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CHAIRMAN’S MESSAGE

The Department of Medicine is proud to have been a major contributor to two major achievements of Tufts Medical Center in 2010, namely, the impressive growth of its physician network and its national recognition as a leader in quality of care.

The addition of MetroWest Medical Center’s affiliated physician group, the SouthCoast Physicians Network and Pediatric Affiliates of Brockton made the Tufts network, known as the New England Quality Care Alliance (NEQCA), now with approximately 1500 physicians, one of the largest physicians’ networks in Massachusetts. In addition, Quincy Medical Center and MetroWest Medical Center selected Tufts Medical Center as a partner in the care of adult patients.

Tufts Medical Center was recognized by the University HealthCare Consortium as among the top ten teaching hospitals in the country for quality, safety and the patient experience. A report by the Joint Commission gave Tufts Medical Center the highest marks of any Boston academic medical center in several categories, including heart failure, pneumonia, and myocardial infarction. Tufts Medical Center achieved striking improvements in a number of quality measures, including central-line associated bacteremia infections, pressure ulcers, and falls, complications that are among the most difficult to avoid. The Department of Medicine contributed extensively to hospital-wide efforts in the design and execution of new approaches.

Clinical activity was robust in 2010. The Department of Medicine had an increase of 7% in hospital discharges and 4% in outpatient activity in 2010. Both of these increases were gratifying at a time of decreased activity in many other academic centers. In part, the increases reflect the efforts of the Division of Internal Medicine and Adult Primary Care which recruited six new primary care physicians in 2010 and expanded the patient panel by over 7%.

Research activity remained strong in 2010 despite the termination of many single-year grants relating to the 2009 American Recovery and Reinvestment Act. Impressively, over 90% of research revenues originated from the federal government or foundations.

The individual divisions and its members received many honors, including the award of research grants, the publication of research in prestigious journals, national recognition in the form of speaking engagements and honorary lectureships, and nomination to leadership positions on major committees and panels. A few examples follow: Dr. Jerome Kassirer was named Co-Chair of the National Academy of Sciences Committee to revise the Scientific Reference Manual; Dr. Robert Russell served as President of the American Society of Nutrition for 2010; and Dr. Nicholas Hill was named President-elect of the American Thoracic Society. The Division of Endocrinology achieved a 36% rate of reversal of type 2 diabetes in the Diabetes Reversal Program and developed evidence that vitamin D may be a tool in the prevention of cardiometabolic disease. The Division of Internal Medicine and Adult Primary Care obtained the highest quality performance measures among NEQCA physicians in screening for diabetes, cancer and hypertension. The Division of Cardiology expanded several of its programs and continued to offer the largest programs in cardiac transplantation and ventricular assist in the New England region. The Divisions of Nephrology and Endocrinology were again ranked in the 50 best hospitals for nephrology in US News and World Report.

For an overview of the distinguished histories of our many divisions and for a more detailed account of the achievements of the Department of Medicine in 2010, I invite you to browse through the pages of this report.

Deeb N. Salem, MD—The Sheldon M. Wolff Professor and Chairman, Department of Medicine
**The Divisions**

- **Allergy**  
  John Ohman, MD

- **Cardiology**  
  James Udelson, MD

- **Clinical Decision Making, Informatics and Telemedicine**  
  John Wong, MD

- **Clinical Nutrition**  
  Edward Saltzman, MD

- **Endocrinology**  
  Ron Lechan, MD

- **Gastroenterology**  
  Joel Weinstock, MD

- **Internal Medicine and Adult Primary Care**  
  Michael Wagner, MD

- **Geographic Medicine and Infectious Disease**  
  David Snydman, MD

- **Hematology/Oncology**  
  Richard Van Etten, MD, PhD

- **Nephrology**  
  Andrew Levey, MD

- **Pulmonary, Critical Care and Sleep Medicine**  
  Nicholas Hill, MD

- **Rheumatology**  
  Timothy McAlindon, MD

**The Institutes**

- **Institute for Clinical Research and Health Policy Studies**  
  Harry Selker, MD

- **Molecular Cardiology Research Institute**  
  Michael Mendelsohn, MD

- **Molecular Oncology Research Institute**  
  Philip Tsichlis, MD

*These Institutes do not report directly to the Department of Medicine but interact extensively with the Department. Many of their members belong to divisions within the Department of Medicine.*
Dr. Deeb Salem has had a distinguished career as an academic cardiologist. In 1987, he was appointed Professor of Medicine at Tufts University School of Medicine. He served as Chief of Cardiology at the New England Medical Center from 1987 to 1995 and was appointed the Sheldon M Wolff Professor and Chairman of the Department of Medicine at Tufts University School of Medicine and Physician-in-Chief of Tufts Medical Center in 1999. He is a Fellow of the American College of Cardiology, the American College of Physicians, and the American College of Chest Physicians.

Dr. Salem was the founding President of the New England Affiliate of the American Heart Association. His academic accomplishments include over one hundred and seventy scientific publications. He is recognized as a national expert in coronary artery disease, valvular heart disease and congestive heart failure. Dr. Salem received the Distinguished Alumni Award from Boston University School of Medicine in 1998, the 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. 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, the Asian American Civic Association, the New England Quality Care Alliance, the Tufts Medical Center Physicians Organization, the Tufts Health Care Institute, and the Ray Tye Medical Foundation.

Dr. Salem is on the National Youth Leadership Forum on Medicine’s Board of Advisors in Boston. 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. He currently is on the Executive Advisory Board of the New England Journal of Medicine.

Dr. Barza is Vice Chair for Clinical Affairs at Tufts Medical Center and 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.

Dr. Barza 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 200 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 is currently Chief of Medicine. 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 is currently Deputy Editor of Clinical Infectious Diseases, a premier infectious disease journal.

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.

**Linden T. Hu, MD**

Linden T. Hu, MD, was appointed Vice-Chairman for Faculty Development for the Department of Medicine in 2008. He is also Associate Chief for Research in the Division of Geographic Medicine and Infectious Diseases at Tufts Medical Center. He is an Associate Professor of Medicine at Tufts University School of Medicine.

After receiving his MD from Brown University, Dr. Hu did an internship and residency in internal medicine at St. Elizabeth’s Medical Center in Boston. He completed a fellowship in Infectious Diseases at Tufts Medical Center.
Dr. Hu is involved in both clinical and laboratory based research into Lyme disease. His focus is on the mechanisms by which the spirochete adapts to its various natural hosts and evades the host immune responses. His laboratory is also developing reservoir-targeted vaccines to reduce transmission of tick borne diseases in the wild. Recently, his laboratory has begun to investigate interactions in bacterial communities using a dental model of periodontitis. He is an author or co-author of over 40 peer-reviewed publications and his laboratory is supported by 7 grants from the NIH.

Dr. Hu has been a member or Chairman of numerous peer review committees for the NIH and the National Research Fund for Tick-borne Diseases. He has received a Daland Fellowship from the American Philosophical Society and the Maxwell Finland Award from the Massachusetts Infectious Disease Society and is a Fellow of the Infectious Disease Society of America. In 2010, he was elected to the American Society for Clinical Investigation. Dr. Hu teaches at Tufts Medical School and at the Sackler School of Graduate Biomedical Studies where he is training faculty in the Programs in Microbiology and in Immunology.

Richard H. Karas, MD, PhD

Richard H. Karas, MD, PhD, has served as Vice-Chairman for Research for the Department of Medicine since 2008. He is also the interim Chief Scientific Officer, Executive Director of the Molecular Cardiology Research Institute, Director of the Preventive Cardiology Center, and Co-director of the Women’s Heart Center at Tufts Medical Center. He is a Elisa Kent Mendelsohn Professor of Medicine at Tufts University School of Medicine.

Before earning his medical degree from the Tufts University School of Medicine, Dr Karas received a PhD in comparative physiology of exercise from Harvard University. After internship and residency in internal medicine at the Brigham and Women’s Hospital, Boston, he completed a clinical fellowship in cardiology at Duke University Medical Center and a research fellowship in cardiology at the University of Texas Southwestern Medical Center, Dallas.

Dr Karas’ main areas of research, supported by grants from the NIH, are the effects of steroid sex hormones on vascular cell biology, mouse models of cardiovascular disease, and the effects of lipid-lowering and hormone therapies on vasomotor function. He has been an author or co-author of over 140 scientific articles, reviews, and book chapters.

Dr Karas serves on the American Heart Association Region II Peer Review Committee, and is the Chairman of the National American Heart Association committee on Cardiovascular Diseases in Women and Special Populations. At the Howard Hughes Medical Institute, he was a member of the Review Committee for Research Training Fellowships for Medical Students. He has also been an ad hoc member of peer review committees for the NIH and the Swiss National Science Foundation. He has been an editorial board member for Endocrinology and Atherosclerosis. He was awarded the Pfizer Postdoctoral Fellowship in Cardiology, the Young Investigators Award from the American College of Cardiology, and a Established Investigator Award from the American Heart Association. Dr. Karas is also the recipient of this year’s Kynett Foundation Award.

Dr Karas is a fellow of the American Heart Association and of the American College of Cardiology. He is a member of the Endocrine Society, the North American Menopause Society, and the American Heart Association’s Basic Science Council, Council on Epidemiology and Prevention, and the Clinical Cardiology Council.

Jerome P. Kassirer, M.D.

Dr. Kassirer has been a member of the faculty of Tufts University School of Medicine for more than four 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 is the recipient of numerous awards, several honorary degrees, and a Mastership in 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 Distinguished Professor at Tufts University School of Medicine and Visiting Professor at Stanford University. He has written extensively about health care, for-profit medicine, and financial conflict of interest. He is the author of the current Oxford University Press book, "On the Take: How Medicine’s Complicity with Big Business Can Endanger Your Health," and a co-author of the book “Learning Clinical Reasoning.”

Richard Kopelman, MD

Richard Kopelman, MD, is the Vice-Chairman for Education in the Department of Medicine and the Louisa C. Endicott Professor of Medicine at Tufts University School of Medicine. He 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 72 interns and residents. He is an active member of the Association of Program Directors in Internal Medicine as well as 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.

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.

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.

Craig Williams, MBA

Craig Williams is the Senior Vice President for Medicine Operations for the Department of Medicine, Tufts Medical Center, and Tufts Medical Center Physicians Organization. Prior to joining Tufts Medical Center, he worked at Brigham & Women’s Hospital and Partners Healthcare System. Mr. Williams has been working in the healthcare industry for 15 years. Most of his career has concentrated on healthcare finance, reimbursement, and planning issues. However, over the past ten years he has focused on Hospital and Physician Practice Operations.

Mr. Williams has a Master of Business Administration with a Health Concentration Degree from Suffolk University. His undergraduate degree is a Bachelor of Science in Business Administration from Framingham State University.
CLINICAL ACTIVITY

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

The table below shows the inpatient volumes for the Department of Medicine at Tufts Medical Center. Overall, total inpatient discharges increased by almost 7% from FY 2009 to FY2010.

<table>
<thead>
<tr>
<th>Attending Service</th>
<th>Fiscal Year 2009 Actual</th>
<th>Fiscal Year 2010 Actual</th>
<th>% Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cardiology</td>
<td>2,319</td>
<td>2,405</td>
<td>4%</td>
</tr>
<tr>
<td>Gastroenterology</td>
<td>642</td>
<td>684</td>
<td>7%</td>
</tr>
<tr>
<td>General Internal Medicine</td>
<td>1,131</td>
<td>1,290</td>
<td>14%</td>
</tr>
<tr>
<td>Geographic Medicine and Infectious Disease</td>
<td>727</td>
<td>784</td>
<td>8%</td>
</tr>
<tr>
<td>Hematology/Oncology</td>
<td>1,075</td>
<td>1,128</td>
<td>5%</td>
</tr>
<tr>
<td>Nephrology</td>
<td>1,130</td>
<td>1,258</td>
<td>11%</td>
</tr>
<tr>
<td>Pulmonary, Critical Care and Sleep Medicine</td>
<td>937</td>
<td>980</td>
<td>5%</td>
</tr>
</tbody>
</table>

The table below outlines the ambulatory visit volumes for the Department at Tufts Medical Center. Ambulatory visits grew by almost 4% in FY 2010.

<table>
<thead>
<tr>
<th>Division</th>
<th>Fiscal Year 2009 Actual</th>
<th>Fiscal Year 2010 Actual</th>
<th>% Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cardiology</td>
<td>11,190</td>
<td>11,747</td>
<td>5%</td>
</tr>
<tr>
<td>Endocrine</td>
<td>6,238</td>
<td>6,111</td>
<td>-2%</td>
</tr>
<tr>
<td>Gastroenterology</td>
<td>5,975</td>
<td>6,570</td>
<td>10%</td>
</tr>
<tr>
<td>General Internal Medicine</td>
<td>60,206</td>
<td>64,653</td>
<td>7%</td>
</tr>
<tr>
<td>Geographic Medicine and Infectious Disease</td>
<td>4,975</td>
<td>4,766</td>
<td>-4%</td>
</tr>
<tr>
<td>GI/Nutrition-Obesity Clinic</td>
<td>186</td>
<td>127</td>
<td>-32%</td>
</tr>
<tr>
<td>Hematology/Oncology</td>
<td>7,955</td>
<td>7,399</td>
<td>-7%</td>
</tr>
<tr>
<td>Nephrology</td>
<td>5,424</td>
<td>5,256</td>
<td>-3%</td>
</tr>
<tr>
<td>Pulmonary, Critical Care and Sleep Medicine</td>
<td>3,969</td>
<td>4,342</td>
<td>9%</td>
</tr>
<tr>
<td>Rheumatology</td>
<td>5,416</td>
<td>5,405</td>
<td>0%</td>
</tr>
</tbody>
</table>
Clinical professional revenue grew overall by 2% between 2009 and 2010, as shown below. A few Divisions had declines in revenue from the prior year; in most cases these were minor. GI/Nutrition had a significant decline because a key member of the faculty left the Practice in FY 2010. The Division of Pulmonary, Critical Care and Sleep Medicine also showed a decline because a decision was made in 2010 to have the supervision of intensive care patients with neurological issues moved from the Division to Neurology; this resulted in a change in billing attributions.

<table>
<thead>
<tr>
<th>Division</th>
<th>Fiscal Year 2009 Actual</th>
<th>Fiscal Year 2010 Actual</th>
<th>% Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cardiology</td>
<td>$6,250,412</td>
<td>$6,954,986</td>
<td>11%</td>
</tr>
<tr>
<td>Endocrinology</td>
<td>736,747</td>
<td>704,964</td>
<td>-4%</td>
</tr>
<tr>
<td>Gastroenterology</td>
<td>3,010,982</td>
<td>3,261,500</td>
<td>8%</td>
</tr>
<tr>
<td>General Internal Medicine</td>
<td>5,436,657</td>
<td>5,531,871</td>
<td>2%</td>
</tr>
<tr>
<td>Geographic Medicine and Infectious Disease</td>
<td>1,926,065</td>
<td>1,912,544</td>
<td>-1%</td>
</tr>
<tr>
<td>GI/Nutrition-Obesity Clinic</td>
<td>323,159</td>
<td>26,891</td>
<td>-92%</td>
</tr>
<tr>
<td>Hematology/Oncology</td>
<td>2,098,794</td>
<td>2,230,266</td>
<td>6%</td>
</tr>
<tr>
<td>Nephrology</td>
<td>3,181,983</td>
<td>3,215,797</td>
<td>1%</td>
</tr>
<tr>
<td>Pulmonary, Critical Care and Sleep Medicine</td>
<td>2,695,658</td>
<td>2,388,876</td>
<td>-11%</td>
</tr>
<tr>
<td>Rheumatology</td>
<td>653,465</td>
<td>682,467</td>
<td>4%</td>
</tr>
<tr>
<td>Grand Totals</td>
<td>26,313,922</td>
<td>26,910,162</td>
<td>2%</td>
</tr>
</tbody>
</table>

In summary, there has been modest growth in clinical activity and in clinical revenue. A major challenge for the Department, as for most Departments of Medicine, will be the continued downward pressure on reimbursement from both governmental and insurance payers. The Department will strive to derive its revenue growth through increased clinical productivity at the individual physician level and through targeted recruitments.
RESEARCH ACTIVITY

The Department of Medicine has a wide variety of clinical and basic research programs. Most basic research is conducted in the Tupper Research Institute, whereas clinical research programs are based primarily at 35 Kneeland Street and within the Tufts Medical Center. Many members of the Department of Medicine conduct their research within the Molecular Cardiology Research Institute (located in the Tupper Building), the Molecular Oncology Research Institute (located at 75 Kneeland Street), 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 10, with increase/decreases from the prior year noted in parentheses. Decreases noted for federal awards are primarily due the closing of many of the single year grants theDOM received in response to the 2009 American Recovery and Reinvestment Act funding opportunities. In addition to the awards referenced below, Geographic Medicine and Infectious Diseases received a $0.5M award from the NIH to purchase a genome sequencer. Further specific details are shown in the individual Division and Institute reports.

<table>
<thead>
<tr>
<th>Division/Institute</th>
<th>R Series (incl. supplements)</th>
<th>K Series</th>
<th>U Awards (incl. supplements)</th>
<th>P Awards</th>
<th>Contracts &amp; Sub-contracts</th>
<th>Foundation Grants</th>
<th>Clinical Trials</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cardiology</td>
<td>2 (0)</td>
<td>1 (0)</td>
<td>1 (0)</td>
<td>0</td>
<td>2 (0)</td>
<td>0 (-1)</td>
<td>24 (-3)</td>
</tr>
<tr>
<td>Clinical Decision Making</td>
<td>0 (0)</td>
<td>0 (0)</td>
<td>0 (0)</td>
<td>1 (0)</td>
<td>3 (+1)</td>
<td>0</td>
<td>N/A</td>
</tr>
<tr>
<td>Endocrinology</td>
<td>6 (0)</td>
<td>1 (0)</td>
<td>0 (0)</td>
<td>0 (0)</td>
<td>0 (0)</td>
<td>1 (0)</td>
<td>3 (+1)</td>
</tr>
<tr>
<td>Gastroenterology</td>
<td>5 (+2)</td>
<td>2 (0)</td>
<td>0 (0)</td>
<td>0 (0)</td>
<td>2 (0)</td>
<td>3 (0)</td>
<td>6 (+2)</td>
</tr>
<tr>
<td>Geographic Medicine and Infectious Disease</td>
<td>17 (+2)</td>
<td>8 (+2)</td>
<td>3 (-1)</td>
<td>5 (0)</td>
<td>15 (+4)</td>
<td>8 (0)</td>
<td>8 (-2)</td>
</tr>
<tr>
<td>Internal Medicine and Adult Primary Care</td>
<td>0 (0)</td>
<td>0 (0)</td>
<td>0 (0)</td>
<td>0 (0)</td>
<td>1 (+1)</td>
<td>0</td>
<td>0 (0)</td>
</tr>
<tr>
<td>Hematology/Oncology &amp; Cancer Center</td>
<td>0 (0)</td>
<td>0 (0)</td>
<td>1 (0)</td>
<td>2 (+1)</td>
<td>1 (0)</td>
<td>2 (0)</td>
<td>26 (0)</td>
</tr>
<tr>
<td>Nephrology</td>
<td>9 (+2)</td>
<td>8 (+1)</td>
<td>4 (+2)</td>
<td>1 (0)</td>
<td>7 (+2)</td>
<td>17 (-1)</td>
<td>6 (0)</td>
</tr>
<tr>
<td>Pulmonary</td>
<td>7 (+1)</td>
<td>2 (-1)</td>
<td>0 (0)</td>
<td>0 (0)</td>
<td>2 (+1)</td>
<td>3 (-1)</td>
<td>29 (+10)</td>
</tr>
<tr>
<td>Rheumatology</td>
<td>5 (+1)</td>
<td>0 (0)</td>
<td>0 (0)</td>
<td>0 (0)</td>
<td>4 (0)</td>
<td>1 (-2)</td>
<td>7 (0)</td>
</tr>
<tr>
<td>Institute for Clinical Research and Health Policy Studies</td>
<td>11 (+4)</td>
<td>3 (0)</td>
<td>3 (-1)</td>
<td>1 (-3)</td>
<td>49 (+25)</td>
<td>7 (+2)</td>
<td>N/A</td>
</tr>
<tr>
<td>Molecular Cardiology Research Institute</td>
<td>29 (+2)</td>
<td>2 (0)</td>
<td>0 (0)</td>
<td>1 (0)</td>
<td>2 (+1)</td>
<td>20 (+6)</td>
<td>N/A</td>
</tr>
<tr>
<td>Molecular Oncology Research Institute</td>
<td>29 (+3)</td>
<td>2 (+1)</td>
<td>1 (+1)</td>
<td>0 (0)</td>
<td>3 (-6)</td>
<td>29 (+13)</td>
<td>N/A</td>
</tr>
</tbody>
</table>

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 09.

2 Clinical Trial numbers reflect trials with activity during the fiscal year (not # of executed agreements)
FY '10 Total Grant and Contract Revenue ($46.6M)

FY '10 Sources of Revenue

Industry, 7.1%

Foundation, 9.2%

NIH, 83.7%
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 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.
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 and Telemedicine 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.
The Allergy Division offers programs to address a wide variety of allergic conditions such as allergic rhinitis, allergic asthma, eczema, food allergy, drug allergy, sinusitis, urticaria and angioedema. The staff works closely with colleagues in inpatient pharmacy and infectious disease to develop pathways for evaluation of patients with drug allergy as well as protocols for skin testing for hypersensitivity and desensitization procedures. The division also participates in the evaluation of the immune status of patients with frequent infections to rule out immunodeficiency such as common variable immunodeficiency. Other specialties with which the Division of Allergy maintains close collaboration are otolaryngology, dermatology and gastroenterology.

### Faculty

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<tr>
<th>Name</th>
<th>Academic Rank</th>
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<tbody>
<tr>
<td>John L. Ohman, MD</td>
<td>Clinical Professor</td>
<td>Chief of Division</td>
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<tr>
<td>Weihong Zheng, MD</td>
<td>Assistant Professor</td>
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### Clinical Programs

There is an active outpatient clinic that provides evaluation and treatment of allergic diseases through referrals from within the hospital and from an increasing base of community physicians. Assessment of the allergic component of asthma, chronic rhinitis and eczema accounts for approximately half of outpatient activity. Division members also treat diverse conditions as food allergy, insect sting anaphylaxis, drug allergy, various anaphylactic syndromes including exercise induced anaphylaxis and angioedema and eosinophilic syndromes including eosinophilic esophagitis and vasculitis.

Specialized treatments are available through the Allergy Division including allergen immunotherapy inhalant allergy and insect sting allergy. Outpatient oral desensitization procedures have been developed for including aspirin desensitization for asthmatic patients with nasal polyps. Inpatient consultations for drug allergy and other allergic disorders are provided.

### Community Outreach Programs

Division staff have given presentations on local TV and radio stations about the prevention and treatment of allergy and asthma. The staff has been active in reaching out to the Mandarin speaking population of Boston to increase their awareness of the services offered by the Allergy Division. This outreach includes educational articles in Chinese language newspapers.

### Teaching Programs

Residents from the Internal Medicine Program rotate through the Allergy Division on a regular basis. Those with a particular interest in Allergy and Clinical Immunology have opportunities to participate in extra clinical sessions and are encouraged to do literature surveys and extended evaluations of complicated patients. House staff members expressing an interest in allergy have been encouraged and supported; two have had abstracts accepted for presentation at national meetings. Recent house staff members have been recommended for fellowship positions in Allergy and Clinical Immunology and have been accepted in well recognized training programs including Scripps Clinic, Brigham and Women’s Hospital, Baylor College of Medicine and University of Virginia College of Medicine.

The staff provides General Medical Associates with Educational Seminars on topics of food allergy. Division staff have given presentations on “atopic march” and food allergy to the residents and attending physicians in the medical grand rounds at Carney Hospital.
DIVISION OF CARDIOLOGY

Overview

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 within cardiology, including clinical cardiology, cardiac catheterization and intervention, echocardiography, 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. Today, under the guidance of James Udelson MD, the Division of Cardiology continues to grow. The advanced heart failure and cardiac transplantation program is the largest in New England, the comprehensive Hypertrophic Cardiomyopathy (HCM) Center remains the most active in the Northeast, and the cardiac catheterization and electrophysiology laboratories show steady growth in patients, providers and new techniques.

The Division maintains outreach programs to a number of regional hospitals, including Lahey Clinic, Rhode Island Hospital, Miriam Hospital, Morton Hospital, Jordan Hospital, and the University of Massachusetts Medical Center. Cardiology fellows from neighboring institutions spend time at Tufts Medical Center to learn the latest techniques in management of advanced heart failure. The Division operates offsite imaging and consultation centers in Wellesley, Brockton and Norwood. The Arrhythmia Center has special expertise in the area of sudden cardiac death, both in elite athletes and in the general public. State-of-the-art imaging capabilities are available using echocardiography, nuclear imaging, CT and MRI, and advanced percutaneous procedures are performed daily at Tufts.

Cardiologists at Tufts Medical Center participate in a wide variety of clinical, translational and basic science research projects sponsored by the NIH, industry, and other sources. There is extensive collaboration and shared faculty with the Molecular Cardiology Research Institute. Clinical trials are underway to study improved techniques for coronary angioplasty, more durable and convenient ventricular assist devices, automated external defibrillators, nuclear imaging for assessment of infarct viability and remodeling, approaches to the assessment of vascular function, and novel therapies for atherosclerosis.

Highlights of 2010

» Largest cardiac transplantation and ventricular assist programs in the New England region
» Advanced capabilities for performing electrophysiology mapping and ablations
» Expanded lead extraction program
» Growing percutaneous support device programs in the Catheterization Laboratory
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<tr>
<th>Name</th>
<th>Academic Rank</th>
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<tbody>
<tr>
<td>Marvin Konstam, MD</td>
<td>Professor</td>
<td>Executive Director, Cardiovascular Center</td>
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<tr>
<td>James Udelson, MD</td>
<td>Professor</td>
<td>Chief, Division of Cardiology</td>
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<td>Director, Nuclear Cardiology</td>
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<tr>
<td>Robert Blanton, MD</td>
<td>Assistant Professor</td>
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<td>Laurence Conway, MD</td>
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<td>Gregory Corrodi, MD</td>
<td>Assistant Professor</td>
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<tr>
<td>David DeNofrio, MD</td>
<td>Associate Professor</td>
<td>Director, Heart Failure and Transplantation</td>
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<td>Brian Downey, MD</td>
<td>Assistant Professor</td>
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<td>Mohamad El-Zaru, MD</td>
<td>Assistant Professor</td>
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<tr>
<td>N. A. Mark Estes, MD</td>
<td>Professor</td>
<td>Director, Cardiac Electrophysiology</td>
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<tr>
<td>Caroline Foote, MD</td>
<td>Assistant Professor</td>
<td>Co-Director, Women's Heart Center</td>
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<td>Solomon Gabbay, MD</td>
<td>Assistant Professor</td>
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<td>Jonas Galper, MD, PhD</td>
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<tr>
<td>Ania Garlitski, MD</td>
<td>Assistant Professor</td>
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<td>Jean-Pierre Geagea, MD</td>
<td>Assistant Professor</td>
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<tr>
<td>Munther Homoud, MD</td>
<td>Associate Professor</td>
<td>Director, Electrophysiology Fellowship Program; Director, TUSM Cardiac Pathophysiology Course</td>
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<tr>
<td>Gordon Huggins, MD</td>
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<td>Iris Jaffe, MD, PhD</td>
<td>Assistant Professor</td>
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<td>Navin Kapur, MD</td>
<td>Assistant Professor</td>
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<tr>
<td>Richard Karas, MD, PhD</td>
<td>Professor</td>
<td>Vice-Chairman of Medicine; Interim Chief Science Officer; Director, Molecular Cardiology Research Institute; Director, Preventive Cardiology; Co-Director, Women’s Heart Center</td>
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<tr>
<td>Michael Kiernan, MD</td>
<td>Assistant Professor</td>
<td>Medical Director, LVAD Program</td>
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<tr>
<td>Carey Kimmelstiel, MD</td>
<td>Associate Professor</td>
<td>Director, Cardiac Catheterization Laboratory; Director, Interventional Cardiology Fellowship Program</td>
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<tr>
<td>Alan Kono, MD</td>
<td>Assistant Professor</td>
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<tr>
<td>Jeffrey Kuvin, MD</td>
<td>Associate Professor</td>
<td>Associate Chief of Cardiology; Director, Cardiovascular; Education and Fellowship Training</td>
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<td>Douglas Laidlaw, MD</td>
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<tr>
<td>Mark Link, MD</td>
<td>Professor</td>
<td>Director, Heart Station; Co-Director Hypertrophic Cardiomyopathy Center</td>
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<td>Henry Lyle, MD</td>
<td>Assistant Professor</td>
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<td>Anthony Marks, MD</td>
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<tr>
<td>Martin Maron, MD</td>
<td>Assistant Professor</td>
<td>Director, Hypertrophic Cardiomyopathy Center; Co-Director, Cardiovascular CT and MRI</td>
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<tr>
<td>Borzoo Nikpoor, MD</td>
<td>Assistant Professor</td>
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<tr>
<td>Natesa Pandian, MD</td>
<td>Professor</td>
<td>Co-Director, Comprehensive Cardiovascular Imaging</td>
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<tr>
<td>Ayan Patel, MD</td>
<td>Associate Professor</td>
<td>Director, CardioVascular Imaging Center; Director, Echocardiography Laboratory; Director, Women’s Heart Center</td>
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<tr>
<td>Stephen Pauker, MD</td>
<td>Professor</td>
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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 occupy preeminent positions amongst the premier cardiovascular programs throughout 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 performs state-of-the-art procedures such as septal ablation for hypertrophic cardiomyopathy (HCM), valvuloplasty, percutaneous mechanical support for high risk coronary intervention and advanced heart failure, and transcatheter treatment of a variety of congenital defects such as patent foramen ovale, atrial septal defects and aortic coarctation. The Interventional Cardiology Program participates in major multi-center clinical trials as well as investigator-initiated research. In the past year, the laboratory has continued to recruit patients into trials of newer-generation drug-eluting stents as well as cutting-edge pharmacologic studies including one examining stem cell therapy in the treatment of patients with recent myocardial infarction. The interventional research staff has received accolades for the scope and quality of their enrollment efforts. The program actively pursues investigator-initiated, single-center studies. Examples of this type of investigation include Dr. Carey Kimmelstiel’s collaboration with Dr. David Thaler, of the Department of Neurology, which led to data documenting a significant reduction in migraine symptoms in patients who underwent closure of a patent foramen ovale. Drs. Kimmelstiel, Kapur and Weintraub have recently collaborated with basic scientists in the Tufts Molecular Oncology Research Institute in a mechanistic study which has defined the anti-platelet effects of bivalirudin specifically elucidating the inhibitory effect of this drug on platelet thrombin receptors.

Dr. Andrew Weintraub, along with colleagues from nephrology, examined the effect of nesiritide on the incidence of contrast nephropathy. Other examples of such investigations include the effect of pharmacologic adjuncts to PCI on platelet function. The Hypertrophic Cardiomyopathy Center provides a large number of physiologic studies for HCM and alcohol septal ablation. Several current studies involving alcohol septal ablation allow collaboration between the interventional staff and colleagues in the heart failure arena.

Dr. Navin Kapur, Assistant Director of the Cardiac Catheterization Laboratory, joined the Division in 2007. His clinical research focuses on the hemodynamics and application of percutaneous mechanical support devices (pMSD).

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<th>Name</th>
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<tr>
<td>Deeb Salem, MD</td>
<td>Professor</td>
<td>Chairman of Medicine</td>
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<td>Gordon Saperia, MD</td>
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<td>Sushil Singh, MD</td>
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<td>Jeffrey Shih, MD</td>
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<td>Syed Tahir, MD</td>
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<td>Jonathan Weinstock, MD</td>
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<td>Andrew Weintraub, MD</td>
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Since 2009, Tufts Medical Center has established a national presence through the SCAI, AHA, and TCT as a leader in the field of pMSD. Furthermore, Tufts Medical Center has research collaborations with several pMSD industry leaders and is the primary Northeast training center for CardiacAssist, Inc. 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 surgically implanted cardiac assist devices. Dr. Kapur also supervises an NIH-funded molecular research laboratory at the Molecular Cardiology Research Institute at Tufts Medical Center that focuses on basic and translational research involving angiogenic peptides and molecular remodeling in heart failure. Several national presentations, publications, and four patents were submitted in 2010 from Dr. Kapur’s laboratory. Participation in these initiatives has enabled the Division to attract patients to the service, and contribute to medical research. In addition, 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. Dr. Kapur is also an investigator at the Molecular Cardiology Research Institute (MCRI). For details of his research at the Institute, please see that section.

The laboratory participates in benchmarking outcomes with the American College of Cardiology and the National Catheterization Data Registry. This allows the Division to compare its interventional outcomes with those of other programs throughout the country and fosters a high standard of quality.

Dr. Andrew Weintraub, Associate Director of the Cardiac Catheterization Laboratory and the Director of the Coronary Care Unit, 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. Collaboration with Vascular Surgery and community-based cardiology practices has led to marked growth in the past year. Delivery of vascular care includes care of the claudicant as well as care for critical limb ischemia. Together with vascular surgery, the Cardiac Cath Lab is participating in investigation with a novel arterial access closure device. In addition, Dr. Weintraub has designed a trial to estimate the size of vessels in a novel and precise manner. Dr. Weintraub was the site investigator for a clinical trial studying the effect of a cardiac device on infarct size in patient suffering from ST elevation myocardial infarction. Tufts Medical Center was the third leading enrolling site in the United States.

Dr. Kimmelstiel is active in clinical trials and he serves on many clinical assessment, steering and data and safety monitoring committees. In addition, he has been the local leader in numerous industry-sponsored coronary disease studies. He has recently completed a single-center study documenting previously undescribed anti-platelet effects of bivalirudin. He has recently been named national principle investigator of a large drug-eluting stenting trial.

The New England Cardiac Arrhythmia Center

N. A. Mark Estes, 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 five board-certified electrophysiologists. Physicians and staff provide comprehensive evaluation and management of patients with cardiac arrhythmia with an emphasis on communicating in a timely fashion with patients and members of the health care team. Nurse practitioners respond to routine patient 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, radiofrequency ablations, defibrillator and pacemaker implantations, tilt table tests, and cardioversions. A state-of-the-art ablation laboratory provides the most advanced imaging and mapping capabilities to address almost all supraventricular arrhythmias and many ventricular arrhythmias. With an advanced mapping system available, 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 for four 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 attendings serve as invited faculty at the major national and international meetings.

Clinical research is conducted by all staff electrophysiologists. 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 and MADIT-RIT Trials as well as the NIH-funded “Multidisciplinary Study of Right Ventricular Dysplasia” (ARVD). This last-named trial is a multidisciplinary, multi-center, study of the cardiac, clinical, and genetic aspects of arrhythmogenic right ventricular dysplasia (ARVD). Dr. Estes conducts research on the prevention of sudden death by means of Automated External Defibrillators (AEDs) with several publications related to program development, clinical utility, legislative policy, and legal risks of the devices.

Dr. Mark Link has undertaken several new clinical studies including the Multicenter, Automatic Defibrillator Implantation Cardiac Resynchronization Therapy Trial I (MADIT-CRT). His research into “commotio cordis” advances efforts to prevent sudden deaths resulting from precordial chest blows. Together with colleagues in the Tufts-MCRI, he is performing electrophysiologic investigations on knock-out mouse models. Dr. Weinstock served as the principal investigator in the Replace Trial and is serving in a similar role in the Echo_CRT Trial. Dr. Garlitski’s research interests are focused on improved mapping and ablation techniques for atrial fibrillation.

Physicians in the Center have been authors or coauthors of over 60 publications in the last two years.

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 remains a regional leader offering advanced therapies, including cardiac transplantation and mechanical ventricular assist device therapy, and for patients with Stage D heart failure.

The Center’s cardiac transplantation program performed 18 transplantation procedures in the 2010 calendar year. Additionally, over the last three-year period, the program has been the highest volume cardiac transplantation center in New England, performing 69 procedures. Following its 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 performs approximately 90 formal transplant evaluations per year.

