

Department of Medicine

ANNUAL REPORT

July 1, 2014 – June 30, 2015

Submitted by:

Polly E. Parsons, MD

E.L. Amidon Professor and Chair Department of  
Medicine

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## Department of Medicine

### Annual Report 2014-2015



#### 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 Cardiology, Dermatology, Hematology/Oncology, Immunobiology, and Primary Care Internal Medicine, 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 to include our University of Vermont Health Network partners in Cardiology, Critical Care, Hematology/Oncology, and Bone Metabolism and we expanded our partnership with the Burlington Veteran's administration clinic to include Dermatology with an additional resident in dermatology and a faculty member. New clinical programs at UVMHC 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 and developing a teledermatology outreach program with a rural hospital. The UVM High Value Care (previously known as Choosing Wisely) initiative continues to expand with new projects including reduction in arterial blood gas utilization in the ICU and reduction in phlebotomy for dialysis patients.

Education is a core mission for the department with faculty continuing to engage innovative new programs at UVM as well as at our affiliate sites. This year, Danbury and Norwalk Hospitals joined to form the Western Connecticut Health Network with an acting clerkship in Medicine serving as the first new opportunity for our students in Norwalk. The College of Medicine celebrated the establishment of the Teaching Academy. Drs. Jan Carney, Mark Levin and Charles Irvin were inducted as Distinguished Educators, Drs. Dennis Beatty, Laurie Leclair and Pat King were named Master Teachers and Drs. Maura Barry, Jason Bartsch, Shaden Eldakar-Hein and Alan Rubin became Members. The faculty continued to

participate extensively in the VIC curriculum and again received a number of honors and awards for their contributions to education. The Outpatient Medicine Clerkship directed by Dr. Roberta O'Brien received the Best Clerkship Award from the UVM College of Medicine Class of 2016, Cardiovascular, Respiratory & Renal Systems course, Directed by Dr. Laurie Leclair and taught by many of our faculty won the award for Outstanding Foundations Course, Dr. Bill Hopkins received the Silver Stethoscope Award from the UVM College of Medicine Class of 2018 and Dr. Lynn Pesta, a third year resident, received the Gold Honor Society Humanism and Excellence in Teaching Award from the UVM College of Medicine Class of 2016. In recognition of their contributions to resident education, Dr. Bill Hopkins received the E.L. Amidon MD Award for Subspecialty Medicine and Dr. Florian Foerg received the William Osler, MD Award for General Internal Medicine. .

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 including students, residents, fellows (MD and PhD) continue to publish more than 300 manuscripts, reviews, chapters and books annually, 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. Our students, residents and fellows also presented their work at regional and national meetings and published in high impact journals.

The SPARK<sup>VT</sup> program, initiated in the Department of Medicine, to encourage the translation of novel ideas into therapies, diagnostics, and was expanded to the entire UVM campus with the support of the Provost Dr. David Rosowsky. With the continued support of an exceptional panel of community consultants, the program included a series of educational workshops and four new projects received funding, including two with investigators from the Department of Medicine, Drs. Claire Verschraegen and Dan Weiss. . Although research funding continues to be a challenge with the declining of the NIH budget, research funding to the department significantly increased this year- a tribute to the quality and dedication of our faculty. 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. The resurgence of R01 mechanism funding throughout our divisions is a further testament to the quality of research executed in the department. . Key awards include: Dr. Markus Meyer's project entitled, "Sarcolemmal Calcium Extrusion Defect in Patients with Diastolic Dysfunction," Dr. Jason Bates' project entitled, "Personalized Mechanical Ventilation for the Injured Lung," and Dr. Dan Weiss' project entitled, "Optimizing Functional Recellularization of Acellular Human Lung Scaffolds."

Administrative Team:

Physician Leader and Chair	Polly E. Parsons, MD
Vice Chairs	
Medical Education	Mark Levine, MD
Research	Charles Irvin, PhD
Academic Affairs	Benjamin Suratt, MD
Director	Allen Mead
Assistant Director	Tammy Stockton, RN
Director, Cancer Center	Katie Michaud
Physician Executive Assistant	Laurie St.Gelais
Financial Administrator	Jessica Hendela
Grants Manager	Eric Gagnon
Financial Associate	Marlene Frank
HR Administrator	Jennifer Russell

Department of Medicine, University of Vermont Division Chiefs

R. Budd, MD, Immunobiology  
B. Libman, MD, Rheumatology  
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  
Schneider, MD, Cardiology Unit and Vascular Biology Unit  
R. Solomon, MD, Nephrology  
J. Vecchio, MD, Gastroenterology

Total faculty: 173

By rank – Assistant Professors: 74

Associate Professors: 48

Professors: 48

Research Associates: 3

By gender – 70 female; 103 male

By track – Tenured: 38  
Research Scholar Pathway: 10  
Tenure Pathway: 5  
Clinical Scholar Pathway: 117  
Education Scholar Pathway: 3

Faculty Actions:

FALL 2014 – nine green sheet promotions; seven pink reappointments

SPRING 2015 – 33 green sheet reappointments; 11 pink sheet reappointments; 30 volunteer pathway faculty reappointments.

Promotions (7/1/15):

Matthew Gilbert to Associate Professor, CSP  
Thomas Jetton to Professor, Research  
Lennart Lundblad to Associate Professor, Research  
Caroline Lyon to Associate Professor, CSP  
Yolanda Mageto to Professor, CSP  
Matthew Poynter to Professor (tenured)  
Halle Sobel to Associate Professor, CSP  
Benjamin Suratt to Professor (tenured)

## **Department of Medicine – Standing Committees**

### **Assistant Professor Faculty Actions Committee**

M. Tischler, Chair  
T. Bertsch  
S. Eldakhar-Hein  
M. Gilbert  
C. Holmes  
S. Lidofsky  
C. Lyon  
D. Strader  
P. Van Buren

Committee Mission:

The mission of the Department of Medicine Faculty Action Committee is to provide support to the Department Chair in the preparation of summary information required for reappointment and/or promotion of Department of Medicine faculty members at the Assistant Professor level. The Committee is charged with reviewing the content of dossiers, assembled by each faculty member (under consideration) and corresponding unit director, and with writing summaries that highlight accomplishments in the areas of teaching, research and scholarship, and service to the institution and beyond. Each summary will also serve to generate constructive feedback to the faculty member under consideration, so that the goals for future promotion can be achieved. The Committee will meet at least once during each faculty review cycle to finalize the summaries, which will then be forwarded by the Committee Chair to the Department Chair.

