



Department of Medicine

ANNUAL REPORT
July 1, 2011 – June 30, 2012

Submitted by:
Polly E. Parsons, MD
E.L. Amidon Professor and Chair
Department of Medicine
Date: August 21, 2012

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Department of Medicine Annual Report 2011-2012

Chair's Executive Summary:



The Department of Medicine is committed to excellence in all of the areas that define our mission: research, clinical care, education and service. This past year we welcomed not only new residents, postdoctoral fellows, graduate students, and staff but new faculty in Dermatology, Hematology-Oncology, Infectious Disease, Nephrology, Primary Care Internal Medicine, Pulmonary/Critical Care Medicine and Rheumatology.

Education is a core mission for the Department of Medicine. The faculty participate extensively in the VIC curriculum and more than 100 trainees including house officers, chief medical residents, undergraduate students, graduate students and post-doctoral fellows (MD and PhD) are actively engaged in research, education and clinical care in the Department. This year the entire department contributed to the major redesign of the internal medicine residency program which will enhance the training in the ambulatory setting and improve patient continuity and subspecialty experience. The faculty received a number of honors and awards this year for their contributions to education. Dr. William Hopkins received the Foundations Course Director Award (for the sixth consecutive year) and the AMSA Golden Apple Award from the Class of 2014. The Cardiovascular, Respiratory & Renal Systems course, directed by Dr. Hopkins, won the award for Outstanding Foundations Course for the sixth time. Drs. Laurie Leclair (Simulation Training for Multidisciplinary Intensive Care Unit Teams: Active Learning to Promote Best Practice); Patricia King (Teaching Professionalism through lessons from the Board of Medical Practice); and Marie Sandoval (Developing Best Practice in Communication when using the EHR for Nurse Practitioner and Medical Students and Their Preceptors) were selected as Frymoyer Scholars for the 2012 and 2013 academic years. The Medicine Housestaff award for Outstanding Teacher of the Year, Subspecialty Medicine, went to Dr. Joseph Winget and the award for Outstanding Teacher of the Year, General Internal Medicine Award, went to Mark Pasanen. Dr. Alan Rubin was selected as the Graduate Medical Education Teacher of the Year by the UVM Medical Group.

The Department continues to be a leader in research spanning the bench to the bedside to the community. Despite the challenges facing our national economy and the NIH budget, the department's research funding continues to be strong with awards totaling \$21.92M (\$19.3M at UVM and \$2.62M at FAHC). Our faculty continue to find creative ways to lead and succeed in their respective fields, and our rich spirit of collaboration continues to be this department's greatest assets. Generous donations were made this year to support research within the department including a fund for Cancer research, and a \$1,000,000 award from Tom and Mary Evslyn to support Dr. Peter Spector's research in atrial fibrillation. To further increase the support for research and encourage innovation and collaboration, the Department established a formal program for bridge funding and a new internal grant award program for translational research.

In aggregate, members of the department published more 300 manuscripts, reviews, chapters, and books. Many faculty members serve on NIH study sections, are editors of journals, and are members of editorial boards. Faculty continue to receive substantial recognition for their scholarly contributions by being asked to serve on NIH study sections and advisory councils, FDA review panels, and editorial boards. They are invited from around the world to present at scientific meetings and be visiting professors, and elected to leadership positions in national societies. Highlights this year included Dr. Virginia Hood serving as the President of the American College of Physicians and Dr. Ralph Budd being inducted into the Association of American Physicians. For her contributions to scholarship, Dr. Mercedes Rincon was named a UVM University Scholar. To recognize the critical role of mentors in an academic department, a Department of Medicine Mentor Award was established. The first awardee was Dr. Chris Holmes.

The Department provides extensive clinical care not only at Fletcher Allen Health Care but at numerous satellite sites throughout Vermont and New York State. The subspecialty providers in the department continue to develop opportunities for collaborative interactions with other departments and services to provide multidisciplinary care. New initiatives this year included the development of a 24/7 attending physician service for the Medical Intensive Care Unit, the commitment of an Infectious Disease attending to the ICU, the establishment of the TAVI (a transcatheter aortic valve implantation) program in Cardiology, and the expansion of the cancer multidisciplinary clinics with the addition of a GU multidisciplinary clinic. All of the PCIM clinic locations are now AHRQ certified medical homes and the PCIM faculty continue to be actively engaged in the transformation of primary care and the integration of primary care and subspecialty medicine. The overall clinical excellence was recognized by US News and World Report which included Drs. Muriel Nathan, Steven Grunberg*, Claire Verschraegen*, Virginia Hood, Richard Solomon, Polly Parsons* and Sheldon Cooper in the listing of the Top Doctors from the region and the country (those with an asterisk). In addition, two specialty areas, Gastroenterology and Nephrology, were ranked as “High Performing”.

Administrative Team:

Physician Leader and Chair	Polly E. Parsons, MD
Vice Chairs	
Medical Education	Mark Levine, MD
Research	Charles Irvin, PhD
Administrative Director	Allen Mead
Assistant Director	Tammy Stockton, RN
Physician Executive Assistant	Laurie St. Gelais
Financial Administrator	Fiona Daigle
Grants Manager	Eric Gagnon
Financial Associate	Marlene Frank
Department Assistant	Katelyn Bolgioni

- New faculty recruited 7/1/06 to present: 84
 - Total faculty: 174
 - By rank – Assistant Professors: 80
Associate Professors: 46
Professors: 40
Research Associates: 8
 - By gender – 65 female; 109 male
 - By track – Tenured: 38
Research Scholar Pathway: 16
Tenure Pathway: 6
Clinical Scholar Pathway: 111

Reappointments:

FALL 2011– 5 green sheet reappointments; 2 pink sheet reappointments;
7 promotions; 2 tenure
SPRING 2012 – 28 green sheet reappointments; 22 pink sheet
reappointments, (16) part-time faculty reappointments

Promotions:

Dr. Steven Ades – promotion to Associate Professor
Dr. Gilman Allen – promotion to Associate Professor
Dr. Prospero Gogo – promotion to Associate Professor
Dr. Friederike Keating – promotion to Associate Professor
Dr. Amanda Kennedy – promotion to Associate Professor
Dr. Beth Kirkpatrick – Associate Professor, tenured
Dr. Janet Lindow – promotion to Research Assistant Professor
Dr. Daniel Weiss – promotion to Professor (tenured)

Standing Committees:

Operational Efficiency Committee

K. Schwarzenberger, MD, Chair
S. Grunberg, MD
F. Keating, MD
B. Libman, MD
Y. Mageto, MD
A. Mead
L. Polish, MD
J. Schnure, MD
K. Schwarzenberger, MD

A. Segal, MD
D. Strader, MD

Education Committee:

M. Levine, MD, Chair
G. Allen, MD
M. Antkowiak, M.D.
L. Bryan, MD
R. Christian, MD
D. Collins, MD
E. Ganguly, MD
Z. Gardner, MD
M. Hockett, MD
P. Hohl, MD
F. Keating, MD
M. Pasanen, MD
L. Polish, MD
M. Ramundo, MD
S. Raza, MD
D. Shelc
P. Slavik, MD
N. Zakai, MD

Fellowship Education Committee

M. Levine, MD, Chair
M. Capeless, MD
R. Christian, MD
N. Ferrentino, MD
E. Gagnon
C. Grace, MD
D. Kaminsky, MD
B. Libman, MD
A. Marney, MD
K. Pierce, MD
R. Pinckney, MD
A. Segal, MD
J. Sprague, MD

Housestaff Evaluation Committee

M. Ramundo, MD
M. Antkowiak, MD
L. Bryan, MD
M. Pasanen, MD
M. Levine, MD
D. Shelc

Housestaff Selection Committee:

M. Levine, MD, Chair
W. Alston, MD
A. Bantle, MD
M. Meyer, MD
E. Ganguly, MD
W. Prabhu, MD
W. Hopkins, MD
M. Pasanen, MD
K. Pierce, MD
M. Ramundo, MD
J. Sprague, MD
Ms. D. Shelc

Medical Grand Rounds Education Program Committee

R. Budd, MD, Chair
C. Irvin, MD
M. Levine, MD
P. Parsons, MD
T. Jetton, PhD
S. Lidofsky, MD
M. Wood, MD

Quality Assurance Committee - Medicine Health Care Service:

M. Levine, MD, Chair
S. Ades, MD
M. Airiodi
M. Antkowiak, MD
S. Bellemare
D. Benway, RN
T. Berrings, RN
J. Blondin
P. Bouchard, RN
I. Bonin, RN
M. Capeless, MD
I. Derock
P. Gagne, RN
Y. Mageto, MD
D. Pepin, RN
A. Repp, MD
J. Stinnett-Donnelly, MD
J. Rimmer, MD
J. Vecchio, MD

K. Walter

Quality Assurance Committee – Cardiac Catheterization Laboratory

H. Dauerman, MD, Chair

P. Gogo, MD

E. Terrien, MD

M. Watkins, MD

T. Fortner, RN

H. Igneri, RN

Quality Assurance Committee – Dermatology

T. Holmes, MD

K. Schwarzenberger, MD

G. Goldman, MD

C. Weinberger, MD

T. Stockton

Resident and Scholarly Activity

V. Hood, MD

A. Marney, Chair

C. Irvin, PhD

M. Levine, MD

R. Pinckney, MD

C. Holmes, MD

M. Meyer, MD

D. Weiss, MD

Bylaws and Credentialing Committee

Glenn Goldman, Chair

M. Lazarovich, MD

E. Leib, MD

K. Pierce, MD

D. Schneider, MD

J. Schnure, MD

R. Solomon, MD

J. Vecchio, MD

M. Wood, MD

Social Committee (Club Med –icine)

E. Terrien, Chair

S. Chang, MD

N. Hynes, MD

A. Lee, MD

P. Menon, MD
F. Khan, MD
A. Marney, MD
J. Lin, MD
C. Noyes, MD
T. Stockton, RN
K. Bolgioni

Department of Medicine, University of Vermont

Unit Directors

P.E. Parsons, MD, Chair
R. Budd, MD, Immunobiology
E. Leib, MD, Rheumatology (Interim)
N. Fukagawa, MD, Geriatrics (acting)
R. Galbraith, MD, Clinical Pharmacology (acting)
C. Grace, MD, Infectious Diseases
G. Goldman, MD, Dermatology
J. Leahy, MD and Joel Schnure, MD, Endocrinology, Metabolism, & Diabetes
B. Littenberg, MD, General Internal Medicine
C. Verschraegen, MD, Hematology/Oncology
A. Dixon, MD, Pulmonary and Critical Care Medicine
C. Schneider, MD, Cardiology Unit and Vascular Biology Unit
R. Solomon, MD, Nephrology
J. Vecchio, MD, Gastroenterology

Research Committee

C Irvin, PhD and R. Budd, MD, Co-chairs
R. Pratley, MD
M. Poynter, PhD
T. Mazuzan
D. Schneider, MD
B. Kirkpatrick, MD
C. Maclean, MD
T. Jetton, PhD
K. Schwarzenberger, MD
M. Toth, PhD
J. Vecchio
E. Gagnon

Promotions and Tenure

G.Davis, MD, Chair
R. Pratley, MD
E. Leib, MD

Assistant Professor and Instructor Faculty Actions

M. Tischler, Chair
D. Plante, MD
K. Schwarzenberger, MD
P. VanBuren, MD
S. Lidofsky, MD

Part-time Faculty Actions

J. Alpert, M.D., Chair
C. Berger, M.D.
B. Libman, M.D.

Scientific Integrity Committee

R. Budd, M.D., Chair
N. Fukagawa, M.D.
B.E. Sobel, M.D. (ex officio)

Medical Service

Patient Days: 47,210 (inpatients and outpatients)
Ambulatory Care Visits: 215,574 (142,151 specialty and 73,423 primary care)

FAHC Practice Sites:

Ambulatory Care Center – Medicine has a presence in four Modules:
-Medicine: Infectious Disease (including Travel Medicine), Osteoporosis Center, Rheumatology and Clinical Immunology, and Pulmonary (including PFTs), Lung Cancer Multidisciplinary Clinic
- Dermatology including Mohs Surgery and Melanoma Multidisciplinary Clinic
- Cancer Center: Hematology/Oncology
- Surgery: Gastroenterology, Thrombosis Center [part of Hem/Onc and Vascular Surgery], and Gastrointestinal Multidisciplinary Center

University Health Center

- Nephrology

Tilley Drive, South Burlington

- Cardiology and Cardiac Rehabilitation, Oncology Rehabilitation, Pulmonary Rehabilitation
- Endocrinology and Endocrine Clinical Research

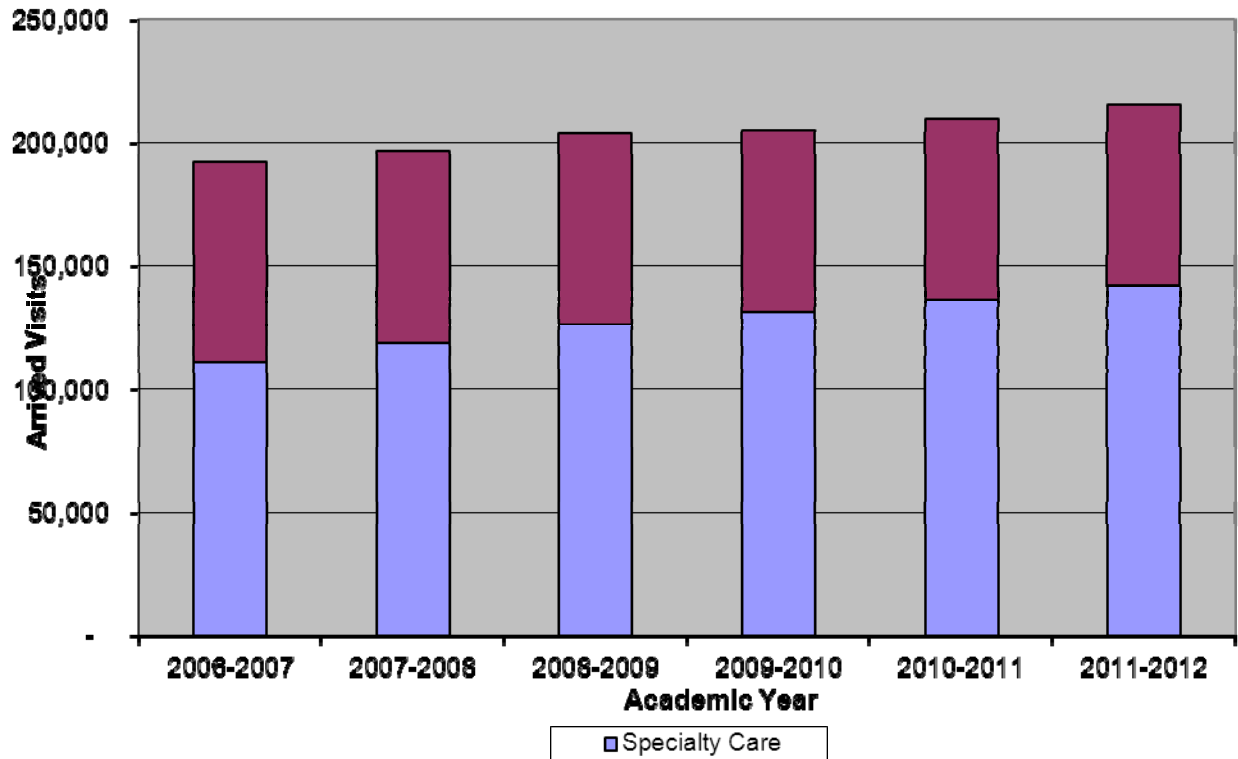
FAHC Outreach Sites:

Bennington – Hematology/Oncology (Familial Cancer Program)
Brattleboro (BMH) – Infectious Disease
Morrisville (Copley Hospital) – Hem/Onc, Rheumatology
St. Albans (Northwestern Medical Center) –Nephrology and Cardiology
St. Johnsbury (Northeastern Medical Center) - Infectious Disease
Barre (Central Vermont) – Rheumatology, Nephrology
Rutland (Rutland Regional) – Nephrology, Cardiology, Infectious Disease
Newport (Newport Memorial) – Nephrology
Malone (Alice Hyde) – Cardiology
Ticonderoga (Moses Luddington Hospital) – Dermatology, Cardiology
Saranac Lake (Adirondack Medical Center) – Cardiology, Hematology/Oncology
Canton- Potsdam – Cardiology
Massena (MMH) – Cardiology

Primary Care Sites:

Aesculapius (Timberlane, South Burlington)
Given Essex (Essex Junction)
Given Burlington (University Health Center)
Given Williston (Blair Park, Williston)

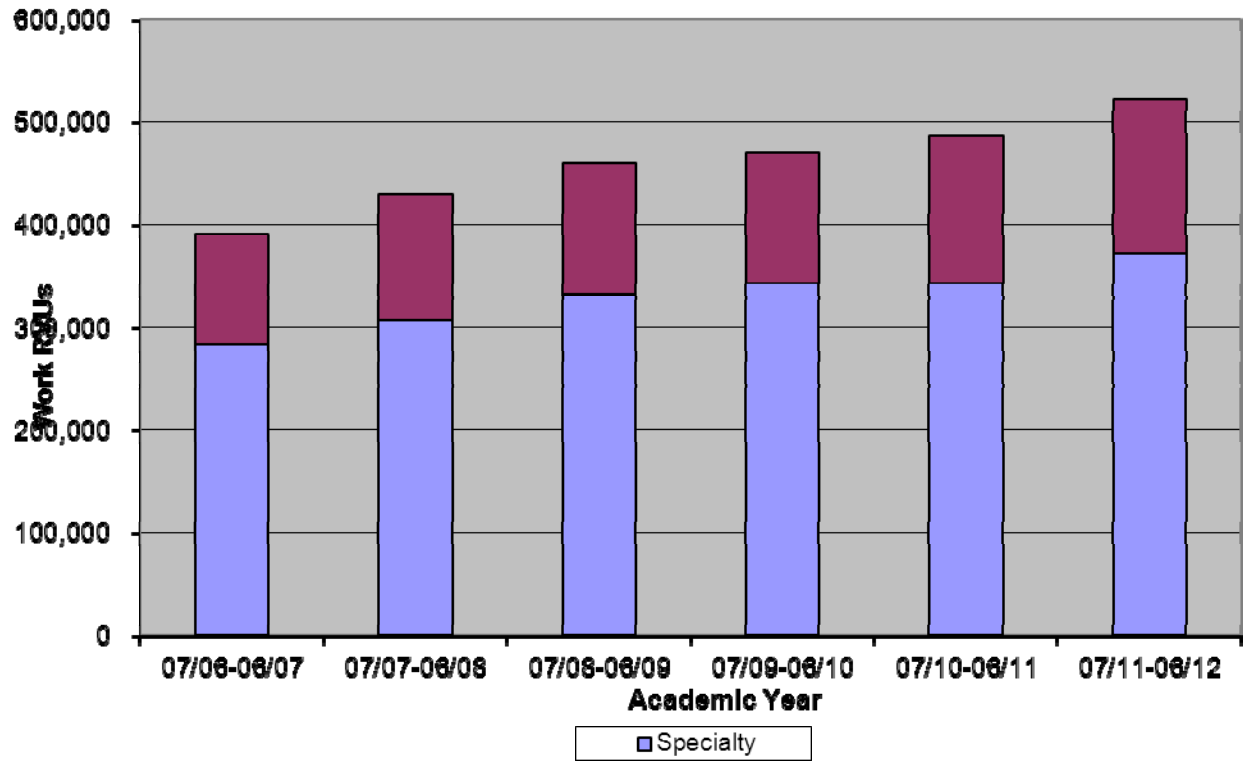
Department of Medicine Arrived Clinic Visits



Department of Medicine Arrived Visits

	2006-2007	2007-2008	2008-2009	2009-2010	2010-2011	2011-2012
Specialty Care	110,794	118,880	126,256	130,912	136,223	142,151
Primary Care	81,386	77,875	77,735	74,272	74,069	73,423
Total	192,180	196,755	203,991	205,184	210,292	215,574

Department of Medicine Work RVUs



Graduate Students/Pre-Doctoral Trainees and Post-Doctoral Associates/Trainees

Last Name	First Name	Appointment Title	Department
Rao	Krithika	Graduate Assistant	Cardiology
Saligrama	Naresha	Graduate Assistant	Immunobiology
Schott	Benjamin	Graduate Assistant	Pulmonary
Ziegler	Christopher	Graduate Assistant	Immunobiology
Sateriale	Adam	Graduate Rsrch/Teach Asst	Infectious Disease
Callahan	Damien	Post Doct Fellow/Trainee	Cardiology
Krementsov	Dimitry	Post Doct Fellow/Trainee	Immunobiology
Lathrop	Melissa	Post Doct Fellow/Trainee	Pulmonary
Menon	Prema	Post Doct Fellow/Trainee	Pulmonary
Skolnick	Maria	Post Doct Fellow/Trainee	Cardiology
Smith	Bradley	Post Doct Fellow/Trainee	Pulmonary
Wagner	Darcy	Post Doct Fellow/Trainee	Pulmonary
Case	Laure	Post Doctoral Associate	Immunobiology
Sideleva	Olga	Post Doctoral Associate	Pulmonary
Theiler	Shaleen	Post Doctoral Associate	Hematology Oncology
Wall	Emma	Post Doctoral Associate	Immunobiology
Klaus	Joseph	Pre Doctoral Fellow/Trainee	Immunobiology
Pothen	Joshua	Pre Doctoral Fellow/Trainee	Pulmonary
Tharp	William	Pre Doctoral Fellow/Trainee	Endocrinology

Medical Education

1. Leadership



Mark A Levine, M.D.,F.A.C.P – Program Director



Mary Ramundo, M.D. – Associate Program Director



Mark Pasanen, M.D., F.A.C.P – Associate Program Director



Dorothy Shelc – Program Administrator

2. Summary of Program Highlights 2011-2012

A) The Office of Education held a strategic planning retreat for our residency and fellowship education programs in July 2011. This created a work plan for the residency program for the 2011-2012 academic year. Major work has been done in multiple areas, with a majority of these coming into play as program achievements in July 2012

1) Major redesign of the internal medicine training schedule to a “4 + 1” template (4 weeks of inpatient or selective requirements followed by 1 week of ambulatory continuity clinics) allows enhancements in ambulatory training, improved resident exposure to highly functional ambulatory care settings, improved patient continuity, improved subspecialty ambulatory training experiences, and enables true separation between inpatient medicine and continuity clinic/ambulatory medicine to maximize educational potential. The “4 + 1” template was developed and has been launched as of 07-01-12.

2) The primary care initiative: A commitment to improve primary care training, the primary care track, and the overall ambulatory continuity experience for all residents in the program – This major educational initiative launched 07-01-12.

3) Incorporation of more members of the refugee community into the resident continuity practice site and improvement in cultural competency training – Occurred 2011-2012.

4) A commitment to improvement in the evaluation system and incorporation of the developmental milestones-based approach – Ongoing work with launch scheduled for the first half of the 2012-13 academic year.

5) A commitment to optimize the work schedule on inpatient medicine ward rotations to eliminate duty hour violations – Has been successfully implemented.

B) The residency underwent a successful internal review by the GMEC in October 2011. Though a number of citations were provided as per all such reviews (and have been addressed), it is noteworthy that seven strengths of the program were listed:

- 1) “Fantastic” formal teaching.
- 2) Program is very responsive to resident feedback.
- 3) Program promotes a supportive culture.
- 4) Excellent dynamics between residents.

- 5) Residents appreciate the program efforts to adhere to ACGME duty hour requirements.
- 6) Research and Scholarly Activities of the residents.
- 7) Diverse patient population with variety of clinical problems and stages of disease.

The residency was also fortunate to receive a communication from the ACGME indicating its next review under the Next Accreditation System guidelines will be a self-study visit in 2018.

C) To enable effective functioning of the 4+1 template, the program has been provided with permission to increase the size of the residency cohort to 13/year. In the current intern year there are now 13 categorical interns and 9 preliminary interns.

D) ABIM pass rate for the last academic year – 92%.

E) The residency retreats continue to support the overall competency based residency curriculum in a strong fashion, with ongoing sessions involving communication skills development, professionalism, research, and resident teaching skills.

F) The Grand Rounds Design Committee continues to be active and the Ground Round series remains cutting edge and innovative. The departmental Morbidity and Mortality Conference continues to be a popular forum for competency based discussions that have in many instances led to quality improvement initiatives.

3. List of All Residents

PGY-3

Bartsch, Jason	George Washington University
Borofsky, Jennifer	University of Vermont
Burke, Michele	University of Vermont
Helminski, Aaron	University of Vermont
Hill, Elizabeth	University of Vermont
Hohl, Patrick	University of New England, Osteopathic Medicine
Jayaprakash-Sardana, Jasmol	Nova Southeastern University of Osteopathic Medicine
McMahon, Sean	SUNY – Upstate
Meyer, David	East Tennessee State University
Meyer, Gabriela	East Tennessee State University
Stinnett-Donnelly, Justin	University of Vermont
Sundaran, Preeth	Royal College of Surgeons, Ireland

PGY-2

Disantis, Robert	Penn State University
Fashoyin, Adedayo	University of Wisconsin
Fitzgerald, Alison	University of Vermont
Houghton, Damon	University of North Carolina
Keveson, Benjamin	New York University

Leclair, Timothy
Merrill, Samuel
Parkhurst, Benjamin
Rand, David
Raza, Samreen
Sharma, Deva
Shenk, Heather
Spiess, Krystine
Trobaugh, Derinda

University of Vermont
Washington University
University of Buffalo
Philadelphia College of Osteopathic Medicine
Imperial College – United Kingdom
University of Maryland
University of Vermont
Kansas City Osteopathic Medicine
University of Arkansas

PGY-1

Categorical

Agarwal, Zubin
Arling, Timothy
Burnett, Maria
Cox, Courtney
Dado, Christopher
Degirmenci, Markus
Halevy, Jonathan
Koenen, Brian
Lopez, Max
McEntee, Rachel
Pesta, Lynn
Sandiford, Patrick
Vadlamudi, Charita

Mayo Medical School
University of Maryland
University of Vermont
Eastern Virginia Medical School
Wayne State University
University of Washington
University of Pittsburgh
University of Kansas
Boston University
University of Vermont
Wayne State University
Albany Medical College
University of North Carolina

Preliminary

Love, Robert
Moore, Alistair
Odell, Ian
Pace, Thomas
Patlak, Johann
Pizzini, Mario
Schmidt, Thomas
Semma, Makeda
Wolf, James

University of Michigan (Radiology)
University of Texas at San Antonio (Radiology)
University of Vermont (Dermatology)
University of Vermont (Anesthesia)
University of Vermont (Anesthesia)
University of Washington (Neurology)
University of Toledo (Neurology)
University of Vermont (Radiology)
SUNY – Downstate (Anesthesia)

Chief Medical Residents

Bantle, Anne
Prabhu, William

University of Minnesota
SUNY - Upstate

4. Resident Awards

- **The Harriet P. Dustan, M.D. Award**
Dan Collins, M.D.
- **The Frank L. Babbott, M.D. Memorial Award**
Anne E Bantle, M.D.
- **E.L. Amidon, M.D. Award**
Outstanding Teacher of the Year
Subspecialty Medicine
Joseph Winget, M.D.
- **William Osler, M.D. Award**
Outstanding Teacher of the Year

General Internal Medicine

Mark Pasanen, M.D.

- **Richard E. Bouchard, M.D.**
Excellence in Primary Care Award
Emily Alexandra Glick, M.D.
- **Beyond Medicine Teaching Award**
Ramsey Herrington, M.D.
- **Community of Medicine Award**
Carla Van Hoy

5. Resident presentations at local/national meetings and publications

Anish Amin MD, Nathaniel Thompson MD, Martin Lewinter MD A very anxious woman: A case of pheochromocytoma induced Takosubo cardiomyopathy. Poster Presentation at the Vermont ACP Meeting, October 2011 and the Resident Research Day, May 18, 2012

Anne Bantle MD, W Kemper Alston MD The Kinetics of the Leukocyte Response during Clostridium difficile Infection (CDI) Oral Presentation at the Resident Research Day, May 18, 2012

Dan Collins MD, Rebecca Wilcox MD, Muriel Nathan MD, Richard Zubarik MD. Celiac disease and hypothyroidism

Published in the American Journal of Medicine, March 2012. Oral Presentation at the Vermont ACP Meeting, October 2011 and the Resident Research Day, May 18, 2012.

Emily Glick MD, Pierre Znojkwicz MD, William Hopkins MD, Marc Tischler MD Sinus Venosus ASD: A Unique Hole in the Heart Poster Presentation at the Resident Research Day, May 18, 2012

Carl Henderson MD, Dean Stephens MD, Bonita Libman MD, Ronald Bryant MD Massive Bilateral Shoulder Effusions: A Case of Milwaukee Shoulder Poster Presentation at the Resident Research Day, May 18, 2012

Ching GG, Dadon L, Baker WL, **Hohl PK**, et al. Major Adverse Cardiac Events Among Post Percutaneous Coronary Intervention Patients on Clopidogrel and Proton Pump Inhibitors. **Published in Connecticut Medicine**. April 2012; 76(4): 205-211.

Mitchell Nimmich MD, **Patrick Hohl DO MPH**. Novel Therapy for Unresectable Squamous Cell Carcinoma In a Somali Male with Oculocutaneous Albinism. Poster Presentation, at the Vermont ACP Meeting, October 2011 and the **American College of Physicians National Meeting**. New Orleans, LA, April 2012.

Elizabeth Nimmich MD, **Anne Bantle MD** Community-acquired MRSA epidural abscess and meningitis. Poster Presentation at the Vermont ACP Meeting, October 2011 and the **American College of Physicians National Meeting**, New Orleans, LA, April 2012 and Poster Presentation at the Resident Research Day, May 18, 2012

Glencora Pontee MD, Richard Pinckney MD. Geriatric Screening Questionnaire in Resident Clinic Poster Presentation at the Resident Research Day, May 18, 2012

William Prabhu MD, Jeff Coppage MC, Timothy Fries MD. Acute atraumatic paraparesis in an adult with congenital diastematomyelia. Presented at the Vermont ACP Meeting, October 2011

William Prabhu MD, Prospero Gogo MD A Significant Reduction in Air Kerma with a Simple Radiation Quality Initiative. **Presented at American Heart Association Scientific Sessions**, November 2011 and oral presentation at the Resident Research Day, May 18, 2012

Samreen Raza MD, Paul Slavik MD. A unique presentation of carcinomatous meningoencephalitis. Presented at the Vermont ACP Meeting, October 2011

Deva Sharma MD, William Hopkins, M.D. An Unusual Case of Typical Angina Oral presentation at the **SGIM New England Regional Meeting**, Portland, ME, March 9, 2012

Jadwiga Stanek MD, Justin Stinnett-Donnelly MD. Bilateral proptosis due to orbital lymphomatous infiltration in Waldenstrom's Macroglobulinemia Poster Presentation at the Resident Research Day, May 18, 2012

Justin Stinnett-Donnelly MD, Stephanie Mariorenzi, Abigail Trutor, MBA. Dermatology Clinic time motion study and Monte Carlo Method simulation to optimize clinic efficiency. Presented at the Vermont ACP Meeting, October 2011 and the **American College of Physicians National Meeting**, New Orleans, LA, April 2012.

