FELLOWSHIP IN CARDIOVASCULAR MEDICINE

Fletcher Allen HEALTH CARE

The UNIVERSITY of VERMONT
COLLEGE OF MEDICINE

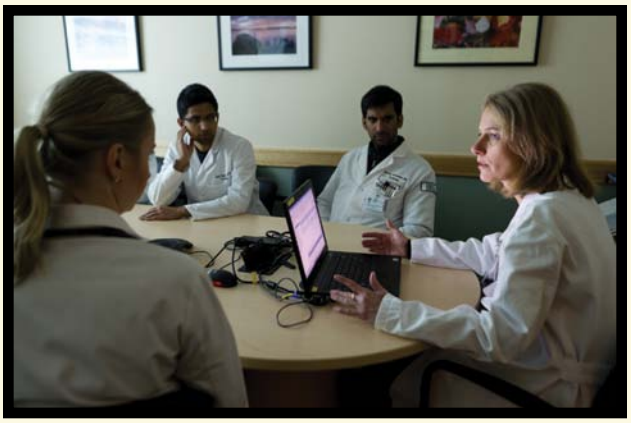
University of Vermont / Fletcher Allen Health Care Fellowship Training Program

www.uvm.edu/medicine/medicine/cardiovascular

The Fellowship Program in Cardiovascular Disease at the University of Vermont/Fletcher Allen Health Care is designed to train fellows in general cardiology as well as to allow each fellow to pursue subspecialty training during the final year of this three year program.

Specifically, years 1 and 2 are devoted to general cardiology training. Thus, each fellow will be exposed to all aspects of general cardiology. Rotations include inpatient cardiology (including consults), electrophysiology (exposure to electrophysiological testing as well as inpatient and consultative electrophysiology), stress testing, cardiac catheterization (training in diagnostic cardiac catheterization), and cardiac imaging (which includes radionuclide imaging, echocardiography, CT angiography and cardiac magnetic resonance imaging). In addition, the fellows play an integral role in an outpatient continuity clinic. After completion of the first two years, the fellow will have achieved level II training in stress testing with radionuclide imaging, cardiac catheterization, and echocardiography consistent with the guidelines presented in COCATS (J Am Coll Cardiol. 2008;51:339-48.). Year 3 in the clinical track is an elective year. We anticipate that each fellow will choose an area of cardiology for sub-specialization. The goals of this sub-specialty training will be to achieve COCATS level III training in one of three areas: electrophysiology, cardiac catheterization, or cardiac imaging. Other special training interest can also be accommodated in the 3rd year. Training in interventional cardiology and electrophysiology will require a fourth year of training.

For more information visit:
www.uvm.edu/medicine/medicine/cardiovascular



The Facility

Fletcher Allen Health Care is the only tertiary care medical center in Vermont, and the teaching hospital of the University of Vermont, College of Medicine. This facility provides state-of-the-art health care to the nearly 1,000,000 residents of Vermont and Upstate New York. This population base supports an active cardiovascular service with approximately 2000 patients admitted to the inpatient cardiology services, and 18,000 ambulatory patient visits yearly. Approximately 5,200 diagnostic cardiac catheterization and 1,500 percutaneous interventions (e.g. angioplasty) are performed annually. In addition, over 10,000 echocardiograms and approximately 4,800 nuclear stress tests are performed each year. The cardiac arrhythmia service implants approximately 500 devices (pacemakers and defibrillators) and performs more than 200 ablation procedures annually.

The Faculty

The Cardiology faculty at the University of Vermont is comprised of 22 highly trained clinician-scientists (including 4 PhD researchers). In addition to their busy clinical responsibilities, the faculty has active and productive research careers. For example, during the past 4 years, we have averaged more than 80 articles, chapters and reviews being published each year. Funding for research comes from industry support as well as federal funding. Six of the faculty are NIH sponsored investigators.

The Location

Burlington Vermont, located on the shores of Lake Champlain, is a vibrant college community of approximately 60,000 residents. There are 2 four year colleges in addition to the University of Vermont. Burlington is routinely rated as one of the most desirable places to live in the United States. The four seasons provide ample opportunities to enjoy oneself in the outdoors. Most notable is the easy access to world class skiing in the winter, while in the summer Vermonters enjoy hiking, cycling, boating, and several festivals.

A More In-depth Look at the Fellowship Training Program

Training in cardiovascular disease is enhanced through several modalities. A formal curriculum is distributed to each fellow upon matriculation. Independent reading is expected, and suggested reading is included in the curriculum. Online access to numerous journals is readily available. A weekly lecture series constitutes the didactic teaching of the training program. Cardiology fellows participate in didactic teaching through conferences. Finally, a substantial component of "hands on" training occurs during clinical rotations where there is a high degree of contact with the Cardiology Faculty.

Lecture Series

A daily lecture series includes Core Lectures (a basic curriculum designed to introduce basic concepts in cardiology), Morbidity and Mortality Conference, CCU Conference (selected cases are discussed weekly), Subspecialty Conference (focused conferences in cardiac catheterization, electrophysiology, and cardiac imaging), Journal Club, ECG Conference, and Fellow Didactic Lectures (fellow lectures on a fundamental area of the cardiovascular sciences).

WEEKLY LECTURES

Core Lectures
A comprehensive lecture series designed to cover all major aspects of cardiology and which prepares fellows for board certification in Cardiovascular Diseases. This curriculum is extensive and takes two years to complete.

Morbidity and Mortality
Once each month fellows rotating on the inpatient service present selected cases. A brief discussion and literature review is provided.

Subspecialty
A rotating weekly conference in which fellows on the electrophysiology, echocardiography and nuclear cardiology services review and discuss with the faculty selected cases highlighting a specific educational focus.

Journal Club
An alternating week conference in which fellows and faculty review recent articles.

ECG and EP Conference
Every other week electrophysiologists review ECG and intracardiac tracings with the fellows.

CCU Conference
A weekly conference where interesting cases are discussed amongst the faculty and fellows. Lively discussions usually entail.

Fellow Didactic Conference
Each fellow presents at least one didactic conference each year in an area of interest to the fellow.

Catheterization Conference
A weekly conference focusing on catheterization laboratory quality assurance, case reviews and didactic presentations, with joint presentations from the Cardiac Surgery faculty.

Cardiovascular Research Institute Research Seminar Series
A once monthly seminar in which clinical and translational research at the University of Vermont/ Fletcher Allen Health Care is presented.

Nuclear Physics Course
An elective course in nuclear physics offered every other year which upon completion makes one eligible for NRC licensure, a requirement for establishing an independent nuclear cardiology laboratory.

Electrophysiology Service

At the end of two years of general clinical training each fellow will be able to accurately diagnose brady and tachy arrhythmias, will understand the use of diagnostic testing to determine the presence and type of arrhythmia, and will understand the role of pharmacologic and non-pharmacologic treatment in the management of arrhythmias. Fellows will be exposed to the following procedures; electrophysiologic testing, catheter ablation procedures, 24 hour ambulatory and event monitoring, signal averaged ECG, tilt table testing, pacemaker and ICD evaluation. Fellows will participate in the full range of catheter ablation (e.g. paroxysmal and chronic AF, VT and atrial arrhythmias following surgical repair of congenital heart disease). Fellows will be facile with electrogram recording systems, 3-D electro anatomic mapping systems and use of irrigated ablation.

