidney Disease

The Center for Polycystic Kidney Disease at Tufts Medical Center was opened in 2006. The physicians are internationally recognized experts in treating and managing the complications of PKD. On average, 50 new patients are seen each year in this program. Areas of expertise for patients with PKD include dialysis and transplantation and the evaluation and management of the complications of liver and kidney cysts including chronic pain, kidney stones, and cardiovascular issues such as intracranial aneurysms. Care is coordinated with the Departments of Urology, Neurosurgery, Transplantation Surgery and Genetics.

Kidney Transplantation Program

New evaluations of potential kidney transplant recipients are performed by a multidisciplinary team consisting of transplant coordinator, transplant nephrologist, transplant surgeon, social worker, dietician, and pharmacist. The Division of Nephrology has established a specific Kidney Transplant follow-up clinic for recent kidney transplant recipients staffed by Dr. Goyal. Drs. Goyal and Gordon also evaluate potential living donors and work closely with the transplant coordinators, seeing donors in the Kidney and Blood Pressure Center. The kidney transplant program has patient and graft survival rates well above the national average.

Kidney Function Evaluation Clinic



The Kidney Function Evaluation Center, under the direction of Dr. Inker, is a Boston-wide resource for confirmatory tests for GFR estimated from creatinine. Patients whose estimates of GFR using creatinine are not thought to be accurate are referred to the Center for measurement of GFR using plasma clearance of iothexol, estimated using both creatinine and cystatin C and a report is sent to the referring physicians for a complete interpretation of the GFR values. For example, it may be useful in patients who will be undergoing chemotherapy with agents that are cleared by the kidneys, potential kidney donors with high muscle mass who are thought to have falsely low estimated GFR, or patients with CKD who have low muscle mass but who have symptoms that could be consistent with uremia.

In-center Dialysis

The DCI Boston in-center hemodialysis unit located at Tufts Medical Center operates more than 20 stations. There are two affiliated in-center dialysis clinics, one at Ball Square in Somerville, the other at Walden Pond in Concord, MA. Both programs are routinely recognized for high quality clinical care.

Inpatient Programs

The Division provides routine consultation in the diagnosis and management of kidney diseases, as well as expertise for all forms of renal replacement therapy including hemodialysis, peritoneal dialysis, continuous renal replacement therapy, and charcoal hemoperfusion.

Under the direction of Dr. Goyal, the Division participates in the Tufts Medical Center Kidney Transplant Program. Many of the donors in this program are living donors. Tufts Medical Center is a member of the New England Program for Kidney Exchange (NEPKE) that coordinates sharing by mismatched donor-recipient pairs. Patients who have received transplants are followed in the KBPC. The transplant team at Tufts Medical Center has carried out more than 1250 kidney transplants.

Inpatient Dialysis

Dialysis Clinic, Inc., the hospital's dialysis provider, with Dr. Meyer as director, performs pediatric as well as adult hemodialysis at Tufts Medical Center. Because patients receiving hemodialysis treatment usually are also undergoing many other tightly scheduled tests and procedures, the program is organized so as to enhance patient flow. Continuous venovenous hemofiltration (CVVH) and slow continuous ultrafiltration (SCUF) are also available.

Inpatient peritoneal dialysis is performed in intensive care units and on the North 7 inpatient ward, where the nursing staff are trained to perform peritoneal dialysis. Tufts Medical Center is the only hospital in Greater Boston with a floor on which the staff nurses are trained to perform peritoneal dialysis.

Teaching Activities

The Division of Nephrology is committed to education at the national as well as the local level. Division members carry out clinical and basic research, serve on national boards that establish standards in clinical practice, and lecture at local, national, and international conferences.

Division members participate extensively in the preclinical years (renal pathophysiology, physical diagnosis) and the clinical years (ward and consultation services) of the medical school. Dr. Gilbert conducts a series of lectures on core nephrology topics for 3rd year students during their internal medicine clerkships at Tufts Medical Center. In addition, Dr. Gilbert offers an elective in evidence-based medicine to 4th year students.

Interns and residents at Tufts Medical Center rotate through the renal ward service and may choose an elective on the renal consultation service. Senior residents may also choose an elective in the Kidney and Blood Pressure Center. The senior residents rank this outpatient experience highly.

The Division participates in other postgraduate forums. Several Division members serve as research mentors to Masters of Science candidates in the Sackler School of Graduate Biomedical Sciences. Dr. Gilbert coordinates nephrology lectures in the Advanced Molecular and Cellular Pharmacology Course at Tufts University School of Medicine, teaches Renal Pharmacology at the Sackler School of Graduate Biomedical Sciences and leads the Renal Section of the Nutritional Biochemistry and Physiology at the Friedman School of Nutrition Science and Policy.

Clinical Fellowship Training

Under the direction of Dr. Gilbert, Director, and Dr. Dad, Associate Director, the clinical fellowship program offers training of unusual breadth and depth. Fellows have clinical rotations both at Tufts Medical Center and at St. Elizabeth's Hospital. Almost half of graduates of the fellowship program have continued in full-time academic positions. Another 12% have become private practitioners with substantial teaching responsibilities, many in hospitals with university affiliations. The remaining graduates are largely engaged in private practice.



Research Fellowship Training

The Division of Nephrology offers clinical research training through the NIDDK Institutional Research Training Award in “Epidemiology, Clinical Trials and Outcomes Research in Nephrology”. The program is designed for fellows aspiring to a career as an independent investigator in clinical research in nephrology. The program has been focused primarily on chronic kidney disease, but in recent years, there has been a growing interest in acute kidney injury.

Policy Initiatives

ASN Public Policy Board

Dr. Weiner is the chair of the Quality, Patient Safety and Clinical Practice Committee of the ASN. The QPSCPC works closely with the ASN executive council to advance potential care models to benefit kidney disease patients. Additionally, the QPSCPC leads ASN’s efforts to promote high-level kidney care by interfacing with CMS and other stakeholders on regulatory processes, such as MACRA implementation in the Quality Payment Program, the ESRD Quality Incentive Program (QIP) and Prospective Payment System (PPS), other quality metrics programs, and the Physician Fee Schedule. Dr. Weiner also represents ASN as a voting member in Kidney Care Partners, an organization that brings together stakeholders across the kidney community.

ASN Workforce and Training Committee and ASN Executive Committee

Dr. Gilbert chairs the ASN Workforce and Training Committee and is a member of the ASN Executive Committee. The Workforce and Training Committee is charged with developing, implementing, evaluating, and

continuously improving initiatives for students, residents, fellows, and other trainees. It defines training requirements for nephrologists, promotes improvements to training programs, and cultivates interest in kidney medicine, research, and education. The Executive Committee reports directly to ASN Council on the goals and mission of the organization. Dr. Gilbert’s appointment is for 5 years.

Chronic Kidney Disease in Nicaragua

Dr. Weiner collaborates with public health researchers from Boston University School of Public Health to investigate chronic kidney disease among workers in rural Nicaragua. The objective is to explore the reported high prevalence of kidney disease among working age residents in rural northwest Nicaragua in order to better define prevalence and to develop hypotheses regarding cause.

DCI Information Systems and Outcomes Monitoring Program

Dr. Meyer is Medical Director for Information Systems for Dialysis Clinic, Inc., and is a principal architect of DCI’s information system, which sets an industry standard for quality of care and of information. The team’s current projects include continued development of decision support tools for treatment of anemia in dialysis patients and the implementation of an interface between hemodialysis machines and the information system. Dr. Richardson directs the corporate-wide DCI Outcomes Monitoring Program, which uses patient-reported outcomes data to improve care.

National Kidney Disease Education Program

Dr. Inker is a member of the National Kidney Disease

Education Program (NKDEP) of the NIDDK. She has participated in the efforts of the NKDEP to recommend reporting GFR estimates by clinical laboratories and to standardize serum creatinine assays for more accurate GFR estimation.

National Kidney Foundation, US Food and Drug Administration and the European Medicines Agency Scientific Workshop

Drs. Levey and Inker worked with the National Kidney Foundation (NKF), along with the Food and Drug Administration (FDA) and the European Medicines Agency (EMA) to conduct a scientific workshop entitled “Change in Albuminuria and GFR as End Points for Clinical Trials in Early Stages of Chronic Kidney Disease”. This scientific collaboration reviewed the results of a major, multi-year meta-analysis examining the largest compilation of data ever collected on chronic kidney disease (CKD). The groups gathered and reviewed the data supporting the use of earlier markers of kidney disease progression as endpoints in clinical trials for early stages of CKD. These clinical trials may lead to

treatments that will improve the lives of people with kidney disease. The extensive meta-analysis included data on nearly two million participants. Results of the analysis and recommendations on whether surrogate biomarkers—albuminuria, changes in the rate/slope of GFR decline, and GFR and albuminuria in combination—can be used as predictors of a treatment’s effect on progression to kidney failure in clinical trials in early stages of CKD.

Research Activity

Research in the Division of Nephrology is focused on solving clinical problems. Each research project has domain experts, generally a nephrologist, a methods expert, and collaborators from other disciplines. Although the primary emphasis has been on chronic kidney disease, there is a growing number of projects in acute kidney injury. Some of the areas of recent emphasis are: chronic kidney disease, assessment of kidney function, aging, nutrition, dialysis and transplantation, progression, polycystic kidney disease, acute kidney injury, and hypertension.

Clinical Research Activity

Recipient	Funding Source	Purpose of Award
Mark J. Sarnak, MD, MS	NIH*	Role of Mitochondrial Health in Acute and Chronic Kidney Disease in Older Adults
	PCORI*	Promoting Autonomy and Improving Shared Decision-making for Older Adults with Advanced Kidney Disease
	DCI	Identifying risk factors and screening for cognitive impairment in hemodialysis patients
	NIH/NIDDK	Investigate cognitive function in hemodialysis patients
	NIH/NIDDK	Assess relationship among chronic kidney disease, vascular disease and aging
	NIH	The Aging Kidney: Chronic Injury, Impaired Functions and Clinical Outcomes
	NIH	Kidney tubular damage and dysfunction identify a novel axis of kidney disease
	NIH	Beyond the glomerulus: novel clinical markers of kidney health and prognosis
Taimur Dad, MD	DCI	Psychometric and Qualitative Evaluation of the In-Center Hemodialysis Consumer Assessment of Healthcare Providers and Systems (ICH CAHPS)
David Drew, MD, MS	NIH	Association of FGF-23 and Klotho with cognitive impairment and cerebrovascular disease in CKD
	NIH	CKD Biomarkers Consortium Data Coordinating Center

Clinical Research Activity (continued)

Recipient	Funding Source	Purpose of Award
Lesley A. Inker, MD, MS	NIH*	Medication Use and Adverse Events in CKD
	Omeros*	ARTEMIS-IGAN Phase 3 Study
	Reata*	Phase 2 Study of bardoxolone methyl in patients with rare chronic kidney diseases
	DCI*	Accuracy of eGFR in Advanced Heart Failure
	NIH	CKD Biomarker Consortium-Phase 2: Risk Markers in Blood
	NKF	Change in albuminuria and GFR as end points for clinical trials in early stages of CKD
	Reata	A Phase 2/3 Trial of the Efficacy and Safety of Bardoxolone Methyl in Patients with Alport Syndrome
Andrew S. Levey, MD	NIH*	Chronic Kidney Disease Prognosis Consortium
	NIH	Epidemiology, Clinical Trials and Outcomes Research
Dana C. Miskulin, MD, MS	DCI*	Prepared Meals to Prime and Perpetuate Reduced Dietary Sodium Intake in Hemodialysis Patients (PePPeR DISH)
	DCI	The Dialysate Sodium Lowering Trial (DESALT)
Ronald D. Perrone, MD	Otsuka	Determine long-term safety and efficacy of oral tolvaptan in adults with ADPKD
	Otsuka	Evaluate the long-term safety of titrated immediate-release tolvaptan in patients with ADPKD
	Department of Defense	Evaluating metformin as a novel therapy for ADPKD
	Kadmon	A Double-blind Randomized Parallel Group Study of the Efficacy and Safety of tesevatinib in Subjects with Autosomal Dominant Polycystic Kidney Disease
Daniel E. Weiner, MD, MS	Ardelyx*	Safety and Efficacy of tenapanor to Treat Hyperphosphatemia in Dialysis Patients
	Janssen	The CREDENCE Trial (Canagliflozin and Renal Events in Diabetes with Established Nephropathy Clinical Evaluation Trial)
	NIH	Sugarcane Workers, Medical Visits and Kidney Function
	NIH	Coherent Hemodynamics Spectroscopy for Cerebral Auto Regulation and Blood Flow
	NIH	Biological Determinants of Peritoneal Dialysis Outcomes
	Baxter	A Multi-center, Prospective, Randomized, Controlled, Open-label, Parallel Study to Evaluate Safety and Efficacy of the TheraNova 400 Dialyzer in ESRD patients
	AstraZeneca	A Study to Evaluate the Effect of Dapagliflozin on Renal Outcomes and Cardiovascular Mortality in Patients with Chronic Kidney Disease
	NIH	Integrated Mineral Metabolism Treatment Strategies in Patients on Dialysis

* New grant in 2018

Honors and Awards

Mark J. Sarnak, MD, MS

- » Recognized in Boston Magazine as one of Boston's best nephrologists
- » Chairs, Kidney Disease Improving Global Outcomes (KDIGO) Controversies Conference for Coronary Artery Disease and Valvular Disease in Kidney Disease
- » Member, Steering Committee for the KDIGO Controversies Conference on Heart Failure in CKD
- » Chair, Heart Failure with Preserved Ejection Fraction and Pre-Dialysis CKD
- » Member of the Steering Committee for the KDIGO Controversies Conference on Blood Pressure in CKD
- » Co-chair, KDIGO Controversies Conference on Coronary Artery Disease and Valvular Diseases in CKD

Invited presentations

- » HFpEF and HFrEF: It's All the Same to the Kidneys (Or Is It?) at the American College of Cardiology Annual Meeting held in Orlando FL.
- » Update in Nephrology and Hypertension at the American College of Physicians Annual Meeting held in New Orleans LA.
- » Cognitive Function and Vascular Disease in Dialysis Patients at the Yale O'Brien/Trenal Symposium held in New Haven CT.
- » Management of Congestive Heart Failure in Dialysis Patients at 2018 ASN Kidney Week held in San Diego CA.

Major Grant Awards in 2018

- » Please see Table of Research Activities

Ronald D. Perrone, MD

- » Recognized in Boston Magazine as one of Boston's best nephrologists
- » Co-executive director, Polycystic Kidney Disease Outcomes Consortium
- » Chair, External Advisory Committee for three PKD Centers (Kansas University, Mayo, University of Maryland)
- » Member, NKF of New England Medical Advisory Board

Invited Lectures

- » JYNARQUE™ (tolvaptan): The First FDA-Approved Treatment for ADPKD at the PKD Foundation Live National Webinar from Kansas City MO.
- » JYNARQUE™ (tolvaptan): The First FDA-Approved Treatment for ADPKD at the Polycystic Kidney Disease Outcomes Consortium Critical Path Institute in Tucson AZ.
- » Update on Tolvaptan: The First Treatment for ADPKD in the US at PKD Connect, PKD Foundation National Conference held in Kansas City MO.

- » Best Practices in Treating PKD at PKD Connect, PKD Foundation National Conference held in Kansas City MO.
- » DDA Biomarker Qualification and MRI Imaging Parameters Qualified by FDA (PKDOC Measures) at the NIDDK Renal Imaging Workshop held in Bethesda MD.
- » Emerging Therapies and Promising Clinical Trials in Early Course PKD: Translating Mechanisms into Therapy at the 2018 ASN Kidney Week held in San Diego CA.
- » Long-term treatment of PQRAD (ADPKD) with Tolvaptan at the XLVIII Congress of the Spanish Society of Nephrology and IX Iberoamerican Congress of Nephrology held in Madrid Spain.
- » Management of ADPKD in 2018 at the 2018 Toronto PKD Scientific Conference held in Toronto Canada.
- » Advances in the Management of ADPKD at Charité – Universitätsmedizin in Berlin Germany.
- » Optimal Management of ADPKD in Patients Prior to Dialysis at the 31st Berliner DialyseSeminar held in Berlin Germany.

Taimur Dad, MD

- » Selected participant, Tufts Medical Center Physicians Organization Physician Leadership Program

David Drew, MD, MS

- » Editorial Board Member, Kidney Medicine

Scott J. Gilbert, MD

- » Recognized in Boston Magazine as one of Boston's best nephrologists
- » Member, Alliance for Academic Internal Medicine's Association of Subspecialty Professors Council.
- » Member, Medical Advisory Board of the NKF serving New England
- » Member, Panel for Accreditation Appeals in Nephrology Accreditation Council for Graduate Medical Education
- » Chair, Nephrology Training Program Directors for the American Society of Nephrology
- » Chair, Workforce Executive Committee for the American Society of Nephrology

Invited presentations

- » The Epidemic of Kidney Disease. 6th Annual William Gelfand Memorial Lecture, Phi Delta Epsilon International Medical Fraternity at UMass-Boston.
- » ASN Workforce and Training Joint TPD-Division Chiefs Meeting at 2018 ASN Kidney Week held in San Diego CA.

Craig E. Gordon, MD, MS

- » Member, Training Program Director Committee of the American Society of Nephrology
- » Editorial Board Member, *Kidney Medicine*

Invited Presentations

- » Evaluation and Prevention of HCV Infection in the CKD Setting at the National Kidney Foundation 2018 Spring Clinical Meeting held in Austin TX.
- » Diagnosing aHUS in the Presence of Complement-amplifying Conditions: A Multidisciplinary Team Approach at the Japanese Society for Clinical Renal Transplantation 51st Annual Meeting held in Kobe, Japan.
- » Challenging Cases in TMA – A Case Discussion at the Japanese Society for Clinical Renal Transplantation 51st Annual Meeting held in Kobe Japan.
- » What is a TMA team? An Algorithmic Approach to the Diagnosis of TMA at the TMA Masters Forum held in Tokyo Japan.
- » Difficult TMA Cases – An International Discussion Panel at the TMA Masters Forum held in Tokyo Japan.

Nitender Goyal, MD

- » Abstract reviewer for 2018 ASN Kidney Week and 2019 American Transplant Congress.

Lesley A. Inker, MD, MS

- » Recognized in Boston Magazine as one of Boston's best nephrologists
- » Chair, International Classification of Diseases in the US
- » Member of the National Institute for Diabetes, Digestive and Kidney Disease: United States Renal Data System External Advisory Committee and Vascular Access Consortium External Advisory Committee
- » Member, National Kidney Disease Education Program Laboratory Work Group.
- » Chair, Clinical Oversight Committee for National Kidney Foundation KEEP Program.
- » Major Grant Awards in 2018: Please see Table of Research Activities

Bertrand L. Jaber, MD

- » Recognized in Boston Magazine as one of Boston's best nephrologists

Invited Presentations

- » Update on Prevention of Contrast-Induced Acute Kidney Injury at the 11th Annual Congress of the Lebanese Society of Critical Care Medicine held in Beirut Lebanon.
- » Update on Continuous Renal Replacement Therapies in the ICU at the 11th Annual Congress of the Lebanese Society of Critical Care Medicine held in Beirut Lebanon.