The Center also maintains a vibrant mechanical ventricular assist device program to support patients with Stage D heart failure. Since 1998 over 150 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 under this new indication. The two main LVADs that are employed at our institution are the Thoratec HeartMate II and the HeartWare HVAD devices. The HeartWare device is currently under investigation and Tufts Medical Center is the only center in the Northeast utilizing this pump to treat refractory heart failure. In 2010 30 LVADs were placed for the treatment of Stage D heart failure, the most since the program’s inception.

The Division maintains heart failure outreach programs at Lahey Clinic, Rhode Island Hospital, Miriam Hospital, the University of Massachusetts Medical Center and Dartmouth-Hitchcock Medical Center. In addition, cardiologists from Lahey Clinic, Dartmouth-Hitchcock and Rhode Island Hospital also 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 Center participates in several clinical research investigations of new therapies for the treatment of all stage 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 Trial Network and is currently engaged in two Network protocols. One is examining the utility of sildenafil in patients with heart failure and preserved ejection fraction. The other is evaluating the utility of ultrafiltration in patients with acute heart failure complicated by cardiorenal syndrome. In addition, the Center has recently become an active member of the National Institute of Health’s Clinical Trials in Organ Transplantation (CTOT) Research Group. The Center is participating in the CTOT-11 trial examining the efficacy of rituximab in preventing the development of allograft coronary disease In heart transplant recipients. The development of premature coronary disease has been a major limitation to long-term survival following heart transplantation.
The Comprehensive Cardiovascular Imaging Center (echocardiography, nuclear cardiology, cardiac CT and cardiac MRI)

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. Dr. Natesa Pandian, Co-Director of the Cardiac Imaging Center, is internationally renowned and conducts educational seminars worldwide.

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, and cardiac hemodynamics; myocardial contrast imaging for evaluation of cardiac function; and assessment of cardiac dysynchrony in patients who are being evaluated for cardiac resynchronization therapy.

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, 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 done 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 Cardiac Imaging Core Laboratory completed work on the multi-center NHLBI-funded Occluded Artery Trial ancillary nuclear study (OAT-NUC), in which patients from the parent OAT trial underwent SPECT imaging for assessment of infarct zone viability and influence on remodeling. The initial data analysis was presented at a major national meeting. The IMMEDIATE Trial will assess infarct size from SPECT imaging in a subset of the patients enrolled in the NHLBI study of glucose-insulin-potassium given to patients with acute coronary syndromes in ambulances. Enrollment began in early 2007, and the biologic cohort study will begin during 2009. The Core Lab is also serving as a central quality control and analysis center for SPECT imaging performed in conjunction with 2 major federally-funded comparative effectiveness trials - the PROMISE trial, randomizing 10,000 patients with suspected CAD to an initial evaluation with functional testing (including stress SPECT perfusion imaging) or to an anatomic evaluation strategy (CT angiography), and RESCUE, a 4,000 patient trial of those with suspected CAD randomized to an initial evaluation with stress SPECT perfusion imaging or to CT angiography.

In conjunction with Dr. Patel and the Department of Radiology, Dr. Udelson and the administrative staff of the Division of Cardiology opened an off-site imaging center—Tufts Medical Center Imaging South—in Braintree during 2007. Stress testing with radionuclide perfusion imaging, echocardiography services, electrocardiography and Holter monitoring, as well as out-patient cardiology consultations, were made available. During 2008-9, there was substantial growth in the volume of non-invasive studies conducted at the Braintree site, serving numerous primary care physicians in the area.

Cardiac Computed Tomography and Magnetic Resonance Imaging

Martin Maron, MD, Kent Yucel, MD and Neil Halin, DO – Co-Directors

At Tufts Medical Center, a complete non-invasive assessment of the coronary arteries can now be 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. In addition, Tufts Medical Center has two Phillips Achieva XR 1.5T MRI magnets capable of the most advanced cardiac imaging. The cardiac MRI program will have a special focus on imaging for cardiomyopathies as well as structure/function and myocardial viability. The rapid technological advancements of both of these modalities have demonstrated their respective roles in detecting not only coronary artery disease, but also cardiac structure/function, myocardial viability and perfusion.

The Hypertrophic Cardiomyopathy Center

Martin S. Maron, MD - Director; Mark Link, MD, James E. Udelson, MD – Co-Directors

2010 marks the eighth 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 center utilizes traditional imaging techniques and advanced cardiac imaging techniques to accurately assess the extent of disease as well as to determine
optimal treatment. Surgeons working with the HCM center perform over 40 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 continues to be a leader in this area. 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 becoming a major research center for patients with HCM. Dr. Martin Maron has an NIH clinical research grant to investigate whether an aldosterone inhibitor (spironolactone) can modify the HCM phenotype by decreasing myocardial scarring/fibrosis. This study will be one of the only comprehensive evaluations of a novel drug therapy in HCM. Members of the Center have contributed to the current understanding of HCM through their work on exertional ischemia, 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, 30 manuscripts have been published from the HCM center at Tufts. The center has become established as one of the top HCM centers in the country.

The Preventive Cardiology Center
Richard Karas, MD, PhD – Director
The Preventive Cardiology Center (PCC) continues to provide risk factor assessment and management for patients with heart disease and those at an increased risk for cardiovascular disorders. The staff is composed of a multi-disciplinary team of cardiologists, fellows, pharmacists, and other health professionals. Staff members have instituted a number of new measures to enhance patients’ medication compliance.

Dr. Karas is a member of the basic science council and the epidemiology and prevention council of the American Heart Association. He also serves on several committees for the American Heart Association, including being the chair of the Committee on Cardiovascular Disease in Women and Special Populations, and serving on the Science Classification Task Force. He was recently a member of the Founder’s Affiliate Research Committee and chairman of the AHA National Molecular Signaling Peer Review Committee.

The Center continues to function as the main outpatient training experience for cardiovascular fellows at Tufts Medical Center. Numerous clinical research projects are based in the PCC, such as the effect of beta-blockers on ambulatory blood pressure and vascular function and the role of lipid altering therapy on endothelial function and cardiovascular events. The Vascular Function Study Group is working on novel approaches to the evaluation of endothelial function. The Group is enrolling patients in the IMPROVE-IT Study, a multi-center, multi-national study looking at 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 Vascular Function Study Group is also the core laboratory for numerous clinical studies using the surrogate marker of vascular endothelial function.

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, as well as to cardiologists, regarding prevention, diagnosis, and management of cardiovascular diseases in women. The center consists of a team of physicians with expertise in the management of lipid disorders and other cardiovascular risk factors, management of cardiac arrhythmias, and cardiovascular imaging/diagnostic testing in women. Nutritional counseling is also available in collaboration with the Frances Stern Nutrition Center. Dr. Richard Karas (Co-Director) and Dr. Ayan Patel have had a long-standing research interest in vascular health in women and Dr. Karas is internationally recognized as an expert on the effects of estrogen on the vasculature.

In addition to the Center’s activities at the Tufts Medical Center main campus, Dr. Caroline Foote (Co-Director) provides consultative services in Braintree, Massachusetts.

The Heart Station
Mark Link, MD – Director
The Heart Station is the epicenter for cardiovascular testing for electrocardiography and arrhythmia monitors. The Heart Station performed nearly 30,000 electrocardiograms amongst a variety of other cardiovascular tests, such as Holter and loop monitors, and cardiopulmonary stress tests.
Teaching Activities

Jeffrey Kuvim, MD—Director, Cardiovascular Education and Fellowship Training

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

Cardiology staff are involved with individual preceptorships and selectives with first year medical students. In addition, attending cardiologists teach small group lecture series on topics in cardiology. Staff provide didactic courses on the cardiovascular physical examination and also provide research mentorship to students throughout the year. Cardiology fellows work with students as they learn physical diagnosis.

Under the direction of Munther Homoud, MD, the cardiovascular pathophysiology course for second year Tufts medical students is a comprehensive series of lectures and small group discussions. 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 a weekly lecture on electrocardiography. Staff also serve as research mentors for medical students at all levels.

Bedside and didactic teaching of internal medicine house officers occurs daily during attending rounds. Numerous attending cardiologists have received recognition for outstanding teaching by the house staff. In addition, house staff are encouraged to attend Division conferences and to conduct research with the cardiology staff. Numerous members of the house staff present research at national research meetings and publish articles in the field.

Cardiovascular fellowship training and education at Tufts Medical Center is under the direction of Jeffrey Kuvim, MD. Fellowship positions are extremely competitive. The three-to-four year fellowship program provides state-of-the-art advanced training in all aspects of cardiovascular disease. Fellows participate in many ongoing research projects in the Division. Fellows present findings at regional and national meetings and publish their work in peer-reviewed journals. Graduating fellows from the Division of Cardiology move on to successful careers in cardiology.

Other Activities

During 2009, the Division participated in many innovative research studies. Major sources of funding continue to come from NIH and industry.

The Division has established a variety of programs to improve the quality of inpatient and outpatient care and satisfaction. Specialized Primary and Networked Care in Heart Failure (SPAN-CHF) establishes and supports an outpatient framework for the daily assessment of patients with heart failure. This effort allows for a unique opportunity to gather clinical information on the effectiveness of interactive health care. It also provides ongoing assistance for patients who have heart failure in the community. A joint SPAN-CHF program has been developed with the NEQCA-affiliated practices, and plans are in the works to expand this program further across the NEQCA network.

Two large “effectiveness” trials examining the roles of cardiac imaging in acute and chronic coronary syndromes began planning for recruitment in 2010. The NHLBI funded ROMICAT II trial will test whether cardiac CT angiography aids in the diagnosis and management of Emergency Department patients with suspected acute coronary syndromes. Tufts is one of only seven sites in the US selected to participate in enrollment. Dr. Udelson is on the Executive Steering Committee of the trial and Co-Chair of the Clinical Coordinating Center. The NHLBI funded PROMISE trial will examine the role of cardiac CT angiography vs. functional stress testing as the initial testing strategy in out-patients with a chest pain syndrome in need of evaluation. Dr. Udelson is on the Executive Committee of the trial and directs the Nuclear Cardiology Core laboratory.

As of late 2009/early 2010, there were 48 clinical trials either active or in the planning stage in the Division of Cardiology.
Honors and Awards (2010)

Robert Blanton, MD
» Department of Medicine Faculty Teaching Award, Tufts Medical Center, 2010.
» Tufts University School of Medicine Citation for Excellence in Medical Student Teaching for the 2009-2010 academic year.
» AHA Scientist Development Grant “Role of PKGI alpha in Cardiac Myocyte Signaling and Heart Failure” (award effective January 2010)

David DeNofrio, MD
» Education Committee, Heart Failure Society of America
» Education Endorsement Subcommittee, Heart Failure Society of America
» Education CME Subcommittee, Heart Failure Society of America
» Voting Chair, UNOS Region 1 Review Committee for Heart Transplantation
» Best Doctors®, Inc., Physician List
» Invited lectures:
  - “When the Pump Doesn’t: Congestive Heart Failure”—Medical Grand Rounds, Lowell General Hospital, Lowell, MA
  - “Update on Heart Failure Management”—Medical Grand Rounds, Southern New Hampshire Medical Center, Nashua, NH
  - “Treatment options for patients with advanced heart failure: Heart transplantation and left ventricular assist devices”—Medicine Grand Rounds, Fletcher Allen Health Sciences Center, Burlington, VT
 » Heart Failure 2010—Lahey Clinic Cardiovascular Disease: State of the Art Course, Brewster, MA

Mark Estes, MD
» Associate Editor, Heart Rhythm
» Associate Editor, Journal of Interventional Cardiac Electrophysiology
» Editorial Board, Circulation, Arrhythmias and Electrophysiology
» Editorial Board, Circulation
» Editorial Board, American Journal of Cardiology
» Editorial Board, US Cardiology
» Editorial Board, Journal of Cardiovascular Electrophysiology
» Editorial Board, Pacing and Clinical Electrophysiology
» Section Editor, Controversies in Cardiology, Circulation
» Editor in Chief, Cardiology Up to Date
» Past-President Heart Rhythm Society 2008-2009
» Co-Chair ACC/AHA Task Force on Performance Measures for Atrial Fibrillation
» Chairman American Heart Association, Council on Clinical Cardiology 2009-2011
» Chairman, American Heart Association Atrial Fibrillation Summit 2010
» Named in “Best Doctors in America”

Jonas Galper, MD, PhD
» Research Award: Gender Specific Complications of Diabetic Autonomic Neuropathy: A New Mouse Model
» Research Award: Role of Sterols and Insulin in Cardiac Autonomic Response

Ania Garlistki, MD
» Invited chair: Heart Rhythm Society 31st Annual Scientific Session, Denver, Colorado
» Education Committee, Heart Rhythm Society
» Work Force Study Task Force, Heart Rhythm Society

Munther Homoud, MD
» TUSM Class of 2010 Excellence in Teaching Award

Gordon Huggins, MD
» Promotion to Associate Professor of Medicine, Tufts University
» NIH R01 DK090043-01, “Genetic and Behavioral Effects on High-Density Lipoprotein: The Look AHEAD Study” (Co-I)
» Tufts University School of Medicine Teaching Citation

Iris Zamir Jaffe, MD, PhD
» Principle Investigator-NIH R01-Vascular Mineralocorticoid Receptor-Regulated Genes In Vascular Function and Disease- July 2009-June 2013
» Tufts University School of Medical, MD/PhD Program Executive Committee
» Awarded American Heart Association Grant-In-Aid- July 2008-June 2011
» Irvine H. Page Young Investigator Award Finalist, Atherosclerosis, Thrombosis and Vascular Biology Council, American Heart Association, 2010
» Italian Ministry of Health Young Investigator Research Award, 2010
» Chair, 37th Annual International Aldosterone Conference, 2010-2011
» Irma Mann Fellowship, 2011
» Chair, Scientific Affairs Committee, Tufts University School of Medicine, 2010-2011
» Founder and Chair, Women in Medicine Committee, Department of Medicine, Tufts Medical Center, 2010
Navin Kapur, MD
» SCAI Emerging Leader-Mentor (ELM) Program Award Recipient – Term: 2011-2013
» Appointed Leader of the Interventional Cardiology Program Planning Committee (Core 6): American Heart Association. Term: 2010-2011
» SCAI Fellow-In-Training Grant. Education Grant for the Interventional Cardiology Fellowship Program at Tufts Medical Center. Funded: July 2010-2011
» Abbott Fellow-In-Training Grant. Education Grant for the Interventional Cardiology Fellowship Program at Tufts Medical Center. Funded: July 2010-2011
» Cardiology Fellows Outstanding Faculty Teaching Award – Tufts University School of Medicine – 2009
» Appointed Member of the American Heart Association: Clinical Cardiology Council for Interventional Cardiology. Term 2009-2011
» NIH KO8 Award “Cardiac Fibrosis in Congestive Heart Failure: The Role of Endoglin” Funded July 2009 – July 2014

Richard Karas, MD, PhD
» 2010 Kynett Award for Outstanding Contributions to Public Cardiovascular Health
» Interim Chief Scientific Officer, Tufts Medical Center
» Vice Chairman for Scientific Affairs, Department of Medicine
» Executive Director, Molecular Cardiology Research Institute
» Editorial Board: Atherosclerosis
» Chair, National AHA Committee on Cardiovascular Disease in Women and Special Populations
» Nominated to serve on AHA national research committee
» National American Heart Association, Science Classification Task Force Committee
» Member of Region II cell biology peer review committee for the AHA

Carey Kimmelstiel, MD
» Editorial board: Journal of Thrombosis and Thrombolysis
» Awarded grant by the Medicines Co to investigate antiplatelet effects of bivalirudin
» Named in “Best Doctors in America”
» Editorial Board - Catheterization and Cardiovascular Interventions

Marvin Konstam, MD
» Named in “Best Doctors in America”
» U.S. Food and Drug Administration, Special Government Employee
» Member, Association of University Cardiologists
» Past President, Association of Professors of Cardiology
» Past President, Heart Failure Society of America
» Clinical Practice Guideline Committees. Heart Failure Society of America, Agency for Health Care Policy and Research, and AHA/ACC
» Former Senior Advisor in Cardiovascular Diseases, National Heart Lung and Blood Institute
» Distinguished Faculty Award, Tufts University School of Medicine

Jeffrey Kuvin, MD
» Named Associate Chief of Cardiology, Tufts Medical Center
» Excellence in Teaching Award, Medicine Clerkship, Tufts University School of Medicine
» Chair, Learning Portfolio Workgroup, American College of Cardiology
» Fellowship Education Redesign Task Force, American College of Cardiology
» Laennec and Post-Graduate Education Committee, American Heart Association
» NRMP Specialties Matching Service, Liaison for Cardiovascular Disease
» ACGME Standing Panel for Accreditation Appeals
» E-Learning Committee, American College of Cardiology
» Competency Development Pilot Program, American College of Cardiology
» Committee Chair, Fellow In-Training Examination, American College of Cardiology
» Abstract Chair and Topic Co-Coordinator (General Cardiology: Hypertension, Prevention and Lipids), Annual Scientific Session Program Committee, American College of Cardiology
» Professional Education Committee, American Heart Association
» Education Oversight Committee, American College of Cardiology
» Program Director, “Boot Camp for Cardiology Fellowship Program Directors and Coordinators: Educating the Educators”, American College of Cardiology Annual Scientific Session.
Mark Link, MD

- Research award: Acompora Foundation, Development of a Bio-Mechanical Model of Commotio Cordis, Madit-CRT, IDE #G040092
- NIH/NIEHS Prime Grant No. 2 PO1 ESO09825-06. NEMC PI-Dr. Mark S Link. Ambient Particles and Cardiac Vulnerability in Humans
- Principal Investigator: MADIT-RIT Study
- American Heart Association Emergency Cardiac Care (ECC) Committee, 2005-2010
- American Heart Association Advanced Cardiac Life Support (ACLS) Subcommittee, 2005-2010
- ILCOR/AHA Writing Group: 2010 Adult Life Support Guidelines
- ACLS Guidelines. ILCOR/AHA Working Group Chair: 2010 Defibrillation Guidelines
- Boston Magazine’s Best Doctors in Boston
- American Heart Association Planning Committee for Scientific Sessions 2011

Martin Maron, MD

- Editorial Board-American Journal of Cardiology
- NIH K23 Clinical Mentored Research Grant
- Writing group: American Society of Echocardiography Multimodality Imaging for Hypertrophic Cardiomyopathy
- Cardiology Grand Rounds, University of Pittsburgh Medical Center

Natesa Pandian, MD

- Pioneer Award, Echocardiography, Mayo Clinic
- Outstanding Teacher Award, Tufts Cardiology Fellowship Program
- Honorary Master Professor of Cardiology, University of La Plata, Argentina
- Awards for Scientific Excellence from multiple national and international societies
- Delivered named lectures in Italy and India
- Appreciation Awards from ACC and ASE
- Multiple visiting professorships, plenary lectures, keynote lectures in national and international conferences in US and abroad
- Member of multiple editorial boards

Ayan Patel, MD

- Editorial board: Congestive Heart Failure
- ACC Writing Group for the Appropriate Use Criteria for TTE/TEE and Stress Echocardiography Update
- Section Editor-Circulation: Heart Failure
- Program Committee, Heart Failure Society of America

Deeb Salem, MD

- Vice Chair, NEJM Publications Committee
- Chairman, Mass Medical Society’s Committee on Sponsored Programs
- Member, Mass Medical Society’s Journal Watch Editorial Board

James Udelson, MD

- FDA meeting on Endpoints in Heart Failure trials
- Editor-in-Chief, Circulation: Heart Failure
- Associate Editor, Circulation
- Editorial Board - JACC Imaging, Current Cardiovascular Imaging Reports, Heart Failure Reviews, US Cardiology
- Board of Trustees, American College of Cardiology
- Chair, Governance Committee, American College of Cardiology
- U.S. Food and Drug Administration, Special Government Employee
- Invited member, FDA Cardiovascular and Renal Drugs Advisory Panel
- Member, Association of University Cardiologists
- Member, Association of Professors of Cardiology
- Inducted into Alpha Omega Alpha Medical Student Honor Society/NY Medical College Chapter, as an Alumni Honoree
- Best Faculty Teacher Award from Tufts Medical Center Internal Medicine Residents
- Ad-hoc Member, Cardiovascular and Renal Drugs Advisory Panel, Center for Drug Evaluation and Research, United States Food and Drug Administration
- ACC/ACR Writing Committee for Appropriate Use Criteria to Assess Imaging Modalities in the Evaluation of Heart Failure
- Co-Chair, ACC/ACR Writing Committee for Appropriate Use Criteria to Assess Imaging Modalities to Evaluate Chest Pain in the Emergency Department
- Invited Workshop member and Panel Chair, NHLBI Comparative Effectiveness Workshop
- Invited Workshop member, NHLBI Meeting on Prevention in Heart Failure
- Heart Failure Society of America, Elected to Executive Council
- Heart Failure Society of America, Faculty Member for Inaugural Board Review Course
- Listed, Best Doctors in Boston

Andrew Weintraub, MD

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

The Division of Clinical Care Research has no clinical programs of its own. Physician-researcher Division members have appointments in Medicine, Pediatrics and Psychiatry where they are active participants in clinical activities. Those with primary appointments in Department of Medicine clinical divisions are the following:

» Harry Selker, MD
  Clinic

» Peter Castaldi, MD
  Internal Medicine and Adult Primary Care

» David Kent, MD
  Internal Medicine and Adult Primary Care

» Ira Wilson, MD
  Internal Medicine and Adult Primary Care

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.
DIVISION OF CLINICAL DECISION MAKING, INFORMATICS AND TELEMEDICINE

Overview

“[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, Informatics and Telemedicine 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 and benefits of the alternatives.

The division has become a critical component of sophisticated medical systems and a crucial element of medical school teaching. 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.

The staff of the Division also provides the clinical infrastructure for the hospital’s local and international telemedicine activities. Technological advances in the form of telemedicine have made it possible for physicians to “examine” patients and interact with patients and physicians at a distance for clinical or educational purposes.

Highlights of 2010

» Organizer and speaker, National Institutes of Health (Office of Dietary Supplements) Workshop on Economic Analysis of Nutrition Interventions: Methods, Research and Policy (Dr. Wong)

» Speaker, Patient Involvement in Major Medical Decisions: Focus on Coronary Revascularization. Symposium on Expanding Patient-Provider Collaboration for an Effective and Efficient Healthcare System. Department of International Cooperation, Ministry of Health, Beijing, China. (Dr. Wong)

» Speaker, Rapid Technological Advances: Treatments for Stable Ischemic Heart Disease. National Institutes of Health (NIH) and Agency for Healthcare Research and Quality (AHRQ) Conference on Methodological Challenges in Comparative Effectiveness Research, Bethesda, Maryland (Dr. Wong)

» Co-chair, the National Academy of Sciences Committee to revise the Scientific Reference Manual (Dr. Kassirer)

» 2010 Shirley R. Schneck Award for Significant Contributions to the Development of Medical Hypnosis (Dr. Pauker)

» 2010 National Award for Career Achievement and Contributions to Clinical and Translational Science: Outstanding Contributions to Translational Science from Early Clinical Use to Applicability for Widespread Clinical Practice, Society for Clinical and Translational Science Association for Clinical Research Training-Association for Patient Oriented Research (Dr. Pauker)

» President-elect of the Society for Clinical and Experimental Hypnosis (Dr. Pauker)
# Faculty

<table>
<thead>
<tr>
<th>Name</th>
<th>Academic Rank</th>
<th>Title and Special Responsibility</th>
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<tbody>
<tr>
<td>John B Wong, MD</td>
<td>Professor</td>
<td>Division Chief</td>
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<td></td>
<td></td>
<td>Fellowship Program Co-Director</td>
</tr>
<tr>
<td>Brian J Cohen, MD</td>
<td>Assistant Professor</td>
<td>Medical Director, Pratt Diagnostic Center</td>
</tr>
<tr>
<td>Jerome P Kassirer, MD</td>
<td>Distinguished Professor</td>
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</tr>
<tr>
<td>Stephen G Pauker, MD</td>
<td>Professor</td>
<td>Fellowship Program Co-Director</td>
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</table>
Major Clinical Programs

Clinical Decision Consultation Service
The 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 risks and benefits of the alternatives and often the preferences of the specific patient. Typical consultations involve complex clinical problems or problems that involve difficult tradeoffs: patients with combinations of conditions that make traditional strategies of care problematic, instances in which there is conflicting information, and decisions that need to reflect strongly individual patient preferences.

Clinical Hypnosis Consultation Service
This service provides consultation on the application of medical hypnosis for a wide variety of conditions including undesired habits, anxiety, sleep disorders, chronic pain, and chemotherapy-related nausea.

Teaching Activities

Evidence-based Medicine
1st year medical students are introduced to the general principles of clinical reasoning (how doctors think), medical decision making (how to make decisions in the face of uncertainty, uniqueness and value conflict), and evidence-based medicine (how to find and evaluate information) thereby removing some of the mystery that seems to ensnare the activities of outstanding clinicians who not only have professional knowledge but also wisdom, talent, intuition and artistry. This course provides the appropriate cognitive science background essential to the understanding of physician reasoning and decision making and also a working knowledge of evidence-based medicine exemplified through case-based reasoning.

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 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.

Medical Computer Literacy and Applications
This elective course helps 4th year Tufts medical students become facile with basic “off the shelf” tools available for today’s microcomputers. The emphasis is on applications relevant to physicians’ day-to-day activities, such as interpreting diagnostic tests, understanding simple decision analysis and searching the medical literature. Advanced students with prior computer experience can design and develop medical informatics projects including clinical databases to conduct research or develop Internet applications to provide clinical decision support for patients and providers.

National Library of Medicine Medical Informatics Fellowships
For three decades, the National Library of Medicine has provided funding to the Division to offer training in clinical informatics to physicians. For the past decade, the Division has functioned as a component of the Boston Combined Medical Informatics Training Program. The program at Tufts Medical Center currently has two fellows who receive one, two or three years of training in clinical informatics, clinical decision analysis, cost-effectiveness and health policy analysis, guideline development, clinical decision support, clinical cognition and clinical reasoning. Many former fellows have moved on to leadership positions in informatics, policy making or teaching.

Medical Hypnosis
Dr. Pauker provides training in medical hypnosis at Tufts Medical Center for medical students and also teaches in annual workshops given by the New England Society for Clinical Hypnosis.

Research
The Division focuses its research on clinical decision analysis, cost-effectiveness 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 optimal therapy, and evaluation of new medical technologies (tests, devices or drugs). It uses the tools of decision analysis, utility assessment, literature synthesis, medical informatics, artificial intelligence, Markov model development, Monte Carlo simulation, Bayesian interpretation of diagnostic tests, measurement of patient preferences, cost-effectiveness analysis, literature review, meta-analysis and discrete event simulation.
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, colon cancer screening, the utility of screening for heart disease before treating attention deficit hyperactivity disorder, and epilepsy treatment.

**Health care Policy and Clinical Practice**

The Division has been involved with numerous consensus conferences and guideline development processes for the National Institutes of Health (NIH), Office of Medical Applications Research (OMAR), Institute of Medicine (IOM), 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), and the European League Against Rheumatism (EULAR). 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. The Division helps synthesize scientific evidence to improve quality and effectiveness in health care in the Tufts Evidence-based Practice Center in the Institute for Clinical Research and Health Policy Studies sponsored by the Agency for Healthcare Research and Quality (AHRQ).

**Honors and Awards**

**John Wong, MD, FACP**

- Statistical Editor, Decision and Cost-effectiveness, Annals of Internal Medicine, American College of Physicians, Philadelphia, PA 2005-
- Member, American College of Cardiology/American Heart Association/American Medical Association Physician Consortium for Performance Improvement. Work Group on Heart Failure 2009-
- Member, American College of Cardiology/American Heart Association/American Medical Association Physician Consortium for Performance Improvement. Work Group on Coronary Artery Disease/Hypertension 2009-
- Invited Author, Medical Testimony, Scientific Reference Manual by National Academy of Sciences
- Invited primary care physician representative to American College of Cardiology (ACC) Clinical Quality Committee (CQIC), Writing Committee for ACC Health Policy Statement (HPS) on Patient-centered Care 2010-
- Speaker, Shared Decision Making: Focus on Coronary Revascularization, American College of Cardiology Foundation, 2011 Medical Directors’ Institute. October 22-23, 2011
Jerome Kassirer MD, MACP
» Co-chair of Committee to revise the Scientific Reference Manual by National Academy of Sciences
» Senior Advisor to the Editor of Circulation: Cardiovascular Quality and Outcomes
» Member, Institute of Medicine of the National Academy of Sciences, Association of American Physicians, American Academy of Arts and Sciences
» Board Member, National Committee on Quality Assurance
» Consultant Advisor, St. Thomas Health Clinic, New Orleans

Stephen Pauker, MD, MACP, FACC, FACMI, ABMH
» Re-Certification Approved Consultant, American Society of Clinical Hypnosis 2010-2013
» Certified Consultant in Hypnosis, Active Commitment to Excellence (SCEH-ACE), Society for Clinical and Experimental Hypnosis 2010-2013
» 2010 Shirely R. Schneck Award for Significant Contributions to the Development of Medical Hypnosis
» 2010 National Award for Career Achievement and Contributions to Clinical and Translational Science: Outstanding Contributions to Translational Science from Early Clinical Use to Applicability for Widespread Clinical Practice, Society for Clinical and Translational Science Association for Clinical Research Training-Association for Patient Oriented Research
» President-elect, Society for Clinical and Experimental Hypnosis 2009-2011
» Member, Institute of Medicine
» Member, CDC Working Group for Evaluation of Genomic Applications for Populations and Prevention (EGAPP)
» Member, CMS Medicare Evidence Development and Coverage Advisory Committee (MedCAC)
» Member, American Board of Medical Hypnosis (examining body)
» Editorial Board Member, European Journal of Clinical Investigation
» Historian, Society for Medical Decision Making
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 Policy.

Nutrition plays a crucial role in the predisposition to diseases and in healing. There is increasing evidence for novel roles of nutrition in immunological defenses, in amelioration of inflammation in acute and chronic illness, in carcinogenesis, and in the decline of cognitive function with aging. The Clinical Nutrition Division provides an array of consultative services which is unusual even in tertiary care centers, as described below.

Highlights of 2010

» Dr. Joel Mason promoted to Professor of Medicine, TUSM and Senior Scientist, HNRCA
» Dr Robert M. Russell served as President of the American Society of Nutrition for 2010
## Major Clinical Programs

### Adult Nutrition Support Service

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

### Tufts Medical Center Committee on Nutrition

To insure 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 on Nutrition and Medicine. Lectures and case discussions are provided to third year students on clinical rotations. Elective rotations in medical nutrition care are also available to fourth year students.

Residents and Fellows in multiple medical subspecialties rotate through the inpatient Nutrition Support Service and GI Nutrition clinic. Dietetic interns who are training to become Registered Dieticians in the Frances Stern Nutrition Center have required rotations on the inpatient Nutrition Support Service.

Members of the division are involved in the Friedman School of Nutrition and Science Policy, where Dr. Saltzman is Chair of the Department of Nutrition Sciences. Division members participate by lecturing in classes and mentoring PhD candidates.

## Research Activity

Most division members conduct research at the HNRCA, one of six USDA supported national nutrition research centers. At the HNRCA, Dr. Mason directs the Vitamins and Carcinogenesis Laboratory, and Dr. Rosenberg directs the Nutrition and Cognition Laboratory. Dr. Saltzman is Medical Director of the Metabolic Research Unit, the HNRCA’s inpatient unit, and is a member of the Energy Metabolism laboratory at the HNRC. Dr. Dwyer conducts research in her role as Senior Nutrition Scientist in the NIH Office of Dietary Supplements. Dr. Russell serves as a Specialist Expert in the Office of Dietary Supplements the National Institutes of Health.

## Faculty

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<tr>
<th>Name</th>
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<tbody>
<tr>
<td>Edward Saltzman, MD</td>
<td>Associate Professor</td>
<td>Chief</td>
</tr>
<tr>
<td>Johanna Dwyer, PhD</td>
<td>Professor</td>
<td>Director, Francis Stern Nutrition Center</td>
</tr>
<tr>
<td>Joel Mason, MD</td>
<td>Professor</td>
<td>Associate Director for Nutrition and Cancer Prevention, Tufts Medical Center Cancer Center</td>
</tr>
<tr>
<td>Irwin Rosenberg, MD</td>
<td>University Professor</td>
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<tr>
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<td>Professor Emeritus</td>
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Honors and Awards

Johanna Dwyer, PhD
» Volunteer of the Year Award, American Society of Nutrition
» Invited lecturer, National Nutrient Databank Conference: Grand Forks, ND, “New Developments in federal dietary supplement databases”

Joel Mason, MD
» Mary Swartz Rose Senior Investigator Award, American Society for Nutrition
» Elected Fellow, American Gastroenterological Association
» Chair, NIH Scientific Review Group, The Role of Microbial Metabolites in Cancer Prevention and Etiology (U01)
» Top Gastroenterologist, Boston Magazine, 2010
» Top Doctor in U.S., Castle-Connely, 2010
» Invited lecturer, FASEB Summer Conference on B12, Folate and One-carbon Metabolism, Carefree, AZ, “Folate and Cancer”
» New grant support: Defining the promoting effect of folate on colorectal cancer in a novel animal model 1R21CA150118

Robert Russell, MD
» Provided the Atwater Memorial Lectureship, U.S. Department of Agriculture, Agricultural Research Service
» Selected as Member, Board of Trustees, United States Pharmacopeia

Edward Saltzman, MD
» Elected Chair, Medical Nutrition Council, American Society of Nutrition
» Invited lecturer, Ras al Khaimah Hospital, United Arab Emirates, “Nutrient Deficiencies after Bariatric Surgery”
Overview

The Division of Endocrinology at Tufts Medical Center offers extensive clinical services, ranging from comprehensive diabetes management to subspecialty outpatient clinics devoted to bone, thyroid, and neuroendocrinological disorders. 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 in order to foster interest in this subspecialty among 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, identification of the origin of the hypothalamic tuberoinfundibular system, studies on the mechanisms of somatostatin and prolactin secretion, demonstration of the importance 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 construction of the Human Nutrition Research Center on Aging, the Endocrinology program gained prominence in disorders of lipids, calcium metabolism and obesity. In 1990, Dr. A.E. Boyd, III became Chief and brought with him 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.

Current research interests of the division include bone metabolism, diabetes, neuroendocrinology, obesity and adipocyte function. The division has received numerous grants and awards and its members have been awarded prestigious lectureships and committee memberships.

Highlights of 2010

- Grant renewal from the Gerald J. and Dorothy R. Friedman Foundation for Medical Research to support Fellowship training in Endocrinology, Diabetes and Metabolism, as well support for 5 new grants (1 clinical/4 basic research) from sources including the NIH and American Diabetes Association
- Publication of 44 peer-reviewed papers, book chapters and reviews
- Interdisciplinary research with the Evidence-based Practice Center suggesting that vitamin D may be a promising new element in the prevention and management of cardiometabolic disease, and contributing to similar conclusions by the Institute of Medicine.
- Demonstration in the first 100 type 2 diabetic patients enrolled in the Diabetes Reversal Program of a 36% remission rate among patients who completed at least 3 months of the program.
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 (under the direction of Dr. Lisa Ceglia)
- Thyroid disease including thyroid cancer (Drs. Caroline Kim and Radhika Hariharan)
- Diabetes and metabolism (Drs. Richard Siegel and Anastassios Pittas)
- Obesity (in collaboration with the Obesity Consultation Center)
- Neuroendocrinology (Dr. Ronald Lechan)
- Diabetes Reversal Program (Dr. Michael Dansinger)
- General endocrinology with a focus on endocrine neoplasia and adrenal tumors (Drs. Ronald Lechan, Richard Siegel and Radhika Hariharan)

The Division provides an inpatient consultation team that offers diabetes management services for hospitalized patients. 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. Under the direction of Dr. Michael Dansinger, the Diabetes Reversal Program at Tufts Medical Center was introduced in which diet and exercise is used to achieve remission in patients with type 2 diabetes. Mary Wenners, NP oversees an insulin pump program as well as an Asian Outreach Screening Program to identify patients in the local community with diabetes mellitus.
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.