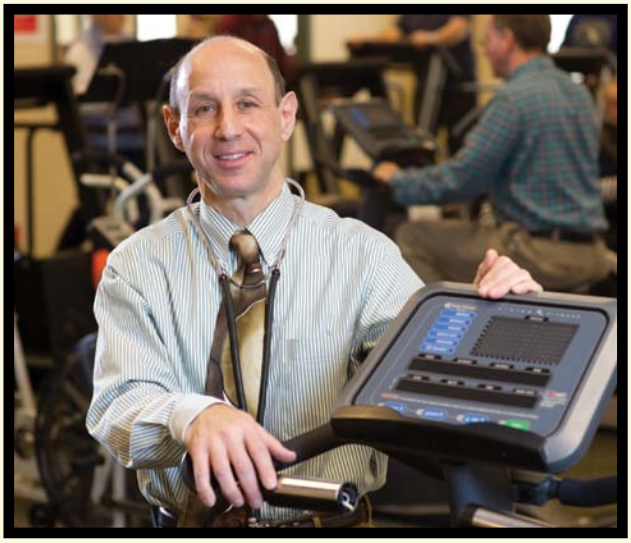
EP Research track:

We have developed an Electrophysiology Research track for clinical fellows interested in an academic career in EP. This is a five year program that follows an internal medicine residency. Fellows start with 20 months in the research laboratory. During this time there are no clinical distractions. Fellows are encouraged to spend some time during this period studying EP related areas at the University (e.g. engineering, math, computer science). Next is an abbreviated clinical cardiology fellowship in which only the minimal ACGME required rotations are taken. These rotations take 18 months and lead to board eligibility in general cardiology. Finally the clinical EP fellowship follows: 22 months of clinical EP training (in- and out-patient arrhythmia service, and an intense exposure to complex ablation and device procedures). Further information about EP training can be found at www.fletcherallen.org/epeducation

Cardiac Catheterization & Interventional Cardiology

Cardiovascular catheterization and interventional cardiology are an essential part of modern clinical cardiovascular practice. All trainees in cardiology will complete an extensive core curriculum in cardiac catheterization, interventional cardiology, peripheral angiography, peripheral vascular intervention and structural heart disease intervention. Trainees who plan to perform independent catheterization and angiography will require more extensive training during the third year of their fellowship. A fourth year of training is required to be fully trained in interventional cardiovascular procedures. The requirements for training are met using three state-of-the art catheterization laboratories in which over 5,000 diagnostic and interventional procedures are performed per year. Included in the cardiac catheterization suite is a fully capable endovascular suite and hybrid operating room to allow training in endovascular interventions and transcatheter aortic valve replacement (TAVR). University cardiology, vascular surgery and cardiac surgery faculty are involved directly in the training and supervision of cardiology fellows. The training includes all aspects of diagnostic cardiac catheterization, peripher-

al angiography and intervention, and complex cardiovascular interventions including TAVR. Interventional cardiology training occurs in the catheterization laboratories, inpatient and outpatient clinical settings as well as in didactic multidisciplinary teaching formats.



Cardiac Rehabilitation

After two years of training, each fellow will be familiar with the foundations of cardiac rehabilitation and secondary prevention. The fellow will understand the principles of patient management, program operation and structure. The fellow will be capable of supervising a cardiac rehabilitation program as well as designing an exercise and secondary prevention component for clinical cardiology practice. Day to day management includes the performance and interpretation of cardiopulmonary stress tests and lipid management according to the NCEP (National Cholesterol Education Panel) goals.

The Adult with Congenital Heart Disease and Pulmonary Hypertension Program

After two years of clinical training each cardiology fellow will understand the basics of congenital heart disease and pulmonary hypertension as it pertains to the adult patient. More extensive training in congenital heart disease (pediatric and adult patients) and pulmonary hypertension is available in the third year of training.

Echocardiography

At the end of two years of general clinical training, each cardiology fellow will understand the basic principles of ultrasonic imaging and Doppler ultrasound, cardiac anatomy, standard two dimensional, three dimensional, tissue Doppler and transesophageal echocardiography. All fellows will be expected to perform and interpret a minimum of 300 two-dimensional Doppler echocardiography studies. Those fellows desiring Level III certification including stress echocardiography, transesophageal echocardiography and complex congenital heart disease will complete an additional 12 month training period during their 3rd year.

Exercise Stress Testing

After a two year training period, each cardiology fellow will be capable of safely and effectively supervising electrocardiographic exercise stress tests. Fellows will also be trained to accurately interpret and summarize results of electrocardiographic stress tests.

Most important, fellows will be familiar with contraindications to exercise stress testing and indications for termination of an individual test. Interpretation will include

knowledge of the concepts of sensitivity, specificity and predictive accuracy of stress tests as they relate to the prevalence of disease in selected subsets of patients.

Nuclear Cardiology

At the completion of general clinical training each cardiology fellow will be qualified to perform, analyze, and interpret nuclear cardiology procedures and will meet level II criteria for specialized training in nuclear cardiology. A nuclear medicine course is also offered which allows the fellow to be licensed in Nuclear Medicine by the Nuclear Regulatory Commission. Level III training in nuclear cardiology is available in the third year of clinical training. With this training, fellows will be board eligible in Nuclear Cardiology. A particular strength of our training program is the dual interpretation of all studies by both cardiologists and radiologists.

Cardiac Magnetic Imaging and CT Angiography

The cardiac MRI laboratory provides a strong research commitment to advancing the field of cardiac imaging. Cardiac imaging is performed with a Philips Achieva 3.0 Tesla system, a Phillips Panorama 1.0 Tessla high field open magnet and a Philips Integra 1.5 Tessla wide bore magnet. A 3 Tesla magnet and a 4.7 Tesla small bore facility dedicated to research enables us to improve our care of patients through investigation. MRI cardiac imaging includes ventricular function analysis, myocardial viability determinations, myocardial perfusion imaging during vasodilator stress, structural and congenital heart disease, myocardial strain analysis, MR coronary angiography and diagnosis of infiltrative cardiomyopathies. In addition, Cardiology fellows participate in the interpretation CT angiography performed with 256 slice scanners.

"Our program has been fashioned to equip its participants with the expertise, experience, intellectual foundation, and scientific insights needed for optimal performance as superb clinicians." — **Burton E. Sobel, MD**
Director of Cardiovascular Research Institute

Physicians and Faculty Biographies

The cardiologists at University Cardiology Associates are academic faculty of the University of Vermont and dedicated to improving prevention, diagnosis, and treatment of cardiac diseases by focusing on direct patient care, cutting-edge research and educating the next generation of cardiac specialists. These nationally recognized professionals have chosen to work in an academic setting rather than private practice because a university affiliated tertiary care hospital provides the greatest opportunities for investigative work combined with clinical experience. The convergence of research, teaching and clinical experience creates cross-functional collaborations that directly translate into improved patient care.

PHILIP A. ADES, MD, FACC

Medical School
- University of Maryland School of Medicine, Baltimore, MD
- Residency McGill University, Royal Victoria Hospital, Montreal, Quebec

Fellowship
- University of Colorado Health Sciences Center

Specialty
- Cardiac Rehabilitation
- Preventive Cardiology
- Hyperlipidemia

Certifications
- Internal Medicine
- Cardiovascular Disease

Academic Appointments
- Professor of Medicine
- Director of Cardiac Rehabilitation and Preventive
- Associate Director, Clinical Research Center

Research Interests

Dr. Ades' research program has had consistent NIH funding since 1988. His current research characterizes the methods and benefits of weight loss in obese coronary patients. Other current research interests include intervention to treat and prevent disability in older patients with coronary artery disease and patients with chronic heart failure. A recent review on "Cardiac Rehabilitation and the Secondary Prevention of Coronary Heart Disease" in the New England Journal defines state-of-the-art practice in cardiac rehabilitation. Much of it based upon local clinical research.