Mohammed-Ali Babi, MD, Justin Stinnett-Donnelly MD. A first case report of West-Nile viral meningitis with concomitant West-Nile Viral Pancreatitis in the United States. Presented at the Vermont ACP Meeting, October 2011.

Huma Vahora MD, Dina Ismail MD Venous and arterial thrombosis in a patient with active Ulcerative Colitis
Presented at the Maryland ACP Meeting, February 2010 and Poster Presentation at the Resident Research Day, May 18, 2012

6. **Graduating Residents – where are they going/ which fellowships**

Anish Amin	E.M. Resident – Boston University
Anne Bantle	Chief Medical Resident – Applying for Endocrine Fellowship 2013-2014
Dan Collins	G.I. Fellowship – Carolinas Medical Center
Emily Glick	Primary Care – Bristol, Vermont
Carl Henderson	Rheumatology Fellowship – Duke
Elizabeth Nimmich	Hospitalist – FAHC/Applying for ID Fellowship 2013-2014
Mitchell Nimmich	Hospitalist – FAHC
Glencora Pontee	Geriatrics Fellowship – Baylor
William Prabhu	Chief Medical Resident – Applying for Cardiology Fellowship 2013-2014
Jadwiga Stanek	Hospitalist – Cincinnati, Ohio/Applying for Hem/Onc Fellowship 2013-2014
Huma Vahora	Hospitalist – FAHC/Applying for GI Fellowship 2013-2014

7. **MATCH RESULTS 2011-2012**

Categorical

Zubin Agarwal	Mayo Medical School
Timothy Arling	University of Maryland
Mary Burnett	University of Vermont
Courtney Cox	Eastern Virginia Medical School

Christopher Dado
Markus Degirmenci
Jonathan Halevy
Brian Koenen
Max Lopez
Lynn Pesta
Patrick Sandiford
Charita Vadlamudi

Wayne State University
University of Washington
University of Pittsburgh
University of Kansas
Boston University
Wayne State University
Albany Medical College
University of North Carolina

Preliminary

Robert Love
Alistair Moore
Ian Odell
Thomas Pace
Johann Patlak
Mario Pizzini
Thomas Schmidt
Makeda Semma
James Wolf

University of Michigan (Radiology)
University of Texas at San Antonio (Radiology)
University of Vermont (Dermatology)
University of Vermont (Anesthesia)
University of Vermont (Anesthesia)
University of Washington (Neurology)
University of Toledo (Neurology)
University of Vermont (Radiology)
SUNY –Downstate (Anesthesia)

Cardiovascular Division

David J. Schneider, MD, Director

http://www.fletcherallen.org/services/heart_health/specialties/cardiology/



During the past year the Cardiovascular Division has been busy on all 3 fronts, clinical, research and education. Major new initiatives included the initiation of a clinical research program to implant aortic valves with a catheter, so-called TAVI, a clinical research program to prevent stroke by occluding the left atrial appendage in patients with atrial fibrillation as well as major remodeling on McClure 1 to better accommodate noninvasive cardiovascular testing as well as our research and education programs. Our cardiovascular catheterization laboratories and electrophysiology laboratories have experienced significant growth in volume, likely related to the new programs. The reconstruction on McClure 1 allows us improved space to care for patients as well as allowing us to meet regulatory requirements for certification of our echocardiography laboratories. In transition this year, Timothy Christian has left our group seeking to focus his career on health policy development. Nader Elgharib will leave Malone so that he can spend more time performing coronary interventions. In his place, Keon Menzies, one of our former fellows will provide care on a part time basis to patients of this region. Our general cardiology training program continues to evolve to improve the educational content. This year, the general program will implement a night time float system so that fellow participation can be more consistent. One of our new faculty, Kevin Carey won the fellowship training program teacher of the year and another new faculty, Joseph Winget won the faculty teacher of the year award for the Department of Medicine. William Hopkins was selected for the sixth consecutive year by the medical students of the College of Medicine as the recipient of the Course Director of the year. The course he directs, Cardiovascular, Respiratory, and Renal, has been selected again as best course. Dr. Hopkins was also once again the recipient of the best clinical teacher of the year. Key research initiatives and accomplishments including the following: David Schneider was a co-author on a publication in the New England Journal of Medicine describing the use of a direct acting anticoagant in the secondary prevention of heart attack. In the area of cardiovascular intervention, Dr. Dauerman is the national principal investigator for 2 clinical trials --one clinical trial testing the utility of selected prophylactic strategies to prevent acute kidney injury after cardiac catheterization and the second trial defining optimal antiplatelet therapy after coronary stenting. Dr. Peter Spector was awarded a \$1 million gift to support his research in atrial fibrillation. Dr. Lustgarten was an investigator in a recently completed trial comparing a catheter-delivered device that occludes the left atrial appendage. This mechanical therapy is being compared with anticoagulation for the prevention of emboli in patients with atrial fibrillation. In the area of heart failure research, Dr. LeWinter continues to lead the NHLBI Heart Failure Clinical Research Network (Dr. LeWinter is one of 9 principal investigators in the US). In total, the Cardiovascular Division published 72 manuscripts and chapters during the past year.

Faculty

David Schneider, MD
Professor of Medicine
Director, Cardiovascular Division
Research and Clinical Interests

- thrombosis
- platelet biology
- atherosclerosis/ischemic heart disease
- preventive cardiology

Philip Ades, MD
Professor of Medicine
Director, Cardiac Rehabilitation
Research and Clinical Interests

- cardiac Rehabilitation
- preventive cardiology
- ischemic heart disease

Mark Capeless, MD**
Professor of Medicine
Director, Cardiovascular Disease Training Program
Director, Clinic Electrophysiology Training Program

Kevin Carey, MD
Assistant Professor of Medicine
Research and Clinical Interests

- coronary intervention
- cardiac catheterization
- ischemic heart disease

Harold Dauerman, MD**
Professor of Medicine
Director, Cardiovascular Catheterization Laboratory

- coronary intervention
- cardiac catheterization
- peripheral vascular intervention
- ischemic heart disease
- vascular biology

John Fitzgerald, MD
Assistant Professor of Medicine
Research and Clinical Interests

- preventive cardiology

- ischemic heart disease
- valvular heart disease

Prospero Gogo, MD

Associate Professor of Medicine

Associate Director Interventional Cardiology Training Program

Research and Clinical Interests

- cardiac catheterization
- percutaneous coronary intervention
- percutaneous treatment of structural heart disease

William Hopkins, MD**

Associate Professor of Medicine

Director, Pulmonary Hypertension and Adult Congenital Heart Disease Program

Research and Clinical Interests

- pulmonary hypertension
- adult congenital heart disease
- genetic heart disease
- valvular heart disease
- echocardiography

Friederike Keating, MD

Assistant Professor of Medicine

Director, Nuclear Cardiology

Director, Cardiac Care Unit

Research and Clinical Interests

- cardiovascular disease in women
- cardiovascular imaging
- thrombosis
- platelet biology

Robert J. Kelm, Jr., PhD**

Associate Professor of Medicine

Associate Professor of Biochemistry

- Molecular biology of smooth muscle cell differentiation
- Assembly and function of protein-nucleic acid complexes
- Biochemistry of purine-rich element binding proteins
- Mechanisms of dysfunctional cardiovascular remodeling

Martin M. LeWinter, MD**

Professor of Medicine

Director, Heart Failure and Cardiomyopathy Program

Research and Clinical Interests

- cardiomyopathy
- coronary heart disease

- valvular heart disease
- heart failure
- pericardial disease

Robert Lobel, MD**

Assistant Professor of Medicine

Research and Clinical Interests

- clinical cardiac electrophysiology
- catheter ablation
- pacemaker and ICD implantation

Daniel Lustgarten, MD**

Associate Professor of Medicine

- clinical cardiac electrophysiology
- catheter ablation
- pacemaker and ICD implantation

Marcus Meyer, MD**

Assistant Professor of Medicine

Research and Clinical Interests

- cardiac imaging and stress testing
- general cardiology
- heart failure and cardiomyopathy

Burton Sobel, MD**

University Distinguished Professor

Director, Cardiovascular Research Institute

Research and Clinical Interests

- heart disease and diabetes
- fibrinolysis
- ischemic heart disease and myocardial infarction
- cardiovascular pharmacology

Peter Spector, MD**

Professor of Medicine

Director, Cardiac Electrophysiology

Research and Clinical Interests

- catheter ablation
- atrial fibrillation

Jeffrey Spees, PhD

Associate Professor of Medicine

Director, Stem Cell Core Facility

Research and Clinical Interests

- adult stem cell biology
- regenerative medicine

Edward Terrien, MD
Associate Professor of Medicine
Director, Ambulatory Cardiovascular Clinic
Research and Clinical Interests

- coronary intervention
- cardiac catheterization
- peripheral vascular intervention
- ischemic heart disease

Marc Tischler, MD**
Associate Professor of Medicine
Director, Echocardiography Laboratory
Research and Clinical Interests

- magnetic resonance imaging and echocardiography
- valvular heart disease
- ischemic heart disease
- congestive heart failure

Michael Toth, PhD**
Associate Professor of Medicine
Research and Clinical Interests

- skeletal muscle physiology
- heart failure
- aging
- physical disability
- muscle disuse

Anthony Tramontano, MD
Assistant Professor of Medicine
Research and Clinical Interests

- ischemic heart disease
- heart failure and cardiomyopathy
- echocardiography
- cardiac magnetic resonance imaging

Peter Van Buren, MD**
Associate Professor of Medicine
Associate Professor of Molecular Physiology and Biophysics
Associate Director Cardiovascular Training Program
Research and Clinical Interests

- specialist in heart failure
- echocardiography
- nuclear cardiology

Matthew Watkins, MD

Professor of Medicine
Director of Interventional Cardiology
Director of Interventional Cardiology Fellowship Training Program
Research and Clinical Interests

- interventional cardiology
- ischemic heart disease

Joseph Winget, MD**
Associate Professor of Medicine

- clinical cardiac electrophysiology
- catheter ablation
- pacemaker and ICD implantation

Fellows
Daniel Correa de Sa, MD (Electrophysiology)
David Coyle, MD
Cameron Donaldson, MD (Interventional Cardiology)
Mark Lee
Stefan Lischke
Shahab Moossavi
Ellie Mueller, MD (Interventional Cardiology)
Sadi Raza
Zohair Raza
Sukit Ringwala
Ali Saab
Naveen Seecheran
Nathaniel Thompson
Magdalena Zeglin-Sawczuk, MD

Nurse Practitioners and Physician Assistants:
Elizabeth Carney, APRN
Gregory Ehle, PA
Karen Farrell, APRN
Susan Ann Hamlyn-Prescott, APRN
Ann Laramée, APRN
Cheryl McNeil, APRN
Nancy Strong, APRN

Graduate Students, Post-doctoral Fellows, MD PhD Students:

Robert Kelm, Jr., PhD
Amy E. Rumora (PhD student, Biochemistry Program)
Lauren A. Ferris (PhD student, Biochemistry Program)

Martin LeWinter, MD

Donald Selby
Cameron Donaldson
Burton Tanner

Burton Sobel, MD
Rui Yang, CMB Graduate Student

Peter Spector, MD
Phillip Bileau – German medical student doing research thesis
Bryce Benson, Ph.D. candidate, biomedical engineering

Michael J. Toth, Ph.D.
Damien Callahan, Ph.D. – post doctoral
Mark Miller, Ph.D. – K01 Mentee

Leadership in Professional Societies:

Harold Dauerman, MD
Steering Committee, American Heart Assn Annual Meeting—Interventional Cardiology
Programming
Incoming Chairman, Clinical Cardiology Programming AHA Scientific Sessions, 2013
American College of Cardiology 2013 Programming Committee

Martin LeWinter, MD
Member, Graduate College Faculty
Associate Chair, Dept. of Medicine, University of Vermont College of Medicine
Director, Heart Failure and Cardiomyopathy Program, University of Vermont College of
Medicine
Professor of Molecular Physiology and Biophysics (secondary appointment), University of
Vermont College of Medicine

Markus Meyer, MD
Fellow of the American College of Cardiology, 2008-present
Member, American Heart Association, Basic Science Council, 2002-present
Member, Deutsche Gesellschaft für Innere Medizin, 1995-present

Burton Sobel, MD
American Society for Clinical Investigation
Association of American Physicians
Western Society for Clinical Research
American Physiological Society
Fellow, The Royal Society of Medicine, UK
Fellow, American College of Cardiology
Fellow, American College of Physicians

Fellow, American Heart Association Council on Clinical Cardiology
Fellow, American Heart Association Council on Circulation
Fellow, American Heart Association Council on Atherosclerosis, Thrombosis, and Vascular
Vascular Biology
Cardiac Muscle Society
American Heart Association
American Heart Association Council on Basic Science
Society for Experimental Biology and Medicine
Association of University Cardiologists
International Study Group for Research in Cardiac Metabolism
British Cardiac Society, Honorary Member
Cardiac Society of Australia & New Zealand, Honorary Member
International Society for Fibrinolysis and Proteolysis
International Society for Applied Cardiovascular Biology
Society of Cardiovascular Disease in the Elderly, Founding Member (1994)
Association of Professors of Medicine
Association of Cardiovascular Journal Editors (HEART)
Fellow, Molecular Medicine Society
Institutional Representative, American Society for Clinical Investigation
Fellow, American Association for the Advancement of Science
Master, American College of Physicians
American Diabetes Association
Inaugural Fellow, American Heart Association (Council on Basic Cardiovascular
Sciences)
President, Board of Governors, Society for Experimental Biology and Medicine
Premier Membership, American Heart Association / American Stroke Association
Fellow, International Academy of Cardiovascular Sciences
Past President, Society for Experimental Biology and Medicine
Institute of Biomedical Sciences and Technology
Co-Chair, National Diabetes Education Initiative (NDEI)

Editorships and Editorial Boards:

Harold Dauerman, MD

Editorial Board—Journal of the American College of Cardiology
Associate Editor—Journal of Thrombosis and Thrombolysis

William Hopkins, MD

Associate Editor, Coronary Artery Disease

Martin LeWinter, MD

Associate Editor, Coronary Artery Disease
Section Editor, Current Treatment Options in Cardiovascular Medicine
Editor-in-Chief, Clinical Medicine: Cardiology

Associate Editor, Circulation
Book Review Editor, Circulation
Myopericardial Disease Section Editor, UpToDate

Editorial Boards:
Circulation
Heart and Vessels
Experimental and Clinical Cardiology
Current Cardiology Reviews
Heart Failure Reviews

Daniel L. Lustgarten, MD, PhD

Reviewer for:

Circulation: Arrhythmia & Electrophysiology
Circulation
Journal of the American College of Cardiology
Journal of Cardiovascular Electrophysiology
Heart Rhythm
PACE
American Journal of Cardiology
J Int Card EP

Burton Sobel, MD

Circulation
American Journal of Cardiology (published by American College of Cardiology)
American Journal of Cardiology
Coronary Artery Disease, Editor
International Journal of Cardiology
Current Medical Literature - Cardiovascular Medicine
Current Opinion in Cardiology
Fibrinolysis: International Journal on Fibrinolysis and Thrombolysis
Cardiology in the Elderly
Cardiovascular Drug Therapy
Clinical Therapeutics
The Canadian Journal of Cardiology
Clinical Guides to Medical Management, Series Editor
Arteriosclerosis, Thrombosis, and Vascular Biology
Issues in Type 2 Diabetes
Fibrinolysis and Proteolysis
American Journal of Geriatric Cardiology
Diabetes Treatment Today
Clinical Insights in Diabetes
Diabetes Care
Future Cardiology
Current Diabetes Reviews

Cardiology: International Literature Review Service
Journal of Clinical Investigation, Associate Editor
American Journal of Physiology, Associate Editor
Experimental Biology and Medicine

Marc Tischler, MD
Associate Editor, Coronary Artery Disease
Chairman, Faculty Actions Committee

Michael Toth, PhD
Editorial Board: American Journal of Physiology-Endocrinology and Metabolism

Study Sections and Federal Advisory Boards:

Harold Dauerman, MD
NHLBI: Data and Safety Monitoring Board (DSMB) for the Immunomodulatory, Inflammatory,
and Vasoregulatory Properties of Transfused Red Blood Cells as a Function of Storage
Steering Committee, Mission Lifeline/American Heart Association.

Daniel L. Lustgarten, MD, PhD
Medtronic Co-Management Council of Advisors

Martin M. LeWinter, MD
Ad Hoc Grant Reviewer, NHLBI
Self-Evaluation Exam Committee, American Board of Internal Medicine
Chair, Publications and Presentations Committee, NHLBI Heart Failure Research Network
Chair, Research Committee, Heart Failure Society of America

Peter Spector, MD
Physician's Advisory Board – Biosense Webster, Inc., 2003 – present

Michael Toth, PhD
Ad hoc Special Emphasis Panel ZAG1 ZIJ8 PPG review: 11/11
Ad hoc Special Emphasis Panel ZRG1 MOSS-D: 6/12
NIA-C Clinical Aging Study Section

Major Faculty Awards:

Harold L. Dauerman, MD
Tenure

Friederike Keating, MD
Promotion to Associate Professor of Medicine

Prospero Gogo, MD
Promotion to Associate Professor of Medicine

William Hopkins, MD
American Medical Student Association Golden Apple Award, 2012
Foundations Course Director Award, 2012
Outstanding Foundations Course Award, 2012

Burton Sobel, MD
University Distinguished Professor of Medicine

Grants

Harold Dauerman, MD
EXCEL: International Randomized trial of Drug Eluting stents versus CABG for Left Main coronary disease. (Steering Committee) 2010-2012

Grant: Contract under negotiation after FDA approval of protocol
Anticipated publication—New Eng J Med 2012

BOSS Trial: Randomized trial of normal saline versus bicarbonate for patients at high risk of contrast induced kidney injury
(National Co-Principal Investigator) 2010

Grant: \$38,592 to be shared with Dr. Richard Solomon, Nephrology; Anticipated publication—*Circulation* 2012

EDUCATE : Endeavor Drug Eluting Stents: Understanding Care, Antiplatelet Agents and Thrombotic Events (EDUCATE) Trial
(National Co-Principal Investigator) 2010-2011
Grant: \$83,970

Two publications anticipated: 30 day (*Am Heart J*) and 12 month (*Circulation*)
Dauerman HL, Cutlip DC. Rationale, design and 30 day outcomes of the Endeavor Drug Eluting Stents: Understanding Care, Antiplatelet Agents and Thrombotic Events (EDUCATE) Trial. *Am Heart J* 2011, manuscript in preparation.

COREVALVE: Corevalve Transcatheter Aortic Valve Implantation for Severe Aortic Stenosis.
Site Co Principal Investigator
Grant: To be shared with CT Surgery and Anesthesia. Details pending.

SIMPLICITY HTN-3: A randomized trial of renal denervation versus maximal medical therapy for severe hypertension. 2012-2014. Estimated Grant: Metronic, \$100,000

Robert Kelm, Jr., PhD

09GRNT2170060, American Heart Association Founders Affiliate
Regulation of Vascular Remodeling by Pur Repressors Proteins
07/01/2009 – 06/30/2012
\$198,000 total costs

Martin M. LeWinter, MD

PI – “Advanced Glycated End-Products in Human Myocardium”
NIH RO1 HL089944, 9/1/08 – 8/31/13 Current year funding \$485,000

PI, “New England, New York and Quebec Regional Clinical Center”
NIH UO1 HL084899, 10/1/06 – 12/31/11 Current year funding \$250,000

PI – “Ranolazine to Treat Rate-Dependent Incomplete Relaxation: In Vitro Studies in Human Myocardium” 8/1/10-7/31/12
Gilead Pharmaceuticals Current year funding: \$84,000

Daniel L. Lustgarten, MD, PhD

On-Going Clinical Trials:

- DIRECT - Direct His Bundle Pacing to Implement CRT Study
- PREVAIL: Implantable left atrial occluder study
- ADAPTIVE CRT – evaluation of a novel biventricular pacing algorithm to maximize CRT response rate
- Long Term Follow-Up Ablation – Long-Term follow-up of patients undergoing radiofrequency catheter ablation SLS- System Longevity Study
- Long Term Follow-Up ICD/ PCMKR-Long Term Follow up of Patients Undergoing Bi-Ventricular Pacemaker and ICD Implantation
- RESPECT-Reducing Episodes by Septal Pacing Efficacy Confirmation Trial (RESPECT)
- ST Detect- ST Segment Detection Study

Pending Clinical Trials:

- RAID: Study of ranolazine as an antiarrhythmic agent in ICD patients

Marcus Meyer, MD

NIH R21 Grant, 1 R21 HL 094807-01A1 2009-2011

Cardiac and Renal Effects of N-Acetylcysteine – 12/01/09-11/30/2011 – PI 20% effort.

David J. Schneider, MD

PI: David Schneider Agency: Astra Zeneca
Period: 10/01/2010 – 9/30/2011 \$150,000

Burton Sobel, MD

PI: Burton E. Sobel, M.D. Agency: Medtronic, Inc.

Period: 01/01/06 – indefinite \$500,000 annually

PI: Burton E. Sobel, M.D. Agency: Intrexon, Inc.
Period: 11/01/07 – indefinite \$500,000 annually

PI: Burton E. Sobel, M.D. Agency: Takeda Pharmaceuticals, Inc.
Period: 07/07/08 – indefinite \$500,000 annually

Peter Spector, MD

UVM – 026710 “Distinguishing Multi-wavelet Reentry from Focal Drivers with Fibrillatory Conduction” – PI: Spector

UVM – 024417 “Novel Catheter Designs for Atrial Mapping” – PI: Spector

FAHC – 06-266 “Multi-site Simultaneous Mapping of Human Atrial Fibrillation” – PI: Spector

FAHC – “Validation of Virtual Electrograms Using Transmembrane Voltage” – PI: Spector

Jeffrey Spees PhD

R01 HL085210 NIH/NHLBI (Spees) 1/1/2008– 12/31/2012
Factors Responsible for Cardiac Preservation Conferred by Adult Marrow Stem Cells.

UVM Neuroscience COBRE pilot project 7/1/2012-6/30/2013

UVM Department of Medicine Competitive BSP 7/1/2012-6/30/2013

R01 NS073815 NIH/NINDS/NIGMS (Spees) 1/1/2013-12/31/2016
Control of reactive astrocytes by Notch1 and Amyloid Precursor Protein.

Michael Toth, PhD

Individual Research Project Grant 5/01/06 to 4/30/12 (\$1,924,695)
NIH R01 HL-077418 PI: Toth (no-cost extension)
Title: Skeletal Muscle Contractile Dysfunction in Heart Failure

Reproductive Medicine Network Grant 8/24/07 to 8/23/12 (\$1,613,342)
NIH U10 HD055944-01 PI: Casson
Role on project: Co-I

Individual Research Project Grant 7/01/10 to 6/30/15 (\$2,023,353)
NIH R01 AG-033547 PI: Toth
Title: Muscle Disuse and Contractile Dysfunction in the Elderly

Peter Van Buren, MD

P01 HL059408-11 Warshaw (PI) 2/1/10-1/31/15
NIH/NHLBI

Cardiac Myosin Binding Protein-C: Structure, Function and Regulation.

Project 2 Warshaw (PI) cMyBP-C: Molecular Mechanisms of Actomyosin Modulation.

This project focuses on the molecular mechanics of cMyBP-C as it modulates power generation by the cardiac actomyosin motor.

Role: Co-Investigator

UO1 HL 084899

LeWinter (PI) 7/1/07- 6/30/13

NIH/NHLBI

New England, New York and Quebec Regional Clinical Center of the National Heart Failure Research Network.

The major goals of this grant are to nationally coordinate clinical heart failure trials through the NIH Heart Failure Network.

Role: Co-Investigator

Publications

Ades PA, Savage PD, Lischke S, Toth MJ, Harvey-Berino J, Bunn JY, Ludlow M, Schneider DJ. Weight loss and exercise improves flow-mediated dilatation in patients with coronary heart disease. *Chest* 140: 1420-1427, 2011 [PMC in progress]

Ahmed B, Dauerman HL, Piper WD, Robb JF, Goldberg D, Boss RA Jr., Phillips WJ, Fedele F, Ryan TJ Jr., Butzel D, Silver MT, Malenka DJ. Recent changes in practice of elective PCI for stable angina. *Circulation: Quality and Outcomes* 2011; 4: 300-305.

Ahmed B, Dauerman HL. Invited Review: Women, Bleeding and Coronary Intervention. *Circulation* 2012, under review

Albersen M, Kendirci M, Van der Aa F, Hellstrom WJG, Lue TF, Spees JL. Multipotent stromal cell therapy for cavernous nerve injury-induced erectile dysfunction. *J Sex Med.* 9:385-403 (2012).

Angiolillo DJ, Schneider DJ, Bhatt DL, French WJ, Price MJ, Saucedo JF, Shaburishvili T, Huber K, Prats J, Liu T, Harrington RA, Becker RC. Pharmacodynamic Effects of Cangrelor and Clopidogrel: The Platelet Function Substudy from the Cangrelor Versus Standard Therapy to Achieve Optimal Management of Platelet Inhibition (CHAMPION) Trials. *J Thromb Thrombolysis* 2012;34(1):44-55

Asakura T, Iwaki S, Okada H, Sobel BE, Fujii S: Posttranscriptional regulation of plasminogen activator inhibitor type-1 by cAMP in HepG2 liver cells. *J. Biochem.* 150:687-694, 2011 (PMID: 21878476).

Audelin MC, Savage PD, Toth MJ, Harvey-Berino J, Schneider DJ, Bunn JY, Ludlow M, Ades PA. Change of energy expenditure from physical activity is the most powerful determinant of improved insulin sensitivity in overweight patients with coronary disease participating in an intensive lifestyle modification program. *Metab Clin Exp* 61: 672-679, 2012.

Bakondi B, Shimada IS, Peterson BM, Spees JL. SDF-1 secreted by human CD133-derived MSCs promotes neural progenitor cell survival through CXCR7. *Stem Cells Dev.* 20:1021-1029 (2011).

Bart BA, Goldsmith SR, Lee KL, Redfield MM, Felker GM, O'Connor CM, Chen HH, Rouleau JL, Givertz MM, Semigran MJ, Mann D, Deswal A, Bull DA, LeWinter MM, Braunwald E. Cardiorenal rescue study in acute decompensated heart failure: rationale Design of CARRESS-HF. *J Card Fail* 2012;18:176-82

Beesley RD, Palmer BM, Casson PR, Toth MJ. Effect of testosterone on cardiomyocyte contractile function and calcium homeostasis in adult female rats. *Exp Physiol* (in press).

Brown JR, McCullough PA, Splaine ME, Davies L, Ross CS, Dauerman HL, Robb JF, Boss R, Goldberg DJ, Fedele FA, Kellett MA, Phillips WJ, Ver Lee PN, Nelson EC, Mackenzie TA, O'Connor GT, Sarnak MJ, Malenka DJ. How do centres begin the process to prevent contrast-induced acute kidney injury: a report from a new regional collaborative. [BMJ Qual Saf.](#) 2011 Sep 2. [Epub ahead of print]

Correa de Sa D, Thompson N, Stinnitt-Donnelly J, Znojkwicz P, Habel N, Müller JG, Bates J, Buzas JS, Spector PS. Electrogram Fractionation: The Relationship between Spatio-Temporal Variation in Tissue Excitation and Electrode Spatial Resolution. *Cir Arrhythm Electrophysiol* 2011. Published online October 9, 2011 CIRCEP.111.965145.

Correa de Sa DD, Hardin NJ, Crespo EM, Nicholas KB, Lustgarten DL. Autopsy Analysis of the Implantation Site of a Permanent Selective Direct His Bundle Pacing Lead. *Circ Arrhythm Electrophysiol* 2012 5:244-246.

Correa de Sa DD, Lustgarten DL. Electrophysiology for Clinicians. *Circulation* 2012;125:e939-e940.

Dauerman HL and Sobel BE. Towards a comprehensive approach to pharmacoinvasive therapy for patients with ST elevation myocardial infarction. *Journal of Thrombosis and Thrombolysis* May, 2012; online, pages to be determined.

Dauerman HL, Rao SV, Resnic F, Applegate RG. Bleeding avoidance strategies: consensus and controversy. *J Am Coll Cardiol* 2011;58:1-10.

Dauerman HL. An Overview of the ACC-AHA PCI Guidelines in CathSap4. Editor D. Moliterno American Heart Association Publications, 2012

Dauerman HL. Inflammation and Arterial Injury. In 1001 Questions: An Interventional Cardiology Board Review. Lippincott, Williams and Wilkins, New York, 2011.

Dauerman HL. Reasonable incomplete revascularization. *Circulation* 2011; 123:2337-2340.

Dauerman HL. The magic of disappearing stents. *J Am Coll Cardiology* 2011; 58: 1589-1591.

David JJ, Subramanian SV, Zhang A, Willis WL, Kelm RJ Jr, Leier CV, Strauch AR. (2012) Y-box binding protein-1 implicated in translational control of fetal myocardial gene expression after cardiac transplant. *Exp Biol Med* 237, 593-607. PMID: 22619371

Donaldson C., Dauerman HL. Acute myocardial infarction in *Critical Care Secrets*, 5th edition (editor. P. Parsons and Wiener-Kronish) , Elsevier, 2011.

Felker GM, Lee KL, Bull DA, MD, Redfield MM, Stevenson LW, Goldsmith SW, LeWinter MM, Deswal A, Rouleau JL, MD, Ofili EO, Anstrom KJ, Hernandez AF, McNulty SE, Velazquez EJ, Kfoury AG, Chen HH, Givertz MM, Semigran MJ, Bart BA, Mascette AM, Braunwald E, O'Connor CM, For the NHLBI Heart Failure Clinical Research Network. A randomized controlled trial of diuretic strategies in patients with acute decompensated heart failure. *New Eng J Med* 364:797-805, 2011.