### **Promotions and Tenure Committee**

B. Suratt, MD, Chair  
B. Littenberg, MD  
J. Bates, PhD  
M. Levine, MD  
K. Pierce, MD  
C. MacLean, MD  
H. Dauerman, MD  
G. Atweh, MD

#### **Committee Mission:**

The DOM RPT Committee is charged with the evaluation of all DOM reappointment and promotion dossiers for senior (Associate and Full Professors) and Tenure Track faculty during the annual academic cycles. The objectives of the committee are to provide guidance to faculty throughout their promotion cycles and to ensure that faculty dossiers are of the highest standards before they are sent to the COM RPT Committee.

### **Medicine Credentials Committee**

G. Goldman, Chair  
M. Lazarovich, MD  
K. Pierce, MD  
D. Schneider, MD  
J. Schnure, MD  
R. Solomon, MD  
J. Vecchio, MD  
M. Wood, MD

#### **Committee Mission:**

The mission of the Medicine Credentials committee is two-fold. First, the committee is charged with maintaining an up to date policy and procedure / rules and regulations for the Medicine Health Care



Service. Second, the committee is charged with ensuring that faculty receive appropriate initial and ongoing performance evaluations to assist the medical staff office with credentialing.

### **Part-Time Faculty Actions Committee**

J. Alpert, Chair  
C. Berger

### **Quality Assurance Committee – Cardiac Catheterization Laboratory**

P. Gogo, Chair  
H. Dauerman  
E. Terrien  
M. Watkins  
T. Fortner  
S. Beausoleil

#### **Committee Mission:**

The purpose of the committee is to ensure high quality in the processes of care of the cath lab to ensure excellent outcomes. Some goals are to eliminate outliers, reduce variation, and enhance performance. The QA monthly meeting provides rapid turnover feedback mechanisms. The committee is committed to educational opportunities for the staff and incorporating practice standards and guidelines into the laboratory operation. Internal, regional, and national comparative data is included that address cognitive knowledge, procedural skill, clinical judgment, and procedural outcomes.

### **Resident Research Committee**

R. Stapleton, Chair  
V. Hood  
C. Huston  
D. Kaminsky  
M. Meyer  
M. Pasanen  
R. Pinckney  
H. Sobel  
D. Weiss  
Z. Zakai

#### **Committee Mission:**

Responsibilities of the Committee are to, in general, provide guidance and resources for residents and fellows, along with their mentors, performing scholarly research projects. More specifically, the Committee has the following duties:

- 1) Explain the research project process to new R2s at their annual R2 retreat in July

- 2) Conduct R2 Research Evenings every fall, where each R2 and their mentor present their project to the Committee to ensure feasibility and receive any pertinent advice/feedback
- 3) Review residents' proposals for travel to national meetings to present abstracts that have been accepted, so that limited travel funds can be awarded
- 4) Serve on a discussion panel for medical students interested in research
- 5) Review R3 and fellow abstracts every spring to select the abstracts that will be presented orally and via poster on Resident Research Day and Fellow Research Day
- 6) Select winners of the R3 research (Harriet Dustan) and mentor awards annually for presentation at the resident graduation dinner
- 7)

### **Fellowship Directors Education Committee**

M. Levine, Chair

F. Keating

N. Ferrentino

E. Gagnon

M. Gilbert

D. Kaminsky

B. Libman

M. Pasanen

K. Pierce

A. Segal

J. Sprague

#### **Committee Mission:**

The primary mission of the Fellowship Directors' Education Committee is to provide a forum and improve the training, education and overall experience for all Fellows throughout the UVMHC and to support, and develop the potential of each Fellow; in doing so, the Fellows will become an asset to the medical community providing outstanding care and contributions.

### **Clinical Competency Committee**

M. Ramundo, Chair

S. Eldakhar-Hein

J. Bartsch

H. Sobel

R. Clouser

E. Ganguly

M. Pasanen

F. Keating

#### **Committee Mission:**

The mission of the Clinical Competency Committee is to ensure that the graduates of our training program have the necessary knowledge, skills and attitudes to provide excellent patient care and to promote quality and improvement in the health care system. The Clinical Competency Committee

meets a minimum of twice yearly to assess resident progress towards independent practice using the Milestones as a platform. This committee is responsible for issues pertaining to resident promotion, remediation and dismissal. The committee is also responsible for preparing a complete summative evaluation report, based on a review of all available evaluations, for each resident semi-annually.

### **Housestaff Selection Committee**

Shaden Eldakar-Hein, MD - Chair  
W. Alston, MD  
M Burnett, MD  
R. Clouser, DO  
E. Ganguly, MD  
J. Halevy, MD  
W. Hopkins, MD  
R. McEntee, MD  
P. Menon, MD  
M. Meyer, MD  
K. Pierce, MD  
M. Ramundo, MD  
J. Sprague, MD  
Ms. D. Shelc

#### **Committee Mission:**

The Housestaff Selection Committee is responsible for the recruitment of Internal Medicine Residents. This includes a careful review of applications from candidates, interviews of the invited candidates and, finally the compilation of the rank list for Match Day. As we receive over 1300 applications for residency, and interview over 200 applicants, this committee serves a critical role in the success of the residency.

### **Program Evaluation Committee**

M. Pasanen, MD - Chair  
V. Agrawal MD  
M. Barry, MD  
J. Bartsch, MD  
R. Clouser, DO  
M. Degirmenci  
E. Ganguly, MD  
F. Keating, MD  
M. Burnett, MD (Chief Resident)  
E. Monfred, MD  
M. Ramundo, MD

J. Halevy, MD (Chief Resident)  
D. Shelc  
R. McEntee, MD (Chief Resident)  
P. Slavik, MD  
H. Sobel, MD  
J. Wilfong, MD

**Committee Mission:**

The Program Evaluation Committee meets 1–2 times per month. This committee actively participates in planning, developing, implementing and evaluating all educational activities of the program. This includes reviewing and making recommendations for revision of competency-based curriculum goals and objectives. It also includes addressing areas of noncompliance with ACGME standards and reviewing the program annually using the evaluations of faculty, residents and others. This culminates in an annual report which summarizes a systematic evaluation of the curriculum and renders the official written Annual Program Evaluation.

**Quality Assurance Committee – Medicine Health Care Service**

M. Levine, Chair  
S. Ades  
M. Airoidi  
S. Bellemare  
T. Berrings  
M. Capeless  
P. Gagne  
Y. Mageto  
S. Merrill  
S. Raza  
A. Repp  
J. Rimmer  
P. Stevens  
S. Thach  
J. Vecchio

**Committee Mission:**

To monitor, assess and continuously improve the quality and safety of health care provided by the UVMHC by reviewing, evaluating, and continuously improving the care delivered by the Medicine Health Care Service.