Publications

Ades PA, Savage PD, Brawner CA, Lyon CE, Ehrman JK, Bunn JY, Keteyian SJ. Aerobic capacity in patients entering cardiac rehabilitation. Circulation 2006;113:2706-2712.

Williams MA, Ades PA, Hamm LF, Keteyian SJ, LaFontaine PT, Roitman JL, Squires RW. Clinical evidence for a health benefit from cardiac rehabilitation: An update. Am. Heart J. 2006; 152:835-841.

Suaya JA, Stason WB, Ades PA , Normand, SLT, Shepard DS. Cardiac Rehabilitation and Survival in Older Coronary Patients. J Am Coll Cardiol. 2009;54:25-33.

Ades PA, Savage PD,Toth MJ, Harvey-Berino J, Schneider DL, Bunn JY, Audelin MC, Ludlow M. High-Caloric Expenditure Exercise: A New Approach to Cardiac Rehabilitation for Overweight Coronary Patients. Circulation. 2009;119:2671-8.

Ades PA, Savage PD, Harvey-Berino J. The treatment of obesity in cardiac rehabilitation. J Cardiopulm Rehabil and Prev.2010 Apr 29. [Epub ahead of print]

MARK A. CAPELESS, MD, FACC

Medical School
- Georgetown University, Washington, DC

Residency
- Northwestern Memorial Hospital, Chicago, IL

Fellowships
- University of Vermont, College of Medicine, Burlington, VT

Specialty
- General Cardiology
- Cardiac Electrophysiology

Certifications
- Internal Medicine
- Cardiovascular Disease
- Cardiac Electrophysiology

Academic Appointments
- Professor of Medicine
- Director of Cardiovascular Training Program

Publications

Sheridan JP, Capeless MA, Martire DE: Thermodynamics of molecular association by gas-liquid chromatography. J Amer Chem Soc 94:10-15, 1972

Jaffin BW, Gundel WD, Capeless MA, Castaneda AR, Rabinovitch M and Wackers FJT: Aneurysm of the pulmonary artery as a cause of severe chest pain. Arch Int Med 143:1484-85, July 1983.

Capeless MA, and Hamrell BB: Active force during hypoxia of hypertrophied right ventricular trabeculae. Am J Physiol 252: H945-H952, 1987.

Dewey RC, Capeless MA, and Levy AM: Use of ambulatory electrocardiographic monitoring to identify high-risk patients with congenital complete heart block. N. Engl. J Med. 316:835-839, 1987

Sudden death in athletes. Winget JF, Capeless MA, Ades PA. Sports Med. 1994;18:375-83.

KEVIN T. CAREY, MD

Cardiac Imaging and Stress Testing, Magnetic Resonance Imaging, computed Tomography, Nuclear Cardiology Positron Emission Tomography

Medical School
- University of Vermont

Residency
- University of Illinois at Chicago - Internal Medicine

Fellowship
- University of Massachusetts Medical School - Cardiovascular Disease
- University of Massachusetts Medical School - Interventional Cardiology

Specialty
- Coronary Intervention
- Cardiac Catheterization
- General Cardiology

Certifications
- Internal Medicine
- Cardiovascular Disease
- Interventional Cardiology

Academic Appointments
- Assistant Professor of Medicine, Cardiovascular Medicine

Publications

Clinical Experience with Routine Activated Coagulation Time Monitoring During Elective PTCA. Voyce SJ, Heller LI, Weiner BH, Laifer LI, Greenwald LL, Carey KT, Becker RC. J Thromb Thrombolysis. 1995;1:201.

Accelerated coronary artery stenosis at a site proximal to coronary angioplasty. Voyce SJ, Carey KT, Weiner BH, Laifer LI, Folland ED. Cathet Cardiovasc Diagn. 1992;26:113.

HAROLD L. DAUERMAN, MD, FACC

Medical School
- Harvard Medical School, Boston, MA

Residency
- Massachusetts General Hospital, Boston, MA

Fellowship
- Beth Israel Hospital, Boston, MA

Specialty
- Coronary Intervention
- Cardiac Catheterization
- Peripheral Vascular Intervention
- Ischemic Heart Disease
- Vascular Biology

Certifications
- Internal Medicine
- Cardiovascular Disease
- Interventional Cardiology

Academic Appointments
- Professor of Medicine
- Director, Cardiovascular Catheterization Laboratory

Research Interests

Dr. Dauerman has used both investigator initiated and multi-center registry studies to elucidate optimal interventional cardiology treatment options for high risk patients, such as those the elderly, women and patients with ST elevation myocardial infarction, and cardiogenic shock.

Dr. Dauerman is currently leading two national trials in interventional cardiology as national principal investigator: the EDUCATE trial will study patients compliance with dual antiplatelet therapy after drug eluting stent placement and determine the optimum duration of antiplatelet therapy. BOSS will randomize patients undergoing cardiac catheterization to different hydration regimens to prevent contrast related kidney injury. Dr. Dauerman is on the steering committee for the international EXCEL trial which will study whether patients with left main coronary disease should be treated with drug eluting stents or coronary artery bypass surgery.

Publications

Dauerman HL, Bhatt DB, Smyth SS, French PA, Becker RC. Bridging the gap between clinical trials and applications of antiplatelet therapy for the elderly. American Heart Journal 2010; 159: pp. 508-517.

Becker RC, Scheiman J, Dauerman HL, Spencer F, Rao S, Sabatine M, Johnson DA, Chan F, Abraham NS, Quigley EMM. Management of platelet directed pharmacotherapy in patients with atherosclerotic coronary artery disease undergoing elective endoscopic gastrointestinal procedures. J Am Coll Cardiol 2009; 54: p 2261-2276.

Dauerman HL. In search of an algorithm to prevent acute kidney injury. J Am Coll Cardiol: Interventions 2009; 2: p. 1125-1127.

Dauerman HL. PCI, diabetes and death. J Am Coll Cardiol 2010;55: p. 1076-1079.

Solomon RJ, Dauerman HL. Contrast Induced Acute Kidney Injury: A Clinician's Update. Circulation, 2010, in press.

JOHN M. FITZGERALD, MD

Medical School
- University of Vermont

Residency
- Genesee Hospital, Genesee, NY

Fellowship
- Rochester General Hospital, Rochester, NY

Specialty
- General Cardiology
- Cardiac Catheterization
- Echocardiography

Certifications
- Internal Medicine
- Cardiovascular Disease

Academic Appointments
- Assistant Professor of Medicine

Dr. Fitzgerald joined the University Practice Group in 2011 after 27 years in private practice in the Burlington area. He maintains an interest in all aspects of clinical cardiology and is the recipient of several Fletcher Allen House Staff teaching awards.