Eduardo Lacson, Jr., MD, MPH

- » Delegate for ASN National Kidney Health Initiative, CDC Making Dialysis Safer Coalition and Non-profit Kidney Care Alliance
- » Member, ASN National Transforming Dialysis Safety QAIE Committee
- » Delegate, KDIGO Consensus Conference on Prescribing and Initiating Dialysis
- » Member, DCI's Clinical Science and Quality Initiatives

Invited presentations

- » Evaluating Patient Losses at DCI Home Dialysis Programs at the DCI Spring Medical Directors' Meeting held in Savannah GA.
- » 2018 Infection Control and Prevention Program at DCI at the DCI National Medical Directors' Meeting held in Tampa FL.
- » Magnesium & Maintenance HD: DyMO Study Rationale & Design at Gardener's Grove: Stakeholders Conference on Cluster Randomized Trials held in Toronto Canada.

Andrew S. Levey, MD

- » Recognized as a "Top Doctor" by Boston Magazine
- » Recognized by Thomson Reuters as a highly influential researcher for four sequential years
- » Member, NKF Scientific Advisory Board
- » Member, Living Donor Advisory Council

Invited presentations

- » Chronic Kidney Disease: Update on the Definition, Classification and Prognosis at UCSD Medicine Grand Rounds (Visiting Professor) in San Diego CA.
- » Update in GFR Estimation at Renal Grand Rounds (Mendes Lecture Visiting Professor) in San Diego CA.

Major Grant Awards in 2018

- » Please see Table of Research Activities

Nicolaos E. Madias, MD

- » Member, Advisory Board for the Hellenic Bioscientific Association in the USA
- » Member, editorial boards of Hippokratia, Hellenic Medicine, International Angiology, Arterial Hypertension and Kidney: A current survey of world literature

Invited presentations

- » Invited Lecturer at the 20th Hellenic Congress of Nephrology held in Athens Greece.

Klemens B. Meyer, MD

- » Recognized in Boston Magazine as one of Boston's best nephrologists
- » Member, DCI's Quality Management Committee and Medical Information Steering Committee
- » Member, Renal Disease and Detoxification Committee for Association for the Advancement of Medical Instrumentation
- » Member, Steering Committee for the Kidney Health Initiative Project Prioritizing Symptoms of ESRD Patients for Developing Therapeutic Interventions.

Dana C. Miskulin, MD, MS

- » Member, Quality Management Committee of Dialysis Clinic Inc
- » Major Grant Awards in 2018: Please see Table of Research Activities

Michelle M. Richardson, PharmD

- » Member, ESRD Functional Status TEP

Invited presentations

- » Patient-reported Outcomes in Kidney Disease: An Overview at the National Kidney Foundation 2018 Spring Clinical Meeting held in Austin TX.
- » What To Do With Patient-reported Outcomes? at the Renal Physicians Association 2018 Annual Meeting held in Orlando FL.

Daniel E. Weiner, MD, MS

- » Recognized in Boston Magazine as one of Boston's best nephrologists
- » Inaugural Editor-in-Chief, Kidney Medicine
- » Chair, ASN Quality Committee
- » ASN Representative for Kidney Care Partners
- » Chair, ESRD Physician Level Measure Development Technical Expert Panel
- » Member, DCI Medical Director Research Committee and Quality Management Committee
- » Panel Member, National Kidney Foundation Home Dialysis Controversies Conference
- » Member, KDIGO Hemodialysis Initiation Controversies Conference
- » Member, KDOQI Blood Pressure Guideline Commentary Workgroup
- » Member, KDIGO Coronary Artery and Valvular Disease Controversies Conference

Invited presentations

- » Building an Ideal Quality Metric for ESRD Healthcare Delivery at 2018 ASN Kidney Week held in San Diego CA.
- » Management of Gout in CKD at the National Kidney Foundation 2018 Spring Clinical Meeting held in Boston MA.
- » KDOQI Commentary: Serum Phosphate and Calcium Targets at the National Kidney Foundation 2018 Spring Clinical Meeting held in Boston MA.
- » Major Grant Awards in 2018: Please see Table of Research Activities

DIVISION OF

PALLIATIVE CARE



Tamara Vesel, MD

The Division of Palliative Care offers comprehensive consultative services for patients of all ages with serious illness at Tufts Medical Center and Floating Hospital for Children. The Division of Palliative Care was established in February of 2017. The Division provides clinical care and academic training, and contributes to research initiatives in Palliative Care at Tufts Medical Center and Floating Hospital for Children and Tufts Medical School.

Highlights of 2018

- » Rachel Bernstein MD joined the division as Palliative Care attending
- » Alexandra Contino NP joined the Division on a per diem basis
- » Aline Venturin became an Administrative Coordinator in May 2018



Faculty

Name	Academic Rank	Title and Special Responsibility
Tamara Vesel, MD	Assistant Professor of Medicine and Pediatrics, Tufts University School of Medicine	Division Chief
Jatin Dave, MD, MPH	Assistant Professor of Medicine, Tufts University School of Medicine	Attending Physician Chief Medical Officer, NEQCA
Rachel Bernstein, MD		Attending Physician

Major Programs

Clinic Services

The Division of Palliative care provides inpatient and ambulatory consultation and follow-up services. The spectrum of services provided to patients of all ages with serious illness encompasses discussions of goals of care, complex decision making, pain management (pharmacological and non-pharmacological) and other non-pain symptom management. The Palliative Care Team provides services across Tufts Medical Center. They provided 790 inpatient and 161 outpatient consultations in 2018.

Palliative Care received a grant to improve care of patients on Medicaid. It developed screening tools to identify patients with benefits from Palliative Care consultation and started to provide Palliative Care consultations to patients in ACO. This is an ongoing project.

Outpatient Clinic

The Division utilizes a dedicated palliative care outpatient clinic space located in the South Building in the Cancer Center. In addition, the Division created an embedded clinic with cardiology serving patients with aortic stenosis, and is expanding to other clinics around the hospital at Tufts Medical Center as well as Floating Hospital, serving patients of all ages.

Teaching Activities

The Division of Palliative Care is committed to education at the international as well as the local level. Major teaching initiatives include:

Medical Student, Resident, and Fellowship Training

Under the direction of Dr. Vesel, fellows have clinical rotations with the Division of Palliative Care at Tufts Medical Center throughout the year. She provides a Summer Lecture Series for Oncology Fellows and supervises an international medical student as well as non-medical student volunteers. In addition, she teaches at a Simulation Boot Camp for Neonatal-Perinatal Fellows and lectures Neuroscience Residents on communication skills and end of life care. A palliative care Lecture is included in the third year Internal Medicine Clerkship and Dr. Vesel is a co-director of the fourth year Tufts Medical School elective: Decisions at the End of Life.

Curriculum Planning

Dr. Vesel contributes in curriculum planning for the Patient Experience ESP2 Curriculum, and the Intersessions Week Curriculum as part of the Tufts Education Reform (ESP2) Initiative. She serves as the advisor of a MD, OB/GYN Resident for a OB/GYN conference series and serves as Co-Director of End of Life Decision Elective for Tufts University School of Medicine fourth year students. She participates in small group teaching opportunities for multiple departments at Tufts Medical Center, and lectures at Tufts University School of Medicine for all levels of medical students. Dr. Vesel established and gained approval for a Fourth Year Medical Students Pilot Project that teaches 4th year medical students how to have difficult conversations surrounding end of life care with patients and their families.

Committees, Collaborations and Presentations

The Division has membership in the following organizations:

Name	Title	Organization Name and Location
Tamara Vesel, MD	Member	The Ethics Committee, Beverly Hospital and Addison Gilbert Hospital
	Member	The Ethics Committee, Tufts Medical Center, Boston, MA
	Member	Opioids Addiction Task Force, Tufts Medical Center, Boston, MA
	Member	Risk Management Committee, Tufts Medical Center, Boston, MA
	Member	Medicine Executive Committee, Tufts Medical Center, Boston, MA
	Member	Tufts Medical School Curriculum Committee, Tufts Medical School, Boston, MA
	Chair	Palliative Care Advisory Group, Tufts Medical Center, Boston, MA
	Member	Quarterly Cancer Care Committee, Tufts Cancer Center, Boston, MA
	Member	Tufts Medical School Patient Experience Committee New Curriculum Development
	Member	QI Committee Division Leadership, Tufts Medical Center, Boston, MA
Rachel Bernstein, MD	Member	QI Committee Division Leadership, Tufts Medical Center, Boston, MA
	Member	Quarterly Cancer Care Committee, Tufts Cancer Center, Boston, MA

Dr. Vesel contributed to the development of competencies on Serious Illness Communication through ARIADNE Labs through Harvard School of Public Health. She has trained Pediatric Oncology Fellows on Serious Illness Conversations and was involved in the implementation of the project through ARIADNE Labs. Dr. Vesel actively worked with Tufts Medical School around various projects around new curriculums. Dr. Vesel was invited to provide a memorial Grand Rounds entitled “Compassionate Care: Why and How?” at the Annual Memorial Grand Rounds at Lawrence Memorial Hospital in Medford, MA.

In March, Dr. Jatin Dave presented an hour long workshop on the Five Steps to Build an Effective Payer-Provider Partnership for Innovative Palliative Care Models at the Annual Meeting of American Academy of Hospice and Palliative Care Medicine in Boston, MA. In October, Dr. Vesel and Dr. Dave presented a Preferred Paper Presentation on Management of ICD and LVAD in Palliative Care and Hospice Patients at the 22nd International Congress on Palliative Care, in Montréal, Canada. They presented two posters at this conference: “Improving efficiency of an academic palliative care program with limited resources” and “Music therapy and palliative care: Systematic review.” Dr. Dave gave the presentation “Diagnosis and Treatment of Dementia: an Update” at Tufts Health Plan Medical Directors Meeting in Watertown, MA.

Marketing Initiatives

The Division worked to address the need for hospital wide education regarding the function of the Division of Palliative Care for patients and their families by updating the external website for Tufts Medical Center’s Division of Palliative Care.

Palliative Care Grand Rounds

The ACGME accredited Palliative Care Grand Rounds program is led by Dr. Vesel and takes place on a monthly basis in the Wolff Auditorium. It attracts a wide interdisciplinary audience.

Date	Title	Speaker
1/18/2018	“Emerging Role of palliative Care for patients with Advance Heart Failure”	Jatin Dave, MD
2/15/2018	“Grief and Bereavement: Best practices for supporting bereaved families”	Sue Morris, PsyD.
4/19/2018	"Home Hospice: Debunking the Myths, Understanding the Realities"	Diana Taylor, SW
5/15/2018	"Tibetans Practices for the End of Life: What we can learn from Asian Models"	Willa Miller, PhD
6/14/2018	"Needs Assessment for Bereavement Services at Tufts Medical Center"	Kathy Hershfield, SW
7/19/2018	“Team- and Systems-Based Approaches to Quality and Safety in Pain Management”	Daniel Carr, MD
9/20/2018	"Spirituality in Palliative Care: From Asclepius to P-Values"	Tracy Balboni, MD
10/11/2018	“Delirium in Seriously Ill Children and Adults”	Chase Samsel, MD
11/1/2018	"We should be worse technicians and better human beings: The Conversations that Lead to End of Life Decisions"	Susan Harris, CHB Chaplain
12/13/2018	“Courageous Parents Network: Using Patient and Family Voices in Pediatric Palliative Care”	Patricia O'Malley, MD

Research Activities

The Division was involved in several research activities in 2018:

Name	Activity
Tamara Vesel, MD	Innovations in Education Intramural Grant: A Workshop to Advance Communication and Palliative Care Skills for 4th Year Medical Students at Tufts Medical School Grant
	“Exploration of high intensity health care utilization at end of life in Chinese-American and Caucasian advanced solid tumor patients at Tufts Medical Center: Retrospective chart review” summer project with Emma Ernst, Medical Student, accepted for Berlin Germany May 2019
	“A Study of the Impact of Serious Illness Care Program Training on Fellows’ (Trainees’) Ability to Understand Patients’ Values” – A NEQCA, BCBS, TMC and Ariadne Lab Collaboration
	Innovation in Education Intramural Grant Tufts Medical School: to develop a Workshop to advance communication and palliative care skills
	Serious Illness Communication Ariadne Lab via BCBS- NEQCA and TMC
	Palliative Care Curriculum for OB/GYN Residents Research Study
	Involvement with Ariadne Labs Serious Illness Project designed to create system level intervention centered on best practices in palliative care.
	Dr. Vesel served as research advisor for a first year MD/MPH student, looking at disparity in end of life treatment between Chinese and Caucasian patients with stage 4 non-small cell lung cancer.
Grant application approval for Innovation in Medical Education Grant (TUSM).	

DIVISION OF

PULMONARY, CRITICAL CARE AND SLEEP MEDICINE



Nicholas Hill, MD

The Pulmonary Division was established in 1971. During the 31-year tenure of its first chief, Dr. Fanburg, the Division grew to comprise ten active MD members and two full-time PhD members. Dr. Fanburg established a highly regarded basic research program that focused on metabolic activities of the lungs including angiotensin converting enzyme activity as well as endothelial cell biology. More recent studies have focused on signal transduction pathways related to transglutaminase 2, and its role in regulation of cell proliferation and fibrosis of the pulmonary vasculature and right ventricle. Dr. Fanburg has received international recognition and numerous awards for his work.

Dr. Nicholas Hill assumed the directorship in 2002 and has expanded the clinical research activities in the division, along with a more than doubling in the size of the faculty. Clinical trials are underway on pulmonary hypertension, high flow nasal oxygen and ventilator management of ARDS. There are also studies in progress to improve ventilator outcomes, especially through the use of noninvasive ventilation and more recently, high flow nasal therapy. These modalities are now widely used because of their abilities to improve outcomes in patients with certain forms of respiratory failure.

The Division offers a wide array of clinical services. In the early 1990s, it became the Pulmonary and Critical Care Division when it assumed the medical care of patients in the Medical Intensive Care Unit at Tufts Medical Center. The Center for Sleep Medicine was incorporated in 2002 and it became the Division of Pulmonary, Critical Care and Sleep Medicine. In addition, specialty clinics in asthma, pulmonary hypertension, TB, lung cancer and amyotrophic lateral sclerosis are conducted by the Division. The addition of Drs. Maher Tabba in 2008 and Marianne Barry and Maureen Dziura in 2017 brought skills in interventional pulmonology to the Division. In 2013, the Division added coverage of two intensive care units in Lowell, Massachusetts, at Lowell General Hospital and Saints Medical Center under the direction of Dr. Greg Schumaker. In 2018, coverage of the ICU at Melrose-Wakefield under the direction of Dr. Maher Tabba was added.

Highlights of 2018

- » Dr. Nicholas Hill chaired the Search Committee that selected a new Executive Director of the American Thoracic Society
- » Dr. Erik Garpestad appointed as Associate CMO in addition to his role as Associate Chief of Pulmonary Division
- » Dr. Maher Ghamloush appointed Director of Cardiopulmonary Exercise Testing
- » Two PhD researchers in The Division obtained funding from the American Heart Association; Dr. Krishna Penumatsa working on the biological effects of transglutaminase2 with Dr. Barry Fanburg, and Dr. Victor Qi working on the role of mineralocorticoid receptors, working with Dr. Ioana Preston.
- » The Division also added clinical faculty including Dr. Anthony (TJ) Faugno who completed a Pulmonary Critical Care fellowship at Tufts Medical Center in June, Dr. Alexander Rabin who completed a fellowship in Pulmonary Critical Care at Mass General Hospital and Dr. Harrison Farber. Dr. Ambalavanan Arunachalam, having completed a Pulmonary Critical Care fellowship at the Cleveland Clinic, started a fellowship in Pulmonary Hypertension while serving as a part-time junior attending

Faculty

Name	Academic Rank	Title and Special Responsibility
Nicholas Hill, MD	Professor	Division Chief Director, Respiratory Therapy Department
Christina Anderlind, MD	Assistant Professor	ICU Co-Director and Pulmonary Consultant Lemuel Shattuck Hospital
Ambalavanan Arunachalam, MD		Advanced Pulmonary Hypertension Fellow
Marianne Barry, MD	Assistant Professor	Co-Director Interventional Service
Haval Chweich, MD	Assistant Professor	CCU Intensivist
John Devlin, Pharm D	Adjunct Associate Professor	Director, ICU Pharmacology Research Program Special and Scientific Staff
Matthew Duprey, Pharm D	Sponsored Research Staff	Special and Scientific Staff
Maureen Dziura, MD	Assistant Professor	Medical Director, Bronchoscopy Service
Scott Epstein, MD	Professor	Dean of Educational Affairs, Tufts University School of Medicine
Barry Fanburg, MD	Professor	Director, Pulmonary Research
Anthony Faugno, MD	Instructor	CCU Intensivist
Harrison Farber, MD	Appointment Pending (Proposed Professor of Medicine)	Director, Pulmonary Embolism Response Team (PERT)
Geraldine Finlay, MD	Adjunct Associate Professor	Senior Editor, Up-To-Date, Pulmonary Attending
Erik Garpestad, MD	Associate Professor	Associate Division Chief MICU Director Associate Chief Medical Officer for Quality
Maher Ghamloush, MD	Assistant Professor	Director, Pathology Conference Series Director, CPET
Aarti Grover, MD	Assistant Professor	Sleep Attending and Intensivist
Khalid Ismail, MD	Assistant Professor	Program Director, Sleep Medicine Fellowship Director, The Center for Sleep Medicine
Sucharita Kher, MD	Assistant Professor	Director, Inpatient Services, Dept of Medicine Medical Director, Pulmonary Clinic
Michael McBrine, MD	Assistant Professor	Pulmonary Course Director, Tufts University School of Medicine Director, Pulmonary Fellowship Program
Alexander Panda MD	Assistant Professor	Researcher, Nutrition Center
Krishna Penumatsa, PhD*	Assistant Professor	Special and Scientific Staff
Peter Polgar, PhD		Special and Scientific Staff
Ioana Preston, MD	Associate Professor	Director, Pulmonary Hypertension Center Director, Pulmonary Function Lab
Imrana Qawi, MD	Assistant Professor	Director, Pulmonary/Critical Care Ultrasound Services
Alexander Rabin, MD	Assistant Professor	New Appointment
Kari E. Roberts, MD	Associate Professor	Associate Chief Medical Officer for Graduate Medical Education (DIO) Associate Program Director, Internal Medicine Residency Program
Greg Schumaker, MD	Assistant Professor	Medical Director, Rapid Response Team, Tufts MC ICU Director, Lowell General Hospital Section Chief of Critical Care, Lowell General Hospital

Name	Academic Rank	Title and Special Responsibility
Amy Simon, MD	Adjunct Associate Professor	Director, Asthma Center
Maher Tabba, MD, FACP	Associate Professor	ICU Director, Melrose-Wakefield Hospital Co-Director, Interventional Service
Deniz Toksoz, PhD	Associate Professor	Special and Scientific Staff
Rod Warburton, BA	Assistant Professor	Research Lab Supervisor
Jamie Wilson, PhD*	Assistant Professor	Special and Scientific Staff
Felix Yu, MD	Assistant Professor	Pulmonary, Critical Care

*New member in 2018

Major Clinical Programs

The *Critical Care Program*, under Dr. Erik Garpestad, oversees the delivery of medical critical care at Tufts Medical Center. The program provides daytime coverage by a board-certified intensivist seven days a week, as well as nightly phone coverage by fellows and attendings. The Division also provides daytime coverage and overall direction of two ICUs at Lowell General Hospital and Saints Medical Center, respectively, under the direction of Greg Schumaker, MD. Dr. Maher Tabba serves as Director of the ICU at Melrose-Wakefield Hospital in Melrose, MA.