**Faculty Engagement Committee**

E. Terrien, Chair  
J. Pierson

C. Noyes  
F. Khan  
P. Menon  
J. Lin  
K. Cheung  
J. Schnure  
J. Vecchio

**Committee Mission:**

We are tasked with facilitating interaction between the different divisions in Medicine. We sponsor gatherings at different times of the year and encourage meeting events between divisions. Our goal is to “open up” the department, to encourage inter divisional discourse, and promote mentorship.

**Medical Grand Rounds Education Program Committee**

R. Budd, MD  
C. Irvin  
M. Levine  
P. Parsons  
T. Jetton  
S. Lidofsky  
M. Wood  
M. Burnett  
J. Halevy  
R. McEntee

**Committee Mission:**

The Grand Rounds Committee reviews the format for Grand Rounds and its speakers to insure that it is scientifically sound, presenting up-to-date information, and assisting the medical residents and medical students in becoming familiar with the research going in within the Department. We also review candidates nominated for the Tisdale Lectureship.

**Scientific Integrity Committee**

R. Budd, Chair  
C. Irvin

**Committee Mission:**

Scientific Integrity Committee advises the Chair on issues related to policies for reviewing possible scientific fraud.

**Medicine Operations 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

**Committee Mission:**

The Department of Medicine Operations Committee serves to compare operational practices across specialties with the aim of improving operational efficiency and enhancing quality; to review and select High Value Care quality improvement projects; and to advise the departmental leadership (Chair and Unit Chiefs) regarding operational matters.

**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

**Committee Mission:**

The DOM Faculty Development Committee is composed of 1-2 faculty from each division in the DOM and meets monthly. The charge of the committee is to work with the Vice Chair for Academic Affairs on matters related to faculty development, including faculty mentoring, career development, and promotion. Current efforts include work on faculty mentoring support tools, Green Sheet assistance, and the development of metrics and guidelines for the Clinical Scholar Pathway within the DOM.

**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

**Committee Mission:**

The Department of Medicine’s Research Committee is Chaired by the Vice Chair for Research with faculty representation from each Division/Center and financial/operations leadership staff. The committee meets monthly to discuss a wide range of issues pertaining to the research mission and activities of the department’s faculty. A major focus of the committee is to advise the Chair on decisions that impact the research endeavors of the department’s faculty. Other topics include the development and review policies and procedures relating to research, funding requests, new funding opportunities, changes in Federal policies, dissemination of information and setting new initiatives to enhance the research activities of the department.

**Quality Assurance Committee – Dermatology**

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

**Committee Mission:**

Our mission is to ensure quality care and promote continuous quality improvement of services and processes in order to fulfill the needs and expectations of the patients we serve.

**Medical Service**

Patient Days: Patient Days: 46,059 (inpatients and bedded outpatients)

Ambulatory Care Visits: 233,784 (164,292 specialty and 69,492 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
- Cancer Center: Hematology/Oncology, Breast Care Center and Multidisciplinary Clinic, Head and Neck Cancer Multidisciplinary Clinic, and Sarcoma Multidisciplinary Clinic.
- Surgery: Gastroenterology, Thrombosis Center [part of Hem/Onc and Vascular Surgery], and Gastrointestinal Cancer 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, Cardiology  
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, Dermatology (Telederm)  
Malone (Alice Hyde) – Cardiology  
Ticonderoga (Moses Luddington Hospital) – Dermatology  
Saranac Lake (Adirondack Medical Center) – 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:

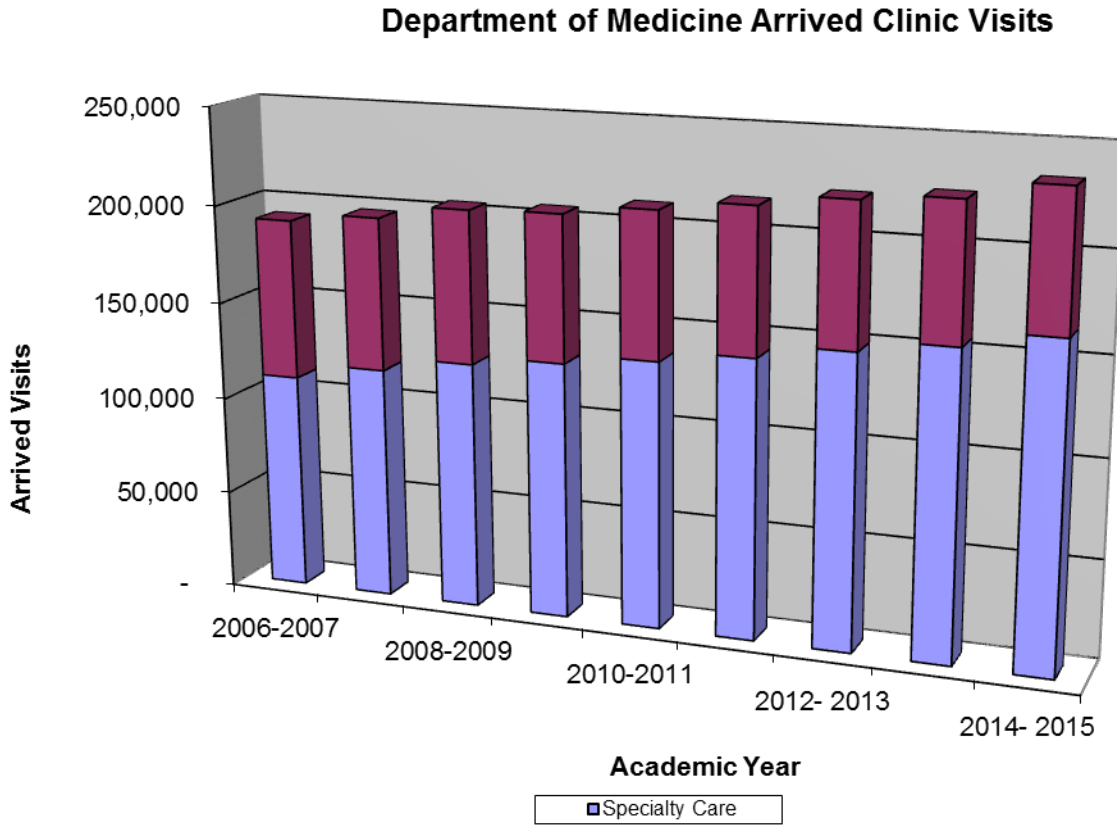
**Department of Medicine Multidisciplinary Clinics** (examples of participants in parentheses)

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 – DIO, Associate Dean for GME**



**Mary Ramundo, M.D. – Associate Program Director**



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



**Shaden Eldakar-Hein, MS MD– Associate Program Director**



**Dorothy Shelc – Program Administrator**

## **2. Summary of Program Highlights 2014-2015**

### 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**

Agarwal, Zubin	Mayo Medical School
Arling, Timothy	University of Maryland
Burnett, Maria	University of Vermont
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-2**