PROSPERO B. GOGO, MD

Interventional Cardiology, Cardiac Catheterization, Percutaneous Coronary Intervention, General Outpatient Cardiology

Medical School
- George Washington University, Washington, DC

Residency
- University of Vermont/Fletcher Allen Health Care, Burlington, Vermont

Fellowship
- University of Vermont/Fletcher Allen Health Care, Burlington, Vermont

Specialty
- Cardiac Catheterization
- Percutaneous Coronary Intervention
- General Outpatient Cardiology

Board Certifications
- Internal Medicine
- Cardiovascular Disease
- Interventional Cardiology

Academic Appointments:
- Assistant Professor of Medicine
- Director, Interventional Cardiology Fellowship

Research Interests
His research interests include investigation into the treatment of acute coronary syndrome and cardiogenic shock. He has been involved in several multi-center trials, including TIMI 32, MCC-135 and TENACITY. He is currently the primary investigator for CHAMPION-PCI, a multi-center study using a novel inhibitor of platelet function for the treatment of acute coronary syndromes.

Publications
Gogo P., Schneider D, Terrien E, Sobel B, Dauerman H. Osteoprotegerin is Not Associated with Angiographic Coronary Calcification. Journal of Thrombosis and Thrombolysis.

Gogo P. The Evaluation and Management of Cardiogenic Shock. Critical Pathways in Cardiology: A Journal of Evidence-Based Medicine. 5(1):1-6, March 2006.

Gogo P, Schneider D, Watkins M, Terrien E, Sobel B, Dauerman H. Systemic Inflammation After Drug-Eluting Stent Placement. Journal of Thrombosis and Thrombolysis. 2005 Apr;19(2):87-92.

Gogo P, Schneider D, Terrien E, Watkins M, Sobel B. Dauerman H. Relation of Leukocytosis to C-Reactive Protein and Interluekin-6 Among Patients Undergoing Percutaneous Coronary Intervention. American Journal of Cardiology. 2005 Aug 15;96(4):538-42

Cytokine Activation Before Percutaneous Coronary Intervention Reflects Clinical and Laboratory Variables Associated With Increased Risk. ACC 2005, Orlando, Florida. Poster abstract.

WILLIAM E. HOPKINS, MD, FACC, FACP

Medical School
- University of Chicago, Chicago, IL

Residency
- Brigham and Women's Hospital, Boston, MA

Fellowship
- Washington University, St. Louis, MO

Specialty
- Adult Congenital Heart Disease
- Pulmonary Hypertension
- Adults with Down Syndrome
- Valvular Heart Disease
- Echocardiography

Certifications
- Internal Medicine
- Cardiovascular Disease
- Nuclear Cardiology

Academic Appointments
- Associate Professor of Medicine
- Director, Cardiovascular, Respiratory, and Renal course for 2nd year medical students.

Research Interests
Dr. Hopkins is committed to advancing knowledge in the fields of congenital heart disease, pulmonary hypertension, and Down syndrome. He has a research interest in Eisenmenger Syndrome, cyanotic congenital heart disease, pulmonary hypertension, and Down syndrome.

Publications
Hopkins WE. Medical Students, Intellectual Curiosity, and Algorithmic Medicine: Reflections of a Teacher. Coronary Artery Disease 2009; 20:477-78.

Rubin, LJ, Hopkins, WE. Overview of Pulmonary Hypertension. In: UpToDate, Rose, BD (ed), UpToDate, Waltham, MA 2007-present.

Rubin, LJ, Hopkins, WE. Diagnostic Evaluation of Pulmonary Hypertension. In: UpToDate, Rose, BD (ed), UpToDate, Waltham, MA 2007-present.

Rubin, LJ, Hopkins, WE. Pathogenesis of Pulmonary Hypertension. In: UpToDate, Rose, BD (ed), UpToDate, Waltham, MA 2007-present.

Rubin, LJ, Hopkins, WE. Treatment of Pulmonary Hypertension. In: UpToDate, Rose, BD (ed), UpToDate, Waltham, MA 2007-present.

FRIEDERIKE K. KEATING, MD

Medical School
- Georg-August-University Goettingen, Germany

Residency
- Dept of Cardiology, Georg-August-University Goettingen, Germany
- Winthrop-University Hospital, Mineola, NY

Chief Residency
- Winthrop-University Hospital, Mineola, NY

Fellowship
- University of Vermont, Burlington, VT

Specialty
- Women's Cardiovascular Disease
- Non-Invasive Cardiology
- Cardiovascular Imaging
- Echocardiography

Certifications
- Internal Medicine
- Cardiovascular Disease
- Nuclear Cardiology

Academic Appointments
- Assistant Professor of Medicine

Research Interests

Basic, translational and clinical research on platelet function and platelet-leukocyte interaction: Transfusion, inflammation and thrombosis. Microparticles in stored blood. Local investigator for multicenter clinical trials of antiplatelet agents and antithrombotics.

Women and Heart disease: local investigator for the NIH-funded VIRGO study of younger women and MI.

Nuclear Cardiology: Diagnostic accuracy of current multimodality imaging; stress-only nuclear imaging.

Publications

Keating, FK, Schneider, DJ, Savage, PD, Bunn, JY, Harvey-Berino, J, Ludlow, M, Toth, MJ, Ades, PA. Effect of Exercise Training and Weight Loss on Platelet Reactivity in Overweight Patients with Coronary Artery Disease. Manuscript in Preparation.

Keating FK, Butenas S, Fung MK, Schneider DJ. Platelet-leukocyte interaction, leukocyte apoptosis and procoagulant activity in stored red blood cells. Transfusion. 2011 May;51(5):1086-95.

Keating FK, Schneider DJ. The influence of platelet activating factor on the effects of platelet agonists and antiplatelet agents in vitro. J Thromb Thrombolysis. 2009 Jul;28(1):38-45.

Keating FK, Fung MK, Schneider DJ. Induction of platelet white blood cell (WBC) aggregate formation by platelets and WBCs in red blood cell units. Transfusion. 2008 Jun;48(6):1099-105.

Tsai M, Fisher JM, Norotsky M, Keating F, Anderson L, Howe P, Marcus S. Perforation of the right atrium during radiofrequency catheter ablation.J Cardiothorac Vasc Anesth. 2008 Jun;22(3):426-7.

ROBERT J. KELM, JR., PHD

Graduate School
- University of Vermont, College of Medicine, Department of Biochemistry

Postdoctoral Fellowship
- Mayo Clinic/Foundation, Department of Biochemistry and Molecular Biology, Rochester, MN

Specialty
- Protein-nucleic acid interactions
- Mechanisms of gene regulation
- Vascular cell and molecular biology

Academic Appointments
- Associate Professor of Medicine
- Associate Professor of Biochemistry

Research Interests

The primary objective of Dr. Kelm's research program is to uncover the molecular mechanisms responsible for the phenotypic reprogramming of disease or injury-activated cell types of the heart, lung, and vasculature. His laboratory has identified several structurally and functionally novel single-stranded nucleic acid-binding proteins, which regulate the expression of genes encoding specific actin and myosin isoforms present in smooth, skeletal, and cardiac muscle. Using a combination of biochemical, biophysical, cellular, and in vivo approaches, Dr. Kelm's lab is currently engaged in defining the mechanistic roles of purine-rich element binding proteins A and B (Pur-alpha and Pur-beta) and Y-box binding protein 1 (YB-1) in facilitating the phenotypic modulation of smooth muscle cells in damaged or diseased arteries. Over the past 10 years, Dr. Kelm's research group has been supported by grants from the National Institutes of Health and American Heart Association.

