



Department of Medicine

ANNUAL REPORT  
July 1, 2013 – June 30, 2014

Submitted by:  
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E.L. Amidon Professor and Chair  
Department of Medicine  
Date: September 11, 2014

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## Department of Medicine Annual Report 2013-2014



### Chair's Executive Summary

The Department of Medicine had another excellent year with significant contributions in all areas of our mission: clinical care, education, research, and service. To support all of those missions we continue to grow. This year we welcomed new faculty in Dermatology, Cardiology, Geriatrics, Hematology-Oncology, Primary Care Internal Medicine, Public Health, Pulmonary and Critical Care Medicine and Transplant Nephrology, new residents in Internal Medicine and Dermatology, fellows in all of our subspecialty areas, and graduate students and post-doctoral trainees in our laboratories. The Department expanded its clinical practice, increased its focus on high value cost conscious care and participated in the creation of service lines that extend across our partner hospitals. New clinical programs this year included multidisciplinary clinics for Kidney Stones, Transplant, Thyroid biopsy and Endocrine-Maternal Fetal Medicine. In addition, an Interventional Pulmonary program was launched and faculty from Pulmonary Medicine and Oncology participated in the creation of a multi-disciplinary Lung Cancer Screening Program. The Diabetes Care Pathway created by the faculty in Endocrinology and Primary Care was extended to all of the Medical Home sites and similar initiatives focused on asthma and COPD are being developed by the faculty in Pulmonary and Primary Care. The Dermatology faculty and residents extended their practice to include volunteering at the Community Health Center Free Clinic. The Choosing Wisely (high value cost conscious care) initiative continues to expand with new projects focused on decreasing x-rays in the ICU, reducing repeat echocardiograms on inpatients, eliminating duplicate Hepatitis A and C testing, and optimizing CT/PET scanning for breast cancer patients. The team also received a grant from the UVM Medical Group to expand Residents and Fellows engagement in quality improvement via a high value-cost conscious curricular experience. To further enhance patient care the department has been a leader in the creation of service lines in cardiovascular medicine and cancer which create a multidisciplinary, patient focused approach to care that extends across not only FAHC but our health care network.

Education is a core mission for the department and this year the department leadership had a retreat to develop goals and objectives focused on the enhancement of medical student, resident and fellow education. Faculty are engaging in new ways of teaching including an innovative, multidisciplinary simulation-based education program for the ICU team lead by Dr. Laurie Leclair and supported by a Frymoyer Scholarship award. This year we celebrated the first graduates of the Certificate in Public Health program and the launch of both the Masters in Public Health and the Certificate in Environmental Health programs under the leadership of Dr. Jan Carney. The faculty continued to participate extensively in the VIC curriculum and again received a number of honors and awards for their contributions to education. Dr. William Hopkins received the Foundations Course Director Award for the eighth consecutive year and the Dean Warsaw Integration Award for 2014. The Cardiovascular, Respiratory & Renal Systems course, directed by Dr. Hopkins and taught by many of our faculty won the award for Outstanding Foundations Course for the eighth time. In recognition of their contributions to

resident education, Dr. Bill Hopkins received the E.L. Amidon MD Award for Subspecialty Medicine and Dr. Shaden Eldakar-Hein received the William Osler, MD Award for General Internal Medicine. This year's recipients of the Department of Medicine Mentor Awards were Drs. Ben Suratt and Matt Poynter.

The Department continues to be a nationally/internationally recognized leader in research with contributions to new scientific knowledge panning from the bench to the bedside to the community. In aggregate, members of the department published more than 300 manuscripts, reviews, chapters and books, and were 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 to be visiting professors, and they are elected to leadership in national societies. The SPARK<sup>VT</sup> program to encourage the translation of novel ideas into therapies, diagnostics, and devices that will improve health was expanded to include the Departments of Neurological Sciences and Obstetrics, Gynecology, and Reproductive Sciences. With the continued support of an exceptional panel of community consultants, the program included a series of educational workshops and the second round of applications resulted in four new projects receiving funding. Although research funding continues to be a challenge with the declining of the NIH budget, the faculty continue to be successful in obtaining grants.

Highlights this year include a large Federal subcontract from Johns Hopkins University entitled, "Operation of a Facility for the Study of Infectious Agents, Vaccines and Antimicrobials in Adult and Pediatric Human Subjects" award to Dr. Beth Kirkpatrick, Vaccine Trials Unit; the competitive renewal of a large multi-site study," entitled "Etiology of Geographic and Racial Differences in Stroke," awarded to Dr. Mary Cushman; and the competitive renewal of the Pulmonary Division's and Vermont Lung Center's NHLBI T32 training grant entitled, "Multidisciplinary Training in Lung Biology," awarded to Dr. Charles Irvin.

In recognition of significant national contributions Dr. Renee Stapleton was awarded the Jo Rae Wright Award for Outstanding Science from the American Thoracic Society, Dr. Patricia King received the John H. Clark Award, recognizing exemplary leadership, commitment and contributions in advancing the public good at the state medical board level, Dr. Mary Cushman was awarded the American Health Association's Council on Epidemiology and Prevention Distinguished Achievement Award, Dr. Ralph Budd received the Senior Researcher of the Year award from the University of Vermont Medical Group, and Dr. Phil Ades received the Presidential Recognition Award from the American Association of Cardiovascular and Pulmonary Rehabilitation; and Dr. Phil Ades and Dr. Martin LeWinter were named Distinguished Investigators by the Cardiovascular Research Institute of Vermont.

Administrative Team:

Physician Leader and Chair	Polly E. Parsons, MD
Vice Chairs	
Medical Education	Mark Levine, MD
Research	Charles Irvin, PhD
Associate Chair for Academic Affairs	Benjamin Suratt, MD
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 of Medicine, University of Vermont Division Chiefs

R. Budd, MD, Immunobiology  
E. Leib, MD, Rheumatology  
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  
A. Repp, MD, Primary Care 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

- Total faculty: 180
- By rank –     Assistant Professors: 85  
                  Associate Professors: 49  
                  Professors: 44  
                  Research Associates: 2
- By gender – 73 female; 107 male
- By track –     Tenured: 39  
                  Research Scholar Pathway: 10  
                  Tenure Pathway: 6  
                  Clinical Scholar Pathway: 121  
                  Education Scholar Pathway: 4

Faculty Actions:

FALL 2013– 3 green sheet reappointments; 12 pink sheet reappointments;  
4 promotions; 2 tenure and promotion.

SPRING 2014 – 13 green sheet reappointments; 33 pink sheet  
reappointments, (11) volunteer faculty reappointments

Promotions:

Steven Grant, MD – Associate Professor  
Marc Greenblatt, MD – Professor  
Todd Holmes, MD – Associate Professor  
Markus Meyer – Associate Professor (with tenure)  
Kristen Pierce, MD – Associate Professor  
Renee Stapleton, MD – Associate Professor (with tenure)

Standing Committees:

Operational Committee

F. Keating, MD, Chair  
N. Bethina, MD  
G. Lamba, MD  
Y. Mageto, MD  
A. Mead – Staff  
T. Stockton – Staff  
J. Pierson, MD  
L. Polish, MD  
J. Schnure, MD  
A. Segal, MD  
D. Strader, MD

Education Committee:

M. Levine, MD, Chair  
G. Allen, MD  
A. Bantle, MD  
J. Bartsch, MD  
M. Degirmenci  
E. Ganguly, MD  
P. Hohl, MD  
F. Keating, MD  
S. M cMahon, MD

M. Pasanen, MD  
L. Polish, MD  
M. Ramundo, MD  
S. Raza, MD  
D. Shelc  
P. Slavik, MD  
J. Wilfong, MD  
N. Zakai, MD

Fellowship Education Committee:

M. Levine, MD, Chair  
M. Capeless, 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

Clinical Competency Committee (formerly Housestaff Evaluation Committee)

J. Bartsch, MD  
P. Hohl, MD  
M. Levine, MD  
M. Pasanen, MD  
M. Ramundo, MD  
D. Shelc

Housestaff Selection Committee:

M. Levine, MD, Chair  
W. Alston, MD  
R. Clouser, DO  
E. Ganguly, MD  
W. Hopkins, MD  
P. Menon, MD  
S. Merrill, MD  
M. Meyer, MD  
M. Pasanen, MD  
K. Pierce, MD  
M. Ramundo, MD  
S. Raza, MD  
H. Shenk, 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  
J. Bartsch, MD  
P. Hohl, MD  
S. McMahan, MD

Quality Assurance Committee - Medicine Health Care Service:

M. Levine, MD, Chair  
S. Ades, MD  
M. Airiodi  
S. Bellemare  
D. Benway, RN  
T. Berrings, RN  
J. Blondin  
M. Capeless, MD  
P. Gagne, RN  
Y. Mageto, MD  
S. McMahan, MD  
D. Pepin, RN  
A. Repp, MD  
P. Stevens  
J. Stinnett-Donnelly, MD  
J. Rimmer, MD  
J. Vecchio, MD  
K. Walter

Quality Assurance Committee – Cardiac Catheterization Laboratory

P. Gogo, MD, Chair  
H. Dauerman, MD  
E. Terrien, MD  
M. Watkins, MD  
T. Fortner, RN  
H. Ignéri, RN



Quality Assurance Committee – Dermatology

T. Holmes, MD  
G. Goldman, MD  
C. Weinberger, MD  
J. Lin, MD

Resident and Scholarly Activity

A. Marney, Chair  
V. Hood, MD  
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  
J. Trice, MD  
K. Pierce, MD  
D. Schneider, MD  
J. Schnure, MD  
R. Solomon, MD  
J. Vecchio, MD  
M. Wood, MD

Faculty Engagement Committee

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  
J. Pierson, MD  
T. Stockton, RN  
K. Bolgioni

Research Committee

C Irvin, PhD, chair  
R. Budd, MD

M. Poynter, PhD  
B. Kirkpatrick, MD  
T. Jetton, PhD  
M. Toth, PhD  
E. Gagnon - Staff  
M. Cushman, MD  
N. Fukagawa, MD PhD  
S. Lidofsky, MD PhD  
M. Meyer, MD  
R. Solomon, MD  
T. Mazuzan – Staff  
M. Rowen – Staff

Promotions and Tenure

G.Davis, MD, Chair  
B. Littenberg, MD  
J. Bates, PhD  
M. Levine, MD

Assistant Professor and Instructor Faculty Actions

M. Tischler, Chair  
D. Strader, MD  
C. Holmes, MD  
A. Repp, 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.

Faculty Development Committee

Laurie Leclair, Chair  
Benjamin Suratt, MD  
Garth Garrison, MD  
Matthew Gilbert, DO, MPH  
Christine Jones, MD  
Farrah Khan, MD  
Beth Kirkpatrick, MD  
Allen Lee, MD

Robert Lobel, MD  
Narandra Bethina, MD  
Kristen Pierce, MD  
Christine Weinberger, MD

**Medical Service**

Patient Days: Patient Days: 48,298 (inpatients)  
Ambulatory Care Visits: 224,767 (155,893 specialty and 68,874 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, Breast Care Center and Multidisciplinary Clinic, and Head and Neck Cancer Multidisciplinary Clinic
- 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, Dermatology (Telederm)  
Rutland (Rutland Regional) – Nephrology, Cardiology, Infectious Disease  
Middlebury (Porter) – Cardiology, Hem/Onc  
Newport (Newport Memorial) – Nephrology  
Malone (Alice Hyde) – Cardiology  
Ticonderoga (Moses Luddington Hospital) – Dermatology

Saranac Lake (Adirondack Medical Center) – Cardiology, Hematology/Oncology  
Canton- Potsdam – Cardiology  
Massena (MMH) – Cardiology  
Plattsburgh (CVPH) – Cardiology, Endocrinology

**Primary Care Sites:**

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

The Department also participates in many multidisciplinary clinics:

**Department of Medicine Multidisciplinary Clinics** (examples of participants in parentheses)

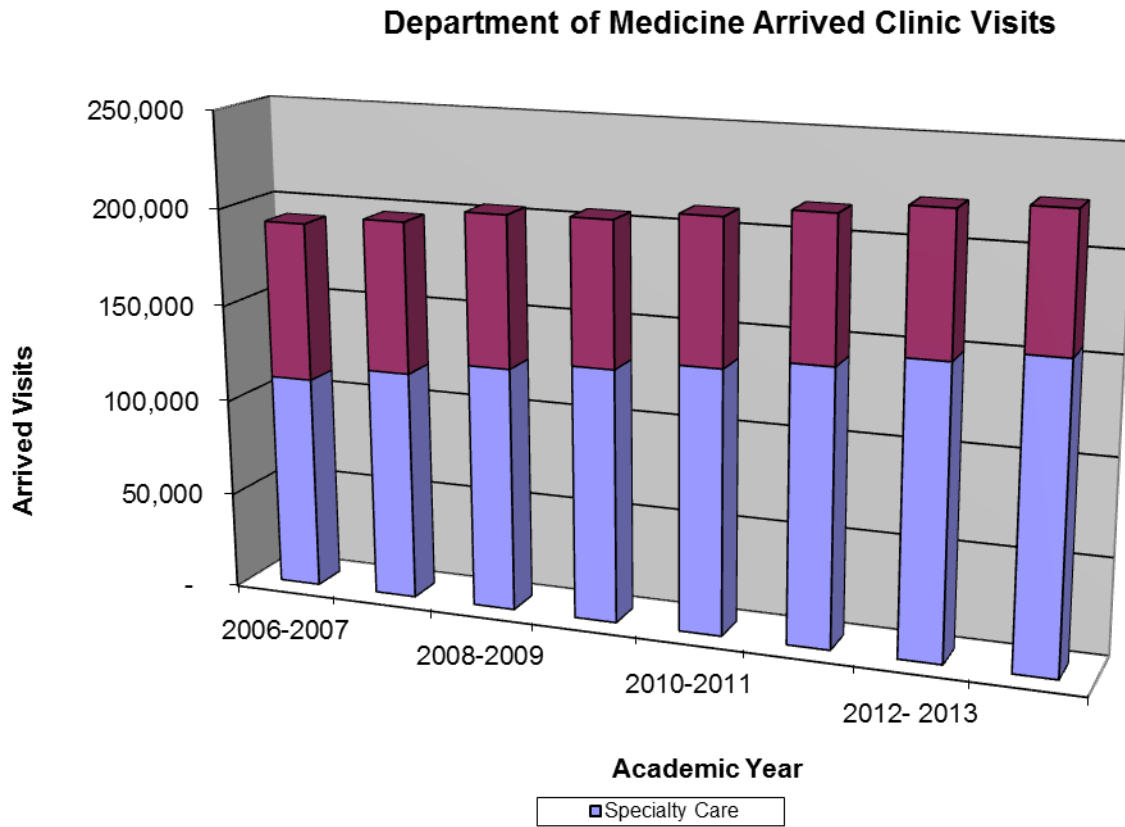
Active

- Maternal Fetal Medicine/Gestational Diabetes (Endocrine, Women's)
- Upper GI MDC (Gastroenterology, Hematology/Oncology, Rad. Oncology, Surgery)
- Lung MDC (Pulmonary, Surgery, Radiation Oncology, Hematology/Oncology)
- Breast MDC (Hematology/Oncology, Radiology, Surgery)
- Hem Malignancy (Hematology/Oncology, Pathology)
- GYN Tumor Board (Hematology/Oncology, Women's, Pathology)
- Brain Tumor Board (Hematology/Oncology, Surgery, Pathology)
- Sarcoma MDC (Hematology/Oncology, Orthopaedics)
- ENT MDC (Hematology/Oncology, Surgery)
- GU MDC (Hematology/Oncology, Surgery)
- Melanoma MDC (Dermatology, Surgery, Hematology/Oncology)
- Interstitial Lung Disease (Pulmonary and Rheumatology)
- Cystic Fibrosis (Pulmonary, Endocrinology, Social Work, Nutritional Services)
- Bone Metabolism (Endocrinology and Rheumatology)
- Stone Clinic (Nephrology and Urology)
- Transplant Clinic (Nephrology and Transplant Surgery)
- Oncology Rehabilitation (Hematology/Oncology, Cardiology, Physical Therapy)

- Pulmonary Rehabilitation (Pulmonary, Cardiology, and Physical Therapy)
- Heart Failure (Cardiology and Primary Care)
- TAVR (Cardiology and Surgery)

Under Development

- Dermatology and OB/GYN





## **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 2013-2014**

### **Administrative changes:**

Dr. Mark Levine, who had served as Program Director for over 20 years, was named the Designated Institutional Official and Associate Dean for Graduate Medical Education. In May 2014, Dr. Mark Pasanen assumed the role of Program Director for the Internal Medicine Residency and in July 2014, Dr. Shaden Eldakar-Hein was appointed to Associate Program Director, joining Dr. Mary Ramundo in that role.

### **Enhancements to Curriculum:**

On July 10, 2014, the Department of Medicine had a leadership retreat, in which the focus was the education of our learners. This jump-started several initiatives to improve the quality of our teaching sessions. The successful separation of inpatient and outpatient duties has allowed for continued educational innovation. Over the year, significant effort went into refining the curriculum with an enhanced emphasis on preparation for the ABIM certification exam, including incorporation of MKSAP questions into morning report and teaching sessions. In addition, the ethics curriculum has been re-designed and sessions offering an opportunity for personal and professional reflection were added.

**Continuity Clinic Revitalization:** In continuity clinic, small group learning sessions continue to be developed and are extremely well-received by residents. Given the importance of supporting a culture of high value care, residents were introduced to the Choosing Wisely initiative through interactive teaching sessions. In addition, on-line modules introducing patient safety concepts were initiated. Residents were educated on practice management, and have initiated personal practice improvement projects.

### **Improved Communication:**

As the program has expanded over the last few years, the need for an improved communication strategy was identified. This led to the development of a new secure website for the Internal Medicine residency. This website includes numerous resources for residents, including links to recent cases and teaching discussions, schedules and more general resources (such as the “Survival Pack”). In addition, weekly emails are now sent to all the residents, outlining the highlights of the past week, links to relevant clinical information and the schedule for the upcoming week.



### Improvements in Evaluation/Assessment:

This past year, led by Dr. Ramundo, we successfully implemented a milestone-based annual resident review. To do this, we required development and increased use of focused assessments and direct observation. Faculty development on the use of these focused assessments has been initiated. There has been substantial work utilizing the New Innovations platform to create a user-friendly educational portfolio for residents.

### Scheduling improvements:

Given the complexity and stresses of resident scheduling, increased flexibility was a goal. In the last year, we instituted a policy of floating days off for residents while on General Medicine wards. In addition, we were able to successfully implement night float coverage for cardiology, essentially eliminating overnight call for our residents.

## 3. List of All Residents

### PGY-3

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	University of Vermont
Merrill, Samuel	Washington University
Parkhurst, Benjamin	University of Buffalo
Rand, David	Philadelphia College of Osteopathic Medicine
Raza, Samreen	Imperial College – United Kingdom
Sharma, Deva	University of Maryland
Shenk, Heather	University of Vermont
Spiess, Krystine	Kansas City Osteopathic Medicine
Trobaugh, Derinda	University of Arkansas

### PGY-2

Agarwal, Zubin	Mayo Medical School
Arling, Timothy	University of Maryland
Burnett, Maria	University of Vermont
Cox, Courtney	Eastern Virginia Medical School
Dado, Christopher	Wayne State University
Degirmenci, Markus	University of Washington
Halevy, Jonathan	University of Pittsburgh
Koenen, Brian	University of Kansas
Lopez, Max	Boston University
McEntee, Rachel	University of Vermont
Pesta, Lynn	Wayne State University
Sandiford, Patrick	Albany Medical College
Thampatty, Gayathri	Amala Institute, Thrissur, India
Vadlamudi, Charita	University of North Carolina

## **PGY-1**

### **Categorical**

Champaloux, Marc	University of Virginia
Dunbar, Edward	University of Wisconsin
Enser, James	University of Wisconsin
Hall, Elizabeth	University of Louisville
Khadanga, Sherrie	University of So. Alabama
Menson, Katherine	University of New England, Osteopathic Medicine
O'Toole, Jacqueline	University of New England, Osteopathic Medicine
Scribner-Metcalf, Tara	University of Washington
Solomon, Benjamin	Medical College of Georgia
Stoyak, Samuel	University of Pittsburgh
Thach, Susanna	University of Vermont
Vanderloo, Matthew	University of Cincinnati
Wacker, Matthias	Julius – Maximilians – Universitaet Wurzburg
Wilfong, Jonathan	University of California – San Francisco

### **Preliminary**

Bensimhon, Ariel	Temple University (Anesthesia)
Caballero-Manrique, Esther	University of Rochester (Anesthesia)
Leshchinskiy, Sergey	St. George's University (Radiology)
Maddy, Erin	University of Minnesota (Anesthesia)
Reynolds, Nicholas	University of Louisville, Anesthesia)
Romano, Michael	University of Massachusetts (Dermatology)
Trevino, Christopher	Baylor College of Medicine (Neurology)
Varvarikos, John	St. George's University (Radiology)
Weber, Stewart	University Auto de Guadalajara (Neurology)

### **Chief Medical Residents**

Bartsch, Jason	George Washington University
Hohl, Patrick	University of New England, Osteopathic Medicine
McMahon, Patrick	SUNY - Upstate

## **4. Resident Awards**

- **The Harriet P. Dustan, M.D. Award**  
*Deva Sharma, M.D. and Samuel Merrill, M.D.*
- **The Frank L. Babbott, M.D. Memorial Award**  
*Deva Sharma, M.D.*
- **E.L. Amidon, M.D. Award**  
**Outstanding Teacher of the Year**  
**Subspecialty Medicine**  
*William Hopkins, M.D.*
- **William Osler, M.D. Award**  
**Outstanding Teacher of the Year**

**General Internal Medicine**  
*Shaden Eldakar-Hein, M.D.*

- **Richard E. Bouchard, M.D.**  
**Excellence in Primary Care Award**  
*Krystine Spiess, D.O.*

**5. Resident presentations at local/national meetings and publications**

Schneider, DJ, Agarwal Z, Seecheran N, Keating FK, Gogo P. Pharmacodynamic Effects during the transition from Cangrelor to Ticagrelor and from Ticagrelor to Cangrelor. JACC Intervention 2014; 7(4):435-442.

**Robert Disantis MD**, Karen McFeetersLeary CCC-SLP, Lakshmi Joshi Boyle CCC-SLP, David Kaminsky MD Vocal Therapy Efficacy in Vocal Cord Dysfunction presented at the Annual G3 Research Day, May 23, 2014

**Disantis, Robert MD** Abdominal Pain and Mass in a Patient with History of Seizures, presented at the Vermont/ New Hampshire ACP chapter meeting, October 25, 2013

**Adedayo Fashoyin MD**, Benjamin Littenberg MD Vitamin D, Bone Mineral Density and Mortality in Adults presented at the Annual G3 Research Day, May 23, 2014

**Alison Fitzgerald, M.D.** Improving the Autopsy Rate at Fletcher Allen Health Care. What are the Barriers? What are The Solutions? presented at the Annual G3 Research Day, May 23, 2014

**Damon Houghton, M.D.** Prediction of Hospital Acquired Venous Thrombosis in Cancer Patients using the MITH Score Presented at the American Society of Hematology in New Orleans, LA December of 2013

**Damon Houghton MD**, Michael DeSarno MS, Peter Callas PhD, Allen Repp MD, Mary Cushman MD MSc, Samuel Merrill MD PhD, John Winters MD, Neil Zakai MD MSc Validation of Medical Inpatient Thrombosis Risk Assessment Model (MITH Study) Presented at the Northern New England Clinical Oncology Society in Stowe, VT November of 2013 and presented at the Annual G3 Research Day, May 23, 2014

**Benjamin Keveson MD**, Pamela Stevens RN MSN, Justin Stinnett-Donnelly MD MS, Ryan Clouser DO, Gilman Allen MD Choosing Wisely at Fletcher Allen Health Care – Facilitating Change Through Resident Involvement and Education: Reducing Daily Chest X-rays in Adult Intensive Care presented at the Annual G3 Research Day, May 23, 2014

**Timothy Leclair MD**, Neil Zakai MD, Mike Desarno, Jan Bunn PhD, Renee Stapleton MD, PhD Vitamin D Supplementation and Outcomes in Critically Ill Intubated Patients in the Medical Intensive Care Unit presented at the Annual G3 Research Day, May 23, 2014

**McEntee RK**, Hopkins W Seeing, hearing, thinking, and Feeling: Cardiopulmonary simulation in preclinical medical education. Presented at the Vermont / New Hampshire ACP Chapter Meeting, October 25, 2013

**Menson, K** Clot Busters: A Case of Acquired Hemophilia A Presented at the Vermont/New Hampshire ACP Chapter Meeting, October 25, 2013

**Merrill SA**, Pamela Stevens RN Choosing Wisely: Reducing Unnecessary Imaging in Breast Cancer Patients presented at the Annual G3 Research Day, May 23, 2014

**Merrill SA**, DeSarno M, Houghton D, Winters J, Huston C, Peter Callas P, Repp A, Cushman M, Zakai N. Clostridium Difficile As a Risk Factor For Hospital-Acquired Venous Thrombosis in Medical Inpatients. Poster session at the American Society of Hematology Annual Meeting, December 7, 2013 in New Orleans, LA.

**Merrill SA**, DeSarno M, Houghton D, Winters J, Huston C, Peter Callas P, Repp A, Cushman M, Zakai N. Infection-related Risk Factors for Inpatient Venous Thromboembolism. Poster session at the American College of Physicians, Vermont Chapter Meeting October 25, 2013 in Hannover, NH.

**Merrill SA** and **Keveson B.** (2013, 10 October). Unwanted Party Favors: Serotonin Syndrome and Amnesia. Poster session at the American College of Physicians, Vermont Chapter Meeting. October 25, 2013 in Hannover, NH.