The *Center for Sleep Medicine*, under Dr. Khalid Ismail, provides diagnostic and therapeutic services for patients with a variety of sleep-related disorders. It consists of a six-bed, fully accredited sleep laboratory at Tufts Medical Center. It serves as an important educational resource for the Pulmonary and Critical Care Fellowship Program.

The *Bronchoscopy Service*, under Dr. Maureen Dziura, offers diagnostic and therapeutic bronchoscopies for inpatients and outpatients attending Tufts Medical Center.

The *Pulmonary Hypertension Center*, under Ioana Preston MD, includes a clinical center, an inpatient service, and basic, translational and clinical research programs.

The *Pulmonary Interventional Service*, under Dr. Maher Tabba, offers a wide range of advanced pulmonary interventional procedures that include percutaneous placement of tracheostomy tubes, placement of stents for airway narrowing, medical thoracoscopy and other pleural procedures including thoracoscopy drainage and pleurodesis. Plans are in place to obtain fluorescent technology to identify occult airway cancers.

The *Procedures Service* under Dr. Marianne Barry, was created to assist in the performance of a wide array of procedures including central and arterial lines, thoracenteses, chest tubes, bronchoscopies,

paracenteses, lumbar punctures and others.

The Division also offers numerous outpatient general and specialty clinics for asthma, sleep disorders and pulmonary hypertension.

Teaching Activities

The Division teaches the second-year pathophysiology course at Tufts University School of Medicine, providing didactic lectures and leading small discussion groups. The faculty also provide didactic sessions for the medical residents throughout the year, covering topics in pulmonary and critical care medicine. In addition, division members precept the resident's morning report.

Medical students from the Tufts University School of Medicine rotate thru the pulmonary ward service during 3rd and 4th year clerkships. Fourth-year clerkships are also available in the MICU at Tufts Medical Center. Electives are available on the pulmonary consultation service, as well as in the Sleep Laboratory and on the Pulmonary Interventional and Procedure Services under Dr. Maher Tabba and Dr. Marianne Barry. Medical residents rotate thru the Pulmonary ward and MICU services and may choose electives on the Pulmonary consultation service. Division members have received many teaching awards.

There are ACGME-accredited fellowships in Pulmonary and Critical Care medicine, as well as in Sleep Medicine. The Division also offers unaccredited fellowships in interventional medicine and pulmonary vascular disease. There are three fellows in each year of the three-year Pulmonary Critical Care fellowship, and there is an option for additional years for those wishing a more in-depth research experience. The Sleep Fellowship has one position per year.

Fellows rotate thru the ICUs and provide pulmonary consultations at Tufts MC during their first year. During the second and third years, fellows rotate thru the Intensive Care Units at Lowell General and Saints

Medical Center. Furthermore, they begin their research project. These projects can encompass a wide range of pulmonary topics that span basic, translational and clinical pulmonology, and fellows are encouraged to collaborate with investigators at other institutions if additional expertise is sought. Each year, the Barry Fanburg Award for Excellence in Pulmonary and Critical

Care Medicine is presented to a senior fellow selected for his or her exceptional and outstanding performance during fellowship. Most graduates have taken clinical academic positions or have gone into clinical practice, and some have pursued basic science or clinical research careers.

Research Activities

Clinical Research Support

The ongoing clinical research projects within the Division have an annual budget of approximately \$225,000.

Recipient	Funding Source	Purpose of Award	
Nicholas Hill, MD	Pulmonary Division	Database and DNA tissue bank in pulmonary hypertension	
	Pulmonary Division	Sleep during non-invasive ventilation in the ICU	
	Actelion		A multi-center, double-blind, placebo-controlled, Phase 4 study in patients with pulmonary arterial hypertension to assess the effect of selexipag on daily life physical activity and patient's self-reported symptoms and their impacts
			Cell Permeable peptides by the inhaled route to ameliorate pH
	Aerogen Pharma	A Two-Part Pharmacodynamic Study to Compare VentaProst™ (Epoprostenol Solution for Inhalation via Custom Drug Delivery System) Dosing to Conventionally Administered Aerosolized Epoprostenol Dosing in Cardiac Surgery Patients	
	Alung Technologies, Inc.	The VENT-AVOID Trial: A Prospective, Multi-Center, Randomized, Controlled, Pivotal Trial to Validate the Safety and Efficacy of the Hemolung® Respiratory Assist System for COPD Patients Experiencing an Acute Exacerbation Requiring Ventilatory Support	
	Reata Pharmaceuticals	An expanded access program to assess the long term safety of bardoxolone methyl in patients with pulmonary hypertension	
	United Therapeutics		A multicenter, randomized, double-blind, placebo-controlled trial to evaluate the safety and efficacy of inhaled Treprostinil in subjects with pulmonary hypertension due to parenchymal lung disease
			An Open-Label Extension study of Inhaled Treprostinil in Subjects with Pulmonary Hypertension due to Parenchymal Lung Disease
	USPHSR / E Squared	United States Pulmonary Hypertension Scientific Registry	
Erik Garpestad, MD	NIH/NHLBI Subcontract from Vanderbilt University Medical Center	Altering Sedation Paradigms to Improve Brain Injury and Survival in Severe Sepsis (MENDS II)	
	AstraZeneca	Naloxegol for the prevention of Opioid Induced Constipation in Critically Ill Adults Initiated on Schedule IV Opioid Therapy: A Randomized Double-blind, Placebo-Controlled, Pilot Study	
Krishna Penumatsa, PhD	Tufts University Charlton Award	Mechanisms of Glycolysis Mediated Transglutaminase 2 Activation in Pulmonary Hypertension	
	American Heart Association	Role of Transglutaminase 2 in Inflammation and Glycolysis Mediated Pulmonary Hypertension	

Recipient	Funding Source	Purpose of Award
Ioana Preston, MD	Bayer HealthCare	REPLACE: A prospective, randomized, international, multicenter, double-arm, controlled, open label study of Riociguat in patients with pulmonary arterial hypertension (PAH) who are on a stable dose of phosphodiesterase-5 inhibitors (PDE-5i) with or without endothelin receptor antagonist (ERA), but not at treatment goal (REPLACE – Riociguat rEplacing PDE-5i therapy evaluated Against Continued PDE-5i therapy)
		Respite – An open-label, international multicenter, single arm, uncontrolled, phase 3b study of riociguat response to treatment with phosphodiesterase-5 inhibitors (PDE-5i)
	Accelaron Pharma	A Phase 2, Double-Blind, Placebo-Controlled, Randomized Study to Compare the Efficacy and Safety of Sotatercept (ACE-011) Versus Placebo When Added to Standard of Care for the Treatment of Pulmonary Arterial Hypertension (PAH)
	Actelion	OPUS Registry/Opsumit® (Macitentan) Users Registry
		SPHERE study. Uptravi® (Selexipag): the Users Drug Registry
		TRITON study. The efficacy and safety of initial triple versus initial dual oral combination therapy in patients with newly diagnosed pulmonary arterial hypertension: a multi-center, double-blind, placebo-controlled, Phase 3b study.
	Liquidia	INTREPID: Investigation of Treprostinil for Pulmonary Arterial Hypertension Using a Dry Powder Inhalation Device
	American Heart Association	The Role of Macrophage-Mineralocorticoid Receptor on Pulmonary Hypertension and Fibrogenesis
	United Therapeutics Corporation	A Multicenter, Randomized, Double-blind, Placebo-controlled Study to Evaluate the Safety and Efficacy of Oral Treprostinil in Subjects with Pulmonary Hypertension (PH) in Heart Failure with Preserved Ejection Fraction (HFpEF)
		"An Open-label Extension Study of Oral Treprostinil in Subject with Pulmonary Hypertension (PH) Associated with Heart Failure with Preserved Ejection Fraction (HFpEF) - A Long-term Follow-up to Study TDE-HF-301"
Complexa Inc	Phase 2 Multicenter, Double-Blind, Placebo Controlled, Efficacy, Safety, and Pharmacokinetic Study of 2 Doses of CXA-10 on Stable Background Therapy in Subjects with Pulmonary Arterial Hypertension (PAH)	
PhaseBio Pharmaceuticals	A Randomized, Double-Blind, Parallel Group, Phase 2 Study to Assess the Safety, Tolerability, and Efficacy of Once Weekly Subcutaneous Injections of a Sustained-Release VIP Analogue, PB1046, in Adult Subjects with Symptomatic Pulmonary Arterial Hypertension	
Guanming Qi, PhD	American Heart Association	The Role of Macrophage-Mineralocorticoid Receptor on Pulmonary Hypertension and Fibrogenesis
Asma Tariq, MD	Tufts University Zucker Award	Incidence and nature of respiratory impairment in consecutive patients undergoing bronchoscopy under conscious sedation: A Pilot Study

Basic Research/NIH Funded Research Support

For the past 45 years the Division has been actively involved in NIH-supported research programs that have utilized biochemical, cell biologic and molecular biologic systems to study pulmonary disease. A variety of investigators from the Division, including both MDs and

PhDs, have performed these studies. Members of the Division regularly participate in national advisory and grant review committees. The Division's current annual research grant support is \$400,000.

Recipient	Funding Source	Purpose of Award
Nicholas Hill, MD	NIH/NHLBI	PVDomics Network – Redefining Pulmonary hypertension through pulmonary vascular disease
	NIH/NHLBI	PETAL NETWORK. Re-examination of systemic early neuromuscular blockade for ARDS: ROSE TRIAL
Barry Fanburg, MD	NIH/NHLBI	Determine the role of the serotonin transporter in serotonylation of cellular proteins, including fibronectin, that leads to smooth muscle cell proliferation and migration and development of pulmonary hypertension (Fanburg, PI; Toksoz, co-investigator; Hill, collaborator)
	UCB Biopharma SPRL	Serotonylated Fibronectin as a TG2 target engagement biomarker in chronic kidney disease. The goal is to develop a new bioassay for detection and follow up of fibrotic kidney disease. (Fanburg, PI; Penumatsa, Co-Investigator)
Harrison Farber, MD	NIH	Translational studies for identifying and targeting novel pathways in systemic sclerosis
Erik Garpestad, MD	NIH/NHLBI	Altering Sedation Paradigms to Improve Brain Injury and Survival in Severe Sepsis (MENDS-II)
Khalid Ismail, MD	Tufts Collaborative Grant	Exosome based biomarkers for obstructive sleep apnea (OSA) (A.Hoffman, DVM, DVSc, L.Correa, BDS, MS, S.Li, DDS, T.Roomian, MS, MPH, K.Ismail, MD)
	Natalie V. Zucker Research Center for Women Scholars at Tufts University School of Medicine Grant	Incidence and nature of respiratory impairment in patients undergoing Bronchoscopy under conscious sedation (K.Ismail, M.D, A. Tariq, M.D., M. Tabb, M.D., Nicholas Hill, M.D.)
Krishna Penumatsa, PhD	American Heart Association	Career Development Award
Victor Qi, MD	American Heart Association	Postdoctoral Fellowship
Jamie L Wilson, MD	NIH KO8	Junior Faculty Mentored Award
	NIH/NHLBI	Regulation of smooth muscle hyperplastic growth

Honors and Awards

Maureen Dziura, MD

- » Sepsis Committee Member, Tufts Medical Center
- » Ventilator Associated Pneumonia Committee Member, Tufts Medical Center

Scott Epstein, MD

- » Faculty Advisory Council on Excellence, Diversity and Inclusion, TUSM
- » Co-Chair, First and Second Year Course Directors Committee, TUSM
- » Educational Strategic Planning II Committee (to revise TUSM curriculum)
- » Chair, Accreditation Standards Oversight Committee, TUSM
- » Curriculum Committee, TUSM
- » Data Safety Monitoring Board, "Frequency of Screening and SBT Technique Trial (FAST) Trial" (Principal Investigator, KEA Burns, N Hill), multicenter trial funded by the Canadian Institutes of Health Research
- » Selected by Class of 2018 to give the "Last Lecture"
- » Award for Outstanding Teaching in the Pre-Clerkship Years from the Class of 2018, Tufts (commends one faculty member who has demonstrated outstanding dedication to teaching, a commitment to academic scholarship and a concern for the general wellbeing of Tufts medical students)

Harrison Farber, MD

- » Invited Speaker: 12th PVRI Meeting, (Ralinepag clinical study - Phase 2 data), Singapore, January, 2018
- » Invited Speaker: Grand Rounds, New York Presbyterian-Brooklyn, (Current Controversies in PAH), Brooklyn, NY, March 2018
- » Invited Speaker: Sabin Memorial Lecture, (Current Issues in PAH), MetroWest-Leonard Morse Hospital, Natick, MA, March 2018
- » Invited Speaker: Pulmonary Grand Rounds, (Controversies in PAH), University of Kansas, Kansas City, KS, March 2018
- » Invited Speaker: Grand Rounds/Visiting Professor, (Pulmonary Hypertension in Connective Tissue Disease), LSUHSC, Shreveport, LA, April 2018
- » Invited Speaker: PHA National Conference Current Treatment of PH), Orlando, FL, June 2018 ((Co-organizer for Team Phenomenal Hope - Peloton Challenge/talk on

- » Invited Speaker: Grand Rounds, Mountain View Hospital (University of Nevada), (Current Therapy for PAH), Las Vegas, NV, September 2018
- » Invited Speaker: ERS (PVRI Workshop on Risk Calculators), (Overseer, Task force on development of risk assessment tools for clinical trials), Paris, France, September, 2018
- » Invited Speaker: Cardiology Grand Rounds, MetroWest-Framingham, (PH in 2018 - The PH patients I actually see), Framingham, MA, September 2018
- » Invited Speaker: CHEST, San Antonio, TX, (Difficult cases in PH; Interstitial Pneumonitis with Autoimmune Features), October 2018
- » Invited Speaker: 16th Annual Review of Pulmonary Hypertension, (Difficult Cases of Scleroderma PH), Boston, MA, December 2018)
- » Invited Speaker: Grand Rounds, Stony Brook University Medicine, (Group 2 PH - What do I do), Stony Brook, NY, December 2018
- » Reviewer, Jenesis Grants (United Therapeutics) 2018
- » Reviewer, Springboard Grants (United Kingdom) 2018
- » Steering Committee, United States Pulmonary Hypertension Registry
- » Steering Committee, Selexipag Registry
- » Chairman, Steering Committee, TRIO Registry (PAH/IPF)

Erik Garpestad, MD

- » Co-Chair of Critical Care Committee, Tufts Medical Center
- » 2018 Medicine Housestaff Faculty Teaching Award, Tufts Medical Center

Maher Ghamloush, MD

- » IRB Committee member, Tufts Medical Center

Nicholas Hill, MD

- » Best Doctors 2018, Boston Magazine
- » Chair, Search Committee for Executive Director, ATS
- » Chair, Research Review Committee, PAH Scholars Award Program, Gilead Biosciences
- » Ad hoc reviewer, NHLBI Program Project Grants proposal
- » Chair, Steering Committee, Liberty Trial on ubenemix for PAH, Eiger Biochem
- » Chair, Data Monitoring Committee, Pfizer A1481324 post-marketing assessment of sildenafil.
- » Member DSMB, BEAT trial United Therapeutics
- » Chair, Medical Advisory Board, INSPIRE study of inhaled treprostinil, Liquidia, Inc.

- » Visiting Professor: National Jewish Medical Center. Presentations on “Noninvasive Ventilatory Techniques, a changing paradigm” and Update in Pulmonary Hypertension”. January, 2018.
- » Invited Speaker: 15th International Conference on Home Mechanical Ventilation (JIVD) & 6th European Respiratory Care Association Congress: Scientific Sessions: High O2 flow Part 1: From physiology to evidence. High flow O2: Only a Question of Oxygen?”. Lyon, France. March 14, 2018
- » Invited Speaker: NAMDRC 2018: Update in Pulmonary, Critical Care and Sleep Medicine. The 41st Annual Meeting and Educational Conference Jointly provided by CHEST® American College of Chest Physicians: Walter O’Donohue Lecture: “Humidified High Flow Nasal Cannulae Oxygen Therapy.” Carlsbad, California. March 21, 2018
- » Invited Speaker: New Jersey Thoracic Society Annual Scientific Program: Plenary Session: Past, Present and Future of Non-Invasive Ventilation. New Brunswick, NJ. April 20, 2018.
- » Invited Speaker: MGH Conference On Obesity: Obesity and PH: Invited Speaker: “Obesity in Pulmonary Hypertension”. Boston, MA =. March 27, 2018.
- » Annual International Conference: American Thoracic Society (ATS). Chair: Session: Division of Lung Diseases NHLBI/NIH: Initial Findings from The NHLBI PVDOMICS Program: Deep Phenotyping of Patients with Pulmonary Hypertension. Chair: Session: RAPID Abstract Poster Discussion: Critical Care: Invasive, Non-Invasive, Conventional, and Non-Conventional Ventilation In Acute Respiratory Failure. San Diego, California. May 18-24, 2018
- » Invited Speaker: The MGH Research Institute: “Update on Non-Invasive Ventilation.” Boston, MA. June 12, 2019
- » Invited Speaker: American Association for Respiratory Care, AARC. 57th RESPIRATORY CARE Journal Conference on Noninvasive Respiratory Support in Adults. “Non-Invasive Ventilation for Hypercapnic Respiratory Failure.” Petersburg, Florida. June 14-15, 2018
- » Invited Speaker: XIX Foro Internacional de Medicina Crítica / International Forum of Critical Medicine (Mechanical Ventilation - Sepsis and Selected Topics): “High Flow Nasal Ventilation in ARDS-Right or Mistaken?,” “Update on the Management of Right Cardiac Failure.” Mexico City, México. July 12-14, 2018
- » Invited Speaker: IMPACT PH Mentor and Meeting Total CME/ : “ICU Management of Pulmonary Hypertension.” Pismo Beach, California. September 13-14, 2019
- » Invited Speaker: 22nd Annual Thomas J. Godar Pulmonary/Critical Care Symposium, Saint Frances Hospital and Medical Center: Invited Speaker: “Chronic Pulmonary Arterial Hypertension 2018– “Did we climb the top of the mountain ye or long way to go?” Hartford, CT. September 27, 2018
- » Chest 2016, the Annual Meeting of the American College of Chest Physicians. Leadership Training Course Speaker: “Nasal High Flow,” San Antonio, CA. October 6-10, 2018
- » Annual Fall Respiratory Therapy Symposium. New York Downstate Association for Respiratory Therapists Inc. (NYDART). Speaker: “Noninvasive Ventilation Therapies; the role of High Flow and beyond.” (On website: Nasal High Flow Therapy; How does it help and where do I use it?) Long Island, NY. October 26, 2018.
- » Invited Speaker: The 11th Annual New England Heart Failure and Transplant Network Conference, Tufts University School of Medicine: “Update on the Evaluation and Management of Pulmonary HTN in Left Heart Failure,” Waltham, MA, November 2018.
- » Course Director. The 16th Annual Tufts Pulmonary Hypertension Speaker Symposium: Moderator: Morning Plenary Session, The Great Debate: How Early to Treat PAH and Challenging Cases: Exercise-Induced PAH.” Boston, MA. December 7, 2018
- » Sutter Health Care: Respiratory Management of Late Onset Pompe Disease (LOPD), San Francisco, CA. December 28-29, 2018