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, Jonathon	University of California – San Francisco

**PGY-1**

**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	University of Oklahoma
Joshua Melito	Lincoln Memorial U of DeBusk College of Osteopathic Medicine
Joshua Stopak	University of Nebraska
William Tharp	University of Vermont

**Chief Medical Residents**

Merrill, Samuel	Washington University
Raza, Samuel	Imperial College – United Kingdom
Shenk, Heather	University of Vermont

**4. Resident Awards**

- **The Harriet P. Dustan, M.D. Award**  
*Jonathan Halevy, M.D.*
- **The Frank L. Babbott, M.D. Memorial Award**  
*Markus Degirmenci, M.D.*
- **Richard E. Bouchard, M.D. Excellence in Primary Care Award**  
*Lynn Pesta, 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**

***Florian Foerg, M.D.***

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

O'Toole J., Bates J., Stapleton R., Kinsey M. Managing Lung Cancer Screening And Its Downstream Findings A3572 - Estimating the Prevalence of Screen-Detected Lung Cancer. Presented at the American Thoracic Society Meeting, Denver Colorado. May 2015

Scribner-Metcalf T, Farkas J ID 64207 Urine in the Chest: The First Known Case of Uninothorax as a Complication of Continuous Bladder irrigation C51-Toxic Ingestions and Exposures Accepted to the American Thoracic Society Meeting, Denver, Colorado (May 2015)

Scribner-Metcalf T, O'Toole J, Raza S, Borofsky J. Zebra Spotting: A Case of Adult Onset Urea Cycle Disorder Presented at the National ACP Meeting in Boston, MA (April 2015)

Khadanga, S, Monterroso J, Goodwin A, Unger P. Oozing All Over: An Interesting Case of Acquired Hemophilia A Poster Presentation at the Northern New England Clinical Oncology Society Meeting (October of 2014 and at the National ACP Meeting in Boston, MA (April 2015)

O'Toole J, Ades S, Waters B, Agarwal Z Delayed HHV-6 Encephalitis in an Allogeneic Stem Cell Transplant Patient. Poster Presentation at the National ACP Meeting in Boston, MA (April 2015)

Halevy J Connective Tissue Disease and Recurrent ST Elevation Myocardial Infarction Poster Presentation at the National ACP Meeting in Boston, MA (April 2015)

Vadlamudi C, Sobel H From Past to Present: Continuity of Care in a Resident Clinic after a 4+1 Block Schedule Implementation Poster Presentation at the Regional SGIM Meeting in Boston, MA (April 2015). The National ACP Meeting in Boston, MA (April 2015) and the National SGIM Meeting in Toronto, Canada (May 2015).

Merrill S, DeSarno MS, Houghton D, Huston C, Callas P, Repp A, Cushman M, Zakai N. Infection Type and Severity are Risk Factors for Hospital-Acquired Venous Thromboembolism in Medical Inpatient Poster Presentation at the National American Heart Association Meeting in Baltimore, MD (March 2015)

Degirmenci M, Callas PC, Judd S, Howard V, Jenny NS, Kissela B, Kim C, Cushman M Dehydroepiandrosterone (DHEAS) and Risk of Stroke in Black and White Americans: the Reasons for Geographic and Racial Differences in Stroke Cohort (REGARDS) Poster Presentation at the National American Heart Association Meeting in Baltimore, Maryland (March 2015)

Agarwal Z, Callas P, Kissela B, Jenny N, Judd S, Zakai N, Cushman M. Galectin-3 and Risk of Stroke: Reasons for Geographic and Racial Differences in Stroke (REGARDS) Cohort Presented at the American Heart Association Meeting (November 2014)

Burgess L, Khadanga S Transient ischemic attack as an initial presentation of adenocarcinoma of the lung Presented at the Regional ACP Meeting (October 2014)

Champaloux M, Nambiar L Dyspnea: Recumbent Relief Presented at the Regional ACP Meeting (October 2014)

Degirmenci M, Cetin P, Eylul D Bechet's disease: Diagnostic Dilemma of the Mediterranean Presented at the Regional ACP Meeting (October 2014)

Dunbar E The Fog – Human Granulocytic Anaplasmosis Encephalopathy. Presented at the Regional ACP Meeting (October 2014)

Everett D The Case of the Missing Tumor: Metastatic adenocarcinoma of unknown primary with neuroendocrine features Presented at the Regional ACP Meeting (October 2014)

Halevy J Connective Tissue Disease and Recurrent ST Elevation Myocardial Infarction  
Presented at the Regional ACP Meeting (October 2014)

Khadanga S Systemic sclerosis with Cardiac, Renal and Rheumatologic dilemmas Presented at the Regional ACP Meeting (October 2014)

McEntee R, Meyer M Ho-hum or HCM: apical variant hypertrophic cardiomyopathy presenting as palpitations and chest pain Presented at the Regional ACP Meeting (October 2014)

Scribner-Metcalf T Meig's Syndrome: A Unique cause of Pericardial Effusion Presented at the Regional ACP Meeting (October 2014)

Thampatty G, Jones C A Rare Case of Statin Myopathy Treated with Immunosuppression Presented at the Regional ACP Meeting (October 2014)

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.

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

Samuel Merrill MD PhD, Stevens P, Wood M. Choosing Wisely: Reducing Unnecessary Imaging in Breast Cancer Patients Poster presentation at the Northern New England Clinical Oncology Society meeting, October 2014.

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

Agarwal, Zubin Cardiology Fellowship, Jackson Memorial, Miami, FL

Arling, Timothy Primary Care Practice, Washington, DC

Burnett, Maria	Chief Medical Resident
Dado, Christopher	Pulmonary/Critical Care Fellowship – Brown University, Providence, RI
Degirmenci, Markus	Hospitalist, Brown University, Providence, RI
Halevy, Jonathan	Chief Medical Resident
Koenen, Brian	Hospitalist, New Orleans, LA
Lopez, Max	Hospitalist, University of Mississippi –Jackson, MS
McEntee, Rachel	Chief Medical Resident
Pesta, Lynn	Primary Care Practice, Providence, RI
Sandiford, Patrick	Emergency Medicine Residency – University of Rochester, Rochester, NY
Thampatty, Gayathri	Hospitalist – Bangor, Maine
Vadlamudi, Charita	Hospitalist – North Carolina

**7. MATCH RESULTS 2014-2015**

**PGY-1**

**Categorical**

Sarah Gillett	University of Vermont
Caitlin Greenberg	University of New England College of Osteopathic Medicine
Elena Kozakewich	Albany Medical College
Lauren Miller	Drexel University (Primary Care)
Gatha Nair	University of Arizona
Hank Ng	University of Vermont
Anthony Provenzano	Wayne State University
Vishal Shah	University of Vermont
Kelsey Sheahan	University of Vermont (Primary Care)
Ross Stemmler	Florida State University