**Benjamin Parkhurst, M.D.** Improving Nursing/Resident Communication: A Quality Improvement Survey presented at the Annual G3 Research Day, May 23, 2014

**David Rand, DO MPH**, Julie Lin, MD, Elizabeth Zeeck MD, Deborah Cook MD Granulomatous Tattoo Reaction as a Manifestation of Sarcoidosis presented at the Society of General Internal Medicine Meeting in San Diego, CA April of 2014

**David Rand DO MPH**, Richard Pinckney MD MPH, Alfred Croteau MD, Michelle Dorwart MD MPH, Mark Levine MD Resident Duty Hours-Violations and Reporting Inaccuracy presented at the Annual G3 Research Day, May 23, 2014

**Samreen Raza, MD** Hearts and Spades: A Rare Care of Apical Hypertrophic Cardiomyopathy (Yamaguchi's syndrome) presented at the Vermont/New Hampshire ACP Chapter Meeting, October 25, 2013

**Samreen Raza, M.D.** Shifting the Goalposts: Updating the Appropriate Use Criteria for Radionuclide Imaging May Increase the Proportion of Appropriately Ordered Tests presented at the Annual G3 Research Day, May 23, 2014

**Deva Sharma MD**, Jamie E Levis MS, Sean R. McMahon MD, Inder Lal MD, Chris E Holmes, MD PhD Anti-platelet Therapies in the Modulation of TGFB Irelease: A Novel Therapeutic Approach to the Treatment of Breast Cancer Presented and Winner at the ACP VT/NH Chapter Meeting, October 25, 2014, presented at the ACP National Meeting in Orlando FL April 10, 2014 and presented at the Annual G3 Research Day, May 23, 2014

**Sharma D**, Brummel-Ziedins KE, Bouchard BE and Holmes, CE Platelets in Tumor Progression: A host Factor that Offers Multiple Potential Targets in the Treatment of Cancer J Cell Physiology 229: 1005-2015, 2014

**Heather Shenk, M.D. Derinda Trobaugh, M.D.** Inpatient Management of Venous Thromboembolism: Evaluation of Clinician Adherence to Local Guidelines and Creation of an Order Set to Standardize Treatment. presented at the Annual G3 Research Day, May 23, 2014

Solomon BL, Rounds T, Wood M Contribution of Extended Family History in Assessment of Risk for Breast and Colon Cancer Presented at the American Society Cancer Organization

**Kystine Spiess DO**, Mary Ramundo MD, Richard Pinckney MD MPH, G Sharp, K Perez, W Yagoda

Routine HIV Testing in a Rural Academic Center presented at the Annual G3 Research Day, May 23, 2014

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

Robert Disantis, M.D.	Hospitalist at Vanderbilt in Tennessee
Adedayo Fashoyin, M.D.	Geriatric Fellowship at Duke University in North Carolina
Alison Fitzgerald, M.D.	Hospitalist in Vermont
Damon Houghton, M.D.	Hematology/Oncology Fellowship at the University of North Carolina
Benjamin Keveson, M.D.	Pulmonary/Critical Care Fellowship at FAHC
Timothy Leclair, m.D.	Pulmonary/Critical Care Fellowship at FAHC
Samuel Merrill, M.D.	Chief Medical Resident, Applying for Hematology/Oncology Fellowship for 2015-2016
Benjamin, Parkhurst, M.D.	Hospitalist in North Country Hospital in Newport, Vermont
David Rand, M.D.	Hospitalist at Porter Medical Center in Middlebury, Vermont
Samreen Raza, M.D.	Chief Medical Resident, applying for Cardiology Fellowship For 2015-2016
Deva Sharma, M.D.	Research Fellowship at the University of Pittsburgh
Heather Shenk, M.D.	Chief Medical Resident
Kystine Spiess, M.D.	Infectious Disease Fellowship at FAHC
Derinda Trobaugh, M.D.	Hospitalist Job in Arkansas

**7. MATCH RESULTS 2014-2015**

**Categorical**

Trace Barrett	Albany Medical College
Lee-Anna Burgess	University of Queensland, Australia
Brendan Everett	Rutgers Robert Wood Johnson
Steven Jarzembowski	George Washington University
Shea Lambirth	University of Kentucky
Kevin Leadholm	Albany Medical College
Erica Monfred	University of Maryland
Lakshmi Nambiar	Royal College of Surgeons Ireland
Sara Roberts	Pennsylvania State University
Moussa Takla	University of Connecticut
Javaneh Tamiji	Royal College of Surgeons Ireland
Rosannah Velasquez	Baylor College of Medicine
Kaitlyn Vennard	NY Institute of Tech College of Osteopathic Medicine
Ann Vo	Touro University-California College of Osteopathic Medicine

**Preliminary**

Barbara Decker	St. George's University (Neurology)
Price DeHay	USF Health Morsani (Radiology)
Brendan Fulmer	Tulane University (Anesthesia)
Marcus Hook	University of Kansas (Radiology)
David Lorance	Tulane University (Neurology)
Nicholas Phillips	University of Vermont (Neurology)
Jeremy Porter	University of Hawaii (Anesthesia)
Jaclyn Thiessen	Oregon Health & Science University (Radiology)

**Preliminary Anesthesia shared with Surgery**

Bradley Jones  
Joshua Melito  
Joshua Stopak  
William Tharp

University of Oklahoma  
Lincoln Memorial U of DeBusk College of Osteopathic Medicine  
University of Nebraska  
University of Vermont

## Cardiovascular Division

David J. Schneider, MD, Director

[http://www.fletcherallen.org/services/heart\\_health/specialties/cardiology/](http://www.fletcherallen.org/services/heart_health/specialties/cardiology/)



During 2014 the Cardiovascular Division continued integration efforts among members of Fletcher Allen Partners. In January 2014 we began a coordinated effort to establish a Cardiovascular Service Line within Fletcher Allen Health Care and across Fletcher Allen Partners. A Cardiovascular Service Line Advisory Group was formed and meets on a monthly basis. Products of that discussion include a charter for the service line as well as position descriptions for the medical director and administrative director. David Schneider has agreed to serve as the medical director for the service line. In April 2014, our cardiology EPACs, Merge, was deployed at Central Vermont Medical Center. In June 2014, the three interventional cardiologist at Champlain Valley Physicians Hospital joined the Cardiovascular Division and UVMMG. Eric Gauthier, William Bradley, and Timothy Garrand will continue their primary clinical activity in Plattsburgh. Regional quality assurance meetings continue on a monthly basis. In May 2014, we received approval from the Green Mountain Care Board to update and replace equipment in 2 cardiovascular catheterization laboratories. These laboratories will support our growing structural heart disease program. In July 2014, we implanted our 100<sup>th</sup> aortic valve with the use of transcatheter aortic valve techniques. We continue a robust clinical and translational research program. Dr. Spector is in the final stages of negotiation with a company that will use his research findings to guide ablation of atrial fibrillation. Our research continues to benefit patients. We are actively involved in multiple trials of new pharmacologic agents as well as devices. For example, we are testing a novel treatment to lower cholesterol in patients who have had a myocardial infarction. In addition, we performed a series of small studies to determine the optimal transition between a new intravenous antiplatelet agent and longer term oral antiplatelet agents. In total, the Cardiovascular Division published 52 manuscripts and chapters during the past year. On the education front, Dr. Hopkins continues a key role in the medical student curriculum. He was selected for the eighth consecutive year by the medical students of the College of Medicine as the

recipient of the Course Director of the year. The course he directed, 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. Dr. Gogo was selected by the fellows in the Cardiovascular Training Program as the teacher of the year. Dr. Hopkins was the recipient of the E. L. Amidon, MD Award for Outstanding Teacher of the Year in Subspecialty Medicine. Dr. Dauerman is the Chair of the Clinical Cardiology Council Programming of the American Heart Association National Scientific Meeting.



## 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

William Bradley, MD  
Interventional Cardiology  
Clinical Interests

- ischemic heart disease
- cardiac catheterization
- coronary intervention

Mark Capeless, MD  
Professor of Medicine  
Director, Cardiovascular Disease Training Program  
Director, Clinic Electrophysiology Training Program  
Research and Clinical Interests

- clinical cardiac electrophysiology

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

- coronary intervention
- cardiac catheterization
- ischemic heart disease

Harold Dauerman, MD  
Professor of Medicine

- 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

Timothy Garrand, MD

Interventional Cardiology

Clinical Interests

- ischemic heart disease
- cardiac catheterization
- coronary intervention

Eric Gauthier, MD

Assistant Professor of Medicine

Clinical Interests

- ischemic heart disease
- cardiac catheterization
- coronary intervention

Prospero Gogo, MD

Associate Professor of Medicine

Director, Cardiovascular Catheterization Laboratory

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

Associate 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 regulation of myofibroblast and smooth muscle cell differentiation
- Mechanisms of dysfunctional cardiovascular remodeling
- Pathobiology of acute myeloid leukemia
- Biochemistry of purine-rich element binding proteins

Martin M. LeWinter, MD  
Professor of Medicine and Molecular Physiology and Biophysics  
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:  
Research Interests

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

Markus Meyer, MD  
Assistant Professor of Medicine  
Research and Clinical Interests

- cardiac imaging and stress testing
- general cardiology

- heart failure and cardiomyopathy

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

- 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

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

Abraham Abernethy

Sreedivya Chava

Mohamed El-Haddad

Patrick Hohl

Mark Lee

Gangadhar Malasana

Sean McMahon

Shahab Moossavi

Mehdi Rambod

Zohair Raza

Ali Saab

Naveen Seecheran

Preeth Sundaran

Nathaniel Thompson

Srinath Yeshwant,

Nurse Practitioners and Physician Assistants:

Elizabeth Carney, APRN

Gregory Ehle, PA

Karen Farrell, APRN

Susan Ann Hamlyn-Prescott, APRN

Ann Laramee, APRN  
Margaret MacDonald, NP  
Cheryl McNeil, APRN  
Nancy Strong, APRN  
Barbara Worgan, APRN

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

Robert J. Kelm, Jr. Ph.D.  
Amy E. Rumora, (Ph.D. student, Biochemistry Program) defended Ph.D. dissertation on May 31, 2014 (current position, Postdoctoral Fellow)  
Lauren A. Ferris (Ph.D. student, Biochemistry Program)

Martin LeWinter, MD  
Burton Tanner

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

Michael J. Toth, Ph.D.  
Damien Callahan, Ph.D. – post doctoral  
Mark Miller, Ph.D. – K01 Mentee  
Timothy W. Tourville, Ph.D.- Post-doc

**Leadership in Professional Societies:**

<b>Harold L. Dauerman, MD</b>	
Scientific Task Force American Heart Association	2008- 2014
Mission: Lifeline National STEMI Quality Improvement Initiative	
Member, Steering Committee for American College of Cardiology Get with the Guidelines/ACTION Registry	2013-2016
Data Safety and Monitoring Board, current	2012-2014
Chairman, Clinical Cardiology Council Programming American Heart Association National Scientific Meeting	2012-2014

**Prospero B. Gogo, MD**  
Governor-elect, Vermont Chapter of the American College of Cardiology; member  
Novation Cardiovascular Council

**William Hopkins, MD**

American College of Cardiology, Fellow  
American College of Physicians, Fellow  
Pulmonary Hypertension Association  
International Society for Adult Congenital Cardiac Disease

**Matthew W. Watkins, MD**

Executive Board, Northern New England Cardiovascular Disease Study Group  
Advisory Board, Green Mountain Care Board, Vt. State health care reform program  
Technical Advisory Board, Green Mountain Care Board, Vt. State health care reform program  
for specialty practice

**Martin LeWinter, MD**

Chair, Research Committee  
Heart Failure Society of America  
Cardiovascular Self-Examination Committee, ABIM  
Council of Faculty and Academic Societies, AAMC

**Editorships and Editorial Boards:**

**Philip Ades, MD**

Consulting Editor (Former Editor--in-Chief) Journal of Cardiopulmonary Rehabilitation and  
Prevention  
Associate Editor: Coronary Artery Disease  
Editorial Board: Circulation

**Harold L. Dauerman, MD**

Editor in Chief, Coronary Artery Disease  
Wolters Kluwer, Lippincott Williams Wilkins  
Journal of the American College of Cardiology

July 1, 2013-  
2005-current

**William Hopkins, MD**

Associate Editor, Coronary Artery Disease

**Prospero B. Gogo, MD**

Reviewer for American Journal of Cardiology and Coronary Artery Disease

**Daniel Lustgarten, MD**

Study Sections and Federal Advisory Boards  
Medtronic Co-Management Council of Advisors

**Martin LeWinter, MD**

Associate Editor, Circulation  
Associate Editor, Coronary Artery Disease

PI, New England, New York and Quebec Regional Clinical Center of the NHLBI Heart Failure Research Network  
Section Editor, Myopericardial Disease, UpToDate  
Editorial Boards: Heart and Vessels. Experimental and Clinical Cardiology, Current Cardiology Reviews, Heart Failure Reviews

**David J. Schneider, MD**

Associate Editor, Coronary Artery Disease  
Editorial Board, American Journal of Cardiology

**Jeffrey L. Spees, Ph. D.**

Editorial Board: Coronary Artery Disease.  
Reviewer for: Science, Stem Cells, Stem Cells Dev., FASEB J., Proc. Natl. Acad. Sci. USA, J. Cell Sci., Arthritis and Rheumatism, Coronary Artery Disease, Clinical and Investigative Medicine, Cytotherapy, Cancer Gene Therapy, Gene, Journal of Neuroscience Research, FEBS Letters, Neurotoxicology, Proceedings of the American Thoracic Society, Differentiation, Acta Neuropathologica, Tissue Engineering, Experimental Hematology, Experimental Dermatology, Molecular Therapy, Biology of Blood and Marrow Transplantation, J. Cell Biochem., J cell Physiology, and J. Cell. Mol. Med.

**Marc D. Tischler, MD**

Associate Editor, *Coronary Artery Disease*

**Michael J. Toth, Ph.D.**

Editorial board: American Journal of Physiology-Endocrinology and Metabolism

**Peter Van Buren, MD**

Performed editorial review for the following journals: Biochemistry, Circulation Review, Coronary Artery Disease

**Study Sections and Federal Advisory Boards:**

**Daniel Lustgarten, MD**

Medtronic Co-Management Council of Advisors

**Peter S. Spector, MD**

Physician's Advisory Board – Biosense Webster, Inc., 2003 – present  
Medical Board – Atrial Fibrillation Association-US (AFA-US) – 2011– present

**Jeffrey L. Spees, Ph.D.**

Consultant and Project Coordinator, Fate Therapeutics, Inc., San Diego, CA 2012-  
Chief Scientist, ArchisAcres, LLC, Escondido, CA 2013-  
Meetings with ArchisAcres, White House Staff, members of the Pentagon, and



Sec. Agriculture Tom Vilsack in Washington, DC.	2013-
NIH Special Emphasis Panel, Cardiovascular Sciences	2013
German-Isreali Research Foundation	2013
Connecticut Academy of Science and Engineering, Stem Cell Peer Review	2013

**Michael Toth, Ph.D.**

Recent member of NIA-C Clinical Aging Study section 6/10 to 6/14

**Peter Van Buren, MD**

Veterans Administration Cardiovascular Study Section Panel Member

**Major Faculty Honors and Awards:**

**Philip Ades, MD**

- 2013 AACVPR Presidential Recognition Award at the 28<sup>th</sup> Annual Meeting in Nashville, TN
- 2014 Distinguished Investigator: Cardiovascular Research Institute of Vermont

**Friederike Keating, MD**

- Associate Director Cardiovascular Training Program

**William Hopkins, MD**

University of Vermont College of Medicine

- The Dean Warshaw Integration Award, 2014
- Foundations Course Director Award, 2014
- Outstanding Foundations Course Award, 2014
- University of Vermont College of Medicine Internal Medicine Residency Program
- E. L. Amidon, MD Award: Outstanding Teacher of the Year, Subspecialty Medicine, 2014

**Michael Toth, Ph.D.**

- 2014 Silver Stethoscope Award for Teaching Excellence – UVM COM 2016 class  
Foundations Award for faculty member who, although having few lecture hours, made a substantial contribution to the students' education

**Grants:**

**Philip Ades, MD**

R01 AG 033547 (M Toth) Muscle disuse and contractile dysfunction in the elderly NIA Co-Investigator 5% \$358,263 2010-2014

Vermont Center for Behavior and Health. Principal Investigator Steven Higgins PhD. PI (P. Ades MD, Assoc. Director, Co P.I.: 20% time) P20GM103644-01A1

Agency: NIH: The National Institute of General Medical Sciences 2013-2018

Tobacco Centers of Regulatory Science Award P50DAO36114 from the National Institute on Drug Abuse and U.S. Food and Drug Administration Steven Higgins PhD.  
PI Philip Ades, MD Investigator 5% time 2013-2018

**Harold L. Dauerman, MD**

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

ABSORB 3: A randomized trial comparing a fully bioresorbable drug eluting poly lactic acid polymer coronary stent versus a permanent everolimus eluting coronary stent. 2013-2014. Estimated Grant: Abbott Vascular—75,000 dollars.

**Friederike Keating, MD**

PI, Odyssey Outcome Trial (Sanofi EFC11570)

**Robert J. Kelm, Jr. PhD**

2013 LCCRO Pilot Project Award

Vermont Cancer Center

09/01/2013 – 12/31/2014

\$50,000 total direct costs

Role of Purine-Rich Element Binding Proteins in the Pathogenesis of High-Risk AML

**Martin LeWinter, MD**

PI, Vermont, New York and Quebec Regional Clinical Center of the NHLBI Heart Failure Research Network (NIH U10 HL110342)

PI, Advanced Glycated End-Products in Human Myocardium (NIH RO1 HL089944)

PI, Postdoctoral Cardiovascular Research Training Program (NIH T32 HL07647)

**Markus Meyer, MD**

Medtronic \$75,000

Pacing-induced remodeling in a swine model of left ventricular hypertrophy II

This study seeks to define the pacing requirements that result in a beneficial remodeling of the HFpEF phenotype in a swine model of hypertension-induced left ventricular hypertrophy

Role: PI

Medtronic \$20,000

Pacing-induced remodeling in a swine model of left ventricular hypertrophy III

This study seeks to define the pacing requirements that result in a beneficial remodeling of the HFpEF phenotype in a swine model of hypertension-induced left ventricular hypertrophy  
Role: PI

**Danel Lustgarten, MD**

Industry Grant: Medtronic

start: 06/28/2010

Direct His Bundle Pacing (DHBP) to Implement Cardiac Resynchronization Therapy.

Boston Scientific

Prospective Randomized Evaluation of the WATCHMAN LAA Closure Device In Patients with Atrial Fibrillation Versus Long Term Warfarin Therapy (PREVAIL) and Continued Access to PREVAIL (CAP2)

St Jude Medical

Quadripolar Pacing Post Approval Study

Medtronic, Inc.

Attain Performa Quadripolar Lead Clinical Study

Medtronic, Inc.

Product Performance Platform

**David J. Schneider, MD**

*The Medicines Company*

*Transition from Cangrelor to Ticagrelor, Prasugrel, and Clopidogrel*

**Peter Spector, MD**

**Patents:**

Provisional US patent application #61753387: "Method and systems for optimizing detection and treatment of atrial fibrillation" Jan 16 2013.

US patent application #13\_844600: "Methods and systems for mapping cardiac fibrillation" filed March 15 2013.

US patent application #13\_844623: "Methods and systems for optimizing lesion placement to minimize and treat cardiac fibrillation" filed March 15 2013.

US patent application #13\_844739: "Methods and systems for minimizing and treating cardiac fibrillation" filed March 15 2013.

US patent application #13\_844710: "Methods and systems for determining spatiotemporal variability for mapping cardiac fibrillation" filed March 15 2013.

US patent application #13\_844753: “Catheter systems and related methods for mapping, minimizing and treating cardiac fibrillation” filed March 15 2013.

US patent application #13\_844574: “Methods and systems for assessing cardiac fibrillogenicity” filed March 15 2013.

Provisional US patent application: “An interactive tissue model for simulating the electrical activity of excitable tissues” filed March 15 2013

**Jeffrey L. Spees, Ph.D.**

R01 NS073815 NIH/NINDS/NIGMS (Spees) 1/1/2013-12/31/2016

Control of reactive astrocytes by Notch1 and Amyloid Precursor Protein.

\$219,000 direct funding per year

Patent: Cell-Kro (C-terminal domain 4 of CTGF and Insulin); provisional application submitted.

**Michael J. Toth, Ph.D.**

Individual Research Project Grant 9/15/10 to 6/30/15 (\$2,802,106)

NIH R01 AG-033547 PI: Toth

Title: *Muscle Disuse and Contractile Dysfunction in the Elderly*

VCC/LCCRO 8/1/14 to 7/31/15 (\$50,0000)

PI: Toth

Title: Novel exercise modalities to improve fatigue and muscle function in cancer survivors

NIH R01 AR-033547 Muscle disuse and contractile dysfunction in the elderly

Dept of Medicine Translational Science Award - Skeletal muscle dysfunction in the elderly with acute muscle disuse

Peter Van Buren, MD

P01 HL059408-11 (Warshaw)

February 1, 2010- January 31, 2015

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

**Matthew W. Watkins, MD**

[CRT-152 Nine-Month Primary Endpoint Results of the Omega Study: Clinical Outcomes After Implantation of a Modern Platinum Chromium Bare Metal Stent](#) “Ad5.AC6 Gene Transfer for CHF” NIH protocol 13761, FAHC PI Matthew Watkins Use of intracoronary AC6 gene therapy to improve symptomatic heart failure

**Publications: (2013-2014)**

Nathaniel C. Thompson, Justin Stinnett-Donnelly, Nicole Habel, Bryce Benson, Jason H. T. Bates, Burton E. Sobel, Peter S. Spector. Improved spatial resolution and electrogram wave direction independence with the use of an orthogonal electrode Configuration. *J Clin Monit Comput* (2014) 28:157–163 April 2014

Spector. P and Habel N. “Principles of Differential Diagnostic Pacing Maneuvers: Serial vs. Parallel Conduction” *Pacing Clin Electrophysiol*. 2014 May 27.

Rubin, LJ, Hopkins, WE. Overview of Pulmonary Hypertension. In: UpToDate, Rose, BD (ed), UpToDate, Waltham, MA 2014.

Rubin, LJ, Hopkins, WE. Diagnostic Evaluation of Pulmonary Hypertension. In: UpToDate, Rose, BD (ed), UpToDate, Waltham, MA 2014.

Rubin, LJ, Hopkins, WE. Pathogenesis of Pulmonary Hypertension. In: UpToDate, Rose, BD (ed), UpToDate, Waltham, MA 2014.

Rubin, LJ, Hopkins, WE. Treatment of Pulmonary Hypertension. In: UpToDate, Rose, BD (ed), UpToDate, Waltham, MA 2014.

John C. Wang; Didier Carrié; Monica Masotti; Andrejs Erglis; David Mego; Matthew Watkins; Paul Underwood; Dominic J. Allocco; Christian W. Hamm

Solomon R, Jeremias A, Abbott D, Kim M, Kereakes D and Dauerman HL. Bicarbonate or Saline Study . *Clinical Journal: Am Soc Nephrology* 2014, submitted.

Cutlip DE, Kerieakes DJ, Mauri L, Stoler RS and Dauerman HL for the EDUCATE Investigators. Bleeding complications and non-compliance with dual oral antiplatelet therapy after drug eluting stent placement. *J Am Coll Cardiology* 2014, submitted.

Dauerman HL. Deconstructing the Language of Bleeding. *Journal of the American College of Cardiology*, 2014 63:1876-1878.

Tian,J.; Ren,X.; Uemura,S.; Dauerman,H.; Prasad,A.; Toma,C.; Jia,H.; Abtahian,F.; Vergallo,R.; Hu,S.; McNulty,I.; Lee,H.; Lee,S.; Yu,B.; Jang,I.K. Spatial heterogeneity of neoatherosclerosis and its relationship with neovascularization and adjacent plaque characteristics: Optical coherence tomography study. *Am Heart J* 2014; 167:884-892.

Meyer,M.; Bell,S.P.; Sardana,N.; Zubarik,R.; Lewinter,M.M.; Dauerman,H.L. Esophageal assessments of left ventricular filling pressures: A proof-of-concept study. *Int J. Critical Illness* 2014; 4: 18-23

Dauerman HL. Rewriting the History of Vascular Closure Devices. *Eurointervention*, 2014. In press.

Steinhubl SR, Eikelboom JW, Hylek EM, Dauerman HL, Smyth SS, Becker RC. Antiplatelet Therapy in Prevention of Cardio- and Venous Thromboembolic Events. *Journal of Thrombosis and Thrombolysis* 2014; 37:367-372.

van Diepen S, Reynolds HR, Stebbins A, Lopes RD, Džavík V, Ruzyllo W, Geppert A, Widimsky P, [Ohman EM](#), [Parrillo JE](#), [Dauerman HL](#), [Baran DA](#), [Hochman JS](#), [Alexander JH](#). Incidence and Outcomes Associated With Early Heart Failure Pharmacotherapy in Patients With Ongoing Cardiogenic Shock. *Crit Care Med*. 2014;42: 281-288

[Jia H](#), [Abtahian F](#), [Aguirre AD](#), [Lee S](#), [Chia S](#), [Lowe H](#), [Kato K](#), [Yonetsu T](#), [Vergallo R](#), [Hu S](#), [Tian J](#), [Lee H](#), [Park SJ](#), [Jang YS](#), [Raffel OC](#), [Mizuno K](#), [Uemura S](#), [Itoh T](#), [Kakuta T](#), [Choi SY](#), [Dauerman HL](#), [Prasad A](#), [Toma C](#), [McNulty I](#), [Zhang S](#), [Yu B](#), [Fuster V](#), [Narula J](#), [Virmani R](#), [Jang IK](#). In Vivo Diagnosis of Plaque Erosion and Calcified Nodule in Patients with Acute Coronary Syndrome by Intravascular Optical Coherence Tomography. *J Am Coll Cardiol*. 2013, Nov 5;62(19):1748-58

Bagai,A.; Jollis,J.G.; Dauerman,H.L.; Peng,S.A.; Rokos,I.C.; Bates,E.R.; French,W.J.; Granger,C.B.; Roe,M.T. Emergency Department Bypass for ST-Segment Elevation Myocardial Infarction Patients Identified with a Pre-Hospital Electrocardiogram: A Report From the American Heart Association Mission: Lifeline Program. *Circulation* 2013 Jul 23;128(4):352-9

Meyer,M.; Bell,S.P.; Chen,Z.; Nyotowidjojo,I.; Lachapelle,R.R.; Christian,T.F.; Gibson,P.C.; Keating,F.F.; Dauerman,H.L.; Lewinter,M.M. High dose intracoronary N-acetylcysteine in a porcine model of ST-elevation myocardial infarction. *Journal of Thrombosis and Thrombolysis* 2013. Nov;36(4):433-41.