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, under the direction of Dr. Richard Siegel
» Lectures at Noon Conference and participation in Morning Report for Internal Medicine Residents
» A series of 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.

Faculty members have also been mentors, served on PhD Thesis Committees, and participated in teaching in the Medical School (Depts. of Neuroscience, Pharmacology and Experimental Therapeutics, Physiology), and in the Sackler School of Graduate Biomedical Sciences, USDA Human Nutrition Center, Dental School, and Friedman School of Nutrition and Health Policy. Division members have also have teaching engagements at the University of Parma and Semmelweis University Medical School. In addition, a series of multimedia web lectures were developed on human embryology and the anatomy of the head and neck and 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 44 peer reviewed papers, book chapters and reviews.

Support for faculty research is derived from 10 R01, 1 R24, 2 R21, 1 KL2, 1 T32, and 1 Fogarty International award from the NIH, a grant from the Gerald J. and Dorothy R. Friedman Foundation for Medical Research to support Fellowship training, as well as a number of other grants from foundations and industry.

Highlights of recent research accomplishments include:

» Demonstration that perilipin overexpression in adipocytes protects against diet-induced obesity

» Development of a bioartificial scaffold of the rat thyroid gland and ex situ growth of functionally-active, bioengineered thyroid tissue.

» Demonstration of the importance of glial cells for T3-dependent signaling to neurons

» Demonstration that a melanocortin-sensitive region in the paraventricular nucleus of the hypothalamus projects to the lower brainstem and may modulate the satiety effects of signals relayed to the brainstem by the vagus nerve, area postrema and circulating hormonal factors.

» Demonstration that lower vitamin D status is associated with increased risk for cardiometabolic disease and may have a role in the development of type 2 diabetes, hypertension and cardiovascular disease.

» Demonstration in a randomized controlled trial that alkalinization of the diet with potassium bicarbonate lowered nitrogen excretion (an indicator of reduced muscle wasting) and improved lower extremity muscle performance in healthy older adults.

» Identification of the optimal dose of bicarbonate for bone and muscle preservation in older men and women.

» Demonstration of the proportions of men and women in the US who are eligible for consideration for pharmacotherapy to lower fracture risk, according to new National Osteoporosis Foundation guidance.

» Demonstration that the rank order of the ability of diets to reverse atherogenic dyslipidemia (as assessed by lipoprotein particle analysis) is Atkins>Zone>Weight Watchers>Omish diets (Tufts Popular Diet Trial) due to the degree of dietary carbohydrate restriction.

» Demonstration that lipoprotein testing rather than traditional lipid testing is necessary to adequately show improvements in atherogenic dyslipidemia resulting from lifestyle change.
<table>
<thead>
<tr>
<th>Recipient</th>
<th>Funding source</th>
<th>Purpose of award</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lisa Ceglia, MD</td>
<td>NIA, Boston OAIC (Bhasin, PI)</td>
<td>Develop a consortium in Boston focused on developing translational research aimed at the discovery and assessment of function promoting anabolic therapies</td>
</tr>
<tr>
<td></td>
<td>NCRR (Selker, PI)</td>
<td>Support for multidisciplinary clinical and translational research with training and mentoring. The program includes a master’s degree in clinical research.</td>
</tr>
<tr>
<td>Michael Dansinger, MD</td>
<td>NIH</td>
<td>Randomized trial of effectiveness of the new USDA food pyramid and a low-starch alternative for weight loss and cardiovascular risk factor reduction</td>
</tr>
<tr>
<td></td>
<td>USDA</td>
<td>Assessments of requirements for calcium and vitamin D intake in adults</td>
</tr>
<tr>
<td></td>
<td>NIH</td>
<td>Effect of potassium, bicarbonate, and the combination on bone turnover, calcium excretion and muscle performance</td>
</tr>
<tr>
<td></td>
<td>Pfizer*</td>
<td>Effect of diet on vitamin D bioavailability</td>
</tr>
<tr>
<td>Bess Dawson-Hughes, MD</td>
<td>NIH/NIAMS (Co-Investigator)</td>
<td>Effect of vitamin D (2000 IU per day) on the progression of knee osteoarthritis</td>
</tr>
<tr>
<td></td>
<td>NIDDK (Pittas)</td>
<td>Effects of vitamin D and calcium supplementation on glucose metabolism, insulin sensitivity and secretion, in individuals at high risk for type 2 diabetes.</td>
</tr>
<tr>
<td></td>
<td>NIH (Co-Investigator)</td>
<td>Determinants of low bone mass in older Puerto Ricans</td>
</tr>
<tr>
<td></td>
<td>NIDDK (Pittas)</td>
<td>Association between vitamin D status and risk of developing type 2 diabetes and cardiometabolic disease in the Diabetes prevention Program</td>
</tr>
<tr>
<td></td>
<td>NIH (Co-Investigator)</td>
<td>Dose dependent anti-inflammatory effects of vitamin D in a human gingivitis model</td>
</tr>
<tr>
<td>Ronald Lechan, MD, PhD</td>
<td>Gerald J. and Dorothy R. Friedman Foundation for Medical Research*</td>
<td>Clinical and research training in Endocrinology, Diabetes and Metabolism</td>
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<tr>
<td></td>
<td>Eli Lilly</td>
<td>Observational study of efficacy and long-term consequences of human growth hormone in patients with hypopituitarism (with Dr. Siegel)</td>
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<tr>
<td></td>
<td>Tercica</td>
<td>Observational study of patients with acromegaly treated with somatuline</td>
</tr>
<tr>
<td>Richard Siegel, MD</td>
<td>Eli Lilly (Co-Invest)</td>
<td>Observational study of efficacy of human growth hormone in patients with hypopituitarism (with Dr. Lechan)</td>
</tr>
<tr>
<td></td>
<td>Tercica (Co-Invest)</td>
<td>Observational study of patients with acromegaly treated with somatuline (with Dr. Lechan)</td>
</tr>
<tr>
<td>Anastassios Pittas, MD</td>
<td>NIDDK/ODS</td>
<td>Randomized trial of the effects of vitamin D and calcium supplementation on glucose metabolism, insulin sensitivity and insulin secretion, in individuals at high risk for type 2 diabetes</td>
</tr>
<tr>
<td></td>
<td>NIDDK/ODS</td>
<td>Association between vitamin D status and the risk of developing type 2 diabetes and cardiometabolic disease in the Diabetes Prevention Program</td>
</tr>
<tr>
<td></td>
<td>American Diabetes Association (Harris)</td>
<td>Define effects of vitamin D and calcium supplementation on glucose metabolism in non-white individuals at high risk for type 2 diabetes</td>
</tr>
</tbody>
</table>

* New Award in 2010
## Basic Research

<table>
<thead>
<tr>
<th>Recipient</th>
<th>Funding source</th>
<th>Purpose of award</th>
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</thead>
<tbody>
<tr>
<td>Csaba Fekete, MD</td>
<td>NIH</td>
<td>Role of the newly discovered anorexigenic lipid mediator (OEA) in the regulation of the hypophysiotropic TRH neurons</td>
</tr>
<tr>
<td></td>
<td>Hungarian Basic Science Foundation*</td>
<td>Dendritic structure and rewiring of TRH neurons</td>
</tr>
<tr>
<td></td>
<td>NIH (Co-Invest)</td>
<td>Control of TRH release in the hypothalamic paraventricular nucleus</td>
</tr>
<tr>
<td>Andrew Greenberg, MD</td>
<td>NIDDK</td>
<td>TLP2: A central node in obesity-associated inflammation and metabolic disorder</td>
</tr>
<tr>
<td></td>
<td>USDA</td>
<td>Obesity-Related Inflammation and Metabolic disorders</td>
</tr>
<tr>
<td></td>
<td>NIENS, NIH (Co-PI)</td>
<td>Definition of the role of BPA in promoting obesity and associated metabolic complications</td>
</tr>
<tr>
<td></td>
<td>American Diabetes Association*</td>
<td>Role of TPL2 in obesity-associated inflammation, hepatic steatosis, and insulin resistance</td>
</tr>
<tr>
<td></td>
<td>NIH</td>
<td>Mode of adipocyte death in obesity and its role in obesity-associated inflammation and insulin resistance</td>
</tr>
<tr>
<td></td>
<td>NIH*</td>
<td>Sex Difference in Adipose Tissue Biology and Metabolic Disease</td>
</tr>
<tr>
<td></td>
<td>NIH, NIDDK (Co-Investigator)</td>
<td>Adipocyte Death and Obesity-Induced Inflammation</td>
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<tr>
<td></td>
<td>NIH, NIDDK</td>
<td>Research Training Program in Nutrition and Chronic Disease</td>
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<tr>
<td></td>
<td>United States and Israel Binational Science Foundation (Co-PI)</td>
<td>Lipolysis regulation by lysosomal degradation of lipid droplet associated proteins</td>
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<td></td>
<td>Robert C and Veronica Atkins Foundation*</td>
<td>Estrogen Action in Regulating Postmenopausal and Overfeeding Effects on Metabolism</td>
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<td></td>
<td>Unilever</td>
<td>Effects of nutrients on adipose tissue metabolism</td>
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<tr>
<td></td>
<td>ATA, THANC Junior</td>
<td>Genetic changes required for thyroid cancer metastasis in a mouse model</td>
</tr>
<tr>
<td>Caroline Kim, MD</td>
<td>NIDDK</td>
<td>Elucidation of the mechanisms of control of thyrotropin-releasing hormone (TRH) in the hypothalamic paraventricular nucleus</td>
</tr>
<tr>
<td>Ronald M. Lechan, MD, PhD</td>
<td>NIDDK</td>
<td>Elucidation of the tanyocytes transcriptome</td>
</tr>
<tr>
<td></td>
<td>NIH, Collaborator (Beasley, PI)</td>
<td>Autocrine role of cytokines and vascular smooth muscle</td>
</tr>
<tr>
<td>Jeffrey Tatro, PhD</td>
<td>University of Parma School</td>
<td>Interaction of human PTH and its receptor: mechanisms of hormone and receptor interactions; basis of diverse effects</td>
</tr>
<tr>
<td>Roberto Toni, MD</td>
<td>Fund for Basic Research Investments (FIRB)*</td>
<td>Scaffolds for the regeneration of bone tissue</td>
</tr>
<tr>
<td></td>
<td>Museum of the Department of Human Anatomy (MAFS)</td>
<td>Creation of a web archive showing artistic portrayal of endocrine diseases in paintings and bas-reliefs throughout the world linking morphology and endocrinology</td>
</tr>
<tr>
<td></td>
<td>Museum of the Department of Human Anatomy, Parma, Italy</td>
<td>Development of software for laser-graphics modeling of 3D images of anatomical specimens</td>
</tr>
</tbody>
</table>

* New Award in 2010
Honors and Awards

Dr. Lisa Ceglia
» Tufts Clinical and Translational Science Institute
  Mentored Career Development Award
» Research Career Development Core Award, Boston Claude A. Pepper Center

Dr. Bess Dawson-Hughes
» Invited speaker at Zurich International Muscle Symposium
» Invited speaker NOF International Symposium on Osteoporosis
» Invited speaker, Southeast Asia Endocrine Societies meeting, Bangkok
» Invited speaker IOF Regional Meeting, Damascus
» Invited speaker IOF-ECCEO meeting, Florence, Italy
» Invited speaker NAMS meeting, Chicago, IL
» Invited speaker ASBMR annual meeting, Toronto
» Editorial Boards, Bone, Osteoporosis International
» Contributor to Up-to-Date (vitamin D)

Dr. Csaba Fekete
» Invited speaker, 14th International Thyroid congress, Paris, France
» Lendulet award of the Hungarian Academy of Sciences
» Editorial Board, Journal of Neuroendocrinology

Dr. Andrew Greenberg
» Co-Director of FASEB Summer Research Conference, July, 2010
» Editorial Board, Obesity and Endocrinology

Dr. Radhika Hariharan
» Invited speaker Lowell General Hospital and Tobey Hospital

Dr. Ronald M. Lechan
» Editorial Board, Endocrinology and Acta Biomedica
» Boston Magazine 2010 list of Top Doctors
» American Registry Top Doctor Award
» 2010 Patient Choice Award

Dr. Anastassios Pittas
» Invited Speaker, Beth Israel Medical Center, New York, NY
» Invited Speaker, International conference of Early Disease Detection and Prevention, Munich, Germany
» Reviewer, American Diabetes Association 70th Scientific Session
» Member of NIH Study Section, Clinical & Integrative Diabetes and Obesity
» Member, NIH Special Emphasis Panel, Grants for NIH Director’s Opportunity for Research in Five Thematic Areas
» Member, NIH Special Emphasis Panel, Obesity, Hypertension and Diabetes
» Expert Reviewer, Developmental Clinical Studies, medical Research Council, UK

Dr. Roberto Toni
» Symposium Organizer, Visiting an Anatomical Museum: curiosity or training?, Modena, Italy
» Director, Museum of Human Anatomy, Pharmacology and Forensic Medicine, University of Parma, Parma, Italy
» Editorial Board, Bentham Open “Open Anatomy Journal” and Acta BioMedica
DIVISION OF GASTROENTEROLOGY

Overview

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 himself 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 2006, 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 was among the first awardees of an NIH Silvio O. Conte Digestive Disease Research Center grant. This basic research program, known as the GRASP Center, became the central link among all 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 GI Division combine clinical and basic research talents. There is 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 being done at Lahey Clinic but the identification of candidates and the pre-and post-operative care remain at Tufts Medical Center.

Highlights of 2010

» Peter Bonis received the Getza Hetenyi Medallion from Hungarian Society of Gastroenterology
» Hannah Lee awarded grant to study chronic viral hepatitis in the Asian community
» Joel Mason received Mary Swartz Senior Investigator Award from the American Society of Nutrition
» Joel Weinstock main plenary speaker at XVIII Congress of Parasitology, Mexico
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.

Teaching Activities

The Division of Gastroenterology is extensively involved in the teaching 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 Medical School. This collaboration has significantly enriched the educational experience of the teaching program. Most of the trainees seek academic careers.

<table>
<thead>
<tr>
<th>Name</th>
<th>Academic Rank</th>
<th>Title and Special Responsibility</th>
</tr>
</thead>
<tbody>
<tr>
<td>Joel V. Weinstock, MD</td>
<td>Professor</td>
<td>Division Chief</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Director, Fellowship Program</td>
</tr>
<tr>
<td>Harmony Alison, MD</td>
<td>Instructor</td>
<td></td>
</tr>
<tr>
<td>Martin Beinborn, MD</td>
<td>Assistant Professor</td>
<td></td>
</tr>
<tr>
<td>Peter Bonis, MD</td>
<td>Associate Professor</td>
<td></td>
</tr>
<tr>
<td>Moises Guelrud, MD</td>
<td>Clinical Professor</td>
<td></td>
</tr>
<tr>
<td>Kenneth Hung, MD</td>
<td>Assistant Professor</td>
<td></td>
</tr>
<tr>
<td>John Leung, MD</td>
<td>Instructor</td>
<td></td>
</tr>
<tr>
<td>Laura Borodyansky, MD</td>
<td>Assistant Professor</td>
<td></td>
</tr>
<tr>
<td>Marshall M. Kaplan, MD</td>
<td>Professor</td>
<td>Chief Emeritus</td>
</tr>
<tr>
<td>Alan Kopin, MD</td>
<td>Professor</td>
<td>Director, Molecular Pharmacology Research Center</td>
</tr>
<tr>
<td>Hannah Less, MD</td>
<td>Assistant Professor</td>
<td>Director, Hepatology Programs</td>
</tr>
<tr>
<td>Joel B. Mason, MD</td>
<td>Associate Professor</td>
<td></td>
</tr>
<tr>
<td>Andrew Plaut, MD</td>
<td>Professor</td>
<td>Director, Clinical Translational Research Institute, Tufts Health Sciences</td>
</tr>
<tr>
<td>Kathleen Viveiros</td>
<td>Assistant Professor</td>
<td>Co-director, Fellowship Program</td>
</tr>
</tbody>
</table>
### Clinical Research

<table>
<thead>
<tr>
<th>Recipient</th>
<th>Funding Source</th>
<th>Purpose of Award</th>
</tr>
</thead>
<tbody>
<tr>
<td>Peter Bonis, MD</td>
<td>Gosnell Charitable Trust Fund</td>
<td>Principal investigator for an Evidence Report on Hereditary Nonpolyposis Colorectal Cancer for the Agency of Healthcare Research &amp; Quality (AHRQ) Developed international guidelines for eosinophilic esophagitis Cancer Prevention Program: Co-founded the Cancer Prevention Program at Tufts Medical Center, a multidisciplinary effort involving genetics, genetic counseling, surgery, gastroenterology, oncology, clinical nutrition and pathology</td>
</tr>
<tr>
<td>Moises Guelrud, MD</td>
<td></td>
<td>Endoscopic ablation in gastric intestinal metaplasia Chromoendoscopy in gastric intestinal metaplasia and gastric cancer Endoscopic ablation therapies in Barrett’s esophagus</td>
</tr>
</tbody>
</table>

### Basic Research Support

<table>
<thead>
<tr>
<th>Recipient</th>
<th>Funding Source</th>
<th>Purpose of Award</th>
</tr>
</thead>
<tbody>
<tr>
<td>Peter Bonis, MD</td>
<td>Agency for Healthcare Research Tufts Clinical Translation Study Unit The International Gastrointestinal Eosinophil Researchers NIH</td>
<td>Comparative effectiveness of management strategies for Gastroesophageal Reflux Disease. Exhaled Nitric Oxide as a biomarker for Eosinophilic Esophagitis. Modification of IgA for treatment of IgA Nephropathy</td>
</tr>
<tr>
<td>Kenneth Hung, MD, PhD</td>
<td>Crohn’s and Colitis Foundation of America NCI NIDDK Pfizer</td>
<td>Identification of disease biomarkers for irritable bowel syndrome. Identification of diagnostic biomarkers for colon cancer. Development of therapeutic regimes for colon cancer</td>
</tr>
<tr>
<td>John Leung, MD</td>
<td>Tufts Medical Center</td>
<td>Study the regulation of gut inflammation in new murine model of non-IgE-mediated food hypersensitivity developed at Tufts. Determine the feasibility of using exhaled nitric oxide level as a noninvasive surrogate for Eosinophilic esophagitis.</td>
</tr>
<tr>
<td>Joel Mason, MD</td>
<td>NIH</td>
<td>Defining the promoting effect of folate on colorectal cancer in a novel animal model.</td>
</tr>
<tr>
<td>Andrew Plaut, MD, Jiazhou Qui</td>
<td>NIH</td>
<td>Use of bacterial IgA proteases to treat IgA-deposition diseases in humans.</td>
</tr>
<tr>
<td>Joel Weinstock, MD</td>
<td>NIH NIDDK Broad Foundation</td>
<td>Helminths interaction with components of the host’s intestinal innate immune system to both prevent IBD and reverse ongoing disease Explores how helminths induction various regulatory T cell that are important for control of intestinal immune responses</td>
</tr>
</tbody>
</table>
Honors and Awards

Peter Bonis, MD
- Member of the Executive Board of the International Gastrointestinal Researchers
- Member of the steering committee of the Registry of Gastrointestinal Eosinophilic Disorders
- Primary technical expert on an Agency for Healthcare Research and Quality Comparative Effectiveness report on gastroesophageal reflux disease conducted by the Tufts Evidence Based Practice Center.

Moises Guelrud, MD
- Best Doctors in Boston, Boston Magazine
- Invited lecturer – “Barrett’s for the Internist”, Tufts Medical Center.
- International Editor, GastroHep.com UK
- Member of the Board of the New England Endoscopy Society
- Reviewer for Gastroenterology Medical Journals

Kenneth Hung, MD PhD
- Keynote Speaker, “Biomarker Discovery in Mouse Models of Colon Cancer,” Faculty of Medicine of Ribeirão Preto, Ribeirão Preto, Brazil.
- Invited Speaker, “Development of Personalized Medicine Paradigms in Mouse Models for Sporadic Colon Cancer.” Gastroenterology Research Seminar, Massachusetts General Hospital, Boston, MA.
- Chairman, Research Forum: Novel Approaches to Therapy for GI Cancers, Digestive Disease Week, New Orleans, Louisiana.
- Invited Speaker, “The Dual PI3K/mTOR Inhibitor NVP-BEZ235 Inhibits Tumor Growth in a Genetically Engineered Mouse Model for Sporadic Colon Cancer.” American Association for Cancer Research, Colon Cancer: Biology to Therapy, Philadelphia, Pennsylvania.
- Invited Speaker, “Research Topics in Colorectal Cancer.” Department of Physiology, Tufts University, Boston, MA.

Marshall Kaplan, MD
- Who’s Who in Medicine
- Section Editor in “UptoDate” for Metabolic Liver Diseases
- Editorial Board, Clinics and Research in Hepatology and Gastroenterology
- Advisory Committee, Centocor Phase 2 PBC Clinical Trial

Hannah Lee, MD
- Invited to join Board of Advisors Asian Health Foundation

John Leung, MD
- Digestive Diseases Week Poster of Distinction
- American Associations of Immunologists Trainee Travel Award
- American Associations of Immunologists Block Symposium oral presentation
- Fellowship2Leadership Gastroenterology/Hepatology Fellows’ Travel Award

Joel Mason, MD
- 2010, Mary Swartz Rose Senior Investigator Award, American Society for Nutrition
- 2010, Fellow, American Gastroenterological Association
- Chair, NIH Scientific Review Group, PAR11:15, The Role of Microbial Metabolites in Cancer Prevention and Etiology (U01)
- Top Gastroenterologist, Boston Magazine
- Top Doctor in U.S., Castle-Connely
- Member, Editorial Board, Frontiers in Nutrigenomics
- FASEB Summer Conference on B12, Folate and One-carbon Metabolism, Carefree, AZ
- American Society of Nutrition, Advances And Controversies in Clinical Nutrition, San Francisco, CA
- Symposium on Folic Acid: An update, Universitas Bio-Medica di Roma, Rome, Italy
Andrew Plaut, MD
» Numerous invited seminars

Kathleen Viveiros, MD
» Recipient of Tufts Medical Resident Teaching Award

Joel Weinstock, MD
» Invited speaker, the American Society of Microbiology, San Diego, CA
» Invited speaker at the Inflammatory Bowel Disease Folk Symposium, Miami, FL
» Visiting Professor, Massachusetts General Hospital, Division of Gastroenterology, Boston, MA
» Visiting Professor, Department of Pharmacology, Boston University, Boston
» Visiting Professor, for both the Department of Immunology and Division of Gastroenterology, Yale University, New Haven, CT
» Best Doctors in Boston, Boston Magazine
» Appearances on NPR, Bloomberg Report, and many other newspapers, magazines, radio and TV shows, 2010
Overview

The Division of Geographic Medicine and Infectious Diseases at Tufts Medical Center has long been 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 teaching style attracted many young physicians to the relatively new subspecialty of infectious diseases. Graduates of his training program occupied significant positions in academia. During the tenure of his successor, Dr. Sherwood Gorbach, the cause and pathogenesis of C. difficile-associated disease were discovered by Drs. John Bartlett and Te-Wen Chang. In 2007, Dr. Gorbach was awarded the Alexander Fleming Prize, a lifetime achievement award, from the Infectious Diseases Society of America. Dr. Sheldon Wolff, the Chairman of Medicine at New England Medical Center and an internationally recognized infectious disease expert (and Fleming Prize recipient), together with Charles Dinarello of the Experimental Medicine Division, discovered interleukin-1.

In 1986, the Divisions of Geographic Medicine, Experimental Medicine, and Infectious Disease were merged into the Division of Geographic Medicine and Infectious Diseases. The Chief, Dr. Gerald Keusch, 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, was awarded the Fleming Prize.

Dr. David R. Snydman became chief in 1998. Dr. Snydman 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 in transplantation. Dr. Snydman has 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.

Highlights of 2010

- Continued funding of the Clinical Research Training Grant in Infectious Diseases for 5 years
- Receipt of 2 new K 23 awards
- Completion of funding of the Tally fellowship and publication of a supplement honoring Frank Tally in the journal Clinical Infectious Diseases
- Tufts former fellows and faculty cited for 11 of the most important abstracts presented at the Interscience Conference on antimicrobial Agents and Chemotherapy over the past 50 years (ICAAC) on work performed at Tufts
- Academic promotion of two faculty members, Linden Hu to Professor of Medicine and Helen Boucher to Associate Professor of Medicine
<table>
<thead>
<tr>
<th>Name</th>
<th>Academic Rank</th>
<th>Special Responsibility</th>
</tr>
</thead>
<tbody>
<tr>
<td>David R. Snydman, MD</td>
<td>Professor</td>
<td>Chief of Division Hospital Epidemiology, PI of Clinical Research Training Grant</td>
</tr>
<tr>
<td>Geneve Allison, MD</td>
<td>Assistant Professor</td>
<td>Associate Fellowship Program Director, HIV/Hepatitis C co-infection clinic, Director of OPAT Program</td>
</tr>
<tr>
<td>Robert Arbeit, MD</td>
<td>Professor</td>
<td>Consultation Attending, Idera Pharmaceuticals</td>
</tr>
<tr>
<td>Jorge Barinaga, MD</td>
<td>Assistant Professor</td>
<td>Milton Hospital</td>
</tr>
<tr>
<td>Michael Barza, MD</td>
<td>Professor</td>
<td>Vice Chair for Clinical Affairs Department of Medicine</td>
</tr>
<tr>
<td>Helen Boucher, MD</td>
<td>Associate Professor</td>
<td>Fellowship Program Director</td>
</tr>
<tr>
<td>José A, Caro, MD*</td>
<td>Assistant Professor</td>
<td>HPV Clinic</td>
</tr>
<tr>
<td>Jennifer K Chow, MD</td>
<td>Assistant Professor</td>
<td>Wound Clinic Center and Antimicrobial Management Program (AMT)</td>
</tr>
<tr>
<td>Lisa Davidson, MD, MS</td>
<td>Assistant Professor</td>
<td>Wound Clinic Center and Antimicrobial Management Program (AMT)</td>
</tr>
<tr>
<td>Yoav Golan, MD</td>
<td>Assistant Professor</td>
<td>Antimicrobial Management Program (AMT)</td>
</tr>
<tr>
<td>Sherwood L. Gorbach, MD</td>
<td>Assistant Professor</td>
<td>Antimicrobial Management Program, Pharmacy Department</td>
</tr>
<tr>
<td>Jeffrey K. Griffiths, MD, MPH&amp;TM</td>
<td>Associate Professor</td>
<td>Pathophysiology Course Director</td>
</tr>
<tr>
<td>Susan Hadley, MD*</td>
<td>Associate Professor</td>
<td>Pathophysiology Course Director</td>
</tr>
<tr>
<td>James Hellinger, MD</td>
<td>Assistant Professor</td>
<td>Pathophysiology Course Director</td>
</tr>
<tr>
<td>Steven Y. Hong, MD, MPH*</td>
<td>Clinical Instructor of Medicine</td>
<td></td>
</tr>
<tr>
<td>Linden T. Hu, MD</td>
<td>Professor</td>
<td>Vice Chair for Faculty Development, Department of Medicine, Principal Investigator Microbial Pathogenesis Training Grant</td>
</tr>
<tr>
<td>Michael Jordan, MD</td>
<td>Assistant Professor</td>
<td>Vice Chair for Faculty Development, Department of Medicine</td>
</tr>
<tr>
<td>Anne V. Kane, MD</td>
<td>Assistant Professor</td>
<td>Director, Phoenix Lab</td>
</tr>
<tr>
<td>Laura Kogelman, MD</td>
<td>Assistant Professor</td>
<td>Director of ID Clinic and Traveler’s Health Services</td>
</tr>
<tr>
<td>Rakhi Kohli, MD, MS</td>
<td>Assistant Professor</td>
<td>Antimicrobial Management Program, Pharmacy Department</td>
</tr>
<tr>
<td>Kenneth R. Lawrence, PharmD</td>
<td>Assistant Professor</td>
<td>Antimicrobial Management Program, Pharmacy Department</td>
</tr>
<tr>
<td>Alexandra Mangili, MD</td>
<td>Assistant Professor</td>
<td>Antimicrobial Management Program, Pharmacy Department</td>
</tr>
<tr>
<td>Roberta O’Connor, PhD</td>
<td>Assistant Professor</td>
<td>Antimicrobial Management Program, Pharmacy Department</td>
</tr>
<tr>
<td>Debra D. Poutsiaka, MD, PhD</td>
<td>Associate Professor</td>
<td>Antimicrobial Management Program, Pharmacy Department</td>
</tr>
<tr>
<td>David R. Stone, MD</td>
<td>Assistant Professor</td>
<td>Attending Physician, Lemuel Shattuck Hospital</td>
</tr>
<tr>
<td>Cheleste Thorpe, MD</td>
<td>Associate Professor</td>
<td>Institutional Biosafety Committee Chair</td>
</tr>
<tr>
<td>Edouard Vannier, PhD</td>
<td>Assistant Professor</td>
<td>Institutional Biosafety Committee Chair</td>
</tr>
<tr>
<td>Christine Wanke, MD</td>
<td>Professor of Medicine, Professor of School of Nutrition</td>
<td>Director of Clinical HIV Research Program, Vice Chair Dept of Public Health, Principal Investigator, HIV Clinical Research Training Grant</td>
</tr>
<tr>
<td>Honorine D. Ward, MBBS</td>
<td>Professor</td>
<td>Program Director, HIV Pathogenesis Training Grant</td>
</tr>
<tr>
<td>Simone Wildes, MD</td>
<td>Assistant Clinical Professor</td>
<td>Attending Physician, South Shore Hospital</td>
</tr>
</tbody>
</table>

*New members. Drs. Martin Rhee, Patricia Hibberd, and Jennifer Wolfson left the division in 2010 and three new members, Drs. Caro, Hadley and Hong joined the faculty.
Teaching Activities

The Division provides comprehensive teaching for all levels of the medical school and for postgraduate education. In the medical school, Dr. Susan Hadley is the director of the Infectious Disease pathophysiology block. The preclinical lectures in infectious diseases are highly regarded by the medical students.

The fellowship program is comprehensive and includes training in transplant infectious diseases. From five to seven fellows are recruited each year. The program is supported by four NIH training grants, more than had by any other infectious disease training program in the United States. One grant is for microbial pathogenesis, one is for HIV pathogenesis, one is for clinical research training in infectious diseases, and one is for HIV clinical research. 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. Cases and a rigorous didactic curriculum encompass HIV medicine, nosocomial and community acquired infections, transplantation-related infections and infections acquired during travel. The second program year is devoted to research. 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.

Although the minimum training period is two years, the majority of fellows pursue an additional year of research training. The research program is funded by the NIH and provides a structured, supportive experience with formal mentorship by division faculty. Trainees also have the opportunity to obtain an MPH or MS and PhD degree in clinical research during fellowship, sponsored by the division. Outstanding research opportunities are available for fellows in basic, clinical, and translational research as shown on the website, http://www.tuftsmedicalcenter.org/OurServices/InfectiousDiseases/default?Page=8.

Current and past fellows have competed successfully for NIH-sponsored loan repayment and mentored career development awards (K08, K23) that provide the foundation for a successful academic research career. There are a number of international opportunities for research in which fellows can participate. In the past year fellows have performed research in India, Africa, and Vietnam.