French CJ, Zaman AKMT, McElroy-Yaggy KL, Neimane DK, Sobel BE: Absence of altered autophagy after myocardial ischemia in diabetic compared with non-diabetic mice. *Coron. Artery Dis.* 22:479-483, 2011.

Granada J, Price M, French P, Steinhub S, Cutlip DE, Smyth SS, Becker RC and Dauerman, HL. Platelet mediated thrombosis and drug eluting stents. *Circulation: Cardiovascular Interventions* 2011; 4: 629-637.

Gurha P, Abreu-Goodger C, Wang T, Ramirez MO, Drummond AL, van Dongen S, Chen Y, Bartonicek N, Enright AJ, Lee B, Kelm RJ Jr, Reddy AK, Taffet GE, Bradley A, Wehrens XH, Entman ML, Rodriguez A. (2012) Targeted deletion of microRNA-22 promotes stress induced cardiac dilation and contractile dysfunction. *Circulation* 125, 2751-2761. PMID: 22570371

Habel N, Müller JG, Znojkwicz P, Thompson N, Calame J, Calame S, Noori A, Gallo A, Lustgarten DL, Sobel BE, Spector PS. The Impact of Pharmacologic Sympathetic and Parasympathetic Blockade on Atrial Electrogram Characteristics in Patients with Atrial Fibrillation. *Pacing Clin Electrophysiol* Sept 2011.

Hale SA, Sobel B, Benvenuto A, Schonberg A, Badger GJ, Bernstein IM: Coagulation and fibrinolytic system protein profiles in women with normal pregnancies and pregnancies complicated by hypertension. *Preg. Hyper.: Int. J. Women. Card. Health*, 2:152-157, 2012.

Hefer D, Yi T, Selby DE, Fishbaugher DE, Tremble SM, Begin KJ, Gogo P, LeWinter MM, Meyer M, Palmer PM, VanBuren P. Erythropoietin induces positive inotropic and lusitropic effects in murine and human myocardium. *J Mol Cell Cardiol.* 2012;52:256-63. [PMC Journal - In Process]

Hopkins WE. Right ventricular performance in congenital heart disease: A physiologic and pathophysiologic perspective. *Cardiol Clin* 2012; 30:205-218.

Iso Y, Sato T, Yamaya S, Poole CN, Isoyama K-I, Mimura M, Koba S, Kobayashi Y, Takeyama Y, Spees JL, Suzuki H. Distinct mobilization of circulating CD271⁺ mesenchymal progenitors from hematopoietic progenitors during aging and after myocardial infarction. *Stem Cells Trans. Med.*, In press (2012).

Keller JL, Casson PR, Toth MJ. Relationship of androgens to body composition, energy and substrate metabolism and aerobic capacity in healthy, young women. *Steroids* 76: 1247-1251, 2011. [PMC in progress]

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Lam PH, Anderson III PR, Ahmed B, Sobel BE, VanBuren P, Schneider DJ. Attenuation of cell mediated immunity and positive ventricular remodeling after ST elevation myocardial infarction. *Coron Artery Dis.* 2011;22:311-6.

LeWinter, MM, Tischler MD. Pericardial Disease, In Braunwald's Heart Disease: A Textbook of Cardiovascular Medicine, 89th Edition, Eds. P. Libby et al, Saunders, Philadelphia, pgs 1651-1671.

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Nakayama N, Nakamura T, Okada H, Iwaki S, Sobel BE, Fujii S: Modulators of induction of plasminogen activator inhibitor type-1 in HepG2 cells by transforming growth factor- β . *Coron. Artery Dis.* 22:468-478, 2011.

Redfield MM, Borlaug BA, Lewis GD, Mohammed SF, Semigran MJ, LeWinter MM, Deswal A, Hernandez AF, Lee KL, Braunwald E. Phosphodiesterase-5 inhibition in diastolic heart failure: Will second messenger augmentation succeed where neurohumoral antagonism has failed? *Circulation: Heart Failure* (in press).

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Division of Clinical Pharmacology

Richard Galbraith, MD, Acting Director

<http://www.med.uvm.edu/medicine/pharmacology>



The Clinical Pharmacology Division comprises faculty members who are primarily interested in various research agendas within the general field of Clinical Pharmacology. Areas of interest include muscle atrophy, oxidative stress, appetite regulation, nutrition, and amino acid metabolism.

Dr. Galbraith's long-term interests concern the clinical management and research issues relevant to the porphyrias. He also has worked extensively in the clinical pharmacology of metal-substituted porphyrins in the treatment of jaundice, porphyria and obesity.

Dr. Dwight Matthews leads a group of researchers who have used stable isotopically labeled tracers and kinetic models to answer questions of human physiology and biochemistry. The research program of his group in chemistry focuses on developing new methods and techniques of mass spectrometry to measure stable isotopes in biological molecules and mathematical and computer models to interpret the stable isotope tracer kinetic data obtained from biological samples.

Faculty

Richard Galbraith, MD

Professor of Medicine

Acting Director, Clinical Pharmacology

- Internal Medicine
- Endocrinology
- Metabolism

Dwight Matthews, PhD

Professor of Medicine and Chemistry

Chair, Department of Chemistry, College of Arts and Sciences

Leadership in Professional Societies:

Galbraith:

Member, Board of Directors of the Association for the Accreditation of Human Research Protection Programs.

Editorships and Editorial Boards:

Galbraith:

Ad Hoc Reviewer, Pharmacology, Hepatology, European Journal of Clinical Investigation, Pediatrics, Pediatric Research, Journal of Coronary Artery Disease

Reviewer, Clinical Therapeutics and Medical Economics Publications

Reviewer, The American Journal of Clinical Nutrition

Matthews:

Editorial Board, Current Opinion in Clinical Nutrition and Metabolic Care

Section Editor, *Assessment of Nutritional Status and Analytical Methods*, Current Opinion in Clinical Nutrition and Metabolic Care

Advisory Board, Sport Sciences for Health

Study Sections and Federal Advisory Boards:

Galbraith:

Member, NIH Director's Pioneer Awards Review Committee

Chair, Clinical Research Subcommittee of FASEB Science Policy Committee

Matthews:

Chair, NIH Special Emphasis Panel/Bioengineering Sciences & Technologies RFA: Technology Development for Metabolomics, ZRG1 BST-50

Special Emphasis Panel/NIGMS Research Centers in Trauma, Burn & Peri-operative Injury, ZGM1 PPBC-5

Grants – list all active by faculty member, PI

Matthews:

- | | |
|----------------|---|
| 9/1/07-7/31/12 | NIH grant P01 HL046703
Surface Dependent Reactions in Thrombosis and Thrombolysis
P.I.: Kenneth G. Mann, Ph.D.
Co-investigator on two sub-projects of this program project: D.E. Matthews, Ph.D.
TDC: \$6,526,204 |
| 8/5/08-4/30/12 | NIH grant R01 HL085646
Dual Oxidases in Airway Epithelial Repair and Remodeling
P.I.: Albert van der Vliet, Ph.D.
TDC: \$1,250,000 |
| 4/1/10-3/31/14 | NIH grant R01 DK082803
Palmitate Metabolism and Insulin Resistance
P.I.: Craig Lawrence Kien, M.D., Ph.D. |

TDC: \$2,186,329

7/20/11 - 6/30/16 NIH grant P20 RR020165
Vermont Immunobiology/Infectious Diseases Center
P.I.: Ralph C. Budd, M.D.
TDC: \$7,381,759
Proteomics Core
P.I.: D.E. Matthews, Ph.D.
TDC: \$500,000

9/15/11 - 8/31/14 NSF grant CHE-1126265
MRI: Acquisition of a 500 MHz NMR Spectrometer for Chemistry at the
Univ of Vermont
P.I.: DE Matthews, Ph.D.
TDC: \$535,000

Publications – peer reviewed, chapters, etc. (not abstracts)

Hobin JA, Deschamps AM, Bockman R, Cohen S, Dechow P, Eng C, Galey W, Morris M, Prabhakar S, Raj U, Rubenstein P, Smith JA, Stover P, Sung N, Talman W and Galbraith R. Engaging basic scientists in translational research identifying opportunities, overcoming obstacles. *Journal of Translational Medicine*, Apr, 13:10(1):72, 2012.

Hobin, J.A. and Galbraith, R.A. Engaging basic scientists in translational research. *The FASEB Journal*, Jun;26(6):2227-2230, 2012.

Spiess PC, Deng B, Hondal RJ, Matthews DE, van der Vliet A. Proteomic profiling of acrolein adducts in human lung epithelial cells. *Journal of Proteomics* 74:2380-2394, 2011.

Division of Dermatology

Glenn Goldman, MD, Director

<http://www.med.uvm.edu/medicine/Dermatology>



Dermatology at Fletcher Allen Health Care is a division of Medicine with three general medical dermatologists, four surgical dermatologists, and four experienced physician assistants. We provide basic dermatology care to the community as well as highly-specialized care with particular strengths in the treatment of psoriasis, cutaneous lupus, dermatomyositis, cutaneous lymphoma, and all forms of skin cancer including melanoma. We also provide cosmetic services for lasers and fillers in an ever growing area of dermatology. In order to meet increasing demand, in 2012 we opened a second clinical area in the EP-3 wing of the ambulatory care facility. Currently Vermont has a substantial shortage of dermatologists, and we aim to diminish the waiting period for appropriate care. For 2013 we have hired Col. Joseph Pierson, an academic military dermatologist who will begin as an Assistant Professor and will practice general dermatology. This year we will have approximately 25,000 patient visits producing about 53,000 wRVU.

This year we have added a volunteer clinic at the Community Health Center. Each month an attending physician supervises the residents and Physician Assistants in the provision of free care to patients at the Community Health Center in Burlington. This provides a service to the community and is also a superior experience for our residents and fellow, who are in this manner able to participate in the care of an underserved population.

Two of our attendings hold national leadership positions. Dr. Kathryn Schwarzenberger is a newly-elected member of the Board of the American Academy of Dermatology and she is a test writing committee member of the American Board of Dermatology. Dr. Glenn Goldman just completed a term as a member of the Board of the American College of Mohs Surgery and also serves as the American Medical Association RUC advisor to the ACMS. Dr. Goldman, his mentor, Dr. Leonard Dzubow, and Dr. Christopher Yelverton (video editor) have just published a detailed text of facial reconstruction (Facial Flap Surgery – McGraw Hill) with over 1000 clinical operative photos and 27 videos.

Several of our attending physicians are regular participants in Fletcher Allen administrative processes. Drs. Goldman and Schwarzenberger are involved in multiple committees at the medical center. Dr. Julie Lin is intimately involved with the development of the EMR through her participation with PRISM, where she is the PRISM representative from the Department of Medicine.

Our residency and procedural dermatology fellowship programs train exceptionally qualified physicians, and we have recently received a five-year ACGME residency review cycle with no citations. We have increased our complement of residents to two per year starting 7/1/2011. Our residents and fellows have an excellent employment track record. Five of our graduates are in private practice in general dermatology. Three have gone on to complete fellowships in procedural dermatology. These three all went on to take jobs in academic medicine, and Dr. Todd Holmes remains on faculty at Fletcher Allen Health Care, and Dr. Melissa Pugliano-Mauro has started a new Mohs surgery unit in conjunction with the University of Pittsburgh. We frequently host residents from other institutions for rotations in subspecialty areas of dermatology, especially in surgery, in which Dr. Goldman is a preceptor for the American Society of Dermatologic Surgery.

This year the dermatologic surgery fellow and a UVM medical student are engaged in an exciting study of rotation flap and transposition flap design variations. These porcine experiments will provide valuable data for the clinical practice of dermatologic surgery, and will confirm or contradict accepted flap design dogmas which have been espoused, but never proven in clinical practice. This work is being supported by a private donation to the residents and medical students.

On average we receive over 250 applications for our residency spots annually, and approximately 40 applications are received for our single procedural dermatology fellowship slot. Residents and fellows present regularly at our local and regional meetings, and in the last three years the procedural dermatology fellows have been first author on two major studies published in the dermatologic surgery literature. This year our residents were involved in several local skin screenings and have also been integral participants in our new volunteer free clinic at the Community Health Center.

Each month we host several third or fourth year students for rotations in dermatology. On average one or two University of Vermont medical students per year choose to enter the field of dermatology. Due to the tremendously-competitive nature of dermatology as a specialty, each student requires careful guidance and assistance in procuring a residency. For the last ten years, every UVM student who has pursued dermatology as a career has been able to match for a residency. Sometimes this has required the completion of a research fellowship following medical school, but our faculty mentors have been able to work with students who did not match directly to find a way to achieve their career goals.

Dermatology at Fletcher Allen Health Care / The University of Vermont is well-known for its continuing medical education. We hold a high-level dermatology conference each year which draws participants from around the country. In addition, we hold a local dermatology conference for the didactic and hands-on instruction of primary care physicians. Both are well-attended, and attendance and response to the latter conference has been overwhelming.

Faculty

Glenn Goldman, MD

Professor of Medicine

Director, Dermatology Division

Director, Procedural Dermatology Program

RUC Representative, American College Of Mohs Surgery

- Mohs Surgery and Reconstructive Surgery
- Management of high-risk skin cancers
- Cosmetic Dermatology
- Procedural Dermatology Education
- National Health Care Policy
- Continuing Medical Education

Kathy Schwarzenberger, MD

Professor of Medicine

Residency Director, Dermatology Division

Board of Directors, American Academy of Dermatology

- Connective Tissue Disease
- Dermatology Education
- Health Care Policy
- Clinical Operations
- Continuing Medical Education

Jamie Alpert, MD

Associate Professor of Medicine

Chair, Part-Time Faculty Actions Committee

- General Medical Dermatology

Todd Holmes, MD

Assistant Professor of Medicine

- Surgical Dermatology
- Mohs and Reconstructive Surgery
- Resident Education

Julie Lin, MD

Assistant Professor of Medicine

Department of Medicine PRISM Representative

- Cutaneous Lymphoma
- Electronic Medical Records
- Bioinformatics

Christine Weinberger, MD

Assistant Professor of Medicine

- Mohs Surgery and Reconstruction
- Mohs Surgery for Melanoma

Christopher Yelverton, MD, MBA

Assistant Professor of Medicine

- Mohs Surgery and Reconstruction
- General Medical Dermatology
- Cosmetic Dermatology
- Residency Education
-

Fellow

Vanessa Lichon, MD

Procedural Dermatology Fellow 2011-2012

Residents

Laura McGevna, MD	Chief resident
Ryan Rogers, MD	PGY-3
Elizabeth Zeek, MD	PGY-3
Kendra Lesiak, MD	PGY-2
Andrew Tegeder	PGY-2

Physician Assistants:

Deb Roseman, PA:

Deb has been with us for ten years. She has decades of experience as a dermatology physician assistant and has a following of thousands of patients for whom she provides care.

Anne Klein, PA

Anne is a surgical PA, and works with the dermatologic surgeons daily. She trained for years with a plastic surgeon and has exceptional procedural skills. A testament to her skill is that physicians refer patients to her regularly for surgical excisions.

Rich Callahan, PA

A newer member to our staff, Rich is experienced in dermatology and provides both medical and minor surgical dermatology care. He brings with him many patients from his former practice.

Christine Sowle, PA

Christine trained with us and stayed on as a dermatology PA. She has been working with us for almost ten years and has a large following of thousands of patients who see her on a regular basis.

Leadership in Professional Societies

Boards of Directors

Dr. Schwarzenberger – American Academy of Dermatology

Dr. Schwarzenberger – Test Writing Committee of the American Board of Dermatology

Editorships and Editorial Boards:

Dr. Schwarzenberger- Editor of Dermatology MKSAP 15 & 16

Editorial Board of Archives of Dermatology

Editorial Board of Journal of the American Academy of Dermatology

Study Sections and Federal Advisory Boards:

American Medical Association

Dr. Goldman – RUC representative for the American College of Mohs Surgery

Publications – Books, Peer reviewed, chapters,

Bucci M, **Goldman GD**. Cryostat with distal finger amputation repaired with a composite graft. Dermatol Surg 2012.

Goldman GD, Dzubow LM, **Yelverton CB**. Facial Flap Surgery. McGraw Hill;New York;2013.

Division of Endocrinology

Jack Leahy, MD, Co-Director

Joel Schnure, MD, Co-Director

<http://www.med.uvm.edu/medicine/endocrinology>



The Division of Endocrinology, Diabetes and Metabolism has 5 physicians, 3 nurse practitioners, 3 certified diabetes educators (CDEs).

The Division performs consultative and ongoing endocrine care for Vermonters and upstate New Yorkers. The largest portion of our clinical enterprise is delivering diabetes care to both in-patients and out-patients. Our mission is to combine cutting edge research in basic metabolism and cell biology and physiology while establishing an exemplary center for clinically excellent patient care. Our goal is to strive to deliver seamless system-wide diabetes care.



In this regard, we have developed algorithms for intensive in-patient management and recently helped develop a clinical pathway for use in the Medical Home, in conjunction with PCIM and Family Care. These pathways are now being incorporated into a model for the integration of

specialty and primary care for chronic diseases, diabetes being the initial focus. These roadmaps will allow for state of the art diabetes management to reach more patients with diabetes at FAHC and in our general catchment area.

We also provide more intensified regimens for the growing cohort of individuals on insulin infusion pumps. Our diabetes care team offers classes to individuals, families and groups to assist in achieving targeted glycemic control for all patients with diabetes. The Vermont Regional Diabetes Center is an American Diabetes Association accredited diabetes education program.

Four of our attendings participate in thyroid ultrasonography and have developed a thyroid fine needle aspiration (FNA) biopsy clinic. Together with the cytopathology faculty and trainees, this service has had overwhelming success in the early diagnosis and treatment of thyroid cancer

Other areas of clinical interest include metabolic bone disease and osteoporosis, hypogonadism, as well as pituitary and adrenal disease. Overall, the clinic is flourishing in our new Tilley Drive setting with 12,000 visits per year – fourth in the Department of Medicine. We are currently recruiting a new faculty member to augment our clinical and research capabilities.

The Division's research efforts have focused on beta cell function, intracellular metabolism and life cycle. Dr Leahy's work in this area is world renown. We are also involved in clinical research and clinical trials involving incretin biology, new product development, hypertension, obesity, insulin resistance and cardiovascular outcomes.

Our education mission continues to expand. There are two Fellows in Endocrinology. We have had approximately 30 students rotating through the service and the number of residents electing endocrinology is on the increase.

Faculty

Jack Leahy, MD

Professor of Medicine

Co-Director, Endocrinology, Diabetes and Metabolism Division

- Diabetes mellitus
- Pathogenesis of type 2 diabetes mellitus
- Islet beta-cell biology and pathophysiology

Joel Schnure, MD

Associate Professor of Medicine

Co-Director, Endocrinology, Diabetes and Metabolism Division

Member, DOM Operations and Efficiency Committee

Lead, Diabetes Chronic Care Initiative

Lead, Task Force on In-Patient Diabetes Education

Member, In-Patient Diabetes Initiative

- Diabetes care, type 1 & 2
- Diabetes in pregnancy
- Thyroid disease
- Pituitary disease

Matthew P Gilbert, DO, MPH

Assistant Professor of Medicine

- Diabetes mellitus
- Thyroid disorders
- Thyroid cancer
- Male hypogonadism

Dhananjay Gupta, PhD

Research Assistant Professor

- Pathogenesis of type 2 diabetes and islet biology
- Epigenetic regulation of adaptive islet beta cell response with changing metabolic milieu
-

Thomas Jetton, PhD

Associate Professor of Medicine

- Regulation of glucose homeostasis
- β -cell biology
- Nutrient and neural regulation of β -cell growth

Annis Marney, MD, MSCI

Assistant Professor of Medicine

Associate Director, Endocrinology Fellowship Program
Director, Medical Student and Residency Endocrine Elective
Chair, Resident Research and Scholarly Activity Committee
Patient Care and Operations Committee
Clinical Research Center Scientific Advisory Committee

- General endocrinology

Muriel Nathan, MD, PhD

Professor of Medicine

- Diabetes, including use of insulin pumps
- Thyroid cancer, nodules and disorders
- Pituitary tumors and dysfunction
- Adrenal disorders
- Inpatient improvement projects funded by the James M. Jeffords Institute for Quality ~
SQ and IV insulin forms, insulin pump, DKA

Fellows

Vanessa Escobar Barboza, MD (F5; will complete her fellowship August 31, 2012)

Yew-Xin Teh, MD (F5 started July 1, 2012)

Madiha Alvi, MD (F4 started July 1, 2012)

Nurse Practitioners and Certified Diabetes Educators

Margaret Costello, NP

Maureen Dwyer, NP

Ann Gotham, NP

Kristen Bolton, CDE

Rhonda Lapidow, CDE

Linda Tilton, CDE

Graduate Students, Post-doctoral Fellows, MD PhD Students

William Tharp (MD, PhD Student)

Leadership in Professional Societies

Dhananjay Gupta

- Ad hoc reviewer: Journal of Nutritional Biochemistry

Thomas Jetton

- Organizer and Senior Member: Northeast Islet Club (hosted Spring Meeting, UVM)
- Symposium Moderator and Speaker: American Diabetes Association Annual Meeting

Jack Leahy

- Councilor for Society of Experimental Biology and Medicine

Editorships and Editorial Boards

Thomas Jetton

- Reviewer: Diabetes, Endocrinology, PNAS, Metabolism, Diabetologia, American Journal of Physiology, PLoSOne

Jack Leahy

- Insulin Therapy, Editors Jack L Leahy and William T Cefalu, Endocrinology and Metabolism Clinics of North America, Volume 41, Number 1, 2012
- Editorial Board, Journal of Diabetes and Its Complications

Joel J. Schnure

- Editorial Board, Coronary Artery Disease

Study Sections and Federal Advisory Boards

Dhananjay Gupta

- P30 Grant Review Panel Member, Indiana Diabetes Research Center, Indiana-Purdue University

Thomas Jetton

- NIH/MMPC MicroMouse Grant Review Panel Member
- Ad Hoc Member, Juvenile Diabetes Research Foundation International, Generating Beta Cell Source Grants Study Section

Jack Leahy

- Grant Review Panel, American Diabetes Association

Major Faculty Awards

Dhananjay Gupta

- Internal Grant Program Award (College of Medicine and Department of Medicine)

Grants

Dhananjay Gupta

Role of Peroxisome Proliferator Activated-receptor gamma (PPAR gamma) signaling in Adaptive Islet Beta Cell Growth and Function (PI)
2011-2012
College of Medicine and Department of Medicine

Thomas Jetton

Effects of Aliskiren on Adipocyte Proliferation and Differentiation (PI)

04/11- 05/12

Novartis Pharmaceuticals

PPAR γ and Uterine Vascular Dysfunction in Diabetic Pregnancy (Gokina, PI)

9/1/2008-7/30/12

Jetton, Co-I (5% effort)

NIH/NHLBI R01 HL088245

Beta-cell PPAR-gamma Signaling in Fat Fed Mice (Leahy, PI)

1/1/10-12/31/12

Jetton, Co-I (16% effort)

ADA Research Grant

Additive Effects of TZD and DPP-4 inhibitor therapy on Beta-cell mass and function (Leahy, PI)

9/1/10-2/25/13

Jetton, Co-I (22.5% effort)

Takeda Pharmaceuticals Research Grant

β -cell Compensation in Partial Pancreatectomy Mice (Leahy, PI)

9/1/10 – 8/31/14

Jetton, Co-I (24% effort)

NIH/NIDDK R01 DK56818-10

Jack Leahy

B-cell compensation in partial pancreatectomy mice (PI)

9/1/10-8/31/14

NIH/NIDDK R01 DK56818-10

Beta-cell PPAR-gamma signaling in fat fed mice (PI)

1/1/10-12/31/12

American Diabetes Association Research Grant

Additive Effects of TZD and DPP-4 inhibitor therapy on beta-cell mass and function (PI)

9/1/10-2/25/13

Takeda Pharmaceuticals Research Grant

Annis Marney

Effect of Sitagliptin on short-term metabolic dysregulation of oral glucocorticoid therapy (PI)

08/11-07/13

Merck (Investigator Initiated Study)

Muriel Nathan

A Quality Initiative to Improve Glycemic Control in Diabetic and Non-diabetic Patients after Lower Extremity Bypass (Bertges, PI)

2012-2015

Nathan, Co-I

University of Vermont Medical Group Grant

Detection and Treatment of Celiac Disease in Patients with Hypothyroidism (Zubarik, PI)

4/12/12-4/12/14

Nathan, Co-I

Department of Medicine

Publications

Bolli GB, Deeb LC, Garg SK, Leahy JL, Mazze RS, Owens DR, Riddle MC, Southerland P, Strock ES. International Forum for the Advancement of Diabetes Research and Care, April 29-30, 2011, Athens, Greece. *Diabetes Technol Ther* 13:967-979 2011

DeFronzo RA, Mehta RJ, Schnure JJ. Pleiotropic effects of the thiazolidinediones: Implications for treatment of type 2 diabetes. *Hosp Pract* 2012. In press

Fonseca V, Gill J, Zhou R, Leahy J. An analysis of early insulin glargine added to metformin with or without sulfonylurea: Impact on glycemic control and hypoglycemia. *Diabetes Obes Metab* 13:814-822 2011

Gilbert MP, Schneider A. Management of hyperglycemia in the critically ill. In: *Critical Care Secrets, 5th Edition*. PE Parsons and JP Weiner-Kronish, Eds. Hanley & Belfus, Philadelphia, PA. 2012. In press

Leahy JL. Insulin therapy in type 2 diabetes mellitus. *Endocrinol Metab Clin North Am* 41:119-144 2012

Marney AM. Thyroid disease in the intensive care unit In: *Critical Care Secrets, 5th Edition*. PE Parsons and JP Weiner-Kronish, Eds. Hanley & Belfus, Philadelphia, PA. In press 2012

Pratley RE, Gilbert M. Clinical management of elderly patients with type 2 diabetes mellitus. *Postgrad Med* 1:1-11 2012

Schnure JJ, Leahy JL. Diabetic ketoacidosis and hyperosmolar hyperglycemic state In: *Critical Care Secrets, 5th Edition*. PE Parsons and JP Weiner-Kronish, Eds. Hanley & Belfus, Philadelphia, PA. In press 2012

Division of Gastroenterology and Hepatology

James Vecchio, MD, Director

<http://www.med.uvm.edu/medicine/gastroenterology>



The Gastroenterology and Hepatology Unit at the University of Vermont College of Medicine/FAHC has eight full-time Faculty members, three GI Fellows and two Ph.D.'s. Clinical care, teaching, and both basic science and clinical research are all major elements of the GI Unit.

Cutting edge clinical care and state of the art endoscopy are just two components of the Faculty's responsibility. A newly constructed modern 8-room Endoscopy Center is equipped with the latest HD endoscopes, to allow the performance of over 12,000 procedures per year. All aspects of diagnostic and therapeutic GI endoscopy are performed. Advanced procedures including EUS (endoscopic ultrasound) with on-site cytopathology, and all modes of ERCP (endoscopic retrograde cholangiopancreatography) with portable fluoroscopy are performed daily. A new motility center and esophageal pH laboratory is being launched. A dedicated nursing staff and ancillary personnel of the Endoscopy Center ensure a seamless flow of patients each day.

In the Rowell Building of the University of Vermont there is a Simulation Center. At the Simulation Center, GI Fellows may practice endoscopy on newly designed and highly sophisticated computerized models of the GI tract.

A daily clinical office setting is shared with General Surgery in the Digestive Disease Center located on the 5th floor of the new Ambulatory Care Center. There is a very close working relationship with the Colorectal Surgery and General Surgery division. There are dedicated liver clinics, and each aspect of luminal gastroenterology is represented in the various clinics. All this is accomplished with an integrated out-patient and in-patient electronic medical record.

All members of the GI Unit are actively involved in a variety of aspects of medical teaching. The members of the GI Faculty have very active roles in lectures in the Vermont Integrated Curriculum of the UVM College of Medicine. UVM medical students are team members on the consult service and in the clinical office setting. The members of the GI Faculty are responsible for the vast majority of the teaching in the GI Fellowship Program. Members of the GI Faculty give lectures to both medical and surgical residents, review at Residents' Morning Report and are part of the integrated Teaching Attending Service at FAHC. A weekly clinical GI Conference is held and led by GI Faculty and guest speakers from other divisions. Two Journal Clubs occur each month where an in-depth analysis and review of recent articles is accomplished. A monthly Quality Care Review Committee Meeting enables a constant improvement of clinical care and endoscopic practices. And finally, a monthly GI Research Meeting of all the GI Faculty and Fellows meets to review present and future research endeavors.

Each Faculty member and each GI Fellow is actively engaged in an academic research pursuit. Research projects to date span the field of gastroenterology and hepatology from eosinophilic esophagitis, to new therapy for Barrett's esophagus with radiofrequency ablation (RFA), to all

aspects of chronic liver disease, new therapies for hepatitis C, new medications for inflammatory bowel disease (IBD) and irritable bowel syndrome (IBS), and exploring methods for early detection of pancreatic cancer.

The Gastroenterology and Hepatology Unit at the University of Vermont fosters a close cooperation, collaboration and interaction with other research departments throughout UVM which allows a unique opportunity to explore translational research as it pertains to future aspects of clinical care.

James Vecchio, MD

Professor of Medicine

Director, Gastroenterology and Hepatology Division

- GERD
- Celiac Disease
- Inflammatory Bowel Diseases – Crohn’s and Ulcerative Colitis
- Therapeutic Endoscopy

Nicholas Ferrentino, MD

Associate Professor of Medicine

Director, GI Fellowship Program

- Chronic Viral Hepatitis
- Management of Cirrhosis
- General Gastroenterology and General Hepatology
- Therapeutic Endoscopy

Eric Ganguly, MD

Assistant Professor of Medicine

- Endoscopic Ultrasound and GI Malignancies
- Barrett’s Esophagus and Radiofrequency Ablation for Barrett’s Esophagus
- Therapeutic Endoscopy
- General Gastroenterology

Allen Lee, MD

Assistant Professor of Medicine

- Esophageal Manometry and pH Monitoring
- Motility Disorders
- GERD
- Wireless Motility Capsule Monitoring
- Small Bowel Endoscopy

Steven Lidofsky, MD, Ph.D.