Umer Syed	Chicago Medical School at Rosalind Franklin University
Kathleen Whitbread	University of Buffalo
Heather Wright	University of New England College of Osteopathic Medicine
Abdelbassat Zerguine	Meharry Medical College

**Preliminary**

Patrick Benson	University of Vermont (Dermatology)
Corey DeWitt	Geisel School of Medicine, Dartmouth (Dermatology)
Aaron Dunham	University of Arizona (Neurology)
Julia Hobson	University of Vermont (Dermatology)
Thomas Johnson	University of North Dakota (Radiology)
Kara Klingman	University of Vermont (Neurology)
Fatemeh Sobhani	Isfahan University of Medical Sciences (Neurology)
John Taylor	University of Vermont (Neurology)

**Preliminary Anesthesia shared with Surgery**

Lindsey Belk	Medical University of South Carolina
Patrick Fagan	Rocky Vista University College of Osteopathic Medicine
Marielle Lopes	Oregon Health & Sciences University
Corey Sheahan	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 2015 continued development of a network based Cardiovascular service line remained as a primary clinical focus. Integration of cardiologists in the region and providing the right care in the right place are priorities. The successful addition of 3 interventional cardiologists at CVPH during 2014 was a precursor to efforts in 2015 to integrate all cardiologists at CVPH. Cardiologists at CVMC and CVPH worked with those at UVMC to create common credentialing criteria for cardiologists across the network. In addition, cardiologists across the region have worked together to create criteria designed to guide triage and initial treatment of common cardiac disorders. A new interventional cardiologist (Roger Ishac) was recruited to CVPH because 2 of the existing interventional cardiologists will reduce their effort to part time. During 2015 we completed revision of 2 cardiovascular catheterization laboratories at UVMC. Both laboratories are capable of supporting percutaneous intervention for structural heart disease, a program that has grown substantially – we perform 8-10 TAVR (transcatheter aortic valve replacement) procedures each month. A new heart failure specialist was recruited to join the faculty at UVMC. Dr. Johannes Steiner will join our group in November 2015. He will retain an appointment at Massachusetts General Hospital (MGH). This will allow us to expand our services by offering cardiac transplantation as well as education of our fellows in transplant at MGH. The clinical and translational research program remains active. Dr. Spector is actively engaged in developing new technology to guide ablation of atrial fibrillation. Several small translational studies were pivotal in the development of a new antiplatelet agent, cangrelor, that was recently approved by the FDA. We continue to be actively involved in multiple trials of new pharmacologic agents as well as devices. Our heart failure network continues to test new treatments for patients. In total, the Cardiovascular Division published 85 manuscripts and chapters during the past year. On the education front, 2015 saw a change in leadership in our cardiovascular fellowship training. Friederike Keating has assumed the role of program director. Dr. Hopkins received the the E. L. Amidon, MD Award for Outstanding Teacher of the Year in Subspecialty Medicine. Dr. Tischler was selected by the fellows in the Cardiovascular Training Program as the teacher of the year.

## Faculty

David Schneider, MD

Professor of Medicine

Director, Cardiovascular Division and Cardiovascular Service Line

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

Director of UVMMC Cardiovascular Services

- coronary intervention
- cardiac catheterization
- structural heart 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

Program Director, UVM Cardiovascular Fellowship

Leader, Women's Cardiac Care Program

Subspecialty Coordinator for Cardiology, Internal Medicine Residency Program

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
- repair of cardiac and cns tissues
- vascular biology

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

Director Cardiac Care Unit

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

Imran Alkhalil

Amir Azarbal

Sreedivya Chava

David Cleary

Mohamed El-Haddad

Patrick Hohl

Mark Lee  
Sean McMahon  
Shahab Moossavi  
Mehdi Rambod  
Preeth Sundaran  
Samvit Tandan  
Chigang Yen  
Srinath Yeshwant

Nurse Practitioners and Physician Assistants:

Elizabeth Carney, APRN  
Gregory Ehle, PA  
Karen Farrell, APRN  
Susan Ann Hamlyn-Prescott, APRN  
Ann Laramée, 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.  
Lauren A. Ferris (Ph.D. student, Biochemistry Program)  
Tamar R. Wheeler (2015 Summer Undergraduate Student Fellowship Awardee from the AHA Founders Affiliate, Sponsor: Robert Kelm)

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:

Harold L. Dauerman, MD

Data Safety and Monitoring Board COAPT Mitraclip trial and Bionics

Drug Eluting Stent Trial

current

Co-Chair, UVM Health Network Academic Integration Workgroup

2014-2015

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

Friederike Keating, MD

American Heart Association

American College of Cardiology

American Society of Nuclear Cardiology

Robert J. Kelm, Ph.D

Chair, Institutional Biosafety Committee

Chair, Graduate Studies Committee, Department of Biochemistry

Daniel Lustgarten, MD

Fellow of the Heart Rhythm Society – Current

American College of Cardiology Political Action Committee - Member

Paul Dudley White Society, Cardiology Division: Member

M. Tischler, MD

American College of Cardiology, Fellow

American Heart Association, Fellow

American College of Physicians, Fellow

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 July 1, 2013-  
Wolters Kluwer, Lippincott Williams Wilkins  
Section Leader, Interventional Cardiology, Journal of the  
College of Cardiology 2014-current

William Hopkins, MD  
Associate Editor, *Coronary Artery Disease*

Prospero B. Gogo, MD  
Reviewer for American Journal of Cardiology and Coronary Artery Disease

Friederike Keating, MD  
Coronary Artery Disease

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, Up-To-Date  
Editorial Boards: Heart and Vessels. Experimental and Clinical Cardiology, Current Cardiology  
Reviews, Heart Failure Reviews

Daniel Lustgarten, MD  
MediaSphere Medical, LLC | Innovations in Cardiac Rhythm Management Editorial Board:  
“Journal of Innovations in Cardiac Rhythm Management”

**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

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:

Harold L. Dauerman, MD

Physician Executive Committee – Boston Scientific

2014-current

Daniel Lustgarten, MD

Medtronic Co-Management Council of Advisors 2008-present

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-

Michael Toth, Ph.D.

*Ad hoc* member: ZRG MOSS-C SMEP Member conflict study section

*Ad hoc* member: NIA-C Clinical Aging study section

*Ad hoc* member: NIH SMEP study section

Peter Van Buren, MD

Veterans Administration Cardiovascular Study Section Panel Member

Major Faculty Honors and Awards:

Philip Ades, MD



2014: Distinguished Investigator: Cardiovascular Research Institute of Vermont  
2015 University Scholar University of Vermont

William Hopkins, MD  
University of Vermont College of Medicine  
The Silver Stethoscope Award, 2015  
Clinical Teacher of the Year Award, 2015  
University of Vermont College of Medicine Internal Medicine Residency Program  
E. L. Amidon, MD Award: Outstanding Teacher of the Year, Subspecialty Medicine, 2015

**Marc D. Tischler, M.D.**

Teacher of the Year, Cardiovascular Unit, 2014-2015

**Grants:**

**Philip A. Ades, MD**

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**

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.