Publications

Knapp, A. M., Ramsey, J. E., Wang, S. X., Strauch, A. R., and Kelm, R. J., Jr. (2007) Structure-function analysis of mouse Pur-beta II: Conformation altering mutations disrupt single-stranded DNA and protein interactions crucial to smooth muscle alpha-actin gene repression. J. Biol. Chem. 282:35899-35909

Zhang, A., David, J. J., Subramanian, S. V., Liu, X., Fuerst, M. D., Zhao, X., Leier, C. V., Orosz, C. G., Kelm, R. J., Jr., and Strauch, A. R. (2008) Serum response factor neutralizes Pur-alpha and Pur-beta-mediated repression of the fetal vascular smooth muscle alpha-actin gene in stressed adult cardiomyocytes. Am. J. Physiol. Cell. Physiol. 294:C702-C714

Ramsey, J. E. and Kelm, R. J., Jr. (2009) Mechanism of strand-specific smooth muscle alpha-actin enhancer interaction by purine-rich element binding protein B (Pur-beta). Biochemistry 48:6348-6360

van Rooij, E., Quiat, D., Johnson, B. A., Sutherland, L. B., Qi, X., Richardson, J. A., Kelm, R. J., Jr., and Olson, E. N. (2009) A family of microRNAs encoded by myosin genes governs myosin expression and muscle performance. Dev. Cell 17:662-673

Rumora, A. E., Steere, A. N, Ramsey, J. E., Knapp, A. M., Ballif, B. A., and Kelm, R. J. Jr. (2010) Isolation and characterization of the core single-stranded DNA-binding domain of purine-rich element binding protein B (Pur-beta). Biochem. Biophys. Res. Commun. 400:340-345

MARTIN M. LeWINTER, MD, FACC, FAHA

Medical School
- New York University School of Medicine, New York, NY

Residency
- Bellevue Hospital Center, New York, NY

Fellowship
- University of California School of Medicine, San Diego, CA

Specialty
- Heart Failure and Cardiomyopathy
- Ischemic Heart Disease
- Valvular Heart Disease
- Pericardial Disease

Certifications
- Internal Medicine
- Cardiovascular Disease

Academic Appointments
- Professor of Medicine
- Director of Heart Failure and Cardiomyopathy Program

Research Interests

Dr. LeWinter has a longstanding interest in myocardial and ventricular function and remodeling in cardiomyopathy and heart failure. Current areas of interest include mechanoenergetics of the myocardium in acquired heart failure and genetic models of cardiomyopathy. A second area of interest is diastolic left ventricular function and in particular the role of the giant cytoskeleton protein titin as a determinant of left ventricular stiffness and restoring forces. A third area of interest is the effect of diabetes and hypertension on myocardial function, calcium handling, and myofilament function. The latter studies utilize samples of human myocardium obtained in the operating room. Dr. LeWinter is also the Principal Investigator of a grant designating the University of Vermont as one of nine NIH funded Regional Clinical Centers for heart failure research. As such, he is extensively involved in clinical trials in heart failure.

Publications

Suzuki T, Palmer BM, James J, Wang Y, Chen Z, VanBuren P, Maughan DW, Robbins J, LeWinter MM: Effects of cardiac myosin isoform variation on myofilament function and cross-bridge kinetics in transgenic rabbits. Circ Heart Fail 2:334-41, 2009.

LeWinter MM, Popper J, McNabb M, Nyland L, Stephen SB, Granzier H: Extensible behavior of titin in the miniswine left ventricle. Circulation 121:768-774, 2010.

LeWinter MM, Granzier H: Titin - A Multifunctional Giant. Circulation 121: 2137-45, 2010.

Donaldson C, Taatjes D, Palmer B, Bishop N, Von Turkovich M, Spinale F, Zile M, Maughan D, LeWinter MM: Immunoelectron microscopic detection of the advanced glycation end-product carboxymethyl lysine in human myocardium. Histochem Cell Biol 2010 May 19. [Eput ahead of print]

Savage P, Ades P, LeWinter M, Miller D, Toth M. Muscle strength and physical disability in chronic heart failure: Favorable effects of high intensity resistance training. Circ Heart Fail (in press)

ROBERT M. LOBEL, MD

Medical School
- Boston University School of Medicine, Boston, MA

Residency
- Fletcher Allen Health Care, Burlington, VT

Fellowship
- Fletcher Allen Health Care, Burlington, VT

Specialty
- General Cardiology
- Cardiac Electrophysiology

Certifications
- Internal Medicine
- Cardiovascular Disease
- Cardiac Electrophysiology

Academic Appointments
- Assistant Professor of Medicine

Research Interests

Research interests focus on improved treatment of patients with rhythm disturbance. He is the local Principal Investigator on the System Longevity Study (SLS)" (including the PAS for the 4195 Attain StarFix Lead and the PAS for the 4196 Attain Ability Lead) Medtronic Inc. A co-investigator on direct His Bundle Pacing to Implement Cardiac Resynchronization Therapy Study (DIRECT) Medtronic Inc. and an investigator on multiple other device and pharmaceutical trials.

Publications

Lustgarten DL, Calame S, Crespo EM, Calame J, Lobel R, Spector PS. Electrical resynchronization induced by direct His-bundle pacing. Heart Rhythm January 2010 (Vol. 7, Issue 1, Pages 15-21).

Calame S, Lobel R, Lustgarten D. A novel approach to Fidelis lead failure in a patient with complete subclavian occlusion and existing functional endocardial left ventricular lead. Accepted Allied Professional Case-Based Abstract Presentation Heart Rhythm Society May 15, 2009.

Crespo EM, Bhadra K, Lobel R. Brugada syndrome unmasked by a Mosquito, Case Report. Accepted for publication, Journal of Hospital Medicine. 2008.

Lobel RM, Spector P, Calame J, Lustgarten D. Inappropriate Pulmonary Vein Isolation: Misdiagnosis secondary to Complex AV conduction. Heart Rhythm Society abstract/poster. Presented 5/2006

Lobel RM, Lustgarten DL, Spector P. "Multidetector computed tomography guidance in complex cardiac ablations". Coronary Artery Disease. 2006 Mar;17(2):125-30.

DANIEL LAWRENCE LUSTGARTEN, MD, PH.D

Medical School
- Albert Einstein College of Medicine, New York, NY

Residency
- Massachusetts General Hospital, Boston, MA

Fellowship
- Massachusetts General Hospital, Boston, MA

Specialty
- General Cardiology
- Cardiac Electrophysiology

Certifications
- Internal Medicine
- Cardiovascular Disease
- Cardiac Electrophysiology

Academic Appointments
- Assistant Professor of Medicine

Research Interests

Dr. Lustgarten has made significant basic contributions to the fields of cardiac ablation and device therapy. He is recognized for his work exploring the use of cryotherapy in the setting of cardiac ablation, and additionally is a recognized expert in the field of selective site pacing. He teaches established electrophysiologists and trainees of other programs in nationally attended courses on the biophysics of ablation, atrial fibrillation ablation, and on the performance of transeptal puncture. His current research interests include direct His bundle pacing and the creation of an ischemic canine model for understanding biventricular pacing in the treatment of congestive heart failure. Dr Lustgarten recently initiated a multicenter device trial exploring direct His bundle pacing as an alternative means to effect cardiac resynchronization therapy in patients presenting for biventricular pacing.

Publications

Habel N, Znojkiewicz P, Thompson N, Müller JG, Mason B, Calame J, Calame S, Sharma S, Mirchandani G, Janks D, Bates J, Noori N, Karnbach A, Lustgarten DL, Sobel BE, Spector P. The Temporal Variability of Dominant Frequency and Complex Fractionated Atrial Electrograms Constrains the Validity of Sequential Mapping in Human Atrial Fibrillation. Heart Rhythm 2010 May;7(5)594-5.