[Leonardi S](#), [Stebbins A](#), [Lopes RD](#), [Lokhnygina Y](#), [Todd M](#), [Bhatt DL](#), [Stone GW](#), [Lincoff AM](#), [Dauerman HL](#), [Gibson CM](#), [White HD](#), [Parikh KH](#), [Gruberg L](#), [Herrmann HC](#), [McLaurin BT](#), [Goodman SG](#), [Mahaffey KW](#). Quantification of the effect of clopidogrel on enzymatic infarct size related to a percutaneous coronary intervention in patients with acute coronary syndromes: insights from the CHAMPION percutaneous coronary intervention trial. *Coron Artery Dis*. 2013 Jun;24(4):321-7.

Dauerman HL. The Softer Side of Bleeding. *J Am Coll Cardiology*; 2013: 61(21):2139-41

Zeglin-Sawczuk M, Jang IK, Kato K, Yonetsu T, Kim S, Choi SY, Kratlian C, Lee H and Dauerman HL. Lipid rich plaque and coronary dissections in women compared to men. *Journal of Thrombosis and Thrombolysis* 2013 Nov;36(4):507-13.

Donaldson CW, Schneider DJ, Bertges DJ, Adams JE, Elgharib NZ, Mueller E, Prabhu W, Ashikaga T and Dauerman HL. Increased local cytokine production at culprit superficial femoral artery plaques. *J. Thrombosis and Thrombolysis* 2013 Oct;36(3):293-9

Savage PD, Lakoski S, Ades PA. Course of Body Weight from Hospitalization To Exit from Cardiac Rehabilitation. *J Cardiopulm Prev Rehabil.* 2013;33:274-280.

Fletcher G (Chair), Ades PA (Co-Chair for Exercise Training), Kligfield P (Co-Chair for Exercise Testing), Arena R, Balady GJ, Bittner V, Coke L, Fleg JL, Forman DE, Gerber T, Gulati M, Madan K, Rhodes J, Thompson PD, Williams MA. Exercise Standards for Testing and Training: A Statement for Healthcare Professionals from the American Heart Association. In Press *Circulation* 2013.

Keating FK, Schneider DJ, Savage PD, Bunn JY, PhD, Harvey-Berino J, Ludlow M, Toth MJ, Ades PA. Effect of Exercise Training and Weight Loss on Platelet Reactivity in Overweight Patients with Coronary Artery Disease. *J Cardiopulm Rehabil Prev.* 2013;33:371-7.

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## 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 four general medical dermatologists, four surgical dermatologists, and four experienced physician assistants. We provide general dermatology care to the community as well as highly-specialized consultation 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.

Our new wing on EP-3 is up and running smoothly. For 2014-2015 we have hired our Chief Resident Dr. Elizabeth Zeeck who will begin as an Assistant Professor and will practice general dermatology. This year we will have approximately 29,300 patient visits producing about 61,000 wRVU.

The additions of Dr. Joseph Pierson and Dr. Laura McGevna have been a tremendous addition to our faculty. Dr. McGevna is developing a women's health dermatology clinic in conjunction with the Department of Obstetrics and Gynecology. Dr. Pierson hit the ground running and has greatly improved what was already a very strong Residency Program. Dr. Pierson brings a great passion for education, and he has guided our training program through the transitions to the ACGME Milestones. We continue to secure multiple donations to our residency program which allow us to provide a very high level of financial support for our trainees.

On the merits of his excellent teaching and national recognition as a leader in cutaneous surgery, Dr. Todd Holmes was promoted to Associate Professor of Dermatology / Medicine. Dr. Glenn Goldman was given an appointment as a Professor in the Department of Surgery.

Our last Procedural Dermatology fellow Dr. Vanessa Lichon presented a fabulous research project at the Annual Meeting of the American College of Mohs Surgery. This study of rotation flap tension vectors in a Porcine Model was selected for the prestigious Tromovich Award as the best fellow research project in the United States for 2013-2014. This work continues, and in September Dr. Lichon will return to complete a further set of experiments with Dr. Goldman and with one of the Otolaryngology residents, Dr. Christine Cairns. The incoming surgery fellow, Dr. Nicole Howe has obtained a grant from the American Society for Dermatologic Surgery and she will be collaborating with Dr. Goldman and the ASDS to develop criteria and a curriculum for international fellowships in Dermatologic Surgery.

We continue to volunteer at the Community Health Center Free Clinic. 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 able to participate in the care of an underserved population.

In January we held the 25<sup>th</sup> Annual Winter Dermatology Conference in Stowe. Established by Paul Krusinski, MD, this conference remains popular and relevant despite its long tenure. This coming year we will be fortunate to have several national leaders lecturing at the conference and we are expecting a large turnout for this year's event.

Dr. Glenn Goldman continues to hold numerous national leadership positions. He continues to be the ACMS advisor to the American Medical Association Resource Based Relative Value Utilization Committee. He is writing a second textbook of cutaneous surgery with Dr. Kavita Miriwalla. Dr. Holmes and Dr. Goldman remain very active in volunteer international work for dermatologic surgery through the American Society for Dermatologic Surgery. This fall Dr. Goldman will travel to South Africa to work with The Dermatologic & Aesthetic Surgery International League to create a joint website portal with the American Society for Dermatologic Surgery. Next fall Dr. Goldman and Dr. Holmes will both visit Cape Town, South Africa as lecturers and surgeons, performing Mohs surgery and reconstruction and assisting in the training of South African Dermatologic Surgeons.

Several of our attending physicians are regular participants in Fletcher Allen administrative processes. Dr. Goldman, Dr. Weinberger, Dr. Holmes, and Dr. Pierson serve on a number of FAHC committees. Dr. Julie Lin continues her involvement in PRISM, where she is the PRISM representative from the Department of Medicine. She is working with Northwest Medical Center to develop a dedicated teledermatology program. Dr. Lin has completed her degree and boards in bioinformatics.

Our residency and procedural dermatology fellowship continue to be successful and rewarding. In the last two years two of our graduating residents have stayed on as faculty in dermatology at Fletcher Allen Health Care / University of Vermont College of Medicine. The residency remains highly sought after by students from around the country. 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. 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.

Residents and fellows present regularly at our local and regional meetings, and the senior residents and fellows are currently involved in a number of publications.

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. As usual, last year our UVM student interested in dermatology matched at an excellent training program. This year we have several outstanding candidates and expect that they will match at superior programs.

## **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
- International Dermatologic Surgery
- Flap tension in vivo research



### **Jamie Alpert, MD**

Associate Professor of Medicine  
Chair, Part-Time Faculty Actions Committee

- General Medical Dermatology



### **Todd Holmes, MD**

Associate Professor of Medicine

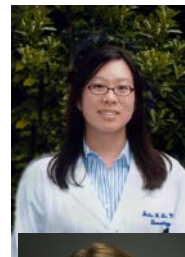
- Surgical Dermatology and Cutaneous Oncology
- Mohs and Reconstructive Surgery
- Resident and Fellow Education
- International Education in dermatologic surgery



### **Julie Lin, MD**

Assistant Professor of Medicine  
Department of Medicine PRISM Representative

- Cutaneous Lymphoma
- Electronic Medical Records
- Bioinformatics
- Teledermatology



### **Christine Weinberger, MD**

Assistant Professor of Medicine



- Mohs Surgery and Reconstruction
- Mohs Surgery for Melanoma

**Joseph Pierson, MD, Col US Army**  
**Assistant Professor of Medicine**

- General Medical Dermatology
- Residency Education in Dermatology



**Laura McGevna, MD**

- UVM Medical Graduate
- General Medical Dermatology
- Women’s Dermatology
- Residency Education in Dermatology



**Elizabeth Zeeck, MD**

- Last year’s Dermatology Chief Resident
- General Medical Dermatology
- Dermatology Laser and Cosmetics
- Residency Education in Dermatology



**Fellow**

**Nicole Howe, MD**

Procedural Dermatology Fellow 2013-2014

**Residents**

<b>Kendra Lesiak, MD</b>	PGY-4 / Chief
<b>Andrew Tegeder, MD</b>	PGY-4 / Chief
Jeremy Hugh, MD	PGY-3
Elizabeth Lester, MD	PGY-3

Andrew Hankinson, MD      PGY-2  
Michael Romano, MD      PGY-2

**Physician Assistants:**

**Deb Roseman, PA:**

Deb has been with us for over 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**

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.

**Study Sections and Federal Advisory Boards:**

**American Medical Association**

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

**Dermatology Foundation**

Dr. Goldman – Leader’s Society State / Regional Chair

Dr. Pierson – Leader’s Society State / Regional Vice Chair

**American College of Mohs Surgery**

Dr. Goldman – Fellowship Training Committee

**Publications – Books, Peer reviewed, chapters,**

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## **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 had 5 physicians, 3 nurse practitioners, 3 certified diabetes educators (CDEs) during the 2013-2014 academic year.

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 within the Fletcher Allen Partners network. To that end, we have initiated an Endocrine Service at CVPH, in Plattsburgh, NY that is staffed by one of our Endocrinologists.



Our “Diabetes Initiative,” recently developed in conjunction with PCIM and Family Medicine, is in use at the 9 Medical Home sites at FAHC.

These pathways are 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 eventually in the State of Vermont and in our general catchment area. The hallmarks of this effort are to facilitate seamless care between specialty and primary care and to allow all the patients to have complete diabetes education. In addition, we have developed algorithms for intensive in-patient diabetes management. 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. In cooperation with, and imbedded in the Community Health Teams, our Certified Diabetes Educators are able to reach many more individuals cared for within the FAHC system.

The Vermont Regional Diabetes Center is an American Diabetes Association accredited diabetes education program.

Three of our attending 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, and pituitary and adrenal disease. Overall, the clinic is flourishing in our new Tilley Drive setting

with 14,000 visits per year – fourth in the Department of Medicine. We are currently recruiting two new faculty members 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 educational mission continues to expand. Each year we train two Fellows in Endocrinology and approximately 30 students rotate through the service—and the number of residents electing endocrinology is on the increase.

## **Faculty**

### **John (Jack) Leahy, MD**

Professor of Medicine

Co-Director, Endocrinology, Diabetes and Metabolism Division

- Diabetes mellitus
- Islet beta-cell physiology and dysfunction

### **Joel Schnure, MD**

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

Director, Endocrinology Fellowship Program (as of 6/28/14)

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

### **Dhananjay (Jay) 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
- $\beta$ -cell biology
- Nutrient and neural regulation of  $\beta$ -cell growth

**Annis Marney, MD, MSCI**

Assistant Professor of Medicine

Director, Endocrinology Fellowship Program (through 6/27/14)

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**

Madiha Alvi, MD (F5; completed her fellowship June 30, 2014)

Sree Susmitha Garapati, MD (F4; started July 1, 2013)

**Nurse Practitioners and Certified Diabetes Educators**

Margaret Costello, FNP, MS

Maureen Dwyer, ANP, ACNP, GNP

Ann Gotham, ANP, MSN, ScM

Kristen Bolton, MS, RD, CDE

Rhonda Lapidow, RN, CDE

Linda Tilton, MS, RD, CDE

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

William Tharp (MD, PhD Student)

## **Leadership in Professional Societies**

Thomas Jetton

- Organizer and Senior Member: Boston-Ithaca Islet Club

## **Editorships and Editorial Boards**

Dhananjay Gupta

- Editorial Board: Journal of Endocrinology, Diabetes and Obesity

Thomas Jetton

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

Jack Leahy

- Diabetes Section Editor, [ENDOTEXT.COM](http://ENDOTEXT.COM)
- Founding member, and member of the Editorial Board for [BetaCellsInDiabetes.org](http://BetaCellsInDiabetes.org)
- Co-editor, Insulin Therapy, Endocrinology and Metabolism Clinics of North America, Volumes 42-43

Joel J. Schnure

- Editorial Board, Coronary Artery Disease

## **Study Sections and Federal Advisory Boards**

Dhananjay Gupta

- Grant Review Panel, Diabetes UK

Thomas Jetton

- Ad Hoc reviewer, EMNR-Study Section (SBIR and STTR), NIDDK, and NIH

Jack Leahy

- Grant Review Panel, American Diabetes Association

## **Major Faculty Awards**

Dhananjay Gupta

- American Diabetes Association – Young Investigator Travel Award for highest score on a research abstract

## **Grants**

Dhananjay Gupta

- Manipulating  $\beta$ -cell Inflammation and Survival via Cholinergic Pathways (Jetton, PI)

09/01/13-8/31/16

Gupta, Co-I

Juvenile Diabetes Research Foundation International

- Studying the Role of Dairy-Derived Bioactive Lipids as a Nutritional Intervention Targeting the Pathogenesis of Diabetes Mellitus (Kraft, PI)  
5/1/14-8/31/15  
Gupta, Co-I  
University of Vermont REACH Award
- Exploring the role of branched-chain fatty acids as a diabetes-preventive nutraceutical (Jetton, PI)  
01/01/14-12/31/14  
Gupta, Co-I  
Diabetes Action Research Foundation

Thomas Jetton

- Manipulating  $\beta$ -cell Inflammation and Survival via Cholinergic Pathways (PI)  
09/01/13-8/31/16  
Juvenile Diabetes Research Foundation International
- Studying the Role of Dairy-Derived Bioactive Lipids as a Nutritional Intervention Targeting the Pathogenesis of Diabetes Mellitus (Kraft, PI)  
5/1/14-8/31/15  
Jetton, Co-I  
University of Vermont REACH Award
- Exploring the role of branched-chain fatty acids as a diabetes-preventive nutraceutical (PI)  
01/01/14-12/31/14  
Diabetes Action Research Foundation
- $\beta$ -cell Compensation in Partial Pancreatectomy Mice (Leahy, PI)  
2/15/00 – 8/31/14  
Jetton, Co-I  
NIH/NIDDK R01 DK56818

Jack Leahy

- $\beta$ -cell Compensation in Partial Pancreatectomy Mice (PI)  
2/15/00-8/31/14  
NIH R01 DK56818

Annis Marney

- The Utility of Continuous Glucose Monitoring (CGM) in Detecting Cardiac Autonomic Neuropathy (CAN) and its Impact on Glucose Variability and Cardiac Function in Patients with Type 2 Diabetes Mellitus and Heart Failure (PI)  
3/2013-3/2015  
Medtronic (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**

Gupta D, Leahy AA, Monga N, Peshavaria M, Jetton TL, Leahy JL. PPAR $\gamma$  and its target genes are downstream effectors of FoxO1 in islet beta-cells: Mechanism of beta-cell compensation and failure. *J Biol Chem.* 2013;288:25440-9.

Rhodes CJ, White MF, Leahy JL, Kahn SE. Direct autocrine action of insulin on  $\beta$ -cells: does it make physiological sense? *Diabetes.* 2013;62:2157-63.

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Gupta D, Jetton TL, Leahy JL. Transition from beta-cell compensation to ER stress in long-term fat fed mice [43-OR, presented at the American Diabetes Association 2014 Annual Scientific Sessions, San Francisco, CA, June 12-17]. *Diabetes.* 2014;63(Suppl 1):A11.

Alvi MM, Gilbert MP, Marney AM, Schnure JJ. Bactrim induced severe hypoglycemia in a diet-controlled diabetic patient with history of gastric bypass (RYGB) surgery – Use of serum drug & insulin levels for diagnosis. Poster presented at ICE/ENDO 2014, the 96th Annual

Meeting of the Endocrine Society, Chicago, IL; June 21-24, 2014.

Alvi MM, Klein AL, Schneider A, Gilbert MP, Schnure JJ, Nathan MH, DeSamo MJ, Anderson SR, Marney AM. Multidisciplinary thyroid biopsy clinic at the University of Vermont – A comprehensive educational initiative and experience. Poster presented at ICE/ENDO 2014, the 96th Annual Meeting of the Endocrine Society, Chicago, IL; June 21-24, 2014.





## 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/University of Vermont Medical Center 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 responsibilities. A modern 8-room Endoscopy Center is equipped with the latest HD endoscopes and monitors, 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 onsite cytopathology, and all modes of ERCP (endoscopic retrograde cholangiopancreatography) with cholangioscopy and laser lithotripsy with portable fluoroscopy are performed. A new motility center and esophageal pH laboratory is now open. 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 their skills in 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 5<sup>th</sup> floor of the Ambulatory Care Center. There is a very close working relationship with the Colorectal Surgery and General Surgery divisions. 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 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, preside at Residents' Morning Report and are part of the integrated Teaching Attending Service at the University of Vermont Medical Center. A weekly clinical GI Conference is held and led by GI Faculty and guest speakers from other divisions. As well, there is a weekly GI Pathology Conference led by specialty trained GI pathologists. There an in depth discussion and review of recent GI pathology occurs with the intent to improve diagnosis and clinical outcomes. Two GI Journal Clubs occur each month where an in-depth analysis and review of recent published articles is accomplished. A monthly Quality Care Review Committee Meeting enables a constant improvement and review 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 celiac disease, 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), exploring methods for early detection of pancreatic cancer and assessing new therapies for motility disorders.

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**

Associate 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

- Director of GI Motility Lab
- 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 of Neurological Sciences; Adjunct Professor of Medicine and of Pharmacology

- 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**

Professor of Medicine

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

**André-Denis Wright, Ph.D.**

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**

Professor of Medicine

Director, Endoscopy

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

**Nick Lim, MD**

GI Fellow

**John Randles, MD**

GI Fellow

**Mario Velez, MD**

GI Fellow

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

- Benoit St-Pierre, MD (Post Doc)
- Laura Cersosimo (Ph.D Student)
- Sue Ishaq (Ph.D. Student)
- Alejandro Salgado (Ph.D Student)
- Stephanie Spohn (PhD Student)
- Estelle Spear (PhD student)
- Conor O'Neill, MD

**Leadership in Professional Studies:**

*Steven Lidofsky, MD, Ph.D.*

- Co-Chair Joint Research Awards Committee, American Association for the Study of Liver Diseases and American Liver Foundation

*Gary Mawe, Ph.D.*

- Councilor, American Gastroenterological Association, Nerve-Gut Interactions Section, 2014-present
- Fundamentals of Neurogastroenterology - Basic Science Committee, The Rome Foundation, 2012-2014. The purpose of this committee is to develop a summary of the research and literature to date related to functional gastrointestinal disorders, and then offer guidelines or recommendations to help advance future research.
- Scientific Advisory Board, The International Foundation for Functional Gastrointestinal Disorders, 2008 – present
- Chair, Research Committee, American Neurogastroenterology and Motility Society, 2012-2014
- Councilor, American Neurogastroenterology and Motility Society, 2006-present

*Peter Moses, MD*

- Elected member of the University of VT Professional Standards Committee, 2013-2014

### **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
- 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.*

- Reviewing Editor: *Journal of Physiology*, 2012 – present
- Reviews Editor: *Neurogastroenterology and Motility*, 2012 – present
- Guest Associate Editor: *Gastroenterology*, 2012
- Editorial Board: *American Journal of Physiology: Gastrointestinal and Liver Physiology*, 1999-present
- Editorial Board: *Frontiers in Autonomic Neuroscience*, 2010-present
- Editorial Board: *Frontiers in Gastrointestinal Sciences*, 2011-present
- Editorial Board: *Journal of Visualized Experiments, (JoVE)*, 2011-present

*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
- UVM Professional Standards Committee

*André-Denis Wright, Ph.D.*

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

*Richard Zubarik, M.D.*

- Editorial Board Member, World Journal of Gastroenterology 2012-present

- Reviewer, Gastrointestinal Endoscopy 2004-present
- Reviewer, Evidence-Based Gastroenterology 2001-present
- Reviewer, Journal of Gastroenterology 2006-present
- Reviewer, Archives of Internal Medicine 2010-present
- Reviewer, Digestive Diseases and Sciences 2010- present
- Reviewer, International Journal of Inflammation 2012-present

**Study Sections and Federal Advisory Boards:**

*Steven Lidofsky, MD, Ph.D*

- NIH ZDK1 GRBN Special Emphasis Panel

*Gary Mawe, Ph.D.*

- Member of the Clinical, Integrative, and Molecular Gastroenterology Study Section, Center for Scientific Review, NIH, 2013 - 2017.

*Peter Moses, MD*

- Grant Reviewer, Study Section of the NIH at the National Institute of Biomedical Imaging and Bioengineering (NIBIB)

*Doris Strader, MD*

- Director of Data Safety Monitoring Board for NIH Hepatitis B Research Network

*André-Denis Wright, Ph.D.*

- USDA
- NSF

**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

*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.*

- 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).

- A randomized, double-blind, controlled Study to evaluate the efficacy and safety of the combination of ABT-450/Ritonavir/ABT-267 (ABT-450/r/ABT-267) and ABT-333 with and without ribavirin (RBV) in treatment-naïve adults with genotype 1b chronic hepatitis C virus (HCV) infection (PEARL-III)

*Gary Mawe, Ph.D.*

- Neuronal excitability and motility in colitis (G. Mawe, Principal Investigator). NIH RO1 Grant Award (DK 62267); 7/15/02-3/31/2017. 40% effort. The goal of this project is to determine what changes occur in colonic neural circuitry in an animal model of colitis.
- Centers of Biomedical Research Excellence (COBRE) Phase III: Transitional Centers. (Imaging/Physiology Core Director) NIH/NIGMS 7/1/2011-6/30/2016 5% Effort. The primary goal of this grant is to support the continued growth of two sophisticated multi-user research cores: an Imaging/Physiology Core and Cellular/Molecular Core.
- Studies of gastroparesis in monogenic migraine mouse models (R. Shapiro, PI). Migraine Research Foundation. January 1, 2014 – Dec 31, 2014. The primary aim of this pilot exploratory project is to determine whether mice that have been engineered to express genetic mutations causative for human migraine have delayed gastric emptying relative to their wildtype littermate mice.
- “Mechanisms of gastrointestinal dysfunction in multiple sclerosis” (G. Mawe, Principal Investigator). National Multiple Sclerosis Society June 1, 2014 – May 30, 2015. This pilot project aims to explore the possibility that altered GI function can be investigated using well-established mouse models of MS (MS mice). In addition, we will test the hypothesis that the blood of individuals with MS contains antibodies that stick to, and interfere with, nerve cells in the GI tract.

*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)
- Furiex Mu-Delta Agonist for the treatment of IBS with diarrhea

*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)**

**Lee A.** Gastroparesis: what is the current state of the art for evaluation and medical management; what are the results? *J Gastrointest Surg*, 2013;17:1553-1556.

**Lee A, Wilder G, Kuo B.** Variable Abnormal Physiological Motility in the Proximal Upper Gastrointestinal Tract in Gastroparesis. *Neurogastro Motil*, 2012;24:652-657.

**Kuo B, Maneerattanporn M, Lee AA, Baker JR, Wiener SM, Chey WD, Wilding GE, Hasler WL.** Generalized Transit Delay on Wireless Motility Capsule Testing in Patients with Clinical Suspicion of Gastroparesis, Small Intestinal Dysmotility, or Slow Transit Constipation. *Dig Dis Sci*, 2011;56(10):2928-38.

**Lee A, Kuo B.** Metoclopramide in the treatment of diabetic gastroparesis. *Expert Rev. Endocrinol. Metab*, 2010; 5(5): 653-662.

**Lee A, Kuo B.** Recent Advances in Gastric Function Testing. *US Gastroenterology and Hepatology Review*, 2010;6:17-21.

**Dimagno M, Wamsteker E, Lee A.** Chronic pancreatitis. *British Medical Journal Point of Care/Best Practice*.

**Murdock T, Lee A, Wilcox R.** An Unusual Cause of Upper Gastrointestinal Bleeding. *Clinical Gastroenterol Hepatol*, 2014 Apr 1. pii: S1542-3565 [epub ahead of print].

**Zenali M, Lidofsky SD.** 2013. Beyond degree of fibrosis - assessment of liver biopsy when there is clinical concern for portal hypertension. *Ann Clin Pathol* 1(1): 1004.

**Lim N, DeSarno N, Lidofsky SD, Ganguly EK.** 2014. Hospitalization for variceal hemorrhage in an era with more prevalent cirrhosis. *World J Gastroenterol*. (in press).

**Lidofsky SD.** 2014. Jaundice. In Feldman M, Friedman LS, Brandt LJ. (eds.) Sleisenger and Fordtran's Gastrointestinal and Liver Disease, 10<sup>th</sup> ed. (in press).

**Moses, PL,** Martel, M, Alnaamani, A, Stuart, G, Adam, V, Kowalski, T, Mitty, R, Barkun, A, Branch, MS. Randomized trial in malignant biliary obstruction: Plastic vs partially covered metal stents. *World Journal of Gastroenterology.* 12/2013; 19(46):8638-46.