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 both in the US and in international sites. 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 Tufts community. The core services are all based on the growth of micro-organisms and include large- (up to 20L) 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 have 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.
### Clinical Research Awards

<table>
<thead>
<tr>
<th>Recipient</th>
<th>Funding Source</th>
<th>Purpose of grant</th>
</tr>
</thead>
<tbody>
<tr>
<td>Geneve Allison, MD</td>
<td>Coram Home Infusion Company</td>
<td>Supporting Outcomes Research in Outpatient Parenteral Antibiotic Therapy 2010</td>
</tr>
<tr>
<td>Jennifer K Chow, MD, MS</td>
<td>K23 DK083504 NID DK/NIH</td>
<td>Iron Excess and Risk of Infection in Liver Transplant Recipients</td>
</tr>
<tr>
<td>Shira Doron, MD, MS</td>
<td>K23 AT003391-02 NCCAM/NIH</td>
<td>The gastrointestinal microbiota in subjects colonized by VRE</td>
</tr>
<tr>
<td>Sherwood Gorbach, MD</td>
<td>NIH (PI)</td>
<td>Center for Aids Research grant for collaborative research on HIV infection between Brown and Tufts University (GI, nutrition and metabolism core)</td>
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<td></td>
<td>NIH/NIDA</td>
<td>Metabolic research on HIV and drug abuse: effects of ethnicity</td>
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<td></td>
<td>NIH</td>
<td>ID Training Grant: To train physicians who have about one year of clinical training in Infectious Diseases.</td>
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<tr>
<td></td>
<td>NIDA</td>
<td>Initial research in Vietnam and India to follow patients and establish baseline nutrition and metabolic status of HIV-infected patients prior to widespread access to HAART.</td>
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<tr>
<td></td>
<td>NIDA Subcontract to Brown University</td>
<td>Training of Asian medical and scientific personnel to improve clinical care and research in HIV in Asia; Nutrition and metabolic state before and on HAART in drug abuse patients with HIV in Vietnam and India</td>
</tr>
<tr>
<td>Jeffrey Griffiths, MD, MPH</td>
<td>NIAID</td>
<td>Collaboration with CDC and Serum Institute of India to develop a thermostable measles vaccine</td>
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<tr>
<td></td>
<td>Fogarty International Center, NIH</td>
<td>Developing Global Health at Tufts University</td>
</tr>
<tr>
<td></td>
<td>USAID</td>
<td>Global Nutrition Collaborative Research Support Program (CRSP), Focus on Africa and Asia. Purpose of award: Provide evidence-based research on the linkage between (1) improved agricultural practices, (2) maternal and child nutrition, and (3) human health indices when a package of integrated interventions are implemented.</td>
</tr>
<tr>
<td></td>
<td>USAID</td>
<td>Emerging Pandemic Threat Program: RESPOND. Cooperative Agreement for development of infrastructure to respond to emerging diseases in Amazonia, Africa, South and Southeast Asia. Consortium of Tufts, Development Assistance International, and the Univ. of Minnesota. Role: co-Investigator; Curriculum Lead for East and West Congo Basin regions</td>
</tr>
<tr>
<td>Recipient</td>
<td>Funding Source</td>
<td>Purpose of grant</td>
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<tr>
<td>Michael Jordan, MD, MPH</td>
<td>WHO</td>
<td>Monitoring of HIV drug resistance emerging during treatment in sentinel ART sites in resource-limited settings</td>
</tr>
<tr>
<td></td>
<td>NIH</td>
<td>Emergence of HIV drug resistance: Low frequency mutations and associated factors</td>
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<tr>
<td>Yoav Golan, MD, MS</td>
<td>Merck</td>
<td>Development of early treatment interventions for invasive candidiasis</td>
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<tr>
<td></td>
<td>Multiple industry grants</td>
<td>Effect of microbial characteristics and antibiotic susceptibility on outcomes of MRSA bacteremia</td>
</tr>
<tr>
<td>Laura Kogelman, MD</td>
<td>CDC</td>
<td>Collaborative study with other area travel medicine clinics to assess practices of practitioners and travelers, demographics and serostatus of travelers</td>
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<td></td>
<td>Pfizer</td>
<td>Multicenter study of maraviroc (CCR5 antagonist) in treatment-naive HIV patients</td>
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<tr>
<td></td>
<td>Pfizer</td>
<td>Multicenter study of maraviroc (CCR5 antagonist) in treatment experienced HIV patients</td>
</tr>
<tr>
<td>Rakhi Kohli, MD, MS</td>
<td>K23 DK079789-01A2</td>
<td>HIV: Metabolic Abnormalities</td>
</tr>
<tr>
<td>David R Snydman, MD, FACP</td>
<td>NIH NCCAM</td>
<td>Ability of a probiotic to eliminate colonization by vancomycin-resistant enterococci</td>
</tr>
<tr>
<td></td>
<td>NIAID</td>
<td>Clinical research training grant in infectious disease</td>
</tr>
<tr>
<td></td>
<td>Industry sources</td>
<td>US National Survey of susceptibility of Bacteroides fragilis, National Survey of C. difficile antimicrobial susceptibility and epidemiology</td>
</tr>
<tr>
<td></td>
<td>R43 NIH/NIAID</td>
<td>Molecular Diagnosis of Bacterial Pathogens in VAP</td>
</tr>
<tr>
<td>Christine Wanke, MD</td>
<td>R01 NIH/NHLBI</td>
<td>The Impact of Omega Three Fatty Acids on Vascular Function and cIMT in HIV Infected Individuals</td>
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<tr>
<td></td>
<td>NIH/NICHHD</td>
<td>Nutrition and HIV Progression</td>
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<tr>
<td></td>
<td>USAID</td>
<td>Nutrition Value of US Food Aid</td>
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<tr>
<td></td>
<td>2 R01 NIH/NHLBI</td>
<td>Protease Inhibitor Related Dyslipidemia</td>
</tr>
<tr>
<td>NIH/NIAID</td>
<td>Brown-Tufts University Center for AIDS Research: Nutrition Core</td>
<td></td>
</tr>
<tr>
<td>Gates Foundation</td>
<td>NIH/NIDA</td>
<td>Center for Metabolic Research on HIV and Drug Use</td>
</tr>
<tr>
<td>NIH/NIAID</td>
<td>NIH/Fogarty</td>
<td>Immune Response to Cryptosporidiosis in a Birth Cohort of Children in S. India</td>
</tr>
<tr>
<td>NIH/Fogarty</td>
<td>Brown/Tufts/Miriam Fogarty AIDS International Training and Research Program</td>
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</tbody>
</table>
## Basic Research Support

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

<table>
<thead>
<tr>
<th>Recipient</th>
<th>Funding Source</th>
<th>Purpose of grant</th>
</tr>
</thead>
<tbody>
<tr>
<td>Linden Hu, MD</td>
<td><strong>NIAID</strong></td>
<td>Recognition of Host Catecholamines in Borrelia burgdorferi Gene Regulation</td>
</tr>
<tr>
<td></td>
<td><strong>NIAID</strong></td>
<td>Development of a multivalent vaccine for mouse reservoirs of deer tick pathogens</td>
</tr>
<tr>
<td></td>
<td><strong>NIAID</strong></td>
<td>Role of Borrelial integrin binding proteins in Lyme arthritis</td>
</tr>
<tr>
<td></td>
<td><strong>NIH</strong></td>
<td>Xenodiagnosis of Lyme disease</td>
</tr>
<tr>
<td></td>
<td><strong>NIH</strong></td>
<td>Searching for persistence in Lyme Disease</td>
</tr>
<tr>
<td></td>
<td><strong>NIDCR</strong></td>
<td>Bacterial Immunomodulation in Periodontitis</td>
</tr>
<tr>
<td></td>
<td><strong>NIAID</strong></td>
<td>Delivery system development for a reservoir targeted Lyme disease</td>
</tr>
<tr>
<td>Roberta O’Connor, PhD</td>
<td>NIH/NIAID received an ARRA supplement to R21</td>
<td>T. gondii as a model for investigation of Cryptosporidium</td>
</tr>
<tr>
<td>Cheleste Thorpe, MD</td>
<td><strong>NIH</strong></td>
<td>Mechanisms by which Shiga toxin and ricin damage ribosomes</td>
</tr>
<tr>
<td></td>
<td><strong>UO1</strong></td>
<td>Develop new treatments for Shiga toxin-E. coli disease which may be used in biodefense</td>
</tr>
<tr>
<td>Honorine D. Ward, MBBS</td>
<td><strong>2 T32 AI07389-18 NIH/NIAID</strong></td>
<td>HIV Pathogenesis Training Program - Director</td>
</tr>
<tr>
<td></td>
<td><strong>R01 AI072222-02 NIH/NIAID</strong></td>
<td>Immune Response to Cryptosporidiosis in a Birth Cohort of Children in S. India</td>
</tr>
<tr>
<td></td>
<td><strong>R03 HD057736-02 NIH/NICHD</strong></td>
<td>Probiotics for Infectious Diarrhea in Children in South India</td>
</tr>
<tr>
<td></td>
<td><strong>1 R01 AI07545-02 NIH/NIAID</strong></td>
<td>Transmission dynamics of Cryptosporidial Infections in India</td>
</tr>
<tr>
<td></td>
<td>Bill and Melinda Gates Foundation (Bhutta) Subcontract with Aga Khan University</td>
<td>Evaluation of the Impact of Zinc and/or micronutrient supplementation on intestinal flora, diarrheal diseases burden, intestinal mucosal integrity and growth among cohorts of children in Pakistan.</td>
</tr>
<tr>
<td>Edouard Vannier, PhD</td>
<td><strong>NIH/NIA</strong></td>
<td>Genetic Basis of Age-acquired Susceptibility to Babesiosis</td>
</tr>
<tr>
<td></td>
<td>Tufts Medical Center Research Fund</td>
<td>A Novel Erythrocytic Gene as a Determinant of Host Resistance to Babesiosis</td>
</tr>
<tr>
<td></td>
<td>The Gordon and Llura Gund Family Foundation</td>
<td>The Role of Immunoglobulins in the Resistance to Babesiosis</td>
</tr>
</tbody>
</table>
Honors and Awards

Helen Boucher, MD, FACP

» Antimicrobial Availability Task Force, Infectious Diseases Society of America
» Research Committee, Infectious Diseases Society of America
» Steering Committee, Mycoses Study Group
» Education Committee, Mycoses Study Group
» Editorial Board Antimicrobial Agents and Chemotherapy
» “Top 10 Papers in Mycology” (CME), 50th ICAAC Annual meeting, Boston, MA
» 37th Annual Postgraduate Course in Clinical Pharmacology, Drug Development and Regulation, Boston, MA
» Best Doctors Selection

Yoav Golan, MD, MS

» Member, Publications Committee, Infectious Disease Society of America (IDSA)
» Member, NIH Mycoses Study Group (MSG)
» Infectious Diseases Rounds, Alfred Hospital. For invasive candidiasis: fluconazole, amphotericin or the echinocandins? Melbourne, Australia.

Sherwood L. Gorbach, MD

» NIH Study Section, IRAP

Jeffrey K. Griffiths, MD

» Associate Editor, Annals of Tropical Medicine and Parasitology (2010-) (Liverpool, UK)
» Chair, Drinking Water Committee, US EPA Science Advisory Board
» Quoted by Bob Herbert, columnist for New York Times, on drinking water issues, October 26, 2010.
» Griffiths, JK. Micronutrient Deficiency in Infants and Children. Impact of Micronutrients on Respiratory Infections. National Institutes of Allergy and Infectious Diseases, May 10-11, 2010

Susan Hadley, MD

» MSG Education Committee Chairman
» Received FIDSA status

James Hellinger, MD, MPH

» Committee member, HIV Research Network Technical Advisory Group, Johns Hopkins University School of Medicine, Baltimore, MD

Steven Y. Hong, MD

» World Health Organization (WHO) Temporary Advisor to Namibia for HIV drug resistance
» Development of comprehensive curriculum for the training of consultants in the global WHO HIV drug resistance strategy
» Technical and content review of the WHO HIV drug resistance early warning indicator abstraction manual and training materials
Maxwell Finland Award for excellence in research from the Massachusetts Infectious Disease Society, May 2010

Joint United Nations Team on HIV/AIDS
Update on HIV Drug Resistance in Namibia, 23 September, 2010

World Health Organization Training Workshop on Early Warning Indicators and HIV drug resistance database. Windhoek, Namibia, 14-17 September, 2010 Facilitator

Linden Hu, MD

Reviewer, F13 Infectious Diseases and Microbiology Fellowship Study Section, NIH ZRG1 F13-C(20) L
Reviewer, NIH Bench to Bedside Study Section
Organizing Committee, NIAID Lyme Disease Diagnostics Workshop
Co-Chair Elect, 13th International Conference on Lyme Borreliosis and other Tick Borne Infections

Michael Jordan, MD, MPH


Strategies for HIV drug resistance surveillance: public health approach. N’djamena Chad. Invited speaker and course director

Laura Kogelman, MD

AIDS Action Committee, Commitment to Action Award
Quantia MD Community Choice Award
Recognition for notable teaching in the Medicine Clerkship

Debra D. Poutsiaka, MD, PhD

Member, Research Committee of the Infectious Disease Society of America (IDSA)

David R. Snydman, MD, FACP

Boston Magazine Best Doctors Selection
Best Doctor’s in America Selection
Castle Connolly Best Doctors Selection
Data Safety Monitoring Board for Genzyme on studies of Campath
Data Safety Monitoring Board for Millenium Pharmaceuticals
Data Safety Monitoring Board for Massachusetts Biologics Laboratory (Chairman for study of hepatitis C monoclonal antibody in liver transplantation)
Editorial Board - Transplantation
Editorial Board - Clinical Infectious Diseases
Editorial Board - Mayo Clinic Proceedings
Clinical Research and Development Committee Tufts(Chairman)
Grant Reviewer for Welcome Trust
Abstract Reviewer for the American Transplant Congress
Abstract Reviewer for the European Congress on Clinical Microbiology and Infectious Diseases
Ad hoc reviewer MID-B Study Section (NIH)
Christine Wanke, MD

» HIV Nutrition Roundtable, Washington, DC (NIH, WFP and WHO)
» MGH Nutritional and Metabolic Complications of HIV
» Boston, Health Care for the Homeless - Nutritional Complications of HIV
» National Institute of Epidemiology - Chennai, India - Medical Benefits of Nutrition in HIV
» NIH Nutrition in Clinical Management of HIV Infected adolescents and adults meeting: organizer and working group leader
» CVD HIV Steering Committee, NIH
» ICAAC Session Moderator: Weird Bugs in Weird Places - Panelist, ICAAC Clinical Quiz
» American Dietetics Symposium, Organizer, Speaker - Nutrition and HIV
» Brown University Medical School - Research Symposium: Nutrition and HIV
» WHO Nutrition Expert Advisory Group (NUGAG) Member
» NUGAG Meeting (Geneva) and (Jordan)
» Baystate Medical Center - Global Health
» YRG CARE Clinic Chennai ART Symposium - Benefits of Nutrition in HIV Infection
» Guidelines: CDC Opportunistic Infection Guidelines - Enteric Infections
» Guidelines: IDSA Management of Diarrhea
» Study Section - NIH Ad Hoc Study Section, NIAID, Mentored Research Awards
» Study Section - Special Emphasis Panel, HIV Clinical Research
» Study Section - Invited Reviewer, University of Washington Center for AIDS Research International Pilot Project Program

Reviewer, (ad hoc) NIH AIDS Opportunistic Infections and Cancer Study Section
» 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
» “Role of Glycans and Glycan binding proteins in Cryptosporidium-Host Cell Interactions” Consortium for Functional Glycomics Symposium Bethesda, MD May 2010
» NIH Role of Host and Parasite Glycans and Glycan-Binding Proteins in Cryptosporidium-Host Cell Interactions 11th International Workshop on Opportunistic Protozoa Hilo, Hawaii, August 2010
» Role of Mucin Glycoproteins and Glycan binding proteins in Cryptosporidium-Host Cell Interactions 10th International Coccidiosis Conference, Guangzhou, China October 2010
» Building Capacity for Diarrheal Diseases Research in India 48th Annual Meeting Infectious Diseases Society of America, Vancouver, Canada October 2010
» Sweet and Sticky: The Role of Carbohydrates in Cryptosporidium-Host Cell Interactions New York Academy of Sciences, New York, NY November 2010

Edouard Vannier, PhD

» 12th International Conference on Lyme Borreliosis and other Tick borne Diseases, Ljubljana, Slovenia. “Cellular Basis for Clearance of Babesia microti in Immunocompromised Hosts.”

Honorine D. Ward, MBBS

» Editorial Boards - BioMed Central, Infectious Diseases, Microbes and Infection
» Member, NIH College of CSIR reviewers
» Reviewer, (ad hoc) NIH Special Emphasis Panel Clinical and Translational Science Award ZRR1 CR-1
» Reviewer, (ad hoc) NIH Special Emphasis Panel ZRG1 PSE-K Director’s Opportunity 5 Themes Population Sciences and Epidemiology
» Reviewer (ad hoc) NIH Clinical Research and Field Studies of Infectious Diseases Study Section
The William Dameshek Division of Hematology/Oncology was established in the 1940s by Dr. William G. Dameshek, a world-renowned hematologist and founder of the American Society of Hematology (ASH). The William Dameshek Award for outstanding research is given each year at the ASH meeting. In 1972, Dr. Robert S. Schwartz assumed the directorship of the Division of Hematology, and oversaw its merger with the Division of Oncology in 1978. Dr. Schwartz conducted seminal studies that demonstrated the feasibility of pharmacological immunosuppression, ushering in the era of organ and marrow transplantation. In 1990, he became Deputy Editor of the New England Journal of Medicine. His successor as Division Chief, Dr. Bruce Furie, made major contributions to the fields of hemostasis and cell adhesion, and discovered P-selectin, an important platelet and vascular adhesion molecule. From 1998 to 2006, Dr. John Erban, an internationally recognized clinical breast cancer researcher, served as Division Chief, and was succeeded in 2006 by Dr. Richard Van Etten, the current Chief.

The Division has trained numerous leaders who now head major cancer centers and divisions of hematology and oncology throughout the world as well as prestigious societies including the American Society of Hematology, the American Society of Clinical Oncology, and the American Association of Blood Banks. Division faculty are involved in evaluation of novel treatments for all types of cancers.

The outpatient Hematology-Oncology Clinical Center includes a 17-bed infusion center for administration of chemotherapy and other treatments. In 2002, the Division dedicated the Neely Center for Clinical Cancer Research, and in 2004 completed construction of a $2,000,000 hematopoietic cell processing facility. The Hematological Malignancies and Bone Marrow Transplantation/Leukemia Service is nationally recognized as an innovative center for hematopoietic stem cell transplantation. In continuous operation for over 20 years, the transplantation unit continues to be a major contributor to ECOG- and NCI-sponsored transplant clinical trials, and was re-accredited by FACT in October 2009.

**Highlights of 2010**

- Hematology/Oncology Fellowship Training Program received 5-year accreditation from the Accreditation Council of Graduate Medical Education
- Hematology/Oncology clinical and research relationship launched with Jordan Hospital in Plymouth, MA
- Division members participated in the “Best of ASH” lecture series in Atlanta, San Francisco, and Washington DC
- Seven Division faculty named to the “Best Doctors in Boston” list published annually by *Boston Magazine*
<table>
<thead>
<tr>
<th>Name</th>
<th>Academic Rank</th>
<th>Title and Special Responsibilities</th>
</tr>
</thead>
</table>
| Richard A. Van Etten, MD, PhD | Professor                    | Chief, Division of Hematology/Oncology  
Director, Tufts Medical Center Cancer Center                                                        |
| Kenneth B. Miller, MD         | Professor                    | Associate Chief, Division of Hematology/Oncology                                                      |
| Eugene Berkman, MD            | Professor, Emeritus          |                                                                                                      |
| Rachel Buchsbaum, MD          | Assistant Professor          | Associate Director, Fellowship Program                                                               |
| Raymond Comenzo, MD*          | Professor (Appt. pending)    | Director, Blood Bank and Stem Cell Processing Laboratory                                              |
| Lidija Covic, PhD             | Assistant Professor          | Associate Director, Hemostasis and Thrombosis Research Laboratory                                     |
| Jane F. Desforges, MD         | Professor Emeritus           |                                                                                                      |
| Andreas Klein, MD             | Assistant Professor          | Vice Chairman, Institutional Review Board  
Clinical Director, Lymphoma and Myeloma Program  
Associate Director, Fellowship Program  
Acting Chairman and Principal Investigator, Cancer Center Tissue Banking Committee |
| Hans-Georg Klingemann, MD, PhD| Professor                    | Director, Bone Marrow and Hematopoietic Cell Transplant Program  
Leader, Hematologic Malignancies Program, Cancer Center                                               |
| Athan Kuliopulos, MD, PhD     | Associate Professor          | Director, Hemostasis and Thrombosis Research Laboratory                                               |
| Stuart Levy, MD               | Professor                    | Director, Center for Adaptation Genetics and Drug Resistance, Tufts University School of Medicine     |
| Robert Martell, MD PhD*       | Associate Professor (Appt. pending) | Leader, Program in Experimental Therapeutics                                                           |
| Paul Mathew, MD               | Associate Professor          | Prostate cancer and Genitourinary Malignancies                                                       |
| J. Scott Nystrom, MD          | Assistant Professor          | Director, Hematology/Oncology Clinical Services  
Co-Director, Head & Neck Oncology Program  
Director, Cancer of Unknown Primary and Rare Tumor Clinics                                            |
| Robert Schwartz, MD           | Professor (Associate Staff)  | Emeritus Chief, Division of Hematology/Oncology                                                       |
| Pamela Smith, MD PhD *        | Assistant Professor          | Director, Head & Neck Oncology Program                                                                |
| Hedy Smith, MD, PhD           | Assistant Professor          | Director, Benign Hematologic Disorders Program                                                         |
| Kellie Sprague, MD            | Assistant Professor          | Clinical Director, Leukemia Program  
Assistant Director, Bone Marrow and Hematopoietic Cell Transplant Program                             |
| Gary Strauss, MD, MPH         | Professor                    | Director, Hematology/Oncology Fellowship Program  
Co-Director, Lung Tumor Evaluation Clinic                                                              |
| Philip Tsichlis, MD           | Jane F. Desforges Professor  | Executive Director, Molecular Oncology Research Institute                                              |

* New member
Major Clinical Programs

The faculty of the Hematology/Oncology Clinical Center oversee three complex inpatient services: the BMT/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 17-bed infusion center provides state-of-the-art infusion support for chemotherapy, parenteral solutions, and antibiotics, in addition to education and psychosocial services. The Center for Extracorporeal Photopheresis, with two photopheresis machines and specialty staff, provides novel therapy with a nationally recognized clinical research program in allogeneic stem and marrow transplantation. All chemotherapy orders are executed through a web-enabled Oncology Management Tool known as the Sunrise Disease Manager program. Inpatient electronic ordering was implemented in 2008.

Multidisciplinary Cancer Care is the paradigm for cancer treatment offered by the Division. Division physicians participate in several multidisciplinary clinics providing multispecialty care and access to psychosocial and genetic counseling. Multidisciplinary programs and clinics for cancer treatment in 2009-10 include:

» Breast Cancer and The Breast Health Center (established 1978)
» Lung Tumor Evaluation Center – Gary Strauss, MD, MPH, Clinical Director
» Head and Neck Tumor Clinic – J. Scott Nystrom, MD, co-Director
» Hepatobiliary Tumor Clinic (established 2005) – Robert Martell, MD PhD Clinical Director
» Brain Tumor and Neuro-Oncology Program – J. Scott Nystrom, MD and Gary Strauss, MD, MPH
» Lymphoma & Myeloma Service – Andreas Klein, MD, Clinical Director
» Bone Marrow and Stem Cell Transplantation Program – Hans Klingemann, MD, PhD, Director

» Hematopoietic Malignancy Program (Tufts Medical Center Cancer Center) – Hans Klingemann, MD, PhD, Program Leader
» Benign Hematological Disorders Clinic – Hedy Smith, MD, PhD, Clinical Director
» Extracorporeal Photopheresis Program – Raymond Comenzo, MD, Director
» The Neely Center for Clinical Cancer Research – Robert Martell, MD PhD, Medical Director
» Cancer of Unknown Primary Clinic- J. Scott Nystrom MD
» Rare Tumor Clinic - J. Scott Nystrom MD
» Experimental Therapeutics Program (Tufts Medical Center Cancer Center) - Robert Martell, MD, PhD, Program Leader
» Genitourinary Malignancies Tumor Board (established 2009) - Paul Mathew, MD (Medical Oncology)

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 course entitled “Introduction to Hematology and Oncology. Dr. Sprague serves as Preceptor for the Ambulatory Medicine Elective for TUSM 3rd year students in the Breast Health Clinic and is the Director of the Hematology-Oncology Clerkship for TUSM 4th year students. Several faculty are mentors and thesis advisors for PhD graduate students enrolled in the Sackler School of Graduate Biomedical Science at Tufts University. Currently, there are 4 PhD students and 2 MD-PhD students doing thesis research in laboratories of Division faculty.

The Division’s fellowship program at Tufts Medical Center selects five clinical fellows per year from over 300 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 while maintaining a continuity outpatient clinic one half-day per week. During their clinical year, fellows are exposed to the breadth of basic
Research Activities

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. Division faculty serve in key leadership positions on ECOG disease committees. The Tufts Medical Center ECOG program is the third oldest in the United States, and supports a research network of 8 affiliated institutions throughout New England, including Baystate Medical Center in Springfield, MA and Jordan Hospital in Plymouth, MA.

Currently, the Division has 103 open clinical trials in cancer and hematology, 78 additional trials that are closed to enrollment, and 22 pending trials. Annual clinical trial funding based on patient accrual was $438,000 last year. 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 Bank 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 Investigator-Initiated Trials (IITs) that were developed within the Division.
Basic/Translational Research

The basic and translational cancer research activities of the Faculty are based in the Molecular Oncology Research Institute (MORI). Now in its seventh year of existence, MORI is a core component of the Tufts Medical Center Cancer Center and has 14 faculty members, including four clinician–scientists from the Hematology/Oncology Division who are actively involved in care of cancer patients. Current Division faculty with research laboratories at MORI include Drs. Buchsbaum, Covic, Klingemann, Kuliopulos, Mathew, Tsichlis, and Van Etten.

The following is a list of basic/translational research grants currently held by the faculty:

**Dr. Buchsbaum**

- R01 CA095559 (NCI) “Studies on the Regulation of Rac signaling”; Principal Investigator; Period: 3/1/04-2/28/11
- Principal Investigator, Tufts Cancer Center Pilot Project, “Neoadjuvant Cyclophosphamide and Docetaxel in Locally Advanced Breast Cancer: A Collaborative Trial from Bedside to Bench”; 6/08-5/09, Co-Principal Investigator, Rachel Buchsbaum, MD.
- A randomized, double-blind, multi-center phase III study comparing everolimus (RAD001) plus best supportive care versus placebo plus best supportive care in patients with advanced gastric cancer after progression on prior systemic chemotherapy, Principal Investigator Robert Martell, MD, PhD.
- Phase I Dose Escalation Study of ARQ 197 Administered in Combination with Sorafenib in Adult Patients with Advanced Solid Tumors; Principal Investigator Kathy Theall, MD, Co-Investigator Robert Martell, MD, PhD.
- Phase I Dose Escalation Study of Temozolomide with Autologous Stem Cell Rescue for Patients with Relapsed/Refractory CNS Malignancy Including Isolated Metastatic Disease”, investigator-initiated study, Principal Investigator Andreas Klein, MD.
- Phase II, Safety and Efficacy Study of Fixed Dose Radioimmunotherapy (Zevalin, Yttrium-90 Ibritumomab Tiuxetan) For Patients with Incomplete Response to Chemotherapy Prior to Autologous Stem Cell Transplant For Multiple Myeloma, investigator initiated study, Principal Investigator Andreas Klein, MD.
- Phase II Study of Umbilical Cord Blood Transplantation Following Myeloablative and Reduce-intensity Conditioning, investigator-initiated study, Principal Investigators Hans Klingemann, MD PhD and Andreas Klein, MD.
- Biological Material Collection For Studies of Immune Function, and Tumor Biology and Behavior in Subjects with Hematologic Malignancies, Bone Marrow Disorders or Immunologic Diseases, and Healthy Donors, investigator-initiated tissue banking protocol, Principal Investigator Andreas Klein, MD.
- HLA class I Haplotype Mismatched Natural Killer Cell Infusions after Autologous Stem Cell Transplant for Hematological Malignancies, FDA/IND granted – PACT (Production Assistance for Cellular Therapy), in part funded through NHLBI, Investigator-initiated study, Principal Investigator Hans Klingemann, MD PhD.
- A Randomized Trial of Extracorporeal Photopheresis, Pentostatin and Total Body Irradiation in Patients Undergoing Reduced Intensity Allogeneic Stem Cell Transplantation for the Treatment of Malignancies. Principal Investigators Kenneth Miller, MD and Kellie Sprague, MD.
- A Multicenter Phase I Clinical and Pharmacokinetic Study of DCC-2036 in Subjects with Philadelphia Chromosome Positive Leukemias (2036-01), Principal Investigator Hedy Smith, MD PhD.
- AZD2171: A Phase III, Randomized, Parallel Group, Multi-Centre Study in Recurrent Glioblastoma Patients to Compare the Efficacy of Cediranib [RECENTIN, AZD2171] Monotherapy and the Combination of Cediranib with Lomustine to the Efficacy of Lomustine Alone. Principal Investigator J. Scott Nystrom, MD.
- The Effect of Bivalirudin (Angiomax) on Platelet Function During Percutaneous Coronary Intervention, Principal Investigators: Athan Kuliopulos MD, PhD, Lidija Covic PhD, Carey Kimmelstiel, MD.

**Dr. Comenzo**

- The Lymphoma Foundation: The Role of Cyclin D1 in AL Plasma Cells.
- Genzyme Genetics: Case control study of Ashkenazi Jewish glucocerebrosidase founder mutations as risk factors for multiple myeloma.
» ECOG E4A08 Tufts #9658 A Randomized Open-label Multicenter Phase III Trial of Melphalan and Dexamethasone (MDex) versus Bortezomib, Melphalan and Dexamethasone (BMDex) for Untreated Patients with Systemic Light-chain (AL) Amyloidosis Ineligible for Autologous Stem-cell Transplantation

» Multi-center (Tufts, Lahey Clinic, MSKCC) Tufts #9149 A Phase II Clinical Trial for Untreated Patients with Multiple Myeloma Eligible for Stem Cell Transplant: Lenalidomide (Revlimid®) plus Low-dose Dexamethasone (Ld x 4 cycles) Then Stem Cell Collection Followed by Randomization to Continued Ld or Stem Cell Transplantation (SCT) Plus Maintenance Ld for SCT Patients Not Achieving at least a Very Good Partial Response (VGPR) or Having High-risk Disease

Dr. Covic
» Principal Investigator, NIH R01 CA104406, “Protease Activated Receptors in Cancer Invasion

Dr. Klein
» Principal Investigator, Charlton Fund, “Construction and Evaluation of Novel Palmytolated Peptides (Pepducins) Targeting ZAP70 Signaling in Chronic Lymphocytic Leukemia”

Dr. Klingemann
» R01 HL093981 (H. Klingemann & R. Van Etten, Dual PIs) Agency: NHLBI. Novel Cellular Therapies for Ph+ Leukemia
» HLA class I haplotype mismatched natural killer cells infusions after autologous stem cell transplant for hematological malignancies

Dr. Levy
» Principal Investigator, NIH 5-R01 AI 56021-22 - The Multiple Antibiotic Resistance (mar) regulon
» Principal Investigator, USDA 2006-35604-16673 - Genetics of soil survival and persistence of Pseudomonas fluorescens
» Principal Investigator, “Studies of Tetracycline Resistance”, Paratek Pharmaceuticals
» Principal Investigator, “Effect of topical administration of VIGAMOX (a fluoroquinolone) on the emergence of fluoroquinolone resistance among skin, nasal and oropharyngeal flora”, Alcon Research Institute

Dr. Martell
» A Phase 1 Dose Escalation Study of ARQ 621 in Adult Patients with Metastatic Solid Tumors and Hematologic Malignancies, Principal Investigator Robert Martell, MD, PhD.
» Phase 1 Study of the Anti-VEGFR-3 Monoclonal Antibody IMC-3C5 in Subjects With Advanced Solid Tumors Refractory to Standard Therapy or for Which No Standard Therapy is Available, Principal Investigator Robert Martell, MD, PhD.
» A Phase 1 Study of LY2523355 in Patients with Acute Leukemia, Principal Investigator Robert Martell, MD, PhD.
» A Phase III Randomized, Double-Blind Trial of Chemoembolization with or without Sorafenib in Unresectable Hepatocellular Carcinoma (HCC) in Patients with and without Vascular Invasion, Principal Investigator Robert Martell, MD, PhD

Dr. Mathew
» Pilot Study of Sunitinib, Hormonal Ablation and External Beam Radiation Therapy in Localized High-risk prostate cancer. Principal Investigator Paul Mathew MD
» Phase III Study of Docetaxel, Prednisone and Dasatinib in Castration-resistant metastatic prostate cancer. Principal Investigator Paul Mathew MD

Dr. Tsuchlis
» Awarded new NIH grant, R01 CA124835 – “Tpl2 in intestinal tumorigenesis”

Dr. Van Etten
» Principal Investigator, NIH R01 “CA 90576, “Studies of BCR/ABL Leukomogenesis in Mice: 2006-2011
» Principal Investigator, NIH R01 HL089747, “Molecular Pathogenesis & Therapy of JAK2 V617F-induced Myeloproliferative Disease”
» Principal Investigator, T32 CA09429, “Research training in oncology”
» Co-Principal Investigator (with H. Klingemann), R01 HL093981, “Novel cellular therapies for Ph+ leukemia”
Honors and Awards (partial list)

Dr. Buchsbaum

» Tufts University School of Medicine Faculty Teaching Award Diane Connolly-Zaniboni Scholar in Breast Cancer Research
» Successful 5-year reaccreditation with commendation of Hematology-Oncology Fellowship Training Program.

Dr. Comenzo

» Amyloidosis – an Update. Fellowship Lecture, Hematology Branch, National Heart, Lung, and Blood Institute, National Institutes of Health, Washington, DC.
» Multiple Myeloma: highlights of ASH 2009. American Society of Hematology, Washington, DC and Atlanta, GA.
» Light-chain Amyloidosis: Water-boarding the Plasma Cell. Weekly Hematology Rounds, Brigham & Women’s Hospital, Boston, MA.
» Clonal Plasma Cell Disorders and their Current Management. Hematology-Oncology Grand Rounds, Baystate Medical Center, Springfield, MA.
» High-dose Therapy and Stem Cell Transplantation for Multiple Myeloma: A Durable Success Story. Massachusetts Association of Blood Banks Annual Meeting, Westborough, MA.
» Monitoring of AL Amyloidosis Using serum free light chains. XII International Symposium on Amyloidosis, Rome, IT.
» Pathobiologic associations of plasma cell (PC) overexpression of Cyclin D1 (CCND1) in systemic AL amyloidosis (AL). XII International Symposium on Amyloidosis, Rome, IT.
» High rates of overall and complete hematologic response in a prospective phase 1/2 study of weekly and twice-weekly bortezomib in relapsed AL Amyloidosis. XII International Symposium on Amyloidosis, Rome, IT.
» Novel Agents and a New Era of Drug Development for AL Amyloidosis. Medical Grand Rounds, Roswell Park Cancer Center, Buffalo, NY.
» Amyloidosis: Novel Agents. American Society of Hematology, Educational Program of the 53rd Annual Meeting, Orlando, FL.
» Multiple Myeloma: Tailoring Treatment to Optimize Patient Outcomes. Hematology-Oncology Conference, Jamestown Oncology Center, Jamestown, NY.
» Boston Magazine, Best Doctors 2010

Dr. Covic

» Invited speaker Nature Biotechnology SciCafe, Boston, MA
» Chair Pepducin Science Symposium, Cambridge, MA
» Invited speaker 7th Annual Congress: G Protein Coupled Receptors in Drug Discovery, Barcelona, Spain
» Invited speaker Peptide Symposium, Tufts University, MA
» Invited speaker Pepducin Science Symposium, Cambridge, MA
» Invited speaker ENC 2011 neuropeptide, Cambridge, MA

Dr. Klingemann

» Invited Speaker: Highlights of ASH, San Francisco, CA
» Invited Speaker: Indications and outcomes of stem cell transplant, Brockton Hospital, MA
» Invited Discussant: Leukemia Forum 2010, San Francisco, CA
» Member, Leukemia Committee, ECOG
» Member, NHLBI, Protocol Review Committee for bone marrow transplant, Member, NCI: Special emphasis panel: Therapeutic strategies for cancer
» Boston Magazine, Best Doctors 2010
  – Editorial Boards:
    – Biology of Blood and Marrow Transplant
    – Bone Marrow Research
    – The Open Tissue Engineering & Regenerative Medicine Journal
    – Blood and Lymphatic Cancers
Dr. Kuliopulos

» Gordon Research Conference on Proteolytic Enzymes and Their Inhibitors, Platelet Proteases and Protease-Activated Receptor-1, Il Ciocco-Barga, Italy May 2-7, 2010
» Speaker and Panelist “Our Journey: Founders talk of their companies”, Massachusetts Life Sciences Innovation Day 2010, Boston, MA June 2, 2010
» 6th International Meeting ADP2010, Villa Cagnola, Grazzada-Schianno, Italy (CME accredited lecture) Sept 2-4, 2010
» Co-Organizer and Chair, 2nd Pepducin Science Symposium, Cambridge, MA Nov 4-5, 2010
» Elected to the American Association of Physicians
» Chair, Scientific Advisory Board Anchor Therapeutics, Cambridge MA
» Professor of Medicine and Biochemistry, Tufts Medical School

Dr. Levy

» Univ. of Alberta, Diane Taylor lectureship in microbiology (2010)

Dr. Matthew

» Boston Magazine, Best Doctors 2010

Dr. Miller

» Boston Magazine, Best Doctors 2010
» Mass Society of Clinical Oncology Annual Meeting- Lectures.
» MGH Leukemia Conference
» BMT Symposium
» Medical Grand Rounds, St. Vincent Hospital, Worcester Medical Center, Worcester, MA
» Tumor Board – Texas Transplant Center
» Invited Speaker Dana Farber Survivorship Conference
» Invited Speaker National Bone Marrow Donor Program

Dr. Nystrom

» Invited Speaker: St. Luke’s-Roosevelt Hospital Center NYC Carcinoma of Unknown Primary an Orphaned Entity 1/28/10
» Invited Speaker: Tufts Medical Center Oncology Grand Rounds: Carcinoma of Unknown Primary; March 19th, 2010
» Invited Speaker: Grand Rounds Cedar Sinai Hospital – Tower Oncology Los Angeles, CA. Metastatic Cancer of indeterminate Origin. October 12, 2010
» Invited Speaker: Carney Hospital Grand Rounds, Boston, MA. Metastatic Cancer of Indeterminate Origin 10-27-2010

Dr. Sprague

» Boston Magazine, Best Doctors, 2010

Dr. Strauss

» Boston Magazine, Best Doctors, 2010
Dr. Tsichlis

» Keynote speaker for the “Joint retreat of the Cancer and Inflammation Programs and the Laboratory of Cancer Biology and Genetics, National Institutes of Health.
» MicroRNAs and human disease and development meeting, Cambridge MA March 2010
» Basic Research Grand Rounds, Moffitt Cancer Center, Tampa Florida
» Basic Research Grand Rounds, Dartmouth Hitchcock Medical Center
» Broad Institute. Invited speaker for the celebrations of the life achievements of Dr Ed Scolnick
» Member: External Advisory Board of the Institute of Molecular Biology and Biotechnology of the University of Crete.
» Member, External Advisory Board of the Biomedical Research Institute of the Academy of Athens.
» Member of an External Evaluation Committee examining the teaching and research activities of Greek Universities.
» Chartered member: Molecular Oncogenesis (MONC) Study Section
» Member: Review Committee for the Charles A. King Trust Postdoctoral Fellowship Program
» Ad hoc reviewer: AICR and Leukemia and Lymphoma Research, United Kingdom.