Khalid Ismail, MD

- » Tufts CTSI Pilot Studies Program Review Committee, Tufts Clinical and Translational Science Institute, Tufts Medical Center
- » Pulmonary Medicine Curriculum Subcommittee, Tufts University School of Medicine
- » OSA Perioperative Practice Advisory Committee, Tufts Medical Center
- » Admissions Committee, Tufts University School of Medicine
- » Program Director, Sleep Medicine Fellowship Program, Tufts University School of Medicine
- » Co-Director, Hypoglossal Nerve Stimulation Program, Tufts Medical Center
- » Medical Director, Sleep Center, Tufts Medical Center
- » Co-Director, Mycobacterial Disease Clinic, Tufts Medical Center
- » Best Doctors 2018, Boston Magazine

Sucharita Kher, MD

- » Member, Planning Committee, Behavioral Sciences and Health Services Research Assembly, American Thoracic Society
- » Medical Director, Outpatient Pulmonary Services

Michael McBrine, MD

- » Curriculum Committee, TUSM
- » Director, Second Year Pulmonary Course Director, TUSM
- » Alcohol Withdrawal Clinical Guideline Workgroup, Tufts Medical Center

Krishna Penumatsa, PhD

- » Course Director, Pulmonary Research Seminar Series, Tufts Medical Center
- » Invited speaker at Gilead Sciences Research Scholars Program Award Presentation Ceremony. Relationship of Transglutaminase 2 (TG2) to Tissue Stiffness I
- » Pulmonary Hypertension. October 29, 2018. Toronto, Canada

Ioana Preston, MD

- » Scientific Leadership Council, Pulmonary Hypertension Association
- » IRB Committee Member, Tufts Medical Center
- » Chair, Educational Committee, Pulmonary Hypertension Association
- » Editorial Board Member: Pulmonary Circulation, European Respiratory Journal, Advances in Pulmonary Hypertension
- » Grant reviewer for the American Heart Association

Imrana Qawi, MD

- » 2018 Medical Staff Service Award, Lowell General Hospital
- » ECHO/US Course for incoming Critical Care Fellows (Multi Institution collaboration held at TUFTS) 2016, 2017, 2018
- » Director, Clinical Pulmonary/Critical Care Conference Series

Kari Roberts, MD

- » Appointed Associate CMO for Graduate Medical Education, Tufts Medical Center
- » Care Improvement Committee, Tufts Medical Center
- » Patient Care Assessment Committee, Tufts Medical Center
- » Pharmacy and Therapeutics Committee, Tufts Medical Center
- » Best Doctors, Boston Magazine

Greg Schumaker, MD

- » Co-Chair, VAP Prevention Task Force, Tufts Medical Center
- » UIT Prevention Task Force member, Tufts Medical Center
- » Critical Care Committee member, Tufts Medical Center
- » Chair, Critical Care Committee, Lowell General Hospital
- » Ethics Committee, Lowell General Hospital
- » Medical Executive Committee, Lowell General Hospital
- » Peer Review Committee, Lowell General Hospital
- » Pharmacy and Therapeutics Committee, Lowell General Hospital
- » Performance Improvement Council, Lowell General Hospital
- » Sepsis Committee, Lowell General Hospital
- » Quality of Care Committee, Wellforce
- » Shared IT Governance Committee, Wellforce
- » Neuroscience Committee, Lowell General Hospital

Maher Tabba, MD

- » IRB Committee Member, Tufts Medical Center
- » Director, Critical Care Medicine, Hallmark Health System
- » University Faculty Senate Representative, Educational Affairs and Policy Committee, Tufts University School of Medicine
- » Diversity and Inclusion Committee, Tufts University School of Medicine



Tufts Medical Center

BLACK HISTORY

Tufts Medical Center
Black History Month
Exhibition

DIVISION OF

RHEUMATOLOGY, ALLERGY AND IMMUNOLOGY



Timothy McAlindon, MD

The Division of Rheumatology, Allergy and Immunology offers comprehensive clinical evaluation and management of the complex disorders. The Division now comprises two Sections: Rheumatology & Allergy.

The Rheumatology Division focuses on diagnosis and treatment of musculoskeletal and autoimmune rheumatic disorders. The division has had a steady increase in patient volume both internally in the main campus clinic as well as in its two satellite clinics in Norfolk (supervised by Dr. Senada Arabelovic) and Wellesley (supervised by Dr. Janeth Yinh).

The Allergy Division addresses common conditions including allergic rhinitis, allergic asthma, eczema, food and drug allergy, sinusitis, urticarial, angioedema and adult immunodeficiency. Division members work closely with the otolaryngology, dermatology and gastroenterology department to coordinate the evaluation of allergic disorders that are common to those specialties.

Highlights of 2018

- » The Division of Allergy joined to form a newly merged Dept of Rheumatology, Allergy and Immunology
- » Dr. Christina Cruz joined the Allergy Section
- » Dr. Senada Arabelovic, Timothy McAlindon, Janeth Yinh, William Harvey and Robert Kalish received the Boston Magazine "Top Doctors" Award
- » Dr. Senada Arabelovic received the Mutual Mentoring Network Grant, awarded by the Office of Educational Affairs, TUSM
- » Dr. Senada Arabelovic received the Medical Student Clinical Preceptorship Grant, Awarded by the Rheumatology Research Foundation.
- » Dr. William Harvey was promoted to Associate Professor of Medicine and Chief Medical Informatics Officer
- » Dr. Timothy McAlindon received the Top Ten Clinical Research Achievement Award by the Clinical Research Foundation
- » Dr. Chenchen Wang received FY2020 Innovative Research Award, American College of Rheumatology, US
- » Dr. Chenchen Wang received NIH K24 Midcareer Investigator Award
- » Dr. Michelle Park, a trainee of Dr. Wang, received the Outstanding Young Investigator Award at the 2018 NIH International Congress on Integrative Medicine and Health
- » Recruitment of mid-level clinical provider Emily Cain PA-C
- » Recruitment of Pharmacist Luting Chen, PharmD

Faculty

Name	Academic Rank	Title and Special Responsibility
Timothy McAlindon, MD, MPH	Professor; Natalie V. Zucker and Milton O. Zucker Chair in Rheumatology	Division Chief
John L. Ohman, MD	Assistant Professor, Medicine	Chief of Allergy
Senada Arabelovic, DO	Assistant Professor	Co-director of the Young Adults with Autoimmune Diseases Pediatric/Adult Transitional Clinic Associate Fellowship Program Director Course Director for Medical Student on 4th Year Electives Adjunct faculty to the Immunology Program at the Sackler School of Graduate Biomedical Sciences, Tufts University
Raveendhara Bannuru, MD, PhD	Assistant Professor	Director, Center for Treatment Comparison & Integrative Analysis Deputy Director, Center for Complementary and Integrative Medicine
Juan Canoso, MD	Adjunct Professor	Clinical Anatomy
Christina Cruz, MD	Assistant Professor	Allergy Clinic
Jeffrey Driban, PhD	Associate Professor	Research
William Harvey, MD, MSc	Associate Professor	Clinical Director
Robert Kalish, MD	Associate Professor	Program Director
Shanthini Kasturi, MD, MS	Assistant Professor	Quality Initiatives
Amrita Khokhar, MD	Assistant Professor	Allergy Clinic
Grace Lo, MD	Adjunct Assistant Professor	Osteoarticular Research Program
Steven Vlad, MD, PhD	Assistant Professor	Industry Sponsored Clinical Trials
Chenchen Wang, MD, MSc	Professor	Director, Center for Complementary and Integrative Medicine
Janeth Vinh, MD	Assistant Professor	Musculoskeletal Ultrasound Program Director
Ming Zhang, PhD	Assistant Professor	Medical Image processing

Major Clinical Programs

The Center for Arthritis and Rheumatic Diseases

The Center for Arthritis and Rheumatic Diseases provides ambulatory consultation and follow-up as well as inpatient consultation services. The spectrum of rheumatic disorders treated by the Rheumatology Division encompasses musculoskeletal disorders and complex autoimmune diseases. Areas of particular expertise include ankylosing spondylitis, autoimmune rheumatic disorders, bone health, bursitis and tendonitis, gout, inflammatory muscle diseases, lupus, Lyme disease, osteoarthritis, psoriatic arthritis, rheumatoid arthritis, and vasculitis. The Division also has expertise in musculoskeletal ultrasound and hosts a weekly urgent care clinic to accommodate urgent referrals for diagnosis

or treatment of acute or severe presentations in rheumatic disease. The Division's eight faculty and two fellows saw approximately 8,600 visits in 2018 (includes rheumatology and allergy sub-specialties).

The Division strives to advance all three aspects of its mission; patient care, education, and research. Emphasis on achieving these goals include diversifying services, building networks with community physicians and neighborhood hospitals, offering high quality patient-oriented services, and developing clinically-relevant research programs.

Allergy Program

The outpatient clinics provide evaluation and treatment of allergic diseases through referrals from staff physicians and from an increasing base of community physicians. A wide range of diseases is seen and evaluated. Assessment of the allergic component of asthma, chronic rhinitis, food allergy, drug allergy and eczema accounts for approximately 50% outpatient activity. Division members also treat diverse conditions such as anaphylaxis from insect stings, other anaphylactic syndromes such as exercise induced anaphylaxis, angioedema and eosinophilic syndromes including eosinophilic esophagitis and vasculitis.

Specialized Treatments are available through the Allergy Division including allergen immunotherapy for inhalant and insect sting allergy. Outpatient oral desensitization procedures are used when indicated for various forms of drug allergy. Inpatient intravenous desensitization is increasingly used for antibiotic allergy in the context of an increasing frequency of multi-resistant bacterial infections

Musculoskeletal Ultrasound Program

To improve the care of patients, the Division has adopted the use of musculoskeletal ultrasound. This non-invasive imaging technique provides an enhanced musculoskeletal evaluation that avoids exposure to the ionizing radiation associated with other imaging techniques. The faculty employs the use of ultrasound in our clinic and has designed a teaching series to introduce trainees to this modality. Musculoskeletal ultrasound allows the dynamic assessment of joint and tendon movements in a manner not possible through other routine imaging modalities. Ultrasound-guidance facilitates the aspiration and injection of musculoskeletal tissues, improves diagnostic accuracy and therapeutic effectiveness, and is valuable for research in rheumatology.

Pediatric/Adult Transitional Clinic

The clinic is designed to transition pediatric patients with autoimmune disorders who have been followed at the Floating Hospital for Children into an adult setting. The patients are seen by Dr. Senada Arabelovic.

Lyme Disease Specialty Clinic

Dr. Robert Kalish offers a weekly Lyme disease clinic in which patients are assessed for complex issues regarding the diagnosis and treatment of Lyme disease. Dr. Kalish has been involved in Lyme disease research, first studying the humoral immune response in patients with Lyme arthritis in the 1990's, and subsequently participating in a long-term follow-up study of patients with Lyme disease in the Lyme, Connecticut area. He is invited regularly to

speak on Lyme disease for Medical Grand Rounds conferences.

Clinical Teaching Activities

The Rheumatology Fellowship Program expanded from 2 to 3 Fellows in 2018. The Rheumatology Fellowship web page was updated and is more informative for prospective applicants.

Our Tufts University medical students from each of the four years rotate through the Division. First and third year students have the option of a selective (first year) or elective (third year) with Dr. Kalish or other faculty members. Second year students receive lectures by the Division's faculty in the Rheumatology course directed by Dr. Kalish. Fourth year medical students have the option of completing a one month rotation in Rheumatology directed by Dr. Senada Arabelovic.

Internal Medicine Residents also rotate through the rheumatology division and – guided by our faculty and fellows – see both inpatient and outpatient consults and attend didactic conferences during rotations.

The Rheumatology Fellowship is a two-year clinical and research-based program that provide training for physicians interested in specializing in Rheumatology. Each year, the division enrolls one new fellow and graduates physicians into successful academic and clinical positions. Weekly educational conferences in the division include Rheumatology Grand Rounds, Rheumatology Case Conference/Journal Club and Rheumatology Radiology Rounds.

Research Activities

Research in the Division focuses on investigations of the pathogenesis of osteoarthritis, new quantitative methods to measure its progression, and clinical trials of disease-modifying investigational treatments. There is an active program in the use of Tai Chi for chronic rheumatic diseases including osteoarthritis, fibromyalgia, and systemic lupus erythematosus. The Center for Treatment Comparison and Integrative Analysis (CTCIA) generates evidence reports, health technology assessments, and clinical practice guidelines.

The Division recruits and trains the next generation of clinical researchers. Trainees of all educational levels and abilities participate in designing and implementing research, as well as in formal and informal research meetings to improve their skills.

Weekly division research meetings focus on a wide variety of topics including: didactic sessions with visiting scholars; reviewing contemporary research and research methods; reviewing research and grant proposals originating in the division; helping develop research proposals, methods, and manuscript submissions.

In the "Merge" immunology summer mentoring program: Tufts Sackler School Immunology Doctor Students rotated through the rheumatology clinic with Dr. Arabelovic and McAlindon.

Members of the division also help their colleagues develop their skills by giving formal talks on various research methods of interest to the group.

Center for Complementary and Integrative Medicine

The Center for Complementary and Integrative Medicine has a tripartite area of focus:

1. Conduct of clinical research projects on the efficacy, safety, comparative effectiveness, and mechanisms of integrative medicine therapies for patients with chronic conditions

2. Provide ongoing international professional training for pre-doctoral and postdoctoral candidates and related healthcare professionals
3. Implementation and integration of scientific, evidence-based therapies into conventional medical practice, including mind-body therapy, acupuncture, massage therapy, natural products, nutrition, Tibetan medicine, music therapy and others.

The overall mission of the Center for Complementary and Integrative Medicine (CCIM) is to improve the health and well-being of patients with chronic medical conditions. Through its efforts to integrate evidence-based, multidisciplinary therapies into conventional care plans for chronic disease prevention and treatment, the CCIM allows for collaboration between doctors and researchers, ultimately promoting high quality clinical care for patients.

Research Activities

The research group has had a productive year with 54 publications in peer-reviewed journals, 16 oral presentations and poster presentations at National/International Conferences.

Osteoarthritis (OA)

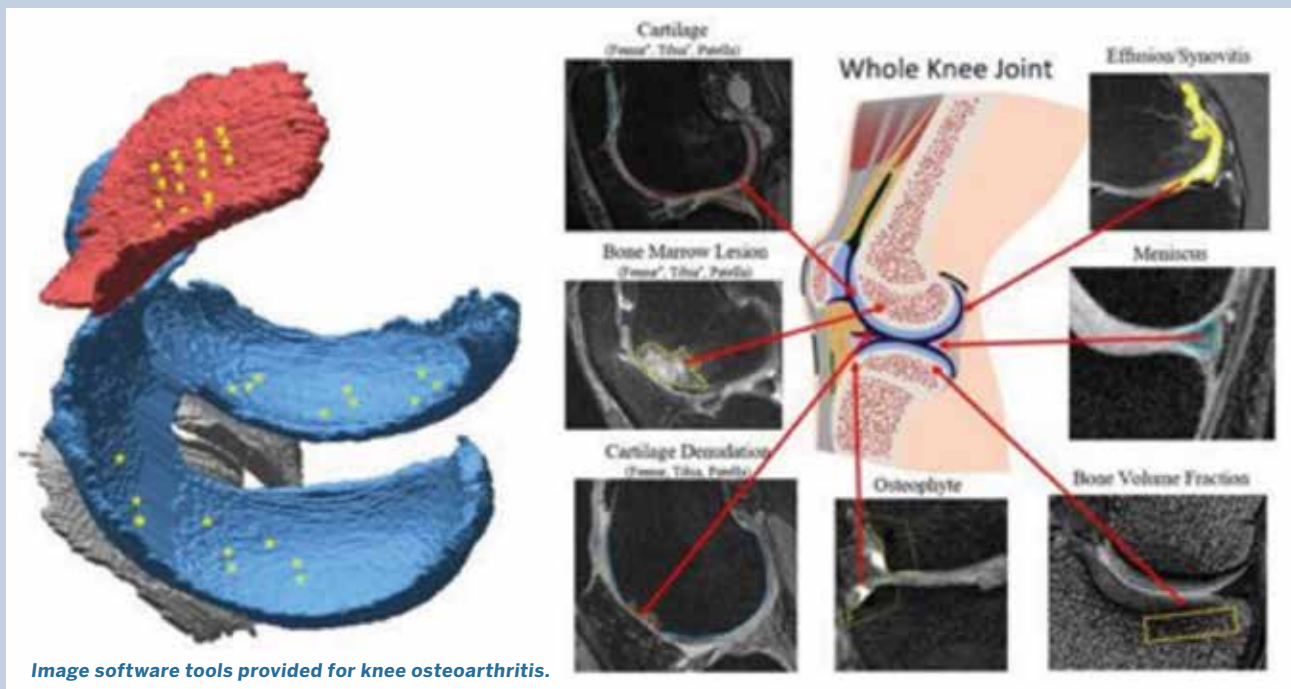


Image software tools provided for knee osteoarthritis.

The goals of this program are to advance the understanding of OA pathophysiology and to seek new disease-modifying interventions. A critical component is the development of valid outcome measures for OA progression that are sensitive to change. Techniques being explored include quantitative imaging of articular cartilage, effusion, assessment of peri-articular bone morphology using MRI, dual x-ray absorptiometry, gait analysis, and the testing of physical function. These approaches are addressed through epidemiologic collaborations (e.g., with the Osteoarthritis Initiative consortium) and through clinical trials. Disease-modification trials of intra-articular corticosteroids, vitamin D, collagen hydrolysate, and osteogenic protein 1 are completed or in progress. The research program is funded by grants from the NIH, the Rheumatology Research Foundation, and by sponsorship from industry.