Ishaq, S.L. & **A-D.G. Wright.** 2014. Design and validation of four primers for next-generation sequencing to target the 18S rRNA gene of gastrointestinal ciliated protozoa. *Appl. Environ. Microbiol.* Impact Factor: 3.83. *In Press*

Ishaq, S.L. & **A-D.G. Wright.** 2014. High-throughput DNA sequencing of the ruminal bacteria from moose (*Alces alces*) in Vermont, Alaska, and Norway. *Microbial Ecology.* Impact Factor: 3.28. *In Press*

Dehority, B.A. & **A-D.G. Wright.** 2014. Studies on the in vitro cultivation of ciliate protozoa from the kangaroo forestomach. *Eur. J. Protistol.,* Impact Factor: 2.32. *In Press*

Chaudhary, P.P., **A-D.G. Wright,** L. Brablcová, I. Buriánková, A. Bednaříkl, & M. Rulík. 2014. Dominance of Methanosarcinales phylotypes and shifts in the distribution of methanogen community structure in fresh water sediment depths from Sitka stream in Czech Republic. *Current Microbiol.* Impact Factor: 1.82. *In Press*

Samsudin, A.A., **A-D.G. Wright,** R. Al Jassim. 2014. The effect of fibre source on the numbers of some fibre degrading bacteria of Arabian camel's (*Camelus dromedarius*) foregut origin. *Trop. Anim. Health Prod.* Impact Factor: 1.07 *In Press*

Glad, T., P. Barboza, R.I. Mackie, **A-D.G. Wright,** L. Brusetti, S.D. Mathiesen, & M.A. Sundset. 2014. Dietary supplementation of usnic acid, an antimicrobial compound in lichens, does not affect rumen bacterial diversity or density in reindeer. *Current Microbiol.* 68: 724–728. Impact Factor: 1.82

St-Pierre, B. & **A-D.G. Wright.** 2014. Comparative metagenomic analysis of bacterial populations in three full-scale mesophilic anaerobic manure digesters. *Appl. Microbiol. Biotechnol.* 98: 2709–2717. Impact Factor: 3.42

St-Pierre, B. & **A-D.G. Wright.** 2013. Metagenomic analysis of methanogen populations in three full-scale mesophilic anaerobic manure digesters operated on dairy farms in Vermont, USA. *Bioresource Technology.* 138: 277–284. Impact Factor: 5.17.

St-Pierre, B., G. de la Fuente, S. O'Neill, **A-D.G. Wright,** & R. Al Jassim. 2013. Analysis of stomach bacterial communities in Australian feral horses. *Mol. Biol. Reports.* 40:369-376. **Impact Factor: 2.93**

- St-Pierre, B. & **A-D.G. Wright**. 2013. Diversity of gut methanogens in herbivorous animals. *Animal*. 7s1: 49–56. Impact Factor: 1.74.
- Ivan, M., H.V. Petit, J. Chiquette & **A-D.G. Wright**. 2013. Rumen fermentation and microbial population in lactating dairy cows receiving diets containing oilseeds rich in C-18 fatty acids. *Brit. J. Nutrit.* **109**: 1211-1218. **Impact Factor: 3.45**
- von Keyserlingk, M.A.G., N.P. Martin, E. Kebreab, K.F. Knowlton, R.J. Grant, M. Stephenson, C.J. Sniffen, J.P. Harner, III, **A-D.G. Wright**, & S.I. Smith. 2013. Invited Review: Sustainability of the U.S. Dairy Industry. *J. Dairy Sci.* 96: 5405-5425. Impact Factor: 2.56
- Krause, D.O., T.G. Nagaraja, **A-D.G. Wright** & T.R. Callaway. 2013. Board-invited review: Rumen microbiology: Leading the way in microbial ecology. *J. Anim. Sci.* 91: 331-341. Impact Factor: 2.58
- Lynn, D.H. & **A-D.G. Wright**. 2013. Biodiversity and molecular phylogeny of Australian *Clevelandella* species (Class Armophorea, Order Clevelandellida, Family Clevelandellidae), intestinal endosymbiotic ciliates in the wood-feeding roach *Panesthia cribrata* Saussure, 1864. *J. Euk. Microbiol.* 60: 335-341 Impact Factor: 2.16
- Li, Z.P., H.L. Liu, G.Y. Li, K. Bao, K.Y. Wang, C. Xu, Y.F. Yang, F.H. Yang, & **A-D.G. Wright**. 2013. Molecular diversity of rumen bacterial communities from tannin-rich and fiber-rich forage fed domestic Sika deer (*Cervus nippon*) in China. *BMC Microbiology*, 13:151. Highly Accessed. Impact Factor: 3.10
- Li, Z.P., H.L. Liu, C.A. Jin, X.Z. Cui, Y. Jing, F.H. Yang, G.Y. Li & **A-D.G. Wright**. 2013. Differences in the methanogen population exist in Sika deer (*Cervus nippon*) fed different diets in China. *Microbial Ecol.* 66: 879-888. Impact Factor: 3.28
- Luo, Y, **A-D.G. Wright**, Y. Li, H. Li, Q. Yang, L. Luo, M. Yang. 2013. Diversity of methanogens in the hindgut of captive white rhinoceroses, *Ceratotherium simum*. *BMC Microbiology*, 13: 207. Impact Factor: 3.10.
- Luo, Y., H. Peng, **A-D.G. Wright**, S. Bai, X. Ding, Q. Zeng, H. Li, P. Zheng, Z. Su, R. Cui, & K. Zhang. 2013. Broilers fed dietary vitamins harbor higher diversity of cecal bacteria and higher ratio of *Clostridium*, *Faecalibacterium* and *Lactobacillus* than broilers with no dietary vitamins revealed by 16S rRNA gene clone libraries. *Poultry Science* 92: 2358–2366. Impact Factor: 1.07
- Meyer, M, Bell, S, Sardana, N, **Zubarik, R**, LeWinter, M, Dauerman, H 2014. Esophageal assessments of left ventricular filling pressures: A proof of concept study *International Journal of Critical Illness & Injury Science*: 18-23

- Behar, J., **G.M. Mawe**, and M.C. Carey (2013) Roles of cholesterol and bile salts in the pathogenesis of gallbladder hypomotility and inflammation. *Neurogastroenterology and Motility* 25:283-290.
- Mawe, G.M.** and J.M. Hoffman (2013) Serotonin Signaling in the gastrointestinal tract: functions, dysfunctions, and therapeutic targets. *Nature Reviews Gastroenterology and Hepatology* 10: 473–486.
- Roberts, A.J, L. Durnan, K.A. Sharkey, V.N. Mutafova-Yambolieva, and **G.M. Mawe** (2013) Oxidative stress disrupts purinergic neuromuscular transmission in the inflamed colon. *Journal of Physiology (London)* 591: 3725–3737.
- Krementsov, D.N., E.H. Wall, R.A. Martin, M. Subramanian, R. Noubade, R. DelRio, **G.M. Mawe**, J.P. Bond, M.E. Poynter, E.P. Blankenhorn, and C Teuscher (2013) Histamine H<sub>3</sub> receptor integrates peripheral inflammatory signals in the neurogenic control of immune responses and autoimmune disease susceptibility. *PLoS ONE* 8: e62743
- Camilleri, M., D. A. Drossman, G. Becker, L. R. Webster, A. N. Davies, **G. M. Mawe** Opioid-Induced Constipation: A Multidisciplinary Working Group Consensus Statement. *Neurogastroenterology and Motility* In revision.
- Mawe, G.M.** **P.L. Moses** G.T.P. Saccone and M. J. Pozo Motility of the Biliary Tree. In *Textbook of Gastroenterology*, 6th edition T. Yamada, ed., Wiley-Blackwell. In press
- Farrugia, G., **G.M. Mawe**, M. Simren, S. Bradesi and A. Bredenoord, and (2013) Neurogastroenterology and Motility's impact factor. *Neurogastroenterology and Motility* 25:779
- Farrugia, G., **G.M. Mawe**, M. Simren, S. Bradesi and A. Bredenoord, and (2014) Gut microbiota and neurogastroenterology and motility: the good the bad and the ugly. *Neurogastroenterology and Motility* 26:295



## Division of General Internal Medicine Research

Benjamin Littenberg, MD, Director

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



The division consists of eight faculty, one staff, one post-doc fellow, eight PhD students and seven Masters' students in the Clinical and Translational Science Program. Four physician faculty members practice in the Fletcher Allen Primary Care Internal Medicine Group, and one serves as 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**

Henry and Carleen Tufo Professor of Medicine and Professor of 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
- Geographic correlates of chronic health problems

### **Elizabeth S. Chen, PhD**

Assistant Professor of Medicine  
Assistant Professor, Computer Science

- Electronic health records
- clinical decision support
- clinical data mining and natural language processing

**Amanda G. Kennedy, PharmD**

Associate Professor of Medicine

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

**Charles D. MacLean, MD**

Professor of Medicine

Associate Dean for Primary Care

Research Director, Area Health Education Center

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

**Richard G. Pinckney, MD, MPH**

Associate Professor of Medicine

Co-Director - Internal Medicine Resident Clinic

- Motivational Interviewing
- Evidence-Based Medicine

**Alan S. Rubin, MD**

Associate Professor of Medicine and Psychiatry

- Communication Skills
- Health Behavior Change

**Constance van Eeghen, DrPH**

Assistant Professor of Medicine

Doctor of Public Health

- Quality Improvement
- Health Policy

**Robert R. Wheeler, MD**

Clinical Assistant Professor

Chief Medical Officer, Blue Cross and Blue Shield of Vermont

- Health Policy
- Medical Management

**Abigail Crocker, PhD**

Assistant Professor of Mathematics and Statistics

Post-doctoral Fellow

- Epidemiology
- Health Policy
- Medical Statistics

**Graduate Students**

Marianne Burke

Katharine Cheung  
Ross Colgate  
Peter Durda  
Alex Friend  
Matthew Gissel  
Jay Gonyea  
Scott Hipko  
Kristi Johnson  
Kairn Kelley  
Carole McBride  
Prema Menon  
Renju Raj  
Emily Tarleton  
Richard Voogt

### **Endowed Professorships**

Benjamin Littenberg, MD  
Henry and Carleen Tufo Professor of Medicine

### **Leadership in Professional Societies**

Elizabeth Chen, PhD  
Member, Awards Committee, American Medical Informatics Association (AMIA)  
Member, Membership and Outreach Committee, American Medical Informatics Association (AMIA)

Charles Maclean, MD  
Member, Vermont Healthcare Workforce Group–Vermont Agency of Administration  
Member, Unified Pain Management Council–Vermont Department of Health  
Member, Board of Directors—Dartmouth COOP Project  
Member, Evaluation Workgroup—Vermont Blueprint for Health  
Member, Executive Committee – Vermont Blueprint for Health

Alan Rubin, MD  
Course Director, Doctoring Skills, UVM College of Medicine  
Fellow, American College of Physicians  
Medical Consultant, Department of Psychiatry, UVM/FAHC

Richard Pinckney, MD, MPH  
Associate Member of the American College of Physicians  
American Academy on Communication in Health Care  
The Motivational Interviewing Network of Trainers

### **Editorships and Editorial Boards**

Elizabeth Chen, PhD  
Member, Editorial Board, Methods of Information in Medicine



Kennedy AG., PharmD

Clinical Advisory Board Member, ISMP Medication Safety Alert! Community/Ambulatory Care newsletter, Institute for Safe Medication Practices

## Study Sections and Federal Advisory Boards

Benjamin Littenberg, MD

- Member, GE-AUR Radiology Research Academic Fellowship (GERRAF) Advisory Board, Association of University Radiologists
- Member, A1C Registry Advisory Board, New York City Department of Health and Mental Hygiene
- Grants Reviewer, Sensors and Mobile Devices for Health Monitoring, National Institutes of Health
- Associate Editor, Patient Activation & Engagement, Latino Medical Journal,

Elizabeth Chen, PhD

- Panel Member, JPC-1 Health Information Technology Program, American Institute of Biological Sciences (contracted by USAMRMC and TATRC) [August 21, 2013]
- Study Section Member, Special Emphasis Panel (K22/R01), National Library of Medicine, National Institutes of Health [ZLM1 ZH-C (01); October 30, 2013]
- Study Section Chair, Special Emphasis Panel (K01/R21/R01), National Library of Medicine, National Institutes of Health [ZLM1 ZH-C (01); February 19, 2014]
- Study Section Member, NIH Health Care Systems Research Collaboratory - Demonstration Projects for Pragmatic Clinical Trials Focusing on Multiple Chronic Conditions (UH2/UH3), National Center for Complementary and Alternative Medicine, National Institutes of Health [ZAT1 SM (32); March 21, 2014]
- Study Section Member, Mobile Health: Technology and Outcomes in Low and Middle Income Countries (R21), Fogarty International Center, National Institutes of Health [ZRG1 IMST-K (50); June 16-17, 2014]

Constance van Eeghen, DrPH

- Study Section Member, Agency for Healthcare Research and Quality, Center for Delivery, Organization and Markets. Disseminating Patient Centered Outcomes Research To Improve Healthcare Delivery (R18)

## Posters and Presentations

**Chen ES**, Carter EW, Winden TJ, Sarkar IN, Melton GB. Development of a Comprehensive Family Health History Information Model. AMIA 2013 Annual Symposium, Washington, DC, November 19, 2014.

**Kennedy AG**. Faculty, National Resource Center for Academic Detailing (NaRCAD) Academic Detailing Training Program, Boston, MA, September 16-17, 2013

**Kennedy AG.** Pharmacists in the Vermont Blueprint for Health. Presented at Albany College of Pharmacy and Health Sciences Pharmacy Practice Faculty Meeting; December 2013; Colchester, Vermont

**Kennedy AG.** Academic Detailing on the Front Lines: Connecting with Doctors. Presented with Barry Patel, PharmD at The First National Conference on Academic Detailing; November 2013, Boston, MA

**Kennedy AG.** Academic Detailing on the Front Lines: Developing Effective Messages. Presented with Steve Farrell, MBA at The First National Conference on Academic Detailing; November 2013, Boston, MA

**Kennedy AG, MacLean CD.** Integrating Pharmacists into Primary Care: A Demonstration Emphasizing Population Management. Poster presented at: North American Primary Care Research Group (NAPCRG), November 9-13, 2013, Ottawa, Ontario

**Littenberg B.** Managing Chronic Kidney Disease in Primary Care. *Michigan Primary Care Consortium*, Grand Rapids, MI, October 19, 2013.

**Littenberg B.** Rethinking the Delivery of Care for Diabetes. *Florida Hospital Diabetes Institute*, Orlando, FL, November 11, 2013.

**Littenberg B, Troy AS.** Relationship between measures of urban form and body mass index in non-urban diabetic adults: Results from Vermont. *American Public Health Association Annual Meeting*, Boston, November 6, 2013.

**MacLean CD, Littenberg B, Kennedy AG, Van Eeghen C, Mayo F.** Population Reporting of Opioid Prescribing Using Electronic Medical Record Data. *North American Primary Care Research Group (NAPCRG) Annual Meeting*, Ottawa, ON, November 9-13, 2013

**MacLean C, Littenberg B, Kennedy AG.** A Tall Tale: Reliability of Height Measurement in an Electronic Medical Record. Scheduled to be presented at: North American Primary Care Research Group (NAPCRG), November 9-13, 2013, Ottawa, Ontario.

**Pinckney, RG.** An 8-Week Compassion Training Program. International Conference for Communication in Health Care, Montreal Canada, September 30<sup>th</sup>, 2013

**Pinckney, RG.** Population Based ADHD Management. Bridging the Divide Annual Conference. Burlington, VT, November 8, 2013

**Rubin A, Nichols C, Pinckney RG, Gilligan T**  
Reaching your communication milestones using simulation. International Conference for Communication in Health Care. Montreal Canada, September 30<sup>th</sup>, 2013

**Van Eeghen C, Kennedy A, Kessler R, Littenberg B., MacLean C., Pasanen M.** Translating public health policy to private practice using lean. *American Public Health Association Annual Meeting*, Boston, November 4, 2013.

**Van Eeghen C, Kennedy AG, Pasanen M, Littenberg B, MacLean CD.** Using Lean Management to Improve Opioid Prescribing for Pain in Ambulatory Care. *North American Primary Care Research Group (NAPCRG) Annual Meeting*, Ottawa, ON, November 9-13, 2013

**Van Eeghen C.** Impact of Integrating Behavioral Health Services in Primary Care Using Lean as a Quality Improvement Method. *North America Primary Care Research Group. (NAPCRG) Annual Meeting*, Ottawa, ON, November 9-13, 2013

## Grants

### Leveraging the EHR to Collect and Analyze Social, Behavioral & Familial Factors

NIH/NLM R01 LM011364 07/01/2012 – 06/30/2016

Principal Investigator: **Elizabeth Chen** Co-PI: Genevieve Melton (University of Minnesota)

*The overall goal of this project is to develop and evaluate computational methods for generating knowledge regarding the relationships between diseases and social, behavioral, and familial factors from EHR data. Collaborative effort between the University of Vermont and University of Minnesota.*

### Medication Management Pilot Study

Vermont Department of Health 1/1/12-6/30/14

Principal Investigator: **Amanda Kennedy**

*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.*

### The Vermont Academic Detailing Program

Narcotic Quality Improvement - Vermont Department of Health 1/1/13 - 12/31/14

Principal Investigator: **Amanda Kennedy** Co-I: **Charles Maclean**

*This program develops and delivers Academic Detailing to providers and practices in Vermont.*

### The Vermont Academic Detailing Program Pharmacist in the Blueprint-Vermont Department of Health 1/1/12 – 12/31/13

Principal Investigator: **Amanda Kennedy** Co-I: **Charles Maclean**

This program tests the integration of pharmacists into the Patient Centered Medical Home.

### Automated Alcohol Screening and Brief Intervention in Primary Care using IVR

NIAAA 1R01AA018658-01A1 (Rose) Co-I: **Charles Maclean**

National Institute of Alcohol 7/1/10-6/30/15

*This grant is a randomized controlled trial of alcohol screening and brief intervention (SBI) administered using a telephone-based Interactive Voice Response (IVR) system.*

Model State Supported Area Health Education Centers

U77 HP03624 9/1/12-8/31/17

Health Resources and Services Administration

Principal Investigator: **Charles Maclean**

*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.*

Data Abstraction Project

Vermont Oxford Network (VON), 07/01/13 - 06/30/14

Principal Investigator: Neil Sarkar Co-I: **Elizabeth Chen**

Vermont SBIRT Collaborative: Changing Care through Systems Redesign and Team Based Training SAMSHA

9/1/13-8/31/16

Co-Investigator: **Richard Pinckney**

A compassion training program for Clinicians

Frymoyer Scholarship 9/1/09 -8/31/13

PI: **Richard Pinckney**

A Toolkit to Implement Behavioral Health in Primary Care

National Institute of Mental Health R-03M 99157 7/1/13 - 6/30/15

PI: Rodger Kessler Co-I: **Benjamin Littenberg, Connie van Eeghen**

Systematize a quality improvement implementation of behavioral health in primary care.

**Publications**

**Chen ES**, Sarkar IN. Mining the electronic health record for disease knowledge. *Methods Mol Biol.* 2014;1159:269-86

**Chen ES**, Garcia-Webb M. An analysis of free-text alcohol use documentation in the Electronic Health Record. *Appl Clin Inform.* 2014 Apr 16;5(2):402-15

Johnson KC, **Kennedy AG**, Henry SM. Clinical Measurements of Lymphedema: A Review. *Journal of Lymphatic Research and Biology.* In press.

**Kennedy AG**, Maclean CD. Practical guidelines are necessary for successful pharmacist integration into primary care. *Can Pharm J.* 2014 Jan;147(1):11. PMID: 24494009

**Kennedy AG**, Chen H, Corriveau M, MacLean CD. Improving Population Management through Pharmacist-Primary Care Integration: A pilot study. *Population Health Management*. In press

Kessler R, Miller B, Kelly M, Graham D, **Kennedy AG**, **Littenberg B**, **MacLean CD**, **van Eeghen C**, Scholle SH, Tirodkar M, Morton S, Pace W. Mental health, substance abuse and health behavior services in patient-centered medical homes. *J Am Board Fam Med*. In Press

Kaiser S, Vassell **R**, **Pinckney RG**, Holmes T, James TA. Clinical Impact of Biopsy Method on the Quality of Surgical Management in Melanoma Biopsy Method & Melanoma Surgical Management. *Journal of Surgical Clinical Oncology*. 2014; 109: 774-779

Kasser SL, Jacobs JV, **Littenberg B**, Foley JT, Cardinal BJ, Maddalozzo GF. Exploring Physical Activity in Women with Multiple Sclerosis: Associations with Fear of Falling and Underlying Impairments. *American Journal of Physical Medicine & Rehabilitation* 2013; (in press).

**MacLean CD**, MacCaskey M, **Littenberg B**. Improving Testing for Proteinuria in Diabetes Using Decision Support: Role of Laboratory Ordering Systems. *Lab Medicine* 2013; (in press).

McMahon SR, Kikut J, **Pinckney RG**, Keating FK. *Feasibility of Stress Only Rubidium-82 PET Myocardial Perfusion Imaging*. *Journal of Nuclear Cardiology*. 2013: 20;1069-75

Morris NM, **MacLean CD**, **Littenberg B**. Change in health literacy over two years in older adults with diabetes. *The Diabetes Educator* 2013; 39(5):638-46. DOI:10.1177/0145721713496871.

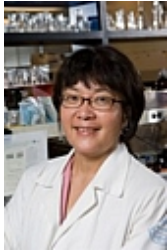
Jain R, Narang J, Griffith J, Bagher-Ebadian H, Scarpace L, Mikkelsen T, **Littenberg B**, Schultz LR. Prognostic vascular imaging biomarkers in high-grade gliomas: Tumor permeability as an adjunct to blood volume estimates. *Acad Radiol* 2013;20: 478-85.

## **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

- Health Effects of Diesel and Biodiesel Exhaust
  - Protein/Amino Acid and Energy Metabolism
  - Oxidative Stress in Aging and Disease

### **Muyao Li, PhD (Retired)**

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

## **College of Medicine**

2014-Member of the COM Admissions Committee

2014-Faculty Mentor, Public Health Course for Second-Year Medical Students

Dr. Fukagawa

**Leadership in Professional Societies:**

American Society for Clinical Investigation Institutional Representative  
American Society for Nutrition Subcommittee on Nutrition Education in Professional Schools

**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/International Advisory Boards:**

Homing Plus Programme Fundacja na rzecz Nauki Polskiej (Poland Research Foundation)

UVM Transdisciplinary Research Initiative Food Systems Steering Committee

**Major Faculty Awards:**

Vermont Academy of Science and Engineering  
Fellow, Center for Rural Studies/Food Systems Research Collaborative, University of Vermont

**Grants – list all active by faculty member, PI**

ACTIVE

UVM Center on Aging Armin Grams Research Award (Fukagawa and Kolodinsky)  
Community-Based Nutrition Intervention in Affordable Housing for Elders  
3/1/2013-2/28/2015      \$50,000  
The goal is to determine whether nutrition education improves fruit/vegetable intake and stabilizes frailty scores.

Ajinomoto Amino Acids Research Program (Fukagawa)      10/01/2009– 12/31/2013  
\$50,000

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.

R01DK082803-01 (Kien)      12/01/2009-11/30/2014  
NIH/NIDDK      \$427,731  
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.

UVM Transportation Research Center (USDOT)      (Fukagawa, PI)  
TDC \$180,323      03/01/2012-12/31/2013

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 metabolism and lung inflammation.

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

Kien CL, Bunn JY, Poynter ME, Stevens R, Bain J, Ikayeva O, Fukagawa NK, Champagne CM, Crain KI, Koves TR, Muoio DM. A Lipidomics Analysis of the Relationship between Dietary Fatty Acid Composition and Insulin Sensitivity in Young Adults. *Diabetes* 2013; 62:1054-1063. Epub 2012 Dec 13. doi:10.2337/db12-0363 PMID 23238293.

Fukagawa NK, Li M, Poynter ME, Palmer BC, Parker EP, Kasumba J, Holmén B. Soy Biodiesel and Petrodiesel Emissions Differ in Size, Chemical Composition and Stimulation of Inflammatory Responses in Cells and Animals. *Environ Sci Technol* 2013; 47:12496-12504. 2013 Oct 10. [Epub ahead of print] PMID:24053625.

Traviss N, Li M, Lombard M., Thelen BA, Palmer BC, Poynter ME, Mossman BT, Holmén BA, Fukagawa NK. Petrodiesel and Waste Grease Biodiesel (B20) Emission Particles: Characterization and Effects on Lung Epithelial Cells and Macrophages. *Air Quality, Atmosphere and Health* 2014; 7:59-70. DOI 10.1007/s11869-013-0231-x.





## Division of Hematology/Oncology

Claire Verschraegen, MD, Director

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

### **A. Executive Summary**



The Division combines 2 specialties, Hematology and Oncology. There are 2 full time faculty focusing on benign hematology and thrombosis, 5 faculty treating benign and malignant hematology, 8 medical oncologists, 1 internist (lymphedema) and 1 cardiologist (thrombosis and cardiology for cancer patients) in the Division with 2 emeritus faculty, 6 fellows, 4 post-doctoral fellows, 6 midlevel providers, about 70 nurses and staff in the outpatient clinic. We have recruited three new faculty: Drs. George Atweh and Edmund Folefac who both will start in August 2014, and Dr. Molly Barry, who will start in December 2014. The division also supervises the Apheresis Program and the Hemophilia Center and has obtained accreditation for stem cell transplant late last year. Our group embraces the mission of the COM and FAHC with cost effective high quality care, cutting-edge research, and dedication to all aspects of teaching and research.