SURTA VI: a randomized trial of surgical aortic valve replacement vs Corevalve transcatheter aortic valve replacement for patients at intermediate risk. 2013-2016.

Estimated Grant: Medtronic---200,000 dollars

Corevalve Pivotal Trial and Expanded Use Registries 2012-2017 (5 year follow up)

Estimated Grant: Medtronic—800,000 dollars

**Friederike Keating, MD**

Nuclear Cardiology Projects: Safety of regadenoson after NSTEMI.

Platelet Function: Platelet pharmacology in ACS. With D.Schneider, MD. Ongoing.,  
Improved systems of care for inpatients with elevated troponin. Resident research project on  
troponin elevations in inpatients with Tara Metcalf-Scribner, MD.

Troponin elevation in influenza. With Sean McMahon, MD, Fellow.

Multicenter studies:

Local PI, Sanofi EFC11570 ODYSSEY Outcomes study

Sub-I, PREVAIL (Watchman atrial appendage occlude device; TEE guidance  
of the procedure) - ongoing.

**Martin LeWinter, MD**

NIH RO1 grant: Myofilament Basis of Diastolic Dysfunction in HFpEF” 09/2014 - 2018

**Daniel Lustgarten, MD**

Gilead (Tempo) 8-26-14

Medtronic (Wrap IT) 3-10-15

Biotronic (Protego) 3-19-15

**David J. Schneider, MD**

Novel Markers of Thrombotic Risk. Janssen Pharmaceuticals LLC 7/1/14 – 12/31/16

**Jeffrey Spees, Ph.D.**

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

1/1/2013-

Control of reactive astrocytes by Notch1 and Amyloid Precursor Protein.  
\$219,000 direct funding per year

**Peter Spector, MD**

Gilead (Tempo) 8-26-14  
Medtronic (Wrap IT) 3-10-15  
Biotronic (Protego) 3-19-15  
SP282 (Evslin Grant)  
PSPEC (R&E)  
EP (R&E)  
BSW

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

NIH R01 AG-033547 PI: Toth  
Title: *Muscle Disuse and Contractile Dysfunction in the Elderly*

VCC/LCCRO PI: Toth  
Title: Novel exercise modalities to improve fatigue and muscle function in cancer survivors

Dept of Medicine Translational Science Award PI: Toth  
Skeletal muscle dysfunction in the elderly with acute muscle disuse

**Matthew W. Watkins, MD**

Current Clinical Trial Principal Investigator

AC-6, Adenovirus Vector Type 5 Ad5.hAC60 Expressing Human Adenylyl Cyclase Type 6;  
Administered Via Intracoronary Catheterization for the treatment of Left Ventricular  
Dysfunction.  
NIH/Renova Therapeutics funding, Enrollment completed 2015, In follow up

Randomized, Double-Blind, Placebo-Controlled Phase I/II Study of the Safety and Efficacy of  
Intracoronary Delivery of Allogeneic Cardiosphere-Derived Cells in Patients With an Anterior  
Myocardial Infarction and Ischemic Left Ventricular Dysfunction (ALLogeneic Heart STem  
Cells to Achieve Myocardial Regeneration, ALLSTAR). Enrollment ongoing 2015

Outcomes with the Promus PREMIER Bare Metal Stent in Women and Minorities,  
(PLATINUM Diversity) Boston Scientific Corporation. Enrollment ongoing 2015

**Peter VanBuren, MD.**

1R01HL1185

Granzier/LeWinter (PI)

September 1, 2014- June 30 2018

*Myofilament-based mechanisms of diastolic dysfunction in HFpEF.*

The major goal of this grant is to better define the functional role of titan in diastolic heart failure. The proposed work is integrative, combining studies in human tissue with genetic mouse models.

Role: Co-Investigator

5U10HL110342

VanBuren (PI)

January 1, 2012-December 31, 2018

NIH/NHLBI

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

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

Role: Principal Investigator

**Publications: (2014-2015)**

Keteyian SJ, Squires RW, Ades PA, Thomas RJ. Incorporating patients with chronic heart failure into outpatient cardiac rehabilitation: practical recommendations for exercise and self-care counseling—a clinical review. *J Cardiopulm Rehabil Prev.* 2014;34:223-32.

Pack QR, Rodriguez-Escudero JP, Thomas RJ, Ades PA, West CP, Somers VK, Lopez-Jimenez F. The Prognostic Importance of Weight Loss in Coronary Artery Disease: A Systematic Review and Meta-Analysis. *Mayo Clin Proc.* 2014 Oct;89(10):1368-77.

Dittus K, Lakoski SG, Savage PD, O'Brien P, Ades PA. Exercise-based Oncology Rehabilitation: Leveraging the Cardiac Rehabilitation Model. *J Cardiopulm Rehabil Prev.* In Press 2014.

Callahan DM, Miller MS, Sweeny AP, Tourville TW, Slauterbeck JR, Savage PD, Maughan DW, Ades PA, Beynon BD, Toth MJ. Muscle Disuse Alters Skeletal Muscle Contractile Function at the Molecular and Cellular Levels in Older Adult Humans in a Sex-Specific Manner. *The Journal of Physiology,* In Press 2014.

Savage PD, Rengo JL, Menzies KE, Ades PA. Cardiac Rehabilitation after Heart Valve Surgery: Comparison with Coronary Artery Bypass Grafting Patients. *J Cardiopulm Rehabil Prev*, 2015 Jan 23. [Epub ahead of print].

Ades PA, Savage PD, Marney AM, Harvey J, Evans KA. Remission of Recently Diagnosed Type 2 Diabetes Mellitus with Weight Loss and Exercise. *J Cardiopulm Rehabil Prev*, 2015. Jan 29. [Epub ahead of print].

Berkman A, Cole B, Ades PA, Dickey S, Higgins ST, Trentham-Dietz A, Sprague BL, Lakoski SG, Racial Differences in Breast Cancer, Cardiovascular Disease, and All-Cause Mortality Among Women with Ductal Carcinoma In Situ of the Breast. *Breast Cancer Research and Treatment*. 2014 Oct 18. [Epub ahead of print]. PMID:25326349.

LeWinter C, Doherty P, Gale CP, Crouch S, Stirk L, Lewin RJ, LeWinter ML Ades PA, Keber L, Bland MM. Exercise based cardiac rehabilitation in patients with heart failure: a meta-analysis of randomized controlled trials between 1999 and 2013. *Eur J Prev Cardiol*, In Press, 2014.