Dr. Van Etten

» Program Chair and speaker, Highlights of ASH®, Washington DC Jan 29-30, 2010
» Program Chair and speaker, Highlights of ASH®, Atlanta GA Feb 5-6, 2010
» Invited speaker, 5th International Symposium on MDS and MPN, MD Anderson Cancer Center, Houston TX Apr. 24-25, 2010
» Program Chair and speaker, Highlights of ASH® Latin America, Rio de Janeiro, Brazil May 13-15, 2010
» Invited speaker, Targeting the Kinome in Leukemic Disorders, 15th Annual European Hematology Association Congress, Barcelona Spain June 12, 2010
» Organizing Committee and Invited speaker, 12th International ESH Conference on Chronic Myeloid Leukemia, Washington DC Sept. 24-25, 2010
» Hematology/Oncology Grand Rounds, University of Nebraska, Omaha NE Oct. 15, 2010
» Invited speaker, Myeloid Neoplasia Committee Scientific Session, 52nd Annual ASH meeting, Orlando FL Dec. 4-5, 2010
» Invited speaker, 5th International Workshop on CML and MPN, Orlando FL Dec. 8-9, 2010
DIVISION OF INTERNAL MEDICINE AND ADULT PRIMARY CARE

Overview

The Division of Internal Medicine and Adult Primary Care of Tufts Medical Center is the principal clinical home for adult internal medicine, family medicine, and geriatrics and transitional care medicine. The division contains four sections, described below. General Medical Associates (GMA) comprises several ambulatory internal medicine practices. Most of the physicians are internists and family medicine physicians but some are research physician/scientists who maintain their clinical skills in internal medicine with part-time practices in GMA.

The Pratt Diagnostic Center is a concierge model practice based on the medical home model. 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 general medicine inpatient service is a Hospitalist service caring for a wide range of medical conditions. As the only non-subspecialty inpatient medical service, it serves as an important component of the resident and medical student education experience.

The Geriatrics section offers a geriatric rotation 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 2010

In FY 2009 the Division of Internal Medicine and Adult Primary Care began a three year growth plan to expand the primary care team. The division has recruited nine new primary care physicians thus far, a gratifying achievement in a highly competitive market.

» Dr. Deborah Blazey-Martin was recruited as the Assistant Chief for Clinical and Quality Development.
» Six new physicians were recruited to the Division.
» The patient panel was expanded from 28,825 to 31,020 patients, a 7.6% increase.
» Participation in NEQCA, the New England Quality Care Alliance. This network of community and academic physicians is dedicated to providing comprehensive, innovative, high-quality and affordable health care and to support the teaching and research mission of Tufts Medical Center.
» Highest quality performance metrics in the NEQCA physicians’ group in the areas of diabetes, cancer screening, blood pressure, and other measures.
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<tr>
<th>Name</th>
<th>Academic Rank</th>
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<tbody>
<tr>
<td>Michael Wagner, MD</td>
<td>Associate Professor</td>
<td>Chief of Division</td>
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<tr>
<td>Dineli Ahearn, MD</td>
<td>Assistant Professor</td>
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<tr>
<td>Deborah Blazey-Martin, MD</td>
<td>Assistant Professor</td>
<td>Assistant Chief for Clinical and Quality Development</td>
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<tr>
<td>Michael Cantor, MD</td>
<td>Assistant Professor</td>
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<tr>
<td>Jeannine Carlson, MD</td>
<td>Associate Clinical Professor</td>
<td>Pratt Diagnostic Center</td>
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<td>Niamh Carroll, MD</td>
<td>Assistant Professor</td>
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<td>Peter Castaldi, MD</td>
<td>Assistant Professor</td>
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<tr>
<td>Daniel Chandler, MD</td>
<td>Assistant Professor</td>
<td>Director of Resident Internal Medicine Education</td>
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<tr>
<td>Elaine Choi, MD</td>
<td>Assistant Professor</td>
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<tr>
<td>Brian Cohen, MD</td>
<td>Assistant Professor</td>
<td>Director, Pratt Diagnostic Center</td>
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<td>Kimberly Dowdell, MD</td>
<td>Assistant Professor</td>
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<tr>
<td>John Doyle, MD,</td>
<td>Assistant Professor</td>
<td>Medical Director of Employee Health Services</td>
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<td>Paul Duncan, MD</td>
<td>Assistant Professor</td>
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<tr>
<td>Richard Dupee, MD</td>
<td>Associate Clinical Professor</td>
<td>Chief of Geriatrics</td>
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<tr>
<td>David Fairchild, MD</td>
<td>Associate Professor</td>
<td>Chief Medical Officer</td>
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<tr>
<td>Radhika Hariharan, MD</td>
<td>Assistant Professor</td>
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<td>Eileen Hession, MD</td>
<td>Assistant Professor</td>
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<td>Linda Kaplan, MD</td>
<td>Assistant Professor</td>
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<tr>
<td>Winifred Kender, MD</td>
<td>Assistant Professor</td>
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<tr>
<td>David Kent, MD</td>
<td>Professor</td>
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<tr>
<td>Richard Kopelman, MD</td>
<td>Professor</td>
<td>Vice-Chair for Education; Program Director, Internal Medicine Residency Program</td>
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<tr>
<td>Diane Krause, MD,</td>
<td>Assistant Professor</td>
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<tr>
<td>Joan Kross, MD</td>
<td>Associate Clinical Professor</td>
<td>President, IPA</td>
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<tr>
<td>Nicole Malouf, MD</td>
<td>Assistant Professor</td>
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<tr>
<td>Cinthya Marturano, MD</td>
<td>Assistant Professor</td>
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<tr>
<td>Sonia Mathew, MD</td>
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<tr>
<td>Catherine Milch, MD</td>
<td>Assistant Professor</td>
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<td>Julia Murphy, MD</td>
<td>Assistant Professor</td>
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<td>Jennifer Nansteel, MD</td>
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<tr>
<td>Ronnie Ortiz, MD</td>
<td>Assistant Professor</td>
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<tr>
<td>Judy Pinsker, MD</td>
<td>Associate Clinical Professor</td>
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<tr>
<td>Fadi Ramadan, MD</td>
<td>Assistant Professor</td>
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<tr>
<td>Joseph Rencic, MD</td>
<td>Associate Professor</td>
<td>Associate Program Director of Internal Medicine Residency Program; Clerkship Director</td>
</tr>
<tr>
<td>Joyce A. Sackey, MD</td>
<td>Associate Professor, Department of Medicine and Department of Public Health and Community Medicine</td>
<td>Dean, Multicultural Affairs/Global Health</td>
</tr>
<tr>
<td>Kimberly Schelling, MD</td>
<td>Assistant Professor</td>
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</table>
Major Clinical Programs

The division of Internal Medicine and Adult Primary Care continues to increase its primary care services at Tufts Medical Center. In addition to General Medical Associates (GMA), the division has expanded services in Geriatrics, inpatient medicine and alternative health programs. The clinical Geriatrics group at the Tufts Medical Center campus has been increased to five. The Division is also expanding services into alternative and complementary medicine with certification in acupuncture for two physicians.

General Medical Associates (GMA) is the largest ambulatory practice at Tufts Medical Center and comprises four ambulatory internal medicine teams located in the Biewend building. The Division cares for more than 30,000 patients resulting in over 65,000 visits per year. GMA consists of 32 internists whose careers are primarily in clinical care as well as 8 other physicians who have primary appointments in other divisions, mainly research divisions, but practice clinical medicine in GMA. General Medical Associates is a collaborative practice model where physicians, nurse practitioners, residents, and medical students work together to provide comprehensive ambulatory medicine. The division is a major source of referrals to subspecialty colleagues and assists in the coordination of care across services within the organization.

As part of a continuous process of providing better and more efficient customer service to patients, General Medical Associates initiated a program to improve telephone access. This project has markedly enhanced patient satisfaction.

In an effort to improve the care provided to diabetics, GMA has hired Dr. Radhika Hariharan, an exceptional diabetes specialist, who also practices in the Endocrinology Division. Through this liaison, primary care providers are able to obtain intensive diabetes consultation, management, and education promptly and efficiently.

The GMA Anticoagulation Service monitors patients on Warfarin and Lovenox. The service is primarily managed by nurses in consultation with a pharmacist and the primary care physicians. Patients can have the blood drawn in a variety of sites convenient for them. In 2010 the service managed over 500 patients and had excellent results in terms of compliance and time in the therapeutic range.

The Pratt Diagnostic Center provides a high level of service coupled with expert diagnostic care in a concierge model. Under the direction of Dr. Brian Cohen, the program has thrived since its inception six years ago. The Pratt Diagnostic Center markets its services and clinical practice to members of the Boston business community.

The general medicine inpatient service continues to be an important clinical and educational program. Whereas most of the ward services at Tufts Medical Center are subspecialty 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.
Teaching Activities

The educational programs of the division consist of the following:

- Ambulatory Medicine in GMA
  - Residents’ Continuity Clinic
  - Ambulatory block rotations
  - Geriatric block rotation
  - Third year medical student rotation through GMA

- Inpatient and Consult Medicine
  - General Medicine Inpatient Service with a 3rd year resident and 2 interns
  - Third Year Medicine Clerkship for Tufts University School of Medicine
  - Fourth-year medicine sub-internships for Tufts University School of Medicine
  - General Medicine consult service with a 3rd year resident

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 24 new interns and has a total of 72 residents and three chief medical residents.

Dr. Joseph Rencic provides oversight for the medical students during their third and fourth year medicine clerkships at Tufts Medical Center. Together with Drs. Laura Snydman and Dan Chandler, Dr. Rencic recently introduced a “Resident as Teacher” program to enhance the skills of residents in teaching medical students. This new program has been well received by residents and was presented as a poster at the national Society of General Internal Medicine meeting in 2008.

Dr. Daniel Chandler is Director of Resident Education for Internal Medicine and Adult Primary Care. In this role he sets the overall education agenda for 72 residents that rotate through GMA for their continuity and primary care experience.

Dr. Elisabeth Wilder coordinates the second year medical student physical diagnosis course.

The faculty of the division continues to be recognized 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 is an important source of patients for clinical research trials at the medical center. With more than 30,000 patients in the practice and an electronic medical record which enables researchers to identify patients with specific diagnoses, the Division is able to work collaboratively with institutionally-sponsored research projects on identifying patients for research projects.

Honors and Awards

Daniel Chandler, MD

Awards
- Northeast Group on Educational Affairs (NEGEA [regional AAMC association]) Annual Educational Retreat 2010, Innovation in Resident Education Award, co-recipient with Laura Snydman and Joseph Rencic for research abstract, “Peer Observation and Feedback of Resident Teaching During Work Rounds”.
- Milton O. and Natalie V. Zucker Clinical Teaching Prize for Outstanding Innovation in clinical teaching (with Drs. Snydman and Rencic).
- TUSM Innovations in Education Intramural Grant Recipient (with Drs. Snydman and Rencic).

Medical School Activities

- 2010-2011 Preceptor, TUSM foundations of Patient Care, Competency-based Apprenticeship in Primary care

Oral Presentations

Poster Presentations

Presentations
- Rencic J, Chandler D, Snyderman LK. Teaching Residents to Teach. Carney Hospital Grand Rounds.

Workshops

Richard Kopelman, MD

Awards

» Tufts University School of Medicine
   Distinguished Faculty Award

Mary Lee, MD, Associate Provost, Tufts University, Professor of Medicine, Department of Medicine

University Activity

» “Bridging Global Health, Medical Education Innovation, and Technology,” (Keynote) Bay State Medical Center Research Week, Springfield, MA

National Activity

» American College of Physicians (ACP), Laureate of the Massachusetts Chapter

» External Advisory Board Member, Associated Medical Schools of New York (AMSNY) Leadership Conference

» Invited external site visit team member representing the Commission on Institutions of Higher Education of the New England Association of Schools and Colleges for university accreditation

» “Targeted, comprehensive care in the field: can mobile technology deliver the support we need?” (invited presentation and discussion), USAID, Washington, DC

» “Using mobile technology to enhance remote clinical training and service for underserved populations: an India-USA partnership” (Poster Session) R. Vyas, S. Albright, D. Walker, A Zachariah and M.Y. Lee; NIH mHealth Summit, Washington, DC

» “Integrating Clinical Data Collection with Locally Customizable Mobile Education and Training for Health Care Workers” (Poster Sessions) P. Biondich and MY Lee; NIH mHealth Summit, Washington, DC

» “Enabling Systems for Global Health at Tufts University” (Presentation) Consortium of Universities for Global Health Conference (CUGH) in Seattle, WA

» “Educational Innovations for Global Health at Tufts University” (Presentation) Consortium of Universities for Global Health Conference (CUGH) in Seattle, WA

» Invited faculty: Presentations and discussions on TUSK and Academic Leadership Development for Associated Medical Schools of New York (AMSNY), New York City

» “Using OER to Support Global Health”, poster session presentation and discussion at Hewlett Foundation Grantees Conference, Yale University, New Haven, Connecticut

» “Research In Medical Education Grantsmanship: How to Write Promising Grant Proposals” (Workshop) M Blanco and MY Lee; AAMC Annual Meeting, Washington, DC

» “Writing Effective Grant Proposals” (Workshop) M Blanco, MY Lee; NEGEA Retreat in Farmington, CT

International Activity

» Invited faculty: Week-long series of faculty development workshops for integrating TUSK tools into curriculum and programs, including mobile applications, Christian Medical College, Vellore, India

» “Making the Most of your Lecture: How can you promote active learning?” and “ Promoting Active Learning with Technology in Classrooms, Clinics, and Beyond” (Presentations) Korea University, Seoul

» OER-in-Health Interest Group (Discussion Leader); “Harnessing OER to Develop Health Education Systems in Africa” (Panelist); “Using the OER Model Across a National Network to Strengthen Health Care Education and Clinical Care in Remote Areas of Need” (Workshop); “Challenges and Key Factors for the Success of Mobile Platforms” (Panelist); OpenCourseWare Consortium Global Conference, Hanoi, Vietnam
Invited faculty: Medical Education and Curriculum Development (3-day series of workshops) J Sackey, YC Sung, MY Lee; University of Ghana, Accra

Co-Principal Investigator with Harris Berman, MD, and Anand Zachariah. Anonymous Foundation. Funding to strengthen educational capacity at Christian Medical College (CMC), Vellore, India – three-year project with Indian partners to establish TUSK at CMC and expand TUSK reach to secondary hospital partners throughout India.

Fadi Ramadan, MD
Invited Speaker

» Geriatrics for the Rheumatologist. Tufts Medical Center.
» Geriatric Series Grand Rounds, Four Grand rounds at Lawrence General and Holy Family Hospital.
» Geriatric Syndromes. Carney Hospital Grand Rounds.
» Aging of the Endocrine System. Endocrinology Division, Tufts Medical Center.
» Update in Geriatrics, Tufts Medicine Grand Rounds, Tufts Medical Center.
» Hypertension & weight loss Review Lecture. Internal Medicine Division, Tufts Medical Center.

Presentations

» Clinical Practice of Medicine for 2nd year TUSM students – Geriatric Assessment. Nursing Home Experience – Hale House, Boston, MA.

Research

» Medical Care for Minorities in US Nursing Homes. Abstract accepted for publication & presentation at the American Geriatrics Society Annual Scientific Meeting, Orlando Florida.

Joseph Rencic

Awards

» The 2010 Medical Educator Award, New England region, Society of General Internal Medicine, awarded to the outstanding generalist clinician-educator in the New England region.
» Northeast Group on Educational Affairs (NEGEA [regional AAMC association]) Annual Educational Retreat 2010, Innovation in Resident Education Award, co-recipient with Laura Snydman and Dan Chandler for research abstract, “Peer Observation and Feedback of Resident Teaching During Work Rounds”.
» Mitus Special Faculty Recognition Award, awarded by Tufts University School of Medicine medical student Class of 2010 to a faculty member who has made medical school a more enjoyable experience through his exemplary teaching and genuine concern for student interest.
» Zucker Award for Innovations in Medical Education, awarded annually by the Tufts University School of Medicine curriculum committee for innovative medical education research.
» Selected Tufts faculty member for 2011 Macy’s Scholars Program for Educators in Health Professions.

Presentations

» Rencic J., Clinico-pathological case conference: A 65 y.o. male with new-onset right scrotal swelling. Tufts Medical Center Department of Medicine Grand Rounds.

Laura K. Snydman, MD

Awards

» Medical Economics Doctor Writing Contest Young Doctor Award
» Northeast Group on Educational Affairs (NEGEA [regional AAMC association]) Annual Educational Retreat 2010, Innovation in Resident Education Award.
co-recipient with Daniel Chandler, MD and Joseph Rencic, MD for research abstract, “Peer Observation and Feedback of Resident Teaching During Work Rounds”

» Milton O. M’30 and Natalie V. Zucker Clinical Teaching Prize for Outstanding Innovation in clinical teaching (with Drs. Chandler and Rencic)

» TUSM Innovations in Education Intramural Grant Recipient (with Drs. Chandler and Rencic)

» Graduate of the 2010 Stanford Faculty Development Center’s Basic Science facilitator-training program

Housestaff Activities

» Co-director of Annual Tufts Medical Center Internal Medicine Intern-to-Resident Retreat

» Conference director, TUSM Annual Rising Chief Resident Faculty Development Conference

Presentations and Workshops


» Rencic/Chandler/Snydman. Teaching Residents to Teach. Carney Hospital Internal Medicine Grand Rounds.

» Snydman/Blanco: Medical Students as Teachers: Participant’s perceptions of the impact of a fourth-year medical education elective on their current teaching practice as residents. The Northeastern Group on Educational Affairs. Connecticut.


» Snydman/Chandler/Sung/Rencic: Peer Observation and Feedback of Resident

Michael Wagner, MD

» Vice Chair of Institutional Review Board, Tufts Medical Center and Tufts University Health Sciences, 2009-2010

Elisabeth Wilder, MD

Awards

» Julius Kritzman Award for Primary Care Teaching

Excellence in Teaching Citations by 3rd Year Students:

» Daniel Chandler, MD

» Richard Kopelman, MD

» Myron Siu, MD

» Michael Wagner, MD
Overview

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 at Tufts-New England Medical Center in the subspecialty of geriatrics. Residents and students receive formal instruction and are assigned clinical experience in geriatric medicine.

Over the past few years, the service has gained local and national recognition as its Chief, Dr. Dupee, appeared on the “Today Show” as the “resident geriatrician”, and played a major role in the coverage several years ago of the Pope’s illness. With the opening of the MedWest Center for Memory Disorders and Conditions of Older Adults, Tufts Medical Center is gaining recognition as a center of excellence in the diagnosis and treatment of Alzheimer’s disease.
Major Clinical Programs

MedWest Center for Memory Disorders and Conditions of Older Adults

In June 2004, the MedWest Center for Memory Disorders and Conditions of Older Adults was established in conjunction with Tufts Medical Center. A team of specialists 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 and this approach has given substantial support to patients and families.

Teaching Programs

The Geriatrics Service is engaged in the teaching of Tufts University medical students and internal medicine residents. For students, exposure to geriatrics may begin as early as in the first year. Each year a first year student with an interest in geriatrics spends one-half day a week in Dr. Dupee’s Wellesley office. The elective is consistently rated highly by student evaluations.

Third-year clerkship students doing electives in medicine attend conferences on geriatric conditions during each block at Tufts Medical Center.

Internal medicine residents at Tufts Medical Center are exposed to case-based noon conferences dealing with geriatric conditions. The sessions are highly interactive. In addition, second-year residents have the opportunity to work in Dr. Dupee’s Wellesley office seeing patients with him. This format allows residents to have some exposure to longitudinal care of the elderly. The program has been popular with residents, some of whom have chosen second and even third sessions.

Faculty

<table>
<thead>
<tr>
<th>Name</th>
<th>Academic Rank</th>
<th>Title and Special Responsibility</th>
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<tbody>
<tr>
<td>Richard Dupee, MD</td>
<td>Associate Clinical Professor</td>
<td>Chief of Geriatrics</td>
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<tr>
<td>Michael Cantor, MD</td>
<td>Assistant Professor</td>
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</tr>
<tr>
<td>Daniel Chandler, MD</td>
<td>Assistant Professor</td>
<td>Director of Resident Internal Medicine Education</td>
</tr>
<tr>
<td>Winifred Kender, MD</td>
<td>Assistant Professor</td>
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<tr>
<td>Cinthya Marturano, MD</td>
<td>Assistant Professor</td>
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<tr>
<td>Fadi Ramadan, MD</td>
<td>Assistant Professor</td>
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<tr>
<td>Myron Siu, MD</td>
<td>Assistant Professor</td>
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Honors and Awards

Richard Dupee, MD

National Professional Society Committee Appointments
» Member, American Geriatrics Society: Practice Management Advisory Group (2003-2009)
» Member, American Geriatrics Society, COSAAR (2002-2010)
» President, Massachusetts Geriatrics Society (2006-2009)
» Governor, American College of Physicians, Massachusetts Chapter, 2010-2014
» Member, Editorial board, “Annals of Long-term Care” (2003-present)
» Invited to lead geriatrics conference in Saudi Arabia in May, 2010

Fadi Ramadan, MD

Committee Membership
» Member, Institutional Review Board (IRB), Tufts Medical Center.
» Member, Geriatric Task Force Committee, TUSM & Bay State Medical Center.
» Member, Physician Wellness Committee, Tufts University School of Medicine

Invited speaker
» Geriatric Series Grand Rounds, Four Grand rounds at Lawrence General and Holey Family Hospital, Spring 2010
» Geriatric Syndromes. Carney Hospital Grand Rounds, September 2010
» Aging of the Endocrine System. Endocrinology Division, Tufts Medical Center, October 2010
» Update in Geriatrics. Tufts Medicine Grand Rounds. Tufts Medical Center, November 19, 2010
» Hypertension & weight loss Review Lecture. Internal Medicine Division, Tufts Medical Center, December 14, 2010

Presentations
» Clinical Practice of Medicine for 2nd year TUSM students – Geriatric Assessment. Nursing Home Experience – Hale House, Boston, MA. November 2009 (two Wednesday sessions) & May 2010 (one session).

Research
Overview

The William B. Schwartz Division of Nephrology is internationally known for the quality of its 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).

The Division has established multidisciplinary clinics for stone disease, polycystic kidney disease, and kidney transplantation. A home dialysis program has been established for selected patients and continues to grow.

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 in pursuit of a Master of Science degree at the Sackler School of Graduate Biomedical Sciences at Tufts University.

The extensive research programs of the Division include epidemiological studies of chronic kidney disease; the standardization of methods to assess progression of disease; cardiac and cerebrovascular disease in patients with chronic kidney disease; the study of patient-based outcomes; and the development and implementation of clinical practice guidelines. Basic science studies involve the role of inflammation and oxidative stress in chronic kidney disease and the role of immunosuppressive regimens in predisposing patients to infections in dialysis and transplant patients.

Tufts Medical Center is the site of the editorial offices of the American Journal of Kidney Diseases (AJKD), the official journal of the National Kidney Foundation. The Editor, Deputy Editor, and other Editors are members of the Division. Their selection is a tribute to the national stature of the Division.

Highlights of 2010

» The Division was again ranked in the 50 best hospitals for nephrology in US News and World Report
» The research budget exceeds $4M, with 4 Division members holding Career Development (K23) Awards and 1 holding a prestigious Midcareer Investigator Award in Patient Oriented Research (K24).
» Drs. Levey, Perrone and Sarnak were recognized in Boston Magazine as among Boston’s best nephrologists.
» The hospital-based hemodialysis program was recognized as one of very few to use arteriovenous fistulas on more than 70% of its hemodialysis patients.
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<thead>
<tr>
<th>Name</th>
<th>Academic Rank</th>
<th>Title and Special Responsibility</th>
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<tbody>
<tr>
<td>Andrew S. Levey, MD</td>
<td>Professor</td>
<td>Division Chief&lt;br&gt;Editor of the American Journal of Kidney Diseases&lt;br&gt;Director, Tufts Center for Kidney Disease Clinical Guideline Development and Implementation</td>
</tr>
<tr>
<td>Ronald D. Perrone, MD</td>
<td>Professor</td>
<td>Associate Division Chief&lt;br&gt;Director, Polycystic Kidney Disease Center&lt;br&gt;Medical Director, Kidney Transplantation</td>
</tr>
<tr>
<td>V. S. Balakrishnan, MD, PhD</td>
<td>Associate Professor</td>
<td>Director, Continuing Medical Education</td>
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<tr>
<td>Jeanine A. Carlson, MD</td>
<td>Associate Clinical Professor</td>
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<tr>
<td>Michael B. Cohen, MD</td>
<td>Assistant Professor</td>
<td>Co-Medical Director, DCI Ball Square</td>
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<tr>
<td>Anthony Z. Dash, MD</td>
<td>Assistant Professor</td>
<td>Co-Medical Director, DCI Ball Square</td>
</tr>
<tr>
<td>Scott J. Gilbert, MD</td>
<td>Associate Professor</td>
<td>Director, Fellowship Training Program&lt;br&gt;Medical Director, Kidney and Blood Pressure Center</td>
</tr>
<tr>
<td>Bertrand L. Jaber, MD, MS</td>
<td>Associate Professor</td>
<td>Vice Chairman of Medicine for Clinical Affairs, St. Elizabeth’s Medical Center</td>
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<tr>
<td>Annamaria T. Kausz, MD, MS</td>
<td>Assistant Professor</td>
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<tr>
<td>Andrei Kouznetsov, MD</td>
<td>Assistant Professor</td>
<td>Associate Medical Director, DCI Walden Pond</td>
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<tr>
<td>Amy B. Kuhlik, MD</td>
<td>Assistant Professor</td>
<td>Dean for Student Affairs, TUSM</td>
</tr>
<tr>
<td>Nicolaos E. Madias, MD</td>
<td>Maurice S. Segal, MD&lt;br&gt;Professor of Medicine</td>
<td>Chairman, Department of Medicine, St. Elizabeth’s Medical Center</td>
</tr>
<tr>
<td>Klemens B. Meyer, MD</td>
<td>Professor</td>
<td>Director, Dialysis Services Tufts Medical Center&lt;br&gt;Medical Director, DCI Boston and DCI Walden Pond&lt;br&gt;Medical Director, Home Dialysis Program at DCI Ball Square&lt;br&gt;Medical Director, DCI Information Systems</td>
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<tr>
<td>Dana C. Miskulin, MD, MS</td>
<td>Assistant Professor</td>
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<tr>
<td>Valerie R. Price, MD</td>
<td>Assistant Clinical Professor</td>
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<tr>
<td>Madhumathi Rao, MD, PhD</td>
<td>Assistant Professor</td>
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<tr>
<td>Michelle M. Richardson, PharmD</td>
<td>Assistant Professor</td>
<td>Director, DCI Outcomes Monitoring Program&lt;br&gt;Director of Communications</td>
</tr>
<tr>
<td>Mark J. Sarnak, MD, MS</td>
<td>Professor</td>
<td>Director of Research&lt;br&gt;Associate Director, Research Training Program in Nephrology</td>
</tr>
<tr>
<td>Carmen Castaneda Sceppa, MD, PhD</td>
<td>Associate Professor of Nutrition, Friedman School of Nutrition Science and Policy</td>
<td></td>
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<tr>
<td>Lesley A. Stevens, MD, MS</td>
<td>Assistant Professor</td>
<td>Director, Quality Improvement&lt;br&gt;Director, Guideline Implementation, Tufts Center for Kidney Disease Guideline Development and Implementation</td>
</tr>
<tr>
<td>Katrin Uhlig, MD, MS</td>
<td>Associate Professor</td>
<td>Director, Guideline Development, Tufts Center for Kidney Disease Guideline Development and Implementation</td>
</tr>
<tr>
<td>Ashish Upadhyay, MD</td>
<td>Assistant Professor</td>
<td>Medical Director, Kidney and Blood Pressure Center</td>
</tr>
<tr>
<td>Daniel E. Weiner, MD, MS</td>
<td>Assistant Professor</td>
<td>Associate Medical Director, DCI Boston&lt;br&gt;Deputy Editor, American Journal of Kidney Diseases</td>
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**Major Clinical Programs**

**Kidney and Blood Pressure Center (KBPC)**
Outpatient clinical activities take place primarily in the Center, directed by Dr. Upadhyay. 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, kidney stones, and peritoneal dialysis. A multidisciplinary Kidney Stone Clinic coordinates expertise in nephrology, surgery, radiology, and nutrition for patients with nephrolithiasis.

The Center carries out clinical studies on chronic kidney disease (CKD), including studies of polycystic kidney disease, lupus nephritis (in conjunction with the Division of Rheumatology), immunosuppression for transplantation, cardiovascular disease in transplantation, computerized quality of life assessment, and genetic predisposition to progression.

**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. In December 2007, the peritoneal dialysis program was one of four programs recognized nationally by Baxter Healthcare for quality of care.

**Center for Polycystic Kidney Disease**
The Center for Polycystic Kidney Disease at Tufts Medical Center 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 PK 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**
A weekly Transplant Multidisciplinary clinic is staffed by Dr. Perrone, Medical Director of Kidney Transplantation, together with a transplantation surgeon. Nurse practitioners serve as transplantation coordinators. The multidisciplinary nature of the team facilitates consultations for patients who have already received transplants, as well as for patients and donors for whom transplantation is being considered. Another benefit of this joint activity is the facilitation of dialysis access planning and interventions.

**Incenter Dialysis**
The DCI Boston incenter hemodialysis unit located at Tufts operates 21 stations. There are two affiliated incenter dialysis clinics, one at Ball Square in Somerville, the other at Walden Pond in Concord, MA. In 2010, the incenter hemodialysis program was recognized as one of only 7 facilities in New England, and the only facility in Boston, to use arteriovenous fistulas to perform dialysis on more than 70% of its hemodialysis patients.

**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. Perrone, 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 1150 kidney transplants.

**Inpatient Dialysis**
Dialysis Clinic, Inc., the hospital’s dialysis provider, performs pediatric as well as adult hemodialysis at Tufts Medical Center, with Dr. Meyer as director. 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.
In 2007, the program introduced the use of the NxStage System 1 for CVVH, replacing the Baxter BM-25. Introduction of citrate regional anticoagulation has markedly improved the efficiency of CVVH, thereby allowing its utilization in all intensive care units at Tufts Medical Center. Intraoperative SCUF is provided for patients with kidney failure who undergo liver transplantation. With the growth of solid organ and bone marrow transplantation, cardiac surgery, and oncology programs, increased utilization of continuous renal replacement therapies will be required.

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 routinely 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 in the Department of Pharmacology and Experimental Therapeutics 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. Dr. Uhlig is the Co-Chair of the Evidence Based Medicine—Information mastery theme in the new curriculum at TUSM and is also co-faculty for Introduction to Meta-Analysis, a half credit course offered by the Sackler School of Graduate Biomedical Sciences at Tufts University.
Clinical Fellowship Training
Under the direction of Dr. Gilbert, 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. Over the past 14 years, almost half of the 33 graduates of the fellowship program have continued in full-time academic positions. Another quarter have become private practitioners with substantial teaching responsibilities, typically in hospitals with university affiliations. The remainder are engaged in private practice.

Research Fellowship Training
The William B. Schwartz Division of Nephrology offers clinical research training through the NIDDK Institutional Research Training Award in “Epidemiology, Clinical Trials and Outcomes Research in Nephrology.” This award funds three research trainees per year. This 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.

In 2010, four William B. Schwartz Division of Nephrology members held Career Development (K23) Awards and one Division member holds a prestigious Midcareer Investigator Award in Patient Oriented Research (K24).

Policy Initiatives
DCI Information Systems and Outcomes Monitoring Programs
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 experience data to improve care, and collects high-quality comorbidity data from all DCI chronic dialysis units. Dr. Miskulin and Alice A. Martin, RN, lead the Comorbidity Assessment Program.

Tufts Center for Kidney Disease Guideline Development and Implementation
The mission of the Tufts Center for Kidney Disease Guideline Development and Implementation is to improve the quality of care of individuals with kidney disease within the framework of the “Kidney Disease: Improving Global Outcomes (KDIGO)” initiative. The extensive process of guideline development is supported by a team of nephrologists and methodologists, which constitutes the Evidence Review Team (ERT).

Collaborative Partners of the Tufts Center include:
» Centers for Disease Control and Prevention
» Coventry Health Care
» U.S. Food and Drug Administration
» Laboratory Corporation of America
» National Committee for Quality Assurance
» NIDDK Kidney Disease Education Program
» World Health Organization

A research group has been constituted at the Tufts Center to study the effectiveness of strategies and tools for guideline implementation and to ensure the translation of the guidelines into clinical practice. This group has established partnerships with Coventry Healthcare, Kaiser Permanente Northwest, LabCorp and Quest Diagnostics, and, jointly with the NKF leadership, is exploring additional partnerships, including the Chronic Disease Research Group at the University of Minnesota.