### **Clinical work**

Clinical efforts for 2014 (pro-rated) include a heavy clinical load with 26,390 outpatient visits (about 1,900 new patients) and about 6,000 inpatient visits for a total of 48,484 RVU's. This is an 11% growth from last year. These numbers do not include patients treated in our infusion suite. 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 provides. Established MDC clinics exist for breast, upper GI, ENT, lung cancer, GU, melanoma, sarcoma, leukemia's and lymphomas, brain and GYN. These multidisciplinary clinics are being integrated within Transdisciplinary Academic Teams (TDT), a group of expert physicians and scientists who focus on all aspect of academic medicine for the specific cancers they treat and research. In 2014, more than 600 new patients were seen through the TDT and MDC clinics. Our specialty services also include a federally granted hemophilia center (Dr. Holmes), a thrombosis and hemostasis program (Dr. Cushman), an accredited stem cell program (Dr. Sprague) an oncology rehabilitation center (Dr. Dittus) a cancer genetics clinic (W. McKinnon), psychiatry services (Dr. Robinowitz), palliative care (Dr. McVeigh) and a high risk breast program (Dr. Wood). The Thrombosis and Hemostasis Program has undergone a period of recent growth through development of multidisciplinary programs. In 2008-2011 it averaged 429 annual referrals, which rose to 697 annually in 2012-2013. Over the last three years, we have treated over 60 acute deep vein thrombosis cases in the outpatient setting annually. The Cancer Clinic provides ancillary services to include nutrition, psychological, social work, and massage therapy to support to any patients in Vermont in need of these services. We have built a new integrated lung cancer screening program for high risk smokers, which is now opened for business.

We are in the process of extending some of our services to regional oncology practices who have expressed an interest to collaborate for patient care and research.

## **Research**

Research within the Division is done in several collaborative ways (clinical trials, basic science research and epidemiology) covering a number of broad themes (new drug development, cancer treatment and prevention, thrombosis, cardiovascular and stroke epidemiology, supportive care of cancer patients, cancer and exercise, and cancer and coagulation). Working within Transdisciplinary Teams, the faculty of the Hematology/Oncology Division are principal investigators for the majority of the over 300 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 3/4<sup>th</sup> being accrued to medical oncology studies. Approximately 15% of patients are enrolled on treatment 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 and pharmaceutical trials), NIH (NCI, NHLBI, NINDS) and ACS, and through the VCC some of the LCCRO funds support Division research activities.

Dr. Greenblatt is the president of the *Human Genome Variation Society*. Dr. Cushman serves on the National Board of Directors of the *American Heart Association* on May 1, 2013. Dr. Wood serves on the *American Society of Clinical Oncology (ASCO) CME committee* as the liaison to the *ASCO Prevention Committee*. Dr. Verschraegen has been appointed on the Board of the Alliance for Clinical Trials in Oncology and on the NCI Gynecologic Cancers Steering Committee.

## **B. Faculty**

### **Steve Ades, MD – Associate Professor**

Associate Director, Hematology/Oncology Fellowship Program  
Leader, Fletcher Allen Health Care GI Multidisciplinary Clinic  
Co-Leader, Fletcher Allen Health Care GU Multidisciplinary Clinic  
In-Patient Hematology/Oncology Service Director  
Associate Director, Clinical Trials  
Research interests include: GI and GU cancers and thrombosis

### **Mary Cushman, MD, MSc – Professor, Medicine and Pathology**

Director, Thrombosis and Hemostasis Program  
Research interests include: Etiology of vascular diseases and other chronic diseases; racial disparities; venous thrombosis and post thrombotic syndrome

### **Kim Dittus, MD, PhD – Assistant Professor**

Director, Steps to Wellness Program  
Research interests include: Cancer survivorship, energy balance

### **Steven Emmons, MD – Assistant Professor**

Leader, Fletcher Allen Health Care Melanoma Multidisciplinary Clinic  
Research interests include: CNS cancer and Melanoma

**Marc Greenblatt, MD – Associate Professor**

Research interests include: Molecular genetics of mutation in cancer genes and gastrointestinal cancers

**Chris Holmes, MD, PhD – Associate Professor**

Director, Vermont Regional Hemophilia Treatment Center  
Assistant Director, Thrombosis and Hemostasis Program  
Research interests include: Venous thrombosis, post-thrombotic syndrome and platelet function

**Margaret Kennedy, MD, MSc**

Attending Physician  
Research interests include: Venous thrombosis, post-thrombotic syndrome

**Farrah Khan, MD – Assistant Professor**

Research interests include: Care of patients with breast cancer and lung cancer

**Susan Lakoski, MD, MS – Assistant Professor**

Director, Cardiovascular Prevention Program for Cancer Patients  
Research interests include: The role of fitness and exercise intervention in health.  
Venous thrombosis in cancer patients.

**Gurpreet Lamba, MD – Assistant Professor**

Research interests include: Lymphoma and Leukemia

**J. Chris Nunnink, MD, FASCO – Associate Professor**

Attending Physician

**Patricia O'Brien, MD – Assistant Professor Clinical Scholar**

Director, Lymphedema Program

**Julie Olin, MD – Associate Professor**

Attending Physician

**Julian Sprague, MD, PhD – Assistant Professor**

Director, Hematology/Oncology Fellowship Program  
Research interests include: Leukemia and neurotoxicity

**Claire Verschraegen, MD – Professor**

Director, Hematology/Oncology Division  
Co-Director, Vermont Cancer Center  
Research interests include: Mesothelioma, GYN, Lung and other rare cancers

**Marie Wood, MD – Professor**

Director, Familial Cancer Program  
Assistant Director, Hematology/Oncology Division  
Medical Director of the Cancer Clinic  
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 – Associate Professor**

Research interests include: Epidemiology and novel risk factors for venous thrombosis and cardiovascular disease. Epidemiology, causes, and consequences of anemia in

diverse populations. Venous thrombosis causes and prevention, post thrombotic syndrome.

**C. List of Hematology/Oncology Fellows**

Julia Moukharskaya, MD – 3<sup>rd</sup> year fellow – completed fellowship as of July 1, 2014

John Winters, MD – 3<sup>rd</sup> year fellow – completed fellowship as of July 1, 2014

Joanne Monterroso, MD – 3<sup>rd</sup> year fellow

Yongli Ji, MD – 3<sup>rd</sup> year fellow

Samir Ambrale, MD – 2<sup>nd</sup> year fellow

Inder Lal, MD – 2<sup>nd</sup> year fellow

Hibba Rehman, MD – 1<sup>st</sup> year fellow

Jose Ruades, MD – 1<sup>st</sup> year fellow

**D. List all NP's and PA's**

Paul Larson, NP

Jamie Kelly, PA

Penny Gibson, PA

Janet Ely, NP

Emily Parenteau, NP

Kim Sorber, PA

**E. List all graduate students, post-doctoral fellows, MD PHD students**

Ogheneruona Apoe, MD, Post-Doctoral Associate

Kristine Alexander, PhD, Post-Doctoral Associate

Katharine Cheung, MD, Post-Doctoral Associate

Sarah Gillett, PhD, Medical Student – did 12-week research elective w/Mary Cushman, MD, MSc (Sept., Oct., and Nov. 2013)

**F. Leadership in Professional Societies**

**Mary Cushman, MD, MSc**

Co-Chair, American Society of Hematology Quality Symposium, 55<sup>th</sup> Annual American Society of Hematology Annual Meeting, New Orleans, LA

Member, Scientific Program Planning Committee, World Heart Federation and American Health Association's 4<sup>th</sup> International Conference on Women, Heart Disease and Stroke, World Congress of Cardiology Scientific Sessions, Melbourne, Australia

American Heart Association Voices for Healthy Kids Policy Research Summit, - Raleigh, NC, June 2014.

President of the American Heart Association Vermont Board of Directors; Immediate Past President as of July 1.

Member of the American Society of Hematology Media Experts Subcommittee.

Member, Program Committee for Venous thrombosis Disorders, International Society on Thrombosis and Haemostasis 2015 Congress, Toronto.

## **G. Major Faculty Awards**

Mary Cushman, MD, MSc was awarded the American Heart Association's Council on Epidemiology and Prevention Distinguished Achievement Award at the Council's annual meeting in San Francisco on March 28-31, 2014. The award was given in recognition of Dr. Cushman's volunteer leadership service to the Council and to the American Heart Association.

## **H. Grants**

### **Kim Dittus**

NIH-NIGMS Higgins (PI) 9/15/13-7/31/18  
1P20GM103644-01A1  
Vermont Center on Behavior and Health, COBRE  
Junior Investigator Project: Predictors of Weight Loss Success in  
Overweight Breast Cancer Survivors  
Role: PI, Junior Investigator Project

### **Marc Greenblatt**

NIH-NHGRI Berg, Jonathan (PI) 11/1/13-10/31/17  
U01 HG007437-01  
A Knowledge Base for Clinically Relevant Genes and Variants  
Role: Co-Investigator

Vermont Cancer Center Greenblatt (PI) 12/13/13-12/14/14  
Program Award  
Economics of Implementing New Technologies in Hereditary Colon Cancer Syndromes

### **Chris Holmes**

Vermont Cancer Center Holmes, Lamba, Kelm (Co-PIs) 10/1/13-9/30/14  
Purine-Rich Binding Proteins in Patients with Acute Myelogenous Leukemia  
Role: Co-PI

### **Susan Lakoski**

NIH-NIGMS Higgins (PI) 9/15/13-7/31/18  
Vermont Center on Behavior and Health, COBRE  
Junior Investigator Project: Behaviors, Chronic Disease, and Quality of Life after Ductal  
Carcinoma in situ  
Role: PI, Junior Investigator Project

University of Vermont Lakoski (PI) 6/1/13-6/30/14  
REACH Institutional Grant Program  
An Exercise Training and Behavior Weight Loss Program after an Acute Blood Clot:  
TRAIN  
ABC  
Role: PI

### **Gurpreet Lamba**

Vermont Cancer Center/LCCO      Lamba and Kelm (Co-PIs)      9/1/13-9/1/14  
Role of Purine-Rich Element Binding Proteins in the Pathogenesis of High-Risk AML  
Role: Co-PI

Vermont Cancer Center/LCCRO      Lamba and Zaidi (Co-PIs)      9/1/13-9/1/14  
Program Grant  
MicroRNAs as a biomarker for Molecular Mechanisms in AML Patients Undergoing  
Induction Chemotherapy  
Role: Co-PI

### **Marie Wood**

Number: VCC/LCCRO Program Grant      3/1/2014-2/28/2015  
P.I. Marie Wood, M.D.  
Title: MicroRNAs as Predictors of Breast Cancer Development in High Risk Women

Number: VCC/LCCRO Pilot Award      5/1/2014-4/30/2015  
P.I. Marie Wood, M.D.  
The major goal of this project is to evaluate mutations in DNA repair genes between  
sisters with and without cancer from high risk families

### **Claire Verschraegen**

Lake Champlain Cancer Research      Verschraegen (PI)      1/1/14-12/31/14  
Organization (LCCRO)  
Role: PI

## **I. Publications**

Agalliu I, Xue X, Cushman M, Cornell E, Hsing AW, Kaplan RC, Anastos K, Rajpathak S, Ho GYF. Detectability and reproducibility of plasma levels of chemokines and soluble receptors. Results Immunol 2013 Aug 5(3):79-84. PMID:2600562

Ahmed HM, Blaha MJ, Nasir K, Jones SR, Rivera JJ, Agatston A, Blankstein R, Wong ND, Lakoski S, Budoff MJ, Burke GL, Sibley CT, Ouyang P, Blumenthal RS: Low-risk lifestyle, coronary calcium, cardiovascular events, and mortality: Results from MESA. Am J Epidemiol 2013 Jul 1:178(1):12-21. doi: 10.1093/aje/kws453. PMID:23733562

Allison MA, Bluemke DA, McClelland R, Cushman M, Criqui MH, Polak JF, Lima JA. Relation of leptin to left ventricular hypertrophy (from the Multi-Ethnic Study of Atherosclerosis). Am J Cardiol 2013;112:726-30. (PubMed – in process)

Bauman J, Shaheen M, Verschraegen CF, Belinsky SA, Houman Fekrazad M, Lee FC, Rabinowitz I, Ravindranathan M, Jones DV Jr. A Phase I Protocol of Hydralazine and Valproic Acid in Advanced, Previously Treated Solid Cancers. *Transl Oncol* 2014 Apr 17. pii: S1936-5233(14)00020-5. doi: 10.10161/jtranon.2014.03.001. (Epub ahead of print). PMID:24746712

Bell E, Selvin E, Lutsey P, Nambi V, Cushman M, Folsom AR. Glycemia (hemoglobin A1c) and incident venous thromboembolism in the Atherosclerosis Risk in Communities cohort study. *Vasc Med* 2013;18:245-50.

Bowling CB, Booth JN 3<sup>rd</sup>, Safford MM, Whitson HE, Ritchie CS, Wadley VG, Cushman M, Howard VJ, Allman RM, Muntner P. Nondisease-specific problems and all-cause mortality in the Reasons for Geographic and Racial Differences in Stroke (REGARDS) study. *J Am Geriatr Soc* 2013;61:739-46. (PMCID: PMC3656135)

Brown TM, Voeks JH, Bittner V, Brenner DA, Cushman M, Goff DC, Glasser S, Muntner P, Tabereaux PB, Safford MM. Achievement of optimal medical therapy goals for US adults with coronary artery disease: results from the REasons for Geographic And Racial Differences in Stroke (REGARDS) study. *J Am Coll Cardiol* 2014;63:1626-33.

Couch ME, Dittus K, Toth MJ, Willis MS, Guttridge DC, George JR, Change EY, Gourin GG, Der-Torossian H. Cancer Cachexia Update in Head and Neck Cancer: Pathophysiology and Treatment. *Head Neck* 2014 Mar 14. doi: 10.1002/hed.23696. (Epub ahead of print) PMID: 24634283

Cushman M, Judd SE, Howard VJ, Kissela B, Gutierrez OM, Jenny NS, Ahmed A, Thacker EL, Zakai NA: N-Terminal Pro-B-Type Natriuretic Peptide and Stroke Risk: The Reasons for Geographic and Racial Differences in Stroke Cohort. *Stroke* 2014 Apr 122 (Epub ahead of print) PMID: 24757103

Cushman M, Zakai, N: Statin Therapy and Levels of Hemostatic Factors in a Healthy Population: The multi-Ethnic Study of Atherosclerosis: A Reply to a Rebuttal. *J Thromb Haemost.* 2013 Sept;11(9):1789. doi: 10.1111/jth.12336. PMID:23809235

Cushman M. Thrombophilia Testing in Women with Venous Thrombosis: the 4 P's Approach. *Clin Chem* 2014 Jan;60(1):134-7. doi: 10.1373/clinchem.2013.202648. Epub 2013 Nov 19. PMID: 24255080

Der-Torossian H, Couch ME, Dittus K, Toth MJ: Skeletal muscle adaptations to cancer and its treatment: Their fundamental basis and contribution to functional disability. *Crit Rev Eukaryot Gene Exp* 2013;23(4):283-90. PMID:24266844

Dittus K, Geller B, Weaver DL, Kerlikowske K, Zhu W, Hubbard R, Braithwaite D, O'Meara ES, Miglioretti DL: Breast Cancer Surveillance Consortium. Impact of mammography screening interval on breast cancer diagnosis by menopausal status and BMI. *J Gen Intern Med* 2013 Nov;28(11):1454-62. doi: 10.1007/s11606-013-2507-0. PMID:2376074.



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## **Division of Immunobiology**

Ralph Budd, MD, Director

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

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



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 29 faculty in 9 departments in 5 colleges and is in close alliance with the Vermont Vaccine Testing 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 has provided funds to allow the College of Medicine to build a new BSL3 facility in partnership with the Vermont Department of Health (scheduled to open in Fall '14), 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: Cell death, Regulation of caspases in the immune system, Gamma/delta T cells, Autoimmune mechanisms



**Jason Botten, PhD**

Assistant Professor of Medicine, Adjunct in Microbiology and Molecular Genetics

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

**Andreas Koenig, PhD**

Research Associate, Medicine

- Key Research Interests: Virology, immunology

**Karen Fortner, PhD**

Assistant Professor of Medicine

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

**Mercedes Rincón, PhD**

Professor of Medicine and Microbiology & Molecular Genetics

Director, Transgenic/Knockout Mice Facility

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

**Cory Teuscher, PhD**

Professor of Medicine and Pathology

- Key Research Interests: Immunogenetics / Immunology

**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

Devin Champagne (graduate student)

Benjamin King (graduate student)

Joseph Klaus (graduate student)

Dimitry Kremontsov, PhD

Abbas Razza (graduate student)

Michael Secinaro (graduate student)

Emma Wall, PhD

Rui Yang (graduate student)

Christopher Ziegler (graduate student)

### **Editorships and Editorial Boards:**

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

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

### **Study Sections and Federal Advisory Boards:**

(Botten) 2014 Ad hoc reviewer, Developmental Research Project Program for the NIH-HIGMS funded NE-INBRE Program Awards

(Budd) Member, NIH Immunity and Host Defense

(Budd) Chair, NIH Special emphasis review committee for U-19 Autoimmunity Grants (NIAID ZAI1-PA-I-J1/ZAI1-ALW-I-J1)

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

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

(Teuscher) Permanent member, grant review panel for the National Multiple Sclerosis Society.

### **Major Faculty / Research Awards:**

(Budd) Senior Researcher of the Year Award - UVMMG DEC. 2013

(King) Benjamin King, CMB graduate student in Jason Botten's group, received a prestigious Chateaubriand Fellowship from the French Embassy (<http://www.chateaubriand-fellowship.org/>). This will allow Ben to extend his studies on virus migration in cells to include high-definition microscopy at the Institut Pasteur. Ben will be there for 7 months and help form a new international collaboration between the two labs.

(Rincón) U.S. Patent Application No 12/449,265 - Anti-methylation-controlled J protein antibodies and uses thereof? Inventors: Mercedes Rincon and Wendy Neveu. (2013)

(Rincón / Thornton) U.S. Patent Application N0: 12/989,901 - Method and products relating to GSK3b regulation. Inventors: Mercedes Rincon and Tina Thornton. (2013)

### **Grants – list all active by faculty member, PI**

Grant Awards 07/01/13 – 06/30/14

NIH funding:

4 - R01

3 – R21

1 - R56

2 – ARRA Supplements

1 – T32

1 – COBRE

1 – Sub award through University of Utah

1 – Sub award through Drexel University

Foundation funding:

1 – Postdoctoral Fellowship

1 – Foundation Pilot

1 – Novel Research Project

2 – VCC Awards

Budd:

Title: Gamma Delta Cells in Lyme Arthritis

Dates of Award: 09/30/2004 – 08/31/2014

Role: PI

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

Source: NIH/NIAMS

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

Dates of Award: 09/23/09-09/22/13

Role: PI

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

Source: NIH/NIAMS

Title: Vermont Immunology / Infectious Diseases Center

Dates of Award: 08/01/2006 – 06/30/2016

Role: PI

Current Yr funding: \$2,126,776

Source: NIH/NCRR

Title: Vermont Immunology / Infectious Diseases Center (Pilot ARRA Supplement)

Dates of Award: 09/17/09-09/16/13

Role: PI

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

Source: NIH/NCRR

Title: Vermont Immunology / Infectious Diseases Training Grant

Dates of Award: 09/01/05 – 08/31/16

Role: PI

Current Yr funding: \$181,642

Source: NIH/NIAID

Title: Use of Cytolytic Gamma Delta T cells in Cancer Therapy

Dates of Award: 01/01/13 – 10/31/14

Role: Co-PI

Current Yr funding: \$20,000

Source: VCC/LCCRO

Title: RIG-I Regulation of Interferon Signature in SLE  
Dates of Award: 01/01/14 – 12/31/16  
Role: PI  
Current Yr funding: \$100,000  
Source: Lupus Research Institute

Fortner:

Title: T Lymphocyte Homeostasis in Obesity  
Dates of Award: 06/01/14 – 05/31/16  
Role: PI  
Current Yr funding: \$288,750  
Source: NIH/NIAID

Rincón:

Title: p38 MAP Kinase during Early Thymocyte Development  
Dates of Award: 02/15/2009 – 01/31/2015  
Role: PI  
Current Yr funding: \$346,638 (no cost extension, effective 02/01/14)  
Source: NIH/NIAID

Title: IL-6: an innate immune regulator of the plasticity of Tfh cells  
Dates of Award: 04/15/2012 – 03/31/2014  
Role: PI  
Current Yr funding: \$0 (no cost extension)  
Source: NIH/NIAID

Title: Regulation of Mitochondrial Function in T Cells  
Dates of Award: 02/10/14 – 01/31/16  
Role: PI  
Current Yr funding: \$228,750  
Source: NIH/NIAID

Title: Biopsy-Induced Inflammation in Breast Cancer  
Dates of Award: 03/01/14 – 12/31/14  
Role: Co-PI  
Current Yr funding: \$20,000  
Source: VCC/LCCRO

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: \$67,000

Source: University of Utah

Title: Histamine Receptor Signaling in CNS Autoimmune Disease

Dates of Award: 01/15/2008 – 12/31/2013

Role: PI

Current Yr funding: 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: \$324,904

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: \$52,053

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 – 06/30/14

Role: PI

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

Source: NIH/ NINDS

Title: The Role of p38 MapK in the Integration of Environmental Stress Stimuli in CNS Autoimmune Disease

Dates of Award: 10/01/13 – 09/30/14

Role: PI

Current Yr funding: \$43,911

Source: NMSS

Title: Refining the Genetic Basis of EAE to Establish a Model for MS-GWAS Testing

Dates of Award: 07/01/12 – 06/30/15

Role: PI

Current Yr funding: \$88,206

Source: Drexel University (NMSS)

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

Borg ZD, Benoit PJ, Lilley GW, Aktan I, Chant A, DeVault VL, Rincon M, Boyson JE. Polymorphisms in the CD1d promoter that regulate CD1d gene expression are associated with impaired NKT cell development. *J Immunol.* 2014 Jan 1;192(1):189-99. doi: 10.4049/jimmunol.1301451. PMID: 24307737

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. Pages 233-260; 2013

Bramwell KK, Ma Y, Weis JH, Chen X, Zachary JF, Teuscher C, Weis JJ. Lysosomal  $\beta$ -glucuronidase regulates Lyme and rheumatoid arthritis severity. *J Clin Invest.* 2014 Jan 2;124(1):311-20. doi: 10.1172/JCI72339. PMID: 24334460

Bramwell KK, Teuscher C, Weis JJ. Forward genetic approaches for elucidation of novel regulators of Lyme arthritis severity. *Front Cell Infect Microbiol.* 2014 Jun 5;4:76. eCollection 2014. Review. PMID: 24926442

Briso EM, Guinea-Viniegra J, Bakiri L, Rogon Z, Petzelbauer P, Eils R, Wolf R, Rincón M, Angel P, Wagner EF. Inflammation-mediated skin tumorigenesis induced by epidermal c-Fos. *Genes Dev.* 2013 Sep 15;27(18):1959-73. doi: 10.1101/gad.223339.113. PMID: 24029918

Buskiewicz IA, Koenig A, Roberts B, Russell J, Shi C, Lee SH, Jung JU, Huber SA, Budd RC. c-FLIP-Short Reduces Type I Interferon Production and Increases Viremia with Coxsackievirus B3. *PLoS One.* 2014 May 9;9(5):e96156. doi: 10.1371/journal.pone.0096156. PMID: 24816846

Case LK, Wall EH, Dragon JA, Saligrama N, Kremontsov DN, Moussawi M, Zachary JF, Huber SA, Blankenhorn EP, Teuscher C. The Y chromosome as a regulatory element shaping immune cell transcriptomes and susceptibility to autoimmune disease. *Genome Res.* 2013 Sep;23(9):1474-85. doi: 10.1101/gr.156703.113. PMID: 23800453

Diehl SA, McElvany B, Noubade R, Seeberger N, Harding B, Spach K, Teuscher C. G proteins Gai1/3 are critical targets for Bordetella pertussis toxin-induced vasoactive amine sensitization. *Infect Immun.* 2014 Feb;82(2):773-82. doi: 10.1128/IAI.00971-13. PMID: 24478091

Hosking MP, Flynn CT, Botten J, Whitton JL. CD8+ memory T cells appear exhausted within hours of acute virus infection. *J Immunol.* 2013 Oct 15;191(8):4211-22. doi: 10.4049/jimmunol.1300920. PMID: 24026080

Klaus JP, Eisenhauer P, Russo J, Mason AB, Do D, King B, Taatjes D, Cornillez-Ty C, Boyson JE, Thali M, Zheng C, Liao L, Yates JR 3rd, Zhang B, Ballif BA, Botten JW. The intracellular cargo receptor ERGIC-53 is required for the production of infectious arenavirus, coronavirus,

and filovirus particles. *Cell Host Microbe*. 2013 Nov 13;14(5):522-34. doi: 10.1016/j.chom.2013.10.010. PMID: 24237698

Koenig A, Buskiewicz IA, Fortner KA, Russell JQ, Asaoka T, He YW, Hakem R, Eriksson JE, Budd RC. The c-FLIPL cleavage product p43FLIP promotes activation of extracellular signal-regulated kinase (ERK), nuclear factor  $\kappa$ B (NF- $\kappa$ B), and caspase-8 and T cell survival. *J Biol Chem*. 2014 Jan 10;289(2):1183-91. doi: 10.1074/jbc.M113.506428. PMID: 24275659

Koenig A, Sateriale A, Budd RC, Huber SA, Buskiewicz IA. The role of sex differences in autophagy in the heart during coxsackievirus B3-induced myocarditis. *J Cardiovasc Transl Res*. 2014 Mar;7(2):182-91. doi: 10.1007/s12265-013-9525-5. PMID: 24323874