Lustgarten DL, Calame S, Crespo EM, Calame J, Lobel R, Spector PS. Electrical resynchronization induced by direct His-bundle pacing. Heart Rhythm. January 2010 (Vol. 7, Issue 1, Pages 15-21)

Thompson N, Lustgarten DL, Mason B, Mueller E, Calame J, Bell S, Spector P. The Relationship between Tissue Temperature, Microbubble Formation and Steam Pops. Pacing and Clinical Electrophysiology 2009; 32(7):833-841.

Lustgarten DL, Ruskin JN. Medical Application of Cryothermal Energy: A Historical Overview. Book Chapter for CRYOABLATION FOR CARDIAC ARRHYTHMIAS. 2008. ISBN 978-0-9784732-0-4.

Lustgarten DL, Spector PS. Ablation using irrigated radiofrequency: a hands-on guide. Heart Rhythm 2008 Jun;5(6):899-902.

MARKUS F. MEYER, MD

Medical School
- Albert-Ludwigs Universität Freiburg, Germany
- Leopold-Franzens Universität Innsbruck, Austria

Residency
- Fletcher Allen Health Care, Burlington, VT

Fellowship
- Fletcher Allen Health Care, Burlington, VT

Research Fellowship
- University of California, San Diego, CA

Specialty
- General Cardiology
- Echocardiography
- Heart Failure

Certifications
- Internal Medicine
- Cardiovascular Diseases

Academic Appointments
- Assistant Professor of Medicine

Research Interests

Dr. Meyer's primary research interest is mechanisms responsible for and improved treatment of heart failure. His specific focus is to elucidate the role of cellular calcium handling in heart failure.

Publications

Trost SU, Belke D, Bluhm WF, Meyer M, Swanson E, Dillmann WH. Overexpression of the sarcoplasmic reticulum Ca(2+)-ATPase improves myocardial contractility in diabetic cardiomyopathy. Diabetes, 51:1166-1171, 2002

Meyer M, Belke DD, Trost SU, Swanson E, Dieterle T, Scott B, Cary SP, Ho P, Bluhm WF, McDonough PM, Silverman GJ, Dillmann WH A recombinant antibody increases cardiac contractility by mimicking phospholamban phosphorylation. FASEB J. 2004 Aug;18(11):1312-4.

Dieterle T, Meyer M, Gu Y, Belke DD, Swanson E, Ashikaga H, Iwatate M, MD, McDonough P, Hollander J, Peterson KL, Ross JJr, Dillmann WH. Gene transfer of a phospholamban-targeted antibody improves intracellular calcium handling and cardiac function in heart failure Cardiovasc Res. 2005 Sep 1;67(4):678-88

Meyer M, Dauerman HL, MD, Bell SP, LeWinter MM, Lustgarten DL. Coronary Venous Capture of Contrast During Angiography. JACC Interventions 2009; 2:215-221.

Selby DE, Palmer B, LeWinter MM, Meyer M. Tachycardia induced contracture and resting tone in isolated myocardium from patients with left ventricular hypertrophy. JACC accepted for publication 2010.

DAVID J. SCHNEIDER, MD, FACC, FAHA

Medical School
- University of Cincinnati, Cincinnati, OH

Residency
- University of Colorado, Denver, CO
- Chief Medical Resident University of Colorado, Denver, CO

Fellowship
- Washington University School of Medicine, St. Louis, MO

Specialty
- General Cardiology
- Preventive Cardiology
- Ischemic Heart Disease
- Echocardiology
- Vascular Biology

Certifications
- Internal Medicine
- Cardiovascular Disease

Academic Appointments
- Professor of Medicine
- Director, Cardiology Division
- Director, Vascular Biology Division

Research Interests

Delineated mechanisms responsible for altered fibrinolysis in the blood of patients with diabetes. Demonstrated that the combination of hyperinsulinemia, hyperglycemia and increased concentrations of free fatty acids in blood of healthy subjects increases the concentration and activity of the primary inhibitor of fibrinolysis, plasminogen activator inhibitor type 1 (PAI-1). With studies in vitro that demonstrated increased concentrations in blood of insulin increase expression of PAI-1 through stabilization of mRNA. In addition demonstrated that free fatty acids increase expression of PAI-1 by increasing transcription of PAI-1 through a fatty acid response region in the 5' untranslated region of the PAI-1 gene.

Developed and implemented a sensitive and specific assessment of platelet function that utilizes flow cytometry to characterize specific components of platelet reactivity. Utilized this method to demonstrate the prognostic implications of platelet reactivity and to characterize the effects of selected condition, and treatments on platelet function. Identified factors that influence platelet function by increasing platelet reactivity.

Publications

Schneider DJ, Sobel BE: Augmentation of synthesis of plasminogen activator inhibitor type-1 by insulin and insulin-like growth factor type-I: Implications for vascular disease in hyperinsulinemic states. Proc. Natl. Acad. Sci. USA 88:9959-9963, 1991.

McGill JB, Schneider DJ, Arfken CL, Lucore CL, Sobel BE: Factors responsible for impaired fibrinolysis in obese subjects and NIDDM patients. Diabetes 43:104-109, 1994.

Schneider DJ, Hayes M, Taatjes H, Wadsworth M, Rincon M, Taatjes DJ, Sobel BE: Attenuation of neointimal vascular smooth muscle cellularity in atheroma by plasminogen activator inhibitor type-1 (PAI-1). J. Histochem. Cytochem. 52:1091-1099, 2004.

Schneider DJ, Hardison RM, Lopes N, Sobel BE, Brooks MM. Association between Increased Platelet P-selectin Expression and Obesity in Patients with Type 2 Diabetes: A BARI 2D Sub-study. Diabetes Care. 32:944-9, 2009

KeatingFK, Butenas S, Fung MK, Schneider DJ. Platelet-leukocyte interaction, leukocyte apoptosis and procoagulant activity in stored red blood cells. Transfusion, in press

PETER SALEM SPECTOR, MD

Medical School:
- Albert Einstein College of Medicine, New York, NY

Residency
- Medical Center Hospital of Vermont, Burlington, VT

Fellowships
- University of Utah Health Sciences Center, UT

Specialty
- Cardiac Electrophysiology

Certifications
- Cardiovascular Disease
- Clinical Cardiac Electrophysiology

Academic Appointments
- Professor of Medicine
- Director of Cardiac Electrophysiology

Research Interests

Dr. Spector's research has focused on three areas: Mapping of Atrial Fibrillation, the role of the autonomic nervous system in the genesis and treatment of Atrial Fibrillation, and biophysics of ablation.

Publications

Spector PS, Noori AM, Hardin NJ, Calame JD, Bell SP, Lustgarten DL. Pulmonary Vein Encircling Ablation Alters the Atrial Electrophysiologic Response to Autonomic Stimulation. J Interv Card Electrophysiol 2006 Nov;17(2):119-25.

Lustgarten DL, Spector PS. Ablation using irrigated radiofrequency: a hands-on guide. Heart Rhythm 2008 Jun;5(6):899-902.

Thompson N, Lustgarten D, Mason B, Mueller E, Calame J, Bell S, Spector P. The Relationship between Tissue Temperature, Microbubble Formation and Steam Pops. Pacing and Clinical Electrophysiology 2009 Jul;32(7):831-2.

Spector P, Reynolds M, Calkins H, Sondhi M, Xu Y, Martin A, Williams C, Sledge I. Meta-analysis of Ablation of Atrial Flutter and Supraventricular Tachycardia; American Journal of Cardiology, 2009 Sept.1;104(5):671-7.