Miller MS, Nicholas Bedrin NG, Ades PA, Palmer BM, Toth MJ.. Molecular Determinants of Force Production in Human Skeletal Muscle Fibers: Effects of Myosin Isoform Expression and Cross-Sectional Area. *American Journal of Physiology, Cell Physiology, Am J Physiol Cell Physiol*. 2015 Jan 7:ajpcell.00158.2014. doi: 10.1152/ajpcell.00158.2014. [Epub ahead of print]

Ades PA. A Lifestyle Program of Exercise and Weight Loss is Effective in Preventing and Treating Type 2 Diabetes Mellitus: Why Are Programs Not More Available? *Preventive Medicine* 2015 Mar 24. pii: S0091-7435(15)00085-7. doi: 10.1016/j.ypmed.2015.03.014. [Epub ahead of print]. PMID: 25818810

Gaalema DE, Cutler AY, Higgins ST, Ades PA. Smoking and Cardiac Rehabilitation Participation: Associations with Referral, Attendance and Adherence. *Prev Med*. 2015 Apr 18. pii: S0091-7435(15)00115-2. doi: 10.1016/j.ypmed.2015.04.009. [Epub ahead of print]

Callahan D, Tourville T, Miller M, Hackett S, Sharma H, Cruickshank N, Slauterbeck J, Savage P, Ades PA, Maughan D, Beynonn B, Toth M. Chronic disuse and skeletal muscle structure in older adults: Sex-specific differences and relationships to contractile function. In Press, *American Journal of Physiology-Cell Physiology*, 2015 Mar 25:ajpcell.00014.2015. doi: 10.1152/ajpcell.00014.2015. [Epub ahead of print]. PMID: 25810256

Lakoski SG, Cushman M, Kahn S, Ades PA, Berkman A, Penalosa L Savage PD, Croc AM. The Safety and Efficacy of Early Initiation Exercise Training After Acute Venous Thromboembolism: A Randomized Clinical Trial. *J Thromb Haemost*. 2015 Apr 24. doi: 10.1111/jth.12989. [Epub ahead of print].

Rengo JL, Callahan DM, Savage PD, Ades PA, Toth MJ. Skeletal muscle ultrastructure and function in statin-tolerant individuals. *Muscle Nerve*. 2015 Jun 8.doi: 10.1002/mus.24722. [Epub ahead of print]

Ades PA. Temporal trends and factors associated with cardiac rehabilitation referral among patients hospitalized with heart failure: Awaiting the Uptick. Invited Editorial. *J Am Coll Cardiol*, 2015.

Khadanga S, Lakoski SG, Hart V, Sprague BL, Yi Ba, Higgins ST, Ades PA, Newcomb PA, Trentham-Dietz A Living Situation and Socioeconomic Factors Are Associated with Change in Health Behavior after a Diagnosis of Ductal Carcinoma in Situ. In Revision, *Cancer* 2015.

Callahan DM, Tourville T; Beynon BD, Slauterbeck JR; Ades PA. Stevens L, Toth MJ. Reduced Rate of Knee Extensor Torque Development in Older Adults With Knee Osteoarthritis is Associated With Intrinsic Muscle Deficits. Accepted pending revision, 2015, *Experimental Gerontology*

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## Division of Dermatology

Glenn Goldman, MD, Director  
<http://www.med.uvm.edu/medicine/Dermatology>

Dermatology at the University of Vermont Medical Center is a division of Medicine with five general medical dermatologists, three 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. This year we will likely reach 30,000 patient visits per year. We also provide aesthetic services and have hired an aesthetician to join our practice and she is already extremely busy.

This year we added our prior chief resident Dr. Elizabeth Zeeck. She is off and running with a busy practice in general dermatology. In the past three years we have added three new medical dermatologists: Dr. Zeeck, Dr. Laura McGevna, and Dr. Joseph Pierson. These providers have had a great impact toward reducing the wait for patients with serious dermatologic issues.

Last year as part of a Veterans Administration quality improvement initiative we were asked if we could provide dermatology services to Vermont veterans at the outpatient center in Burlington. This led to the addition of a VA-funded dermatology residency position. Dr. Pierson and Dr. Zeeck will work part time at the VA and will supervise the residents. This will provide a high level service to our veterans and save up to three hours of travel time for their dermatology appointments.

Our surgery fellow, Dr. Nicole Howe has worked diligently with Dr. Glenn Goldman to develop and publish an online literature-based reference curriculum for dermatologic surgery. This is now available and includes over 1000 references available online through the website of the American Society for Dermatologic Surgery.

We continue to volunteer regularly 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. Dr. Pierson has taken the lead in public education and skin cancer awareness.

Dr. Glenn Goldman has assumed the position of Chair of the American Society for Dermatologic Surgery International Travelling Mentorship Program. He and Dr. Holmes continue to provide international instruction and to construct the framework for international training in dermatologic surgery. Dr. Goldman and Dr. Holmes will be in Pretoria, South Africa for the last two weeks of August. They will lecture at the South African Dermatological Society annual meeting and perform surgery for advanced skin cancers. In the coming year

Dr. Goldman will be collaborating with a plastic surgeon who is the only provider of Mohs surgery in Poland. This will entail a one week surgery session in Wroclaw, Poland.

Dr. Goldman, Dr. Weinberger, Dr. Holmes, Dr. Lin and Dr. Pierson serve on a number of UMMC committees. Dr. Julie Lin continues her involvement in PRISM, where she is the PRISM representative from the Department of Medicine. She is piloting a number of telemedicine programs and will soon be providing teledermatology to patients in the Newport area.

Our residency and procedural dermatology fellowship remain successful and rewarding. Two of our last four graduates have joined us on faculty. These “home grown” residents are welcome additions to our faculty and have a great impact on local health care improvement. 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 matched one of our own students, Patrick Benson, MD. Two graduates, Julia Hobson, MD and Michael Cunningham, MD matched at the programs of their choice.

## **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**

- General Medical Dermatology
- Dermatology Laser and Cosmetics
- Residency Education in Dermatology

**Fellow**

**Kendra Lesiak, MD**

Procedural Dermatology Fellow 2014-2015

**Residents**

**Jeremy Hugh, MD** PGY-4 / Co-chief

**Elizabeth Lester, MD** PGY-4 / Co-chief

Andrew Hankinson, MD PGY-3

Michael Romano, MD PGY-3

Emily Farrell, MD, PGY-2

Alyssa Fischer, MD, PGY-2

Ivy Norris, 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,**

#### **Book Chapter**

Holmes T., Goldman G., & Cook J. (2015). Random pattern cutaneous flaps. In *Surgery of the Skin* (3rd ed., pp. 252-285). Elsevier.