Center for Treatment Comparison and Integrative Analysis

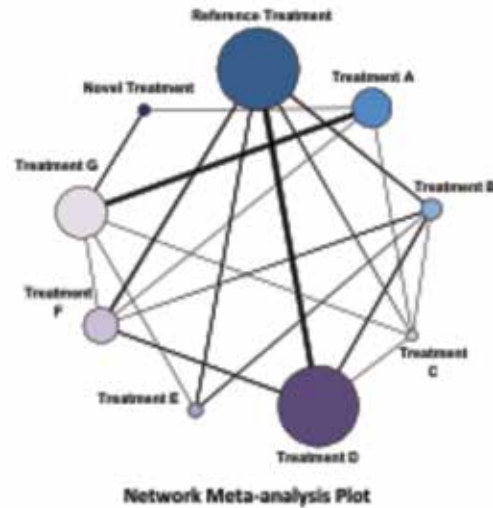
The Center for Treatment Comparison and Integrative Analysis (CTCIA) uses advanced evidence-based methodologies to answer a host of clinical, regulatory and health policy questions.

CTCIA specializes in the development of evidence reports and utilizes advanced meta-analysis methods to help connect research with effective practice and guide informed policy decisions. The center also provides assistance for international panels of experts in the development of guidelines, supporting the development process with evidence and methodological support. These evidence reports have had a significant impact in health policy both nationally and internationally. Using innovative approaches, the center has successfully assisted clients in regulatory process while securing FDA approvals and labeling changes.

In 2018, the center published the Non-Surgical Management of Hip and Knee Osteoarthritis guidelines in collaboration with the Royal Australian College of General Practitioners, the Recommendations for the management of rheumatoid arthritis in the Eastern Mediterranean region as well as other important studies. The center completed work on two guidelines projects—one for the Prevention, Diagnosis, and Treatment of Lyme Disease, in collaboration with the Infectious Diseases Society of America, the American Academy of Neurology and the American College of Rheumatology, and another on the management of knee and hip osteoarthritis for the Osteoarthritis Research Society International.

The CTCIA has three primary areas of focus:

- » Develop state-of-the-art evidence reports and technology assessments.
- » Assist expert panels in developing evidence-based clinical practice guidelines.
- » Employ advanced comparative effectiveness research techniques to support FDA approval/regulatory processes.



This year, the CTCIA completed work on an in-house online data storage and management platform, available at <http://rheumatology.tuftsmedicalcenter.org/CTCIA/>, which allows researchers within the Rheumatology Division to pursue independent projects free of cost. This platform is openly available to any student or researcher and will spare the division significant costs, particularly during the course of clinical practice guidelines projects. The CTCIA also embarked on an ambitious marketing campaign to draw in a higher volume of incoming projects and a more diverse clientele for upcoming research. The team is looking forward to participating in new and exciting projects as a result of this campaign. To learn more, please visit <http://www.ctciadata.com>.



Industry-Sponsored Trials

The industry-sponsored trial program is supported by a full-time clinical research coordinator and numerous research assistants. The program continues to grow and move into new disease spaces, including spondyloarthropathies and vasculitis, while continuing to maintain a strong foundation in osteoarthritis. The current panel of sponsored trials includes:

- » A Randomized, Double-blind, Placebo controlled, Single Injection, 52-Week Study to Evaluate the Efficacy and Safety of an Intraarticular Injection of CNTX-4975-05 in Subjects with Chronic, Moderate-to-severe Osteoarthritis Knee Pain
- » A Phase 3, Randomized, Double-Blind, Study Comparing Upadacitinib (ABT-494) to Placebo and to Adalimumab in Subjects with Active Psoriatic Arthritis Who Have a History of Inadequate Response to at Least One Non-Biologic Disease Modifying Anti Rheumatic Drug (DMARD) – SELECT – PsA 1
- » A Phase 2, 24-Week, Multicenter, Randomized, Double-Blind, Placebo-Controlled Study Evaluating the Safety and Efficacy of SM04690 for the Treatment of Moderately to Severely Symptomatic Osteoarthritis Subjects
- » A Phase 3, Multicenter, Observational Long-term Study Evaluating the Safety, Tolerability, and Efficacy of Treatment of SM04690 or Placebo Previously Injected in the Target Knee Joint of Subjects with Moderately to Severely Symptomatic Osteoarthritis
- » A randomized, double-blind, parallel-group, multicenter study of secukinumab to compare 300 mg and 150 mg at Week 52 in patients with Ankylosing Spondylitis who are randomized to dose escalation after not achieving inactive disease during an initial 16 weeks of open-label treatment with secukinumab 150 mg (ASLeap)
- » A Phase 3 Randomized, Double-Blind, Multi-Dose, Placebo And NSAID-Controlled Study To Evaluate The Efficacy And Safety Of Fasinumab In Patients With Pain Due To Osteoarthritis Of The Knee Or Hip

Research Support Highlights

Name	Title	Funding Source	Purpose of Award
Shanthini Kasturi, MD, MS	Principal Investigator	National Institute of Health	Integrating PROMIS in SLE Clinical Care
Ming Zhang, PHD	Principal Investigator	National Science wFoundation	SCH: EAGER: RUI: Collaborative Research: A novel 3D image predictive model for osteoarthritis disease
	Principal Investigator	Rheumatology Research Foundation	Expand and validate cartilage damage index (CDI) to detect cartilage damage in the Patella cartilage compartments
Raveendhara Bannuru, MD, PhD	Principal Investigator	National Center for Complementary and Integrative Health	Comparative effectiveness of mind-body interventions for osteoarthritis – individual patient data network meta-analysis
	Co-Principal Investigator	Osteoarthritis Research Society International	Clinical practice guideline development for knee and hip osteoarthritis
	Co-Investigator	Moore/Moreau Cancer Research Project Grant	Cost-effectiveness of NCCN recommended chemotherapy for early stage breast cancer: Estimates using decision analysis
	Co-Investigator	U.S. Department of Veterans Affairs, Boston	Role of mind-body interventions in the treatment of Gulf War Illness
	Principal Investigator	Royal Australian College of General Practitioners	RACGP Guidelines for the non-surgical management of hip and knee osteoarthritis
	Principal Investigator	Infectious Diseases Society of America	Infectious Diseases Society of America, American Academy of Neurology and American College of Rheumatology guideline on The Prevention, Diagnosis, and Treatment of Lyme Disease
	Mentor	National Institute of Health	CTSA graduate program institutional training award

Research Support Highlights (continued)

Name	Title	Funding Source	Purpose of Award
Jeffrey B. Driban, PhD	Investigator	Department of Defense	Biomarkers of Cartilage Turnover and Metabolism Greater than One Year After Traumatic Joint Injury and Signs of Early Post-Traumatic Osteoarthritis
	Co-Investigator	NIH	Constitutional and Metabolic Factors associated with the development of Hand OA
	Principal Investigator	NIH	Characterization of Rapidly Progressive Knee Osteoarthritis
William Harvey, MD, MSc	Co-Investigator	NIH	Clinical Trial of Tai Chi & Physical Therapy for Knee Osteoarthritis
	Study Physician	UCB, Samumed, GSK, Daiichi, Axsome	Clinical Trials in Knee Osteoarthritis, Fibromyalgia, GCA and Ankylosing Spondylitis
	Co-Investigator	NIH	Effect of intra-articular steroids on structural progression of knee OA: an RCT
	Co-Investigator	NIH	Clinical Trial of Tai Chi and Aerobic Exercise for Fibromyalgia
Robert Kalish, MD	Principal Investigator	Rheumatology Research Foundation	Amgen/Wyeth Rheumatology Fellowship Training Award
Timothy McAlindon, MD, MPH	Principal Investigator	NIH/NIAMS	Periarticular Bone Density as Biomarker for early Knee OA
	Principal Investigator	NIH/NIAMS	Effect of Intra-Articular Steroids on Structural Progression
	Site Principal Investigator	Abbvie	A Phase 2a Study Evaluating the Safety, Efficacy, and Pharmacodynamic Effects of ABT-981 in Patients with Knee Osteoarthritis
	Principal Investigator	NIH/NIAMS	Rapid quantitative composite MRI measurement of Knee OA structural progression
	Site Principal Investigator	Samumed	A Phase 2, 24-Week, Multicenter, Randomized, Double-Blind, Placebo-Controlled Study Evaluating the Safety and Efficacy of SM04690 for the Treatment of Moderately to Severely Symptomatic Osteoarthritis Subjects
	Site Principal Investigator	Samumed	A Phase 3, Multicenter, Observational Long-term Study Evaluating the Safety, Tolerability, and Efficacy of Treatment of SM04690 or Placebo Previously Injected in the Target Knee Joint of Subjects with Moderately to Severely Symptomatic Osteoarthritis
	Principal Investigator	NIH/NIAMS	Constitutional and Metabolic Factors associated with the development of Hand OA
	Co-Investigator	NIH/NIAMS	Characterization of Rapidly Progressive Knee Osteoarthritis
	Co-Investigator	PCORI	A Method for Patient-Centered Enrollment in Comparative Effectiveness Trials: Mathematical Equipose
	Co-Investigator	NIH/NCCAM	Tai Chi and Knee Osteoarthritis
	Co-Investigator	NIH/NCCAM	Tai Chi and Fibromyalgia

Name	Title	Funding Source	Purpose of Award
Steven Vlad, MD, PhD	Site Principal Investigator	Centrexion Therapeutics Corp.	A Randomized, Double-blind, Placebo-controlled, Single Injection, 52-Week Study to Evaluate the Efficacy and Safety of an Intra-articular Injection of CNTX-4975-05 in Subjects with Chronic, Moderate-to-severe Osteoarthritis Knee Pain
	Site Principal Investigator	Abbvie, Inc.	A Phase 3, Randomized, Double-Blind, Study Comparing Upadacitinib (ABT-494) to Placebo and to Adalimumab in Subjects with Active Psoriatic Arthritis Who Have a History of Inadequate Response to at Least One Non-Biologic Disease Modifying Anti-Rheumatic Drug (DMARD) – SELECT – PsA 1
	Site Sub-Investigator	Samumed	A Phase 2, 24-Week, Multicenter, Randomized, Double-Blind, Placebo-Controlled Study Evaluating the Safety and Efficacy of SM04690 for the Treatment of Moderately to Severely Symptomatic Osteoarthritis Subjects
	Site Sub-Investigator	Samumed	A Phase 3, Multicenter, Observational Long-term Study Evaluating the Safety, Tolerability, and Efficacy of Treatment of SM04690 or Placebo Previously Injected in the Target Knee Joint of Subjects with Moderately to Severely Symptomatic Osteoarthritis
	Site Principal Investigator	Novartis	A randomized, double-blind, parallel-group, multicenter study of secukinumab to compare 300 mg and 150 mg at Week 52 in patients with Ankylosing Spondylitis who are randomized to dose escalation after not achieving inactive disease during an initial 16 weeks of open-label treatment with secukinumab 150 mg (ASLeap)
	Site Principal Investigator	Regeneron Pharmaceuticals, Inc.	A Phase 3 Randomized, Double-Blind, Multi-Dose, Placebo And NSAID-Controlled Study To Evaluate The Efficacy And Safety Of Fasinumab In Patients With Pain Due To Osteoarthritis Of The Knee Or Hip
	Chenchen Wang, MD	Principal Investigator	NIH/NCCAM
Principal Investigator		NIH/NCCAM	Midcareer Investigator Award in Patient-Oriented Research
Primary Mentor		Traditional Chinese Medicine Universities	Mentoring and Clinical Research Training in Chinese Investigators
Site Principle Investigator		U.S. Department of Veterans Affairs	Novel Interventions for Gulf War Veterans' Illnesses
Site Principle Investigator		U.S. Department of Veterans Affairs	Mind-body interventions for PTSD
Primary Mentor		NIH	Mentoring and Research in Patient-Oriented Integrative Medicine
Principal Investigator		American Rheumatology Research Foundation	Innovative Research Award

Honors & Awards

Senada Arabelovic, DO

- » Tufts Instructional Technology Exploration Program Award: This program offers Educational Technology Services (ETS) and support for designing, implementing, and assessing the impact of a new teaching with technology practice for the musculoskeletal rheumatology course on rheumatoid arthritis
- » 2019 Boston Magazine. "Top Doctors"
- » Top Doctor 2017, best physicians on the South Shore and Cape Cod MA for Rheumatology
- » Board Member of the New England Rheumatology Society
- » Member of the TUSM Admissions Committee, Boston MA
- » Member of the American College of Rheumatology (ACR) Test Materials Development Committee (TMDC)
- » Member of the Childhood Arthritis and Rheumatology Research Alliance Transition Working Group

Raveendhara Bannuru, MD, PhD

- » Academic Research Awards Committee of Tufts University School of Medicine
- » Steering Committee Member: International Symposium on Intra Articular Treatment's (ISIAT) Technical Expert Panel on "Treat to target in osteoarthritis."
- » Member: The European Society for Clinical and Economic Aspects of Osteoporosis, Osteoarthritis and Musculoskeletal Diseases (ESCEO) task force on the safety of anti-osteoarthritis medications
- » Core Expert Panel Member and Evidence Synthesis Team Leader: Osteoarthritis Treatment Guideline Development Group (OAGDG) for Osteoarthritis Research Society International
- » Guidelines Core Oversight Team and Literature Review Team Leader, Infectious Diseases Society of America, American College of Rheumatology & American Association of Neurology Committee on Lyme Disease Guidelines
- » Evidence-based Medicine Expert: International Board on IAHA Efficacy and Use in Knee OA
- » Expert Working Group Member (Evidence Synthesis Team Leader), Royal Australian College of General Practitioners Guidelines for the non-surgical management of hip and knee osteoarthritis
- » Guidelines Core Oversight Team and Literature Review Team Leader, Infectious Diseases Society of America, American College of Rheumatology & American Association of Neurology Committee on Babesiosis Guidelines

- » Grant Reviewer for Replication Studies Research Program, the Netherlands Organization for Scientific Research (NWO)
- » Grant Reviewer for Ambizione Program, the Swiss National Science Foundation (SNSF)

Jeffrey Driban, MD

- » Executive Committee Chair, Athletic Trainers' Osteoarthritis Consortium
- » Vice Chair, Osteoarthritis Action Alliance
- » Chair Elect, National Athletic Trainers' Association Research and Education Foundation Free Communications Subcommittee
- » Section Editor, BMC Musculoskeletal Disorders
- » Editorial Board Member, Journal of Rheumatology
- » Editorial Board Member, Journal of Athletic Training
- » Editorial Board Member, International Journal of Athletic Therapy and Training
- » Study Section Member, Rheumatology Research Foundation
- » Committee Member, Strategic Alliance Committee, Osteoarthritis Research Society International
- » Committee Member, KL2 Advisory Committee, Tufts Clinical and Translational Science Institute
- » Committee Member, Eastern Athletic Trainers' Association Research Committee
- » Outstanding (Top 5%) Reviewer, Arthritis Care & Research
- » Young Alumni Achievement Award, Department of Kinesiology, Temple University

William Harvey, MD, MSc

- » Chief Medical Informatics Officer, Tufts Medical Center
- » Associate Professor of Medicine, Tufts University
- » Clinical Director, Division of Rheumatology, Tufts Medical Center
- » Care Improvement Council, Tufts Medical Center
- » Advocates for Arthritis, American College of Rheumatology annual political advocacy meeting with legislators on Capitol Hill, Washington, DC
- » Board of Directors, American College of Rheumatology
- » Director of Informatics Integration, Tufts CTSI
- » 2019 Boston Magazine. "Top Doctors"

Robert Kalish, MD

- » American College of Rheumatology Educational Grant Study Section – Chair
- » Tufts University School of Medicine Promotions Committee
- » 2019 Boston Magazine. "Top Doctors"
- » Amgen Fellowship Training Award, Rheumatology Research Foundation

Shanthini Kasturi, MD, MS

- » Member of American College of Rheumatology Quality Measures Subcommittee
- » KL2 Mentored Career Development Award, National Center for Advancing Translational Sciences, National Institutes of Health

Timothy McAlindon, MD MPH

- » 2019 Boston Magazine. "Top Doctors"
- » Osteoarthritis Clinical Treatment Guideline Development Initiative Principal Investigator, OARSI
- » OARSI Ethics Committee member

Steven Vlad, MD PhD

- » Member, Tufts Institutional Review Board
- » Member, Classification Subcommittee of the American College of Rheumatology Quality of Care Committee
- » Member, Canadian Institute of Health Research College of Reviewers

Chenchen Wang MD, MSc

- » Vice Chairperson, World Federation of Chinese Medicine Societies (Computational Medicine)
- » Expert Panel of American College of Rheumatology Guideline Committee, 2019 Guideline for the Pharmacologic and Non-Pharmacologic Management of Osteoarthritis of the Hand, Hip and Knee.
- » Steering Committee, Tufts University
- » Excellence Award in Keynote Address, International Integrative Medicine Meetings, China, 2014-2018
- » Ad Hoc reviewer for over 50 national and international journals, including *New England Journal of Medicine*, *JAMA*, *the BMJ*, *JAMA Archive of Internal Medicine* and *Anal of internal Med.*

Janeth Vinh, MD RhMSUS

- » 2019 Boston Magazine. "Top Doctors"







THE INSTITUTES

Tufts Medical Center has three Institutes which are nationally known for their basic and clinical research activities. The Institutes do not report directly to the Department of Medicine but many of their members carry out clinical activities within the various divisions.

INSTITUTE FOR

CLINICAL RESEARCH AND HEALTH POLICY STUDIES

» INSTITUTE FOR CLINICAL RESEARCH AND HEALTH POLICY STUDIES

The Institute for Clinical Research and Health Policy Studies (ICRHPS) is a hospital-wide enterprise that includes members of many clinical departments of Tufts Medical Center. Academic appointments and clinical activities of Institute members are conducted through the Division of Clinical Care Research (CCR) of the Department of Medicine. In addition, some faculty members have clinical appointments in departments other than the Department of Medicine.

These cross-appointments enhance research and the leadership role of the Institute in the broader Tufts campus. About half of the Institute's research is federally supported, primarily by the National Institutes of Health (NIH) and the Patient Care Outcomes Research Institute (PCORI). The Institute's research involves the study of clinical features of disease; the optimal use of treatments and of evidence; measurement of the outcomes of healthcare interventions; and the influence of socioeconomic, organizational, and policy factors on healthcare. Over the past 20 years, as a result of ICRHPS/CCR-based research, Tufts Medical Center has had the world's highest average ISI citation index in health care research, and has been most often ranked first of any institution.

Through the efforts of the ICRHPS faculty, and faculty throughout the Department of Medicine and the Tufts campus, the Tufts Clinical and Translational Science Institute (Tufts CTSI) was established in August 2008 with a grant from the NIH. The CTSI's promotion of collaborative, full-spectrum translational research has a substantial impact on the conduct of research at Tufts and at affiliated hospitals across Massachusetts and Maine. The Tufts CTSI includes the joint Biostatistics, Epidemiology, and Research Design (BERD) Center, the Clinical and Translational Research Center (formerly the Tufts GCRC), and the Clinical and Translational Research Graduate Program of the Tufts Sackler School. The Graduate Program provides research training to fellows and to trainees throughout many Tufts Medical Center clinical departments and divisions. The BERD provides support to all Tufts departments and divisions in biostatistics, study design, data collection, writing, and related project development.