National Kidney Disease Education Program
Drs. Levey and Stevens are members of the National Kidney Disease Education Program (NKDEP) of the NIDDK. He 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.
# Clinical Research Activity

<table>
<thead>
<tr>
<th>Recipient</th>
<th>Funding Source</th>
<th>Purpose of Award</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Andrew S. Levey, MD</strong></td>
<td>NIH/NIDDK</td>
<td>Epidemiology of chronic kidney disease (with Drs. Stevens and Schmid)</td>
</tr>
<tr>
<td></td>
<td>Amgen, Inc.</td>
<td>Study of Aranesp therapy to reduce cardiovascular events</td>
</tr>
<tr>
<td></td>
<td>NIH/RI Hospital*</td>
<td>Using folic acid for to reduce vascular outcomes in patients with kidney (FAVORIT)</td>
</tr>
<tr>
<td></td>
<td>NIH/NIDDK*</td>
<td>Assess aorta, brain, and kidney structure and function in the AGES-Reykjavik study (with Dr. Stevens)</td>
</tr>
<tr>
<td></td>
<td>National Kidney Foundation</td>
<td>Tufts Center for Clinical Practice Guideline Development and Implementation (with Drs. Uhlig, Stevens, Balk and Lau)</td>
</tr>
<tr>
<td><strong>Klemens B. Meyer, MD</strong></td>
<td>Tyco Health</td>
<td>Compare performance and longevity of a split-tip versus a symmetric tip hemodialysis catheter</td>
</tr>
<tr>
<td></td>
<td>NIH/NIDDK</td>
<td>Assessing case-mix and understanding its effects on quality indicators in dialysis</td>
</tr>
<tr>
<td></td>
<td>DCI</td>
<td>Develop decision support for anemia management in hemodialysis patients (with Dr. Meyer)</td>
</tr>
<tr>
<td></td>
<td>DCI</td>
<td>Pilot study for a future randomized clinical trial</td>
</tr>
<tr>
<td><strong>Ronald D. Perrone, MD</strong></td>
<td>NIH/NIDDK ARRA Supplement</td>
<td>Polycystic Kidney Disease Clinical Trials Network</td>
</tr>
<tr>
<td></td>
<td>NIH/NIDDK*</td>
<td>Establish clinical centers for the HALT-Polycystic Kidney Disease Trials</td>
</tr>
<tr>
<td><strong>Michelle M. Richardson, PharmD</strong></td>
<td>Amgen, Inc.</td>
<td>Preceptorship to educate individuals on the process and effects of dialysis treatment</td>
</tr>
<tr>
<td><strong>Mark J. Sarnak, MD</strong></td>
<td>NIH/NIDDK</td>
<td>Investigate cognitive function in hemodialysis patients (with Dr. Weiner)</td>
</tr>
<tr>
<td></td>
<td>NIH/NIDDK</td>
<td>Assess if kidney function determines aging success</td>
</tr>
<tr>
<td></td>
<td>NIH/NIDDK</td>
<td>Evaluate cardiac risk factors in chronic kidney disease</td>
</tr>
<tr>
<td></td>
<td>NIH/NHLBI University of Washington</td>
<td>Determine the relationship between mineral metabolism and cardiovascular risk among older adults</td>
</tr>
<tr>
<td></td>
<td>NIH/NIDDK</td>
<td>Assess relationship among chronic kidney disease, vascular disease and aging</td>
</tr>
<tr>
<td></td>
<td>Tap Pharmaceutical Products, Inc.</td>
<td>Investigate if uric acid promotes progression of kidney disease and development of cardiovascular disease in patients with chronic kidney disease</td>
</tr>
<tr>
<td><strong>Lesley A. Stevens, MD</strong></td>
<td>Gilead</td>
<td>Evaluate GFR estimating equations in HIV-positive patients</td>
</tr>
<tr>
<td></td>
<td>DCI</td>
<td>Assess the validity and reliability of a novel gfr marker</td>
</tr>
<tr>
<td></td>
<td>NIH/NIDDK</td>
<td>Assess kidney function and aging - supplement</td>
</tr>
<tr>
<td><strong>Daniel E. Weiner, MD</strong></td>
<td>NIH/NIDDK</td>
<td>Kidney Disease, Stroke and Cognitive Impairment</td>
</tr>
<tr>
<td></td>
<td>DCI*</td>
<td>Investigate the influence of transglutaminase 2 and vascular calcification in patients with CKD</td>
</tr>
<tr>
<td></td>
<td>Tufts University*</td>
<td>Identify novel biomarkers of vascular calcification in patients with CKD</td>
</tr>
<tr>
<td></td>
<td>ASN*</td>
<td>Study the medical economics and also the ecologic impact of dialyzer reuse</td>
</tr>
</tbody>
</table>

* New grant in 2010
## Basic Research Support Table for 2010

<table>
<thead>
<tr>
<th>Recipient</th>
<th>Funding Source</th>
<th>Purpose of Award</th>
</tr>
</thead>
<tbody>
<tr>
<td>V. Balakrishnan, MD, PhD</td>
<td>NIH/NIDDK University of New Mexico</td>
<td>Assess cytokine gene polymorphisms in the CRIC cohort</td>
</tr>
<tr>
<td>Andrew S. Levey, MD</td>
<td>NIH/NIDDK</td>
<td>Use a proteonomic approach to CKD biomarker discovery and validation</td>
</tr>
<tr>
<td>Madhumati Rao, MD, PhD</td>
<td>National Kidney Foundation</td>
<td>Assess the role of mitochondrial injury in the anemia of chronic kidney disease</td>
</tr>
<tr>
<td></td>
<td>NIH/NIA</td>
<td>Determine the relationship of somatic mitochondrial injury and anemia in elderly patients with CKD (with Drs. Balakrishnan and Shirihai)</td>
</tr>
<tr>
<td></td>
<td>DCI</td>
<td>Assess somatic mitochondrial mutations as a simple and novel genomic biomarker of clinical outcomes among hemodialysis patients (with Drs. Balakrishnan and Jaber)</td>
</tr>
<tr>
<td></td>
<td>NIH/NIDDK</td>
<td>Looking at TGF-Beta 1 and PAI-1 genotypes in CKD (with Drs. Balakrishnan and Schmid)</td>
</tr>
<tr>
<td></td>
<td>NIH/NIDDK</td>
<td>Continuation of work previously funded by the National Kidney Foundation on the role of mitochondrial injury in the anemia of chronic kidney disease</td>
</tr>
<tr>
<td>Daniel E. Weiner, MD, MS</td>
<td>Tufts University</td>
<td>Determine novel biomarkers of vascular calcification in CKD</td>
</tr>
</tbody>
</table>
Research Activities

Research in the Division of Nephrology is clinically focused. Each research project has domain experts, generally a nephrologist, a methods expert, and collaborators from other disciplines. Although the primary focus has been on chronic kidney disease, there are a growing number of projects in acute kidney injury. Some of the areas of recent emphasis are:

1. Epidemiology of CKD
2. Assessment of kidney function
3. Interventions to slow progression and reduce complications of CKD
4. Clinical and epidemiologic studies in polycystic kidney disease
5. Epidemiology of cardiovascular disease in CKD
6. Cognition and cerebrovascular disease in CKD
7. Aging and CKD
8. Clinical and epidemiologic studies of nutrition in CKD
9. Genetic epidemiology of CKD
10. Translational studies on pathogenesis of CKD and complications
11. Clinical studies of dialysis modality and dose
12. Clinical studies of immunosuppression and infection in dialysis and kidney transplantation
13. Epidemiologic studies of CKD complications in kidney transplantation
14. Epidemiology of acute kidney injury
15. Development of evidence-based clinical practice guidelines
16. Implementation of clinical practice guidelines in CKD
17. Quality management in dialysis networks
18. Collaboration with US Public Health Service (PHS) and World Health Organization (WHO)
Honors and Awards

The William B. Schwartz Division of Nephrology was honored in the 2010 “Best Hospitals” edition of US News and World Report for the 2nd time in 3 years.

Andrew S. Levey, MD
» Recognized in Boston Magazine as one of Boston’s best nephrologists
» Member, NKF Scientific Advisory Board
» Member, National Kidney Disease Education Project (NIH/NIDDK)
» Invited lecture: University of New Mexico Grand Rounds. Chronic Kidney Disease: An Update to the Definition and Classification Based on Prognosis. Albuquerque NM.
» Invited lecture: University of Colorado Medicine Grand Rounds. Chronic Kidney Disease: An Update to the Definition and Classification Based on Prognosis. Denver CO.
» Invited lecture: National Kidney Foundation President’s Retreat. Reflections of the Gift of Life. Madison WI.
» Chair, KDIGO conference held in London that determined that the current CKD classification system needed to be modified because it did not adequately describe the prognosis of CKD
» Major Grant Awards in 2010: Please see Table of Research Activities

Ronald D. Perrone, MD
» Recognized in Boston Magazine as one of Boston’s best nephrologists
» Member, United Network for Organ Sharing (UNOS) certified Transplant Physician at Tufts Medical Center
» Elected, Chair Region 1 OPTN/UNOS Living Donor Committee
» Member, Medical Advisory Board of the NKF of MA, RI, NH and VT
» Member, Living Donor Committee of the United Network for Organ Sharing
» Member, Physician’s Advisory Board of the Boston Asian-American Civic Association
» Member, Scientific Advisory Committee of the Polycystic Kidney Disease Foundation, former Chair
» Editor, UptoDate cystic kidney disease.
» Clinical Lead, Polycystic Disease Database Consortium
» Major Grant Awards in 2010: Please see Table of Research Activities.

V. S. Balakrishnan, MD, PhD
» Member, Clinical Research Grants Review Committee of the NKF
» Awarded Notable Teaching from TUSM 3rd year students

Scott J. Gilbert, MD
» 2010-2011 Tisch College Fellow
» Member, Medical Advisory Board of the NKF of MA, RI, NH and VT
» Member, Panel of Excellence for the Graduate Institute For Teaching at Tufts University
» Member, Panel for Accreditation Appeals in Nephrology - Accreditation Council for Graduate Medical Education
» Awarded Milton O. M30 and Natalie V. Zucker Clinical Teaching Prize for Accomplishment.
» Awarded Accomplished Teaching from the 3rd year TUSM Class.
» Awarded Outstanding Lecturer for 2009-2010 from students at TUSM
» Awarded Excellence in Teaching from Senior TUSM Class for the 6th year in a row

Bertrand L. Jaber, MD
» Member, Acute Kidney Injury Advisory Group for the American Society of Nephrology
» Member, Disaster Relief Task Force of the American Society of Nephrology
» Member, Kidney Disease Outcomes Quality Initiative (KDOQI) Advisory Board of the NKF
» Member, Council on Renal Nutrition Research Grant Selection Committee for the NKF
» Member, Renal Disease & Detoxification Committee of the Association for Advancement of Medical Instrumentation (AAMI) and Member, Dialysis Research Consortium Committee

» Invited lecture: 30th Annual Dialysis Conference. Daily Hemodialysis: An Update on Ongoing Registries and Clinical Trials. Seattle WA.

» Invited lecture: Mayo Clinic Nephrology/Hypertension Grand Rounds. Frequent Hemodialysis and Alternate Therapies for ESRD. Rochester MN.


» Member, editorial board of Nephron Clinical Practice

» Awarded, 2010 Excellence in Ambulatory Education Honorary Mention from the Internal Medicine Residency Training Program House Staff at St. Elizabeth’s Medical Center

Nicolaos E. Madias, MD

» Member, Advisory Board for the Hellenic Bioscientific Association in the USA

» Member, Education Committee for the American Society of Nephrology


» Member, editorial boards of Hippokratia, Hellenic Medicine, International Angiology, Arterial Hypertension and Kidney: A current survey of world literature

Klemens B. Meyer, MD

» Medical staff sponsor for the Schwartz Center Rounds

» Member, Board of Directors and of the Executive Committee of the End-Stage Renal Disease Network of New England

» Member, Board of Directors of the Forum of End-Stage Renal Disease Networks. Represents the Forum Board on the United States Renal Data System External Advisory Committee and the Fistula First Breakthrough Initiative

» Member, Quality Management Committee of Dialysis Clinic Inc

» President-Elect, National Forum of ESRD Networks

» Invited lecture: Renal Research Institute Annual Meeting. How is Having Chronic Kidney Disease Like Taking the Boards? New Orleans LA.

Dana C. Miskulin, MD, MS

» Member, Quality Management Committee of Dialysis Clinic Inc

» Chair, Endpoints Committee for the HALT-PKD Study

Brian J.G. Pereira, MD, MBA

» Member, Board of Trustees, Kidney Disease Improving Global Outcomes (KDIGO) Holdings

Madhumathi Rao, MD, PhD

» Invited lecturer: Christian Medical College and Hospital. Methods and Tools for Analysis in Gene Association Studies. Vellore India.

Michelle M. Richardson, PharmD

» Chair, Editorial Board 7th edition of the Pharmacotherapy Self-assessment Program

Mark J. Sarnak, MD, MS

» Promoted, Professor of Medicine

» Recognized in Boston Magazine as one of Boston’s best nephrologists

» Co-chair, Cardiovascular Health Study (CHS) Renal Work Group

» Chair, CKD: Epidemiology, Outcomes Abstract Committee for American Society of Nephrology 2010 Annual Meeting

» Member, Editorial Board Annals of Internal Medicine

» Member, American Society of Nephrology Committee for Nephrology Board questions

» Invited lecture: 30th Annual Dialysis Conference. Intradialytic Hypertension. Seattle WA.

» Invited lecture: University of Pittsburgh Medical Center Renal Grand Rounds. Pittsburgh PA.


Carmen Castaneda Sceppa, MD, PhD

» Reviewer, European Society for Parenteral and Enteral Nutrition grants program
» Reviewer, Directors of the Diabetes Australia Research Trust grant program
» Reviewer, Brookdale Leadership in Aging Fellowship program
» Member of the Advisory Committee of the Community Health Education and Literacy Program of the Center for Community Health Education Research and Service.
» Member, ABCD Head Start Citywide Health Services Advisory Committee for the city of Boston

Lesley A. Stevens, MD, MS

» Member, NKF’s Kidney Disease Early Evaluation Program (KEEP) Steering Committee
» Chair, Clinical Oversight Committee of KEEP
» Member, external advisory committee of the NIDDK-funded Hemodialysis Fistula Maturation
» Invited lecture: Genitourinary Cancers Symposium. What All Oncologists Need to Know About Estimated Glomerular Filtration Rate. San Francisco CA.
» Member of the National Institute for Diabetes, Digestive and Kidney Disease: United States Renal Data System External Advisory Committee
» Co-chair, KDIGO Renal Working Group which in conjunction with the World Health Organization will revise ICD-10 towards development of ICD-11
» Chair, NKDEP Workgroup on Estimation of Kidney Function for Medication Dosage Prescriptions

Katrin Uhlig, MD, MS

» Promoted to Associate Professor of Medicine
» Invited lecture: Workshop on Standards for Clinical Practice Guidelines, Making Clinical Practice Guidelines ‘Better’
» Invited lecture: Institute of Medicine’s Committee on Standards for Developing Trustworthy Clinical Practice Guidelines. Washington DC
» Consultant, Society of Gynecological Surgeons systematic review group

Daniel E. Weiner, MD, MS

» Navigator, Tufts Clinical and Translational Science Institute (CTSI)
» Major Grant Awards in 2010: Please see Table of Research Activities
DIVISION OF PULMONARY, CRITICAL CARE AND SLEEP MEDICINE

Overview

The Pulmonary Division was established in 1971. During the tenure of its first chief, Dr. Fanburg, the Division grew to comprise ten physicians and two 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 serotonin, its transporter and receptors, in the regulation of pulmonary vascular smooth muscle cell proliferation. 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. Clinical trials are underway on pulmonary hypertension, ventilator-associated pneumonia and the management of ARDS. There are also studies in progress to improve outcomes in patients with respiratory compromise through the use of noninvasive ventilation.

The Division offers a wide array of clinical services. In the early 1990s, it took over the medical care of patients in the Medical Intensive Care Unit at Tufts Medical Center. The Center for Sleep Medicine was incorporated in 2002 under the direction of Dr. Carolyn D’Ambrosio. In addition, specialty clinics in pulmonary rehabilitation, asthma, pulmonary hypertension and lung cancer are conducted by the Division. The addition of Dr. Maher Tabba in 2008 has brought skills in interventional pulmonology to the Division.

Highlights of 2010

» Dr. Nicholas Hill became President-elect of the American Thoracic Society
» Dr. Khalid Ismail assumed the Directorship of the New England Sinai satellite unit at Tufts Medical Center
» Dr. Imrana Qawi joined the Division to staff the New England Sinai satellite unit at Tufts Medical Center
» Creation of a one-year Pulmonary Hypertension Fellowship
<table>
<thead>
<tr>
<th>Name</th>
<th>Academic Rank</th>
<th>Special Responsibility</th>
</tr>
</thead>
</table>
| Nicholas Hill, MD    | Professor       | Division Chief  
                      Director, Respiratory Department  
                      Director, Pulmonary Hypertension Center  
                      Director Outpatient Pulmonary Rehabilitation at New England Sinai Hospital |
| Walter Baigelman, MD | Associate Professor | Medical Director, Managed Care                                                                                                                   |
| Amy Chi, MD          | Assistant Professor | Associate Director, Winchester Hospital ICU                                                                                                       |
| Carolyn D’Ambrosio, MD | Associate Professor | Director, The Center for Sleep Medicine  
                      Associate Program Director, Internal Medicine Residency Program                                                                         |
| Scott Epstein, MD    | Professor       | Dean of Educational Affairs, TUSM                                                                                                                   |
| Barry Fanburg, MD    | Professor       | Director, Pulmonary Research                                                                                                                      |
| Geraldine Finlay, MD | Associate Professor | Coordinator, Winchester Hospital ICU moonlighter program                                                                                           |
| Erik Garpestad, MD   | Associate Professor | Associate Chief  
                      MICU Director                                                                                                                                  |
| Khalid Ismail, MD    | Assistant Professor | Medical Director, Sinai Satellite Unit at Tufts MC                                                                                                  |
| Usamah Kayyali, PhD  | Associate Professor | Special and Scientific staff                                                                                                                       |
| Saraswathi Muppana, MD * | Assistant Professor | New England Sinai Hospital                                                                                                                       |
| Heidi O’Connor, MD   | Assistant Professor | New England Sinai Hospital  
                      Medical Director, Respiratory Therapy, New England Sinai                                                                                   |
| Ioana Preston, MD    | Assistant Professor | Pulmonary Function Lab Director  
                      Co-Director, Pulmonary Hypertension Center                                                                                                  |
| Imrana Qawi, MD *    | Instructor      | Pulmonary physician, Sinai Satellite Unit                                                                                                           |
| Kari Roberts, MD     | Assistant Professor | Medical Director, Bronchoscopy Service                                                                                                             |
| Greg Schumaker, MD   | Assistant Professor | Director, Outpatient Pulmonary Clinic  
                      Program Director, Sleep Medicine Fellowship  
                      Medical Director, Rapid Response Team  
                      Medical Director, Clinical Resource Nurse Program                                                                                           |
| Amy Simon, MD        | Associate Professor | Director, Asthma Center                                                                                                                           |
| Maher Tabba, MD      | Assistant Professor | Program Director, Fellowship Program  
                      Director, Pulmonary Interventional Service                                                                                                  |
| Deniz Toksoz, PhD    | Associate Professor | Special and Scientific staff                                                                                                                      |
| Alexander White, MD  | Associate Professor | Chief of Pulmonary & Sleep, New England Sinai Hospital  
                      Medical Director, Sleep Medicine, New England Sinai  
                      Director, Rose Kalman Research Center, New England Sinai                                                                                  |

* New member
Major Clinical Programs

The Pulmonary, Critical Care and Sleep Division at Tufts Medical Center offers a broad array of clinical services.

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. Dr. Amy Chi serves as Associate Director of the ICU at Winchester Hospital.

The Center for Sleep Medicine, under Dr. Carolyn D’Ambrosio, provides diagnostic and therapeutic services for patients with a variety of sleep-related disorders. It consists of a six-bed, accredited sleep laboratory at Tufts Medical Center, soon to be enlarged to eight beds. It serves as an important educational resource for the Pulmonary and Critical Care Fellowship Program.

The Bronchoscopy Service, under Dr. Kari Roberts, offers diagnostic and therapeutic bronchoscopies for inpatients and outpatients attending Tufts Medical Center.

The Pulmonary Interventional Service, under Dr. Maher Tabba, provides 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. Plans are in place to obtain fluorescent technology to identify occult airway cancers.

The Division also offers numerous outpatient clinics for patients with asthma, sleep disorders and pulmonary hypertension. In addition, the Division oversees the management of patients at satellite units of New England Sinai Hospital and Rehabilitation Center with long-term pulmonary problems including chronic respiratory failure, difficulty being weaned from mechanical ventilation, management of COPD, and long-term tracheostomy management.

Teaching Activities

The Division teaches the second-year pathophysiology course at Tufts University School of Medicine, providing didactic lectures and leading small discussion groups. Third-year clerkships are available on the pulmonary ward service. A number of pulmonary attendings have been recognized by medical students for their teaching.

Fourth-year clerkships are available in the MICU at Tufts Medical Center and at the Winchester Hospital ICU. Electives are also available on the pulmonary consultation service, as well as in the Sleep Laboratory and on the Pulmonary Interventional Service under Maher Tabba. Medical residents experience rotations on 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 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 will have one position per year.

Fellows rotate through the ICUs and Consultation rotations during their first year, and spend time at the New England Sinai Hospital in Stoughton, MA. During the second and third years, fellows serve as the in-house intensivist at the Winchester Hospital ICU and pursue research interests. There is a wide range of research opportunities including in basic, translational and clinical pulmonology and fellows are encouraged to collaborate with investigators at other institutions if additional expertise is sought. 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 current clinical research projects in the Division have an annual budget of approximately $2.1 million.

<table>
<thead>
<tr>
<th>Recipient</th>
<th>Funding Source</th>
<th>Purpose of Award</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nicholas Hill, MD</td>
<td>United Therapeutics</td>
<td>Long-term effects of inhaled treprostinil</td>
</tr>
<tr>
<td></td>
<td>Actelion</td>
<td>Long-term effect of combination therapy with bosentan and sildenafil</td>
</tr>
<tr>
<td></td>
<td>Actelion</td>
<td>A new, once-a-day endothelial receptor antagonist to treat pulmonary hypertension</td>
</tr>
<tr>
<td></td>
<td>Actelion</td>
<td>Study to assess the safety and tolerability of ACT-064992 in patients with symptomatic pulmonary arterial hypertension</td>
</tr>
<tr>
<td></td>
<td>United Therapeutics</td>
<td>Evaluation of oral treprostin effect on exercise capacity</td>
</tr>
<tr>
<td></td>
<td>United Therapeutics</td>
<td>A post-marketing observational study to assess respiratory tract adverse events in pulmonary arterial hypertension patients treated with Tyvaso (treprostinil) inhalation solution</td>
</tr>
<tr>
<td></td>
<td>Actelion</td>
<td>Registry of pulmonary hypertension patients</td>
</tr>
<tr>
<td></td>
<td>Gilead</td>
<td>Long-term efficacy of Ambrisentan for pulmonary hypertension</td>
</tr>
<tr>
<td>Pulmonary Division</td>
<td>Pulmonary Division</td>
<td>Evaluation of endothelial progenitor cells in pulmonary hypertension</td>
</tr>
<tr>
<td>Pulmonary Division</td>
<td>Pulmonary Division</td>
<td>Comparison of inhaled nitric oxide versus inhaled epoprostenol as acute pulmonary vasodilators</td>
</tr>
<tr>
<td>Pulmonary Division</td>
<td>Pulmonary Division</td>
<td>Database and DNA tissue bank in pulmonary hypertension</td>
</tr>
<tr>
<td>Chest Foundation</td>
<td>Chest Foundation</td>
<td>Evaluation of endothelial progenitor cells in pulmonary hypertension</td>
</tr>
<tr>
<td>Respironics</td>
<td>Respironics</td>
<td>Enhancing utilization of non-invasive ventilation in critical care</td>
</tr>
<tr>
<td>Gilead</td>
<td>Gilead</td>
<td>Randomized controlled study of Cicletamine in subjects with PAH</td>
</tr>
<tr>
<td>Gilead</td>
<td>Gilead</td>
<td>Assessment of the effect of an initial combination of Tadalafil and Ambrisentan compared to each drug alone in patients with pulmonary arterial hypertension</td>
</tr>
<tr>
<td>Pulmonary Division</td>
<td>Pulmonary Division</td>
<td>Sleep during non-invasive ventilation in the ICU</td>
</tr>
<tr>
<td>Hospira</td>
<td>Hospira</td>
<td>Use of dexmetatomidine as sedative agent during non-invasive ventilation</td>
</tr>
<tr>
<td>Pulmonary Division</td>
<td>Pulmonary Division</td>
<td>Evaluation of total face mask for non-invasive ventilation</td>
</tr>
<tr>
<td>GeNO LLC</td>
<td>GeNO LLC</td>
<td>Evaluation of new way to deliver inhaled nitric oxide and assessment of response in patients with pulmonary hypertension</td>
</tr>
<tr>
<td>Investigator-initiated</td>
<td>Investigator-initiated</td>
<td>Study of the natural history of scleroderma in a registry centered at Georgetown Medical Center</td>
</tr>
<tr>
<td>Respironics</td>
<td>Respironics</td>
<td>High intensity non-invasive positive pressure ventilation (NPPV) for stable hypercapnic COPD patients</td>
</tr>
<tr>
<td>Carolyn D’Ambrosio, MD</td>
<td>Pulmonary Division</td>
<td>The influence of sleep deprivation on length of mechanical ventilation in the ICU</td>
</tr>
<tr>
<td></td>
<td>Pulmonary Division</td>
<td>The effects of sleep disordered breathing in patients undergoing bariatric surgery</td>
</tr>
</tbody>
</table>


Recipient | Funding Source | Purpose of Award
--- | --- | ---
Ioana Preston, MD | Gilead | Ambrisentan in portopulmonary hypertension
 | Pfizer | Antibiotic trial – Linezolid in hospital acquired pneumonia
 | Bayer | Randomized controlled trial to evaluate efficacy and safety of oral BAY 63-2521 in patients with PAH (2 studies – blinded and extension)
Kari Roberts, MD | Pulmonary Division | Database for analysis of pulmonary hypertension genetics
 | NIH | A clinical trial of aspirin and simvastatin in pulmonary arterial hypertension (ASA-STAT)
Amy Simon, MD | Genentech & Novartis | An epidemiologic study of Xolair (omalizumab): evaluating clinic effectiveness and long-term safety in patients with moderate to severe asthma

**Basic Research Support**

Current grant support for basic research in the Division amounts to $1.4 million.

Recipient | Funding Source | Purpose of Award
--- | --- | ---
Nicholas Hill, MD | NIH/NHLBI | Determine the role of endothelial and angiotension receptor signaling in pulmonary hypertension (Peter Polgar, PI) (Nicholas Hill, co-investigator)
 | EPIX | Evaluation of serotonin b2 receptor inhibitor for pulmonary hypertension
 | Genzyme | Evaluation of neutral endopeptidase inhibitor + nitric oxide in rates with pulmonary hypertension induced by monocrotalins
Barry Fanburg, MD | NIH/NHLBI | Determine the RHO-related signaling pathways in pulmonary hypertension (with Dr. Toksoz)
Geraldine Finlay, MD | LAM Foundation | The effects of the statin, atorvastatin, as a potential therapeutic tool in LAM and tuberous sclerosis complex
 | AHA | The effects of TSC1 and TSC2 on cardiovascular and pulmonary vascular disease
Ioana Preston, MD | NIH/NHLBI | The mechanisms involved in pulmonary artery smooth muscle cell proliferation by hypoxia and the role of 12-lipoxygenase in stimulating this process
Kari Roberts, MD | NIH/NHLBI | The association between genetic variation in the genes encoding heme oxygenase 1 and 2 and the risk of hepatopulmonary syndrome in individuals with advanced liver disease
Honors and Awards

Nicholas Hill, MD (selected items)

» Invited lecture: Annual Congress: Society of Critical Medicine meeting on: Selection of Patients for Noninvasive Ventilation. Miami Beach, FL.

» Invited lecture: Simply Speaking: Managing Multiple Medications in Patients with PAH. Orlando, FL.

» Featured Speaker: First Annual Symposium on Pulmonary Vascular Disease. Diagnosis and Management of Pulmonary Hypertension, an Update. University of Miami, FL.


» Invited lecture: Strategic Practices of Critical Care Medicine. University of Texas MD Anderson Cancer Center on Optimizing Success of Noninvasive Ventilation. Houston, TX.

» Co-Chair; PAH Physician Forum. Practical Approaches to Management of Patients with PAH. Providence, RI.


» Chair Session, Pulmonary Hypertension Association Annual Meeting; Pulmonary Rehabilitation for the Pulmonary Hypertension Patient. Gardner, CA.

» Invited lecture: 4th Annual Pulmonary Hypertension Symposium. Infused Prostanoid Therapies and Tetrahydrobiopterin and Tyrosine Kinase Inhibitors: A New Role for Imatinib? Yale University School of Medicine, East Haddam, CT.

» Invited lecture: Critical Care Grand Rounds. NIV: Current Indications. Maine Medical Center, Portland, ME.


» Panelist, Harvard Lung Conference and CIMIT Inhalation Technology Workshop. Boston, MA.

» Course Director, Breathing Easier IX - Living with Pulmonary Disease. Workshop: Home Mechanical Ventilation. Norwood, MA.

» Grand Rounds, Sturdy Memorial Hospital. Advances in Management and Therapy of Pulmonary Hypertension. Attleboro, MA.


» Featured Speaker, 7th Annual Pulmonary Hypertension Symposium; Practical Issues and Updates In Management: What to do when Initial Pulmonary Hypertension Therapy Fails. Cleveland, OH.


» Invited lecture: Pulmonary Hypertension Update, Bay State Medical Center; Epidemiology of use of Noninvasive Ventilation. Springfield, MA.
» Course Director, 8th Annual Pulmonary Hypertension Symposium. Debate: Non-PAH PH - to Treat or not to Treat. Cambridge, MA.
» Medical Grand Rounds, University of South Alabama College of Medicine, Department of Pharmacology: NIV in Acute Care. Research lecture: Serotonin Signaling in Pulmonary Hypertension. Mobile, AL
» American Thoracic Society President-elect, New York, New York
» Recognized, Boston Magazine’s Top Doctors in Boston by their peers, 2010

Amy Chi, MD
» Palliative Care Committee, Winchester Hospital

Carolyn D’Ambrosio, MD
» Board Member, Massachusetts Sleep Society

Scott Epstein, MD
» Invited lecture: 45th Respiratory Care Conference: Overview: How Often does Patient Ventilator Asynchrony Occur and What are the Consequences? Cancun, Mexico.
» Co-Chair: 45th Respiratory Care Conference. Patient Ventilator Interaction. Cancun, Mexico.
» Co-Director, Second Year Pulmonary Course, TUSM

Barry Fanburg, MD
» Invited lecture: Vanderbilt University Department of Pharmacology: Serotonin and Pulmonary Artery Smooth Muscle. Nashville, TN.
» Invited lecture: Brigham and Women’s Hospital, Pulmonary and Critical Care Department: Sarcoidosis Update. Boston, MA.
» Grant reviewer for the National Institutes of Health

Geraldine Finlay, MD
» Invited lecture: American Thoracic Society International Meeting “Meet the Professor” seminar. New Orleans, LA.
» Invited lecture: The LAM Foundation Annual Meeting. Cystic Lung Disease; is it curable? Cincinnati, OH.
» ICU Committee member, Winchester Hospital
» Clinical Content committee member, Winchester Hospital
» CPOE Committee Member, Winchester Hospital
» Grant reviewer for the National Institutes of Health and the LAM Foundation

Erik Garpestad, MD
» Recognized, Boston Magazine’s Top Doctors in Boston by their peers, 2010.

Usamah Kayyali, PhD
» Invited lecture: Johns Hopkins University School of Medicine: Regulation of Endothelial Barrier Permeability by Microfilaments and Intermediate Filaments. Baltimore, MD.
» Grant reviewer for the National Institutes of Health

Heidi O’Connor, MD
» Grand Rounds: Management of COPD Patients. New England Sinai Hospital, Stoughton, MA
» Invited lecture: Massachusetts Society for Respiratory Care 33rd Annual Meeting: Tracheostomy Decannulation.

Ioana Preston, MD
» American Thoracic Society International Meeting, Postgraduate Course Lecture: Controversies in Screening for Pulmonary Hypertension. New Orleans, LA.
» Pulmonary Hypertension Association Meeting: Phosphodiesterase 5 Inhibitors for Pulmonary Arterial Hypertension. Gardner, CA.
» Annual Congress of the European Respiratory Society: Pulmonary Arterial Hypertension, Screening and Follow-up Guidelines. Barcelona, Spain.
» Chair of the Preceptorship Committee for the Medical Education Program, Pulmonary Hypertension Association
» Member of the Scientific Leadership Committee, Pulmonary Hypertension Association
» Grant reviewer for the National Institutes of Health, American Heart Association and Department of Defense

Alexander White, MD
» President, American Lung Association of New England, 2010 (formerly the Massachusetts Thoracic Society)
DIVISION OF RHEUMATOLOGY

Overview

The Division of Rheumatology is involved in numerous clinical, teaching and research activities. The clinical program ranges from diagnosis and treatment of autoimmune rheumatic disease to age-related musculoskeletal disorders. The Division is highly regarded for its teaching activities.

Research in the Division is centered on investigations of the pathogenesis of osteoarthritis, new quantitative methods to measure its progression, and clinical trials of disease-modifying investigational treatments. There is also an active program in the use of Tai Chi for chronic rheumatic diseases such as osteoarthritis, fibromyalgia, and systemic lupus erythematosus.

Highlights of 2010

» Publication in New England Journal of Medicine of report of successful use of Tai Chi for fibromyalgia (lead author Dr. Wang)
» Dr Harvey selected by Annals of Internal Medicine for Junior Investigator Recognition Award
» Dr McAlindon awarded an R01 grant from NIH/NIAMS to test the structural effects of intra-articular corticosteroids on knee osteoarthritis progression
» Dr Wang awarded an R01 grant from NCCAM to test the efficacy of Tai Chi for knee osteoarthritis pain
» Landmark trial testing vitamin D as a structure-modifying intervention for knee osteoarthritis reported at Annual Meeting of the American College of Rheumatology
Major Clinical Programs

The Center for Arthritis and Rheumatic Diseases

The Center provides ambulatory consultation and follow-up as well as inpatient consultation services. The outpatient clinic conducts approximately 5,500 patient encounters per year. The spectrum of rheumatic disorders treated by the Rheumatology Division’s physicians is broad and encompasses musculoskeletal disorders and complex autoimmune diseases.

The Division strives to advance all three aspects of its mission, namely patient care, education, and research. Among the goals are to diversify services, build networks with community physicians and neighborhood hospitals, offer high quality patient-oriented services and develop clinically-relevant research programs.

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. Several of the faculty are skilled in its use and have 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 to an adult setting. The patients are seen by Dr. Senada Arabelovic.

Lyme Disease Specialty Clinic

Dr Kalish holds a weekly Lyme disease clinic in which patients are assessed for complex issues regarding the diagnosis and treatment of Lyme disease. He has long 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.

Teaching Activities

The Rheumatology Division conducts extensive teaching activities. The fellowship program enrolls one new fellow each year and graduates fellows into successful academic and private practice careers. Second and third year Internal Medicine residents from Tufts Medical Center rotate through the division and participate in the outpatient clinics and inpatient consultation services. The faculty also teaches the residents by leading the Resident morning report and noon conferences.

Tufts University Medical students from each of the four years rotate through the division. First year students have the option of a selective with Dr. Kalish. The faculty gives lectures for the second year Musculoskeletal Pathophysiology course that is directed by Robert Kalish. This course has been very highly rated by the medical students. Third Year students participate in a pilot project that is investigating...
the use of videotaping the student-patient encounter to promote student learning of rheumatology history taking skills and compassionate care of patients. A one month rotation in Rheumatology is available to fourth year students. Conferences in the division include Rheumatology Grand Rounds, Rheumatology Clinical Case Conference/Journal Club and Rheumatology Radiology Rounds, each weekly.

Research Activities

Osteoarthritis
The primary goal of this program is the development of disease-modifying interventions for osteoarthritis (OA). 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, assessment of peri-articular bone morphology using MRI, and dual x-ray absorptiometry, as well as gait analysis and the testing of physical function. These issues are addressed through epidemiologic collaborations with the Osteoarthritis Initiative consortium, and through clinical trials. Disease-modification trials of vitamin D, collagen hydrolysate and osteogenic protein 1 are all currently in progress. The research program is funded by grants from the NIH, the American College of Rheumatology Research & Education Fund, and by sponsorship from industry.

Complementary and Alternative Medicine
The Division of Rheumatology at Tufts Medical Center pursues rigorous scientific evaluation of the safety and efficacy of Tai Chi as a therapy for chronic rheumatic conditions, especially osteoarthritis, rheumatoid arthritis, fibromyalgia and systemic lupus erythematosus. The research is supported by the National Center for Complementary and Alternative Medicine/National Institutes of Health.

Industry-Sponsored Trials
The sponsored trial program is supported by a research nurse and a clinical research associate. The wide range of pharmaceuticals tested range from intravenously-administered biologicals for immunologic disorders to intra-articular growth factors for osteoarthritis. The current panel of sponsored trials includes:

- A phase 1, double-blind, randomized, single dose escalation safety study of intra-articular osteogenic protein-1 (OP-1) in subjects with osteoarthritis of the knee.
- A single center, prospective, randomized, placebo-controlled, double-blind, pilot clinical trial to evaluate the sensitivity of magnetic resonance imaging to detect change in cartilage structure and composition among 30 participants diagnosed with osteoarthritis of the knee and treated with collagen hydrolysate.
- A multi-center, open label, continuation of LymphoStat-B™ antibody (Monoclonal AntiBLyS antibody) in subjects with systemic lupus erythematosus (SLE) who completed the phase 2 protocol LBSL02.