Professor of Medicine and Pharmacology

Director, Hepatology Section
Director, Gastrointestinal Research
Director, MD-Ph.D. Program

- Liver Cell Biology
- Portal Hypertension
- Hepatocellular Carcinoma
- Viral Hepatitis
- Metabolic Syndrome and the Liver

Gary Mawe, Ph.D.

Professor

Anatomy & Neurobiology

- Neural Regulation of the Digestive Tract
(understanding changes in enteric neural circuits that contribute to altered gut function in inflammatory bowel disease and irritable bowel syndrome)

Peter Moses, MD

Professor of Medicine

- Inflammatory Bowel Disease
- Irritable Bowel Syndrome
- Therapeutic Endoscopy
- Translational research with Human Microbiota

Doris Strader, MD

Associate Professor of Medicine

- Hepatitis C
- Eosinophilic Esophagitis
- General Hepatology and General Gastroenterology

André-Denis Wright, Ph.D.

Associate Professor

Chair, Department of Animal Science

- Human Gut Microbiology
 - a) Determination of bacterial and methanogen profiles in individuals from five major colonic groups: healthy colon, diverticulosis, inflammatory bowel disease, colon polyps and colorectal cancer.
 - b) The dynamics of the methanogen population, and methane production in humans.
 - c) Determination of the dietary effects on different microbial populations in the gut.
 - d) The link between gut microorganisms and obesity.

Richard Zubarik, MD

Associate Professor of Medicine

Director, Endoscopy

- Pancreatic Disorders
- Endoscopy Quality
- Therapeutic Endoscopy
- Endoscopic Ultrasound

Nick Lim, MD

GI Fellow

John Randles, MD

GI Fellow

Neeraj Sardana, MD

GI Fellow

Graduate Students, Post-doctoral Fellows, MD PhD Students:

- Sue Ishaq (Ph.D. Student)
- Laura Cersosimo (Ph.D. Student)

Editorships and Editorial Boards:

Steven Lidofsky, MD, Ph.D.

- Editorial Board, Clinical Therapeutics
- Ad hoc Grants Reviewer for: Burroughs Wellcome Foundation, Medical Research Council of Canada, Natural Sciences and Engineering Research Council of Canada
- Chair of Joint Awards Review Committee, American Association for the Study of Liver Diseases and American Liver Foundation
- Ad hoc Reviewer for the following selected Journals: American Journal of Medicine, American Journal of Physiology, American Journal of Transplantation, British Journal of Pharmacology, Gastroenterology, Hepatology, Journal of Biological Chemistry, Journal of Cellular Physiology, Journal of Clinical Investigation, Journal of Critical Illness, Journal of Hepatology, Journal of Membrane Biology, Journal of Physiology, Molecular and Cellular Biochemistry, Molecular and Cellular Biology, Pediatrics, Nature Medicine, New England Journal of Medicine, Proceedings of the National Academy of Sciences, U.S.A.

Gary Mawe, Ph.D.

- Editorial Board Member, Frontiers in Autonomic Neuroscience
- Editorial Board Member, Frontiers in Gastrointestinal Sciences
- Reviews Editor, Neurogastroenterology and Motility
- Reviewing Editor, Journal of Physiology
- Guest Associate Editor, Gastroenterology
- Editorial Board, Journal of Visualized Experiments (JoVE)

Peter Moses, MD

- Editorial Board Member, The Journal of Clinical Gastroenterology (Yale)
- Editorial Board Member, The World Journal of Gastroenterology (China)
- Reviewer, The American Journal of Gastroenterology
- Reviewer, Gastroenterology
- Reviewer, Alimentary Pharmacology
- Reviewer, Neurogastroenterology and Motility
- Grant Reviewer, Study Section of the NIH at the National Institute of Biomedical Imaging and Bioengineering (NIBIB)
- UVM Professional Standards Committee

André-Denis Wright, Ph.D.

- Editor, Zootaxa (Protozoa)
- Associate Editor, Current Microbiology
- Editorial Board Member, Microbial Ecology
- Editorial Board Member, Journal of Camelid Science
- Editorial Board Member, Journal of Eukaryotic Microbiology

Study Sections and Federal Advisory Boards:

Steven Lidofsky, MD, Ph.D.

- Member, NIH ZRG1 DKUS E10 Study Section

Gary Mawe, Ph.D.

- Scientific Committee, Neurogastroenterology and Motility Meeting, 2011
- Organizing Committee, International Foundation for Functional Gastrointestinal Disorders Planning Committee
- Scientific Advisory Board, The International Foundation for Functional Gastrointestinal Disorders
- Councilor, American Neurogastroenterology and Motility Society
- Clinical and Integrative Gastrointestinal Pathophysiology Special Emphasis Panel, NIH Center for Scientific Review

Doris Strader, MD

- FDA Advisory Committee for Anti-Viral Drugs

André-Denis Wright, Ph.D.

- USDA
- NSF

Major Faculty Awards:

André-Denis Wright, Ph.D.

- *Apokeronopsis wrighti* n.sp., a new species named after Dr. Wright in recognition of his contributions to the phylogenetics and evolution in ciliates (see J. Eukaryot. Microbiol.)

Grants – list all active by faculty member, PI

Eric Ganguly, MD

- A Multicenter National Prospective Study of Pregnancy and Neonatal Outcomes in Women with Inflammatory Bowel Disease
- HALO Patient Registry: Ablation of Barrett’s Esophagus

Allen Lee, MD

- A Pilot Study on the Efficacy and Safety of Olanzapine in Improving Symptoms and Gastric Motility in Gastroparesis

Steven Lidofsky, MD, Ph.D.

- NIH/NIDDK R01 DK56644
Mechanisms of Cell Volume Regulation in Liver
- A Randomized Trial of Telaprevir, Peginterferon, and Ribavirin versus Peginterferon and Ribavirin for Treatment of Genotype 1 Hepatitis C Virus with Host Interleukin 28B CC Polymorphism
- Non-interventional, prospective, cohort study of the effectiveness, safety, and utilization of two approved pegylated interferon-based direct acting triple therapies in the management of genotype 1 hepatitis C in routine clinical practice in the USA (PegBase).

Gary Mawe, Ph.D.

- NIH/National Institute of Diabetes and Digestive and Kidney Diseases (NIDDK)
“Neuronal Excitability and Motility in Colitis”
- NIH/National Institute of Diabetes and Digestive and Kidney Diseases (NIDDK)
“Neural Control of the Gallbladder”

Peter Moses, MD

- A Phase II Randomized, Placebo-Controlled, Double-Blind, Dose Ranging Study to Assess the Immunogenicity and Safety of a *Clostridium Difficile* Toxoid Vaccine (ACAM-CDIFF™) in Subjects with *Clostridium Difficile* Infection (CDI)

Doris Strader, MD

- Treatment of Eosinophilic Esophagitis with High-Dose Proton Pump Inhibition and Swallowed Fluticasone

James Vecchio, MD

- Prospective, Multicenter, Randomized, Double-Blind, Placebo-Controlled Trial Comparing REMICADE® (infliximab) and Placebo in the Prevention of Recurrence in Crohn’s Disease Patients Undergoing Surgical Resection Who Are at an Increased Risk of Recurrence (PREVENT)
- SECURE / A Non-Interventional Long-term Post-Marketing Registry of Patients Treated with Certolizumab Pegol (Cimzia®) for Crohn’s Disease

André-Denis Wright, Ph.D.

- Vermont Agency of Agriculture. Characterization of methane-producing microorganisms in dairy cow waste anaerobic digesters.
- Vermont Dairy Center of Excellence. Microbial community gene expression in dairy cow waste anaerobic digesters.
- Central Vermont Public Service (CVPS) Cow Power
- Lintilhac Foundation
- USDA Hatch. Examination of the methanogen microbiome in five breeds of lactating dairy cows.

Richard Zubarik, MD

- Can Endoscopic Ultrasound (EUS) Stigmata of Chronic Pancreatitis Predict the Response to Pancreatic Enzymes
- International Registry for Intraductal Papillary Mucinous Neoplasms
- Prospective Study of Bacteremia and the Infection Rates Following Cholangioscopy with the Spyglass Cholangioscope

Publications – peer reviewed, chapters, etc. (not abstracts)

Barfod ET, Moore AL, Van de Graaf BG, Lidfosky SD. Myosin light chain kinase and Src control membrane dynamics in volume recovery from cell swelling. *Mol Biol Cell* 22:634-650.

D'Autreaux F, Margolis KG, Roberts J, Li Z, Karamooz N, Stevanovic K, Ahuja A, Mawe GM, Morikawa Y, Cserjesi P, Setlick W, Gershon MD. Levels of Hand2 expression influence the specification of enteric neurons and function of the gut. *Gastroenterology* 2011. 141:576-587.

Ganguly EK, Zubarik RS. The Rosemont Criteria can predict the pain response to pancreatic enzyme supplementation in patients with suspected chronic pancreatitis undergoing endoscopic ultrasound. *Gut Liver*. 2011 Dec;5(4):521-6. Epub 2011 November 21.

Glad T, Kristiansen VF, Nielsen KM, Brusetti L, Wright ADG, Sundset MA. Ecological characterization of the colonic microbiota in arctic and sub-arctic seals. *Microb. Ecol.* 60:320-330.

Grainger C, Williams R, Clarke T, Wright ADG, Eckard RJ. Supplementation with whole cottonseed causes long-term reduction of methane emissions from lactating dairy cows offered a forage and cereal grain diet. *J Dairy Sci.* 93:2612-2619.

Gulbransen BD, Bashashati M, Hirota SA, Roberts JA, Beck PL, MacDonald JA, Muruve DA, McKay DM, Mawe GM, Thompson RJ, Sharkey KA. Activation of neuronal P2X₇ receptor-Pannexin-1 mediates death of enteric neurons during colitis. *Nature Medicine* 2012. 18:600-604.
Hoffman JM, Tyler K, MacEachern SJ, Balemba OB, Johnson AC, Brooks EM, Zhao H, Swain GM, Moses PL, Galligan JJ, Sharkey KA, Greenwood-Van Meerveld B, Mawe GM. Activation of colonic mucosal 5-HT₄ receptors enhances propulsive motility and inhibits visceral hypersensitivity. *Gastroenterology* 2012. 142(4):844-854.e4. Epub 2012 Jan. 4.

Hons IM, Storr MA, Mackie K, Lutz B, Pittman QJ, Mawe GM, Sharkey KA. Plasticity of mouse enteric synapses mediated through retrograde endocannabinoid and purinergic signaling. *Neurogastroenterology and Motility* 2012. 24:e113-24.

Parikh A, Gupta K, Wilson AC, Fields K, Cosgrove NM, Kostis JB. The effectiveness of outpatient appointment reminder systems in reducing no-show rates. *Am J Med.* 123(6):542-8.

Sharkey KA, Mawe GM. Emerging concepts in Neurogastroenterology and Motility. *Nature Reviews Gastroenterology and Hepatology.* 2012. 9:74-76.

Tabatabaei M, Rahim RA, Abdullah N, Wright ADG, Shirai Y, Sakai K, Sulaiman A, Hassan MA. Methanogens: the success of anaerobic treatment of wastewaters. *Process Biochem.* 45:1214-1225.

Tabatabaei M, Zakaria MR, Rahim RA, Abdullah N, Wright ADG, Shirai Y, Shamsara M, Sakai K, Al Hassan M. Comparative study of methods for extraction and purification of environmental DNA from high-strength wastewater sludge. *African J. Biotechnol.* 9:4926-4937.

Division of General Medicine Research

Benjamin Littenberg, MD, Director

<http://www.med.uvm.edu/medicine/gim>



The division consists of nine faculty, two staff, and three PhD students in the Clinical and Translational Science Program. Four physician faculty members practice in the Fletcher Allen Primary Care Internal Medicine Group, one serves as the Medical Director for the Division of Vermont Health Access (Medicaid), and another is the Medical Director for BlueCross and BlueShield of Vermont. The division is the home of the education programs of the Center for Clinical and Translational Science and includes the Director, two Associate

Directors and many of the core faculty from the PhD, Masters, and graduate certificate programs in CTS. Our faculty also contains the Associate Dean for Primary Care and the Associate Director of Ambulatory Education for the Internal Medicine Residency.

The research activities of the division include: investigations into the role of information systems in improving quality of care, patient safety in the use of pharmaceuticals in the outpatient setting, the role of compassion in the medical encounter, the epidemiology of narcotic abuse and the management of chronic pain, the use of the medical record to develop new insights in pathophysiology and epidemiology, and the role of the built environment in determining health, including obesity and incidents of cancer. The division's research is funded by grants from NIH, the State of Vermont, AHRQ, and the US Health Resources and Services Administration.

Benjamin Littenberg, MD

Professor of Medicine and Nursing

Director, General Internal Medicine

- Methodologies for Technology Assessment
Clinical trials; Meta-analysis of diagnostic test assessments; Instruments to assess patients' preferences
- Clinical Technology Assessment
Common problems in Primary Care; Diagnostic tests; Decision support systems
Informatics
- Public health surveillance for chronic disease; Value-added laboratory reporting;
Patient registries
- Quality Improvement and Patient Safety
Breast cancer; Diabetes; Cardiovascular Risk; Medical error; Outpatient prescriptions, chronic kidney disease

E. Graduate Students, post-doctoral Fellows, MD/PhD Students

- Rodger Kessler, PhD
- Connie van Eeghen
- Kairn Kelley
- Rhonda Kost

F. Endowed Professorships

- Henry and Carleen Tufo Professor of Medicine

K. Grants

- A Curriculum for Clinical Research Training in Vermont

2K30 RR022260 (Benjamin Littenberg) 6/1/05 - 5/30/13 Program Director
National Center for Research Resources (NCRR) \$873,762 total

This grant supports developing a curriculum in clinical research at the University of Vermont to effectively and efficiently transform clinicians and other young academics into successful independent clinical investigators.

- Collaborative National Network Examining Comparative Effectiveness Trials (CONNECT)

1R24 HS019462 (PI: Benjamin Miller, PsyD) 8/1/2010 - 7/31/12 Consultant
Agency for Health Research and Quality (AHRQ) \$963,121 total

This project establishes a national network of primary care patient centered medical homes with integrated behavioral and psychological services. The goal is to determine the determinants of high quality care in such settings.

L. Publications

- Morris NS, Grant S, Repp A, MacLean C, Littenberg B. Prevalence of Limited Health Literacy and Compensatory Strategies Used by Hospitalized Patients. Nursing Research 2011; 60:361-6. PMID: 21878798.

Elizabeth S. Chen, PhD

Assistant Professor

Associate Director of Biomedical Informatics, Center for Clinical and Translational Science

Assistant Professor, Computer Science

- Biomedical Informatics, electronic health records, clinical decision support, clinical data mining, natural language processing

A. Leadership in Professional Societies

- AMIA Distinguished Paper Award
- Member, Meetings Committee AMIA

K. Grants

- 2K30 RR022260 (Benjamin Littenberg) 6/1/05 - 5/30/13 Faculty
National Center for Research Resources (NCRR) \$873,762
A Curriculum for Clinical Research Training in Vermont

This grant supports developing a curriculum in clinical research at the University of Vermont to effectively and efficiently transform clinicians and other young academics

- Planning Vermont’s Healthcare Workforce Future” 2010 – 2011
HRSA P50 HP20996 09/2010 – 09/2011

Investigator (10% effort); PI: Charles MacLean (UVM)

Planning grant to convene representatives from the healthcare and education sectors in order to expand healthcare workforce planning efforts and improve the coordination with other Vermont healthcare system innovations.

- 2010 – 2011 “Mental Health Intergovernmental Service System Interactive Online Network for Vermont (MHISSION-VT)”
SAMHSA/CMHS H79 SM058809 09/30/2008 – 09/29/2013
Investigator (10% effort); PI: Thomas Simpatico (UVM)
Through an intergovernmental partnership that strives to build community and informatics infrastructure for mental health, the goal of this project is to address the needs of Vermont veterans and other adults with trauma spectrum illness who are also involved with the criminal justice system.

L. Publications

- Chen ES, Melton GB, Sarkar IN. Translating standards into practice: experiences and lessons learned in biomedicine and health care. *J Biomed Inform.* 2012. (In press)

Amanda G. Kennedy, PharmD

Assistant Professor of Medicine (Research Track)

- Patient and Medication Safety
- Pharmacoepidemiology
- Health Services Research
- Academic Detailing

E. Graduate Students, post-doctoral Fellows, MD/PhD Students

- Helen Smith
- Jennifer Libous
- Sarah Gillett
- Kristi Johnson
- Sarah Bryce
- Abigail Crocker

G. Leadership in Professional Societies

- Clinical Translational Boot Camp (4-hour workshop Co-Presented with Susan Sonne, PharmD, BCPP, Medical University of South Carolina). Presented at NIH, NIGMS Fourth Biennial National IDeA Symposium of Biomedical Research Excellence (NISBRE); June 2012, Washington, DC.

- Partnering Pharmacists with Primary Care and the Vermont Blueprint for Health. Presented at Vermont Society of Health-Systems Pharmacy Annual Meeting; April 2012, Burlington, Vermont.
- Vermont Academic Detailing Program: Atypical Antipsychotics in Primary Care. Presented at Vermont Nurse Practitioner Association 22nd Annual Conference; March 2012, Stowe, VT.
- Management of Nonspecific Low Back Pain in Primary Care (Academic Detailing). Presented at Women in Medicine Conference; July 2011; Stowe, Vermont.

K. Grants

- 2K30 RR022260 (Benjamin Littenberg) 6/1/05 - 5/30/13 Faculty
National Center for Research Resources (NCRR) \$873,762
A Curriculum for Clinical Research Training in Vermont
This grant supports developing a curriculum in clinical research at the University of Vermont to effectively and efficiently transform clinicians and other young academics into successful independent clinical investigators.

(Kennedy)
- Vermont Department of Health 1/1/12-12/31/13 Principal
Investigator
Medication Management Pilot Study
This grant will support the UVM Office of Primary Care to conduct a population-based medication management pilot study in collaboration with selected primary care practices and pharmacists over a two year period. The broad goal of this pilot study is to improve care for Vermonters, specifically around optimizing medication regimens in primary care settings. To support this goal, the pilot will describe and evaluate varying models for pharmacist collaboration with primary care practices. Health information technology, including population-based medication reports from primary care practices' electronic health records, will serve as a tool for the pharmacist collaborations, where available. This pilot study will be collaborative between pharmacists and primary care practices and supported by a broad foundation of stakeholders, utilizing the expertise and opinions of the Vermont Blueprint for Health and Vermont Academic Detailing Program Advisors.

(MacLean)
- Vermont Department of Health 1/1/12-12/31/12 Co-
Investigator
Narcotics Quality Improvement Project
This Grant will support the UVM Office of Primary Care to develop an approach for improving the process of narcotic prescribing in Vermont primary care practices. A quality improvement approach will be utilized to implement a prescribing system in the participating primary care offices with the collaboration of the Agency for Drug Abuse Programs of the Vermont Department of Health and the Vermont Prescription

Monitoring System. The goal is to provide an office systems framework for best practice narcotic prescribing.

- (Kennedy) 7/1/12-6/30/13 Principal
Investigator
Vermont Department of Health \$200,000
The Vermont Academic Detailing Program
This program develops and delivers Academic Detailing to providers and practices in Vermont.
- (Kennedy) 7/1/11-6/30/12 Principal
Investigator
Vermont Department of Health \$200,000
The Vermont Academic Detailing Program
This program develops and delivers Academic Detailing to providers and practices in Vermont.

L. Publications

- Kennedy AG, Littenberg B, Callas PW, Carney JK. Evaluation of a modified prescription form to address prescribing errors. *Am J Health Syst Pharm.* 2011;68:151-157.
- Kennedy AG, Possidente CJ, Pinckney, RG. Awareness and Perceptions of Vermont's Prescribed Product Gift Ban and Disclosure Law by Prescribers and Pharmacists. *J Pharm Pract.* In press.

Charles D. MacLean, MD

Professor of Medicine
Associate Dean for Primary Care
Research Director, Area Health Education Center

D. NPs and PAs

- Sarah Bushweller, PA

G. Leadership in Professional Societies

- Fellow, American College of Physicians

K. Grants

- Narcotic Quality Improvement (MacLean) 5%, donated (PI) 1/1/12-12/31/12
The Vermont Academic Detailing Program \$200,000
This program delivers QI support to primary care practices in Vermont.

- Pharmacist in the Blueprint (Kennedy) 5%, donated (Co-I) 1/1/12-12/31/13
 The Vermont Academic Detailing Program \$200,000
 This program tests the integration of pharmacists into the Patient Centered Medical Home.
- NIAAA 1R01AA018658-01A1 (Rose) 10%(Co-I) 7/1/10-6/30/15
 National Institute of Alcohol \$606,918 (annual)
 Automated Alcohol Screening and Brief Intervention in Primary Care using IVR
 This grant is a randomized controlled trial of alcohol screening and brief intervention (SBI) administered using a telephone-based Interactive Voice Response (IVR) system.
- HHS P50HP 20996 -01-01 (MacLean) 10% (PI) 10/1/10-9/30/11
 Health Resources and Services Administration \$131,000
 Planning Vermont's Healthcare Workforce Future
 This planning grant assembles a wide array of stakeholders including the Vermont DOL and Workforce Investment Board to plan for healthcare workforce needs.
- HHS 2502009000510 (MacLean) 10% (PI) 10/1/09-8/31/12
 Health Resources and Services Administration \$730,316
 The Vermont Student/Resident Experiences and Rotations in Community Health Program (Vermont SEARCH). This program develops and promotes primary care experiences in federally qualified health centers.
- U77 HP03624 (MacLean) 10% (PI) 9/1/10-8/31/12
 Health Resources and Services Administration \$1,435,616 total
 Model State Supported Area Health Education Centers
 The Vermont AHEC Program is a statewide network of community and academic partners working together through three AHEC centers and a Program Office to improve the health of Vermonters. Through community-based initiatives, Vermont AHEC works to promote rural health educational opportunities and address health care workforce challenges unique to specific areas of the state.
- A Curriculum for Clinical Research Training in Vermont
 2K30 RR022260 (Benjamin Littenberg) 6/1/05 - 5/30/13 Program Director
 National Center for Research Resources (NCRR) \$873,762 total
 This grant supports developing a curriculum in clinical research at the University of Vermont to effectively and efficiently transform clinicians and other young academics into successful independent clinical investigators.

L. Publications

- Morris N, Grant S, Repp A, MacLean C, Littenberg B. Prevalence of limited health literacy and use of compensatory strategies among hospitalized patients. Nursing Research Journal. In press 2011.

- Hayden M, MacLean CD, Kennedy AG, Krulewitz J, Holman M, Messier R, Dulsky-Watkins L. Primary Care Provider experience with a Community Health Team approach to establishing a Patient Centered Medical Home: a mixed method study. Submitted 2011.

Richard G. Pinckney, MD, MPH

Associate Professor of Medicine

G. Leadership in Professional Studies

- Narcotics Prescribing Task Force 2012, Fletcher Allen Health Care.

K. Grants

- Title: A compassion training program for clinicians
 Role: Principal investigator
 Source: Frymoyer Scholarship
 Dates: 09/01/09 – 08/31/12

- A Curriculum for Clinical Research Training in Vermont
 2K30 RR022260 (Benjamin Littenberg) 6/1/05 - 5/30/13 Program Director
 National Center for Research Resources (NCRR) \$873,762 total

This grant supports developing a curriculum in clinical research at the University of Vermont to effectively and efficiently transform clinicians and other young academics into successful independent clinical investigators.

L. Publications

- Kaminsky DA, Marcy T, Dorwaldt A, Pinckney R, Desarno M, Solomon L, Hughes JR. Motivating Smokers in the Hospital Pulmonary Function Laboratory to Quit Smoking by Use of the Lung Age Concept. *Nicotine Tob. Res.* 2011 Nov;13(11):1161-6.

Alan S. Rubin, MD

Research Associate Professor of Medicine and Psychiatry

E. Graduate Students, post-doctoral fellows, MD/PhD

- Peter Durda
- William Tharp
- Carole McBride
- Meena Subramanian
- Prema Menon

K. Grants

A Curriculum for Clinical Research Training in Vermont

2K30 RR022260 (Benjamin Littenberg) 6/1/05 - 5/30/13 Program Director
National Center for Research Resources (NCRR) \$873,762 total
This grant supports developing a curriculum in clinical research at the University of Vermont to effectively and efficiently transform clinicians and other young academics into successful independent clinical investigators.

Constance van Eeghen, DrPH

Assistant Professor of Medicine

Doctor of Public Health

K. Grants

- Narcotic Quality Improvement (MacLean) 1/1/12-12/31/12
The Vermont Academic Detailing Program \$200,000
This program delivers QI support to primary care practices in Vermont.

Division of Gerontology

Naomi K. Fukagawa, MD PhD

Acting Director, Gerontology

<http://www.med.uvm.edu/medicine/gerontology>



– Gerontology Executive Summary

Service: visits, RVU's, outreach sites, services offered

Education – fellowship info, medical student teaching

Research – highlight general area of research for the Division
Total grant funding

Faculty

Naomi K. Fukagawa, MD PhD

Professor of Medicine

Acting Director, Gerontology

- Protein/Amino Acid and Energy Metabolism
- Oxidative Stress in Aging and Disease
- Metabolic Regulation

Muyao Li, PhD

Research Associate

- Human genetic diseases
- Gene structure, Function and Mutation, Gene Expression Profile
- Basic cell and molecular mechanisms in human diseases associated with advanced age and obesity

Fellows None

Nurse Practitioners and Physician Assistants: None

Graduate Students, Post-doctoral Fellows, MD PhD Students: None

Endowed Professorships: None

Leadership in Professional Societies:

American Society for Clinical Investigation Institutional Representative

Editorships and Editorial Boards: Associate Editor, *The American Journal of Clinical Nutrition*; Editor-in-Chief, *Nutrition Reviews*; Editorial Board, *Journal of Nutritional Biochemistry*

Study Sections and Federal Advisory Boards:

Member and Chair, External Advisory Committee, Division of Nutritional Sciences, College of Agricultural, Consumer and Environmental Sciences, University of Illinois, Champaign-Urbana, IL

Vice Chair, UVM Transdisciplinary Research Initiative Food Systems Steering Committee

Major Faculty Awards: None

Grants – list all active by faculty member, PI

ACTIVE

1 RC1 ES018053-01 (Fukagawa) NIH/AARA/NIEHS 3.6 calendar months Mechanisms for Cardiovascular Effects of Air Pollutants: Effect of Age and Sex The goal is to determine the mechanisms responsible for the effects of petrodiesel and biodiesel exhaust emissions on cardiovascular disease.	12/1/2009 – 7/31/2012 \$330,256
Ajinomoto Amino Acids Research Program (Fukagawa) 0.6 calendar month Synergistic Effects of the Branched Chain Amino Acids and Camosine Precursors on Exercise-induced Muscle Damage and Performance in Humans The goal is to determine the effects of amino acid supplementation on exercise performance.	10/01/2009– 09/31/2012 \$50,000
R03ES017860-01 (Fukagawa) NIH/NIEHS 0.85 calendar month Tlp2/COT Regulation of ERK1/2 and NF-kB in Response to Particulates The goal is to determine whether Tlp2/COT is the upstream signal for ERK1/2 and NF-kB activation as a component of cellular responses to exposure to particles generated by combustion of petrodiesel or biodiesel fuels.	01/01/2010-12/31/2012 \$50,000
R01DK082803-01 (Kien) NIH/NIDDK 1.8 calendar months Palmitate Metabolism and Insulin Resistance The goal is to determine the mechanisms through which palmitate metabolism influences insulin resistance in human volunteers.	12/01/2009-11/30/2014 \$427,731

UVM Transportation Research Center (USDOT)(Fukagawa, PI)

TDC \$180,323

03/01/2012-02/28/2013

Nutritional Supplementation with the Antioxidant, Glutathione, to Reduce the Health Effects of Petro- and Biodiesel Exhaust Particle Emissions

The goal is to determine whether glutathione plays a role in mitigating the effects of exposure to exhaust on airway hyperresponsiveness.

Publications – peer reviewed, chapters, etc. (not abstracts)

Kien CL, Everingham KI, Stevens R, Fukagawa NK, Muoio DM. Short-term effects of dietary fatty acids on muscle lipid composition and serum acylcarnitine profile in human subjects. *Obesity (Silver Spring)*. 2011 Feb;19(2):305-11. Epub 2010 Jun 17. PMID: 20559306

Shukla A, Barrett TF, MacPherson MB, Hillegass JM, Fukagawa NK, Swain WA, O’Byrne KJ, Testa JR, Pass HI, Faux SP, Mossman BT. An extracellular signal-regulated kinase 2 survival pathway mediates resistance of human mesothelioma cells to asbestos-induced injury. *Am J Respir Cell Mol Biol*. 2011 Nov;45(5):906-14. Epub 2011 Mar 31. PMID: 21454801

Below JE, Cox NJ, Fukagawa NK, Hirvonen A, Testa JR. Factors that impact susceptibility to fiber-induced health effects. *J Toxicol Environ Health B Crit Rev*. 2011;14(1-4):246-66. PMID: 21534090

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Division of Hematology/Oncology

Claire Verschraegen, MD, Director

<http://www.med.uvm.edu/medicine/hemonc>



Executive Summary

The Division combines 2 specialties, Hematology and Oncology. There are 2 full time faculty focusing on benign hematology and thrombosis, five faculty treating benign and malignant hematology, 8 medical oncologists, and 2 internists (lymphedema and cardiology for cancer patients) in the Division with 2 emeritus faculty, 6 fellows, 7 post doctoral fellows, 5 midlevel providers, about 50 nurses and staff in the outpatient clinic. The Division also supervises the Apheresis Program and the Hemophilia Clinic. The group has embodied the mission of the COM and FAHC with cost effective high quality of care, cutting edge research, and dedication to all aspects of teaching.

Clinical work

Clinical efforts for 2011/12 include a heavy clinical load with 22,640 outpatient visits (about 1500 new patients) and about 6,000 inpatient visits for a total of 38,222 RVU's. We are also attending for patients of local private practices when they are hospitalized at FAHC. Services offered include multidisciplinary clinics where at a single visit patients may be seen by a number of oncologic or specialty providers. Established MDC clinics exist for breast, upper GI, ENT, lung cancer, GU, and melanoma. In 2011/12, more than 600 new patients were seen through the MDC clinics. The GU MDC clinic was recently established with Steven Ades and Scott Perrapato, M.Ds. as leaders. The number of patients seen through the MDC in 2011 is twice the numbers seen the previous year. Site specific tumor boards exist for patients with the above cancers as well as lower GI, brain tumors, sarcomas, leukemia's and lymphomas. Our specialty services also include a hemophilia and thrombosis center, an oncology rehabilitation center, a cancer genetics clinic, and a high risk breast program. Activities of the cancer patient support program (CPSP) provide nutrition, psychological and social work support to any patient in Vermont in need of these services.