Highlights of 2018

- » Receipt of \$7,712,030 in new funding for 24 new research projects in 2018
- » Renewal of the Tufts Clinical and Translational Science Institute CTSA Award from NIH \$56,332,178
- » Ongoing conduct of 80 research projects
- » Authorship by faculty of 144 articles in 96 different journals
- » Recognition of faculty by participation in many national panels

Faculty

Name	Academic Rank	Title and Special Responsibility
Harry Selker, MD, MSPH	Professor	Division Chief Executive Director, Institute for Clinical Research and Health Policy Studies Dean, Tufts Clinical and Translational Science Institute Director, CCHSR
David Adler, MD	Professor, Psychiatry and Medicine	Clinician-Researcher, CHS
Joni Beshansky, RN, MPH	Associate Professor	CCHSR
Janis Breeze, MPH	Assistant Professor	Epidemiologist, BERD
Elena Byhoff, MD, MSc	Assistant Professor	Program on Equity in Health and Science
James Chambers, PhD	Associate Professor	CEVR
Hong Chang, PhD	Assistant Professor	Biostatistician, BERD
Joshua Cohen, PhD	Research Associate Professor	Assistant Director, CEVR
Denise Daudelin, RN, MPH	Assistant Professor	Project Director, CCHSR
Karen Freund, MD	Professor	Co-PI, Tufts CTSI Director, Program on Equity in Health and Science Vice Chair of Medicine for Quality Improvement and Faculty Affairs
Sheeona Gorman, PhD	Assistant Professor	Project Director, CCHSR
Richard Hermann, MD	Associate Professor of Medicine and Psychiatry	CHS
David Kent, MD, MS	Professor	Director, Clinical and Translational Research Graduate Program, Sackler School Director, PACE CCHSR
David Kim, PhD	Assistant Professor	CEVR
Manlik Kwong, BS	Adjunct Instructor	Software Engineer, CCHSR
Tara Lavelle, PhD	Assistant Professor	CEVR
Debra Lerner, MS, PhD	Professor of Medicine and Psychiatry	Director, Program on Health, Work and Productivity, CHS
Amy LeClair, PhD	Assistant Professor	Program on Equity in Health and Science
Laurel Leslie, MD	Professor, Medicine and Pediatrics	Program on Equity in Science and Health Tufts CTSI
Pei-Jung Lin, PhD, MS	Associate Professor	CEVR
Jason Nelson, MPH	Instructor	PACE, Biostatistician, BERD
Peter Neumann, ScD	Professor	Director, CEVR
Farzad Noubary, PhD (terminated)	Assistant Professor	Biostatistician, BERD
Daniel Ollendorf, PhD	Assistant Professor	CEVR

Faculty (continued)

Name	Academic Rank	Title and Special Responsibility
Susan Parsons, MD, MRP	Professor of Medicine and Pediatrics	Director, CHS Director, Center for Child and Family Outcomes Founding Director, Reid R. Sacco Adolescent and Young Adult Cancer Program
Jessica Paulus, ScD	Assistant Professor	Associate Director and Epidemiologist BERD Associate Director, Sackler Graduate Program
Lori Lyn Price, MAS	Assistant Professor	Biostatistician, BERD
Gowri Raman, MD, MS	Assistant Professor	CCES
Angie Mae Rodday, PhD	Assistant Professor	CHS
William Rogers, PhD	Research Assistant Professor	CHS
Robin Ruthazer, MPH	Assistant Professor	Associate Director and Biostatistician, BERD CCHSR PACE
Dana Gelb Safran, ScD	Associate Professor	CHS
Robert Sege, MD, PhD	Professor, Medicine and Pediatrics	CGEM
Saeid Shahrzaz, PhD	Assistant Professor	PACE
Norma Terrin, PhD	Associate Professor	Director and Biostatistician, BERD CHS
Hocine Tighiouart, MS	Assistant Professor	Biostatistician, BERD
Lisa Welch, PhD	Assistant Professor	Evaluation Manager, Tufts CTSI
Benjamin Wessler, MD, MS	Assistant Professor	PACE

Research center abbreviations:

BERD = Biostatistics, Epidemiology, and Research Design Center

CCES = Center for Clinical Evidence Synthesis

CCHSR = Center for Cardiovascular Health Services Research

CEVR = Center for Evaluation and Risk in Health

CHS = Center for Health Solutions

CGEM = Center for Community Engaged Medicine

PACE = Predictive Analytics and Comparative Effectiveness Center



Major Clinical Programs

The Division of Clinical Care Research/ICRHPS has no clinical programs of its own. Physician-Researcher Division members have appointments in Internal Medicine and Adult Primary Care, Hematology-Oncology, Pediatrics, and Psychiatry where they are active participants in clinical activities. Among those with primary appointments in the Division, clinical activities are as listed below:

- » **Harry Selker, MD**
Internal Medicine and Adult Primary Care/
Pratt Diagnostic Clinic
- » **David Adler, MD**
Psychiatry
- » **Elena Byhoff, MD, MSc**
Internal Medicine and Adult Primary Care
- » **Karen Freund, MD**
Internal Medicine and Adult Primary Care
- » **David Kent, MD**
Internal Medicine and Adult Primary Care
- » **Laurel Leslie, MD**
General Pediatrics
- » **Susan Parsons, MD**
Adult and Pediatric Hematology- Oncology
Reid R. Sacco Adolescent and Young Adult
Cancer Program
- » **Robert Sege, MD**
Floating Hospital for Children, Child Abuse
Consult Service
- » **Benjamin Wessler, MD**
Echocardiography, Nuclear Cardiology,
Cardiovascular Medicine and Internal
Medicine

Teaching Activities

Faculty members in the Division of CCR/ICRHPS teach courses and seminars in clinical research methods to faculty, fellows, residents, and administrative staff primarily through the Tufts Clinical and Translational Science (Tufts CTSI) Clinical Research Curriculum, MS/PhD Clinical and Translational Science (CTS) Graduate Program of the Tufts Sackler School of Biomedical Sciences.

The CTS graduate program, under the direction of Dr. David Kent, aims to train the next generation of leaders and innovators in the application of methods of health services research, especially to direct improvement of clinical practice. By teaching core clinical research skills and facilitating the completion of an independent

research project, the program aims to help motivated trainees embark on careers as clinical and health services researchers. The CTS graduate program is designed for individuals who have completed training in the medical sciences (MD, DO, DDS, DVM, etc.), or in another advanced biomedical degree program; the majority of students are postdoctoral clinical fellows or faculty at Tufts Medical Center and other Tufts-affiliated hospitals. The program confers an MS and a PhD in Clinical Research and also provides individual courses to other non-matriculated students. Students select one of the three following concentrations, allowing them to develop more extensive competency in their chosen area: Evidence-based Clinical Effectiveness Research, Clinical Investigation, and Health Services and Outcomes Research. Nearly all of the fellows who have trained in this Program are currently active faculty at medical schools or the NIH, and others serve as senior staff or consultants in health services delivery and policy. Post-doctoral training is provided by several federally-sponsored training and career development awards.

Research Activities

Biostatistics, Epidemiology and Research Design Center

(Dr. Theodora Cohen, Director; Dr. Norma Terrin, Scientific Leader; Faculty: Drs. Hong Chang, Farzad Noubary, Jessica Paulus, Ms. Janis Breeze, Mr. Jason Nelson, Ms. Lori Lyn Price, Ms. Robin Ruthazer, Mr. Hocine Tighiouart)

The BERD Center, a joint program between ICRHPS/CCR and the Tufts CTSI, promotes innovation and excellence across the spectrum of patient-oriented research through development of new statistical and study design methods and provision of training, education and support in applying standard and cutting-edge design and analytic techniques. The BERD serves as the academic center for biostatistics at Tufts University and its affiliated teaching hospitals. It provides a forum to develop new methods, consulting strategies, and solutions to problems through internal meetings and seminars as well as through attendance at local and national meetings. BERD faculty members are involved as investigators on their own investigator-initiated research as well as on projects throughout Tufts Medical Center, Tufts University, and other Tufts affiliates. BERD staff serves nationally as consultants to institutions, federal agencies, corporations and grant proposal review

panels, and as members of Data Safety and Monitoring (DSMB) boards. In addition, the faculty in the BERD is responsible for statistical and computational instruction and mentoring to students in the CTS Graduate Program.

Center for Cardiovascular Health Services Research

(Dr. Harry Selker, Director; Faculty: Dr. David Kent, Ms. Denise Daudelin, Mr. Manlik Kwong, Ms. Robin Ruthazer, Dr. Sheeona Gorman)

The Center for Cardiovascular Health Services Research (CCHSR) has focused on the development of treatment strategies, decision aids, methods, and systems aimed at improving emergency and cardiac care. It is particularly known for the development of clinical predictive instrument decision aids which provide diagnostic predictions for emergency physicians and paramedics in the emergency clinical care setting. Related work has included conduct of multiple larger national clinical effectiveness trials, including demonstrating better treatment and clinical outcomes for patients with acute coronary syndromes and acute myocardial infarction. Electrocardiographs now in use include predictive instruments developed by Dr. Selker for cardiac ischemia and the outcomes of reperfusion therapy for ST elevation myocardial infarction (STEMI) and have been shown in large trials to improve emergency cardiac care. CCHSR has built on the EMS clinical trial infrastructure and linked multiple EMS systems and emergency departments for emergency care research and quality improvement. This has included the development of efficiency-to-effectiveness (E2E) clinical trials and clinical device-based trial enrollment and has innovated in clinical trial design, and execution. This also includes being one of three NIH CTSA Trial Innovation Centers, jointly with Johns Hopkins University, and being a hub for the NIH SIREN, a network for research in emergency medicine in cardiovascular and neurological disease.

Center for Clinical Evidence Synthesis

(Faculty: Dr. Gowri Raman, Drs. Nirmala Nanguneri, Norma Terrin, John Wong)

The Center for Clinical Evidence Synthesis (CCES) promotes the application of evidence-based methods to healthcare and biomedical topics. Members are experts in the fields of meta-analysis, clinical data-synthesis, decision, and cost-effectiveness analysis, clinical guideline creation and evaluation and health services and outcomes research. CCES was an AHRQ-designated Evidence-based Practice Center for 15 years and continues to collaborate on these projects nationwide.

In addition, CCES members have done consulting and conducted evidence reviews under contracts from government agencies, pharmaceutical companies, and other organizations. CCES faculty members are experienced teachers in critical literature appraisal and have trained multidisciplinary audiences in the conduct of evidence based reviews through curricula and programs in national and international settings. They serve as mentors to trainees and as consultants to academic and private entities in evidence appraisal.

Center for Community Engaged Medicine

(Faculty: Dr. Robert Sege)

The Center for Community Engaged Medicine, established in 2018 with the recruitment of Dr. Sege, seeks to explore the meaningful cross-sector collaborations to improve health and well-being of patients, their families and communities. The center supports medical and healthcare involvement in public health programs and integration of community resources into health centers. A key program is DULCE (Developmental Understanding and Legal Collaboration for Everyone) which supports infants and their families through integration of early childhood system and legal supports into primary care. The center also supports the Tufts CTSI community and stakeholder engagement through outreach, education and consultation.

Center for the Evaluation of Value and Risk in Health

(Dr. Peter Neumann, Director; Faculty: Drs. Joshua Cohen, James Chambers, David Kim, Tara Lavelle, Pei Jung Lin, Daniel Ollendorf)

The Center for the Evaluation of Value and Risk in Health (CEVR) was established by health economist Peter Neumann, ScD and Joshua Cohen, PhD to focus on issues pertaining to value, cost-effectiveness, and risk tradeoffs in healthcare decisions. The mission of CEVR is to analyze the benefits, risks, and costs of strategies to improve health and health care and to communicate the findings to clinicians and policymakers. Research at CEVR focuses on: 1) evaluating and comparing diverse benefit-risk tradeoffs that are central to a multitude of healthcare decisions; 2) understanding the attitudes and perceptions of value from the perspective of patients, physicians, and policymakers, and 3) applying cost-effectiveness analyses in medical and public health interventions such as preventive measures, screening and treatment for Alzheimer's disease, cancer, and other diseases and conditions.

CEVR has developed four unique databases to help

measure and communicate the clinical and economic value of health care strategies, 1) The Tufts Cost-Effectiveness Analysis (CEA) Registry, an internationally known resource containing detailed information on 5,000 standardized cost-effectiveness analyses published in the peer-reviewed literature (www.cearegistry.org); 2) The Tufts Medical Center Medicare National Coverage Decisions (NCDs) Database, a first of its kind that documents decisions made by the Centers for Medicare and Medicaid Services (CMS), 3) Specialty Drug Evidence and Coverage (SPEC) Database to document widespread variation across US payers in how they cover and restrict specialty drugs and 4) The Global Health Cost-Effectiveness Analysis registry, funded by the Bill and Melinda Gates Foundation focuses on those interventions designed to mitigate disease burden in countries at various stages of industrial development.

Center for Health Solutions

(Dr. Susan Parsons, Director; Faculty: Drs. David Adler, Hong Chang, Richard Hermann, Anita Kumar, Debra Lerner, William Rogers, Angie Mae Rodday)

The Center for Health Solutions (CHS) was founded in 1988 as The Health Institute. The overall mission of CHS is to improve health by advancing measurement of, and knowledge about, the social, behavioral, medical and biological factors that influence individual and population health. To accomplish this goal, researchers develop tools to advance the science of outcomes measurement from the patient's point of view; engage in large-scale research projects to examine the links between structure, process and outcomes of health care; conducts multidisciplinary research into the complex pathways linking health and its social, behavioral, medical and biological determinants; and work with clinicians, government, employers, health plans and other public and private sector organizations to translate research into practice and policy.

The principal program areas of research are 1) Program on Child and Family Outcomes, led by Dr. Parsons, studying the quality of life of families coping with a chronic illness (such as cancer or mental health disorders) and 2) Program on Health, Work, and Productivity, led by Dr. Lerner, addressing the need to improve the health of working people and reduce the

human and economic burden of health problems on them, their families, employers, and the nation.

Predictive Analytics and Comparative Effectiveness Center

(Dr. David Kent, Director; Drs. Jessica Paulus, Lester Leung, Jenica Upshaw, Benjamin Wessler, Robin Ruthazer and Jason Nelson)

The Predictive Analytics and Comparative Effectiveness (PACE) Center studies the limitations of using group-derived evidence as the basis for decision making in individual patients. The approach is based on the close integration of clinical and statistical reasoning; the goal is to provide clinicians and patients with evidence better tailored to their particular circumstances. The PACE Center has expertise in clinical medicine, risk modeling, individual patient meta-analysis, and observational comparative effectiveness studies. Among other projects, David Kent, MD, MS, PACE Director, is the Principal Investigator of several federally-funded research grants related to these issues, including several methods grants from the Patient-Centered Outcomes Research Institute (PCORI) and grants from the National Institutes of Health (NIH)/National Institute of Neurological Disorders and Stroke (NINDS) focused on cerebrovascular disease. Dr. Kent works with 5 additional faculty investigators and statisticians.

Program on Equity in Science and Health

(Dr. Karen Freund, Director; Drs. Elena Byhoff, Laurel Leslie, Amy LeClair)

The Program on Equity in Science and Health addresses diversity in the biomedical workforce and disparities in healthcare delivery. The mission of the program is to address two separate but related aspects of equity through research, 1) equity in science and biomedical careers, including understanding the factors associated with recruitment, promotion, and retention of women and minority faculty in academic biomedical careers and 2) disparities in the delivery of healthcare, especially to women and minority communities. In both areas of research, the program studies the multiple levels at which inequities may operate and pays close attention to the social determinants of health and wellbeing. The program focuses on interventions to reduce and eliminate these disparities.

Research Support

Recipient	Funding Source	Purpose of Award
Elena Byhoff, MD	Blue Cross Blue Shield	The Importance of CBO-Health Care Partnerships
	Tufts U School of Medicine	Jonathan M. Tish College of Civic Life
James Chambers, PhD	National Pharmaceutical Council	Factors Predicting Private Payer Coverage
	National Pharmaceutical Council	Do payers consider input from patients in drug coverage
	*Genentech	Examining variation in private payer coverage for treatments for hemophilia A, spinal muscular atrophy, Duchenne muscular dystrophy, and ALS \$165,000
	*Otsuka	Examining variation in private payer coverage of drugs for Chronic Kidney Disease \$125,000
	*Advanced Medical Tech Association	Quantifying the clinical advancement and value of medical devices \$145,000
Karen Freund, MD	NIH/NIMH	Insurance Instability and Disparities in Chronic Disease Outcomes
	PCORI via Lahey Clinic	Cervical Spondylotic Myelopathy Surgical Trial
	Susan Komen Foundation	Tufts Breast Cancer Training Program to Reduce Health Disparities
	NIH via Tufts U	Tufts BIRWCH Program
	*NIH/NCCATS	CTSA KL2 Career Development \$5,018,478
	NCATS via Boston Medical Ctr	Translating Research into Practice (TRIP): A Massachusetts Community Collaborative to Eliminate Persistent Health Disparities
	American Cancer Society	Patient Navigation to Eliminate Cancer Disparities
David Kent, MD	NIH	Value of Personalized Risk Information (Dual PI: Peter Neumann)
	PCORI	Predictive Analytics Pilot Study: Assessment of Heterogeneity of Treatment Effects in Two Major Clinical Trials
	PCORI	Evidence and the Individual Patient: Understanding Heterogeneous Treatment Effects for Patient-Centered Care
	NIH via Mayo Clinic	Pairing Observational and Patient-level Clinical Trial Data to Assess Cardiovascular Risk Reduction with Catheter Ablation for Atrial Fibrillation
	NIH	Enabling Comparative Effectiveness Research in Silent Brain Infarction Through Natural Language Processing and Big Data
	PCORI	How Well do Clinical Prediction Models (CMPs) Validate?
	*PCORI	Predictive Analytics and Treatment Effect Heterogeneity (PATH) \$1,018,924
	PCORI	Improving Diabetes Prevention with Benefit-Based Tailored Treatment: Disseminating Patient-Centered Estimates of Benefit
	*NIH/NCCATS	CTSA Graduate Program, \$3,957,294
	NIH	An Online Searchable Field Synopsis of Clinical Prediction Models
	NIH via JHU	Institute for Clinical and Translational Research

Recipient	Funding Source	Purpose of Award
David Kim, PhD	*Tufts U	Economic Analyses of Policy Strategies to Improve...
	*NIH	Economic Analysis of Policy Strategies to Improve Diet and Reduce CVD, \$198,639
Tara Lavelle, PhD	Shire	Incorporating family spillover effects into cost-
	Lundbeck	Generating Evidence to Inform a Value Framework for Major Depression
	Lundbeck	A systematic literature review examining the impact of schizophrenia and treatment-resistant schizophrenia on State Medicaid, social service and corrections budgets
	*Personalized Medicine Coalition	Economic value of WES for rare and undiagnosed disease, \$250,000
	*Otsuka	Systematic review of cost utility analysis literature for treatment of anemia in CKD, \$100,000
	PHRMA	Incorporating Family Spillover Effects into Cost...
Debra Lerner, PhD	*Janssen Biotech	Treatment Resistant Depression Study, \$267,467
	University of PA/VA	VA Research and Development Merit Program
	State of Tennessee	The Primary Care Work and Health Initiative Depression Pilot
Laurel Leslie, MD	Rutgers University	Integrating Theoretic and Empirical Findings of Research
Pei Jung Lin, PhD	*NIH/NIA	Assessing Diagnosis and Treatment Delays and Health Care Disparities by Race/Ethnicity among Individuals with Alzheimer's Disease and Related Dementias", \$2,475,026
	Alzheimer's Association	Racial and Ethnic Disparities in ADRD Diagnosis
	Amgen	Incorporating Core Outcome Sets in Alternate Payment Models
	*Amgen	Patient Characteristics and Treatment Patterns of PCSK-9 Inhibitors among Medicare Beneficiaries, \$471,323
	*GlaxoSmithKline	CEVR Postdoctoral Training Program, \$281,808
Peter Neumann, ScD	Bill and Melinda Gates Foundationww	Increasing Use of Health Economic Information for Global Health
	*Boehringer Ingelheim	Boehringer Ingelheim-Tufts MC Post-Doctoral Fellowship in HEOR, \$185,460
	Sunovion	Sunovion Tufts Medical Center Post-doctoral Fellowship
	Bayer	Bayer-Tufts Medical Center Post-Doctoral Fellowship
	Bill and Melinda Gates Foundation	Registry on Cost per Disability Adjusted Life Years (DALY) Studies
	*HITAP	Bibliometric Analysis of Economic Evaluations in Africa, \$80,000
Natalia Olchanski, MS	PhRMA (NFP)	PhRMA Pre-Doctoral Fellowship in Health Outcomes
Susan Parsons, MD	*FDA via NYMC	Ph 2 Defibrotide PPX in High Risk SCD Patients, \$200,858
	Seattle Genetics	Estimating the True Cost of Hodgkin Lymphoma
	Avon Foundation	Leveraging Patient Navigators as Medical Liaisons to Enhance Breast Cancer Treatment for Patients of Chinese Origin
	Rutgers University	Database development for HOLISTIC Consortium, \$37,500
	*Yawkey Foundation	Utilizing Patient Navigators to enhance adherence to oral anti-cancer medication for vulnerable patients.