Krementsov DN, Katchy A, Case LK, Carr FE, Davis B, Williams C, Teuscher C. Studies in experimental autoimmune encephalomyelitis do not support developmental bisphenol a exposure as an environmental factor in increasing multiple sclerosis risk. *Toxicol Sci*. 2013 Sep;135(1):91-102. doi: 10.1093/toxsci/kft141. PMID: 23798566

Krementsov DN, Noubade R, Dragon JA, Otsu K, Rincon M, Teuscher C. Sex-specific control of central nervous system autoimmunity by p38 mitogen-activated protein kinase signaling in myeloid cells. *Ann Neurol*. 2014 Jan;75(1):50-66. doi: 10.1002/ana.24020. PMID: 24027119

Krementsov DN, Teuscher C. Environmental factors acting during development to influence MS risk: insights from animal studies. *Mult Scler*. 2013 Nov;19(13):1684-9. doi: 10.1177/1352458513506954. PMID: 24077054

Krementsov DN, Thornton TM, Teuscher C, Rincon M. The emerging role of p38 mitogen-activated protein kinase in multiple sclerosis and its models. *Mol Cell Biol*. 2013 Oct;33(19):3728-34. doi: 10.1128/MCB.00688-13. Review. PMID: 23897428

Krementsov DN, Wall EH, Martin RA, Subramanian M, Noubade R, Del Rio R, Mawe GM, Bond JP, Poynter ME, Blankenhorn EP, Teuscher C. Histamine H(3) receptor integrates peripheral inflammatory signals in the neurogenic control of immune responses and autoimmune disease susceptibility. *PLoS One*. 2013 Jul 22;8(7):e62743. doi: 10.1371/journal.pone.0062743. PMID: 23894272

Logan A, Shabalina IG, Prime TA, Rogatti S, Kalinovich AV, Hartley RC, Budd RC, Cannon B, Murphy MP. In vivo levels of mitochondrial hydrogen peroxide increase with age in mtDNA mutator mice. *Aging Cell*. 2014 Mar 13. doi: 10.1111/acer.12212. PMID: 24621297

Rival C, Wheeler K, Jeffrey S, Qiao H, Luu B, Tewalt EF, Engelhard VH, Tardif S, Hardy D, del Rio R, Teuscher C, Tung K. Regulatory T cells and vasectomy. *J Reprod Immunol*. 2013 Nov;100(1):66-75. doi: 10.1016/j.jri.2013.08.004. PMID: 24080233

Saligrama N, Case LK, del Rio R, Noubade R, Teuscher C. Systemic lack of canonical histamine receptor signaling results in increased resistance to autoimmune encephalomyelitis. *J Immunol.* 2013 Jul 15;191(2):614-22. doi: 10.4049/jimmunol.1203137. PMID: 23772030

Saligrama N, Case LK, Kremontsov DN, Teuscher C. Histamine H<sub>2</sub> receptor signaling × environment interactions determine susceptibility to experimental allergic encephalomyelitis. *FASEB J.* 2014 Apr;28(4):1898-909. doi: 10.1096/fj.13-239939. PMID: 24371118

Ubags ND, Vernooij JH, Burg E, Hayes C, Bement J, Dilli E, Zabeau L, Abraham E, Poch KR, Nick JA, Dienz O, Zuñiga J, Wargo MJ, Mizgerd JP, Tavernier J, Rincón M, Poynter ME, Wouters EF, Suratt BT. The role of leptin in the development of pulmonary neutrophilia in infection and acute lung injury. *Crit Care Med.* 2014 Feb;42(2):e143-51. doi: 10.1097/CCM.0000000000000048. PMID: 24231757

Wall EH, Case LK, Hewitt SC, Nguyen-Vu T, Candelaria NR, Teuscher C, Lin CY. Genetic control of ductal morphology, estrogen-induced ductal growth, and gene expression in female mouse mammary gland. *Endocrinology.* 2014 Apr 7;en20131910. PMID: 24708240





## 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 1,645 new inpatient consultations. The outpatient clinics remain vibrant with about 6000 outpatient visits yearly. This effort includes the care of over 460 active patients with HIV in four federally funded Comprehensive Care Clinics in Vermont. The ID Unit outpatient care includes the international traveler's clinic, refugee screening, home IV antibiotics and care for patients with general infectious disease issues.

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, UVM's medical student Clerkship Director for the Department of Medicine and the Director of the Vaccine Testing Center at UVM.

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 12 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. This year our 2<sup>nd</sup> Year research fellow presented a poster on the 1<sup>st</sup> Human Case of Equine Encephalitis in Vermont.

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

Investigations center on the molecular biology and pathogenesis of *Entamoeba histolytica*, *Salmonella enterica* serovar Typhi, *Campylobacter jejuni*, and *Cryptosporidium* pharmaceutical agent development. Inpatient Phase III Cholera Vaccine Trial and an out Patient Phase III Cholera Vaccine trial were both completed this last year. The Dengue Virus Vaccine is currently being researched in the laboratory setting. Continuing 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 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
- Associate Director, Infectious Disease Unit
- 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, DTMH**

Professor of Medicine with Tenure

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

### **Sarah Mooney, MBBCh**

Assistant Professor of Medicine

- Clinical Faculty
- Rutland Regional Medical Center attending
- Director, AIDS Education Training

### **Cindy Noyes, MD**

Assistant Professor of Medicine

- Clinical Faculty

### **Kristen K. Pierce, MD**

Assistant Professor of Medicine

- Director, Infectious Disease 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

**Mary B. Ramundo, MD**

Associate Professor of Medicine

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

**Jose Teixeira, PhD**

Research Associate

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

**Sean Diehl, PhD**

Assistant Professor of Research

- Associate Director of Research, UVM Vaccine Testing Center
- Interests: Vaccine Development, Dengue Virus, West Nile Virus

**Fellows**

**Vinod Mohan, MBBS**

Infectious Disease 1st Year Fellow

- Infectious Disease Fellowship Training Program July 1, 2013 – June 30, 2015

**Olha Smolynets, DO**

Infectious Disease 2nd Year Fellow

- Infectious Disease Fellowship Training Program July 1, 2012–June 30, 2014
- Research : Dermatologic Manifestations in Live Attenuated Dengue Vaccines – A skin biopsy study

**Nurse Practitioners and Physician Assistants:**

**Deborah Kutzko, FNP**

Nurse Manager, Comprehensive Care clinic

- Travel health
- Vermont Refugee Clinic
- 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:**

**Rajiv Jumani** – PhD Student, (Huston Laboratory)

**Kovi Bessoff** – MD, PhD Student (Huston Laboratory)- completed PhD Sept. 2013

**Adam Sateriale** – PhD Student (Huston Laboratory)- Post Doctoral Fellow

**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 cases 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

Sean Diehl, PhD

Immunonutrition in Malnourished infants

COBRE P20RR021905

12/1/2013-5/30/2014

Christopher Grace, MD FACP

Ryan White Part C Grant for HIV Care

Non- competing grant award

5/1/2014 – 4/30/2015  
\$ 551,481 Federal HRSA

Christopher Grace, MD FACP  
Ryan White Care Act Part B  
7/1/2014 – 6/30/2014  
\$240,484 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  
08/06/2013 - 06/30/2014  
\$25,000.00 Federal

Sarah Mooney, MD  
New England AIDS Education Training  
Subaward from UMASS  
7/1/2013 – 6/30/2014  
Direct Costs \$58,000

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)**

Bessof K, Spangenberg T, Foderaro J, Jumani R, Ward G, Huston C. Identification of *Cryptosporidium parvum* active chemical series by repurposing the open Access Malaria box. 2014 Antimicrobial Agents and Chemotherapy AAC.ASM.org Vol 58-5

Sateriale A, Roy N, Huston C. SNAP-Tag Technology Optimized for Use in *Entamoeba histolytica*. December 2013 PLOS one, Vol 8 -12

Sateriale A, Bessof K, Sarka I, Huston C. Drug repurposing: mining protozoan proteomes for targets of known bioactive compounds. February 2014 J Am Med Inform Assoc; 21:238-244

Haque R, Snider C, Ma Jennie, Liu Y, Nayak U, Mychaleckyj J, Korpe P, Mondal D, Kabir M, Alam M, Pallansch M, Kirkpatrick BD, Petri WA. Oral polio vaccine response in breast fed infants with malnutrition and diarrhea. Vaccine 2014; 32: 478-482.

Kirkpatrick BD, Lyon CE, Porter CK, Maue AC, Guerry P, Pierce KK, Carmolli MP, Riddle MS, Larsson CJ, Hawk D, Dill EA, Fingar A, Poly F, Hoq F, Tribble DR. Lack of Homologous Protection Against *Campylobacter jejuni* CG8421 in a Human Challenge Model. Clinical Infectious Diseases. 2013; 57 (8): 1106-1113.

## Division of Nephrology

Richard J. Solomon, MD, Director

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



The Division of Nephrology has grown over the past year and now consists of 11 MD providers, including 9 Nephrologists and 2 Transplant Nephrologists, 1 NP and 1 Post-doctoral research fellow. We continue to be the only nephrology presence within the State of Vermont and serve multiple communities where we have outreach clinics and dialysis units. The Division has been awarded a 'High Performing Practice' for the past 3 years by US News and World Reports (only 1 of 4 services at FAHC so recognized this past year).

Service: Two new multidisciplinary clinics were created this past year. One in Transplant, made possible by the addition of a second transplant nephrologist (Dr. Osun Kwon), includes a transplant surgeon, nephrologists, social worker, dietitian and transplant coordinator interacting with patients and family in the same visit. A second multispecialty Stone Clinic was initiated with Virginia Hood, Kevin Sternberg, and a dietitian, together with fellows, residents, and students. Patients (10-12) with a history of chronic stone production are evaluated by both nephrology and urology. A multidisciplinary conference follows the clinic in which the metabolic basis of stone formation and therapeutic options are discussed.

Education: Residents in Medicine rotate for 2 weeks on the Nephrology Service. This previously was an inpatient rotation. Starting this March 2014, the rotation has been split into a one week in-patient and one week out-patient rotation under the supervision of Varun Agrawal. During the outpatient rotation, residents are exposed to the Home dialysis program, the Chronic dialysis program, Stone Clinic, Transplant Clinic, and chronic kidney disease clinics. They are assigned a topic for presentation on the last Friday of the rotation.

Research: Investigator initiated research includes a study of urine electrolytes in patients admitted to the hospital with acute decompensated heart failure (R. Solomon, PI). Two Chief Medical Residents and a second year resident are spearheaded this effort. A study of urine pO<sub>2</sub> measurements in patients undergoing cardiopulmonary bypass is just starting. This effort comes out of a long term collaboration between nephrology (R. Solomon) and the cardiothoracic surgical service on efforts to reduce the incidence of acute kidney injury at FAHC. In addition, one of our fellows (supervised by S. Chang) is compiling a database of all patients transplanted at FAHC in the past 2 decades to tabulate outcomes. A second database of primary glomerulonephritis in the State of Vermont is also underway (supervised by C. Rich). Finally, our post-doctoral fellow (K. Cheung) is working with members of the Global Health Economics Unit in the Center for Clinical and Translational Science. Their project: Using System Dynamics to Project the End Stage Renal Disease (ESRD) Incidence Rates and Costs in the U.S. under Alternate Policy and Critical Care Pathway Scenarios has produced a workable model that will be presented to our ACO leadership in the near future. The goal is to contain health care costs for patients with chronic kidney disease (which accounts for nearly 1/4 of the total costs in the ACO) through more targeted use of home dialysis, transplantation, and conservative care.



## **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)

### **Varun Agrawal, MD**

Assistant Professor of Medicine

Medical Director of Barre Dialysis Unit

#### **Academic Interests**

- Obesity mediated kidney disease
- Nephrology educational research
- Resident education

### **Shirley Chang, MD**

Assistant Professor

#### **Academic Interests**

- Kidney/Pancreas Transplantation
- Diabetic Nephropathy
- Pediatric Nephrology

### **F. John Gennari, MD**

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**

- Population approaches to management of hypertension and chronic kidney disease
- Models for delivery of high value cost conscious health care.
- Acid- base disorders

**Osun Kwon, MD**

Associate Professor of Medicine  
Transplant Nephrology

**Academic Interests**

- Pathogenetic mechanism of ischemic injury to the kidney.
- Long-term survival of kidney transplants and recipients of kidney transplant.

**Dana Negoj, MD**

Associate Professor of Medicine  
Medical Director, St. Albans Dialysis Unit and Home Dialysis Program

**Academic Interests**

- Home-based dialysis therapies
- CKD Education
- Clinical Nephrology Teaching

**Jeffrey Rimmer, MD**

Professor of Medicine  
Medical Director Chittenden Dialysis Unit

**Academic Interests**

- Renal replacement therapies in acute and chronic kidney disease
- Management of vascular access for hemodialysis
- Coordination of care for the in-center hemodialysis patient
- Management of bone and mineral disorders in the hemodialysis patient

**Alan Segal, MD**

Associate Professor of Medicine  
Fellowship Program Director, Renal Fellowship

## **Academic Interests**

- Sodium and potassium transport within the renal tubule
- Hyponatremia/hypotonicity disorders
- Dominant polycystic kidney disease

## **Wolfgang Weise, MD**

Associate Professor of Medicine

Medical Director, Rutland Dialysis Unit

## **Academic Interests**

- Primary Kidney disease

## **Fellows**

Ziad Arabi – Second Year Fellow

Adam Horeish – Second Year Fellow

Sadik Sharef – First Year Fellow

Sree Sursala – First Year Fellow

## **Nurse Practitioners and Physician Assistants:**

Margaret Butler, APRN

## **Post-doctoral Fellows, (Ph.D.):**

|

Katharine Cheung, MD

## **Endowed Professorships:**

Patrick Professorship (Richard J. Solomon, MD)

## **Leadership in Professional Societies:**

**Varun Agrawal, MD**

Kidney Disease Outcome Quality Initiative Education committee, National Kidney Foundation

**Virginia Hood, MBBS, MPH, MACP**

Past President, American College of Physicians

Member, ACP Patient Partnership in Health Care Advisory Board

Member, Sydney University Graduate Union North America Board of Trustees

President Emerita, American College of Physicians

**Editorships and Editorial Boards:**

**F. John Gennari, MD**

Advisory Board: Acid-base and Electrolyte Teaching Cases, American Journal of Kidney Diseases, 2013 and 2014.

Consulting editor, Teaching Cases: Acid-base and electrolyte disorders, American Journal of Kidney Diseases, reappointed through 2016.

**Alan Segal, MD**

Editorial Board: American Journal of Physiology, Renal

**Study Section and Federal Advisory Boards**

**Richard Solomon**

Biomarker Consortium member for NIH

**Alan Segal, MD**

US Advisory Board, Baxter Healthcare

Advisory board of Alexion Pharmaceuticals

**Invited Talks**

**Virginia Hood, MBBS, MPH, MACH**

Choosing Wisely in the USA. SGIM/SSMI Platin-symposium, Thun, Switzerland, September 20, 2013

The Need for High Value Cost Conscious Care. Carolinas Healthcare Systems, Charlotte, NC, Oct. 9, 2013

US Health Care in Crisis: the Need for High Value Care. SUGUNA, Charlotte NC,  
Oct 12, 2013

Handy Hints for Blood Pressure Control. BVI Physicians, Tortola, BVI, March 1,  
2014

Chronic Kidney Disease: What Can a Primary Care Professional Do? 40<sup>th</sup> Annual Family  
Medicine Review Course, Burlington VT, June 12, 2014

**Grants – list all active by faculty member, PI**

**Varun Agrawal, MD**

Mini-grant for National Kidney Foundation, Maryland

**Virginia Hood, MD**

Studies on ‘Choosing Wisely’

Levine M. and Hood V.L. Development of a High Value Cost Conscious Care Experience for  
Residents and Fellows. UVMMG 2014-2015. \$25,000

Studies in patients with end stage kidney disease

**Dana Negoi, MD**

Ferric citrate for patients with ESRD and hyperphosphatemia

**Wolfgang Weise, MD**

Fermagat and sevelamer in hemodialysis patient with hyperphosphatemia

Studies in patients with autosomal dominant polycystic kidney disease

**Wolfgang Weise, MD**

Use of MRI for following cyst

Studies in patients with chronic kidney disease and/or end stage kidney disease.

**Jeffrey Rimmer, MD**

The use of Vascugel® for injury to hemodialysis access and during creation of hemodialysis access.

Amgen: use of cinacalcet for secondary hyperparathyroidism.

**Richard Solomon, MD**

Testing endothelial function with the Endothelix device.

Studies in patients with diabetic kidney disease aimed at delaying progression.

**Richard Solomon, MD**

Bayer: Oral dose of BAY 9408862 in subjects with T2DM Nephropathy

AbbVie: SONAR: study of diabetic nephropathy with Atrasentan

Abbott: BEACON: Bardoxolone Methyl evaluation in patients with diabetes and kidney disease

Studies involving treatment of acute kidney injury

**Richard Solomon, MD**

Allocure: use of mesenchymal stem cells in patients who develop acute kidney injury post cardiopulmonary bypass.

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

Dhakarwal P, Agrawal V, Kumar A, Goli KM, Agrawal V. Update on role of direct renin inhibitor in diabetic kidney disease. Ren Fail. 2014 Jul;36(6):963-9.

Rao BB, Bhattacharya A, Agrawal V. Renal outcomes of bariatric surgery in obese adults with diabetic kidney disease. J Nephrol. 2014 Mar 19. [Epub ahead of print]

Ybanez N, Agrawal V, Tranmer BI, Gennari FJ. Severe hypokalemia in a patient with subarachnoid hemorrhage. Am J Kidney Dis. 2014 Mar;63(3):530-54:

Agrawal V, Liu XJ, Campfield T, Romanelli J, Enrique Silva J, Braden GL. Calcium oxalate supersaturation increases early after Roux-en-Y gastric bypass. Surg Obes Relat Dis. 2014 Jan-Feb;10(1):88-94

Cheung KL, Montez-Rath, Chertow GM, Winkelmayr WC, Periyakoil, VS and Kurella Tamura M. Prognostic Stratification in Older Adults Commencing Dialysis. *J Gerontol A Biol Sci Med Sci*. 2014 Jan 30 [Epub ahead of print].

Tong AT, Cheung KL, Nair SS, Kurella Tamura M, Craig JCC, Winkelmayr WC. Thematic Synthesis of Qualitative Studies on Patient and Caregiver Perspectives on End-of-Life Care in CKD. *Am J Kidney Dis*. 2013;63(6):913-927.

Cheung KL, Lafayette R. Renal Physiology of Pregnancy. *Adv Chronic Kidney Dis*. 2013;20(3),209-214.

Gennari FJ. Intravenous fluid therapy: Saline vs mixed electrolyte and organic anion solutions. *Am J Kid Dis*. 2013; 62 (1):20-22

Lisawat P, Gennari FJ. Approach to the hemodialysis patient with an abnormal serum bicarbonate concentration. *Am J Kid Dis* 2014;64(1) 151-155

Solomon, R. Antioxidant therapy with acetylcysteine for contrast-induced acute kidney injury: a final nail in the coffin? *Coronary Artery Disease* 2014, 25: 94-95.

Solomon, R. Forced diuresis with the RenalGuard system: impact on contrast induced acute kidney injury. *J Cardiol* 2014, 63: 9-13.

Li, LP, Lu J, Zhou Y, Papadopoulou MV, Franklin T, Bokhary U, Solomon R, Sen A, Prasad P. Evaluation of intrarenal oxygenation in iodinated contrast-induced acute kidney injury-susceptible rats by blood oxygen level-dependent magnetic resonance imaging. *Invest Radiology* 2014, 49:403-410.

Li LP, Thacker J, Lu J, Franklin T, Zhou Y, Papadopoulou MV, Solomon R, Prasad PV. Efficacy of Preventive Interventions for Iodinated Contrast-Induced Acute Kidney Injury (CIAKI) Evaluated by Intra Renal Oxygenation as an Early Marker. *Invest Radiol* 2014, May 27, Epub ahead of print).

Solomon, R. Contrast media: are there differences in nephrotoxicity among contrast media? *Biomed Res Int* 2014, Epub 2014, Jan 22.

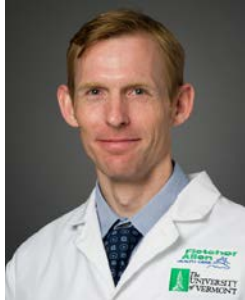
Andreucci, M, Pearce EN, Solomon R, Tasanarong A. Side effects of radiographic contrast media: Pathogenesis, risk factors, prevention. *Biomed Res Int* 2014; 2014:741018, Epub 2014 May 11.

Rojkovskiy, I and Solomon, R. Intravenous and oral hydration: approaches, principles, and differing regimens. *Interven Cardiol Clinic* 2014; 3: 393-404

## Division of Primary Care Internal Medicine

Allen Repp, MD, MS, 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 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.

Over the past year we welcomed Dr. Jennifer Borofsky (Hospital Medicine) as new faculty. Dr. E. Rosy Hill (Ambulatory and Geriatric Medicine) will join us in July 2014.

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. All four outpatient sites have been NCQA recognized as level 2 or 3 Patient Centered Medical Homes. We continue to continuously refine our care processes to enhance the patient experience and deliver optimal care to our population of patients.

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 2 local skilled nursing facilities and for the VNA Hospice.

In the inpatient setting, our hospitalist service provides 24x7 attending and consultative care at Fletcher Allen. Additionally, we provide physician leadership to the rapid response team (CATS Team), which responds to inpatients with medical emergencies throughout the hospital. Our hospitalist team 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 150,000 work RVUs.

Our faculty and providers are extensively engaged in service at the state and national levels. A few examples include: OneCare Vermont Clinical Advisory Board members, Governor for the Vermont Chapter for the American College of Physicians, UVM Medical Alumni President, Vermont Board of Medical Practice Chair, Federation of State Medical Boards Advisory Council member, USMLE and the National Board of Medical Examiners Standards Setting Committee member, Federation of State Medical Boards Board of Directors, Vermont Medicaid Drug Utilization Board members, Green Mountain Care Board Technical Advisory Group member. Faculty participation in committees and task forces at the College of Medicine and Fletcher Allen Health Care is also wide-ranging.

*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. Additionally, we serve as Course Directors for Doctoring in Vermont (Dr. Beatty), Convergence (Dr. King), Outpatient Medicine Clerkship (Dr. O'Brien), Bridge (Dr. Beatty) and the Medicine Acting Internship (Dr. Levine). Administrative leadership positions at the College of Medicine include Associate Dean for Clinical Education (Dr. Bertsch), Associate Dean for Primary Care at the College of Medicine (Dr. Maclean), and Associate Chair for Education in the Department of Medicine and Associate Dean for Graduate Medical Education at the College of Medicine (Dr. Levine).

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 the Internal Medicine residents practice under the supervision of our preceptors and firm leaders in a busy clinic environment. 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 and medical students. Additionally, our inpatient faculty physicians lead the Medicine Consult elective for residents and medical students and a Hospital Medicine Acting Internship.

After an historic tenure, Dr. Levine stepped down from the role of Director for the Internal Medicine Residency Program to assume the position of Designated Institution Official at FAHC and Associate Dean for Graduate Medical Education at the College of Medicine. Dr. Pasanen

was appointed the new Director for the Internal Medicine Residency Program, and in July 2014, Dr. Eldakar-Hein was named as a new Associate Program Director. Our faculty members have been recognized numerous times by the resident physicians for teaching excellence. In June 2014, Dr. Eldakar-Hein received the William Osler, M.D. Award for Outstanding Teacher of the Year in General Internal Medicine.

Our educational endeavors extend to graduate students in analysis of clinical research, nurse practitioners in palliative care fellowship programs, and nurse practitioner students in clinical compassion. We educate our colleagues locally, regionally and nationally in a variety of venues. Examples include the Vermont Academic Detailing Program which delivers educational outreach to Vermont's primary care providers and the University of Vermont Continuing Medical Education Course in Hospital Medicine with faculty largely from PCIM and other divisions of the Dept of Medicine.

### ***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 including clinical trials of immunizations, the impact of innovative models for primary care, narcotic-related adverse events in inpatients, narcotic prescribing practices in the outpatient setting, communication practices around inter-hospital transfer, and VTE prevention in acute medically ill patients.