Research

Research within the Division is done in several ways (clinical trials, basic science research and epidemiology) covering a number of broad themes (cancer treatment and prevention, thrombosis, supportive care of cancer patients, cancer and exercise, and cancer and coagulation). Faculty in the Hematology/Oncology Division are principal investigators for the majority of the over 320 cancer related studies at the University of Vermont, with 25% of these studies being investigator initiated. Approximately 1,000 cancer patients are put on clinical trials annually with about 3/4th

being accrued to medical oncology studies. Approximately 14% of patients are enrolled on clinical trials at FAHC which is higher than the 6% national average. Available trials include Phase I-III treatment trials, supportive care and translational studies, with the majority of the later (supportive care and translational studies) being investigator initiated. Investigators within the Division receive funding from clinical trials (cooperative group (\$200,000) and pharmaceutical trials (\$400,000)), NIH (NCI, NHLBI) and ACS (UVM side, total awarded \$2,158,632 in 2011), and through the VCC some of the LCCRO funds support Division research activities.

Publications.

Notable publications include:

Dr. Lakoski was awarded the best paper of the year in the *Journal of the American Heart Association!* Cardiorespiratory Fitness and Long-Term Survival in "Low-Risk" Adults Carolyn E. Barlow, Laura F. DeFina, Nina B. Radford, Jarett D. Berry, Kenneth H. Cooper, William L. Haskell, Lee W. Jones, and Susan G. Lakoski *Journal of the American Heart Association* 2012;1 e001354

Dr. Ades: Ferri LE, Ades S, Alcindor T, Chasen M, Marcus V, Hickeson M, Artho G, Thirlwell MP. Perioperative docetaxel, cisplatin, and 5-fluorouracil (DCF) for locally advanced esophageal and gastric adenocarcinoma: a multicenter phase II trial. *Ann Oncol.* 2012 Jun;23(6):1512-7. Epub 2011 Oct 29.

Dr. Cushman: Howard G, Cushman M, Kissela BM, Kleindorfer DO, McClure LA, Safford MM, Rhodes JD, Soliman EZ, Moy CS, Judd SE, Howard VJ. Traditional risk factors as the underlying cause of racial disparities in stroke: lessons from the half-full (empty?) glass. *Stroke* 2011;12:3369-75 (PMCID: PMC3226886)

Dr. Greenblatt: Miller PJ, Duraisamy S, Newell JA, Chan PA, Tie MM, Rogers AE, Ankuda CK, von Walstrom GM, Bond JP, Greenblatt MS. Classifying Variants of CDKN2A Using Computational and Laboratory Studies, *Hum Mutat* 2011 32:900-911. PMID: 21462282

Dr. Grunberg: Grunberg S, Chua D, Maru A, Dinis J, DeVandry S, Boice JA, Hardwick JS, Beckford E, Taylor A, Carides A, Roila F, Herrstedt J. Single-dose fosaprepitant for the prevention of chemotherapy-induced nausea and vomiting associated with cisplatin therapy: randomized, double-blind study protocol--EASE. *J Clin Oncol.* 2011 Apr 10;29(11):1495-501. Epub 2011 Mar 7.

Dr. Holmes: Bambace NM, Holmes CE. The platelet contribution to cancer progression. *J Thromb Haemost.* 2011 Feb;9(2):237-49. doi: 10.1111/j.1538-7836.2010.04131.x. Review.

Dr. Lamba: Lamba G, Kaur H, Adapa S, Shah D, Malhotra BK, Rafiyath SM, Thakar K, Cuesta Fernandez A. Use of Conjugated Estrogens in Life-Threatening Gastrointestinal Bleeding in Hemodialysis Patients--A Review. *Clin Appl Thromb Hemost.* 2012 Mar 12. [Epub ahead of print]

Dr. Verschraegen: Morice P, Uzan C, Gouy S, Verschraegen C, Haie-Meder C. Gynaecological cancers in pregnancy. *Lancet.* 2012 Feb 11;379(9815):558-69.

Dr. Wood: Wood ME., Vogel V., Ng A., Foxhall L., Goodwin P., Travis L. "Second Malignant Neoplasms: Assessment and Strategies for Risk Reduction." *Journal of Clinical Oncology* 2012 (In press)

Dr. Zakai: Bryan LJ, Zakai NA. Why is my patient anemic? Hematol Oncol Clin North Am. 2012 Apr;26(2):205-30, vii.

Grants:

A total of 30 grants were submitted.

Nine were funded.

Six contracts were signed with pharma.

Teaching and training

The faculty teach medical students both in classroom sessions and small group settings for the ICDM, attacks and defenses and generation courses. Faculty also teach 3rd and 4th year students on the inpatient Hematology/Oncology team either as the teaching attending or giving didactic lectures at the internal medicine noon conference. Faculty often lecture medical and other specialty residents and fellows. The Hematology/Oncology fellowship is quite strong having been credentialed for 5 years by the ACGME. The fellowship accepts 2 fellows per year for a 3 year fellowship. All fellows are expected to sit for both Hematology and Oncology boards, and all fellows obtained certification in the past 10 years. Graduating fellows pursue careers in academic medicine as well as join private practices. Our 2012 graduates are both pursuing private practice careers.

Additionally, with the LCCRO support, we have started a new one-year translational research fellowship. Dr. Inder Lal has joined our Division and will be mentored by Chris Holmes to study the role of platelets in cancer progression.

Service

Faculty in Hematology/Oncology provide a great amount of service to the local (UVM) and national communities. They serve on a number of important local committees including DOM operations and research committees, P&T committee, IRB and PRC. Several faculty serve in leadership roles for a number of Hematology and Oncology related societies including ASCO, CALGB, ATS, ASH, MASC, NNECOS.

Direction

Under the new VCC leadership at UVM/FAHC, all cancer clinical services are being unified into the FAHC Cancer Service line to optimally serve the cancer population and the people of Vermont at risk for cancer. The clinical work is being organized around the Multidisciplinary Clinics which subspecialize in the various areas of Oncology. The mission of the VCC encompass all aspects of basic and clinical cancer research, delivery of cancer treatment and services, and cancer prevention into an integrated enterprise that will help UVM/FAHC apply for new NCI Cancer Center Designation. Clinical and basic science faculty will team together to translate research ideas for the benefit of the people of Vermont.

Faculty

Steven Ades, MD - Associate Professor of Medicine

Associate Director, Hematology/Oncology Fellowship Program

Leader, Fletcher Allen Health Care GI Multidisciplinary Clinic
 Research interests include: GI and GU cancers and thrombosis

Mary Cushman, MD, MSc - Professor of Medicine and Pathology
 Director, Thrombosis and Hemostasis Program
 Research interests include: Etiology of vascular disease and other chronic diseases; Care of patients with venous thrombosis and related disorders. Epidemiology of venous thrombosis atherosclerotic diseases. Venous thrombosis and post thrombotic syndrome.

Kim Dittus, MD, PhD - Assistant Professor of Medicine
 Director, Steps to Wellness
 Research interests include: Cancer survivorship, energy balance

Steve Emmons, MD - Assistant Professor of Medicine
 Leader, Fletcher Allen Health Care Melanoma Multidisciplinary Clinic
 Research interests: CNS cancer and melanoma

Marc Greenblatt, MD - Associate Professor of Medicine
 Research interests include: Molecular genetics of mutation in cancer genes and gastrointestinal cancers

Steven Grunberg, MD - Professor of Medicine
 Leader, Fletcher Allen Health Care ENT Tumor Multidisciplinary Clinic
 Research interests include: Lung cancer, head and neck tumors, antiemetics

Chris Holmes, MD, PhD - Associate Professor of Medicine
 Director, Vermont Hemophilia Treatment Center
 Assistant Director, Thrombosis and Hemostasis Program
 Research interests include: Venous thrombosis, post-thrombotic syndrome and platelet function

Farrah Khan, MD - Assistant Professor of Medicine
 Research interests include: Care of patients with breast cancer and lung cancer

Susan Lakoski, MD, MS - Assistant Professor of Medicine
 Director, Cardiovascular Prevention Program for Cancer Patients

Gurpreet Lamba, MD – Assistant Professor of Medicine
 Joined Hematology/Oncology Division – July 1, 2012

Emiliano Mugnaini, MD, PhD - Assistant Professor of Medicine
 Joined the Hematology/Oncology Division, November 1, 2011

Patti O'Brien, MD - Assistant Professor Clinical Scholar
 Director, Lymphedema Program

Julie Olin, MD - Attending Physician

Julian Sprague, MD, PhD – Assistant Professor of Medicine
 Director, Hematology/Oncology Fellowship Program
 Research interests include: Leukemia and neurotoxicity

Claire Verschraegen, MD – Professor of Medicine
 Director, Hematology/Oncology Division

Marie Wood, MD - Professor of Medicine
 Director, Familial Cancer Program
 Research interests include: Molecular markers of breast cancer risk, attitudes of primary care physicians regarding cancer genetics, breast cancer screening and prevention.

Neil Zakai, MD, MSc - Assistant Professor of Medicine

Research interests: Epidemiology and novel risk factors of venous thrombosis and cardiovascular disease. Epidemiology, causes, and consequences of anemia in diverse populations. Venous thrombosis causes and prevention, post thrombotic syndrome.

Fellows

Deb Abrams, M.D. – third year fellow – will finish fellowship September 2012
M. Mansoor Alam, M.D. – third year fellow
Yongli Ji, M.D. – first year fellow
Julia Moukharskaya, MD – second year fellow
Edress Othman, M.D. – third year fellow
John Winters, M.D. – second year fellow
Joanne Monterroso, MD - first year fellow – will arrive September 2012

NP's and PA's

Penelope Gibson, PA
Jamie Kelly, PA
Paul Larson, NP
Janet Ely, NP
Emily Parenteau, APRN

Graduate students, post-doctoral fellows, MD PhD students

Marissa Engbers, M.D. (Leiden University) – PhD student
Mary Cushman, MD, MSc
Locke Bryan, MD – Postdoctoral Fellow
Mary Cushman, MD, MSc
Sarah Gillett – MD, PhD Student
Mary Cushman, MD, MSc
Inder Lal, - MD – Postdoctoral Associate
Chris Holmes, MD, PhD
Shaleen Theiler, PhD – Postdoctoral Associate
Marie E. Wood, MD
Jill Miller, PhD - Postdoctoral Associate
Claire Verschraegen, MD
Damon Houghton, MD – 2nd Year Resident
Neil Zakai, MD, MSc
Sam Merrill, MD – 2nd Year Resident
Neil Zakai, MD, MSc

Endowed Professorships

Claire F. Verschraegen, MD, MS, FACP – received the Irwin H. Krakoff, MD, Endowed Green and Gold Professorship at the Vermont Cancer Center – Nov. 14, 2011

Leadership in Professional Societies

Mary Cushman, MD, MSc

Chair, Subcommittee on Quality, American Society of Hematology
Chair, Nominating Committee, American Heart Association Council on
Epidemiology and Prevention
Leadership Cabinet, Leadership Committee and Immediate Past Chair, American Heart
Association Council on Epidemiology and Prevention
Panel Member, American College of Chest Physicians Evidence-Based Clinical Practice
Guidelines on Antithrombotic Therapy (9th Edition)
Member, Scientific Committee on Thrombosis and Vascular Biology, American Society
of Hematology
Member, Council Operations Committee, American Heart Association
On-Line Mentor, American Physician Scientist Association
Member, Maintenance of Certification Working Group, American Society of
Hematology
Member, Volunteer Leadership Committee, American Heart Association Founders
Affiliate

Marc Greenblatt, MD

President, Human Genome Variation Society (HGVS) 2012-2014
Member, Interim Scientific Advisory Council, Human Variome Project (HVP)
Chair, Session on Gene/Disease Specific Databases, Human Variome Project 4th Biennial
Meeting, June 2012
Member, Organizing Committee, Human Genome Variation Society (HGVS) 2012
Annual Meeting
Core Member, Interpretation Committee, International Society for Gastrointestinal
Hereditary Tumors (InSiGHT)
Co-Chair, Working Group on Assessment of Pathogenicity, Collaborative Group of the
Americas on Inherited Colorectal Cancer (CGA-ICCO)

Steven Grunberg, MD

President, Multinational Association of Supportive Care in Cancer (2012-2014)
Member, American Society of Clinical Oncology Scientific Program Committee (2011-
2014)

Chris E. Holmes, M.D., PhD

Member, Platelet Scientific Subcommittee, American Society of Hematology
Council Member, American College of Physicians, Vermont Chapter
Member, Peer Review Board, American College of Physicians, ACP Medicine

Patricia O'Brien, MD

Vermont Lymphedema Network
Vermont, New Hampshire Susan G. Komen Foundation – grants committee member

Claire F. Verschraegen, MD

Member, International Gynecologic Cancer Society

Editorships and Editorial Boards

Mary Cushman, MD, MSc

Senior Guest Editor, Circulation
Associate Editor, Journal of Thrombosis and Haemostasis, the Journal of the
International Society of Thrombosis and Haemostasis
Co-Editor, Prevention Series, Circulation
Editorial Board, Clinical and Translational Science
Editorial Board, Thrombosis and Thrombolysis

Marc Greenblatt, MD

Communicating Editor, Human Mutation

Claire Verschraegen, MD, MS, FACP

Editorial Board, Annals of Oncology

Study Sections and Federal Advisory Boards

Mary Cushman, M.D., MSc

Chartered Member, NIH Cardiovascular and Sleep Epidemiology Study Section
(Chair, Veronique Roger, MD).

Steven Grunberg, M.D.

Ad hoc Member, NCI study section Initial Review Group Subcommittee F – Institutional
Training and Manpower (2012)

Chris E. Holmes, MD, PhD

Ad Hoc Grant Reviewer, Health Research Board of Ireland
Ad Hoc Grant Reviewer, Scientific Advisory Board, Dutch Cancer

Claire Verschraegen, MD, MS, FACP

Ad Hoc – Loan Repayment Program

Major faculty awards

Chris E. Holmes, MD, PhD

Department of Medicine Research Mentor Award

Grants – list all active grants by faculty member, PI

Steven Ades, M.D.

S Ades, PI, - “Impact of Rosuvastatin on Risk Markers of Venous Thromboembolism
During Systemic Therapy for Advanced Cancer”

Mary Cushman, M.D., MSc

M Cushman, Co-I. Multiethnic Study of Atherosclerosis: Special Laboratory Center, N01HC95166.
M Cushman, Subcontract PI. Etiology of Geographic and Racial Differences in Stroke Mortality, U01 NS041588
M Cushman, Subcontract PI. Epidemiology of Venous Thrombosis and Pulmonary Embolism, R01 HL59367
M Cushman, Subcontract PI. The Incidence and Progression of Peripheral Venous Disease, R01 HL084229
M Cushman, Subcontract PI. Aging, abdominal fat, inflammation and cardiovascular disease, R01 HL088451
M Cushman, Co-I. Molecular Epidemiology of MI and Stroke in Older Adults R01 HL071862
M Cushman, Subcontract PI. Genetic contributors to diabetes and dyslipidemia in African-Americans R01 DK084350
M Cushman, Co-I. Reasons for racial disparities in venous thromboembolism, RC1HL099460

Funding anticipated.

M Cushman, Subcontract PI. Exceptional Aging: 12 year trajectories to function. R01 AG0236290-1

Kim Dittus, M.D., PhD

K Dittus, PI, - “Translational Studies of Muscle Atrophy/Dysfunction in Individuals with Cancer Cachexia”

Steven Grunberg, M.D. , PI – Randomized Phase II Pilot Study of Loratadine for the Prevention of Pain Caused by the Granulocyte Colony Stimulating Factor Pegfilgrastim – NCI/CALGB

Chris E. Holmes, M.D., PhD – American Cancer Society, “Platelet Modulation in the Control of Angiogenesis” (PI)

Marie E. Wood, M.D. – 1 R21 CA137650-01A2, “Vitamin D and Breast Cancer Biomarkers” (PI) Funding: 4/1/2010-3/31/2012

Neil Zakai, M.D., MSc

NHLBI Reasons for Racial Disparities in Venous Thromboembolism
RC1 Neil A. Zakai, PI
 Funding 09/2009 - 09/2011

NHLBI Regional and Racial Differences in Hemostasis and Risk of
K08 Stroke and Heart Disease (K-award)
 Neil A. Zakai, PI,
 Funding : 04/01/10-04/01/15

HTRS Venous Thrombosis in Medical Inpatients
Mentored Research Award
Neil A. Zakai, PI
Funding 7/01/08 - 12/31/11

NATF Venous Thrombosis Prevention in Medical Inpatients
North American Thrombosis Forum project grant.
Neil A. Zakai, PI
Funding 2/01/11 – 2/01/12

Publications – peer reviewed, chapters, etc. (not abstracts)

Allison MA, Jensky NE, Marshall SJ, Bertoni AG, Cushman M. Sedentary behavior and adiposity-associated inflammation: the Multi-Ethnic Study of Atherosclerosis. *Am J Prev Med* 2012;42:8 (PMCID: PMC3244676)

Arnett D, McClelland RL, Bank A, Bluemke DA, Cushman M, Szalai AJ, Jain N, Gomes AS, Heckbert SR, Hundley WG, Lima J. Biomarkers of inflammation and hemostasis associated with left ventricular mass: The Multiethnic Study of Atherosclerosis (MESA). *Int J Mol Epidemiol Genet* 2011;2:391-400. (PMCID: PMC3243453)

Auerbach AD, Burn J, Cassiman JJ, Claustres M, Cotton RG, Cutting G, den Dunnen JT, El-Ruby M, Vargas AF, Greenblatt MS, Macrae F, Matsubara Y, Rimo DL, Vihinen M, Van Broeckhoven C. Mutation (variation) databases and registries: a rationale for coordination of efforts. *Nat Rev Genet*. 2011 Oct 25;12:881. PMID: 22025002

Bambace NM, Holmes CE: The platelet contribution to cancer progression. *J Thromb Haemost*. 2011 Feb;9(2):237-249. Doi:10.1111/j.1538-7836.2010.04131.x.Review

Barlow CE, DeFina LF, Radford NB, Berry JD, Cooper KH, Haskell WL, Jones LW, Lakoski SG: Cardiorespiratory fitness and long-term survival in “low-risk” adults: *J Am Heart Assoc* 2012;1:e001354 doi: 10.1161

Bauman J, Verschraegen C, Belinsky S, Muller C, Rutledge T, Fekrazad M, Ravindranathan M, Lee SJ, Jones D: A Phase I study of 5-azacytidine and erlotinib in advanced solid tumor malignancies. *Cancer Chemother Pharmacol* 2012 Feb; 69(2):547-554. Epub 2011 Sept 8. PMID 21901298.

Bordeleau L, Lipscombe L, Lubinski J, Ghadirian P, Foulkes WD, Neuhausen S, Ainsworth P, Pollak M, Sun P, Narod SA; Hereditary Breast Cancer Clinical Study (Group (Wood, ME). Diabetes and breast cancer among women with BRCA1 and BRCA2 mutations. *Cancer* 117(9):1812-8, 2011.

Bryan LJ, Zakai NA: Why is my patient anemic? *Hematol Oncol Clin North Am* 2012 Apr;26(2):205-230, vii.

Carrier M, Cushman M. Assessing utility of venous thrombosis prophylaxis in orthopedic

surgery patients [editorial]. *Ann Intern Med* 2012;156:748-50.

Chaher N, Arias-Pulido H, Terki N, Qualls C, Bouzid K, Verschraegen C, Wallace AM, Royce M: Molecular and epidemiological characteristics of inflammatory breast cancer in Algerian patients. *Breast Cancer Res Treat*: 2012 Jan; 131(2):437-444. Epub 2011 Marc 1. PMID 21360074

Cigler T, Richardson H, Yaffee MJ, Fabian CJ, Johnston D, Ingle JN, Nassif E, Brunner RL, Wood ME, Pater JL, Hu H, Qi S, Tu D, Goss PE: A randomized, placebo-controlled trial (NCIC CTG MAP.2) examining the effects of exemestane on mammographic breast density, bone density, markers of bone metabolism and serum lipid levels in postmenopausal women. *Breast cancer Research and Treatment*:126(2):453-461, 2011.

Dagleish R, Oetting WS, Auerbach AD, Beckmann JS, Cambon-Thomsen A, Devereau A, Greenblatt MS, Patrinos GP, Taylor GR, Vihinen M, Brookes AJ Clarity and claims in variation/mutation databasing, *Nat Biotechnol*. 2011 Sep 8;29(9):790-2. PMID: 21904316

DeFilippis AP, Blaha MJ, Ndumele C, Budoff MJ, Lloyd-Jones DM, McClelland RL, Lakoski SG, Cushman M, Wong ND, Blumenthal RS, Lima J, Nasir K. The Association of Framingham and Reynolds Risk Scores with Incidence and Progression of Coronary Artery Calcification in the Multi-Ethnic Study of Atherosclerosis. *J Am Coll Cardiol* 2011;58:2076-83. (PubMed – in process)

Einhorn LH, Grunberg SM, Rapoport B, Rittenberg C, Feyer : Antiemetic therapy for multiple day chemotherapy and additional topics consisting of rescue antiemetics and high-dose chemotherapy with stem cell transplant: Review and consensus statement. *Support Care Cancer* 19 (Suppl 1):S1-S4, 2011.

Engbers MJ, Cushman M, Rosendaal F, van Hylckama Vlieg A. The effect of time between venipuncture, processing and freezing on the measurement of coagulation factor levels. In press, *J Thromb Haemost*.

Ferri LE, Ades S, Alcindor T, Chasen M, Marcus V, Hickeson M, Artho G, Thirlwell MP. Perioperative docetaxel, cisplatin, and 5-fluorouracel (DCF) for locally advanced esophageal and gastric adenocarcinoma: a multicenter phase II trial *Ann Oncol* (2012) 23(6):1512-1517.

Gao L, Meschia JF, Judd SE, Muntner P, McClure LA, Howard VJ, Rhodes JD, Cushman M, Safford MM, Soliman EZ, Kleinfelder DO. What stroke symptoms tell us: association of risk factors and individual stroke symptoms in the Reasons for Geographic and Racial Differences in Stroke (REGARDS) study. *J Stroke Cerebrovasc Dis* 2012;21:411-6.

Garg PK, McClelland R, Jenny NS, Criqui MH, Liu K, Polak JH, Jorgensen N, Cushman M. Association of lipoprotein-associated phospholipase A2 and endothelial function in the Multi-Ethnic Study of Atherosclerosis (MESA). *VascMed* 2011;16:247-52. (PubMed: in process)

Garland LL, Chansky K, Wozniak AJ, Tsao AS, Gadgeel SM, Verschraegen CF, Dasilva MA, Redman M, Gandara DR: Phase II study of cediranib in patients with malignant pleural mesothelioma: SWOG S0509. *J Thorac Oncol* 2011 Nov; 6(11):1938-1945. PMID: 21964533

Grallart H, Dupuis J, Bis JC, Dehghan A, Barbalic M, Baumert J, Lu C, Smith NL, Uitterlinden AG, Roberts RR, Khuseyinova N, Schnabel RB, Rice KM, Rivadeneira F, Hoogeveen RC, Fontes JD, Meisinger C, Keaney Jr JF, Lemaitre R, Aulchenko YS, Vasani RS, van Duijn CM, Nelson JJ, McPherson RM, Stirratt HA, Psaty BM, Gieger C, Siscovick D, Hofman A, Illig T, Cushman M, Yamamoto JF, Rotter JI, Larson MG, Stewart ARS, Boerwinkle E, Witteman JCM, Tracy RP, Koenig W, Benjamin EJ, Ballantyne CM. Eight loci associated with variation in lipoprotein-associated phospholipase A2 (LpPLA2) mass and activity and CHD: Meta-analysis of genome-wide association studies from five community-based studies. *European Heart J*. 2012; 33:238-51 (PMCID: PMC3258449)

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Howard G, McClure LA, Moy CS, Safford MM, Cushman M, Judd SE, Kissela BM, Kleindorfer DO, Howard VJ, Rhodes DJ, Muntner P, Tiwari HK. Imputation of incident events in longitudinal cohort studies. *Am J Epidemiol*. 2011; 174: 718-26. (PMCID: PMC3166710)

Howard G, Cushman M, Kissela BM, Kleindorfer DO, McClure LA, Safford MM,

Rhodes JD, Soliman EZ, Moy CS, Judd SE, Howard VJ. Traditional risk factors as the underlying cause of racial disparities in stroke: lessons from the half-full (empty?) glass. *Stroke* 2011;12:3369-75 (PMCID: PMC3226886)

Interleukin-6 Receptor Genetics Consortium Emerging Risk Factors Collaboration. Interleukin-6 receptor pathways in coronary heart disease: a collaborative meta-analysis of 82 studies. *Lancet* 2012;379:1205-13.

Jenny NS, French B, Arnold AA, Strotmeyer ES, Cushman M, Chaves P, Ding J, Fried LP, Kritchevsky S, Rifkin D, Sarnak M, Newman A. Long-term assessment of inflammation and healthy aging in late life: The Cardiovascular Health Study All Stars. In press, *J Gerontol Med Sci*.

Kabagambe E, Judd S, Howard VJ, Zakai NA, Jenny NS, Hsieh M, Warnock DG, Cushman M. Inflammation biomarkers and risk of all-cause mortality in the Reasons for Geographic And Racial Differences in stroke (REGARDS) cohort. *Am J Epidemiol* 2011;174:284-92. (PMCID: PMC3202158)

Kahn SR, Lim W, Dunn AS, Cushman M, Dentali F, Akl EA, Cook DJ, Balekian AA, Klein RC, Le H, Schulman S, Murad MH. Prevention of venous thromboembolism in non-surgical patients: Antithrombotic Therapy and Prevention of Thrombosis 9th Ed: American College of Chest Physicians Evidence-Based Clinical Practice Guidelines. *Chest* 2012;141(2 Suppl):e195S-226S.

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Division of Immunobiology

Ralph Budd, MD, Director

<http://www.uvm.edu/medicine/medicine/immunobiology>

<http://www.med.uvm.edu/vcii>



The Immunobiology Program was established in the Department of Medicine in 1995 in recognition of the growing strength in this area of research from various departments. Although established in one department, it was intended from the start that this program should evolve to span several departments to include the various interests in genetic regulation of autoimmune and infectious diseases, basic mechanisms of T cell signaling of cytokine genes and cell death (Medicine), viral immunology (Pathology), transplantation immunology (Surgery), and maternal/fetal immunology (Ob-Gyn). Dr. Ralph Budd has directed this program since its inception. The core of the Immunobiology Program resides with the Department of Medicine and includes 7 faculty whose research interests are detailed below.

In 2006 the Immunobiology faculty partnered with faculty in Infectious Diseases and Microbiology and Molecular Genetics to successfully compete for a Center of Biomedical Research Excellence (COBRE) Award from NIH (NCR). This allowed the formation of the Vermont Center for Immunology and Infectious Diseases (VCIID), which now numbers 21 faculty in 8 departments in 4 colleges and is in close alliance with the Vermont Vaccine Trial Center, headed by Dr. Beth Kirkpatrick, one of the VCIID faculty. The VCIID has a weekly joint Research-in-Progress meeting, seminar series, and a journal club. This provides a weekly forum for students and postdoctoral fellows to present their research progress as well as for faculty to review hypotheses and specific aims of planned grants. During the first 5 years of Phase I COBRE funding, VCIID faculty published 213 articles and received nearly \$48 million in funding, excluding the COBRE funds.

In 2011 the COBRE grant was renewed for a second 5 years. This will provide funds to allow the College of Medicine to build a new BSL3 facility in partnership with the Vermont Department of Health, and to recruit new faculty to the theme of the host response to infection. In addition, we renewed our NIH T32 Training Grant for graduate students.

Faculty

Ralph Budd, MD

Professor of Medicine and Microbiology & Molecular Genetics

Director, Vermont Center of Immunology & Infectious Diseases

- Key Research Interests: Death receptors, caspases and metabolism in T cell growth, gamma/delta T cells in Lyme arthritis

Jason Botten, PhD

Assistant Professor of Medicine, Adjunct in Microbiology and Molecular Genetics

- Key Research Interests: Virology, Cellular Microbiology, Immunology, Proteomics

Roxana del Rio Guerra, PhD

Research Associate, Medicine

- Key Research Interests: to characterize immune-non MHC genes controlling susceptibility to autoimmune diseases, such as autoimmune ovarian disease (AOD), autoimmune dacryoadenitis (ADA), experimental autoimmune encephalomyelitis (EAE), and autoimmune orchitis (EAO); special interest in genes that control tolerogenic mechanisms.

Sean A. Diehl, PhD

Assistant Professor of Medicine

- Key Research Interests: Molecular immunology, human immunology, allergic disease, autoimmune disease, T cells, B cells

Oliver Dienz, PhD

Assistant Professor of Medicine

- Key Research Interests: T cell signaling, memory T cell function, influenza, lung inflammation, cytokines and their transcriptional regulation

Andreas Koenig, PhD

Research Associate, Medicine

- Key Research Interests: Regulation of the RIG-I/MAVS pathway by RNA-virus induced oxidative stress

Karen Fortner, PhD

Assistant Professor of Medicine

- Key Research Interests: Regulation of T lymphocyte homeostasis through cell death, metabolism, and inhibitory functions; autoimmunity

Mercedes Rincon, PhD

Professor of Medicine

Director, Transgenic/Knockout Mice Facility

- Key Research Interests: T cell activation, allergy/asthma, influenza infection, T cell development, breast cancer, cancer and inflammation.

Cuixia Shi, PhD

Research Associate, Medicine

- Key Research Interests: identify gamma delta T cells role in immunity

Cory Teuscher, PhD

Professor of Medicine and Pathology

- Key Research Interests: The major focus of the research effort in my laboratory is the identification and characterization of non-classical immune response genes controlling susceptibility and resistance to immunopathologically mediated diseases.

Tina Thornton, PhD

Research Associate, Medicine

- Key Research Interests: The major focus is on understanding the interactions of signaling pathways that control early thymocyte development and survival, and is currently exploring the interaction of the p38 MAPK pathway and GSK3 in cells from the immune system and central nervous system under normal and pathological conditions.