Research Support (continued)

Recipient	Funding Source	Purpose of Award
Gowri Raman, PhD	ILSI	Macular Pigment Optical Density and Visual Function: A SR and Correlational meta-analysis
	*Alliance for Potato Research and Education	Potato consumption and risk of chronic disease, \$63,849
	California Walnut Board	Walnut consumption and cognitive function: qualitative gap analysis
	Merck	The Clinical Economic Burden of Gram-negative Infections in Latin America: A Systematic Literature Review & Meta-analysis
	ILSI	Flavan-3-ols and Cardiovascular Disease and Risk Factors: A SR and MA
Angie Mae Rodday, PhD	NIH	Identifying Pain Trajectories In Sickle Cell Disease Using Latent Class Analysis \$481,250
William Rogers, PhD	NIH/NIMH via Brown U	Aging, comorbid conditions, and health care utilization in persons with HIV
	NIH via Brown U	Disparities in Nursing Home Care Quality in People living with HIV/AIDS
Robert Sege, MD, PhD	*Center for the Study of Social Policy	DULCE: Developmental Understanding and Legal Collaboration for Everyone ", \$141,833
	*NIH via Boston Medical Ctr	Medical Home-Based Intervention to Prevent Child Neglect, \$24,260
	*NIH via HRiA	LEAH Knox Scholars Program \$55,401
Harry Selker, MD, MSPH	NIH/NCCATS	CTSA Consortium Demonstration and Dissemination Metric-based Management
	NIH via U Michigan	CTSA Development Implementation, and Assessment of Novel Training
	*NIH/NCATS	Clinical and Translational Science Award UL1 \$47,356,416
	NIH/NCATS	Clinical and Translational Science Award 1TL
	NIH/NCATS	Clinical and Translational Science Award - CTRC
	NIH via Emory University	Network for Emergency Care Clinical Trials (SIREN)
	NIH via Johns Hopkins University	Johns Hopkins – Tufts Trial Innovation Center
Benjamin Wessler, MD	NIA/NIA	Improving Care for Patients with Aortic Stenosis and Multimorbidity
	*NIH/NIA	Palliative Care for High-Risk TAVR Patients: The Impact of Multimorbidity", \$892,482

**new in 2018*

Honors and Awards

David Adler, MD

Professional Society Committee Assignments and Leadership:

- » Member, Distinguished Fellowship Committee, Mass. Psychiatric Society
- » Chairman, Committee on Psychopathology, Group for Advancement of Psychiatry

James Chambers, PhD, MPharm, MSc

Editorships:

- » Editorial Board, PharmacoEconomics Open

Karen Freund, MD

Editorships:

- » Editorial Board, Cancer Epidemiology, Biomarkers and Prevention
- » Editorial Board, Journal of Cancer Survivorship
- » Editorial Board, Women's Health and Gender Based Medicine
- » Editorial Board, Women's Health Issues

National Panels:

- » Boston Breast Cancer Equity Coalition, Founding member and Steering Committee
- » National Cancer Institute, Patient Navigation Research Program, Steering Committee
- » Health Care Research Training Study Section, Agency for Healthcare Research and Quality

Honors and Awards:

- » American Cancer Society Clinical Professorship in Health Disparities
- » Milton O. and Natalie V. Zucker Prize, Tufts University School of Medicine

David Kent, MD

Professional Society Committee Assignments and Leadership:

- » Member, CTSA Comparative Effectiveness Research Methods Workgroup, Society of Clinical and Translational Science
- » Member, CTSA Education and Career Development Key Function Committee
- » Member, Methods Work Group of the National CTSA Strategic Goal Committee

National Panels:

- » Member, ClinGen Complex Disease Working Group, Clinical Genome Resource Program, NIH
- » Member, PCORI Advisory Panel on Clinical Trials Post-Award Expert Subcommittee

- » Committee Member, Scientific Advisory Board, Optum Labs
- » Institute of Medicine (IOM) Comparative Effectiveness Research-Innovation Collaborative (CER-IC)
- » PFO Guideline Committee, American Academy of Neurology

Invited Lectures and Presentations:

- » "Using Group Data to Treat Individuals: Understanding heterogeneous treatment effects in the age of precision medicine and patient centered care." Florence Evidence-based Medicine Renaissance. Florence, Italy. February 26, 2018.
- » "Approaches for Studying Heterogeneity of Treatment Effect (HTE) in Comparative Effectiveness Studies." PCORI Transitional Care Evidence to Action Network (E2AN) Webinar. April 3, 2018.
- » "Predictive Analytics and Comparative Effectiveness: Toward a More Personalized Evidence-Based Medicine." Invited Lecture, Michigan State University, Lansing, MI. April 12, 2018.
- » "Special Topics in Predictive Analytics and Comparative Effectiveness in Medicine." Seminar, Michigan State University, Lansing, MI. April 12, 2018.
- » "Overview of heterogeneous treatment effects: Moving from evidence-based medicine to personalized/precision medicine." Evidence and the Individual Patient: Understanding Heterogeneous Treatment Effects for Patient-Centered Care. PCORI-funded Conference. National Academies of Medicine, Washington DC. May 31, 2018.
- » "Is it Finally Time for Patent Foramen Ovale to be Closed in Stroke?" Keynote Address, Brooklyn Stroke Conference, Brooklyn, NY. June 5, 2018.
- » "Recommendations for Predictive HTE Analyses" Leiden University Medical Center, Leiden, the Netherlands, June 12, 2018
- » "Point-Hemoglobin A1c Goals: Is Lower Better?" Tufts Medical Center Point-Counterpoint Grand Rounds. Boston, MA. October 12, 2018. Video link: Medicine Grand Rounds October 12, 2018: Point-Counterpoint: Hemoglobin A1c Goals: Is Lower better?
- » "Moving from evidence-based medicine to personalized medicine: understanding heterogeneous treatment effects in the era of patient-centered care." Biostatistics Seminar. McGill University, Montreal, Canada, October 15, 2018.

- » Understanding heterogeneous treatment effects in the age of precision medicine and patient-centered evidence.” Biogen Conference. Cambridge, MA. November 15, 2018.
- » “Using Group Data to Treat Individuals: Understanding heterogeneous treatment effects in the age of precision medicine and patient centered care.” FDA-JHU Symposium: Assessing and Communicating Heterogeneity of Treatment Effects for Patient Subpopulations: Challenges and Opportunities. Washington, DC. November 28, 2018.
- » “Overview of heterogeneous treatment effects: From evidence-based medicine to personalized evidence based medicine.” Smith Center, Beth Israel Deaconess Medical Center. Boston, MA. Monthly Research Meeting. November 29, 2018.

Editorships:

- » Editorial Board, Diagnostic and Prognostic Research

David Kim, PhD

Invited Lectures and Presentations:

- » Are We Moving Toward the Flat-of-the-Curve in Return on Investments in Medical Research? NBER-IFS International Network on the Value of Health Research Meeting, Cambridge, MA, September 2018
- » “Prioritizing global health resources using cost-effectiveness analysis.” TB MAC / WHO Annual meeting, Washington, DC, September 2018
- » “Does the timing of a drug’s costs and benefits influence US payer coverage of specialty drugs?” ISPOR Annual International Meeting, Baltimore, MD, May 2018.
- » “Cumulative network meta-analysis and research prioritization: evolution of treatment effects for stable coronary artery disease”. (the Top-Rated Abstracts). SMDM, 39th Annual Meeting, Pittsburgh, PA. October 2017 & Tufts Medical Center ICRHPS Grand Round, Boston, MA. February 2018.

Debra Lerner, MS, PhD

National Panels:

- » Mental Health in the Workplace: Driving Action in Canada and Globally, “An Effective Work-Based Intervention for Reducing Depression’s Symptoms and Functional Limitations”, January 18-19, 2018

Laurel Leslie, MD, MPH

Professional Society Committee Assignments and Leadership:

- » American Academy of Pediatrics
- » Member, Pediatrician Life and Career Experience Study Steering Committee
- » Member, Council on Foster Care, Adoption, and Kinship Care
- » Member, Council on Quality Improvement and Patient Safety
- » American Board of Pediatrics, Vice President for Research and Board of Directors, Member, Finance Committee, Board of Directors, Member, Finance Committee

Pei Jung Lin, PhD

Professional Society Committee Assignments and Leadership:

- » Executive Committee, Board of Directors, International Society for Pharmacoeconomics and Outcomes Research (ISPOR) Boston Chapter
- » Steering Committee, International Pharmacoeconomic Conference on Alzheimer’s Disease (IPECAD)

Editorships

- » Associate Editor, Alzheimer’s & Dementia: The Journal of the Alzheimer’s Association

Peter Neumann, ScD

Professional Society Committee Assignments and Leadership:

- » Scientific Review Committee, International Society for Pharmacoeconomics and Outcomes Research
- » Scientific Review Committee, Annual Meeting of the Society for Medical Decision Making
- » Co-Chair ISPOR Special Task Force on U.S. Value Frameworks

Editorships

- » Editorial advisory panel, Expert Review of Pharmacoeconomics and Outcomes Research
- » Editorial board, Health Affairs
- » Editorial board, Value in Health

National Panels:

- » Member, Health Policy Advisory Board, Congressional Budget Office



Susan Parsons, MD, MRP

Professional Society Committee Assignments and Leadership:

- » American Cancer Society, Palliative Care and Symptom Peer Review Committee, Invited Committee Member

National Panels:

- » Invited Member, National Cancer Institute's Steering Committee on Cancer Care Delivery Research
- » Selected Team Member, NCI-ASCO Teams in Cancer Care Delivery Project

Robert Sege, MD, PhD

Professional Society Committee Assignments and Leadership:

- » Fellow, Roy Helfer Society (Honorary Society for Child Abuse Professionals)
- » Member, AAP National Advisory Board on Screening

Invited Lectures and Presentations:

- » Keynote address: "Prevent Child Abuse Georgia", Atlanta, GA September 13, 2018
- » Keynote address: "Illuminate Colorado", Vail, CO October 25-27, 2018
- » Keynote address: "Kansas Children's Services League", Wichita, KS, November 7-8, 2018
- » Invited Lecture: Harvard TH Chan School of Public Health, February 2, March 1, 2018
- » Invited Presentation: Healthy Mothers, Healthy Babies, Helena, MT, February 26-27, 2018

Harry Selker, MD, MSPH

Professional Society Committee Assignments and Leadership:

- » Clinical Research Forum, Chairman, Board of Directors, Chair, Public Policy Committee
- » Association for Clinical and Translational Science, Founder and Board of Directors, Chair, Public Policy Committee

National Panels:

- » NIH National Center for Advancing Translational Sciences, Advisory Council
- » NIH National center for Advancing Translational Sciences, Cures Acceleration Network Review Board
- » NIH Study Sections, Directors Pioneer Award Review Committee

Norma Terrin, PhD

Editorships:

- » Statistics Editor, Clinical Infectious Diseases
- » Editorial Board, Research Synthesis Methods
- » Statistics Editor, Statistical Communications in Infectious Diseases

INSTITUTE FOR

MOLECULAR CARDIOLOGY RESEARCH (MCRI)

» INSTITUTE FOR MOLECULAR CARDIOLOGY RESEARCH (MCRI)

The mission of the Molecular Cardiology Research Institute at Tufts Medical Center is to understand the function of the heart and vessels in health and disease, at the molecular level; to translate these fundamental discoveries into new clinical strategies for diagnosis and treatment to improve cardiovascular care; and to train and mentor the next generation of cardiovascular researchers. The MCRI is organized into 3 Centers focused on Vascular Biology, Cardiac Biology and Translational Pharmacology and Genomics. Members of the MCRI work collaboratively with clinical cardiologists and cardiovascular surgeons, biochemists, neuroscientists, pharmacologists, geneticists, immunologists, and epidemiologists to further research in all facets of cardiovascular diseases. Pre-doctoral, graduate, and post-graduate training are high priorities of the Institute, with numerous trainees, including students from the Sackler School of Graduate Biomedical Sciences at Tufts and post-doctoral fellows from all over the world conducting their research in MCRI laboratories. Investigators are engaged in exploring mechanisms of cardiovascular function in health and disease, identifying novel targets for treatment and pursuing translational studies that explore those targets. Particular areas of interest and expertise include mechanisms and models of hypertension and heart failure; vascular dysfunction and atherosclerosis; hypertrophic cardiomyopathy; the impact of hormones on the cardiovascular system; and genetics, genomics and pharmacokinetics. The intellectual and collaborative environment within the MCRI is highly regarded with ongoing studies underway with members of the Divisions of Cardiology, Nephrology, Oncology, and Pulmonary Medicine within the Department of Medicine.

Highlights of 2018

- » The MCRI celebrated its 20th anniversary as a Research Institute at Tufts Medical Center with a keynote address given by Gary Gibbons, MD, PhD, Director of the National Heart, Lung, and Blood Institute (NHLBI)
- » Jennifer DuPont, PhD, was elected to the American Physiological Society, Women in Physiology Committee
- » Mary Wallingford, PhD, joined the MCRI and the Mother Infant Research Institute, bringing her expertise in vascular development and placental pathophysiology
- » Iris Jaffe, MD, PhD was elected to the Association of University Cardiologists

Faculty

Name	Academic Rank	Title and Special Responsibility
Iris Jaffe, MD, PhD	Elisa Kent Mendelsohn Professor of Molecular Cardiology and Medicine	Executive Director, MCRI Director, Vascular Biology Research Center
Robert Blanton, MD	Assistant Professor	Assistant Program Director, Cardiology Fellowship Scientific Director, Mouse Physiology Core Laboratory
Tinatin Chabrashvili, MD, PhD	Associate Professor (Neurology)	
Howard Chen, PhD	Assistant Professor	
Michael Chin, MD, PhD	Visiting Associate Professor	Research Director, Tufts Hypertrophic Cardiomyopathy Center
Isabelle Draper, PhD	Assistant Professor	Scientific Director, Drosophila Lab
Jennifer DuPont, PhD	Assistant Professor	Scientific Director, Vascular Function Core Laboratory
Jonas Galper, MD, PhD	Professor	
Gordon Huggins, MD	Associate Professor	Director, Center for Translational Pharmacology and Genomics Vice-Chair, IRB; Chair, SRC Co-Director, MD PhD Program, Tufts University School of Medicine
Navin Kapur, MD	Associate Professor	Director, Cardiac Biology Research Center Director, Interventional Research Division of the Surgical Research Laboratories Director, Acute Circulatory Support Executive Director, CardioVascular Center for Research and Innovation
Alan Kopin, MD	Professor	
Ho-Jin Park, PhD	Assistant Professor	
Mary Wallingford, PhD*	Assistant Professor (Ob/Gyn)	

*Joined the institute in 2018



Major Clinical Programs

The Molecular Cardiology Research Institute has a close relationship with the Division of Cardiology. Six members of the MCRI are practicing clinicians within the Division of Cardiology and several serve in leadership roles in the General Cardiology, Heart Failure and Transplant Programs, and the Interventional Cardiology Center. Please refer to the Division of Cardiology for specific information regarding major clinical programs.

Teaching Activities

MCRI Investigators provide extensive mentoring and financial support to students at Tufts University School of Medicine and the Sackler School of Graduate Biomedical Sciences. Twenty-six students have earned advanced degrees while training in the MCRI and two doctoral students are currently completing their theses while in MCRI laboratories. MCRI faculty supervise and lecture in numerous graduate courses and the clinician-scientists within the MCRI participate in the teaching of

medical students through the Patient- Doctor II, Cardiovascular Pathophysiology and Integrating Biomedical Research and Clinical Medicine courses, as well as teaching students, house officers and clinical cardiology fellows while attending in the ambulatory clinics and on the inpatient services.

Recognized nationally and internationally as a leader in cardiovascular research, the Molecular Cardiology Research Institute is training a new generation of investigators in the state-of-the-art technologies necessary to translate bench findings to the bedside and to develop new diagnostic and therapeutic strategies to fight cardiovascular disease. Fellows are engaged in basic, translational and clinical research throughout the Institute and the Cardiology Division. Graduates of the MCRI fellowship program typically pursue careers in academic medicine or in research departments in universities as independent investigators or in the biotechnology/pharmaceutical industry.

Research Activities

Research in the MCRI is funded by the NIH (primarily through the NHLBI), the American Heart Association and other foundations, philanthropic donors and Industry sponsors including pharmaceutical, biotech and medical device companies. The research interests of the Molecular Cardiology Research Institute faculty are described below.