Research Support Highlights

<table>
<thead>
<tr>
<th>Name</th>
<th>Title</th>
<th>Funding Source</th>
<th>Purpose of Award</th>
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<tbody>
<tr>
<td>William Harvey</td>
<td>Principal Investigator</td>
<td>ACR</td>
<td>Career Development Grant</td>
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<tr>
<td>Timothy McAlindon</td>
<td>Principal Investigator</td>
<td>ACR</td>
<td>ACR Amgen/Wyeth Rheumatology Fellowship Award</td>
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<td></td>
<td>Co-investigator</td>
<td>NIH/NIAMS</td>
<td>Efficacy of CAM on Patient Centered Outcomes</td>
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<td></td>
<td>Principal Investigator</td>
<td>NIH/NIAMS</td>
<td>Effect of intra-articular steroids on structural progression of knee OA: an RCT</td>
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<td>Co-Principal Investigator</td>
<td>NIH/NIAMS</td>
<td>Clinical centers for the Osteoarthritis Initiative</td>
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<td></td>
<td>Co-Principal Investigator</td>
<td>NIH/NIAMS</td>
<td>Trial of vitamin D to reduce progression of knee osteoarthritis</td>
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<td></td>
<td>Principal Investigator</td>
<td>NIH/NIAMS</td>
<td>The role of bone in osteoarthritis progression</td>
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<td>Chenchen Wang</td>
<td>Principal Investigator</td>
<td>NIH/NCCAM</td>
<td>Tai Chi for fibromyalgia</td>
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<td></td>
<td>Principal Investigator</td>
<td>BU Pepper Center (NIH/NIA)</td>
<td>Career development award</td>
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<tr>
<td></td>
<td>Principal Investigator</td>
<td>NCCAM</td>
<td>Tai Chi and knee osteoarthritis</td>
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Honors and Awards

Robert Kalish, M.D

» Nominated by Tufts Alpha Omega Alpha Honor Medical Society, Class of 2010 to receive the 2010 Tufts Faculty Election into AOA
» Tufts University School of Medicine
Annual Faculty Mentorship Award
» Faculty Member – Arthur Vining Davis Foundation supported initiative at Tufts University School of Medicine: “An Innovative Resident-as-Teacher Faculty Development Initiative”
» Co-director: Rheumatologic Physical Examination: Anatomical correlates. Workshop session American College of Rheumatology Annual Meeting, Atlanta, GA
» Outstanding TUSM Lecturer for 2009-2010

Timothy McAlindon MD MPH

» Received 2010 ACR REF/Amgen/Wyeth Rheumatology Fellowship Training Award
» Appointed Co-Editor Arthritis and Rheumatism (Osteoarthritis)
» Appointed as a Delegate at the NIH/NIAMS Roundtable discussion on enhancing clinical trials in orthopaedics and osteoarthritis
» Invited lecturer OA: Novel treatment perspectives from clinical research. BIDMC Rheumatology Grand Rounds
» Published Editorial Osteoarthritis & Cartilage 2010: OARSI recommendations for the management of hip and knee osteoarthritis: the semantics of differences and changes

Chenchen Wang MD, MSc

» Editorial Board of the International Scholarly Research Network Rheumatology
» Editorial Advisory Board Journal of Tang

William Harvey, MD

» American College of Rheumatology
Government Affairs Committee
» Invited Speaker, Medical Grand Rounds - Charlton Memorial Hospital: “Updates in Osteoarthritis”
» Invited Speaker, Medical Grand Rounds - Brockton Hospital: “Rheumatologic Emergencies”
» Reviewer, Osteoarthritis and Cartilage
» Reviewer, Arthritis Research and Therapy

Presentation 2010 Annual Scientific Meeting, Atlanta, GA: “Obesity in Patients with Fibromyalgia Modify Response to Tai Chi Therapy”
Presentation 2010 International Congress on Complementary Medicine Research, Norway: “Effect of Tibetan Five Nectar Formula Medicated Bath Therapy on Rheumatoid Arthritis”
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.
Overview

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 90% of the Institute’s research is federally supported, primarily by the National Institutes of Health (NIH) and the Agency for Healthcare Research and Quality (AHRQ). 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. In addition to its research portfolio, ICRHPS has an AHRQ-funded T32 Training Program.

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 NIH. The CTSI’s promotion of collaborative, full-spectrum translational research has a substantial impact on how research is done at Tufts and at affiliated hospitals across Massachusetts and Maine. The Tufts CTSI includes the Research Design Center (RDC), the Clinical and Translational Science Center (formally the Tufts GCRC), and the Clinical and Translational Research Graduate Program of the Tufts Sackler School. The Graduate Program provides research training to ICRHPS fellows and to trainees throughout many Tufts Medical Center clinical departments and divisions. The RDC provides support to all Tufts departments and divisions in biostatistics, study design, data collection, budgetary planning, writing, and related project development.

Highlights of 2010

» Receipt of $6,670,001 in new funding for 25 new research projects in 2010
» Authorship by faculty of 148 publications in over 99 journals
» Recognition of faculty by their participation in many national panels
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<tr>
<th>Name</th>
<th>Academic Rank</th>
<th>Title and Special Responsibility</th>
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</thead>
</table>
| 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  
Professor and Program Director, Clinical Research Graduate Program, Sackler School of Graduate Biomedical Sciences |
| David Adler, MD             | Professor, Psychiatry and Medicine | Director, Mental Health Services Research Group THI                                                                                                                                  |
| Ethan Balk, MD              | Assistant Professor | Assistant Director, CCES                                                                                                                                                                                                 |
| Jennifer Basset-Midle       | Instructor          | BRC                                                                                                                                                                                                                              |
| Joni Beshansky, RN          | Assistant Professor | Assistant Director, CCHSR                                                                                                                                                                                                           |
| Peter Castaldi, MD          | Assistant Professor | Assistant Director, CGEM                                                                                                                                                                                                            |
| Hong Chang, PhD             | Assistant Professor | Biostatistician, BRC                                                                                                                                                                                                                  |
| Joshua Cohen, PhD           | Associate Research Professor | CEVR                                                                                                                                                                                                 |
| Thomas Concannon, PhD       | Assistant Professor | Pfizer Scholar, CCHSR                                                                                                                                                                                                                 |
| Denise Daudelin, RN         | Assistant Professor | Project Director, CCHSR                                                                                                                                                                                                               |
| John Griffith, PhD          | Associate Professor | Co-PI, Tufts CTSI  
Director, Design & Data Resource Center  
Biostatistician, BRC/CCHSR                                                                                                                                                        |
| Richard Hermann, MD         | Associate Professor of Medicine and Psychiatry | Director, Quality Assessment and Improvement in Mental Health THI                                                                                                                |
| Stanley Ip, MD              | Assistant Professor of Medicine and Pediatrics | CCES                                                                                                                                                                                                 |
| David Kent, MD              | Associate Professor | Associate Director, Clinical Research Training Program CCHSR                                                                                                                                                                         |
| Georgios Kitsios, MD, PhD   | Assistant Professor | CCES                                                                                                                                                                                                                           |
| Manlik Kwong, BS            | Adjunct Instructor  | Software Engineer, CCHSR                                                                                                                                                                                                              |
| Pei-Jung Lin, PhD           | Assistant Professor | CEVR                                                                                                                                                                                                                           |
| Joseph Lau, MD              | Professor           | Director, CCES & AHRQ Evidence-based Practice Center  
Concentration Leader, Graduate Program in Clinical Research                                                                                                                                                                               |
| Michael Barton Laws, PhD    | Assistant Professor (terminated 9/10) | THI                                                                                                                                                                                                                                          |
| Deborah Lerner, MS, PhD     | Professor of Medicine and Psychiatry (promoted in 2010) | Program Director, Program on Health, Work and Productivity, THI  
Concentration Leader, Graduate Program in Clinical Research  
Evaluation Director, Tufts CTSI                                                                                                                                               |
| Laurel Leslie, MD           | Associate Professor, Pediatrics and Medicine | Associate Program Director, Center for Child and Health, THI  
Co-PI, Tufts CTSI                                                                                                                                                                                                                       |
<p>| Tanya Logvinenko, PhD       | Assistant Professor | Biostatistician, BRC                                                                                                                                                                                                                  |</p>
<table>
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<tr>
<th>Name</th>
<th>Academic Rank</th>
<th>Title and Special Responsibility</th>
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<tbody>
<tr>
<td>Peter Neumann, ScD</td>
<td>Professor</td>
<td>Director, CEVR</td>
</tr>
<tr>
<td>Susan Parsons, MD, MRP</td>
<td>Professor of Medicine and Pediatrics (promoted in 2010)</td>
<td>Director, THI and Program Director, Center for Child and Health</td>
</tr>
<tr>
<td>Jessica Paulus, ScD</td>
<td>Assistant Professor</td>
<td>Design and Data Resource Center, Tufts CTSI</td>
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<tr>
<td>Lori Lyn Price, MS</td>
<td>Instructor</td>
<td>Biostatistician, BRC</td>
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<tr>
<td>William Rogers, PhD</td>
<td>Assistant Professor</td>
<td>THI</td>
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<tr>
<td>Robin Ruthazer, MPH</td>
<td>Assistant Professor</td>
<td>Biostatistician, BRC/CCHSR</td>
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<tr>
<td>Dana Gelb Safran, PhD</td>
<td>Associate Professor</td>
<td>THI</td>
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<tr>
<td>Christopher Schmid, PhD</td>
<td>Professor</td>
<td>Biostatistician, Director, BRC, Concentration Leader, Graduate Program in Clinical Research</td>
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<tr>
<td>Patricia Sheehan, RN</td>
<td>Assistant Professor</td>
<td>CCHSR</td>
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<tr>
<td>Norma Terrin, PhD</td>
<td>Associate Professor</td>
<td>Biostatistician, BRC, THI</td>
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<tr>
<td>Hocine Tighiouart, MS</td>
<td>Instructor</td>
<td>Biostatistician, BRC</td>
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<tr>
<td>Thomas Trikalinos, MD</td>
<td>Assistant Professor</td>
<td>Associate Director, CCES</td>
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<tr>
<td>Ira Wilson, MD</td>
<td>Professor (adjunct as of 9/10)</td>
<td>Program Director, Measuring and Improving the Quality of HIV Care, THI, Co-PI, Tufts CTSI</td>
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</tbody>
</table>

Research center abbreviations:
BRC = Biostatistics Research Center
CCES = Center for Clinical Evidence Synthesis
CCHSR = Center for Cardiovascular Health Services Research
CEVR = Center for Evaluation and Risk in Health
CGEM = Center for Genetic Epidemiology and Modeling
THI = The Health Institute
## Associate and Adjunct Staff

<table>
<thead>
<tr>
<th>Name</th>
<th>Institution</th>
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<tbody>
<tr>
<td>Evan Benjamin, MD, FACP</td>
<td>Baystate Medical Center</td>
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<tr>
<td>Marge Berham-Hutchins, PhD, RN, MS</td>
<td>Northeastern University</td>
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<tr>
<td>Peter Bonis, MD</td>
<td>Tufts Medical Center</td>
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<tr>
<td>Kathleen Bungay, PharmD</td>
<td>Northeastern University</td>
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<tr>
<td>Joseph Cappelleri, PhD</td>
<td>Pfizer, Inc</td>
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<td>Cathryn Clary, MD, MBA</td>
<td>Pfizer, Inc</td>
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<td>Ralph D'Agostino, Sr., PhD</td>
<td>Boston University</td>
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<td>Olaf Damman, MD</td>
<td>Tufts Medical Center</td>
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<td>Jonathan Davis, MD</td>
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<td>Roger Fielding, MD</td>
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<td>Frederick Frankhauser, JD</td>
<td>Tufts Medical Center</td>
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<td>Ivan Frantz, MD</td>
<td>Zoll Medical</td>
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<td>Gary Freeman, MD</td>
<td>Tufts Medical Center</td>
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<td>Jonathan Garlick, MD</td>
<td>Tufts Medical Center</td>
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<tr>
<td>Seyed Nassir Ghaemi, MD, MPH</td>
<td>Ben Gurion University of the Negev, Israel</td>
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<tr>
<td>Alexandra Glazier, JD, MPH</td>
<td>Tufts USM</td>
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<tr>
<td>Robert Goldberg, PhD</td>
<td>Tufts USDM</td>
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<tr>
<td>Elizabeth Goodman, MD</td>
<td>Caritas St. Elizabeth’s Medical Center</td>
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<td>Alice Gottlieb, MD</td>
<td>Tufts Medical Center</td>
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<tr>
<td>William Gouveia, PharmD</td>
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<td>Daniel Greenberg, PhD</td>
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<td>David Greenblatt, MD</td>
<td>Baystate Medical Center</td>
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<tr>
<td>Catherine Hayes, DMD</td>
<td>Baystate Medical Center</td>
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<tr>
<td>Judy Hinchey, MD</td>
<td>Massachusetts General Hospital</td>
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<tr>
<td>Gordon Huggins, MD</td>
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<td>John Ioannidis, MD</td>
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<td>Bertrand Jaber, MD</td>
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<td>Richard Kopelman, MD</td>
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<td>Jeffrey Lasker, MD</td>
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<tr>
<td>Mary Lee, MD</td>
<td>Millenium Pharmaceuticals</td>
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<tr>
<td>Andrew Levey, MD</td>
<td>Outcome Sciences, Inc., Merck and Co.</td>
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<tr>
<td>Peter Lindenauer, MD, MSc</td>
<td>United Biosource</td>
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<tr>
<td>Alice Lichtenstein, DSc</td>
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<td>John Mason, PhD</td>
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<tr>
<td>Timothy McAlindon, MD, MPH</td>
<td>Baystate Medical Center</td>
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<tr>
<td>Kimberley McGuigan, PhD, MBA</td>
<td>Tufts Friedman School/HNRC</td>
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<tr>
<td>Catherine Milch, MD, PhD</td>
<td>Blue Cross Blue Shield of Massachusetts</td>
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<td>Vandana Menon, MD PhD, MPH, MS</td>
<td>Tufts Medical Center</td>
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<td>Newell McElwee, III, PharmD, MPH</td>
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<td>Mikaya Mwamburi, MD</td>
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<td>James Udelson, MD</td>
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<td>Katrin Ulhig, MD, MS</td>
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<td>Elias Zintzaras, MD, PhD</td>
<td>University of Massachusetts Medical School</td>
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<td>Deborah R. Zucker, MD</td>
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<td>American Federation of Medical Research</td>
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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, Cardiology, Neurology, 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

- **Peter Castaldi, MD**
  Internal Medicine and Adult Primary Care

- **David Kent, MD**
  Internal Medicine and Adult Primary Care

- **Laurel Leslie, MD**
  General Pediatrics

- **Susan Parsons, MD**
  Pediatric Oncology

- **Ira Wilson, MD**
  Internal Medicine and Adult Primary Care

Teaching Activities

Over the past two decades, faculty in the Division of CCR/ICRHPS have taught courses and seminars in clinical research methods to faculty, fellows, residents, and administrative staff. In addition to teaching courses at Tufts Medical Center and other Boston institutions, ICRHPS faculty have given courses around the world. Primarily, however, faculty members of the institute are involved with the teaching activities in the Tufts Clinical and Translational Science (Tufts CTSI) Clinical Research Curriculum, MS/PhD Clinical Research 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 self-motivated trainees embark on careers as clinical and health services researchers.

The CTS graduate program, the first in the nation linking an MS/PhD program in a biomedical graduate school with an academic medical center for clinical research training, has emerged as a national model. The program is designed for individuals who have completed training in the medical sciences (MD, DO, DDS, DVM, and others), or other advanced biomedical degree, and 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 which allows them to develop more extensive competency in their chosen area: Evidence-based Clinical Effectiveness Research, led by Dr. Joseph Lau; Clinical Investigation, led by Dr. David Snydman; and, Health Services and Outcomes Research, led by Dr. Debra Lerner. Additionally, in order to promote better interdisciplinary research education through increased comprehensiveness of the program content, the program now provides students with the option of choosing a focus in another discipline, which would typically represent the content area of their thesis. The Program has a formal mentoring system to facilitate fellows’ development and execution of independent research projects. All students enrolled in this program must complete an independent research project thesis. Visiting, special fellows, and fellows from a variety of Tufts Medical Center Departments and Divisions also participate in fellowship offerings. Nearly all of the fellows who have trained in this Program are currently active faculty at medical schools or the NIH, and the rest serve as senior staff or consultants in health services delivery and policy.

Post-doctoral training is provided by the CCR federally-sponsored T32 training grant in Clinical Care and Health Services Research; A KM1 Career Development Award (KM1) Program in Comparative Effectiveness Research (CER); and, KL2 Junior Faculty Career Development Award Program faculty.
Research Activities

The six primary research programs of the Division of Clinical Care Research are listed below, followed by short descriptions of their activities.

» Biostatistics Research Center
» Center for Cardiovascular Health Services Research
» Center for Clinical Evidence Synthesis
  - Agency for Healthcare Research and Quality Evidence Based Practice Center
» Center for Evaluation of Value and Risk in Health
» Center for Genetic Epidemiology and Modeling
» The Health Institute
  - Center for Child and Family Outcomes
  - Healthcare and Outcomes in Older Adults
  - Measuring and Improving Quality of HIV Care
  - Mental Health Services Research Group
  - Primary Care Quality, Access, and Policy
  - Program on Health, Work and Productivity
  - Quality Assessment and Improvement in Mental Health

Biostatistics Research Center

(Dr. Christopher Schmid, Director; Faculty: Drs. Hong Chang, John Griffith, Joseph Lau, Tanya Logvinenko, Harry Selker, Norma Terrin, Ms. Jennifer Basset-Midle, Ms. Lori Lyn Price, Ms. Robin Ruthazer, Mr. Hocine Tighiouart)

The Biostatistics Research Center (BRC) seeks to promote 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 cutting-edge design and analytic techniques. The BRC 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 meetings and seminars as well as through attendance at local and national meetings. BRC faculty are involved as investigators on their own investigator-initiated research as well as on projects throughout Tufts Medical Center and Tufts University. BRC staff serve 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 BRC is responsible for statistical and computational instruction and mentoring to students in the Sackler Clinical Research Program.

Center for Cardiovascular Health Services Research

(Dr. Harry Selker, Director; Ms. Joni Beshansky, Associate Director; Faculty: Drs. Thomas Concannon, John Griffith, David Kent, Ms. Denise Daudelin, Mr. Manlik Kwong, Ms. Robin Ruthazer)

The Center for Cardiovascular Health Services Research, (CCHSR), is known for a series of studies on the factors influencing emergency cardiac care. Over the past two decades, the Center has developed “cardiac predictive instruments” for use in the emergency cardiac clinical setting. These decision aids, which provide the emergency physician with predictions of key outcomes, are incorporated into a standard computerized electrocardiograph.

Among ongoing projects by the CCHSR is a $25 million grant from the National Heart Lung Blood Institute (NHLBI) of the National Institutes of Health (NIH) for the IMMEDIATE (Immediate Myocardial Metabolic Enhancement During Initial Assessment and Treatment in Emergency care) Trial. This national study will determine if an intravenous “GIK” solution of glucose (sugar), insulin, and potassium can reduce the likelihood of a heart attack and death from heart attack. The study includes patients when they first present with symptoms of a heart attack to emergency medical system (EMS) ambulances in Alaska, Arizona, Connecticut, Massachusetts, Michigan, South Dakota, Texas, and Washington. If the IMMEDIATE Trial shows this inexpensive and readily-accessible treatment is effective, it could save the lives of tens of thousands of patients with threatening or ongoing heart attacks in the United States each year. (Further information can be found at http://www.immediatetrial.com/.)

Cerebrovascular research also is done in CCHSR. Dr. David Kent has received federal funding to develop predictive instruments for stroke care and prevention and Denise Daudelin has taken a leadership role in Massachusetts Department of Public Health Quality Improvement Project.

CCHSR also has an active research program in policy issues in cardiovascular care. Dr. Concannon has received funding from AHRQ to evaluate the comparative effectiveness of regionalization strategies in emergency care for patients with heart diseases. Additionally, faculty are engaged in projects to evaluate the acquisition of high cost medical technology at US hospitals, to estimate drive times to specialty burn hospitals, and to evaluate elapsed time and delays in the emergency 911 system.
The Center for the Evaluation of Value and Risk in Health

(Dr. Peter Neumann, Director; Faculty: Drs. Joshua Cohen, Pei Jung Lin)

The Center for the Evaluation of Value and Risk in Health (CEVR) was established in December 2005 by Peter Neumann, ScD (Director) and Joshua Cohen, PhD (Deputy Director) 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. The members undertake scientific research projects, advance methods development for the field, train the next generation of practitioners and users, and work with policymakers worldwide to develop reasoned policy solutions.

CEVR researchers bring experience in economics and decision analysis to a host of clinical and public health policy issues. 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.

To facilitate this work, CEVR has developed two unique databases to help measure and communicate the clinical and economic value of health care strategies. CEVR is the home of The Tufts Cost-Effectiveness Analysis Registry, a nationally and internationally known and respected resource containing detailed information on more than 1,700 standardized cost-effectiveness analyses published in the peer-reviewed literature (www.cearegistry.org). In addition, CEVR has developed and maintains 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).

The Center for Genetic Epidemiology and Modeling (CGEM)

(John Ioannidis, Director; Faculty: Drs. Peter Castaldi, Tanya Logvinenko, Christopher Schmid, Mr. Hocine Tighiouart)

The Center for Genetic Epidemiology and Modeling (CGEM), led by Dr. Ioannidis, was established to advance the understanding of the complex interplay between genetic and environmental factors and disease susceptibility, response to...
treatment, and effectiveness of genetic testing. As principal and co-investigators, CGEM staff provide analytic support for numerous federal and foundation grants. Current areas of research include candidate gene studies, genome-wide association studies, pharmacogenomics, nutrigenomics, meta-analysis of genetic studies, genomic microarray analysis, proteomic microarray analysis, and cost-effectiveness of genetic testing.

The CGEM is also exploring the association between genetic information and medical events and outcomes. It is currently involved in a variety of projects that study gene-phenotype associations in cardiovascular disease (Framingham Heart Study, WISE Study, Heart Score Study), obesity (Look AHEAD Study), dementia and Alzheimer’s disease (NAME Study), and chronic kidney disease (GOKIND Study). CGEM staff are also involved in pharmacogenetic studies (IMMEDIATE Trial, PROSPER Study, pending FAVORIT Study) aimed to identify relationships between genetic make-up and treatment responses.

The Health Institute

(Barbara S. Rubenstein, MD, PhD, Director; Faculty: Drs. David Adler, Hong Chang, Richard Hermann, W. Barton Laws, Debra Lerner, Laurel Leslie, William Rogers, Dana Gelb Safran, Ira Wilson)

The Health Institute (THI) at Tufts MC, directed by Dr. Susan K. Parsons, was founded in 1988. In its initial years, The Health Institute was home to the Medical Outcomes Study (MOS)—a landmark study designed to measure the relationship between the organization and delivery of medical care and the functional health outcomes of patients. The Health Institute’s overall mission 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 this end, The Health Institute develops tools to advance the science of outcomes measurement from the patient’s point of view; engages 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 works with clinicians, government, employers, health plans and other public and private sector organizations to translate research into practice and policy.

The seven principal program areas of research encompassed by THI’s work are the following: 1) Center on Child and Family Outcomes, led by Susan Parsons, MD, MRP, studying the quality of life of families coping with a chronic illness (such as cancer or mental health disorders); 2) Health Care and Outcomes in Older Adults, led by Dana Gelb Safran, ScD, addressing healthcare quality, coverage and costs in the Medicare program; 3) Measuring and Improving the Quality of HIV Care, led by Ira Wilson, MD, improving the quality of care provided to persons with HIV disease; 4) Mental Health Services Research Group, led by David Adler, MD, improving the delivery of mental health services in healthcare delivery systems, particularly in primary care; 5) Primary Care Quality, Access, and Policy, led by Dana Gelb Safran, ScD, analyzing the metrics for measuring and methods for improving primary care quality; 6) Program on Health, Work, and Productivity, led by Debra Lerner, MS, PhD, assessing the impact of health and treatment on employee functioning; and 7) Quality Assessment and Improvement in Mental Health, led by Richard Hermann, MD, assessing and improving the quality of both mental health and substance-abuse care. Faculty members within THI receive research support from a variety of sources, including federal funders (NIH, AHRQ, and CDC), pharmaceutical companies, and foundations.

Research Support

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<tr>
<th>Recipient</th>
<th>Funding Source</th>
<th>Purpose of Award</th>
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<tr>
<td>Peter Castaldi, MD</td>
<td>NIH/NHLBI</td>
<td>Predictive Modeling with Clinical and Genomic Data in COPD</td>
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<td>Joshua Cohen, PhD</td>
<td>MS&amp;L Worldwide</td>
<td>Estimating the Benefits of Enteral Nutrition</td>
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<td>Thomas Concannon, PhD</td>
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<td>Triage and Allocation Model for Primary PCI after STEMI</td>
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<td>Comparative Effectiveness Research: Public Use Data Pilot Project</td>
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<td>Denise Daudelin, RN, MPH</td>
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<td>Richard Hermann, MD</td>
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<td>Development and Implementation of a Sleep Module for the Wellness Checkpoint</td>
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<td>Addressing the Needs of Children in Child Welfare: Views from the Front Line</td>
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<td>Using Evidence to Improve Medicaid Mental Health Services for Massachusetts Children and Youth</td>
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<td>Comparative Safety of Atypical Antipsychotics among High-risk Children</td>
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<td>NIH via MGH</td>
<td>High Throughput NAPPA-proteoimmunomics and V. cholerae Vaccines</td>
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<td>Proteome-wide Screen for M. Tuberculosis Antigens</td>
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<td>Using Cost Effectiveness Research to Improve Value in the Medicare Program</td>
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<td>Willingness to Pay for Therapeutic Advances in Cancer: The Impact of the Effect of Size and Distribution</td>
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<td>Assessing the Impact of Diagnostic and Medical Technology on Outcomes</td>
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<td>Burden of Condition Analysis for Acute Spinal Cord Injury</td>
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<td>Assessing Quality of Care Delivered to Individuals with Alzheimer’s using Medicare Claims Data</td>
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<td>Expert Panel on Issues involved in developing a value-based insurance design</td>
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<td>Information for Health Plans on the Comparative Value of Pharmaceuticals</td>
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<td>Covidien</td>
<td>Managing Opioid Risk through REMS: Issues and Options</td>
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<td>Amgen</td>
<td>A Policy Paper on the Consequences of new payment systems for ESRD Treatment</td>
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<td>Susan Parsons</td>
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<td>HSCT-CHESS to Enhance Hematopoietic Transplant Recovery</td>
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<td>NIH/NCI via DFCI</td>
<td>Enhanced self-appraisal after cancer: A bias in survivors self-report?</td>
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<td>Susan Parsons and Norma Terrin</td>
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<td>Innovative Statistical Methods for the Integration of Functional and Clinical Outcomes</td>
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<td>Genetic Markers of GIK Effect in acute coronary syndrome in the IMMEDIATE Trial</td>
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<td>Analyzing Patient Provide communication s to understand disparities in HIV care</td>
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<td>Improving the self-report of medication adherence problems in HIV</td>
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<td>Nudging doctors to collaborate with pharmacists to improve medication adherence</td>
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<td>Christopher Schmid, PhD</td>
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<td>Modernizing Meta Analysis to Facilitate Comparative Effectiveness Reviews</td>
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<td>Harry Selker, MD, MSPH</td>
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<td>Early EMS and ED Use of GIK for ACS: IMMEDIATE Trial</td>
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<td>Thomas Trikalinos, MD, PhD</td>
<td>AHRQ</td>
<td>Semi-automated Abstract Screening for Comparative Effectiveness Reviews</td>
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Honors and Awards

**David Adler, MD**

**Awards:**
- 2010-2012 Best Doctors in America
- 2010 Best of Boston Physicians, Boston Magazine

**Editorial Boards:**
- Editorial Board, Psychiatric Services
- Chair, Publications Board, Group for Advancement of Psychiatry

**Invited Lectures:**
- Italian National Institute of Health: Recognition and Treatment of Depression in the Workplace, May 2010

**Ethan Balk, MD**

**Editorships:**
- Associate Editor, Evidence-based Practice program, AHRQ

**Peter Castaldi, MD**

**Research Accomplishments/New Funding:**
- Predictive Modeling with Clinical and Genomic Data in COPD, NHLBI K08

**Joshua Cohen, PhD**

**Research Accomplishments/New Funding:**
- Estimating the Benefits of Enteral Nutrition, MS&L Worldwide, $82,000

**Thomas Concannon, PhD**

**Research Accomplishments/New Funding:**
- Comparative Effectiveness Research Public Use Data Pilot Project, IMPAQ, Inc., $53,957

**Richard Hermann, MD**

**National Panels:**
- Subcommittee of the National Advisory Committee on Medicaid Adult Health Quality Measures, Washington, DC

**Chair, Technical Expert Panel for Inpatient Psychiatric Quality Measure Development, Centers for Medicare and Medicaid Services (CMS), Baltimore, MD**

**Research Accomplishments/New Funding:**
- Contextual Factors Associated with Mortality Reduction with a Quality Improvement Collaborative, AHRQ via subcontract from Baystate Medical Center, $49,420
- Patient Safety in Inpatient Psychiatry, NIMH via subcontract from UPenn, $401,960

**David Kent, MD**

**Invited Lectures:**
- “Average Results and Individual Patients” Center for Value and Risk, External Advisory Board/Sponsor’s Annual Meeting, Taj Hotel, Boston.
- “The Risk of Paradoxical Embolism (RoPE) Study” Boston Stroke Society, Massachusetts General Hospital

**Editorships:**
- Associate Editor, Trials
- Deputy Editor, Journal of General Internal Medicine

**Joseph Lau, MD**

**Editorial Boards:**
- Editorial Board, Journal of Nutrition

**National Panels/Committees:**
- Member, Institute of Medicine Committee on Standards for Developing Trustworthy Clinical Practice Guidelines, 2009-2010.

**Awards/Honors:**
- Editorial Board, Journal of Nutrition
» National Award for Career Achievement and Contribution to Clinical and Translational Science, Society of Clinical and Translational Science

Research Accomplishments/New Funding:
» AHRQ Evidence-based Practice Center Contracts: New task orders and work assignments on the development of a study data repository, technology assessments on cochlear implants, radiation therapy, carotid stents and genetic testing, systematic reviews on nutrients, diet and health outcomes, totaling $3.8 million in 2009

Debra Lerner, PhD

Invited lectures:
» Meeting of ORC Worldwide Physicians Group, “Productivity: How to Capture the Loss Leader – Signature Associations”; (Washington, D.C)
» Aetna Webinar on Health and Productivity,
» “The Program on Health, Work and Productivity”

National Panels/Committees:
» Board of Directors, Health and Productivity Innovation Institute of the Foundation for Rehabilitation Education and Research, Certification of Disability Management Specialists Commission
» Scientific Advisory Board, The Oxycodone Users Registry (OURegistry), Ortho-McNeil Janssen Scientific Affairs, LLC
» Scientific Advisory Board, Takeda Pharmaceuticals and Lundbeck Pharmaceuticals Working Population Council
» Committee Member, Mental Health (Disability) Criteria Revision Working Group Department of Veteran’s Affairs, Veteran’s Benefits Administration and Veteran’s Health Administration

Research Accomplishments/New Funding:
» Impact of Back and Neck Pain, Ortho-McNeil Janssen, $176,838

Laurel Leslie, MD

National Panels:
» Member, National Scientific Panel, California Evidence-Based Clearinghouse for Child Welfare, San Diego, CA
» Expert Consultant, Agency for Health Care Research and Quality, Topic Refinement Brief: Parent-mediated Interventions for Adoptive and Foster Children
» Study Section Member, National Institute of Mental Health, Services Research in Specialty Settings
» Member, Community Engagement Key Function Committee and Children’s Health Outcomes Committee, National Clinical and Translational Science Award Programs
» Member and Content Expert, Health Foster Care America, American Academy of Pediatrics
» Member, Task Force on Children in Foster Care, American Academy of Pediatrics
» Member, Vision of Pediatrics Task Force, American Academy of Pediatrics
» Chair, AAP Longitudinal Study of Pediatrics Planning Committee, American Academy of Pediatrics

Research Accomplishments/New Funding:
» Member, National Award for Career Achievement and Contribution to Clinical and Translational Science

Invited Lectures:
» Leslie LK. “Attention-Deficit Hyperactivity Disorder.” Massachusetts Department of Children and Families. Boston, MA.
» Leslie LK. “Fostering well-being for children in foster care.” Annual Uninformed Services Pediatric Seminar. San Diego, CA.
» Leslie LK, Davis C. “This child’s behavior is driving me crazy! Behavior change: Principles and practice.” Boston Chinatown Neighborhood Center. Boston, MA.
» Leslie LK, Cohen JT. “Costs and logistics of screening.” Screening for Sudden Cardiac Death in Young Working Group Meeting at the National Heart Lung and Blood Institute. Bethesda, MD.
LeslieLK,MackieTI,RoddayAM,HydeJ,Schoonover
DR,BellonciC."Stateoversightofpsychotropic
medicationuseamongchildreninfostercare."Pediatric
AcademicSocietiesAnnualMeeting,Vancouver,BC.

ChangAD,HydeJ,MichaelsN,LeslieLK."Multidisciplinary
trainingtofacilitatecollaborativembetweenearly
interventionandchildwelfare."PediatricAcademic
SocietiesAnnualMeeting,Vancouver,BC.

LeslieLK."Leadership:Handlingdifficult
conversations."PediatricAcademicSocieties
AnnualMeeting,Vancouver,BC.

LeslieLK,DavisC."Mychild’sbehaviorisdriving
mecrazy!Behaviorchange:Principlesand
practice."JosiahQuincySchool,Boston,MA.

LeslieLK,MackieTI,HydeJ,RoddayAM,Schoonover
DR,BellonciC."Systemsforpsychotropicmedication
oversightwithinchildwelfareagencies."AcademyHealth
2010AnnualResearchMeeting,Boston,MA.

LeslieLK,ChangAD."Earlyinterventionservices
foryoungchildreninfostercare."Massachusetts
DepartmentofChildrenandFamilies,Boston,MA.

LeslieLK."Addressingwell-beinginchildren
andadolescentsinfostercare."University
ofColorado,Denver,Denver,CO.

LeslieLK."Managingconflictinchild
welfare."MassachusettsDepartmentof
ChildrenandFamilies,Boston,MA.

LeslieLK."Negotiation."MassachusettsDepartment
ofChildrenandFamilies,Boston,MA,August2010.

LeslieLK."Collaboratingtoaddressthemental
healthneedsonyouthinfostercare."Washington
UniversityinSt.Louis,St.Louis,MO.

LeslieLK."Theuseofpsychotropicmedicationsinfoster
care:Newguidelines."AmericanAcademyofPediatrics
NationalConferenceandExhibition,SanFrancisco,CA.

LeungRubinC,MartinezL,ChuJ,BruggeDHacker
K,OppJ,PirieA,RussellB,LeslieLK."Community
engagedpedagogy:Buildingresearchcapacityin
community-basedorganizations."AmericanPublic
HealthAssociationConference.Denver,CO.

LeslieLK,DawsonEH."Adolescentdevelopment:
Thebasicsofphysical,cognitive,andemotional
changes."AsianHealthInitiativeandDorchesterHealth
Initiativeparticipatingprograms.Boston,MA.

BellonciC,LeslieLK."Too much, too little, or just right?
Oversightofpsychotropicmedicationifyouthinfoster
care."AnnieE.CaseyFoundationandCenter
forHealthCareStrategies,Inc.Baltimore,MD.

ResearchAccomplishments/NewFunding:

UsingEvidencetoImproveMedicationforMental
HealthServices forMassachusettsChildren,WT
Grantvia subcontractfromUMass,$109,210

ComparativeSafetyofAtypicalAntipsychotics
amongHighRiskChildren,NIHvisubcontractfrom
Children’sHospitalofPhiladelphia,$53,338

Pei-jingLin,PhD

ResearchAccomplishments/NewFunding:

WillingnesstoPayforTherapeuticAdvancesin
Cancer,NatalieVZuckerAward,$1,000

PeterNeumann,PhD

NationalPanels:

RobertWoodJohnsonFoundationHealth
PolicyFellowshipsAdvisoryBoard

AcademyofManagedCarePharmacyeDossier
SystemImplementationAdvisoryGroup

Chair,HealthSciencePolicyCouncil,InternationalSociety
ofPharmacoeconomicsandOutcomeResearch

InternationalWorkingGroupforHTAAdvancement

ASCOCostofCareTaskForce

EditorialBoards/Editorships:

Editorialadvisorypanel,ExpertReviewof
Pharmacoeconomics&OutcomesResearch

Editorialboard,HealthAffairs

ResearchAccomplishments/NewFunding:

Assessingqualityofcaredeliveredtoindividuals
withAlzheimer’sDisease,Janssen,$149,997

ExpertPanelonIssuesinvolvedindevelopingavalue-
basedInsuranceDesign,MedPacFoundation,$23,476

InformationforHealthPlansontheComparative
ValueofPharmaceuticals,California
HealthcareFoundation,$289,992

ManagingOpioidRisktroughREMS:Issues
andOptions,Covidien,Inc,$135,000

APolicyPaperontheConsequencesofNew
PaymentSystemsforESRDTreatment

SusanParsons,MD

NationalPanels:

InvitedMember,AmericanSocietyofBlood
andMarrowTransplantationExpertPanelon
indicationsofSCTinthe treatmentofALL
Invited member, Scientific Program Committee, 17th Annual Conference of the International Society for Quality of Life Research (ISOQOL)

Invited co-leader, Scientific program subcommittee for eHealth Plenary Session, 18th Annual Conference of the International Society for Quality of Life Research (ISOQOL)

Invited Lectures:
- Caring for the Caregiver: The Impact of Pediatric HSCT on Parents. “Celebrating a Second Chance at Life” Symposium, sponsored by BMT Infonet.org, Boston, MA (Invited speaker).
- Parental distress with Pediatric HSCT: Methods to Detect it and Strategies to Reduce it. Children’s Hospital of Philadelphia (Invited Speaker).
- What is a good test for that (v.2)? 2010 Annual Meeting of the Pediatric Academic Societies/ Society for Pediatric Research, Vancouver (Workshop co-leader)
- Caring for the Caregiver: eHealth interventions for parents of pediatric HSCT. SIOP Pediatric Psychoncology Meeting, Boston (Invited Speaker).