Graduate Students, Post-doctoral Fellows, MD PhD Students:

Laure Case, PhD

Benjamin King (graduate student)

Joseph Klaus (graduate student)

Andreas Koenig, PhD

Dimitry Kremmentsov, PhD

Jason Pizzollo (graduate student)

Naresha Saligrama (graduate student)

Phan Thai (MD/PhD student)

Emma Wall, PhD

Christopher Ziegler (graduate student)

Editorships and Editorial Boards:

(Budd) Editor for “Textbook of Rheumatology”, Elsevier

(Rincon) J. Immunology; International Journal of Biological Sciences

Study Sections and Federal Advisory Boards:

(Budd) Member, NIH NIAID T32 grant study section

(Teuscher) Charter member, Hypersensitivity, Autoimmune, and Immune-mediated diseases NIH study section

(Rincon) Charter member, Cellular and Molecular Immunology NIH study section

(Botten) Ad hoc reviewer, Project Grants in Basic and Clinical Sciences, The Wellcome Trust

(Botten) Ad hoc reviewer, Special Emphasis Panel ZRG1 IDM-B (02), NIH

Major Faculty Awards:

(Budd) Membership to Association of American Physicians

(Rincon) University Scholar designation by UVM Graduate College for 2012-2013

(Botten) Young Investigator Travel Award, Fourth Biennial National IDEa Symposium of Biomedical Research Excellence (NISBRE), Washington, DC, 2012.

Grants – list all active by faculty member, PI

Grant Awards 07/01/11 – 06/30/12

NIH funding update:

1 – New R21

1- New R56

1 – P01 renewal through ARRA Funding

3 – ARRA Supplements

1 – Non ARRA Supplement

Non – competitive continuations of Immunobiology's R01's, R21's, T32, COBRE.

Foundation funding update:

1 – New Postdoctoral Fellowship

1 – New Foundation Pilot

Budd:

Title: Role of Fas in T Cell Development and Function

Dates of Award: 09/01/2006 – 05/31/2012

Role: PI

Current Yr funding: \$0 (no cost extension)

Source: NIH/NIAID

Title: Role of Fas in T Cell Development and Function (Supplement)

Dates of Award: 09/29/09-5/31/12

Role: PI

Current Yr funding: \$0 (no cost extension)

Source: NIH/NIAID

Title: Gamma Delta Cells in Lyme Arthritis

Dates of Award: 09/30/2004 – 08/31/2012

Role: PI

Current Yr funding: \$302, 673

Source: NIH/NIAMS

Title: Gamma Delta Cells in Lyme Arthritis (ARRA Supplement)

Dates of Award: 09/23/09-09/22/11

Role: PI

Current Yr funding: \$240,800

Source: NIH/NIAMS

Title: Vermont Immunology / Infectious Diseases Center

Dates of Award: 08/01/2006 – 06/30/2011

Role: PI

Current Yr funding: \$2,275,106
Source: NIH/NCRR
Title: Vermont Immunology / Infectious Diseases Center (Pilot ARRA Supplement)
Dates of Award: 09/17/09-09/16/12
Role: PI
Current Yr funding: \$393,646 (no cost extension, effective 09/17/11)
Source: NIH/NCRR

Title: Vermont Immunology / Infectious Diseases Center (BSL3 ARRA Supplement)
Dates of Award: 08/26/09-08/25/12
Role: PI
Current Yr funding: \$813,325 (no cost extension, effective 08/26/11)
Source: NIH/NCRR

Title: Regulation of Effector CD4 T Cells During Infection
Dates of Award: 08/01/09-07/31/12
Role: PI
Current Yr funding: \$1,683,578 (no cost extension, effective 08/01/11)
Source: NIH/NCRR

Title: Vermont Immunology / Infectious Diseases Training Grant
Dates of Award: 09/01/05 – 08/31/16
Role: PI
Current Yr funding: \$182,800
Source: NIH/NIAID

Botten:

Title: Identification of Novel Arenavirus Protein-Host Cellular
Dates of Award: 06/15/10-05/31/13
Role: PI
Current Yr funding: \$0 (no cost extension)
Source: NIH/NIAID

Diehl:

Title: H1R Signaling and Immune Deviation in EAE
Dates of Award: 01/19/10-12/31/14
Role: Co-PI (PI, Teuscher)
Current Yr funding: \$328,114
Source: NIH/ NINDS

Rincón:

Title: p38 MAP Kinase during Early Thymocyte Development

Dates of Award: 02/15/2009 – 01/31/2014

Role: PI

Current Yr funding: \$335,239

Source: NIH/NIAID

Title: IL-6: an innate immune regulator of the plasticity of Tfh cells

Dates of Award: 04/15/2012 – 03/31/2013

Role: PI

Current Yr funding: \$441,315

Source: NIH/NIAID

Teuscher:

Title: Molecular Genetics of Arthritis in Murine Lyme Disease

Dates of Award: 08/15/2004 – 05/31/2014

Role: Co-PI

Current Yr funding: \$139,828

Source: University of Utah

Title: Histamine Receptor Signaling in CNS Autoimmune Disease

Dates of Award: 01/15/2008 – 12/31/2012

Role: PI

Current Yr funding: \$606,264

Source: NIH/NINDS

Title: Sex Chromosomes in Fetal Programming and Susceptibility in EAE

Dates of Award: 07/01/2008 – 06/30/2012

Role: PI

Current Yr funding: \$0 (no cost extension)

Source: NIH/ NINDS

Title: H1R Signaling and Immune Deviation in EAE

Dates of Award: 01/19/10-12/31/14

Role: PI (Diehl, Co-PI)

Current Yr funding: \$328,114

Source: NIH/ NINDS

Title: p38 MAPK as a Female-Specific Druggable Target in Autoimmune Disease of the CNS

Dates of Award: 07/01/11 – 06/30/14

Role: Mentoring PI

Current Yr funding: \$48,476

Source: National Multiple Sclerosis Society (postdoctoral fellowship)

Title: p38 MAPK as a female-specific druggable target in CNS autoimmune disease
Dates of Award: 07/1/11 – 06//30/13
Role: PI
Current Yr funding: \$228,750
Source: NIH/ NINDS

Title: Gestational exposure to bisphenol A in susceptibility to autoimmune inflammatory disease of the CNS
Dates of Award: 01/01/12 – 12/31/12
Role: PI
Current Yr funding: \$43,779
Source: NMSS

Publications – peer reviewed, chapters, etc. (not abstracts)

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Anathy V, Roberson EC, Guala AS, Godburn KE, Budd RC, Janssen-Heininger YM. Redox-based regulation of apoptosis: S-glutathionylation as a regulatory mechanism to control cell death. *Antioxid Redox Signal.* 2012 Mar 15;16(6):496-505. Epub 2011 Dec 22. PMID: 21929356 / PMCID: PMC3304251

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Bramwell KK, Ma Y, Weis JH, Teuscher C, Weis JJ. High-throughput genotyping of advanced congenic lines by high resolution melting analysis for identification of Bbaa2, a QTL controlling Lyme arthritis. *Biotechniques.* 2012 Mar;52(3):183-90. PMID: 22401552

Case LK, Moussawi M, Roberts B, Noubade R, Huber SA, Teuscher C. Histamine H(1) receptor signaling regulates effector T cell responses and susceptibility to coxsackievirus B3-induced myocarditis. *Cell Immunol.* 2012;272(2):269-74. Epub 2011 Oct 15. PMID: 22078271 / PMCID: PMC3244571

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del Rio R, Noubade R, Saligrama N, Wall EH, Kremontsov DN, Poynter ME, Zachary JF, Thurmond RL, Teuscher C. Histamine H4 receptor optimizes T regulatory cell frequency and facilitates anti-inflammatory responses within the central nervous system. *J Immunol.* 2012 Jan 15;188(2):541-7. Epub 2011 Dec 5. PMID: 22147765 / PMCID: PMC3253209

Dienz O, Rud JG, Eaton SM, Lanthier PA, Burg E, Drew A, Bunn J, Suratt BT, Haynes L, Rincon M. Essential role of IL-6 in protection against H1N1 influenza virus by promoting neutrophil survival in the lung. *Mucosal Immunol.* 2012 Feb 1 PMID: 22294047

Fortner KA, Lees RK, MacDonald HR, Budd RC. Fas (CD95/APO-1) limits the expansion of T lymphocytes in an environment of limited T-cell antigen receptor/MHC contacts. *Int Immunol.* 2011 Feb;23(2):75-88. Epub 2011 Jan 25. PMID: 21266499 / PMCID: PMC3030730

Goodwin M, Sueblinvong V, Eisenhauer P, Ziats NP, LeClair L, Poynter ME, Steele C, Rincon M, Weiss DJ. Bone marrow-derived mesenchymal stromal cells inhibit Th2-mediated allergic airways inflammation in mice. *Stem Cells.* 2011 Jul;29(7):1137-48. doi: 10.1002/stem.656. PMID: 21544902

Koenig A, Fortner KA, King BR, Madden J, Buskiewicz IA, Budd RC. Proliferating $\gamma\delta$ T cells manifest high and spatially confined caspase-3 activity. *Immunology.* 2012 Apr;135(4):276-86. doi: 10.1111/j.1365-2567.2011.03540.x. PMID: 22117649

Kordonowy LL, Burg E, Lenox CC, Gauthier LM, Petty JM, Antkowiak M, Palvinskaya T, Ubags N, Rincón M, Dixon AE, Vernooy JH, Fessler MB, Poynter ME, Suratt BT. Obesity is associated with neutrophil dysfunction and attenuation of murine acute lung injury. *Am J Respir Cell Mol Biol.* 2012 Mar 15. [Epub ahead of print] PMID: 22427537

Liu W, Dienz O, Roberts B, Moussawi M, Rincon M, Huber SA. IL-21R expression on CD8+ T cells promotes CD8+ T cell activation in coxsackievirus B3 induced myocarditis. *Exp Mol Pathol.* 2012 Mar 21. [Epub ahead of print] PMID: 22465422

Nagaleekar, V.K., Sabio, G., Aktan, I., Chant, A., Howe, I.W., Thornton, R.M. Davis, R.J. *Rincon, M., *Boyson, J.E., (2011) "Translational control of NKT cell cytokine production by p38 MAP kinase" * co-corresponding authors. *J. Immunol.* 186, 4140-4146. PMID: 21368234

Neveu WA, Bernardo E, Allard JL, Nagaleekar V, Wargo MJ, Davis RJ, Iwakura Y, Whittaker LA, Rincon M. Fungal allergen β -glucans trigger p38 mitogen-activated protein kinase-mediated

IL-6 translation in lung epithelial cells. *Am J Respir Cell Mol Biol.* 2011 Dec;45(6):1133-41. Epub 2011 Jun 3. PMID: 21642586 / PMCID: PMC3262672.

Noubade R, Kremmentsov DN, Del Rio R, Thornton T, Nagaleekar V, Saligrama N, Spitzack A, Spach K, Sabio G, Davis RJ, Rincon M, Teuscher C. Activation of p38 MAPK in CD4 T cells controls IL-17 production and autoimmune encephalomyelitis. *Blood.* 2011 Sep 22;118(12):3290-300. Epub 2011 Jul 25. PMID: 21791428 / PMCID: PMC3179398

Roberson EC, Tully JE, Guala AS, Reiss JN, Godburn KE, Pociask DA, Alcorn JF, Riches DW, Dienz O, Janssen-Heininger YM, Anathy V. Influenza Induces ER Stress, Caspase-12-Dependent Apoptosis and JNK Mediated TGF- β Release in Lung Epithelial Cells. *Am J Respir Cell Mol Biol.* 2011 Jul 28. [Epub ahead of print] PMID: 21799120

Robinson DP, Huber SA, Moussawi M, Roberts B, Teuscher C, Watkins R, Arnold AP, Klein SL. Sex chromosome complement contributes to sex differences in coxsackievirus B3 but not influenza A virus pathogenesis. *Biol Sex Differ.* 2011 Aug 1;2:8. PMID: 21806829 / PMCID: PMC3162877

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Wheeler K, Tardif S, Rival C, Luu B, Bui E, Del Rio R, Teuscher C, Sparwasser T, Hardy D, Tung KS. Regulatory T cells control tolerogenic versus autoimmune response to sperm in vasectomy. *Proc Natl Acad Sci U S A.* 2011 May 3;108(18):7511-6. Epub 2011 Apr 18. PMID: 21502500 / PMCID: PMC3088630

Yakimchuk K, Roura-Mir C, Magalhaes KG, de Jong A, Kasmar AG, Granter SR, Budd R, Steere A, Pena-Cruz V, Kirschning C, Cheng TY, Moody DB. *Borrelia burgdorferi* infection regulates CD1 expression in human cells and tissues via IL1- β . *Eur J Immunol.* 2011 Mar;41(3):694-705. doi: 10.1002/eji.201040808. Epub 2011 Jan 18. PMID: 21246541 / PMCID: PMC3082368

Publications in Progress:

Botten, J., King, B., Klaus, J., and Ziegler, C. Pathogenic Old World Arenaviruses. In *Viral Hemorrhagic Fevers*, edited by Sunit Singh and Daniel Ruzek. Taylor and Francis Group/CRC Press. In Press.

Haist, K. and Botten, J. Strand-Specific Quantitative Reverse-Transcriptase Polymerase Chain Reaction Assay for measurement of arenavirus genomic and antigenomic RNA species. Planned submission to PLoS One in summer 2012.

Hawley, K.L., Navasa, N., Olson, Jr., C.M., Bates, T.C., Garg, R., Hedrick, M.N., Conze, D., Rincon, M. and Anguita, J. (2012). "Macrophage p38 MAP Kinase Activity Regulates iNKT Cell Responses During Infection with *Borrelia burgdorferi*". J. Infect. Dis. In press.

Rincon, M., Oppenheimer, K. and Bonney, E., (2012) "The selective accumulation of Th2-skewing immature erythroid cells in the developing neonatal mouse spleen" Int. J. Biol. Sci. In press.

Sideleva O, Suratt BT, Black KE, Dienz O, Tharp WG, Pratley RE, Forgione P, Irvin CG, Dixon AE. Obesity and Asthma: an inflammatory disease of adipose tissue not the airway; manuscript submitted

Division of Infectious Diseases

Christopher Grace, MD, FACP, Director

<http://www.med.uvm.edu/medicine/id>



The Infectious Diseases (ID) Unit is a group of nine attending physicians dedicated to the diagnosis, management, prevention and investigation of infectious diseases. This past year we provided close to 1,700 new inpatient consultations. In September of 2011 we began a new inpatient collaboration with Pulmonary /Critical Care Medicine, dedicating an ID attending to the MICU and have welcomed Dr Cindy Noyes to our staff. In July 2012 we will begin a new collaboration with Rutland Regional Medical Center with Dr. Sarah Mooney coming on staff both at FAHC and RRMC. The outpatient clinics remain vibrant with over 6,000 outpatient visits yearly. This effort includes the care of over 440 patients with HIV in four federally funded clinics in Vermont, an international traveler's clinic, refugee screening and home IV antibiotics. The ID unit works collaboratively with the Vermont Department of Health for diagnosis and treatment of tuberculosis and biological and pandemic influenza preparedness. The ID staff includes the FAHC Hospital Epidemiologist and infection control officer, the Department of Medicine's Associate Director of Residency Training and UVM's medical student Clerkship Director for the Department of Medicine.

In addition to daily teaching rounds with medical students, residents and fellows, the physicians are actively involved in the Attacks and Defenses, Neural Sciences, Generations, Connections, Convergence and Doctoring in Vermont, medicine clerkships and acting internships sections of the Vermont Integrated Curriculum. The ID unit is the home of a two year fellowship training program. The graduating fellows have a 100% board certification pass rate over the past 10 years. This program includes a year of research that has resulted in abstract presentations at the national ID meetings, peer reviewed publications and book chapters.

Within our unit we have two active research laboratories which support a number of projects by PhD students, research associates, attending physicians, and the 2nd year ID Fellow.

Investigations center on the molecular biology and pathogenesis of *Entamoeba histolytica*, *Salmonella enterica* serovar Typhi, *Campylobacter jejuni*, *Cryptosporidium* pharmaceutical agent development, as well as Phase I clinical trials developing live attenuated Dengue virus vaccines. Clinical research efforts include epidemiologic investigations into *Clostridium difficile* infection and risks, HIV service delivery models and outcomes, HIV related biomarkers and exploration of the biologic rationale of oral polio and rotavirus vaccine failure in an international field trial setting.

In addition to clinical revenues, financial support is provided by grants from the NIH, NIAID, Health Services Research Administration (HRSA), Bill and Melinda Gates Foundation, contracts with regional hospitals and FAHC directorships.

Faculty

Christopher Grace, MD FACP

Professor of Medicine

- Director, Infectious Diseases
- Director, ID Fellowship Training Program
- Director at FAHC Part C, HRSA grant for HIV care
- Director at FAHC Part B, HRSA grant for HIV care (Vermont Dept. of Health)
- Consultant: Pandemic Influenza and Bioterrorism, Vermont Department of Health

W. Kemper Alston, MD MPH

Professor of Medicine

- Chair, Infection Prevention Committee
- Hospital Epidemiologist
- Consultant: Tuberculosis, State of Vermont
- Consultant for Food and Drug Evaluation and Research
- Hospital Infections, Tuberculosis

Christopher D. Huston, MD

Associate Professor of Medicine

- Research Interests: Intestinal protozoan infections including *E. Histolytica* host-parasite infections, Cryptosporidium drug development
- Institutional Biosafety Committee

Beth D. Kirkpatrick, MD

Associate Professor of Medicine

- Director, Vaccine Testing Center
- Research Interests: Vaccine Development, enteric infections , Dengue Fever
- Institution Review Board

Janet Lindow, PhD

Research Associate

- Research Interests: Human Immunology to infectious pathogens, Dengue Fever, Typhoid Fever
- Institutional Biosafety Committee

Cindy Noyes, MD

Assistant Professor of Medicine

- Clinical Faculty

Kristen K. Pierce, MD

Assistant Professor of Medicine

- Associate Program Director, ID Fellowship Training Program
- Research Interests: Dengue Fever vaccine development study

Louis B. Polish, MD

Associate Professor of Medicine

- Director, Department of Medicine Clerkship Program
- Chair, Infectious Disease Practice Committee
- Director, AIDS Education Training

Mary B. Ramundo, MD

Associate Professor of Medicine

- Associate Program Director, College of Medicine Residency Program
- Department of Medicine, Medical Education Committee
- Chairman, Housestaff Evaluation Committee

Jose Teixeria, PhD

Research Associate

- Interests: Intestinal protozoan infections including *E. Histolytica* host-parasite infections, Cryptosporidium drug development

Fellows

Sarah Mooney, MD

Infectious Disease 2nd Year Fellow

- Infectious Disease Fellowship Training Program July 1, 2010 – June 30, 2012
- Research Year: Biomarkers in people living with HIV

Kensley Nichols, MD

Infectious Disease 1st Year Fellow

- Infectious Disease Fellowship Training Program July 1, 2011–June 30, 2013

Nurse Practitioners and Physician Assistants:

Deborah Kutzko, FNP

Nurse Manager, Comprehensive Care clinic

- Travel health
- AIDS Comprehensive Care Clinic

Hella Douglas, PsychNP

Comprehensive Care clinic, HIV patient

- HIV Patient Care, mental health

Graduate Students, Post-doctoral Fellows, MD PhD Students:

Kelly Fimlaid – PhD Student, (Kirkpatrick Laboratory)

Kovi Bessos – MD, PhD Student (Huston Laboratory)

Adam Sateriale – PhD Student (Huston Laboratory)

Archina Vaithilingan – PhD Student (Huston Laboratory)

Editorships and Editorial Boards:

W. Kemper Alston, MD

- External reviewer
 - Annals of internal Medicine,
 - Clinical Infectious Diseases
 - Infection Control and Hospital Epidemiology

Christopher Huston, MD

- Editorial Board Member – Infection and Immunity
- External reviewer
 - Complexity in biology: molecular aspects of infectious Diseases
 - French-Israel Scientific and Technological Cooperation Agreement
 - Ministry of Science and Technology, Israel
- Ad-Hoc Reviewer
 - National Institutes of Allergy and Infectious diseases
 - ZRG1DM-B(02) Pathogens and Symbiotes
 - ZRG1DM-P(02) Parasites and vectors study section

Grants – list all active by faculty member, PI

Beth D. Kirkpatrick MD. Co-Principal Investigator

Exploration of the biologic causes for the underperformance of oral polio and rotavirus vaccination in Bangladesh and India

\$1,450,000 Bill and Melinda Gates Foundation

Total award \$17,000,000

Beth Kirkpatrick, MD

The Operation of a Facility for the Study of infectious agents, vaccines and antimicrobials in adult and pediatric human subjects

RFP #NIHAO2008011 Subaward

04/01/2009 – 03/31/13

\$4,400,000

Christopher Grace, MD FACP

Ryan White Part C Grant for HIV Care

Non- competing grant award

July 1, 2011 – June 30, 2012

\$580,506 Federal HRSA

Christopher Grace, MD FACP
Ryan White Care Act Part B
June 15, 2011 – June 30, 2012
\$231,985 Federal

Christopher Grace, MD FACP
TB Control and Surveillance, Public Health Preparedness & Response for Bioterrorism
Centers for Disease Control and Prevention Investigations and Technical Assistance
08/01/2011-06/30/2012
\$25,000.00 Federal

Deborah Kutzko, FNP
HIV Counseling, Oral testing, and Referral – S.A . F. E.
Public Awareness / promotion of HIV Testing
1/1/2012 – 12/31/2012
\$77,146 Federal

Louis Polish, MD
New England AIDS Education Training
Subaward from UMASS
7/1/2011 – 6/30/2012
Direct Costs \$62,700

Christopher Huston, MD
NIH COBRE
Vermont Immunobiology/ Infectious Diseases Center
Mechanism of *Entamoeba histolytica* phagocytosis
Annual direct costs \$146,061

Christopher Huston, MD
NIH/ NIAID
Molecular Mechanism of *Entamoeba histolytica* phagocytosis
Annual direct costs \$200,000

Christopher Huston, MD
The Campbell Foundation
Targeting human proteins for treatment of cryptosporidiosis
Annual Direct Costs \$63,636

Publications – peer reviewed, chapters, etc. (not abstracts)

Carney JK, Schilling LM, Frank SH, Biddinger PD, Bertsch TF, Grace CJ, Finkelstein JA.
Planning and incorporating public health preparedness into the medical curriculum. Am J Prev
Med 2011 Oct;21(4 Suppl 3):S193-9

Durbin AP, Kirkpatrick BD, Pierce KK, Schmidt AC, Whitehead SS. Development and clinical evaluation of multiple investigational monovalent DENV vaccines to identify components of inclusion in a live attenuated tetravalent DENV vaccine. *Vaccine* 2011 Sept 23;29(42): 7242-50

Huston CD Protozoan, Intestinal Book Chapter in *Eukaryotic Microbiology* Editor: Schaechter, M San Diego, CA. Elsevier, Inc (in press)

Lindlow JC, Borochoff-Porte N, Durbin AP, Whitehead SS, Fimlaid KA, Bunn JY, Kirkpatrick BD. Primary Vaccination with low dose live dengue 1 virus generates a proinflammatory, multifunctional T cell response in humans. *PLoS Negl Trop Dis.* 2012 Jul;6(7): e1742.

Lindlow JC, Fimlaid KA, Bunn JY, Kirkpatrick BD, Antibodies in Action: Role of Human Opsonins in Killing Salmonella Enterica Serovar Typhi, *Infect Immun.* 2011 Aug; 78(8): 3188-94, Epub May 31, PMID: 21124212

Noyes C, Huston CD Meningitis and Encephalitis Book Chapter in: *Critical Care Secrets*, 5th ed. Editors: Parsons PE, Wiener-Kronish JP Philadelphia, PA. Elsevier inc. (in Press)

Sing U, Huston CD Entamoeba genetic diversity and virulence. Book Chapter in *Evolution of Virulence of Eukaryotic Microbes* Editors: Sibley D, Howlett B, Heitman J New York, NY Wiley-Blackwell (in Press)

Teixeira J, Sateriale A, Bessoff K, Huston C. Control of Entamoeba histolytica Adherence Involves Metalloprotease 1, and M8 Family surface Metalloprotease with homology to Leishmanolysin. *Infect Immun* 2012 June;80(6):2165-76

Vaithilingam A, Teixeira J, Miller P, Heron B, Huston C. Entamoeba histolytica Cell Surface Cationic Lipid Binds Human C1Q and functions in Amebic Phagocytosis of Host Cells. *Infect Immun* 2012 Jun;80(6):2008-18

Division of Nephrology

Richard J. Solomon, MD, Director

<http://www.med.uvm.edu/medicine/nephrology>



Our division is the primary provider of care for patients with kidney diseases in Vermont and upstate New York. We provide kidney replacement therapies for patients with end-stage kidney disease including in-center hemodialysis and home dialysis, by either peritoneal or short daily hemodialysis and treatment of acute kidney failure using continuous kidney replacement therapies in the intensive care unit. Our experienced staff members are committed to training patients for a variety of home dialysis therapies. In conjunction with the Department of Surgery, we care for patients undergoing kidney or kidney-pancreas transplantation. In addition to patients with primary kidney diseases, we serve as a referral base for patients with complicated hypertension, electrolyte disorders, kidney stones, and genetic kidney diseases. Faculty provide both inpatient and outpatient consultation, and are nationally recognized for our expertise in the management of acid-base and electrolyte disorders, diabetic nephropathy, hypertension, and acute kidney failure.

Our faculty is involved in the training of medical students, fellows and internal medicine housestaff. We support primary care providers throughout the region by providing educational programs on hypertension treatment, clinical kidney disease prevention, and dialysis and transplantation.

We are engaged in clinical and epidemiologic research supported by a variety of grants (Federal, UVM, industry and foundation). Ongoing trials involve novel therapies for control of hypertension, prevention of acute kidney injury, improving care of patients on dialysis, and innovative educational programs for fellows in Nephrology.

Service:

Services Offered

Our doctors offer specialty expertise in a number of problems, including:

- Acute and chronic kidney failure
- Kidney transplantation
- Kidney stones
- Electrolyte disturbances
- Acid-base balance disorders

We also provide specialty care in acute and chronic hemodialysis on-site and a number of home options, including peritoneal dialysis, home hemodialysis including the NxStage System.

Our hemodialysis clinics are located in multiple locations across the state.

Hypertension

The Nephrology Clinic provides a program for the comprehensive diagnosis and management services for all forms of difficult to manage hypertension in conjunction with Fletcher Allen Surgery and Radiology.

The Burlington Clinic also provides plasmapheresis services for patients with systemic diseases involving the kidney; and provides support services for kidney and kidney/pancreas transplantation in conjunction with Fletcher Allen Surgery.

Regional Dialysis Services

The Clinic has an extensive outreach program with dialysis units in Barre, Rutland, St. Albans, South Burlington, and Newport. We visit these units regularly and are available for both on-site inpatient and outpatient consultation in Barre, Rutland, St. Albans, and Newport.

Education

The fellowship training program accepts two trainees each year for a two-year program. The program includes a first year of hospital consultation service, and a second fellowship year including a rotation on the in-hospital transplant service, and elective time in pathology and radiology. During the second year, fellows are also expected to pursue scholarly activities leading to presentations at national meetings and publication of results.

These projects often involve direct participation in multicenter clinical research trials, investigator initiated research, and collaborative inter-department quality improvement projects. During the two years of fellowship training, the fellows have weekly half day continuity clinics in chronic kidney disease, and a second clinic at our satellite dialysis facility following in-center end stage kidney disease patients. They also have a monthly home dialysis clinic to follow patients on peritoneal dialysis and home dialysis. During the second year, fellows participate in the outpatient transplant follow-up clinic.

Patient Care

We provide kidney replacement therapies for patients with end-stage kidney disease including in-center hemodialysis and home dialysis, by either peritoneal or short daily hemodialysis and treatment of acute kidney failure using continuous kidney replacement therapies in the intensive care unit. The unit has an experienced staff committed to training patients for a variety of home dialysis therapies. In conjunction with the Department of Surgery, the nephrology Unit cares for patients undergoing kidney or kidney-pancreas transplantation.

Research

Division of Nephrology faculty conduct investigator initiated research and participates in multicenter clinical trials in areas of dialysis care, chronic kidney disease, hypertension, and acute kidney injury.

Clinical Trials

Our team is actively recruiting for a number of clinical trials. Ongoing trials involve novel therapies for control of hypertension, prevention of acute kidney injury, improving care of patients on dialysis, and innovative educational programs for fellows in Nephrology.

Faculty

Richard J. Solomon, MD

Professor of Medicine

Director, Nephrology Division

Academic Interests

- Endothelial dysfunction in diabetes and renal disease
- Mechanisms of renal ischemia
- Acute kidney injury Prevention of contrast induced nephropathy (CIN)

Research Interests

- Regulation of electrolyte homeostasis in marine species
Educational initiative for patients with early renal insufficiency (PEAK program)
Pharmacology of antihypertensive drugs
Prevention and treatment of ischemic acute renal failure, including contrast nephropathy
Treatment of progressive renal failure, including diabetic nephropathy

Varun Agrawal, M.D.

Assistant Professor of Medicine

Academic Interests

- Obesity mediated kidney disease
- Nephrology educational research

Shirley Chang, M.D.

Assistant Professor of Medicine

Academic Interests

- Kidney/Pancreas Transplantation
- Diabetic Nephropathy
- Pediatric Nephrology

F. John Gennari, M.D.

Emeritus Professor of Medicine

Academic Interests

- Renal physiology
- Acid-base and electrolyte homeostasis
- Fluid and solute transport in the kidney

Virginia Hood, MBBS, MPH, MACP

Professor of Medicine

Academic Interests

- Epidemiological and public health aspects of hypertension and chronic kidney disease
- Integration of public health and clinical medicine approaches for managing chronic disease
- Metabolic acidosis

Dana Negoi, M.D.

Associate Professor of Medicine

Research Interests

- Peritoneal dialysis

Jeffrey Rimmer, M.D.

Professor of Medicine

Academic Interests

- Renal replacement therapies in acute and chronic kidney disease

Alan Segal, M.D.

Associate Professor of Medicine

Fellowship Program Director

Academic Interests

- Acute Kidney Injury
- Fluid and Electrolyte Disorders
- Home Dialysis
- Efficient and Comprehensive Care in CKD and ESKD

Research Interests

- Cellular and Molecular Physiology of Ion Channels
- Membrane Transport
- Innovations in Medical Education

Wolfgang Weise, M.D.