Vascular Biology Research Center

The Vascular Biology Research Center (VBRC) investigators work together to understand the molecular underpinnings of healthy blood vessel function and how dysfunction develops that can lead to cardiovascular disease. The ultimate goal is to translate these fundamental discoveries into novel therapies to prevent or treat vascular diseases that contribute to heart attack, stroke, high blood pressure and other common cardiovascular conditions. The VBRC maintains a highly collaborative environment allowing investigators to share ideas, reagents, approaches, and models to bring a multidisciplinary approach to solving important unanswered questions in vascular biology in a highly translational context.

Iris Z. Jaffe, MD, PhD Director

The primary focus of the **Jaffe Laboratory** is to understand the molecular mechanisms underlying common vascular disorders including hypertension, vascular remodeling, and atherosclerosis with specific emphasis on the role of the renin-angiotensin-aldosterone system. The Jaffe Laboratory demonstrated the presence of functional mineralocorticoid receptors (MR) in human vascular cells and is studying the role of vascular MR in cardiovascular function and disease. The Laboratory uses in vitro molecular techniques in vascular cells, genome wide “omics” analyses of cardiovascular tissues, whole vessels studies of vascular function, and in vivo tissue-specific transgenic mouse models to study vascular structure, function, and responses to injury and atherogenic stimuli to identify the molecular mechanisms of vascular disease and identify novel treatment targets.

Tinatin Chabrashvili, MD, PhD

Dr. Chabrashvili is a clinician-scientist in the Department of Neurology who specializes in movement disorders. The Chabrashvili laboratory is located in the MCRI and studies cerebral microvascular inflammation and blood-brain barrier permeability.

Jennifer DuPont, PhD

The **DuPont Laboratory** is focused on the mechanisms of sex differences in cardiovascular disease and on microRNAs as regulators of vascular aging and potential biomarkers for diagnosis and treatment strategies. Dr. DuPont’s expertise in performing human vascular function studies including flow-mediated vasodilation, pulse wave velocity and laser Doppler flowmetry adds to the capabilities of the MCRI Vascular Function Core, which she directs, and to the rich clinical research environment in the CardioVascular Center.

Mary Wallingford, PhD

The **Wallingford Laboratory**, based in the Mother Infant Research Institute and the MCRI, is focused on the vascular development and pathophysiology of the placenta and cardiovascular adaptations to pregnancy. The placenta contains highly specialized vasculature that mediates interaction between maternal and fetal circulatory systems during pregnancy. Normal placental growth and function are essential for maternal and fetal health, both during pregnancy and delivery as well as later in life.

Cardiac Biology Research Center

The Cardiac Biology Research Center (CBRC) investigators work to understand cardiac function at the molecular level and the mechanisms driving dysfunction leading to heart failure. Areas of expertise include small and large animal heart failure models, in vivo hemodynamics, non-invasive cardiac function analysis, in vivo imaging, autonomic dysfunction and arrhythmia, and hypertrophic cardiomyopathy and cardiac genetics. The CBRC scientists are moving discoveries in the laboratory toward human clinical trials with the ultimate goal of improving health.

Navin Kapur, MD Director

The **Kapur Laboratory’s** translational research focuses on large and small animal models of acute and chronic heart failure, cardio-renal physiology, circulatory support device development, and cardioprotective mechanisms in the setting of acute myocardial infarction. The laboratory’s recent work has focused on the hypothesis that mechanically unloading the heart and delaying coronary reperfusion limits infarct size. This concept known as the ‘mechanical conditioning hypothesis’ has the potential to alter the paradigm of acute heart attack therapy and reduce the burden of ischemic heart failure. Dr. Kapur’s basic science laboratory focuses on molecular mechanisms governing

maladaptive cardiac remodeling in heart failure. Its particular expertise involves signaling via the transforming growth factor beta (TGF β) system. Over the past several years, the laboratory has focused on a TGF β co-receptor known as endoglin and was the first to establish that reduced endoglin activity improves survival and limits maladaptive cardiac remodeling in heart failure. More recently, the laboratory has demonstrated that targeting endoglin using an antibody-mediated approach not only limits the development of cardiac fibrosis, but can reverse established cardiac fibrosis in preclinical models of heart failure.

Robert Blanton, MD

The **Blanton Laboratory** studies the process of cardiac remodeling, which leads to the syndrome of heart failure. Its members investigate signals within heart muscle which slow down or even reverse remodeling in order to exploit these as new drug targets for heart failure. The laboratory currently focuses on understanding how signaling via the cyclic GMP-Protein Kinase-G pathway attenuates adverse cardiac remodeling and has discovered a number of new molecules that cooperate with this system in heart muscle. The research involves studies ranging from in vitro studies, to animal pre-clinical studies, to studies of humans with heart failure. Dr. Blanton has also partnered with several companies to advance our understanding of novel therapies for heart failure.

Howard Chen, PhD

The **Chen Laboratory** focuses on the molecular imaging of cell death and survival pathways in the heart in vivo. Cell death is the hallmark of many devastating disorders including cardiovascular diseases. The ability to preserve cell viability during cardiovascular diseases is thus of utmost importance. Dr. Chen's laboratory takes an interdisciplinary approach encompassing fundamental molecular and cellular biology, biochemistry, and state-of-the-art imaging technologies, using nanoscience and synthetic chemistry to gain biological and pathophysiological insights. The imaging modalities used have the potential for use into humans.

Michael Chin, MD, PhD

Dr. Chin is interested in understanding the genetic basis of cardiovascular disease, with a focused interest on how regulation of gene expression affects cardiovascular disease phenotypes. Within this context, his goal is to develop therapeutic agents that can ameliorate pathological phenotypes and thus provide

treatments for cardiovascular diseases. The Chin Laboratory's current activities include developing an enzyme replacement therapy for a genetic cardiomyopathy disorder, Barth Syndrome, identifying molecular pathways that regulate cardiac sensitivity to developmental diesel exhaust exposure, and understanding the pathogenesis of hypertrophic cardiomyopathy. In his previous work he was among the first to identify and characterize a bHLH transcription factor, CHF1/Hey2, which regulates the development of the myocardium, atrioventricular valves, interventricular septum and coronary vasculature. His laboratory has expertise in analyzing developmental phenotypes in genetically modified mice, differentiating embryonic stem cells to cardiomyocytes, culturing primary vascular, cardiac and embryonic cells for gain and loss of function studies and also in assessing cardiac hypertrophy and heart failure in vitro and in vivo. He has extensive experience expressing and purifying proteins containing cellular penetrating peptide tags for use in protein therapy. He also has experience in measuring mitochondrial respiration, skeletal muscle contraction and mouse treadmill exercise performance. These broad areas of expertise in cardiovascular investigation provide versatility for analysis of today's cardiovascular problems and development of tomorrow's cardiovascular therapies.

Jonas Galper, MD, PhD

The **Galper Laboratory** studies autonomic neuropathy, a major complication of diabetes that has been associated with a marked increase in the incidence of sudden death in the diabetic population. The Laboratory has demonstrated a relationship between the development of this complication of diabetes and the regulation of cholesterol. The studies have identified several new candidate molecules that might be involved in this process and might serve as targets in the treatment and prevention of this complication of diabetes and the associated abnormal heart beats and sudden death. Dr. Galper also studies abdominal aortic aneurysm, a disease that affects more than 10% of men above the age 65. Currently, its life threatening complications can only be treated surgically. Using a mouse model for this disease, the Galper Laboratory has elicited data which suggest that a new drug that was developed for the treatment of life threatening infections might be used to decrease the incidence and severity of aneurysms. The laboratory is also testing the possibility that a low dose of a drug that causes inflammation might actually protect the aorta from the development of this disease. These experiments may support the use of these agents as a



kind of immunization against this devastating disease. Recently the Galper laboratory has extended its work on abnormal heart rhythm to similar mechanisms that might lead to death of nerve cells that cause Parkinson's disease. A protein that is produced in excess in the diabetic mouse and in the diabetic patient is also present in excess in patients with Parkinson's disease. The Laboratory has established data supporting the conclusion that this excess protein may be involved in accelerating the death of nerve cells in the brain that cause Parkinson's disease.

Center for Translational Pharmacology and Genomics

The Center for Translational Pharmacology and Genomics includes investigators whose core interest's center on leveraging molecular pharmacology, biology and genetic approaches toward the development of novel therapeutics. Ongoing studies have clinical application in cardiovascular, inflammatory, metabolic and skeletal muscle disease. Work performed by the Center laboratories includes (i) state of the art genomic

approaches (e.g. ChIP-seq, RNA-seq, GWAS), (ii) generation and analysis of invertebrate (*Drosophila*) and vertebrate animal models of human diseases, (iii) structure-function studies on a wide variety of pharmacological targets (receptors, channels, enzymes) and (iv) development of novel tools enabling peptide and small molecule drug discovery. The wide array of research capabilities featured by the Center laboratories naturally extends beyond the boundaries of one organ system or pathway offering the unique ability to understand many complex and/or inherited chronic diseases.

Gordon Huggins, MD, Director

The primary goal of the **Huggins laboratory** is to make discoveries that enhance our understanding the biology of human disease that may translate into improved diagnostics and therapies. The basis for its discoveries lies in studying human DNA and/or tissues. Genes or pathways identified through discovery work based upon human samples then serve as the basis for traditional hypothesis-oriented research in animal and cellular



model systems employed in the laboratory. Dr. Huggins has identified several genes/loci associated with hypertrophic cardiomyopathy (HCM) and heart failure and his laboratory has produced an animal model based upon his findings in human HCM. Together with collaborators at Tufts University he is also examining the association of genes, pathways and compounds in Calcific Aortic Valve Disease. In addition, Dr. Huggins directs the NHLBI Heart Failure Network program at Tufts that includes implementing network clinical trials and he co-directs the Committee on Participation of Women in Heart Failure Clinical Trials.

Isabelle Draper, PhD

The **Draper Laboratory** focuses on expediting the characterization of genes relevant to human physiology using the *Drosophila* (fruit fly) model. Dr. Draper pioneered the introduction of mammalian genes in the fly system as a means to expedite the exploration of conserved protein function *in vivo*. Her current research focuses on the investigation of muscle physiology and disease, motor function and RNA processing. Collaborative efforts led to the establishment of a research pipeline, enabling rapid translation of findings from *Drosophila melanogaster* to human myoblast cell lines (healthy and diseased; differentiated from primary cultures or from iPSCs). Conversely, the functional characterization of novel modifiers of muscle disease that are identified in mammalian systems can be expedited in the *Drosophila* model organism. Using proprietary technology in conjunction with this multisystem approach, the Draper Laboratory is assessing the effects of candidate drugs as potential therapeutics for human muscle and heart disease.

Alan Kopin, MD

The **Kopin Laboratory** utilizes molecular and pharmacological approaches, both *in vitro* and *in vivo*, to investigate novel disease targets as well as to develop therapeutics. Current research efforts focus on heart failure, pulmonary artery hypertension, inflammatory disease, neuropathic pain, muscle disease, autism, and sensory autonomic neuropathy.

Research Support

In 2018, the Institute was engaged in the following research projects:

PI	Funding Source	Title of Project
Robert Blanton	NIH	Novel Protein Kinase G1 Substrates in Cardiac Remodeling and Blood Pressure Control
	NIH (sub from Tufts University)	Cardiac Cell Entry-Inhibition and Protection Therapy for Chronic Chagas Disease
	Merck	Pre-clinical Study
	Cardurion	Pre-clinical Study
Howard Chen	NIH	Multiplexed Molecular Imaging of Cell Death Pathways
Michael Chin	American Heart Association	Pathological Pathway Activation at Single Cell Resolution and Biomarker detection in Human Hypertrophic Cardiomyopathy
	NIH	Intracellular mitochondrial enzyme replacement therapy for heart and skeletal myopathy in Barth Syndrome
Isabelle Draper	NIH (sub from U of Florida)	Gene Discovery in Muscular Dystrophy
Jennifer DuPont	NIH	BIRCWH K12 Scholar: The role of AT2R in sex differences in vascular aging :
	Tufts University Charlton Award	The Role of Smooth Muscle Cell Estrogen Receptor Alpha in Sex Differences in Aging-Associated Vascular Stiffness
Michelle Esposito (Kapur Laboratory)	Tufts University Natalie Zucker Research Center for Women Scholars	Primary Unloading: A New Approach to Limit Myocardial Damage
Gordon Huggins	NIH	Heart Failure Network: New England, New York and Quebec Regional Clinical Center
	NIH (sub from Miriam Hospital)	Salivary Amylase Gene (AMY1) as Predictor of Weight and Diet in LookAhead & DPP
	NIH (sub from Ohio State University)	Precision Medicine for Dilated Cardiomyopathy in European and African Ancestry
	NIH (sub from Tufts University)	Diagnosis of Heart Failure Status using Epidermal Metabolomics
	Tufts University Russo Award	Diagnosis of Heart Failure Status using Metabolomics
Iris Jaffe	American Heart Association	Extra-Renal Mineralocorticoid Receptors in Hypertension
	NIH	The Role of Vascular MR-Regulated Genes in Vascular Function and Disease
	NIH	Smooth Muscle Mineralocorticoid Receptors in Vascular Aging and Hypertension
	NIH (sub from Michigan State University)	Cerebral parenchymal arteriole dysfunction and cognitive decline in a life-long high fat feeding model
	NIH (sub from University of Missouri)	Mineralocorticoid receptor-dependent coronary vascular dysfunction in obesity
	NIH (sub from University of Missouri)	Mechanisms for Sex Differences in CVD Pathology and Development of a Targeted Therapeutic
Iris Jaffe/Robert Blanton	Novartis	Pre-clinical Study

Research Support (continued)

PI	Funding Source	Title of Project
Navin Kapur	Abiomed	Changing the Paradigm of AMI Therapy: The Bench to Bedside Approach
	Abiomed	CVAD Registry Protocol Agreement
	NIH	Endoglin: A New Target of Therapy for Heart Failure
	NIH	Mechanical Unloading and Delayed Reperfusion Promotes Myocardial Recovery after Acute Myocardial Infarction
	Precardia	Pre-clinical Study
	Second Heart Assist	Pre-clinical Study
Alan Kopin	On Target Therapeutics	Lipidated Stable BAM8-22 Offers a Promising Therapeutic for Neuropathic Pain
Lija Swain (Kapur Laboratory)	Tufts University Natalie Zucker Research Center for Women Scholars	Investigating Mitochondrial Function as a Therapeutic Target for Ischemia/Reperfusion Injury during Myocardial Infarction
Mary Wallingford*	NIH	Determination of maternal-fetal phosphate transport mechanisms and the role of sodium-dependent phosphate transporters in extraembryonic tissues

*based in the Mother Infant Research Institute (MIRI)

Honors and Awards

Robert Blanton, MD

- » Invited Speaker, 8th International Conference on Relaxin and Related Peptides, Cabo San Lucas, Mexico
- » Invited Moderator, American College of Cardiology (ACC) Poster Session

Howard Chen, PhD

- » Session Moderator, Cardiology in vivo imaging, World Molecular Imaging Congress, Seattle, WA

Michael Chin, MD, PhD

- » Recipient, American Heart Association Innovative Project Award
- » Invited Speaker, 9th International Scientific, Medical and Family Conference on Barth Syndrome, Clearwater, FL
- » Invited Speaker, University of Queensland, Brisbane, Australia
- » Editorial Board, Journal of Molecular and Cellular Cardiology

Isabelle Draper, PhD

- » Member, 2018 American Federation for Aging Research (AFAR) National Scientific Advisory Council

Jennifer DuPont, PhD

- » Invited Speaker and Session Chair, APS Cardiovascular, Renal and Metabolic Diseases: Sex-Specific Implications for Physiology meeting, Knoxville, TN
- » Invited Speaker, Building Interdisciplinary Research Careers in Women's Health (BIRCWH) Annual Meeting, Washington, DC

Gordon Huggins, MD

- » CV Pathophysiology Course Director
- » Ad-Hoc Member, Cardiac Contractility, Hypertrophy and Failure (CCHF) Study Section
- » Co-Chair, Genetic Testing for Cardiomyopathies Session and Poster Professor, Diastolic and Contractile Dysfunction Session, American College of Cardiology (ACC) Annual Meeting, Orlando, FL

Iris Jaffe, MD, PhD

- » Chair, NIH Vascular Cell and Molecular Biology Study Section
- » Elected Member, Association of University Cardiologists
- » Elected Member and Invited Speaker, Interurban Clinical Club Spring Meeting, Philadelphia, PA



- » Invited Symposium Speaker, Experimental Biology, Mineralocorticoid Receptors in Vascular Function and Cardiovascular Disease, San Diego, CA
- » Invited Speaker, Rapid Response to Steroid Hormones: 20th Anniversary Meeting, Dublin, Ireland
- » Invited Speaker, Ralph L. Nachman Vascular and Biology Seminar Series, Weill Cornell Medical College, New York, NY
- » Invited Symposium Speaker, Endo 2018: Endocrine Society 100th annual meeting, Mineralocorticoid Receptor Actions in the Vasculature, Chicago, IL
- » Invited Speaker, American Heart Association Scientific Sessions, Chicago, IL
- » Invited Speaker, Vascular Biology and Therapeutics Program and Cardiovascular Medicine Seminar, Yale University, New Haven, CT
- » Session Chair, 43rd International Aldosterone Conference, "Aldosterone and Vascular Function", Chicago, IL

Navin Kapur, MD

- » Symposium Speaker, 15th Annual Cardiovascular Symposium, American College of Cardiology Foundation, Ponte Vedra Beach, FL
- » Invited Speaker, Grand Rounds, American College of Cardiology/Mayo Program, Jacksonville, FL
- » Invited Speaker, Cardiology Grand Rounds, Johns Hopkins Medical Center, Baltimore, MD

- » Invited Speaker, American College of Cardiology (ACC) Annual Meeting, Orlando, FL
- » Invited Speaker, American Heart Association Scientific Sessions, Chicago, IL
- » Symposium Speaker, 4th Annual BronxHeart Symposium: Innovations in Heart Failure, Transplantation and Mechanical Circulatory Support, Bronx, NY
- » Invited Faculty Speaker, Cardiovascular Innovations 2018, Denver, CO
- » Invited Speaker, 3rd Annual Devices in Heart Failure, Berlin, Germany
- » Invited Speaker, Euro-PCR, Paris, France
- » Co-Chair, Acute Cardiac Unloading and REcovery (ACURE) Group
- » Associate Editor, Circulation Heart Failure

Alan Kopin, MD

- » Chief Scientific Officer, Luke Heller TECPR2 Foundation
- » Panelist, Artificial Intelligence in Pharma Summit, Boston, MA

Mary Wallingford, PhD

- » Invited Speaker, Society for Developmental Biology Annual Meeting, Portland, OR



PUBLICATIONS



Cardiology and the Cardiovascular Center

1. Adamson PD, Fordyce CB, McAllister DA, Udelson JE, Douglas PS, Newby DE. Identification of patients with stable chest pain deriving minimal value from coronary computed tomography angiography: An external validation of the PROMISE minimal-risk tool. *Int J Cardiol.* 2018 Feb 1;252:31-34. doi: 10.1016/j.ijcard.2017.09.033. PubMed [citation] PMID: 29249436, PMCID: PMC5761719
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