Calkins H, Reynolds M, Spector P, Sondhi M, Xu Y, Martin A, Williams C, Sledge I. Treatment of Atrial Fibrillation with Anti-arrhythmic Drugs or Radio Frequency Ablation: Two Systematic Literature Reviews and Meta-analyses; Circulation EP, June 2009.

Lustgarten DL, Calame S, Crespo EM, Calame J, Lobel R, Spector PS. Electrical resynchronization induced by direct His-bundle pacing. Heart Rhythm, October 2009.

JEFFREY L. SPEES, PHD

Graduate School
- University of California, Davis

Post-doctoral Fellowship
- Tulane University Health Sciences Center

Specialty
- Adult Stem Cell Biology
- Regenerative Medicine
- Repair of Cardiac and Pulmonary Tissues
- Vascular Biology

Academic Appointments
- Assistant Professor of Medicine, Vascular Biology Division

Research Interests

Dr. Spees is elucidating the differentiation capacity, migration patterns, cytokine/growth factor secretion, and fusion of adult stem cells with tissue endogenous cells to determine their ability to repair tissues. He works with experimental animal preparations to characterize progressive pulmonary hypertension, myocardial infarction, and fibrosis and their responses to adult stem cells. Currently, he is investigating mechanisms through which adult stem cells can preserve mitochondrial function in injured cardiomyocytes.

Adult Stem Cell Core - Dr. Spees directs a new Adult Stem Cell Core in the Cardiovascular Research Institute. The Core provides unmanipulated as well as lentivirally-tagged adult stem cells from human and rodent sources to other investigators within the University of Vermont College of Medicine. It is anticipated that the Adult Stem Cell Core will act as a catalyst for collaborative discoveries in regenerative medicine and will lead to novel cell-based therapeutic strategies for cardiac and other diseases.

Publications

Gregory, C.A., Prockop, D.J., Spees J.L. Non-hematopoietic bone marrow stem cells: Molecular control of expansion and differentiation. Experimental Cell Res. 306:330-335, 2005.

Munoz, J.R., Stoutenger, B.R., Robinson, A.P., Spees, J.L., D.J. Prockop. Human stem/progenitor cells from bone marrow (MSCs) promote neurogenesis of endogenous neural stem cells in the hippocampus of mice. Proc. Natl. Acad. Sci. U.S.A. 102:18171-18176, 2005.

Spees, J.L., Olson, S.D., Whitney, M.J., D.J. Prockop. Mitochondria transfer between cells can rescue aerobic respiration. Proc. Natl. Acad. Sci. U.S.A. 103:1283-1288, 2006.

Gregory CA, Reyes E, Whitney MJ, Spees J.L. Enhanced engraftment of mesenchymal stem cells in a cutaneous wound model by culture in allogenic species-specific serum and administration in fibrin constructs. Stem Cells 24:2232-2243, 2006.

Lee, R.H., Seo, M.J., Reger, R.L., Spees, J.L., Pulin, A.A., Olson, S.D., Prockop, D.J. Multipotent stromal cells from human marrow home to and promote repair of pancreatic islets and renal glomeruli in diabetic NOD/scid mice. Proc. Natl. Acad. Sci. U S A.103:17438-17443, 2006.

EDWARD F. TERRIEN, MD, FACC

Medical School

- University of Vermont, Burlington, VT

Residency

- Duke University Medical Center, Durham, NC

Fellowship

- William Beaumont Hospital, Royal Oak, MI

Specialty

- Coronary Intervention
- Cardiac Catheterization
- Ischemic Heart Disease
- Peripheral Vascular Intervention

Certifications

- Internal Medicine
- Cardiovascular Disease
- Interventional Cardiology

Academic Appointments

- Associate Professor of Medicine, University of Vermont

Publications

Terrien E, Schneider D, Gogo P, Sobel B, Dauerman H. Osteoprotegerin is Not Associated with Angiographic Coronary Calcification. Journal of Thrombosis and Thrombolysis.

Terrien E, Schneider D, Watkins M, Gogo P, Sobel B, Dauerman H. Systemic Inflammation After Drug-Eluting Stent Placement. Journal of Thrombosis and Thrombolysis. 2005 Apr;19(2):87-92.

Terrien E, Schneider D, Gogo P, Watkins M, Sobel B, Dauerman H. Relation of Leukocytosis to C-Reactive Protein and Interluekin-6 Among Patients Undergoing Percutaneous Coronary Intervention. American Journal of Cardiology. 2005 Aug 15;96(4):538-42.

MARC TISCHLER, MD, FACC, FACP, FAHA

Medical School
- Harvard Medical School, Boston, MA

Residency
- Brigham and Woman's Hospital, Boston, MA

Fellowships
- Brigham and Woman's Hospital, Boston, MA

Specialty
- Valvular Heart Disease
- Ischemic Heart Disease
- Heart Failure and Cardiomyopathy
- Echocardiography
- Cardiac Magnetic Resonance Imaging

Certifications
- Internal Medicine
- Cardiovascular Disease

Academic Appointments
- Associate Professor of Medicine
- Director of Echocardiography Laboratory
- Co-Director, Cardiac MRI Unit

Research Interests

Dr. Tischler's research has focused on the natural history and pathophysiology of mitral regurgitation with particular emphasis on the implications of mitral valve repair compared with valve replacement surgery. He has studied the effects of alteration in ventricular geometry on exercise performance and ventricular filling in patients with congestive heart failure. Dr. Tischler has collaborated with Dr. Ades in the study of the effects of resistance training in elderly patients with coronary disease and with Dr. LeWinter in his studies of left ventricular restoring forces. He is currently studying the effects of mesenchymal stem cells on left ventricular remodeling after myocardial infarction.

Publications

Tischler M, Gentchos G, White G. Complex congenital heart disease: A 3T CMR Perspective. Congenital Cardiol Today 2006; 4:1-8.

Gentchos GE, Tischler MD, Christian TF. Imaging and quantifying valvular heart disease using magnetic resonsnce techniques. Curr Treat Options Cardiovasc Med 2006; 8:453-460.

Toth MJ, Ades PA, Tischler MD, Tracy RP, LeWinter MM. Immune activation is associated with reduced skeletal muscle mass and physical function in chronic heart failure. Int J Cardiol 2006; 109:179-187.

MICHAEL J. TOTH

Graduate School
- University of Maryland at Baltimore

Post-doctoral Fellowship
- University of Vermont

Specialty
- Skeletal muscle metabolism and function

Academic Appointments
- Associate Professor of Medicine
- Adjunct appointment in the Department of Molecular Physiology and Biophysics.

Research Interests

Dr. Toth's research has focused on how the syndrome of heart failure affects the peripheral musculature and how changes in skeletal muscle, in turn, contribute to reduced exercise capacity. His recent studies have shown that heart failure patients experience a unique skeletal muscle myopathy characterized by a selective depletion of the contractile protein myosin heavy chain (MHC). This myopathy is manifest at the whole muscle level as a reduction in contractile strength per unit muscle size and reduced MHC content correlated strongly with exercise intolerance, the hallmark symptom of heart failure. Further studies revealed decreased skeletal muscle MHC mRNA content in heart failure patients, which was paralleled by a reduction in insulin-like growth factor-I expression, a growth factor that is known to stimulate MHC gene expression. These findings suggest that heart failure may impair MHC expression in skeletal muscle through alterations in muscle growth factor expression and/or signaling. The focus of on-going studies is to further characterize this myopathy by measuring skeletal muscle structure and function at the level of the single human muscle fiber. Biomechanical measurements of contractile protein function are used together with classic biochemical and ultrastructural approaches to assess MHC content. Additional studies will examine the expression of growth factors in skeletal muscle to explore the potential mechanisms by which heart failure promotes a reduction in skeletal muscle MHC content. Finally, in collaboration with Dr. Phil Ades and the UVM Cardiac Rehabilitation Center, heart failure patients will undergo a 4 month resistance training program to determine the efficacy of this intervention in countering this myopathy and improving skeletal muscle function.