Associate Professor of Medicine

Academic Interests

- Progression of renal disease

Fellows

Adel Abdessamad – First Year Fellow

Igor Rojovski – First Year Fellow

Panupong Lisawat – Second Year Fellow

Neil Ybanez – Second Year Fellow

Nurse Practitioners and Physician Assistants:

none

Graduate Students, Post-doctoral Fellows, MD PhD Students:

none

Endowed Professorships:

Richard J. Solomon, M.D.

Patrick Professor of Medicine

Leadership in Professional Societies:

F. John Gennari, M.D.

Section Chairman - Fluid, electrolyte and acid-base disorders, American Society of Nephrology annual meeting, 2012

Virginia Hood, MBBS, MPH, MACP

President- American College of Physicians

Editorships and Editorial Boards:

Varun Agrawal, M.D.

Ad-hoc reviewer Hemodialysis International, BioMed Central Medical Informatics, Clinical Journal of American Society of Nephrology

F. John Gennari, M.D.

Advisory Board: Acid-base and Electrolyte Teaching Cases, American Journal of Kidney Diseases

Alan Segal, M.D.

Editorial Board: American Journal of Physiology, Renal

Richard Solomon, MD

Editorial Board: US Nephrology

Ad hoc reviewer: Clinical Journal of the American Society of Nephrology; Journal of the American Society of Nephrology; Nephrology Dialysis and Transplantation; Critical Care

Medicine; Investigative Radiology; Radiology; Circulation; Journal of the American College of Cardiology

Study Sections and Federal Advisory Boards:

Alan Segal, M.D.
US Advisory Board, Baxter Healthcare

Richard Solomon, M.D.
Special Reviewer: NIDDK,NIH
Advisory Board, Biomarker Consortium, Foundation for NIH

Major Faculty Awards:

Virginia Hood, M.D. – Best Doctor Award, US News
Richard Solomon, M.D. – Best Doctor Award, US News

Grants – list all active by faculty member, PI

Dana Negoi, M.D.

- 2011-2012
Keryx Biopharmaceuticals “ A 3 – Period 58 – Week Safety and Efficacy trial of KRX – 0502 (ferric citrate) in Patients with End – Stage Renal Disease (ESRD) on Dialysis – Principal Investigator
- 2012
Dialysis Outcomes and Practice Patterns Study DOPPS (Principal Investigator - participant St. Albans Dialysis Clinic)

Richard Solomon, M.D.

- SIMPLICITY HTN-3 Trial: Metronic (renal denervation for refractory hypertension).
- BEACON: REATA Pharm (Bardoxolone for chronic kidney disease and type 2 diabetes).
- ALTITUDE: Novartic Pharm (Aliskiren in Type 2 diabetes with renal insufficiency).
- CORAL: NIH (Intervention vs medical therapy for renal artery stenosis)

Publications – peer reviewed, chapters, etc. (not abstracts)

Agrawal V, Jaar BG, Frisby XY, Chen SC, Qiu Y, Li S, Whaley-Connell AT, McCullough PA, Bomback AS; KEEP Investigators. Access to health care among adults evaluated for CKD: findings from the Kidney Early Evaluation Program (KEEP). Am J Kidney Dis 59(3 Suppl

2):S5-15 2012

Agrawal V, Segal A, Jhaveri KD; Nephrology crossword: Dyskalemias. *Kidney Int* Apr;81(8):803-4 2012

Cassel C, Hood VL, Bauer WA; Physician Charter: The Tenth Anniversary. *Ann Intern Med*, In press 2012

Negoi D, Mohamed K; Renal Diseases in Pregnancy. In *Maternal – Fetal Medicine*, 2nd Edition, Editors Winn HN, Chervenak FA, Romero R; Online edition, Dec 15 2011

Gennari FJ; Pathophysiology of metabolic alkalosis. A new classification based on the centrality of stimulated collecting duct ion transport. *Am J Kid Dis* 58(4):626-636 2011

Hood VL, Weinberger SW; High value cost-conscious care: An international imperative. *European Journal Internal Medicine*, online March 28, 2012

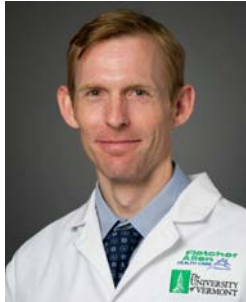
Li LP, Franklin T, Du H, Papdopolou-Rosenzweig M, Carbray J, Solomon R, Prasad P; Intra-renal oxygenation by BOLD MRI in Contrast Nephropathy Model: Effect of the Viscosity and Dose, *Invest Radiol* (accepted) 2012

Negoi D, Khanna R, Nolph KD; History of Peritoneal Dialysis. In *Dialysis: History, Development and Promise*. Editors: Ing TS, Rahman M, Kjellstrand CM; 2012

Primary Care Internal Medicine

Allen Repp, MD, MS Interim Director

<http://www.uvm.edu/medicine/medicine/pcim/>



Primary Care Internal Medicine (PCIM) specializes in diagnosing, treating, and preventing medical problems in adolescents, adults, and the elderly. We work as a team to provide a medical home for our patients in clinic and around-the-clock care for our patients admitted to the hospital.

Our faculty physicians teach general internal medicine and geriatrics to medical students, resident physicians, professional colleagues, and community members. We hold numerous leadership roles at the College of Medicine and are proud to serve an integral role in our vibrant academic

medical center.

Service:

Our clinical service includes approximately 70 faculty and community physicians, nurse practitioners, physician assistants, and mental health specialists. We have four outpatient sites in Chittenden County and an active hospitalist service. We also see patients at numerous skilled nursing facilities and Fanny Allen Acute Rehabilitation.

In the office setting, patients are seen for a variety of acute and chronic medical problems, preventive care, health maintenance and preoperative exams. Our group has been a national leader in developing innovative models for care delivery. Our outpatient sites have worked to improve office systems and to integrate behavioral health specialists, nutritionists, and social workers with our primary care teams. All four outpatient sites have been NCQA recognized as level 2 or 3 Patient Centered Medical Homes. Our physicians care for many geriatric patients in Chittenden County, attending to elderly patients living independently, in assisted living, in local nursing homes, and at hospice. We hold the medical directorships for 3 local skilled nursing facilities and for the VNA Hospice.

In the inpatient setting, our hospitalist service provides 24x7 attending care to medical inpatients from PCIM practices and from many other community primary care practices, as well as to medical inpatients transferred from outside hospitals for tertiary medical care at Fletcher Allen and local patients without a primary care physician. Our faculty physicians work closely with medical residents and students on four busy general medicine teaching services. Our Medicine Consult Service offers inpatient consults to other specialty and subspecialty services and co-manages patients admitted to Orthopaedic Surgery with hip fractures or to Ophthalmology with acute ophthalmological conditions. Additionally, we provide direct care to patients on our Faculty Service and physician leadership to the rapid response team (CATS Team), which responds to inpatients with medical emergencies

throughout the hospital. Our hospitalist team helps to coordinate transfers from outside hospitals and has been engaged in numerous institutional quality improvement initiatives. We also offer medical consultation to patients in the inpatient acute rehabilitation program at Fanny Allen Rehabilitation Center.

This year PCIM faculty and providers will conduct approximately 100,000 patient encounters and generate approximately 150,000 work RVUs.

Our faculty and providers are engaged in service at the institution, regional and national levels. During the past year, Dr. Mark Levine passed over the Governorship of the Vermont Chapter of the American College of Physicians to Dr. Mark Pasanen, M.D. Dr. Jaspinder Sra is organizing a council of young physicians for the Vermont Chapter of the ACP. Dr. Patricia King is currently the Chair of the Vermont Board of Medical Practice, where she also serves as Chair of the Licensing Committee and the liaison to the Vermont Practitioner Health Program, a position appointed by Governor Shumlin. She is nationally active as a member of the Federation of State Medical Boards and participates on the State Advisory Panel to the United States Medical Licensing Examination and as an appointed member of the special national committee on Innovations in Medical Licensing. Dr. Halle Sobel and Dr. Mark Pasanen were appointed by Governor Shumlin to the Drug Utilization Board – charged with reviewing the Medicaid drug formulary in Vermont. Dr. Isaura Menzies was appointed to the Green Mountain Care Board Technical Advisory Group – providing input to health care reform implementation in Vermont. Dr. Karp was appointed by Governor Shumlin to the Advisory Commission on Alzheimer's Disease and Related Disorders. Sarah Bushweller, PA is on the Board of Directors for the Physician Assistant Academy of Vermont and was the Vermont representative to the House of Delegates at the national American Academy of Physician Assistants meeting in May 2012. Faculty participation in committees and task forces at the College of Medicine and Fletcher Allen Health Care is extensive.

Education:

Division faculty members play a pivotal role in teaching and directing courses for a broad audience of clinical learners in the outpatient and inpatient settings. Our educational programs cover a wide spectrum, from primary care to tertiary care, communication skills to statistics, and from pre-medical students to post-graduate continuing medical education.

At the UVM College of Medicine, our faculty members act as preceptors, instructors, and facilitators for courses at all levels of the Vermont Integrated Curriculum including Professionalism, Communication and Reflection; Generations; Doctoring in Vermont; Convergence; Outpatient and Inpatient Medicine Clerkships; Medicine Acting Internship; and the Inpatient Medicine Consult elective. Additionally, we serve as Course Directors for Doctoring in Vermont (Dr. Dennis Beatty), Convergence (Dr. Patricia King), Outpatient Medicine Clerkship (Dr. Roberta O'Brien), and the Medicine Acting Internship (Dr. Mark Levine). As a reflection of his extraordinary teaching efforts, Dr. David Ziegelman was nominated by the College of Medicine Class of 2014 for the Above and Beyond Award.

In the past year, Dr. Tania Bertsch was appointed Associate Dean for Clinical Education at the College of Medicine – supervising the clinical training program for medical students across the four years of the Vermont Integrated Curriculum (VIC). Dr. Charles Maclean continues to serve as Associate Dean for Primary Care at the College of Medicine and Dr. Mark Levine as Associate Chair for Education in the Department of Medicine.

We also play key roles in the clinical education of the Internal Medicine residents. The Given Burlington practice houses the Internal Medicine Resident Clinic – where 39 medical residents practice under the supervision of our preceptors and firm leaders in a busy clinic environment. With the guidance of Drs. Mark Pasanen, Richard Pinckney, Halle Sobel, and Alicia Cunningham the ambulatory curriculum and structure has undergone major enhancements in the past year including the implementation of a firm system, schedule changes to provide more dedicated ambulatory experience, and the development of a resident rotation in the Medical Home model. Drs. Scott Luria and John Miller will join Drs. Pasanen, Pinckney and Sobel as Resident Clinic Firm Leaders in 2012. In the inpatient setting, Hospitalists serve as Teaching Attending for the 4 general medicine teaching teams throughout the year – offering clinical supervision, clinical education, lectures, and evaluation to resident physicians (as well as medical students on their medicine clinical clerkship and acting internship). Additionally, our inpatient faculty physicians lead the Medicine Consult elective for residents and medical students and a Hospital Medicine Acting Internship – coordinated by Dr. Paul Slavik.

As Director and Associate Director, Dr. Levine and Dr. Pasanen provide key leadership to the Internal Medicine Residency Program. Our faculty members have been recognized numerous times by the resident physicians for teaching excellence. Most recently, Dr. Pasanen received the Osler Teacher of the Year Award in June 2012 and Dr. Alan Rubin was recognized as 2011 Graduate Medical Education Teacher of the Year by the UVM Medical Group.

Frymoyer Scholarships were awarded to two PCIM faculty members in 2012 for development of innovative curricular modules: “Teaching Professionalism through Lessons from the Board of Medical Practice” (Dr. King) and “Optimal Patient to Provider Communication in the Outpatient Medical Clinic with Electronic Health Record and the Development of Health Care Curriculum/Faculty Development” (Dr. Marie Sandoval). Furthermore, we initiated efforts to improve physical examination and diagnostic skills of medical students on their inpatient medicine rotations by incorporating point-of-care ultrasound at the bedside – a project led by Dr. Mireille Anawati.

Our educational endeavors extend beyond medical students and resident physicians. Dr. Pinckney teaches graduate students at University of Vermont in analysis of clinical research and helps to facilitate a course for nurse practitioner students on Clinical Compassion. We educate our colleagues locally, regionally and nationally in a variety of venues. The Vermont Academic Detailing Program delivers educational outreach to Vermont’s primary care providers. Drs. Steve Grant, Carrie Lyon, and Allen Repp directed the first University of Vermont Continuing Medical Education Course in Hospital Medicine in 2012, with faculty largely from PCIM and

other divisions of the Dept of Medicine and an audience of physicians and mid-level providers from across the country.

Research

Many of our clinical faculty conduct research via the General Internal Medicine Research unit and provide mentorship, resources, and a scholarly community that supports faculty from many departments in their investigations. We have a diversity of scholarly interests among our faculty. Research involvement ranges from clinical trials of immunizations (Dr. Lyon) to the impact of innovative models for primary care, such as the incorporation of behavioral health professionals (Jessica Young, LICSW; Dr. Jennifer Gilwee) and pharmacists (Dr. Jennifer Ayer) within the medical home. Ongoing quality improvement research projects include the characterization and reduction of narcotic-related adverse events in inpatients (Dr. Repp) and the study and improvement of narcotic prescribing practices in the outpatient setting (Dr. Pasanen; Dr. Maclean).

Faculty

Aesculapius Medical Center

Marie Sandoval, MD (Site Clinical Leader)

Assistant Professor of Medicine

Jennifer Ayer, MD

Assistant Professor of Medicine

Dennis Beatty, MD

Assistant Professor of Medicine

Doctoring in Vermont Course Director, Vermont Integrated Curriculum, UVM College of Medicine

Alicia Cunningham, MD, MPH

Assistant Professor of Medicine

Jennifer Gilwee, MD

Assistant Professor of Medicine

Associate Health Care Service Leader, PCIM

Jason Gramling, MD

Assistant Professor of Medicine

Jonathan Hayden, MD

Associate Professor of Medicine

David Ziegelman, MD
Assistant Professor of Medicine

Given Health Care Center Burlington

Claudia Berger, MD (Site Clinical Leader)
Assistant Professor of Medicine

Jaina Clough, MD
Assistant Professor of Medicine
Medical Director of Hospice for Visiting Nurses Association

Mia Hockett, MD, MPH
Assistant Professor of Medicine

Robert Karp, MD
Associate Professor in Medicine (Emeritus)
Geriatric Medicine

Benjamin Littenberg, MD (see Division of GIM-Research)
Professor of Medicine
Director, Division of General Internal Medicine - Research

Scott Luria, MD
Associate Professor of Medicine

Isaura Menzies, MD
Assistant Professor of Medicine
Medical Director of Starr Farm and Birchwood Terrace Skilled Nursing Facilities

- Geriatric Medicine

John Miller, MD
Assistant Professor of Medicine

Mark Pasanen, MD
Associate Professor of Medicine
Associate Director of Internal Medicine Residency Program

Richard Pinckney, MD, MPH
Associate Professor of Medicine
Co-Director, Internal Medicine Resident Clinic

Alan Rubin, MD (see Division of GIM-Research)
Professor of Medicine

Halle Sobel, MD

Assistant Professor of Medicine

Given Health Care Center Essex

Patricia King, MD, PhD (Site Clinical Leader)

Assistant Professor of Medicine

Convergence Course Director, Vermont Integrated Curriculum, UVM College of Medicine

- Medical Education

Nathan Ayer, MD, MPH

Assistant Professor of Medicine

Tania Bertsch, MD

Associate Professor of Medicine

Associate Dean for Clinical Education

- Medical Education

Diane Haddock, MD

Assistant Professor of Medicine

Mark Levine, MD

Professor of Medicine

Associate Chair for Education, Department of Medicine

Internal Medicine Residency Program Director

Director, Internal Medicine Acting Internship

Charles MacLean, MD (see Division of GIM-Research)

Professor of Medicine

Associate Dean for Primary Care

- Health services research and epidemiology

Roberta O'Brien, MD

Associate Professor of Medicine

Director, Internal Medicine Clerkship

Given Health Care Center Williston

Dennis Plante, MD (Site Clinical Leader)

Associate Professor of Medicine

Marvin Klikunas, MD

Associate Professor of Medicine

Medical Director, The Arbors

- Geriatric Medicine

Lucy Miller, MD

Assistant Professor of Medicine

PCIM Hospitalist Service

Allen Repp, MD, MS - (Director)

Associate Professor of Medicine

Mireille Anawati, MD

Assistant Professor of Medicine

Paul Crainich, MD

Assistant Professor of Medicine

Florian Foerg, MD

Assistant Professor of Medicine

Director, Medicine Consult Service

Zechariah Gardner, MD

Assistant Professor of Medicine

Steve Grant, MD

Assistant Professor of Medicine

Associate Director, Hospitalist Service

Director, Physician Career Center, UVM Medical Group

Mohit Jindal, MD

Assistant Professor of Medicine

Erin Kurek, MD, MPH

Assistant Professor of Medicine

Carrie Lyon, MD, MPH

Assistant Professor of Medicine

Associate Director, Hospitalist Service

Sadie Mills, MD

Assistant Professor of Medicine

Chad Mitchell, MD

Assistant Professor of Medicine

Shuw Siew, MD

Assistant Professor of Medicine

Paul Slavik, MD

Assistant Professor of Medicine

Jaspinder Sra, MD

Assistant Professor of Medicine

Medical Director, CATS Team

Physician Informaticist, PRISM

Dennis Woods, MD

Assistant Professor of Medicine

Nurse Practitioners, Physician Assistants, and Mental Health Specialists:

Aesculapius Medical Center

Tara Abele, NP

Tristan Adie, NP

Diane Bell, NP

Jessica Young, LICSW

Given Health Care Center Burlington

Ann Greer, LCMHC

Gabrielle Mikula, NP

Tracey Niquette, NP

Helen Osborne Linseisen, DNP

Given Health Care Center Essex

Sarah Bushweller, PA

Given Health Care Center Williston

Nancy Berg, NP

Darla Witmer, NP

Starr Farm (Skilled Nursing Facility)

Katherine Murphy PhD, MS, APRN

Leadership in Professional Societies:

Mark Pasanen, M.D.

- Governor, Vermont Chapter of the American College of Physicians

Mark Levine, MD

- Immediate past Governor, Vermont Chapter of the American College of Physicians

Patricia King, MD, PhD

- Chair of the Vermont Board of Medical Practice
- Chair of the Licensing Committee, Vermont Board of Medical Practice
- Liaison to the Vermont Practitioner Health Program

Sarah Bushweller, PA

- Board of Directors for the Physician Assistant Academy of Vermont
- Vermont representative to the House of Delegates, American Academy of Physician Assistants

Editorships and Editorial Boards:

Mark Levine, MD

- Reviewer: Annals of Internal Medicine, MKSAP Syllabus, American College of Physicians, Journal of General Internal Medicine

Allen Repp, MD, MS

- Reviewer: Journal of Hospital Medicine

Study Sections and Federal Advisory Boards:

Patricia King, MD, PhD

- State Advisory Panel to the United States Medical Licensing Examination
- Appointed member of the special national committee on Innovations in Medical Licensing.

Major Faculty Awards:

Mark Pasanen, MD

- Osler Teacher of the Year Award in June 2012

Jaspinder Sra, MD

- Osler Teacher of the Year Award in June 2011

Alan Rubin, MD

- Graduate Medical Education Teacher of the Year, UVM Medical Group. Dec 2011

Publications – peer reviewed, chapters, etc. (not abstracts)

Gardner ZS, Ruppel GL, Kaminsky DA. Grading the severity of obstruction in mixed obstructive-restrictive lung disease. CHEST. 2011; 140(3):598-603

Kaminsky DA, Marcy T, Dorwaldt A, Pinckney R, Desarno M, Solomon L, Hughes JR. Motivating Smokers in the Hospital Pulmonary Function Laboratory to Quit Smoking by Use of the Lung Age Concept. Nicotine Tob Res. 2011; 13(11):1161-6

Kolski BC, Khadivi B, Anawati M, Daniels LB, Demaria AN, Blanchard DG. The dilated coronary sinus: utility of coronary sinus cross-sectional area and eccentricity index in differentiating right atrial pressure overload from persistent left superior vena cava. Echocardiography. 2011; 28(8):829-32

Morris, NS., Grant, S., Repp, A., MacLean, C., Littenberg, B. Prevalence of limited health literacy and use of compensatory strategies among hospitalized patients. Nursing Research. 2011; 60(5):361-366

Prasad, H; Sra, J; Levy, WC; Stapleton, DD. Influence of Predictive Modeling in Implementing Optimal Heart Failure Therapy. Am J Med Sci. 2011; 341(3):185-190

Sra J and Repp AB. Hyponatremia. Hosp Med Clin. 2012; 1: e199–e208.

Young J, Gilwee J, Holman M, Messier R, Kelly M, Kessler R. Mental health, substance abuse, and health behavior intervention as part of the patient-centered medical home: a case study. Translational Behavioral Medicine. Pre-published on-line 20 June 2012. Url: <http://dx.doi.org/10.1007/s13142-012-0148-1>

Division of Pulmonary and Critical Care Medicine

Anne Dixon, MD, Director

<http://www.med.uvm.edu/medicine/pulmonary>



The Pulmonary Critical Care Division has made major changes in its clinical services over the last 12 months, the faculty has made significant research advances which have garnered national and international recognition, and the division has initiated important new pre- and post-graduate educational programs.

The Division is responsible for managing critically ill patients in the Medical Intensive Care unit, inpatient pulmonary and critical care consults, and has a number of sub-specialty clinics including those in interstitial lung disease, cystic fibrosis, lung cancer, asthma and cancer survivorship. The Division provides a full range of pulmonary diagnostic services including bronchoscopy, pulmonary function testing and other services; evaluation of sleep disorders; and outpatient pulmonary rehabilitation.

The Division has initiated major changes in the delivery of clinical care in the last 12 months. The Division now provides 24/7 in house attending-coverage in the medical intensive care unit. This brings the division into line with current best practice nationally, with recent publications suggesting that in-house coverage with intensivist physicians leads to improved patient outcomes. To achieve this new level of clinical care, the division has successfully recruited a number of talented new faculty from other major Pulmonary and Critical Care Divisions across the country. The Division is also working on a telemedicine initiative to provide critical care consults to surrounding hospitals in our rural region. In the area of pulmonary medicine, outpatient visits continue to increase every year. The clinical programs of the Division have expanded and the quality of care has been an area of particular focus of the faculty.

The Division has a national and international reputation in research, especially in the areas of asthma, stem cell research and obesity and lung disease. Members of the Division published over 100 peer reviewed articles during the last year, obtained significant funding from the NIH and foundations. The Division also organized the first international conference on obesity and lung disease, which was hosted in Stowe in October 2011, this was highly successful, and attracted attendees from across the United States, and international attendees from Europe and Australia. The research program continues to expand, and enjoys considerable success and major recognition.

As it maintains a busy clinical practice and successful research program, the Division has been equally committed to education and training over the last year. Members have a leadership role in the medical school curriculum, including running the respiratory section of the award winning Cardiovascular Respiratory and Renal Foundations Course. Dr. Laurie LeClair won a Frymoyer Scholarship to develop simulation training for Critical Care to improve training programs for medical students and physicians in critical care. Faculty members have a major role in teaching medical students, residents, and the three year Pulmonary and Critical Care Fellowship program continues to produce excellent pulmonary and critical care physicians who have gone on to

pursue a variety of career pathways in academic medicine and clinical practice venues. Education of medical students and other trainees is a major mission of the Pulmonary and Critical Care Division.

The last year has been a busy and successful year for the Division as outlined in detail for all members of the Division below.

Faculty

Anne E. Dixon, MD

Associate Professor of Medicine

Director, Pulmonary Disease and Critical Care Medicine

- Asthma
- Chronic Obstructive Pulmonary Disease

Gilman Allen III, MD

Associate Professor of Medicine

MICU Director

- Acute Lung Injury (ALI)

Jason H.T. Bates, PhD Sc.

Professor of Medicine

Department of Molecular Physiology & Biophysics

Interim Director, School of Engineering

- Monitoring of lung function in patients and animals
- Automatic control of ventilatory support
- Mechanical determinants of bronchial responsiveness

Ryan Clouser, DO

Assistant Professor of Medicine

- Pulmonary Disease

Gerald S. Davis, MD

Professor of Medicine (Emeritus)

- Occupational Lung Disease
- Asthma
- Pulmonary Fibrosis
- Silicosis
- Sarcoidosis
- Bronchoalveolar Lavage

Susan Dunning, MD

Assistant Professor of Medicine

- Sleep Apnea
- Sleep Disorders
- Chronic Respiratory Failure

Garth Garrison, MD

Assistant Professor of Medicine

- Clinical Neurophysiology

Charles Irvin, PhD

Professor Pulmonary Sciences and Critical Care Medicine

Professor Department of Molecular Physiology & Biophysics

Director, Vermont Lung Center

- Asthma
- Pulmonary Physiology
- Animal Models of Lung Disease

David Kaminsky, MD

Associate Professor of Medicine

Director, Pulmonary Disease Fellowship Program

- Asthma
- Pulmonary Function Testing

Laurie Whittaker Leclair, MD

Associate Professor of Medicine

Adult CF Program Director, FAHC CF Center Member

- Adult Cystic Fibrosis (CF)

Lennart Lundblad, PhD

Research Assistant Professor

- Lung mechanics in human as well as in laboratory animals
- Asthma
- COPD
- Thoracic gas volume
- Airway pharmacology

Yolanda Mageto, MD, MPH

Associate Professor of Medicine

- Epidemiology of Interstitial Lung Diseases
- Pathophysiology, diagnosis and management of Idiopathic pulmonary Fibrosis
- Asthma community outreach and outcomes

Theodore Marcy, MD, MPH
Professor of Medicine (Emeritus)

- Tobacco use and dependence treatment

Myung Nam, MD
Temporary Employee Status

Polly E. Parsons, MD
E.L. Amidon Professor of Medicine
Chair, Department of Medicine

- Critical Care Medicine

Matthew Poynter, PhD
Associate Professor of Medicine

- Airway Biology

Renee Stapleton, MD, PhD
Assistant Professor of Medicine

- Nutrition in Critical Care
- Acute Lung Injury
- End of Life Care

Benjamin Suratt, MD
Associate Professor of Medicine

- Chemotherapy and hematopoietic stem cell transplantation complications

Charlotte Teneback, MD
Assistant Professor of Medicine

- Cystic fibrosis, pulmonary rehabilitation

Daniel Weiss, MD, PhD
Professor of Medicine

- Acute Lung Injury
- Gene and cell therapies for lung diseases

Fellows

Ali Al-Alwan, MD
Alexey Knyazhitiskiy, MD
Alan Lee, MD
Sanjiva Lutchmedial, MD
Binh Nguyen, MD
Tatsiana Palvinskaya, MD

Nurse Practitioners and Physician Assistants:

Katie Bird, NP
Lily Sender, PA

Graduate Students, Post-doctoral Fellows, MD PhD Students:

Joshua Pothen – PhD student in Bioengineering
Bryce Benson – PhD student in Bioengineering
Keryn Palmer – MS student in Biomedical Engineering (graduated in May 2012)
Niki Ubags - Maastricht University (PhD student)
Tatsiana Palvinskaya - UVM PCCM Fellow
MaryEllen Antkowiak - UVM PCCM Fellow
Prema Menon, MD, Clinical Instructor
Ali Al-Alwan, MD, Senior Fellow
Rebecca Martin, MD/PhD candidate in the Cell and Molecular Biology Program
Benjamin Schott, MS Candidate in Environmental Pathology
Melissa Lathrop PhD, post-doc
Darcy Wagner PhD, post-doc
Jane Tully, PhD candidate
David Chapman, Ph.D., Post Doc
Michael Lam, BS

Endowed Professorships:

Polly E. Parsons, MD
E.L. Amidon Professor of Medicine

Leadership in Professional Societies:

Anne Dixon, MD

- Chair American Thoracic Society Membership Committee
- Member: American Lung Association-Asthma Clinical Research Centers Network, Executive Steering Committee
- Member: American Lung Association-Asthma Clinical Research Centers: Policies and Procedures Committee

Gilman Allen, MD

- American Thoracic Society RSF Nominating Committee (elected)
- American Thoracic Society Website Editorial Board
- American Thoracic Society RSF Assembly Website Director (Appointed)
- American Thoracic Society – Executive Planning Committee for Respiratory Structure and Function Assembly

Jason Bates, PhD

- Chair of the Program Committee, Respiratory Structure & Function Assembly of the American Thoracic Society

Gerald Davis, MD

- Chair, Data & Safety Monitoring Board “Idiopathic Pulmonary Fibrosis Clinical Research Network” (NHLBI Multicenter Trial Network) 2006-
- Lung Cancer Advisory Panel, American Lung Association 2010 -
- Medical Director, Respiratory Therapy Program, Vermont Technical College, State of Vermont 2005-2012
- Physician Leader, Lung Cancer Multi-Disciplinary Clinic Program, Fletcher Allen Health Care 2007-
- American Thoracic Society Member 1974
- American College of Physicians Fellow 1981-
- American College of Chest Physicians Fellow 1982-
- American Association for Bronchology Member 2007 -

Charles Irvin, PhD

- Councilor, Society of Experimental Medicine & Biology
- Member, Finance Committee SEMB
- External Advisory Committee, NIEHS Program Project Grant, (Hyde) Univ. of California, Davis
- External Advisory Committee, LSU COBRE, (Ortiz) LSU New Orleans
- External Advisory Committee, Lung T32 Training Grant, University of WV, Morgantown, WV
- External Advisory Committee COBRE (Stanton) Dartmouth College
- External Advisory Committee INBRE, Dartmouth College
- Nominating Committee, American Thoracic Society (Elected by ATS Board of Directors)
- Chairman, RSF Assembly Nominating Committee, Assembly of Respiratory Function, ATS
- Co-chair working group on mentors NIH NHLBI
- Member, Awards Committee SEMB
- External Advisory Committee COBRE, University of Alaska, Fairbanks, AK

David Kaminsky, MD

- Member, American Thoracic Society Committee on Proficiency Standards for Clinical Pulmonary Laboratories
- Member, Board of Trustees, National Board of Respiratory Care, PFT Committee (ACCP Member)

Laurie Whittaker Leclair, MD

- Cystic Fibrosis Foundation
Therapeutic Development Network Steering Committee

Lennart Lundblad, PhD

- Member of the Board of Directors of the Pulmonary Research Group
- Member of the Program Committee of the Pulmonary Structure and Function Assembly, American Thoracic Society

Yolanda Mageto, MD, MPH

- Vice – ATS Chair Minority Trainee Travel Award committee 2012-2013

Polly E. Parsons, MD

- Alliance for Academic Internal Medicine:
Member, Board of Directors
Chair, Accreditation Committee
- American Thoracic Society:
Members in Transition and Training Committee: member 2008-present
Publications Policy Committee: member 2011-2012
Finance Committee: member 2011- present
- Association of Professors of Medicine:
Education Committee: member: 2008-2011
Chair: 2010-2011
IM-ITE test writing committee: 2008-2011
Board of Directors: 2010-2011
Nominating Committee: 2011- present
- Multi-society National Task Force to Develop a Critical Care Research Agenda:
Chair: 2009 – present

Renee Stapleton, MD PhD

- American Thoracic Society
Committee for Members in Transition and Training
Member 2006-present
Chair-Elect, 2009-2010
Chair, 2010-present
Critical Care Assembly Planning Committee
Member, 2009-present
Chair, 2011-present
Critical Care Assembly Program Committee, 2009-2012

Behavioral Sciences and Health Services Assembly Program Committee, 2012-present

- Canadian Critical Care Nutrition Clinical Practice Guidelines Committee, External Panel Member, 2008-present
- Data Safety Monitoring Board, “Randomized trial of an interdisciplinary communication intervention to improve patient and family outcomes in the ICU,” PI JR Curtis and RA Engelberg, University of Washington, 2009-present.
- Steering Committee, “A Randomized double-Blind Placebo-Controlled Trial of Ganciclovir/Valganciclovir for Prevention of Cytomegalovirus Reactivation in Acute Lung Injury,” PI M Boeckh, University of Washington, 2010-present.