Research Accomplishments/New Funding:
- Innovative Statistical Methods for the Integration of Functional and Clinical Outcomes, Multi-PI grant with Dr. Norma Terrin. NCI R21 $380,409

William Rogers, ScD

Research Accomplishments/New Funding:
- Analyzing Patient –Provider Communications to Understand Disparities in HIV Care, NIMH R01 via subcontract from Brown University, $95,422
- Nudging Doctors to collaborate with Pharmacists to Improve Medication Adherence, NIH via subcontract from Brown University, $121,981

Christopher Schmid, PhD

Awards/Honors:
- Fellow, American Statistical Association
- Dean’s Outstanding Sackler Faculty Mentor Award, Tufts Medical School
- Tufts University Distinguished Faculty Award

National Panels:
- Chair-Elect, Health Policy Statistics Section, American Statistical Association
- Steering Committee, FDA/Industry Statistics Workshop
- Co-Convener, Multiple Interventions Methods Group, Cochrane Collaboration
- Co-chair, Comparative Effectiveness Research Key Function Committee Methods Workgroup, Clinical and Translational Science Award Consortium

Harry Selker, MD

Awards/Honors:
- Board of Directors, Association for Patient Oriented Research (APOR)
- President, Society for Clinical and Translational Science
- Chair, Public Policy Committee, Society for Clinical and Translational Science
- Council Board Member, Society of General Internal Medicine
- President-Elect, Society of General Internal Medicine
- Board of Directors, Health Resources in Action

National Panels:
- Board of Directors, Association for Patient Oriented Research (APOR)
- President, Society for Clinical and Translational Science
- Chair, Public Policy Committee, Society for Clinical and Translational Science
- Council Board Member, Society of General Internal Medicine
- President-Elect, Society of General Internal Medicine
- Board of Directors, Health Resources in Action

Society of General Internal Medicine, David Calkins Award In Health Policy Advocacy
Invited Lectures:
» Association for Clinical Research Training/Society for Clinical and Translational Science Education Session at Annual Meetings
» Case Western University Comparative Effectiveness Research Symposium
» Drug Information Association National Meeting Speaker on Comparative Effectiveness Research
» National Association of EMS Physicians General Session
» New York University Langone Medical Grand Rounds
» University of Alabama at Birmingham Keynote Speaker

Norma Terrin, PhD

Editorial Boards:
» Statistics Editor, Clinical Infectious Diseases
» Editorial Board, Research Synthesis Methods

National Meetings:
» Scientific Organizing Committee for the International Conference on Health Policy Statistics 2010

Hocine Tighiouart, MSc

» Statistical Editor, American Journal of Kidney Diseases

Thomas Trikalinos, MD, PhD

Invited Lectures:
» “Presentation of complex findings in network meta-analysis”, Johns Hopkins University
» “Software for multiple treatment meta-analysis”, Johns Hopkins University

Editorial Boards:
» BMC Medical Research Methodology
» Research synthesis methods
» PLoS Currents – Evidence for Genomic Applications
Overview
Established in 1997, the Molecular Cardiology Research Institute at Tufts Medical Center is comprised of seventeen gifted investigators and physician-scientists working with over eighty staff and trainees. The MCRI has as its mission the study of molecular mechanisms of human cardiovascular disease; translation of bench findings to new bedside strategies for diagnosis and therapy; and the mentoring of MD and PhD trainees committed to a career in academic cardiovascular research. Since its inception the Institute has invested in three principal areas: recruitment of scientists and physician-scientists of the highest quality, establishment and growth of specific programs in cardiovascular research, and establishment of state-of-the-art Core facilities.

The MCRI programmatic areas of focus include vascular biology, cardiomyocyte biology, electrophysiology, human genetics and genomics, molecular pharmacology, inflammation, and signal transduction. Members of the MCRI work closely and collaboratively with clinical cardiologists and cardiovascular surgeons, biochemists, neuroscientists, pharmacologists, geneticists, immunologists, and epidemiologists at Tufts Medical Center and Tufts University 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 labs annually. The MCRI is the home of an NIH-funded Training Program in Cardiovascular Research, which offers nine training positions annually to promising new investigators. In addition, the Institute sponsors a Molecular Medicine Seminar Series throughout the academic year and an Annual MCRI Retreat with nationally and internationally recognized guest speakers participating. The intellectual environment is outstanding and the MCRI investigators are highly productive, having received more than 200 grants and published nearly 450 papers since the Institute’s inception.

Highlights of 2010
- Discovery of a novel molecular signaling pathway that regulates cardiac fibrosis in the setting of heart failure
- “Paper of the Week” award by the Journal of Biological Chemistry for a study of the novel tumor suppressor protein Mst2
- Pharmacological characterization of G Protein-Coupled Receptor (GPCR) variants linked to weight maintenance and/or diabetes
- Demonstration of an antiarrhythmic effect of statins in a doubleblind crossover study
- Identification of several genes associated with bicuspid aortic valve
- Receipt of a Young Researcher’s Grant from the Italian Ministry of Health (Dr. Jaffe)
- Development of “pepmendins”, a novel paradigm to control glucose homeostasis
- MCRI and Division of Cardiology Investigators conduct meta-analysis showing that people with high levels of high-density lipoprotein appear significantly less likely to develop cancer
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<thead>
<tr>
<th>Name</th>
<th>Academic Rank</th>
<th>Title and Special Responsibility</th>
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<tbody>
<tr>
<td>Richard Karas, MD, PhD</td>
<td>Elisa Kent Mendelsohn</td>
<td>Executive Director, MCRI (from March, 2010); Interim Chief Scientific Officer, Tufts Medical Center (from May, 2010); Vice-Chairman of Scientific Affairs, Department of Medicine; Director, Preventive Cardiology Center; Co-Director, Women’s Heart Center</td>
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<tr>
<td>Michael Mendelsohn, MD</td>
<td>Elisa Kent Mendelsohn</td>
<td>Chief Scientific Officer, Tufts Medical Center; Executive Director, MCRI</td>
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<td>Debbie Beasley, PhD</td>
<td>Associate Research Professor</td>
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<td>Martin Beinborn, MD</td>
<td>Assistant Professor</td>
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<td>Robert Blanton, MD</td>
<td>Assistant Professor</td>
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<tr>
<td>Daniel Cox, PhD</td>
<td>Associate Professor (Neuroscience)</td>
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<td>Isabelle Draper, PhD</td>
<td>Assistant Professor</td>
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<td>Afshin Ehsan, MD</td>
<td>Assistant Professor (Surgery)</td>
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<td>Jonas Galper, MD, PhD</td>
<td>Professor</td>
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<tr>
<td>Akiko Hata, PhD</td>
<td>Associate Professor (Biochemistry)</td>
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<tr>
<td>Gordon Huggins, MD</td>
<td>Associate Professor</td>
<td>Director, Center for Translational Genomics</td>
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<td>Lakshmanan Iyer, PhD</td>
<td>Assistant Research Professor (Neuroscience)</td>
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<td>Iris Jaffe, MD, PhD</td>
<td>Assistant Professor</td>
<td>Co-Director, MCRC; Chair, Women in Medicine Committee</td>
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<td>Navin Kapur, MD</td>
<td>Assistant Professor</td>
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<tr>
<td>Alan Kopin, MD</td>
<td>Professor</td>
<td>Director, Molecular Pharmacology Research Center; Director, Computational Genomics Core, Center for Neuroscience Research</td>
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<tr>
<td>John Kyriakis, PhD</td>
<td>Professor</td>
<td>Leader, Cell Biology and Signaling Program, Tufts Medical Center Cancer Center</td>
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<tr>
<td>Giorgio Lagna, PhD</td>
<td>Assistant Professor</td>
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<tr>
<td>Janis Lem, PhD</td>
<td>Associate Research Professor (Ophthalmology)</td>
<td>Director, Transgenic Core Facility</td>
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<td>Ho-Jin Park, PhD</td>
<td>Assistant Professor</td>
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<tr>
<td>Gavin Schnitzler, PhD</td>
<td>Assistant Professor</td>
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Major Clinical Programs
The Molecular Cardiology Research Institute has a close relationship with the Division of Cardiology. Six members of the MCRI are active clinicians within the Division of Cardiology and several serve in leadership roles in the Preventive Cardiology Center, Heart Failure and Transplant Program, and the Women’s Heart 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. Currently, six graduate students from Tufts are mentored by MCRI faculty and many of the MCRI investigators direct and lecture in graduate courses. In addition, the clinician-scientists within the MCRI participate in the teaching of medical students through the Patient-Doctor II course and the Integrating Biomedical Research and Clinical Medicine course, as well as teaching the students, house officers and clinical cardiology fellows while attending in the ambulatory clinics and the inpatient services.

Recognized nationally and internationally as a leader in cardiovascular research, the Molecular Cardiology Research Institute is training a new generation of outstanding investigators in the state-of-the-art technologies and approaches necessary to translate bench findings to the bedside and to develop new diagnostic and therapeutic strategies to fight cardiovascular disease. The MCRI has a robust fellowship program funded in part by a National Institutes of Health T32 training grant with nine training slots. Fellows are engaged in basic, translational and clinical research throughout the institute, with approximately 8-10 new fellows recruited each year. The NIH-funded Cardiovascular Training Grant has provided support to clinical cardiology fellows during the research component of their fellowship with great success.

Graduates of the MCRI fellowship program typically pursue careers in academic medicine (MD graduates) or research departments (PhDs) as independent investigators, with the occasional fellow pursuing an opportunity in industry.

Research Activities
Research in the MCRI is funded primarily by the NIH with additional funding from other federal sources, foundations and industry. The MCRI had 53 active grants in 2010 with an annual active funding base of $12.8 million ($9m directs). The major programs of the Molecular Cardiology Research Institute are described below.

Molecular Cardiology Research Center
- Richard Karas, MD, PhD, Director
- Iris Jaffe, MD, PhD, Co-Director
- Robert Blanton, MD
- Navin Kapur, MD
- Michael Mendelsohn, MD (Founding Director)
- Gavin Schnitzler, PhD

The Molecular Cardiology Research Center, a group of closely aligned laboratories, is the founding group of investigators that formed the MCRI. The five laboratories of the Molecular Cardiology Research Center work closely with one another to explore themes of common interest in heart and blood vessel diseases.

The Karas Laboratory is focused in four primary areas: improving our understanding of the effects of estrogen on the cardiovascular system; investigating the extent to which abnormalities of blood vessel function contribute to both atherosclerosis and high blood pressure, examining the importance of low levels of the “good cholesterol” HDL in contributing to heart disease and stroke, and studying the role of protein kinase G (the main effector of nitric oxide) on vascular health. The laboratory studies the molecular pathways within cells of the heart and blood vessels that mediate responses to estrogen. Heart and blood vessel diseases are by far the leading causes of death for women in this country, and patient-based studies have shown that hormone replacement therapies in postmenopausal women can alter the risk of heart and blood vessel diseases. Dr. Karas’ work is aimed at learning more about how estrogen and nitric oxide regulates the development of heart and blood vessel diseases. The laboratory also has an active research program in studying the adverse events that can result from the use of cholesterol altering medications.
The Jaffe Laboratory is investigating the role of aldosterone, a hormone that regulates blood pressure, in the development of hardening of the arteries, the blood vessel disease that causes heart attacks. Aldosterone works by entering cells and binding to the mineralocorticoid receptor (MR) resulting in changes in the genes that are turned on in that cell. Human clinical trials of drugs that block aldosterone binding to MR demonstrate that these drugs decrease mortality and prevent heart attacks. However, the mechanism of protection from heart attack by these drugs is not known. The Jaffe laboratory has demonstrated that MR is located in the cells of the human blood vessel and MR controls the pattern of genes turned on in the vessel. The laboratory is studying these genes to help understand the role of MR in normal blood vessel function and in promoting hardening of the arteries. These studies likely will provide both new insights into the beneficial effects of aldosterone blocking drugs in human clinical trials and suggest new drug targets for prevention and treatment of heart attacks.

The Kapur Laboratory studies cardiac fibrosis, stiffening of the heart muscle. Cardiac fibrosis is a histological hallmark of the failing heart and contributes to adverse cardiac function or remodeling. Dr. Kapur is studying the role of endoglin, a transforming growth factor beta receptor, in cardiac remodeling. This work may yield novel therapeutic targets for cardiac fibrosis secondary to hypertensive heart disease, myocardial infarction, myocarditis and idiopathic cardiomyopathy. Together with Dr. Akiko Hata, Dr. Kapur is actively pursuing novel biomarkers for hypertrophic cardiomyopathy (HCM), the most common inherited disease of the heart and the most common cause of sudden cardiac death in young patients and an important cause of limiting heart failure symptoms at any age.

The Schnitzler Laboratory is studying the roles of chromatin changes in the regulation of transcription by nuclear hormone receptors, including Estrogen Receptor and Glucocorticoid Receptor. The laboratory uses a combination of standard and high-throughput techniques to understand how the genetic and epigenetic factors that modulate chromatin structure give rise to tissue-specific transcriptional responses to glucocorticoids or estrogen.

Laboratory of Vascular Myocyte Biology

Debbie Beasley, PhD

The Beasley Laboratory seeks to understand the early events that promote arterial inflammation, the predecessor of vascular diseases that can lead to heart attack or stroke. There has been an explosion in recent years in the understanding of “innate immunity” (i.e. immunity that is present at birth). Notably, cells of the immune system have been shown to express various members of a family of receptors (Toll-like receptors) that sense unique molecular patterns associated with viruses, bacteria and other microorganisms, and thereby notify host cells about the presence of microorganisms, and elicit an immune response. The laboratory’s research is focused on the hypothesis that the muscle-like, non-immune cells that comprise the blood vessel wall can express Toll-like receptors in disease states, and that the activation of these receptors may play a deleterious role in vascular disease, distinct from the protective role of these receptors in promoting immune cell function and resistance to infections. Recent work in the laboratory has focused on delineating which Toll-like receptors promote an “inflammatory” or disease-like phenotype in isolated vascular muscle cells in vitro.
Laboratory of Lipid Metabolism and Cardiovascular Signaling

Jonas Galper, MD, PhD
Ho-Jin Park, PhD

Diabetics have been shown to die suddenly from abnormal heart rhythms especially after a heart attack. Using a diabetic mouse, the Galper Laboratory has demonstrated a new relationship between diabetes and cholesterol which may make the diabetic heart more likely to develop dangerous, abnormal heart beats following a heart attack. The lab’s clinical studies suggest that statins, drugs commonly used to lower cholesterol, might protect the heart against the development of these abnormal heart rhythms.

Aortic aneurysms are a major cause of death among the elderly. Using a mouse model that develops these aneurysms in response to a drug that raises blood pressure, the lab has demonstrated that one of the proteins turned on by this drug is important for the formation of the aneurysm. Inhibition of this protein by a new drug currently being tested for its effect in the treatment of cancer also significantly decreased the number and size of aneurysms, suggesting that this drug might also be useful in the treatment and prevention of aortic aneurysms.

Molecular Signaling Laboratory

Akiko Hata, PhD
Giorgio Lagna, PhD

Vascular smooth muscle cells (VSMC) are characterized in part by their ability to modulate their phenotype between a quiescent, differentiated “contractile” state and a proliferative, less differentiated, “synthetic” state. Upon vascular damage, VSMCs adopt the synthetic phenotype as part of a normal repair process. It is suggested that the phenotypic modulation of VSMCs contributes to various disorders in the pulmonary and systemic arteries, including post-angioplasty restenosis, transplant vasculopathy, atherosclerosis, lymphangioleiomyomatosis, and pulmonary arterial hypertension. The Molecular Signaling Laboratory explores a novel mechanism of regulation of VSMC phenotype in normal physiology, which is of fundamental importance in understanding the etiology of cardiovascular disorders. It is investigating evidence that a specific class of protein hormones, bone morphogenetic proteins (BMPs), prevent smooth muscle cells from growing too much and losing their ability to regulate blood pressure. BMPs, or drugs that mimic their action, have the safety profile necessary to fulfill a therapeutic role, since they are already approved drugs for the treatment of bone fractures. Accomplishing these goals will potentially provide the foundation for developing the BMPs into vascular drugs.

Center for Translational Genomics

Gordon Huggins, MD

The MCRI-Center for Translational Genomics (CTG) encompasses both basic science and human investigation into the discovery of genes and genetic modifiers that play a role in the normal function of the cardiovascular system and the pathogenesis of cardiovascular disease. The goals of the CTG include identifying disease-causing genes and mutations, developing diagnostic and prognostic markers and drug targets, and creating new therapeutic strategies for those most likely to develop disease. Through a predictive and personalized approach, treatments can be tailored for those predisposed to disease based upon the anticipated severity of the disease. The Center is currently studying the genetics of common diseases such as hypertension and obesity, as well as hypertrophic cardiomyopathy (an abnormal enlargement of the heart that can cause heart failure and sudden death), bicuspid aortic valve and aortic aneurysm.

Molecular Pharmacology Research Center

Alan Kopin, MD, Director
Martin Beinborn, MD
Isabelle Draper, PhD

Research objectives in the Molecular Pharmacology Research Center (MPRC) focus on the G-protein coupled receptor superfamily. G-protein coupled receptors regulate a wide range of critical physiologic functions (e.g. food intake, glucose homeostasis, perception of pain) and have therefore emerged as one of the leading targets for drug discovery. Specific efforts in the Center focus on understanding structure-function relationships, mechanisms of intracellular signal transduction and physiologic functions of G-protein coupled receptors (GPCRs).

In complementary studies, the MPRC is exploring the molecular mechanisms underlying metabolic disease (i.e. obesity and diabetes) as well as genetic factors contributing to neurologic/locomotor dysfunction (e.g. Parkinson’s Disease). Current investigations are aimed at: (i) understanding ligand-GPCR structure/function interactions, (ii) identifying novel compounds which mediate GPCR activity, (iii) exploring how genetic variation in receptors influence the development and progression of obesity/diabetes, and (iv) developing novel therapeutic approaches (e.g. gene therapy) for locomotor dysfunction. To accomplish these objectives, the laboratory utilizes cell-based assays, viral constructs and animal models (e.g. genetically altered mice and Drosophila). The group is currently studying the cholecystokinin/gastrin, dopamine,
serotonin, mu opioid and GABA-B receptors. Extending from the study of selected GPCRs, the team is also utilizing collections of mutant Drosophila to identify novel genes mediating feeding behavior, fat deposition, locomotor function, and neuroproliferation. Candidate genes that have corresponding mammalian homologs are prioritized for further study.

Laboratory of Stress Signal Transduction and Gene Regulation

John Kyriakis, PhD

The Kyriakis Laboratory studies the molecular mechanisms by which infectious and inflammatory agents trigger activation of the immune system. This work is relevant to the pathogenesis of systemic infection (sepsis or toxic shock), atherosclerosis and chronic inflammatory diseases such as asthma. The laboratory also seeks to understand how a set of growth promoting and growth inhibitory molecules interact in intact cells to influence tumor cell proliferation. This work is relevant to cancer pathogenesis—especially that of neurofibromatosis.

Retina Research Laboratory

Janis Lem, PhD

The Lem Laboratory explores how molecular alterations in proteins that participate in cell-to-cell signaling cause human disease. The lab focuses on a large family of proteins, called G-protein coupled receptors, which are implicated in a wide array of human diseases. Several of the signaling pathways studied in the eye are also of critical importance in blood vessels, creating a unique collaborative opportunity for the Lem group and other MCRI Investigators. Research into the cause of macular degeneration, in particular, is underway. Macular degeneration is an age-associated progressive blindness that results from the loss of photoreceptor cells. With improvements in medical care, increased lifespan has resulted in an ever-increasing population of senior citizens affected with macular degeneration. The socioeconomic impact of this disease continues to rise as the number of affected individuals increases to more than one third of the population over the age of 70. Understanding of what causes photoreceptors in the “macula” or central retina to die is poorly understood. Research in the Lem lab focuses on elucidating the mechanisms that cause photoreceptor cell death or dysfunction. The lab’s research has shown that mutations that cause the photoreceptor to continually see light, whether real or not, will cause cell death. Studies are underway examining how and why continuous exposure to light causes photoreceptor cells to die.
Honors and Awards

**Martin Beinborn, MD**
- Organizing Committee, Tufts University School of Medicine “Building Partnerships through Discovery and Collaboration” retreat

**Debbie Beasley, PhD**
- Author of a major study demonstrating a key role of TLR4 in early intimal lipid accumulation in hypercholesterolemic mice, a model of human atherosclerosis

**Robert Blanton, MD**
- Recipient, Tufts Medical Center Internal Medicine Faculty Teaching Award
- Named Scientific Director, Tufts Medical Center Mouse Physiology Core

**Jonas Galper, MD, PhD**
- Recipient of an R21 entitled “Gender Specific Complications of Diabetic Autonomic Neuropathy: A New Mouse Model”

**Akiko Hata, PhD**
- Consortium Investigator, Transatlantic Networks of Excellence Grant, LeDucq Foundation (N. Morrell/K. Bloch, Principal Investigators)

**Gordon Huggins, MD**
- Promoted to Associate Professor of Medicine
- Named Vice-Chair, Institutional Review Board (IRB)

**Iris Jaffe, MD, PhD**
- Finalist, Irvine Page Young Investigator Competition, ATVB section of the AHA
- Appointed Chair, Scientific Affairs Committee, Tufts University School of Medicine

**Navin Kapur, MD**
- Appointed Member, American Heart Association Program Planning Committee
- Program Director, Abbott and SCAI Interventional Cardiology Training Grants

**Richard Karas, MD, PhD**
- Named Executive Director, MCRI and Interim Chief Scientific Officer, Tufts Medical Center
- Recipient, 2010 Kynett Award for outstanding contributions to the cardiovascular health of the public

**Janis Lem, PhD**
- Ad hoc reviewer, National Eye Institute (NIE) Study Section

**Michael Mendelsohn, MD**
- In June, 2010 joined Merck & Co. as Senior Vice President and Head of Cardiovascular Research; maintains academic appointment as Professor of Medicine at Tufts University School of Medicine and research appointment as Investigator within the MCRI

**Gavin Schnitzler, PhD**
- Together with Dr. Lakshmanan Iyer, recipient, Russo Award, Tufts University School of Medicine, to study the mechanisms of tissue-specific gene regulation by estrogen
MOLECULAR ONCOLOGY RESEARCH INSTITUTE (MORI)

Overview
The Molecular Oncology Research Institute (MORI), a core component of the Tufts Medical Center Cancer Center, has 17 faculty members and occupies over 44,000 square feet in the 75 Kneeland Street research building. 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, MORI scientists carry out research that spans the spectrum from gene discovery to target validation for drug development. MORI functions financially and administratively independently of the Department of Medicine and reports to a Board of Advisors comprised of senior Tufts Medical Center and TUSM executives and the Chairman of the Department of Medicine.

Highlights of 2010
» Institute investigators gave more than 38 Invited Lectures:
» 32 publications by MORI faculty
» Received 17 new research awards totaling $1.84 M
Faculty

Four new members joined the faculty in 2010:

» Dr. Gu-fu Hu came from Harvard Medical School as Associate Professor
» Dr. Mark Ewen came from Dana Farber Cancer Institute as Associate Professor
» Dr. Bill Chiu joined Dept. Surgery and MORI from Children’s Hospital of Philadelphia as Assistant Professor
» Dr. Paul Mathew joined MORI from The University of Texas MD Anderson Cancer Center as Associate Professor

Teaching Activities

Seminars

The Institute has a biweekly seminar program for intramural research at MORI at which graduate students and postdoctoral fellows present their work.

MORI holds a monthly faculty seminar program where principal investigators informally present their work to the MORI faculty. These seminars encourage the sharing of ideas and prompt collaborations between laboratories.

The Institute sponsors a campus-wide seminar series in which invited speakers from other institutions present their research to Tufts MC and TUSM faculty.

Research Activities

Research Support

In 2010, the Institute received new, peer-reviewed research awards in the amount of $1.84 million.

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<th>PI</th>
<th>Funding Source</th>
<th>Title of Project</th>
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<tr>
<td>Buchsbaum, R.</td>
<td>Tufts Medical Center</td>
<td>Tiam1 and tumor microenvironment: generation of a mouse with conditional Tiam silencing</td>
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<td>Cui, R.</td>
<td>Pardee</td>
<td>Transactivation of POMC/MSH in suntan response and skin cancer prevention</td>
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<td></td>
<td>NIH/NCI</td>
<td>The role of pheomelanin in cutaneous melanoma</td>
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<td>Harry J. Lloyd Charitable Trust</td>
<td>The role of pheomelanin in melanomas on non-sun exposed sites</td>
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<td>ACS</td>
<td>Signaling pathway in UV-induced melanogenic response and its mimicking</td>
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<td>Du, K.</td>
<td>NIH/NIDDK</td>
<td>ClipR-59: a novel regulator of Akt signaling</td>
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<td>Hinds, P.</td>
<td>Tufts Medical Center</td>
<td>The role of DPP2 as cell cycle regulator in malignant transformation</td>
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<td>Hsieh, M-Y (with Dr. Van Etten)</td>
<td>Sackler School of Biomedical Science</td>
<td>Role of beta catenin in CML stem cell maintenance and self-renewal</td>
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<td>Hu, M. (with Dr. Hinds)</td>
<td>Tufts Medical Center</td>
<td>The role of CDK6 in stem cells and the HSC niche</td>
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<td>CTSI</td>
<td>Role of CDK6 in T cell development and cancer</td>
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<td>Kuperwasser, C.</td>
<td>Silvian Foundation</td>
<td>Elucidating the role of BRCA1 in breast differentiation</td>
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<td>CTSI</td>
<td>Regulation of breast progenitor and tumor cell phenotype by a BRCA1-Slug-LSD1 pathway</td>
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<td>BCRF</td>
<td>The role of breast cancer stem cells in metastasis</td>
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<td>Silvian Foundation</td>
<td>Elucidating the role of BRCA1 in breast differentiation</td>
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<tr>
<td>Rudnick, J. (with Dr. Kuperwasser)</td>
<td>DOD</td>
<td>Mechanisms by which stromal fibroblasts promote or suppress aggressive breast cancer cell states</td>
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<tr>
<td>Tressel, S. (with Dr. Kuliopulos)</td>
<td>AHA</td>
<td>Metalloprotease-PAR1 signaling in vascular integrity and inflammation</td>
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<tr>
<td>Tsichlis, P.</td>
<td>NIH/NCI</td>
<td>Tpl2 in Intestinal Tumorigenesis</td>
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</table>
**Honors and Awards**

**Dr. Anika Agarwal**
- Selected to be Junior Preceptor (faculty mentor) on the NIH T32 training grant for Hem/Onc fellows

**Dr. Rachel Buchsbaum**
- Tufts University School of Medicine Faculty Teaching Award
- Diane Connolly-Zaniboni Scholar in Breast Cancer Research
- Tufts University School of Medicine Faculty Teaching Award
- Diane Connolly-Zaniboni Scholar in Breast Cancer Research

**Dr. Lidija Covic**
Membership in professional organizations, study sections, advisory boards:
- Scientific Advisory Board, Anchor Therapeutics, Cambridge, MA
- Grant Reviewer, the Israel Science Foundation (ISF)
- American Association for Cancer Research AACR member 2010

Invited lectures:
- Pepducin Symposium, Cambridge, MA
- Summer Neuropeptide and Europian Neuropeptide Meeting SNC & ENC Cambridge, MA

**Dr. Philip Hinds**
Committees/study sections:
- Member of College of CSR Reviewers, 2010-2012

Invited Lectures:
- UMass Medical School, Cell Biology Department
- MEXT International Symposium “Cell Cycle and Development, Kyoto Japan
- Department of Pharmacology, Graduate School of Medicine, Kyoto University, Kyoto Japan
- University of Pittsburgh Cancer Institute Seminar Series

**Dr. Guo-fu Hu**
Invited Lectures:
- Angiogenin in ALS pathobiology and Therapy. Shire Pharmaceutical, Lexington, MA
- Angiogenin-mediated small RNA in angiogenesis, Shanghai Institute of Biochemistry and Cell Biology, Chinese Academy of Sciences, Shanghai, China
- EMT in oral cancer progression, Zhejiang University School of Medicine, Hangzhou, China
- Angiogenin in Cancer and Neurodegeneration, Union Hospital, Huazhong University of Science and Technology, Wuhan, China
- Angiogenin-stimulated rRNA transcription promotes the transition of prostate cancer to androgen independence, 8th International RNase Congress, Naples, Italy.
Committee Participation:
» Organizing committee of the 8th International RNases Congress

Study sections and advisory boards:
» Department of Defense Breast Cancer Pathobiology Study Section
» Department of Defense Neuroblastoma Program Study Section
» Florida Department of Health Bankhead-Coley Research Program reviewer
» Florida Department of Health James and Esther King Biomedical Research Program reviewer
» Kansas City Area Life Sciences Institute Research Program reviewer
» Missouri Life Sciences Research Program reviewer

Dr. Kathryn Huber
» Promoted to Director of the Tufts-Brown Radiation Oncology Residency Training Program

Invited Lectures:
» Invited speaker: How do the new mammography guidelines affect you? Breast Cancer Awareness Month Symposium October 2010 Museum of Science, Boston, MA.

Dr. Hans Klingemann
» Invited Speaker: Highlights of ASH, San Francisco, CA
» Invited Speaker: Indications and outcomes of stem cell transplant, Brockton Hospital, MA
» Invited Discussant: Leukemia Forum 2010, San Francisco, CA

» Member, Leukemia Committee, ECOG
» Member, NHLBI, Protocol Review Committee for bone marrow transplant,
» Member, NCI: Special emphasis panel: Therapeutic strategies for cancer
» Editorial Boards: - Biology of Blood and Marrow Transplant
  – Bone Marrow Research
  – The Open Tissue Engineering & Regenerative Medicine Journal
  – Blood and Lymphatic Cancers

Dr. Athan Kuliopulos
Invited speaker:
» Gordon Research Conference on Proteolytic Enzymes and Their Inhibitors, Platelet Proteases and Protease-Activated Receptor-1, Il Ciocco-Barga, Italy
» Speaker and Panelist “Our Journey: Founders talk of their companies”, Massachusetts Life Sciences Innovation Day 2010, Boston, MA
» 6th International Meeting ADP2010, Villa Cagnola, Grazzada-Schianno, Italy
» Co-Organizer and Chair, 2nd Pepducin Science Symposium, Cambridge, MA

Elected membership in professional organizations, study sections, advisory boards:
» Elected to the American Association of Physicians
» Chair, Scientific Advisory Board Anchor Therapeutics, Cambridge MA
Dr. Charlotte Kuperwasser

» RB Sackler Scholar Award
» BCRF Award
» Susan Komen Foundation: Pathogenesis Study Section, Panel Member
» NIH/NCI Tumor Progression and Metastasis (TPM) Study Section Panel member
» A.I.R.C. - Direzione Scientifica (Association for Cancer Research), Reviewer
» Scientific editor for Breast Cancer Research and Stem Cell Reviews and Reports (SCRR)

Invited Lectures:
» Seminar Series, University of Miami, Miami “Stromal-epithelial interactions in normal and malignant breast development”
» 2010 American Association for Cancer Research Conference· Minisymposia co-chair (Cancer Stem Cells), Washington DC
» Seminar Series, St. Elizabeth’s Hospital “Elucidating the cellular origins of human breast cancer heterogeneity and cancer maintenance”

Dr. Paul Mathew

Honors:
» Boston Magazine Top Doctors 2010

Invited Lectures:
» Dana-Farber Cancer Institute: Prostate Cancer and Bone Metastases: Bridging the Gap
» Lemuel Shattuck Hospital Grand Rounds: Testicular Germ Cell

Dr. Philip Tsichlis

Invited lectures:
» Keynote speaker for the Joint retreat of the Cancer and Inflammation Programs and the Laboratory of Cancer Biology and Genetics, National Institutes of Health.
» MicroRNAs and human disease and development meeting, Cambridge MA

» Basic Research Grand Rounds, Moffitt Cancer Center, Tampa Florida
» Basic Research Grand Rounds, Dartmouth Hitchcock Medical Center
» Broad Institute. Invited speaker for the celebration of the life achievements of Dr Ed Scolnick

Memberships:
» External Advisory Board of the Institute of Molecular Biology and Biotechnology of the University of Crete
» External Advisory Board of the Biomedical Research Institute of the Academy of Athens
» External Evaluation Committee examining the teaching and research activities of Greek Universities
» Charter member: Molecular Oncogenesis (MONC) Study Section
» Review Committee for the Charles A. King Trust Postdoctoral Fellowship Program
» Ad hoc reviewer: AICR and Leukemia and Lymphoma Research, United Kingdom

Dr. Richard Van Etten

Invited speaker:
» Program Chair and speaker, Highlights of ASH®, Washington DC
» Program Chair and speaker, Highlights of ASH®, Atlanta GA
» 5th International Symposium on MDS and MPN, MD Anderson Cancer Center, Houston TX
» Program Chair and speaker, Highlights of ASH®, Latin America, Rio de Janeiro, Brazil
» Targeting the Kinome in Leukemic Disorders, 15th Annual European Hematology Association Congress, Barcelona Spain
» Organizing Committee and Invited speaker, 12th International ESH Conference on Chronic Myeloid Leukemia, Washington DC
» Hematology/Oncology Grand Rounds, University of Nebraska, Omaha NE
» Invited Speaker: Myeloid Neoplasia Committee Scientific Session, 52nd Annual ASH meeting, Orlando FL
» Invited Speaker: 5th International Workshop on CML and MPN, Orlando FL
ESSENTIALS OF MEDICINE

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Carpenter
Griggs
Liscalzo

Intensive Care Medicine

Second Edition

Rippe
Irwin
Alpert
Fink

Cardiovascular concise

12 December 2004
Division of Allergy


Division of Cardiology


27. Field JM, Co-Chair; Hazinski MF, Co-Chair; Sayre MR, Chameides L, Schexnayder SM, Hemphill R, Samson RA, Kattwinkel J, Berg RA, Bhanji F, Cave DM, Jauch EC, Kudenchuk PJ, Neumar RW, Peberdy MA, Perlman JM, Sinz E, Travers AH, Berg MD,


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84. Garlitski AC, Estes NA 3rd. Emerging therapies for atrial fibrillation: is the paradigm shifting?


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Division of Clinical Decision Making, Informatics and Telemedicine


Division of Clinical Nutrition


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Division of Endocrinology, Diabetes and Metabolism


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Division of Gastroenterology


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Division of Geographic Medicine and Infectious Diseases


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Division of Hematology/Oncology


308. Lamont, EB Kabdrum MB, Keating, NL, Archer, L, Lan, L, Strauss, GM, Lilienbaum, R, Niell, HB, Maurer, H, Kosty, MP, Miller, A, Clamon, GH,


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Division of Internal Medicine and Adult Primary Care


Division of Nephrology


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Division of Rheumatology


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Molecular Cardiology Research Institute


Molecular Oncology Research Institute


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