Publications

Toth MJ, Tchernof A. Lipid metabolism in the elderly. Eur J Clin Nutr 54: S121-S125, 2000.

Ferro-Luzzi A, Toth MJ, Elia M, Schürch B. Body weight and body composition in the elderly. Eur J Clin Nutr 54: S160-S161, 2000.

Toth MJ, Poehlman ET. Energetic adaptation to chronic disease in the elderly. Nutr Rev 58: 61-66, 2000.

Toth MJ, Tchernof A, Sites CK, Poehlman ET. Menopause-related changes in body fat distribution. Ann NY Acad Sci 94:502-506, 2000.

Toth MJ. Energy expenditure and physical activity. Obesity: Facts and Figures. North American Association for the Study of Obesity.

PETER VANBUREN, MD

Medical School
- University of Vermont, Burlington, VT

Residency
- Georgetown University, Washington, DC

Fellowships
- University of Vermont, Burlington, VT

Specialty
- Heart Failure and Cardiomyopathy
- Echocardiography

Certifications
- Internal Medicine
- Cardiovascular Disease
- Nuclear Cardiology
- Advanced Heart Failure and Transplant Cardiology

Academic Appointments
- Associate Professor of Medicine
- Associate Professor of Molecular Physiology and Biophysics
- Associate Director of the Cardiovascular Fellowship Training Program

Research Interests

Delineate the role of sarcomeric proteins in the contractile deficit of human myocardial failure. With the use of human myocardial biopsy samples and an in vitro model of muscle contraction, Dr. VanBuren has identified key molecular defects in the contractile machinery. This knowledge can be applied to emerging therapies that specifically target maladapted myocardial signaling pathways. Through such an approach improved survival in patients with heart failure may ultimately be achieved.

Publications

VanBuren P, Palmer BM. Cooperative Activation of the Cardiac Myofilament: The Pivotal Role of Tropomyosin. Circulation. 2010;121:351-3.

Donaldson C, Taatjes DJ, Zile M, Palmer B, VanBuren P, Spinale F, Maughan D, Von Turkovich M, Bishop N, LeWinter MM. A Combined Immunoelectron Microscopic and Stereologic Method to Detect Advanced Glycation End-Products in Human Myocardium. Histochem Cell Biol. 2010;134:23-30

Hünlich M, Tremble SM, Begin KJ, Leavitt BJ, Ittleman FP, VanBuren P. Atrial Contractile Protein Content and Function are Preserved in Patient with Coronary Artery Disease and Atrial Fibrillation. Coron Artery Dis. 2010;21:357-62.

Miller MS, VanBuren P, LeWinter MM, Braddock JM, Ades PA , Maughan DW, Palmer BM, Toth MJ. Chronic heart failure decreases cross-bridge kinetics in single skeletal muscle fibers from humans. J Physiol. 2010 In press

VanBuren P, LeWinter MM. Heart Failure as a Consequence of Diabetic Cardiomyopathy. In Heart Failure: A Companion to Braunwald's Heart Disease. Mann D, editor. 2010 In press.

MATTHEW W. WATKINS, MD, FACC

Medical School
- University of Pennsylvania, Philadelphia, PA

Residency
- Medical Center Hospital of Vermont, Burlington, VT

Fellowships
- Medical Center Hospital of Vermont, Burlington, VT

Specialty
- Interventional Cardiology
- Ischemic Heart Disease
- Valvular Heart Disease

Certifications
- Internal Medicine
- Cardiovascular Disease
- Interventional Cardiology

Academic Appointments
- Professor of Medicine

Research Interests

Dr. Watkins has developed an angiogenic therapy program at the University of Vermont and Fletcher Allen Health Care. He has played a significant role in the early clinical development of therapeutic angiogenesis for the treatment of advanced coronary artery disease. His research program has included clinical trials in intracoronary delivery of the gene, FGF4 (fibroblast growth factor 4) that is designed to initiate an angiogenic response in chronically ischemic myocardium. The first intracoronary gene therapy treatment in the United States

was performed at our institution with subsequent publication of the report of the initial phase one trial (AGENT I) demonstrating safety and preliminary efficacy of this treatment. A second multi-center investigation demonstrated a positive impact of FGF4 treatment on myocardial perfusion (AGENT 2). Dr. Watkins has also been involved in clinical trials investigating the angiogenic response to selective intramyocardial administration of VEGF-s (GENASIS) in patients with advanced coronary disease.

Over the past two years, Dr. Watkins has implemented Cardiac CT angiography (CTA) at our institution. The clinical use of CTA has been established as a joint program with Radiology. Research in this area has included a recent publication examining CTA accuracy and utility in comparison to cardiac catheterization, in collaboration with Cleveland Clinic.

Publications

Grines C, Watkins MW, Mahmarian JJ, Iskandrian AE, Marrott P, Pratt C, Kleiman N. A randomized double blind placebo-controlled trial of Ad5FGF-4 gene therapy and its effect on myocardial perfusion in patients with stable angina (AGENT 2). J Am Coll Cardiol 2003; 42:1339-1347.

Watkins MW, Rubanyi GM. Gene therapy for coronary artery disease: Preclinical and initial clinical results with intracoronary Ad5-FGF4 in Human gene therapy: Current opportunities and future trends edited by Rubanyi GM and Yla-Herttuala S. Springer-Verlag, Heidelberg, Germany, 2003, pp 173-188.

Teirstein PS, Kao J, Watkins M, Tannenbaum MA, Laufer N, Chang M, Mehran R. Dangas, G. Russell ME, Ellis SG, Stone GW. Impact of platelet glycoprotein IIb/IIIa Inhibition on the paclitaxel-eluting stent in patients with stable or unstable angina pectoris or provocable myocardial ischemia (a TAXUS IV substudy). Am J Cardiol 2005; 96:500-505.

Watkins MW, editor. Review in Depth: Cardiac computed tomography. Coron Artery Dis 2006; 17:99-130.

Watkins MW, Hesse B, Green CE, Greenberg NL, Manning M, Chaudhry E, Dauerman HL, Garcia MJ. Detection of coronary artery stenosis using 40-channel computed tomography with multi-segment reconstruction. Am J Cardiol 2007; 99:175-181.

JOSEPH FREDERICK WINGET, MD

Medical School
- Tufts University School of Medicine

Residency
- Medical Center Hospital of Vermont, Burlington, VT

Fellowships
- Medical Center Hospital of Vermont, Burlington, VT

Specialty
- Cardiology (Cardiovascular Disease)
- Clinical Cardiac Electrophysiology

Certifications
- Internal Medicine
- Cardiovascular Disease
- Clinical Cardiac Electrophysiology

Academic Appointments
- Assistant Professor of Medicine

Publications

Sudden death in athletes. Winget JF, Capeless MA, Ades PA. Sports Med. 1994;18:375-83.

Cardiology Division

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