Benjamin Suratt, MD

- Member of Planning Committee, AII/ATS

Daniel Weiss, MD, PhD

- Chair, ATS Stem Cell Working Group
- Study Section Chief, ALA grant review section A

Editorships and Editorial Boards:

Gilman Allen, MD

- Ad Hoc Reviewer for journals American Journal of Physiology, Critical Care Medicine, and Chest

Jason Bates, PhD

- Associate Editor, Journal of Applied Physiology
- Editorial Board Member, Journal of Clinical Monitoring and Computing
- Editorial Board Member, CRC Critical Reviews in Biomedical Engineering

Charles Irvin, PhD

- Editorial Board, American Journal Respiratory Cell and Molecular Biology

Lennart Lundblad, PhD

- Proceedings Editor for the Pulmonary Research Group

Theodore Marcy, MD, MPH

- Ad Hoc reviewer for the following journals: Preventive Medicine, and Chest

Polly E. Parsons, MD

- Up-to-Date: Editor-in-Chief, Critical Care Section 2004-present
- American Journal of Respiratory and Critical Care Medicine 2005-present

- CHEST 2005-present
- Proceedings of the American Thoracic Society: 2006-present

Renee Stapleton, MD, PhD

- Visiting Professor at University of Pennsylvania Perelman School of Medicine, Division of Pulmonary, Allergy, and Critical Care Medicine, February 2011
- Speaker at American College of Physicians Internal Medicine Board Review Course 7/19/11-7/23/11, Seattle, WA,
“Critical Care Medicine Board Review”
“Thromboembolic Disease”
- American Thoracic Society 2012 International Conference, San Francisco, CA. May 2012
- Speaker in Scientific Mini-Symposium *Transitions in Health Care Setting, Disease Management, and Disease State*, “Patient, Family, And Physician Feedback On An Informed Assent Approach To Cardiopulmonary Resuscitation (CPR).”

Daniel Weiss, MD, PhD

- Editorial Board: Molecular Therapy

Study Sections and Federal Advisory Boards:

Anne Dixon, MD

- Member SEP on Development and Testing of a Case Finding Methodology in COPD
- Ad-Hoc Member, VA Merit Review Panel for Pulmonary
- Ad-Hoc Member NIH Lung Cellular and Molecular Immunobiology study section
- Member NHLBI review panel for Patient-Oriented and Career Enhancement Award for Stem Cell Research (K 23, 24, 25)

Gilman Allen, MD

- Cystic Fibrosis Canada - External Reviewer

Jason Bates, PhD

- Ad Hoc member of MABS Study Section, NIH

Gerald Davis, MD

- Chair, Data & Safety Monitoring Board “Idiopathic Pulmonary Fibrosis 2006-Clinical Research Network” [IPFNet]
(NHLBI Multicenter Trials Network)
- Member, *ad hoc* Study Section for “Asthma & Allergic Diseases 2011 Cooperative Research Centers”
(NIAID RFA ZAI1 PA-I (M1))
- Member, *ad hoc* Panel to review National Institutes of Health NHLBI 2011

Loan Forgiveness Program for Academic Medicine

Charles Irvin, PhD

- Ad hoc IRP grants, NIMHD, National Institutes of Health
- Ad hoc P01 grants, NIAID, National Institutes of Health (2x)

David Kaminsky, MD

- Member, American Lung Association (ALA) Research Grant Review Committee, Section C. ALA, New York, NY

Polly E. Parsons, MD

- NHLBI Scientific Advisory Council member
- Scientific Council of the Francis Families Foundation: 2007-2011
- Special Emphasis Panel: NIH Loan Repayment program: 2007 – 2011

Matthew Poynter, PhD

- NHLBI Lung Cellular, Molecular, and Immunology Study Section, June 2012

Renee Stapleton, MD, PhD

- World Health Organization Respiratory Working Group for development of ICD-11, 2010- present

Benjamin Suratt, MD

- NIH LCMI Section, ad hoc, October 2010

Daniel Weiss, MD, PhD

- Study Sections/Grant Reviewer
- ALA
- Canadian CF Foundation

Major Faculty Awards:

Charles Irvin, PhD

Visiting Professor, University of Pennsylvania, Philadelphia, PA
Visiting Professor, UMDNJ, Newark, NJ

Laurie Whittaker Leclair, MD

Frymoyer Scholar July 2012-June 2014

Lennart Lundblad, PhD

U.S. Patent awarded: US7.945.303 B2. Noninvasive Pulmonary Performance Measurement Method and System (coinventors: Bates, Irvin, Lundblad and Thompson-Figueroa)

Theodore Marcy, MD, PhD

Pulmonary Teacher of the Year award 2011

ALA/ C Everett Koop Foundation Unsung Heroes Award 2011

Polly E. Parsons, MD

US News & World Report: Top 1% Pulmonary Physicians in the US 2012

Society of Critical Care Medicine Congress 2012: Plenary Speaker

Renee Stapleton, MD, PhD

Who's who in America, 2011

Grants – list all active by faculty member, PI

Anne Dixon, MD

U01 HL089464

Dixon (PI)

9/30/09-6/30/14

Study of Asthma and Nasal Steroids (STAN): This is a grant for a multicenter study for a randomized placebo controlled trial to determine the efficacy and mechanisms of action of nasal steroids in the treatment of asthma. The plan is to recruit 382 adults and children with poorly controlled asthma and chronic rhinosinuitis at 20 centers (affiliated with the American Lung Association Asthma Clinical Research Center network).

Gilman Allen, MD

Allergy and Asthma Foundation: “Reflux and Asthma: the mechanisms of acid-induced airways hyperresponsiveness”

Source: AAFA

PI: Allen, GB

Effort: 5%

Period: 5/1/10-4/30/11

Budget: \$20,000

COBRE Pilot Program Grant: “The Mechanisms of Synergy between Acid and Endotoxin in Aspiration-Induced Acute Lung Injury”

Source: NCRR

PI: Allen, GB

Effort: 5%

Period: 9/1/10 – 9/30/11

Budget: \$ 48,500

College of Medicine Internal Grant Program:

Source: UVM College of Medicine and Department of Medicine

PI: Ricci, M

Effort: 5%

Period: 7/1/11-6/30/13

Budget: \$50,000

“Does Crew Resource Management Training Improve Outcomes of Cardiac Resuscitation?”

RC4 HL106625 “Bioengineering New Lungs from Cadaveric Lung Scaffolds”

Source: NIH

PI: D.J. Weiss

Effort: 12.5%

Period: 09/17/10-8/30/13

Budget: 1,230,617

Jason Bates, PhD

R01 HL103405, 07/01/10 – 06/30/14, NIH/NHLBI “A multi-scale approach to airway hyperresponsiveness: from molecule to organ”

COBRE PIP Grant, 2012, “Design study of a sterile disposable attachment for measuring respiratory impedance in ventilated patients”

Gerald Davis, MD

“A Randomized Double-Blind Placebo-Controlled, Phase 3 Study of the Safety and Efficacy of Pirfenidone in Patients with Idiopathic Pulmonary Fibrosis (PIPF-006 / CAPACITY) & open label extension. (PIPF-0012) InterMune Inc. Gerald S. Davis, M.D. (Principal Investigator for site) 2006-

“A Phase 2, Multicenter, Multinational, Randomized, Double-Blind, Placebo-Controlled, Parallel-group, Study Evaluating the Safety and Efficacy of Treatment with Ustekinumab or Golimumab in Subjects with Chronic Sarcoidosis. Centocor R&D, Inc. Gerald S. Davis, M.D. (Principal Investigator for site) 2010 -

“A Phase 2, Sequential, Ascending Dose Study To Characterize The Safety, Tolerability, 2011 - Pharmacokinetic And Biological Activity Of CC-930 In Idiopathic Pulmonary Fibrosis (IPF) 2011 - Celgene Cooperation Yolando Mageto, MD (Principal Investigator for site) Gerald S. Davis, MD (Co-Investigator for site)

“A Phase 2a, Open-Label, Single-Arm Study to Evaluate the Safety, Tolerability, and Efficacy of FG-3019 in Subjects with Idiopathic Pulmonary Fibrosis 2011 - Fibrogen Inc. Yolando Mageto, MD (Principal Investigator for site) Gerald S. Davis, MD (Co-Investigator for site)

“A Phase 1, Open Label, Multi-Dose Study to Evaluate the Safety, Tolerability, and Biologic Effects of Three Doses of IW001 in Patients with Idiopathic Pulmonary Fibrosis (IPF) 2011 - Immuneworks Yolando Mageto, MD (Principal Investigator for site) Gerald S. Davis, MD (Co-Investigator for site)

“PIPF-016 entitled “A Randomized, Double-Blind, Placebo Controlled, Phase 3 Study of the Efficacy and Safety of Pirfenidone in Patients with Idiopathic Pulmonary Fibrosis” 2011 - InterMune Inc. Gerald S. Davis, MD (Principal Investigator for site) Yolando Mageto, MD (Co-Investigator for site)

Charles Irvin, PhD

2010-2015 National Heart, Lung and Blood Institute (NIH/NHLBI) P30 RR031158-01

Translational Research in Lung Biology and Disease

Principal Investigator: Charles G. Irvin (20% effort)

3,750.00 total Direct 5,643,750.00 Estimated Total

9/23/10-9/22/12 National Centers for Research Resources (NCRR) 3P30 RR031158-10S2

ARRA PIP (Pilot Investigator Projects)

Principle Investigator: Charles G. Irvin

127,710 Direct costs 193,800 Total

9/24/09-9/23/12 National Centers for Research Resources (NCRR) 3P20 RR015557-10S2

ARRA Inhalation Facility

Principle Investigator: Charles G. Irvin

402,827 Direct costs 450,293 Total

2009-2014 American Lung Association

Asthma Clinical Research Center

Principal Investigator: Charles G. Irvin (10% effort)

\$100,000 year 1 direct cost \$500,000 (total award) plus capitation

4/1/04-3/31/14 National Heart Lung & Blood Institute (NHLBI) T32 HL076122-01

Multidisciplinary Training in Lung Biology

Principal Investigator: Charles Irvin (0% effort) \$299,928

1/1/12-12/31/12 U13 RR022675 NOT-RR-05-004

National IDeA Symposium of Biomedical Research Excellence (NISBRE)

Principal Investigator 326,087 annual direct cost

12/10-11/12 National Heart, Lung and Blood Institute (NIH/NHLBI) P30 RR031158-01) PIP Grant

Role of DARC, the Duffy antigen receptor, in eosinophil induced airway pathology

Principal Investigator \$50,000

09/12 - 08/17 NIH R01 HL085464/01-05 (Janssen-Heininger)

Epithelial JNK-TGFb1 Signaling Axis in Airway Remodeling

Co-investigator \$325,823 annual direct costs

David Kaminsky, MD

R34 HL113290-01, NIH/NHLBI

The Efficacy of Pranayama in COPD

PI: David Kaminsky, MD (10%) 05/01/12-04/30/15

American Lung Association - Asthma Clinical Research Center

PI: Charles G. Irvin, Ph.D.

Role on Project: Co-Investigator (5%) 7/1/04-6/30/14

University of Vermont NIH COBRE Translational Research in Lung Biology

PI: Irvin

Pilot Investigational Project: Non-invasive detection of airway injury associated with airway closure in asthmatic subjects

PI: Kaminsky (7%) 11/16/11-11/15/12

Laurie Whittaker Leclair, MD

Therapeutics and Development network Award, Cystic Fibrosis Foundation, 2009-2012 - \$240,000

The goal of this award is to support infrastructure necessary to effectively participate in multi-center clinical research trials for new therapies to treat CF.

Role on Grant: co-PI

Coulter Foundation Research Grant, Griswold (PI), Coulter Foundation, 2008-2012 - \$528,000

The goal of this award is to determine if genetically engineered lysozyme is effective for the treatment of pulmonary infections

Role on Grant: collaborator

Adult Care Program Quality Improvement Award

2011-2012 - \$20,000

The goal of this award is to improve clinical care for adults with CF by educating multidisciplinary adult care teams in quality improvement.

Role on Grant: PI

Lennart Lundblad, PhD

Hoffman La-Roche, Inc.

Title: Bronchoconstriction and the role of mast cells

Role: Principal Investigator

P30 RR 031158 PI: C. G. Irvin, NIH/NCRR

Role: Physiological Phenotyping Core co-director

ASRC 312 (L.K.A. Lundblad),

Sepracor, Inc. (under no cost extension)

Role: Principal Investigator

SCR 216 (L.K.A. Lundblad)

Sepracor, Inc. (under no cost extension)

Role: Principal Investigator

1R01HL107291-A1 (Poynter) NIH

Role: Co-investigator

Yolanda Mageto, MD MPH

“A Phase 2, Sequential, Ascending Dose Study to Characterize the Safety, Tolerability, 2011 - Pharmacokinetic and Biological Activity of CC-930 in Idiopathic Pulmonary Fibrosis (IPF) 2011 - Celgene Cooperation

Yolanda Mageto, MD, MPH (Principal Investigator for site)

Gerald S. Davis, MD (Co-Investigator for site)

“A Phase 2a, Open-Label, Single-Arm Study to Evaluate the Safety, Tolerability, and Efficacy of FG-3019 in Subjects with Idiopathic Pulmonary Fibrosis 2011 - Fibrogen Inc.

Yolanda Mageto, MD, MPH (Principal Investigator for site)

Gerald S. Davis, MD (Co-Investigator for site)

“A Phase 1, Open Label, Multi-Dose Study to Evaluate the Safety, Tolerability, and Biologic Effects of Three Doses of IW001 in Patients with Idiopathic Pulmonary Fibrosis (IPF) 2011 - Immuneworks

Yolanda Mageto, MD, MPH (Principal Investigator for site)

Gerald S. Davis, MD (Co-Investigator for site)

“PIPF-016 entitled “A Randomized, Double-Blind, Placebo Controlled, Phase 3 Study of the Efficacy and Safety of Pirfenidone in Patients with Idiopathic Pulmonary Fibrosis” 2011 - InterMune Inc.

Gerald S. Davis, MD (Principal Investigator for site)

Yolanda Mageto, MD, MPH (Co-Investigator for site)

“52 week, double blind, randomized ,placebo-controlled trial evaluating the effect of oral BIBF 1120, 150mg twice daily, on annual Forced Vital Capacity decline, in patients with Idiopathic Pulmonary Fibrosis.” Boehringer Inc

Yolanda Mageto, MD, MPH (Principal Investigator for site)

Gerald S. Davis, MD, (Co-Investigator for site)

Theodore Marcy, MD, MPH

National Institutes of Health / National Cancer Institute 5R21CA134817-2

Clinical Testing of a CDSS for Tobacco Use Treatment. No cost extension through Aug 31, 2011

Polly E. Parsons, MD

IU01HL102547 – M. Boeckh (PI)

NIH:NHLBI

A Randomized Phase II Trial of CMV Prevention in Acute Lung Injury

UVM Site PI: P. Parsons
6/1/10-5/31/13

U01 HL108713-01- M. Matthay (PI)
NIH:NHLBI
"Allogeneic Human Mesenchymal Stem Cells for the Treatment of Acute Lung Injury".
UVM Site PI: P. Parsons
9/11-8/14

Matthew Poynter, PhD

R01-HL089177 (Poynter) 08/01/2007-04/30/2012

Nitrogen Dioxide in the Sensitization to Allergic Airway Disease

R01 Admin. Supplement (Poynter) 07/01/2009-04/30/2012

Nitrogen Dioxide in the Sensitization to Allergic Airway Disease

The objectives of this Administrative Supplement are to employ a Postdoctoral Associate to establish the role of serum amyloid A3 (SAA3) in NO₂-induced allergic sensitization.

R01- HL107291 (Poynter) 04/01/2012 – 03/31/2016

Serum Amyloid A3 in Allergic Asthma: An Endogenous Mediator of Disease Severity

R01-NS061014 (Teuscher) 12/01/2007-11/30/2012

Histamine Receptor Signaling in CNS Autoimmune Disease

NASA EPSCoR (Lakin & Hill) 07/01/2009-06/30/2012

The Impact of Microgravity-Grown *Pseudomonas aeruginosa* and *Haemophilus influenzae* on Human Lung Cells: Integration of Virulence, Lung Cell Immune Responses, and the Volatile Metabolome

R01-DK082803 (Kien) 04/01/2010 - 03/31/2014

VLC Pilot Project (Poynter & Ckless) 03/01/2011 – 02/28/2013

Biphasic Redox Regulation of NLRP3 by Serum Amyloid A

VCIID Pilot Project (Boyson & Poynter) 01/01/2010 - 12/31/2012

CD1d and NKT Cell in the Lung

VLC Pilot Project (Poynter & Weiss) 01/04/2012 - 01/03/2013

Investigating the Effects of Human Mesenchymal Stromal Cell (MSC) Administration in a Model of Severe, Th17-Mediated Steroid-Resistant Asthma

Research Agreement (Lundblad) 11/22/2010 – 11/21/2011

Bronchoconstriction and the Role of Mast Cells

RC1 Challenge Grant (Fukagawa) 09/30/2009-09/29/2011

Mechanisms for Cardiovascular Effects of Air Pollutants: Effect of Age and Sex

Renee Stapleton, MD, PhD

Pharmaconutrients as Therapies for Critical Illness: Zinc in Severe Sepsis

1 K23 HL105654, 10/1/11-9/30/15

NIH/NHLBI

Direct: \$156,350 for year 1

Role: PI

Fletcher Allen Health Care/University of Vermont Medical Group Research Award

“Intravenous Zinc as a Therapy for Severe Sepsis: A Pilot Study”

12/1/10-11/30/12

\$50,000

Role: PI

National Palliative Care Research Center

“Changing the paradigm of CPR: Exploring Informed Assent”

7/1/10-6/30/12

Direct: \$140,000 (\$70,000 per year)

Role: PI

American Heart Association Clinical Research Program Award

“The pharmacokinetics of omega-3 fatty acids in patients with sepsis and in healthy controls”

09CRP2230291, 7/1/09-6/30/11 (currently in no-cost extension)

Direct: \$100,000 (\$50,000 per year)

Role: PI

“A Randomized double-Blind Placebo-Controlled Trial of Ganciclovir/Valganciclovir for Prevention of Cytomegalovirus Reactivation in Acute Lung Injury”

1U01HL102547-01, 7/01/10-6/30/13

Per-patient reimbursement

Role: Site-Co-PI and Steering Committee Member

Charlotte Teneback, MD

Program for Adult Care Excellence in Cystic Fibrosis, CF Foundation, \$81,000 over 3 years

Benjamin Suratt, MD

UVM COBRE Pilot Project Award, University of Vermont College of Medicine,

\$50,000: 2011 – 2012

“The role of bone marrow proteases in alpha-one antitrypsin deficiency-related lung disease”

Role on grant: PI

Pilot Award, AlphaOne Foundation,
\$40,000: 2011 – 2012
“Role of alpha-one antitrypsin in control of neutrophil release and the development
of lung inflammation”
Role on grant: PI

Daniel Weiss, MD, PhD
NIH ARRA RC4HL106625 (DJ Weiss PI) 9/17/10-8/30/13
Bioengineering Functional Lung Tissue
The major goals of this project are to determine the optimal conditions of growth factors,
oxygen tension, and cyclic mechanical stretch on development of functional lung tissue
using de-cellularized mouse lungs as 3-dimensional scaffolds.

NHLBI R21HL108689 (DJ Weiss PI) 9/1/11-8/31/13
Submitted in response to RFA-HL-11-026, “New strategies for growing 3D tissues”
De-Cellularized Human Lungs for Ex Vivo Lung Regeneration
The goals of this project are: 1) To determine key differences between de-cellularized
lung scaffolds obtained from different donors. 2) To optimize media and growth factor
conditions for growth and differentiation of hMSCs, hESCs, and human iPS cells into
functional three dimensional lung tissue when inoculated into de-cellularized human lung
slices and apply this technology to whole de-cellularized human lungs.3) NIH/NHLBI

RC2HL101535 (PI: DN Kotton) 9/1/09-8/31/12
Title: Characterization of human hematopoietic and endodermal progenitors derived from
iPS free of reprogramming transgenes. Role: Co-Investigator
The major goals of this project are to define the genetic and epigenetic programs of
differentiating endodermal cell lineages at defined stages of early human development,
using ES and iPS cell model systems and to determine whether the genetic programs of
these differentiated lineages differ when derived from iPS cells of CF or AAT mutant
genotypes in comparison to those derived from normal iPS cells.

NASA EPSCOR Research Grant (PI Jane Hill PhD, UVM College of Engineering)
DJ Weiss Co-Investigator 9/1/09-8/31/12
\$1,500,000 total direct
The impact of microgravity-grown *Pseudomonas aeruginosa* and *Haemophilus influenzae*
on human lung cells: integration of virulence, lung cell immune responses, and the
volatile metabolome

NCCR COBRE P20 RR-155557 (Irvin)
Pilot Proposal (DJ Weiss, Matt Poynter Co- PIs) 8/1/11-7/31/12

CF Foundation Research Grant (D Kotton PI, Boston University)
4/1/10-3/31/12
DJ Weiss Co-Investigator \$90,000 direct/yr
Derivation of Pluripotent Stem Cells for Cystic Fibrosis Therapy

Italian CF Foundation Research Grant (R Loi PI University of Perugia, Sardinia)
DJ Weiss Co-investigator 7/1/10-6/30/12 50,000 Euros/yr 1
An induced pluripotent stem cell (iPS)-based approach for the repopulation and phenotypic correction of cystic fibrosis airway epithelium

Arizona State University/Mayo Clinic Scottsdale seed grant (C Nickerson PhD, PI)
DJ Weiss Co-investigator 1/1/11-12/31/11 \$40,000 direct
Re-cellularization of de-cellularized human lung scaffolds using rotating bioreactor technology

NHLBI R21HL094611 (DJ Weiss PI) 7/1/10-6/30/11
Title: Use of 3-D Culture and Stretch to Develop Lung from MSCs, ESCs, and iPS
The major goals are to determine optimum culture conditions for induction of lung epithelial phenotype by ESCs, MSCs, and iPS grown in de-cellularized mouse lungs and to determine the role of cyclic stretch on conversion of ESCs, MSCs, and iPS to an epithelial phenotype. (Grant voluntarily relinquished with award of the RC4 HL106625).

CF Foundation Research Grant (PI: DN Kotton) 4/1/10-3/31/12
Derivation of Pluripotent Stem Cells for Cystic Fibrosis Therapy Role: Co-Investigator
The goals of this project are to 1) Derive iPS from CF mice and delta F CF patients; 2) Functionally characterize the iPS before and after gene transfer mediated re-constitution of normal CFTR expression

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Division of Rheumatology

Edward Leib, MD, Interim Director

<http://www.med.uvm.edu/medicine/rheumatology>



The Division of Rheumatology and Clinical Immunology provides high quality patient care to residents of Vermont, Upstate New York and other contingent areas, performs teaching activities for the residents of Fletcher Allen Health Care and medical students of the UVM College of Medicine and perform both bench and clinical research. During this year, one of our faculty has been on a leave of absence and an additional board certified rheumatologist has joined our faculty. Once back at full complement of providers, we will have eight board certified members. We have also hired a physician's assistant this year. We welcomed on average 965 patients in our clinic each month, generating monthly 1500 work RVUs. We have an onsite infusion center and bone densitometry facility. We now have the capability of performing musculoskeletal ultrasound at our main clinical site at the Ambulatory Care Center. In addition to our rheumatology services, we also offer a metabolic bone clinic and will be re-initiating an interstitial lung disease program with the return this summer of Dr. Jones. During the year we continued seeing patients at 3 outreach clinics in St. Albans, Central Vermont Medical Center and Copley Hospital. We cover inpatient consults at FAHC on a 24-7 basis.

We have an accredited program for rheumatology fellowship and accept one new fellow annually in a competitive match. Each month, one of the medical residents rotated through our service's outpatient services where they were given the opportunity of working with each of the attendings. Several medical students have also elected a one month rotation in our outpatient site. Annually we participate in the Connections course for 2nd year medical students providing didactic teaching on a wide range of rheumatic and metabolic bone diseases and musculoskeletal examination.

Faculty

Edward Leib, MD

Professor of Medicine

Division Chief, Rheumatology and Clinical Immunology

Member-at-large, UVMMG Board

- Osteoporosis and metabolic bone diseases
- Rheumatoid arthritis

Dr. Leib was lead author on an article on clinical guidelines of the impact of glucocorticoids on fracture risk. He co-authored an abstract presented at the ASBMR meeting in 2011 and is co-author on 2 abstracts submitted to that meeting and 2 abstracts submitted to the ACR (rheum) meeting for 2012. Dr. T. Blackburn, fellow, and S. Schaub, medical student, class of 2012, have been first authors with Dr. Leib on 2 articles on clinical aspects of measurement of bone

densitometry based on a repository of over 16,000 patients seen at the Osteoporosis Center over 10 years which have been submitted for publication. He directs the Osteoporosis Center and the Metabolic Bone Clinic and is Certified to read bone densitometry by the Society for Clinical Densitometry. Dr. Leib is on the Editorial Board of the Journal of Clinical Densitometry.

Sheldon Cooper, MD, MACR

Professor of Medicine

- Rheumatoid arthritis
- Osteoarthritis
- Regional rheumatic syndromes

Dr. Cooper is principal investigator for several trials evaluating the effectiveness and mechanism of action of biologic drugs in the treatment of rheumatoid arthritis. A longitudinal study with tocilizumab, a monoclonal antibody to the IL-6 receptor, is focused on analyzing changes in cytokine levels in patients during treatment. Another study for rheumatoid arthritis involves a monoclonal antibody that is administered subcutaneously and inhibits a B-cell activating factor.

Ralph Budd, MD

Professor of Medicine

- Inflammatory arthritis
- Systemic Lupus Erythematosus

Dr. Budd and his team have been working on four projects related to the activity of caspases and c-FLIP in the immune system. The first demonstrated that the reason certain viruses took FLIP into their own genome as a short form was that it has the ability to turn off the anti-viral interferon response, whereas the full-length long form of c-FLIP does the opposite. Second, they have now linked the level of caspase activity in T cells to their state of metabolism. This has significant implications for which T cells survive an immune response to confer immune memory. The third area is a gene expression study of what genes significantly change expression levels during homeostatic proliferation of T cells. This has implications for why it is important to eliminate these T cells, lest they precipitate autoimmune sequelae. The final study is on gamma/delta T cells in Lyme arthritis, showing how the levels of c-FLIP in dendritic cells profoundly alter their ability to activate the gamma/delta T cells.

Dr Budd is also an editor of the *Textbook of Rheumatology* 9th edition, is a member of an NIH NIAID and a T32 Training Grant study sections. He was honored this year with selection for membership to the Association of American Physicians.

Active Grants:
NIH CORBE
NIH T32 Training Grant
NIH R01 Lyme arthritis

Bonita Libman, MD

Professor of Medicine

- Connective tissue disorders
- Systemic lupus
- Rheumatoid arthritis

Dr. Libman received a \$25,000 Fellowship Training Award for 2012-2013 from the American College of Rheumatology Research and Education Foundation. This is the third year in succession that the division has received this award through the efforts of Dr. Libman. Dr. Libman is a member subcommittee on Self Study, part of the Liaison Committee on Medical Education (LCME) for the College of Medicine. She also successfully passed her re-certification examinations in both General Internal Medicine and Rheumatology.

Chi Chi Lau, MD

Associate Professor of Medicine

- Systemic Lupus
- Inflammatory arthritis
- Connective tissue disorders

Recertified in Rheumatology 2012.

Obtained recertification of CME for rheumatology conferences

Christine Jones, MD

Assistant Professor of Medicine

- Scleroderma
- Interstitial lung disease and rheumatic disease
- Myositis

Dr. Jones has been on a leave of absence this past year to practice medicine in New Zealand. She will be returning in August, 2012 and will be continuing her participation in the Interstitial Lung/Rheumatic Disease Clinic.

Nicole Hynes, MD

Assistant Professor of Medicine

- Inflammatory arthritis
- Connective tissue disorders
- Regional pain syndromes

James Trice, MD

Assistant Professor of Medicine

- Osteoporosis
- Inflammatory arthritis
- Connective tissue disease
- Vasculitis
- Clinical Trials

Dr. Trice joined the faculty in 2011. He recently recertified as a Certified Clinical Densitometrist (CCD) and reads bone densities for the Osteoporosis Center.

Fellows

Tristan Blackburn, MD

Completed fellowship, July, 2012

Narandra Bethina, MD

Completes fellowship, June, 2013

Tatiana Keck, MD

Completes fellowship, June, 2014

Nurse Practitioners and Physician Assistants:

Jennifer, McGill, PAC

Publications – peer reviewed, chapters, etc. (not abstracts)

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