### **Faculty**

#### ***Aesculapius Medical Center***

##### **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

Bridge Course Director, Vermont Integrated Curriculum, UVM College 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

**Alison Landrey, MD**  
Assistant Professor of Medicine

**Marie Sandoval, MD** (Site Clinical Leader)  
Assistant 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 Skilled Nursing Facility

- Geriatric Medicine

**John Miller, MD**  
Assistant Professor of Medicine

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

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

**Halle Sobel, MD**  
Assistant Professor of Medicine  
Co-Director, Internal Medicine Resident Clinic

**Given Health Care Center Essex**

**Nathan Ayer, MD, MPH**  
Assistant Professor of Medicine

**Tania Bertsch, MD**  
Associate Professor of Medicine  
Associate Dean for Clinical Education

**Diane Haddock, MD** (Site Clinical Leader)  
Assistant Professor of Medicine

**Patricia King, MD, PhD**  
Associate Professor of Medicine  
Convergence Course Director, Vermont Integrated Curriculum, UVM College of Medicine

**Mark Levine, MD**  
Professor of Medicine  
Associate Chair for Education, Department of Medicine  
Designated Institution Official at Fletcher Allen Health Care and Associate Dean for Graduate Medical Education at the UVM College of Medicine

**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**

**Anne Breña, MD**  
Assistant Professor of Medicine

**Marvin Klikunas, MD**  
Associate Professor of Medicine

Medical Director, The Arbors

- Geriatric Medicine

**Lucy Miller, MD**

Assistant Professor of Medicine

**Dennis Plante, MD** (Site Clinical Leader)

Associate Professor of Medicine

**PCIM Hospitalist Service**

**Mireille Anawati, MD**

Assistant Professor of Medicine

**Jennifer Borofsky, MD**

Assistant Professor of Medicine

**Paul Crainich, MD**

Assistant Professor of Medicine

**Shaden Eldakar-Hein, 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**

Associate Professor of Medicine

Associate Director, Hospitalist Service

HR Physician Liaison, 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

**Sadie Mills, MD**

Assistant Professor of Medicine

**Chad Mitchell, MD**

Assistant Professor of Medicine

**Mark Pasanen, MD**

Associate Professor of Medicine

Program Director, Internal Medicine Residency Program

Section Head for Hospital Medicine

**Allen Repp, MD, MS**

Associate Professor of Medicine

Health Care Service Leader and Division Chief, Primary Care Internal Medicine

**Paul Slavik, MD**

Assistant Professor of Medicine

**Jaspinder Sra, MD**

Assistant Professor of Medicine

Medical Director, CATS Team

Physician Informaticist, PRISM

**Amy Lynn Teleron, MD**

Assistant Professor of Medicine

**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

Rachel Brodie, PA

**Given Health Care Center Burlington**

Candis Cousins, PA

Gabrielle Mikula, NP

Tracey Niquette, NP

**Given Health Care Center Essex**

Sarah Bushweller, PA

Alison Hall, PA

**Given Health Care Center Williston**

Kirsten Berggren, NP

Darla Witmer, NP

**Starr Farm (Skilled Nursing Facility)**

Katharine Murphy PhD, MS, APRN

**Leadership in Professional Societies:**

Mark Pasanen, M.D.

- 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
- Federation of State Medical Boards Board of Directors

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
- Editorial Board: JSM Clinical Case Reports
- Guest Editor (Invited) *Hospital Medicine Clinics*, Volume 4, Issue 3, publish date July 2015

Halle Sobel, MD

- Reviewer: Annals of Internal Medicine

**Study Sections and Federal Advisory Boards:**

Patricia King, MD, PhD

- Federation of State Medical Boards Advisory Council to the United States Medical Licensing Examination
- National Board of Medical Examiners Standards Setting Committee for USMLE Step 1

### **Major Faculty Awards:**

Shaden Eldakar-Hein, MD

- Osler Teacher of the Year Award in June 2014

Patricia King, MD

- John H. Clark Award, recognizing outstanding and exemplary leadership, commitment and contributions in advancing the public good at the state medical board level.

Halle Sobel, MD

- Reynolds Geriatric Faculty Development Longitudinal Scholar Program at Mount Sinai

### **Grants:**

Mark Levine, MD (Co-Principal Investigator)

- “Development of a High-Value Cost-Conscious Care Experience for Residents and Fellows.” UHC Trust Teaching & Education Grants. \$25,000

Allen Repp, MD (Co-Principal Investigator)

- “Vermont Hospital Medicine Choosing Wisely Project.” Vermont Health Care Innovation Project (VHCIP) as part of State Innovation Model Grant, Centers for Medicare & Medicaid Services. \$488,828 total costs (awarded through Vermont Medical Society Research and Education Foundation)

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

Kirkpatrick BD, Lyon CE, Porter CK, Maue C, Guerry P, Pierce KK, Carmolli MP, Riddle MS, Larsson CJ, Hawk D, Dill EA, Poly F, Fimlaid KA, Hoq F, Tribble DR. (2013) Lack of Homologous Protection against *Campylobacter jejuni* CG8421 in a Human Challenge Model. *Clinical Infectious Diseases* 57(8): 1106-1113.

Repp AB and Jindal M (2013) Portal vein thrombosis. In: Wiese J, Auerbach A, Glasheen J, Li J, Editors. *Clinical Decision Support: Hospital Medicine*. Decision Support in Medicine. Wilmington, DE.

Jindal M and Repp AB (2013) Aortic sclerosis and stenosis. In: Wiese J, Auerbach A, Glasheen J, Li J, Editors. *Clinical Decision Support: Hospital Medicine*. Decision Support in Medicine. Wilmington, DE.

Mitchell C and Repp A (2014) Bubble gum bezoar. *JSM Clin Case Rep* 2(2): 103





## **Division of Pulmonary and Critical Care Medicine**

Anne Dixon MD, Director

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



The Pulmonary Critical Care Division has instituted innovative 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 is significantly enhancing the quality and nature of its educational programs.

The Division manages critically ill patients in the Medical Intensive Care Unit, provides 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: these include bronchoscopy, pulmonary function testing, evaluation of sleep disorders, and a nationally certified pulmonary rehabilitation program. The Division started an interventional pulmonary program this year. This is a major new program, the only of its kind in the region, which significantly enhances the level of care we are able to provide patients with complex airway lesions, particularly those patients with lung cancer. The Division is at the forefront of developing a Lung Cancer Screening Program in collaboration with Radiology and Oncology, and to support this initiative will develop a new program for the evaluation and management of pulmonary nodules, which will enhance the quality of care for patients at risk of lung cancer in our region.

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 research program continues to expand, and enjoys considerable success and major recognition.

The Division is committed to education and training. Members of the Division have a leadership role in the medical school curriculum, including organizing the respiratory section of the award winning Cardiovascular Respiratory and Renal Foundations Course. Over the last year, Dr. Leclair has taken advantage of being awarded a Frymoyer Scholarship to develop a highly innovative, multi-disciplinary simulation-based educational program directed towards integrated education for the ICU team, including nursing, respiratory therapy, medical students and residents. This represents a major change in the way that we educate in the ICU, and takes full advantage of the rich training environment provided by the Simulation Center to model ICU cases and management, with the ultimate goal to improve quality of care and education for the entire critical care team. 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**

Professor Medicine  
Director, Pulmonary Disease and Critical Care Medicine  
Director of Clinical Research, Vermont Lung Center

### **Gilman Allen III, MD**

Associate Professor of Medicine  
Director of Critical Care Services, Fletcher Allen Health Care

### **Jason H.T. Bates, PhD DSc**

Professor of Medicine  
Department of Molecular Physiology & Biophysics

### **Lynn R. Zanardi Blevins, MD MPH**

Clinical Assistant Professor of Medicine

### **Jan Kirk Carney, MD MPH**

Clinical Professor of Medicine

### **Ryan Clouser, DO**

Assistant Professor of Medicine  
MICU Director

- Critical Care Medicine and Pulmonary Disease

### **Gerald S. Davis, MD**

Professor of Medicine (Emeritus)

### **Susan Dunning, MD**

Assistant Professor of Medicine

### **Joshua Farkas, MD**

Assistant Professor of Medicine

### **Garth Garrison, MD**

Assistant Professor of Medicine  
Co-Director, FAHC Lung Cancer Screening Program

### **Charles Irvin, PhD**

Professor Pulmonary Sciences and Critical Care Medicine  
Professor Department of Molecular Physiology & Biophysics  
Director, Vermont Lung Center

**David Kaminsky, MD**  
Professor of Medicine  
Director, Pulmonary Disease Fellowship Program

**C. Matthew Kinsey, MD, MPH**  
Assistant Professor of Medicine  
Director of Interventional Pulmonary

**Laurie Whittaker Leclair, MD**  
Associate Professor of Medicine  
Adult CF Program Director, FAHC CF Center Member

**Lennart Lundblad, PhD**  
Research Assistant Professor

**Yolanda Mageto, MD, MPH**  
Associate Professor of Medicine  
Director of Pulmonary Ambulatory Care Clinics

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

**Matthew Poynter, PhD**  
Associate Professor of Medicine  
Associate Director, Vermont Lung Center

**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  
Associate Chief, Pulmonary and Critical Care Medicine  
Associate Chair of Medicine for Academic Affairs  
Associate Professor of Medicine and Cell & Molecular Biology

**Charlotte Teneback, MD**  
Assistant Professor of Medicine  
Associate Director, Adult Cystic Fibrosis Program

**Daniel Weiss, MD, PhD**  
Professor of Medicine

**Fellows**

Mary Ellen Antkowiak, MD  
Jad Harb, MD  
Sivajothi Kanagalingam, MD  
Alan Lee, MD  
Sanjiva Lutchmedial, MD  
Lucas Mikulic, MD

**Nurse Practitioners and Physician Assistants:**

Katie Bird, NP  
Lily Sender, PA

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

Niki Ubags, Graduate student, in collaboration with Maastricht University, The Netherlands  
MaryEllen Antkowiak, PCCM Fellow (Fellowship research training)  
Olga Sideleva, Post-doc  
Bradford Smith, PhD – postdoctoral fellow  
Joshua Pothen, BS – PhD student  
Jennifer Ather, PhD awarded February 2014, Maastricht University  
Ed Burgess, CMB PhD student  
Nazey Gulec , Graduate student  
Shannon Li, Graduate student  
Prema Menon, MD, Assistant Professor (research mentor)  
Timothy Leclair, MD, Senior Resident (research mentor)  
Darcy Wagner PhD - Postdoctoral  
Fernanda Cruz PhD – Postdoctoral  
Mariana Antunes PhD – Postdoctoral  
Spencer Fenn PhD – Postdoctoral  
Patrick Charron - Master's student  
David Chapman, Ph.D. Post Doc  
Jane Tully, PhD candidate, UVM  
Jimmy Nolan, PhD candidate, UVM  
Robyn Jones, PhD candidate, University of Western Australia  
Sidra Hoffman, PhD candidate, UVM

**Endowed Professorships:**

E.L. Amidon Chair – Polly E. Parsons, MD

**Leadership in Professional Societies:**

Anne Dixon, MD

- American Thoracic Society Finance Committee Member
- American Thoracic Society Membership Committee Program Evaluation Committee Member
- American Thoracic Society Minority Trainee Travel Awards Committee Member

Gilman Allen, MD

- Critical Care Assembly Program Committee, American Thoracic Society

Jason H. T. Bates, PhD, DSc

- Vermont representative for the Northern New England Chapter of the IEEE Engineering in Medicine & Biology Society

Gerald Davis, MD

- Vermont-New Hampshire Thoracic Society Member 1973 -
- American Thoracic Society Member 1974 -
- American College of Physicians Fellow 1981-
- Eastern Section American Thoracic Society Member 1975 -
- American Lung Association of Vermont Board of Trustees 1977 -
- American College of Chest Physicians Fellow 1982 -
- Association of Pulmonary Program Directors Member 1984 -
- American Association for Bronchology Member 2007 -

David Kaminsky, MD

- Co-Chair and Faculty, Post Graduate Course 22. Beyond the Basics: Pulmonary Function and Exercise Testing. 2014 International Conference, American Thoracic Society, San Diego, CA
- Speaker, Workshop WS8. The New Clinical Practice Guideline: Exercise-Induced Bronchoconstriction. 2014 International Conference, American Thoracic Society, San Diego, CA

C. Matthew Kinsey, MD, MPH

- Programming committee member, Assembly on Thoracic Oncology, American Thoracic Society
- Founding member, New England Chapter of the American Association of Bronchology and Interventional Pulmonology
- 

Lennart Lundblad, PhD

- Member of the Board of Directors of the Pulmonary Research Group

- Member of the American Thoracic Society Respiratory Structure & Function program Committee

Yolanda Mageto, MD, MPH

- 1995-Present American thoracic Society
  - 2012-Present Chair Minority Training Awards subcommittee
  - 2013-Present Chair Membership Committee
- 1995-present American College of Chest Physicians Member
- 2012-Present FACCPC- Fellow of the American College of Chest Physicians
- 2012-present Society for Critical Care Medicine Member

Polly E. Parsons, MD

- Alliance for Academic Internal Medicine:
  - Accreditation Committee: Chair 2011-2014
  - Board of Directors (ex-officio): 2011- 2014
- Association of Professors of Medicine:
  - APM Council member: 2014-present

Renee Stapleton, MD PhD

- American Thoracic Society
  - a. Committee for Members in Transition and Training
    - Member 2006-2013
    - Chair, 2010-2013
  - b. Critical Care Assembly Planning Committee
    - Member, 2009-2013
    - Chair, 2011-2013
  - c. Behavioral Sciences and Health Services Assembly Program Committee, 2012-present
  - d. Scientific Advisory Committee (reviews all ATS grants), 2013-present
  - e. Education Committee, 2013-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.

Daniel Weiss, MD, PhD

- Chief Scientific Officer, International Society for Cell Therapy (ISCT)
- Chair, Pulmonary Committee, ISCT
- Chair, Stem Cell Working Group, ATS

### **Editorships and Editorial Boards:**

Jason Bates, PhD, DSc

- Deputy Editor for the Journal of Applied Physiology
- Member of the Editorial Board for the Journal of Clinical Monitoring and Computing
- Member of Editorial Board of CRC Critical Reviews in Biomedical Engineering

Charles Irvin, PhD

- Editorial Board, American Journal Respiratory Cell and Molecular Biology
- Editorial Board, Journal Allergy Clinical Immunology: In Practice
- Editorial Board, COPD Journal

Lennart Lundblad, PhD

- Proceedings Editor with the Pulmonary Research Group

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

Matthew Poynter, PhD

- Editorial Board member, American Journal of Respiratory Cell and Molecular Biology

Renee Stapleton, MD PhD

- Non-Pulmonary Complications on Critical Care. Jeremy B. Richards and Renee D. Stapleton, eds. Springer, Inc., New York, NY, 2014. Electronic identifier: <http://dx.doi.org/10.1007/978-1-4939-0873-8>



Daniel Weiss, MD, PhD

- Molecular Therapy
- Am J Resp Cell Mol Biol

**Study Sections and Federal Advisory Boards:**

Anne Dixon, MD

- Member NHLBI review panel for Patient-Oriented and Career Enhancement Award for Stem Cell Research (K 23, 24, 25), 2007 – present
- Ad-Hoc Member, VA Merit Review Panel for Pulmonary, 2011 - present
- Member, SEP, NIAID Asthma and Allergic Diseases Cooperative Research Centers: pilot trial of allergic and airway diseases review panel, June 2014

Jason H. T. Bates, PhD, DSc

- Standing member of RIBT study section for National Institutes of Health

Jan Carney, MD MPH

- Governor of American College of Physicians, Vermont Chapter. Serving as Governor-elect this year.

Gerald Davis, MD

- Chair, Data & Safety Monitoring Board “Idiopathic Pulmonary Fibrosis Clinical Research Network” (NHLBI Multicenter Trials) 2006-
- Member, Data & Safety Monitoring Board, “Safety and Efficacy of a Lysophosphatidic Acid Receptor Antagonist in Idiopathic Pulmonary Fibrosis”, Bristol Myers Squibb Multicenter Trial 2013-
- Chair, Data & Safety Monitoring Board, A Randomized, Double-Blind, Placebo-controlled Phase II Study to Investigate the Efficacy and Safety of Riociguat (0.5 mg, 1 mg, 1.5 mg, 2 mg and 2.5 mg TID) in patients with symptomatic Pulmonary Hypertension associated with Idiopathic Interstitial Pneumonias (IIP), Bayer Health Care. 2014 -
- C. Ad Hoc Reviewer:
  - American Journal of Respiratory & Critical Care Medicine
  - American Journal of Respiratory Cell & Molecular Biology
  - CHEST
  - European Respiratory Journal
  - Journal of Allergy & Clinical Immunology
  - Journal of Clinical Investigation
  - Journal of Respiratory Disease

LUNG  
Thorax  
Journal of Environmental Pathology, Toxicology, and Oncology

Charles Irvin, PhD

- Charter Member, Standing Study Section, (COBRE and RCMI) NCRR, National Institutes of Health
- Chairman, ZTRI-CG-1, R13 grants NCATS, National Institutes of Health
- Chairman, R01 grants NIMHP, National Institutes of Health
- Ad Hoc ZRG1 CVRS-B51 D7/BEST, Broadening Experience in Scientific Training, Office of Director, National Institutes of Health
- Ad Hoc ZMDI MLS (Panel 1) LRP grants, NIMHD, National Institutes of Health
- Ad Hoc ZMDI MLS (Panel \_) LRP grants, NIMHD, National Institutes of Health

Advisory Boards

- 2003 - present Internal Steering Committee, Vermont Genetics Network, (PI: Van Houten) NIH INBRE program
- 2006 - present Internal Steering Committee, Immunobiology, (PI: Budd) NIH COBRE program
- 2012 - present Internal Advisory Panel, Health and Behavior (PI: Higgins) COBRE program
- 2009 - present External Advisory Committee, NIH COBRE, (Ortiz) LSU New Orleans
- 2010 - present External Advisory Committee NIH COBRE (PI: Stanton) Dartmouth College
- 2010 - present External Advisory Committee NIH INBRE, (PI: Taylor) Dartmouth College
- 2012 - present External Advisory Committee NIH COBRE, (PI: Boyer) University of Alaska, Fairbanks, AK
- 2013 - present Scientific Advisory Board, Trudeau Institute, Saranac Lake, NY
- 2014 - present External Advisory Board, Graduate School of Biomedical Science & Engineering (GSBSE), University of Maine
- 2014-Present External Advisory Committee, NIH COBRE (PI: Rounds), Brown University

David Kaminsky, MD

- Member, American Lung Association (ALA) Research Grant Review Committee, Section C. ALA, New York, NY, March 2014

Polly Parsons, MD

- NHLBI Scientific Advisory Council: member 2011-present

- NHLBI Next Generation Resuscitation Research Workshop 201
- NHLBI Cell Therapy Think Tank 2014
- NHLBAC Asthma Expert Panel Working Group 2014
- NHLBI Think Tank on Sickle Cell Disease 2014

Matthew Poynter, PhD

- Member, NIH Lung Cellular, Molecular and immunology Study section

Renee Stapleton, MD, PhD

- Member of the review panel for the NIH NHLBI PETAL (Prevention and Early Treatment of Acute Lung Injury) Network, December 2013.
- American Thoracic Scientific Advisory Committee (responsible for reviewing all ATS grants), 2013-present

Daniel Weiss, MD, PhD

- Study Section Chief: Connecticut Stem Cell Research Foundation
- Flight Attendant Medical Research Institute study section

### **Major Faculty Awards:**

Ryan Clouser, DO

Family Medicine Residency Appreciation Award. June 2014

Charles Irvin, PhD

John Rankin Memorial Lectureship, University of Wisconsin, Madison (Oct 2014)

Polly Parsons, MD

University of Washington: John Butler Lecture Speaker November 2013

Matthew Poynter, PhD

University of Vermont Faculty Fellow in Sustainability, 2013-2014

Renee Stapleton, MD PhD

2014 American Thoracic Society Jo Rae Wright Award for Outstanding Science. This award recognizes demonstrated potential for significant scientific achievement and contributions and is aimed at the rising generation of individuals who will be tomorrow's leaders in science.

Benjamin Suratt, MD

Research Mentoring Excellence Award, UVM Department of Medicine, 2014

## **Grants – list all active by faculty member, PI**

Anne Dixon, MD

Pfizer

Dixon (PI)

6/18/2014 - 6/17/2016

Biomarkers in asthma

U01 HL089464

Dixon (PI)

9/30/2009 - 6/30/2014

Role (PI)

Irvin (Co-PI)

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 380 adults and children with poorly controlled asthma and chronic rhinosinusitis at 20 centers (affiliated with the American Lung Association Asthma Clinical Research Center network).

P30 RR031158-01

Irvin (PI)

7/1/2010 – 6/30/2015

NIH/NCRR

Role: PI of Clinical Core

Title: Translational Research in Lung Biology and Disease

This is a grant funding a Center of Biomedical Research Excellence (COBRE) Phase III: This transitional center award supports four cores, including an Environmental, Intellectual, and Administrative Core, Transgenic/Knockout Core, Small Animal Phenotyping Core, Clinical Core and a pilot project program.

The focus of the COBRE is to continue the development of research programs in the area of lung biology and disease, specifically, airway epithelial cell biology, cystic fibrosis, asthma inflammation, lung physiology, translational animal studies, and clinical investigation into the pathogenesis of lung disease. The role of the clinical core is to facilitate translational research in pulmonary disease by providing infrastructure personnel and intellectual support for clinical/translational studies.

R01 HL085646 (van der Vliet)

7/01/2013 – 6/30/2018

NIH/NHLBI

Dual Oxidases in Airway Epithelial Injury and Inflammation

The major goal of this project is to investigate the contribution of DUOX1 to epithelial production of Th2 polarizing cytokines and development of allergic inflammation

Jason H. T. Bates, PhD, DSc

R01 HL103405

PI: Bates

07/01/10 – 06/30/14

NIH/NHLBI

Role: Co-PI

P30 GM 103532

PI: Irvin

08/15/10-06/30/15

NIH/NIGMS

Role: Physiological Phenotyping Core leader

RC4 HL106625  
NIH/NHLBI

PI: D. Weiss  
Role: Co-investigator

09/17/10 - 8/30/13

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.

InterMune Inc.

Gerald S. Davis, M.D. (Principal Investigator for site)

Yolando Mageto, MD (Co-Principal 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)

“A Phase II, Randomized, Double-Blind, Placebo-Controlled, Study to Assess the Efficacy and Safety of Lebrikizumab in Patients with Idiopathic Pulmonary Fibrosis”  
2013 -

F. Hoffmann-La Roche Ltd

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

Yolando Mageto, MD (Co-Investigator for site)

“A Treatment Protocol to Allow Patients in the US with Idiopathic Pulmonary Fibrosis Access to Pirfenidone (Expanded Access Program Protocol PIPF-031)”

InterMune, Inc

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

Yolando Mageto, MD (Co-Investigator for site)

Charles Irvin, PhD

P30 GM103532 (Irvin)

08/15/10-06/30/15

NIH/NIGMS

Title: Translational Research in Lung Biology and Disease

Role: Principal Investigator

The goals are to train and enhance the competitiveness of promising, young faculty members through a PPG-like mechanism. Three cores are also funded including: administrative, transgenic animals, and bioengineering.

T32 HL076122 (Irvin)

04/01/04-04/30/19

NIH/NHLBI

Title: Multidisciplinary Training in Lung Biology

Role: Principal Investigator

The major goal of this training grant is to produce outstanding, independent biomedical scientists who investigate the mechanisms, manifestations, preventions and cures for lung disorders.

American Lung Association

Irvin (PI)

8/1/2000 - 7/31/2014

Dixon (Co-PI)

Asthma Clinical Research Center: The major goals of this project are to participate in a nationwide network of clinical research studies in diverse patient populations with asthma.

American Lung Association (Irvin)

07/01/09-06/30/15

Title: Asthma Clinical Research Center

Role: Principal Investigator

The major goals of this project are to participate in a nationwide network of clinical research centers involved in various basic science and clinical investigations in asthma.

8U13 GM103387 (Irvin)

09/25/05-12/31/15

NOT-RR-05-004

Title: National IDeA Symposium of Biomedical Research Excellence (NISBRE)

Role: Principal Investigator

The goals of this project are to: 1) Plan and organize a biennial scientific symposium to showcase research by IDeA (COBRE and INBRE) Investigators, 2) Develop and organize a series of technical collaborative workshops for IDeA scientists to expand their technological repertoire and improve their competitiveness and 3) Enhance communications, share common experiences and establish research collaborations between multidisciplinary investigators of the IDeA community.

R01 HL085464/01 (Janssen-Heininger)

01/07/18-01/31/17

NIH

Title: Epithelial JNK-TGFb1 Signaling Axis in Airway Remodeling

Role: Co-investigator

This project represents a continuation renewal of Project 2 of PPG P01 HL67004.

The major goals of this project are to delineate the functional role of c-jun-N-terminal kinase 1 in epithelial to mesenchymal transition and fibrosis in the mouse.

1P50DA036114-01 (Stephen Higgins)

09/30/13-08/31/18

National Institutes of Health/DHHS-FDA Tobacco Regulatory Science Center

Role: Co- Investigator

David Kaminsky, MD

R34 HL113290-01, NIH/NHLBI

The Efficacy of Pranayama in COPD  
PI: David Kaminsky, MD (10%)

American Lung Association - Asthma Clinical Research Center  
PI: Charles G. Irvin, Ph.D.  
Role on Project: Co-Investigator (5%)

United Therapeutics, Inc.  
Changes in the Diffusing Capacity of the Lung for Carbon Monoxide (DLCO) in  
Response to Vasodilator Therapy in Patients with Pulmonary Arterial Hypertension  
PI: David Kaminsky, MD (< 5%)

C. Matthew Kinsey, MD MPH  
Vermont Cancer Center/Lake Champlain Cancer Research Organization Pilot Grant.  
Kinsey PI.

Laurie Whittaker Leclair, MD  
Therapeutics and Development network Award, Cystic Fibrosis Foundation  
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

Frymoyer Scholars Award  
The goal of the award is to develop innovative, simulation based, inter-disciplinary curriculum  
for the medical intensive care unit care teams.

Lennart Lundblad, PhD  
NKT Therapeutics Inc. (Lundblad) 07/01/2013 - 6/30/2014  
Title: Selective elimination of iNKT cells on the asthmatic phenotype in experimental  
asthma.  
The goal of this pilot project is to study the effects of iNKT cell elimination in mouse  
model of mast cell –independent allergic airway inflammation. We will determine the  
role of iNKT cells on airways hyperresponsiveness and the airway inflammation in mice  
sensitized with ovalbumin.  
Hoffman La-Roche, Inc. (Lundblad) 11/01/2010 – (no cost ext.)  
Investigator initiated grant:  
Title: Bronchoconstriction and the role of mast cells  
To develop a model of bronchoconstriction in mice using house dust mite and to  
determine if mast cells contribute.  
  
ASRC 312 (Lundblad), 11/01/2008 – (no cost ext.)  
Sepracor, Inc.

Title: Cause and effect of formoterol on airway hyperresponsiveness *in vivo*  
To test the hypothesis that the therapeutic effects of formoterol depends on its ability to reduce airway closure via modulation of plasma extravasation and mucin production.

VCIID CoBRE Pilot Project (Budd)  
NIH

10/01/2013 – 09/31/2014

Supporting Drs. Poynter (UVM), Lundblad (UVM), and Tumanov (Trudeau Institute)  
Lymphotoxin  $\beta$  Receptor Signaling in Influenza Virus-Induced Asthma Exacerbation  
Our approach for this Pilot Project is to establish mouse models of influenza-induced asthma exacerbation using acute and chronic inhalational exposure to house dust mite (HDM). We will further explore the potential for therapeutic manipulation of the LT $\beta$ R pathway to prevent lung immunopathology and asthma exacerbation using an LT $\beta$ R inhibitor.

COM- IGP. (Lundblad)  
University of Vermont

03/04/2014 – 03/03/2016

Title: Allergic mast cell expansion and the resulting phenotype are caused by IL-33  
The goal of this pilot project is to establish the role of IL-33 from innate lymphoid cells in the recruitment of mast cells in allergically inflamed lungs.

1R21 AI112804-01. (Lundblad)  
NIH/NAIAID

07/01/2014 – 06/30/2016

Title: iNKT Cells Regulating Lung Mast Cells: New Treatment Opportunity for Asthma  
The central hypothesis of this proposal is that eliminating iNKT cells will reduce allergen induced bronchoconstriction and airways hyperresponsiveness via a reduction of mast cell expansion. A new iNKT antibody (NKT-14) that eliminates all iNKT cells was developed for this project to determine if elimination of iNKT cells reduces the development of allergic AHR and allergen induced bronchoconstriction.

Prema Menon, MD

National Palliative Care Center

7/2013-

6/2015

Career Development Award

Role: PI (Principal Investigator)

“Telemedicine as a Tool for Early Family Conferences in Critically Ill Patients”

Yolanda Mageto, MD MPH

2011-Present PI

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

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

2012-Present PI



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

2012-Present PI

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

2012-Present PI

A randomized, double blind, Placebo-Controlled, Phase 2 study of the Safety and Efficacy of BMS-986020 in subjects with Idiopathic Pulmonary Fibrosis.

2013-Present PI

A phase 2, Randomized, Double-blind Placebo controlled Study to Evaluate the Safety, Tolerability and Efficacy of FG-3019 in Subjects with Idiopathic Pulmonary Fibrosis  
Gerald S. Davis, MD (Co-Investigator for site)

Polly 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- present

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.

NIH 1R01HL107291 (Poynter)

04/01/2012 –

03/31/2016

NIH/NHLBI

Serum Amyloid A3 in Allergic Asthma: An Endogenous Mediator of Disease Severity  
The goal of this project is to determine mechanisms by which pulmonary SAA3 functions to polarize tissue-destructive Th17 responses in severe allergic asthma. In Specific Aim (SA) 1 we will determine quantitative and qualitative patterns of SAA3 expression during the development of allergic asthma in mouse models of disease. In SA2 we will measure the effect of SAA3 on the antigen-specific CD4+ T cell adaptive immune response using

wildtype and inducible airway epithelial SAA3-expressing mice, as well as TLR2-, Nlrp3-, IL-1Ra-, and FPR2-deficient mice to determine whether SAA3 promotes Th17 polarization, which receptors are involved, whether the activity is directly upon T cells, and whether the effect of SAA3 is glucocorticoid-sensitive. In SA3 we will establish *in vivo* the sufficiency and necessity of SAA3 for augmentation of allergic asthma severity, addressing mechanisms implicated from the previous specific aims by which SAA3 worsens lung physiologic and structural allergic asthma phenotypes, including the roles of IL-1, IL-17, and glucocorticoid responsiveness.

Clinical Innovator Award (Poynter)  
06/30/2015

07/01/2012 –

FAMRI

Airway Epithelial Control of Asthma Severity

The objective is to explore how airway epithelial NF- $\kappa$ B-regulated products, including SAA (SAA3 in mice), affect pulmonary DC activities that not only facilitate allergic sensitization but also break inhalational tolerance, manifesting in mixed Th2/Th17 responses and the development of severe disease. We will a) determine the cellular patterns of pulmonary SAA production in response to airway epithelial NF- $\kappa$ B activation, b) establish whether pulmonary SAA resulting from airway epithelial NF- $\kappa$ B activation is necessary and sufficient for the development of severe allergic asthma and breaking inhalational tolerance, and c) evaluate the anti-apoptotic effects upon DCs and identify the pulmonary DC phenotype elicited by airway epithelial NF- $\kappa$ B activation.

VCIID CoBRE Pilot Project (Poynter)  
09/31/2014 NIH

10/01/2013 –

IL-1 Antagonism in Severe Asthma

Our objective for this Pilot Project is to determine whether IL-1R blockade (using an IL-1 trap from Regeneron) during antigen challenge will inhibit Th17-mediated pulmonary inflammation, AHR, and confer glucocorticoid sensitivity in NO<sub>2</sub>- and HDM-promoted allergic airway disease.

VLC Pilot Project (Poynter)  
12/30/2014

03/01/2014 –

Vermont Lung Center

Mouse models to mechanistically address the impact of weight loss on asthma

The hypothesis to be addressed in this Pilot Project is that a mouse model of bariatric surgery-induced weight loss can be developed at UVM, with the input of established experts in their respective fields, which will yield mechanistic insight into the obese asthma phenotype and the manner in which weight loss alters lung physiology and immune function.

VCIID CoBRE Pilot Project (Budd)  
06/30/2014

10/01/2013 –

NIH

Supporting Drs. Poynter (UVM), Lundblad (UVM), and Tumanov (Trudeau Institute)

Lymphotoxin  $\beta$  Receptor Signaling in Influenza Virus-Induced Asthma Exacerbation  
Our approach for this Pilot Project is to establish mouse models of influenza-induced asthma exacerbation using acute and chronic inhalational exposure to house dust mite (HDM). We will further explore the potential for therapeutic manipulation of the LT $\beta$ R pathway to prevent lung immunopathology and asthma exacerbation using an LT $\beta$ R inhibitor.

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 (currently in no-cost extension)

\$50,000

Role: PI

University of Vermont SPARK Initiative

“Developing leptin infusion as an effective therapy for Systemic Inflammatory Response Syndrome (SIRS) and its significant morbidity and mortality”

7/1/2013 - 6/30/2014

\$50,000

Role: Co-PI

“A Randomized double-Blind Placebo-Controlled Trial of Ganciclovir/Valganciclovir for Prevention of Cytomegalovirus Reactivation in Acute Lung Injury”

1U01HL102547-01, 7/01/10-6/30/14

Per-patient reimbursement

Role: Site-Co-PI and Steering Committee Member

#### PENDING GRANTS

Human Mesenchymal Stem Cells for Treatment of Acute Lung Injury

1 U01 HL108713, 7/01/2013 – 6/30/2016

NIH/NHLBI

Per-patient reimbursement

Role: Collaborator

Benjamin Suratt, MD

Research Award, Lake Champlain Cancer Research Organization

2014

2012 –

“Predictors of Dyspnea/Fatigue Syndrome in Breast Cancer Survivors Before and After an Exercise Intervention”

Role on grant: Co-PI

SPARKVT Award, UVM Department of Medicine

2013 – 2014

“Leptin as a novel therapy for Systemic Inflammatory Response Syndrome”

Role: Co-PI

UVM COBRE Pilot Project Award, University of Vermont College of Medicine 2014 –

2015

“Development of Leptin-Mutant Mice for Interdisciplinary Lung Research”

Role on grant: PI

Research Project Grant (R01), NHLBI, HL107291-A1 (Poynter)

2012 –

2017

“Serum Amyloid A3 in Allergic Asthma: An Endogenous Mediator of Disease Severity”

Role on grant: Co-investigator

Daniel Weiss, MD, PhD

NHLBI R21HL108689 (DJ Weiss PI)

9/1/11-8/31/14

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.

United Therapeutics (DJ Weiss PI)

10/1/13-9/30/15

Decellularized pig lungs as xenogeneic scaffolds for ex vivo lung bioengineering

The goals of this project are to develop use of transgenic pig lungs for ex vivo lung bioengineering

UVM College of Medicine (DJ Weiss PI)

9/1/13-

8/30/15

Mechanotransduction pathways in ex vivo lung bioengineering

The major goals of this project are to investigate pathways by which cyclic mechanical stretch influence phenotype and behavior of distal airway endogenous lung progenitor cells

Athersys Inc (DJ Weiss PI) 4/1/14-3/31/16  
 Cell based strategies for ex vivo lung preservation  
 The major goals of this project are to develop strategies for use of multipotent adult progenitor cells in decreasing ischemia reperfusion injury in donor human lungs.  
 Recently Completed Relevant Research Support (selected from 12 grants over the past 3 years)

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.

NIGMS COBRE P30 GM103532 (Irvin) 8/1/12-7/31/13  
 Pilot Proposal DJ Weiss PI  
 “Mechanisms of Stretch-Induced SPC Expression” Role: Pilot Project PI  
 The major goals of these projects are to assess effects of 2 and 3 dimensional stretch on SPC expression in type 2 alveolar epithelial cells and in distal airway progenitor cells.

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

Al-Alwan A, Bates JH, Chapman DG, Kaminsky DA, DeSarno MJ, Irvin CG, et al. The nonallergic asthma of obesity. A matter of distal lung compliance. *Am J Respir Crit Care Med.* 2014 Jun 15;189(12):1494-502. PubMed PMID: 24821412.

Al-Alwan A, Ehlenbach WJ, Menon PR, Young MP, Stapleton RD. Cardiopulmonary resuscitation among mechanically ventilated patients. *Intensive Care Med* 2014;40:556-63. doi: 10.1007/s00134-014-3247-2.

Allen GB , Miller V, Nicholas C, Hess S, Cordes MK, Fortune JB, Blondin J, Ashikaga T, Ricci M. A multitiered strategy of simulation training, kit consolidation, and electronic documentation is associated with a reduction in central line-associated bloodstream infections. *Am J Infect Control* 2014; 42 (6):643-648. doi:10.1016/j.ajic.2014.02.014

Anathy V, Aesif SW, Hoffman SM, Bement JL, Guala AS, Lahue KG, Leclair LW, Suratt BT, Cool CD, Wargo MJ, Janssen-Heininger YM. Glutaredoxin-1 Attenuates S-Glutathionylation of the Death Receptor Fas and Decreases Resolution of *Pseudomonas aeruginosa* Pneumonia. *Am J Respir Crit Care Med.* 2014 Feb 15;189(4):463-74.

Ather J.L., Fortner K.A., Budd R.C., Anathy V., Poynter ME. Serum Amyloid A inhibits dendritic cell apoptosis to induce glucocorticoid resistance in CD4<sup>+</sup> T cells. *Cell Death & Disease*, 4:e786 (2013), PMC3789185.

Ather J.L., Martin R.A., Ckless K., Poynter ME. Inflammasome activity in non-microbial lung inflammation. *Journal of Environmental Immunology and Toxicology*, 1:3, 108-117, (2013).

Bates J.H.T. Understanding alveolar mechanics – it is just a matter of time (Editorial)? *Critical Care Medicine*. *Critical Care Medicine* (Editorial). 41: 1374-1375, 2013.

Bates J.H.T., Smith B.J., Allen G. B. Computational Models of Ventilator Induced Lung Injury and Surfactant Dysfunction. *Drug Discovery Today- Disease Models*. (in press)

Bates J.H.T. Can't decide whether to chase your favorite horse? Groom it first with Occam's razor. *Journal of Applied Physiology* (Commentary). 116: 116, 2014.

Bates J.H.T. Of Course Respiratory Mechanics Are Related To Airway Inflammation in Asthma! The More Difficult Question Is "Why?" *Clinical & Experimental Allergy* (Editorial). 43: 488–490, 2013.

Bates J.H.T. Mechanical properties of the lung.” In: *Comparative Biology of the Lung*. J. Tepper, Ed., CRC Press. (in press)

Bates J.H.T, Kaczka DW, Prisk GK. Measurements in Pulmonology. In: *The CRC Physiological Measurement Handbook*. John G. Webster, Ed. Taylor and Francis (in press).

Ben-Ari R, Robbins RJ, Pindprolu S, Goldman A, Parsons PE. The Costs of Training Internal Medicine Residents in the U.S. *American Journal of Medicine* (epub July 2014)

Bernstein D.B., Nguyen B., Allen G.B., Bates J.H.T.. Elucidating the fuzziness in physician decision making in ARDS. *Journal of Clinical Monitoring and Computing*. 27:357–363, 2013.

Bernstein D.G., Nguyen B., Bates J.H.T.. Controlling mechanical ventilation in ARDS with fuzzy logic. *Journal of Critical Care*. 29: 551-556, 2014.

Bonenfant N, Sokocevic D, Wagner DE, Borg ZD, Lathrop M, Lam YW, Deng B, DeSarno M, Ashikaga T, Loi R, Weiss DJ. The Effects of Storage and Sterilization on De-Cellularized and Re-Cellularized Whole Lung. *Biomaterials*. 34(13):3231-45, 2013.

Calfee CS, Delucchi K, Parsons PE, Thompson BT, Ware LB, Matthay MA and the NHLBI ARDS Network. Latent class analysis of ARDS subphenotypes: Analysis of data from two randomized controlled trials. *Lancet Respiratory Medicine* 2: 611-620, 2014

Carrick R, Benson B, Habel N, Bates O.R.J., Bates J.H.T., Spector P.S.. Ablation of Multi-Wavelet Reentry Guided by Circuit Density and Distribution: Maximizing the Probability of Circuit Annihilation. *Circulation: Arrhythmia & Electrophysiology*. 6:1229-1235, 2013.

Chapman DG, Suratt BT, Dixon AE, Respiratory Disease in Obesity, In: G Fantuzzi, & C Braunschweig, editors. *Adipose Tissue and Adipokines in Health and Disease*. 2<sup>nd</sup> edition. New York: Springer, 2014.

Cleaver J.O., You D., Michaud D.R., Guzmán Pruneda F.A., Leiva Juarez M.M., Zhang J., Weill P.M., Adachi R., Gong L., Moghaddam S.J., Poynter M.E., Tuvim M.J. Evans S.E. Lung epithelial cells are essential effectors of inducible resistance to pneumonia. *Mucosal Immunology*, doi: 10.1038/mi.2013.26 (2013), PMC3735803.

Cloots R.H.E, Sankaranarayanan S., de Theije C., Poynter M.E., Terwindt E., van Dijk P., Hakvoort T.B.M., Lamers W.H., Köhler S.E. Ablation of Arg1 in hematopoietic cells improves respiratory function of lung parenchyma, but not that of larger airways or inflammation in asthmatic mice. *American Journal of Physiology – Lung Cellular and Molecular Physiology*, 305(5):L364-376 (2013), PMID 23831616, (PMCID in process).

Clouser R, Allen GB. Cardiac Complications. In: RD Stapleton and JB Richards, editors. *Non-Pulmonary Complications of Critical Care*. New York, NY: Springer New York, 2014 Electronic identifier: <http://dx.doi.org/10.1007/978-1-4939-0873-8>

Davis GS. The Role of Endobronchial Ultrasound-Guided Needle Aspiration (EBUS TBNA) in the Diagnosis of Sarcoidosis. *Cancer Cytopathology* 2014;122:239-240.

Dixon AE & Suratt BT. Active Lifestyle: The Next “Smoking Cessation” *Am J Respir Crit Care Med*. 2014 May 15;189(10):1155-6.

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Dixon AE. The non-allergic asthma of obesity: A matter of distal lung compliance. *AJRCCM*. Jun 15;189:1494-502.

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Eisenhauer P, Earle B, Loi R, Sueblinvong V, Goodwin M, Allen GB, Lundblad L, Mazan MR, Hoffman AM, Weiss DJ. Endogenous Distal Airway Progenitor Cells, Lung Mechanics, and

Disproportionate Lobar Growth following Long-Term Post-Pneumonectomy in Mice. *Stem Cells* 31(7):1330-9, 2013.

Fukagawa N.F., Li M., Poynter M.E., Palmer B.C., Parker E., Kasumba J., Holmen B.A. Soy biodiesel and petrodiesel emissions differ in size, chemical composition and stimulation of inflammatory responses in cells and animals. *Environmental Science and Technology*, 47(21):12496-504 (2013), PMC3947323.

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Griswold KE, Bement JL, Teneback CC, Scanlon T, Wargo MJ, Leclair LW. Bioengineered lysozyme in combination therapies for *Pseudomonas aeruginosa* lung infections. *Bioengineered*. 2014 Feb 26;5(2).

Hall GL, Irvin CG. Using lung function measurements to greater advantage in patients with lung disease: Which test and when? *Respirology*. 2014 Jun 25. PubMed PMID: 24963832.

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Hoffman S.M., Tully J.E., Nolin J.D., Lahue K.G., Goldman D.H., Daphtary N., Aliyeva M., Irvin C.G., Dixon A.E., Poynter M.E., Anathy V. Endoplasmic reticulum stress mediates house dust mite-induced airway epithelial apoptosis and fibrosis. *Respiratory Research*, 14:141. December 17, 2013 (2013), PMC3877992.

Howrylak JA, Fuhlbrigge AL, Strunk Rc, Zeiger RS, Weiss ST, Raby BA: Childhood Asthma Management Program Research Group. Classification of childhood asthma phenotypes and long-term clinical responses to inhaled anti-inflammatory medications. *J Allergy Clin Immunol* 133(5): 1289-300, 2014 PMID: 24892144.

Jabaut J., Ather J.L., Taracanova A., Poynter M.E., Ckless K. Mitochondrial-targeted drugs enhance Nlrp3 inflammasome-dependent IL-1 $\beta$  secretion in association with alterations in cellular redox and energy status. *Free Radical Biology and Medicine*, 60: 233-245 (2013), PMC3705582.

Kaminsky DA, Knyazhitskiy A, Sadeghi A, Irvin CG. Assessing maximal exercise capacity: peak work or peak oxygen consumption? *Respir Care*. 2014 Jan;59(1):90-6. PubMed PMID: 23777656.

Kaminsky DA. Systems biology approach for subtyping asthma; where do we stand now? *Curr Opin Pulm Med*. 2014 Jan;20(1):17-22. PMID: 24275925



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## **Division of Rheumatology**

Edward Leib, MD, Chief (Up to 6/30/14)

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



The members of the Division of Rheumatology and Clinical Immunology provide high quality patient care to residents of Vermont, up-state New York and other contingent areas, contribute to the teaching of resident physicians of the University of Vermont Medical Center (formerly Fletcher Allen Health Care) and medical students at the UVM College of Medicine, and perform both bench and clinical research. Our faculty consists of nine physicians, all of whom are board certified in Internal Medicine and Rheumatology, and a Physician's Assistant. The combined Rheumatology staff and the

Osteoporosis Center, a part of our Unit, welcomed over 1200 patients monthly, generating 1650 work RVUs monthly. In addition to bone densitometry, we have an on-site infusion center, and provide point of care musculoskeletal ultrasound. We offer a metabolic bone clinic in addition to our rheumatology services, and an Interstitial Lung Disease Clinic in collaboration with our colleagues in the Pulmonary Division. We have well-established out-patient satellite clinics at Central Vermont Medical Center and Copley Hospital. We cover in-patient consults at the University of Vermont Medical Center on a 24-7 basis.

We have an accredited program for Rheumatology Fellowship, and accept one new Fellow annually in a competitive match. The Internal Medicine Residency Program has incorporated an out-patient Rheumatology rotation into the schedule of each Resident; they are given the opportunity to work with each of the faculty. Several medical students have also elected to do a rotation in our out-patient site. Annually, we participate in the Connections Course for 2<sup>nd</sup> year medical students, providing didactic teaching on a wide range of Rheumatic and Metabolic Bone Diseases and Musculoskeletal examination.

Several of our faculty are engaged in clinical research including the use of musculoskeletal ultrasound in lateral hip pain, the effect of belimumab on pneumococcal immunization response in lupus patients and the ability of Trabecular Bone Score (TBS) to predict fracture in various populations. We also collaborate with the division of Immunobiology on effect of IL-6 inhibition on cellular function.

### **Faculty**

#### **Edward Leib, MD**

Professor of Medicine

Division Chief, Rheumatology and Clinical Immunology ending June 30,2014

Director, The Osteoporosis Center, FAHC

- Osteoporosis and Metabolic Bone Diseases
- Rheumatoid Arthritis



Dr. Leib has been a leading authority internationally on developing guidelines and positions on the appropriate use of Bone Densitometry. He has also been involved in clinical studies utilizing a new technology for ascertaining fracture risk called Trabecular Bone Score (TBS). In the past year, he has co-authored presentations on TBS at the annual meetings of the American Society of Bone and Mineral Research, and at the European Congress of Osteoporosis and Osteoarthritis. He also mentored Dr. YX Teh, a Fellow in Endocrinology, who presented a study on interpretation of bone densitometry of the spine at the annual meeting of the Endocrine Society. He directs the Osteoporosis Center and the Metabolic Bone Clinic, and is certified to read Bone Densitometry by the International 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 provides care for individuals with arthritis and musculoskeletal problems. He is Principal Investigator for trials that evaluate the effectiveness and mechanism of action of biologic drugs in the treatment of Rheumatoid Arthritis. The focus is on tocilizumab, a monoclonal antibody to the IL-6 receptor. Recent studies have demonstrated that IL-6 blockade reduces the levels of IgG4 antibodies to citrullinated peptides. Current studies are designed to understand how IL-6 blockade alters B-cell function and the role of IgG4 autoantibodies in the pathogenesis of RA.

### **Ralph Budd, MD**

Professor of Medicine, Microbiology & Molecular Genetics

- 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 the Director of the Vermont Center for Immunology and Infectious Diseases, has been a member of several NIH study sections, is a member of the NIH NIAID T32 grant study section, a member of the NIH Special Emphasis Panel and is a member of the Association of American Physicians.

Active Grants:

NIH CORBE (Center of Biomedical Research Excellence)

NIH T32 Training Grant

**Bonita Libman, MD, Interim Chief beginning 7/1/2014**

Professor of Medicine

- Connective Tissue Disorders
- Systemic Lupus
- Rheumatoid Arthritis

Dr. Libman is the Program Director for the Rheumatology Fellowship Training Program. She received a \$25,000 Fellowship Training Award for 2014-2015 from the American College of Rheumatology Research Foundation. This is the fifth year in succession that the Division has received this award through the efforts of Dr. Libman. She also received a \$4000 American College of Rheumatology Research Foundation Medical Student Preceptorship Award in 2014. Dr. Libman is a member of the American College of Physicians MKSAP 17 Rheumatology Committee. She also chairs the Fletcher Allen Health Care Medical Records Committee.

**Chi Chi Lau, MD**

Associate Professor of Medicine

- Systemic Lupus
- Inflammatory arthritis
- Connective tissue disorders

Re-certified in Rheumatology, 2012.

Obtained re-certification of CME for Rheumatology Rounds.

Dr. Lau has a very busy clinical practice providing excellent care to patients with a variety of complex rheumatic diseases. She is responsible for the Rheumatology Unit's CME reporting and accounting. She is also involved in teaching second year UVM medical students utilizing the innovative Team Based Learning technique. Dr. Lau presented at a community lecture at the Explore Conference in Plattsburgh regarding arthritic disorders in October, 2013. She recently lectured on Systemic Lupus at the Family Medicine Review Course in June, 2014.

**Christine Jones, MD**

Assistant Professor of Medicine

- Scleroderma

- Interstitial Lung Disease and Rheumatic Disease
- Myositis

Dr. Jones is Co-Founder of the Interstitial Lung Disease Clinic at Fletcher Allen, along with Yolanda Mageto, MD, and continues to participate in the Clinic. Dr. Jones is a member of the Faculty Development Committee at FAHC and is a certified Clinical Densitometrist.

### **Nicole Hynes, MD**

Assistant Professor of Medicine

- Inflammatory arthritis
- Connective tissue disorders
- Regional pain syndromes

Dr. Hynes participates in our clinical program on a half-time basis. For a number of years she has provided care in less well served areas at Copley Hospital and Central Vermont Medical Center. In February, 2013, she attended a Harvard Review Course, “General Internal Medicine for the Subspecialist”.

### **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 re-certified as a Certified Clinical Densitometrist (CCD) and reads bone densities for the Osteoporosis Center. He is Co-Chair of the Osteoporosis Committee and serves on the Fellow Education Committee.

### **Narandra Bethina, MD**

Assistant Professor of Medicine

- Rheumatoid Arthritis
- Psoriatic Arthritis
- Scleroderma
- Sjogren’s Syndrome
- Musculoskeletal Ultrasound

Upon his Fellowship graduation from our Rheumatology Division in 2013, Dr. Bethina joined the unit as a Rheumatology Attending. Dr. Bethina manages conditions such as rheumatoid arthritis, psoriatic arthritis, polymyalgia rheumatica (PMR), osteoarthritis, gout,

lupus, ankylosing spondylitis, scleroderma, sjogren's syndrome, vasculitis, inflammatory myositis and other autoimmune disorders. In 2013, Dr. Bethina was certified in Musculoskeletal Ultrasound by the Ultrasound School of North American Rheumatologists (USSONAR). By invitation of USSONAR, he is now teaching their students, while also utilizing musculoskeletal ultrasound for his own patients.

### **Fellows**

#### **Tatiana Keck, MD**

Completed Fellowship, June, 2014

#### **Scott Legunn, MD**

Will complete Fellowship in June, 2015

### **Nurse Practitioners and Physician Assistants:**

#### **Jill Stevenson, PA-C**

### **Publications – peer reviewed, chapters, etc.**

1. Blackburn TD, Howard DB, Leib ES. Utility of Spine Bone Mineral Density in Fracture Prediction with FRAX. *J Clin Densitom.* 16(1):81-6, 2013.
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