#### **Peer-reviewed Articles**

Goldman GD. Reconstruction of the nasal infratip, columella and soft triangle. *Dermatol Surg* 2014.

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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 4 physicians, 3 nurse practitioners, and 3 certified diabetes educators (CDEs) during the 2014-2015 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 University of Vermont Health Network. To that end, we continue to operate an Endocrine Service at CVPH, in Plattsburgh, NY that is staffed by one of our Endocrinologists.

Our Division has expanded its range of services to enhance the care of patients with diabetes. Critical to this effort is the new position of Medical Director of In-Patient Diabetes Services, to which Matthew Gilbert, DO, MPH, has been named. He will serve as an on-site clinical supervisor and leader, assisting in the development and coordination of a high quality, efficient system of clinical diabetes services to ensure a multidisciplinary, comprehensive, patient-oriented approach to the care of patients with diabetes and their families. This goal will be achieved by:

- facilitating diabetes consultative and educational programs;
- orchestrating and disseminating diabetes protocols and order sets throughout UVMHC in conjunction with Nursing, Intensive Care, Surgical, Pharmacy and other services to insure high quality, evidence based, best science, best practice and safe diabetes management;
- developing seamless transitions between intensive care units and medical/surgical units and in-patient and out-patient settings; and
- deploying professional diabetes education modules for house staff and other care providers. The Medical Director serves as a liaison to the medical staff and identifies and resolves medical matters within the clinical service area.

Our “Diabetes Initiative,” developed in conjunction with PCIM and Family Medicine, is in use at the 9 Medical Home sites at UVM MC. 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 allow for state of the art diabetes management to reach more patients with diabetes at UVM MC 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 UVM Health Network system.

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

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

Other areas of clinical interest include metabolic bone disease and osteoporosis, hypogonadism, and pituitary and adrenal disease. Overall, the clinic is flourishing in our Tilley Drive setting with approximately 14,000 visits per year – fourth in the Department of Medicine. We are currently recruiting for a new faculty member to augment our clinical and research capabilities.

The Division of Endocrinology, Diabetes and Metabolism hosted Daniel Drucker, MD, as a W. Allen Tisdale Medical Sciences Lecturer. Dr. Drucker, Senior Scientist at the Lunenfeld Tanenbaum Research Institute in Toronto and a Professor of Medicine at the University of Toronto, presented the April 24th Grand Rounds lecture, titled “Enteroendocrine Signals and the Treatment of Metabolic Disorders.”

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. In addition, Drs. Jetton and Gupta, as part of the Endocrine Division’s Islet Biology group, organized and hosted the annual meeting of the Boston-Ithaca Islet Club, the oldest established pancreatic islet study group in the country. Over 80 attendees from research groups along the East Coast participated in the day-long series of presentations.

Finally, as part of our educational mission, 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**

Associate Professor of Medicine

Director, Endocrinology Fellowship Program

Director, Inpatient Diabetes Management

- 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**

Professor of Medicine

- Regulation of glucose homeostasis
- $\beta$ -cell biology
- Nutrient and neural regulation of  $\beta$ -cell growth

### **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**

Sree Susmitha Garapati, MD (F5; completed her fellowship June 30, 2015)

Anna Thottan, MD (F4; started July 28, 2014)

## **Nurse Practitioners and Certified Diabetes Educators**

Margaret Costello, FNP, MS

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**

## **Endowed Professorships**

## **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

- 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
- Editorial Board: Journal of Biological Chemistry

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**

#### **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)  
01/01/14-06/30/15  
  
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)  
01/01/14-06/30/15  
  
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



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

- Molecular Tumorigenesis of Papillary Thyroid Microcarcinoma (Sidiropoulos and Carr, co-PIs)  
2015-2017

Nathan, Co-I

University of Vermont Medical Center Investigator-Initiated Award

### **Publications**

Gupta D, Leahy JL. Islet amyloid and type 2 diabetes: overproduction or inadequate clearance and detoxification? (Commentary). *J Clin Invest.* 2014;124:3292-4. PMID 25036704.

Leahy JL. Type 2 Diabetes Mellitus – pathogenesis and natural history. In: Umpierrez GE. *Therapy for Diabetes Mellitus and Related Disorders* (6<sup>th</sup> edition). Alexandria, VA: American Diabetes Association, pp 212-238, 2014.

Gilbert MP. Screening and treatment by the primary care provider of common diabetes complications. *Med Clin North Am.* 2015;99(1):201-219.

Gilbert, MP, Pratley RE. The impact of diabetes and diabetes medications on bone health. *Endocrine Reviews.* 2015;36(2):194-213.

Gilbert MP, Nathan MH. A case of stiff person syndrome in a patient with type 1 diabetes. In: *Diabetes Case Studies.* Draznin B, Low Wang CC, Rubin DJ, Eds. Alexandria, VA, American Diabetes Association, 2015, p. 169-171.

Hirsch IB, Probstfield JL, Davis BR, Ahmann AJ, Bergenstal RM, Gilbert M, Kingry C, Khakpour D, Lai D, Pressel SL, Riddle MC, O'Brien KD. Glucose Variability in Type 2 Diabetes: The Initial Results of the FLAT-SUGAR Trial. *Diabetes* 2015;64 Supplement (1): 385-OR



## 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 seven 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 12,500 procedures per year. All aspects of diagnostic and therapeutic GI endoscopy are performed. Advanced procedures including RFA (radio frequency ablation) of the esophagus and EUS (endoscopic ultrasound) with onsite cytopathology, and all modes of ERCP (endoscopic retrograde cholangiopancreatography) with cholangioscopy and laser lithotripsy with portable C-arm fluoroscopy are performed. 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 GI 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. Members of the GI faculty are also key contributors at the weekly GI Multidisciplinary Cancer Conference. 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), fecal microbial transplant (FMT), exploring new 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; Fecal Microbial Transplant

**Doris Strader, MD**

Professor of Medicine

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

**Richard Zubarik, MD**

Professor of Medicine

Director, Endoscopy

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

**John Randles, MD**

GI Fellow

**Mario Velez, MD**

GI Fellow

**Aaron Cohn, MD**

GI Fellow

**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

- Selected to the inaugural group of Fellows of the American Association for the Study of Liver Diseases

*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

*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

**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

*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
- FMT in Ulcerative Colitis

*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

*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)**

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.

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

Lim N, **Lidofsky S.D.** Impact of physician specialty on quality care for patients hospitalized with decompensated cirrhosis. *PLoS ONE*. 2015; 10:e0123490.  
PubMed ID: 25837700



## Division of General Internal Medicine Research

Benjamin Littenberg, MD, Director

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



The division consists of eight faculty, one staff, one post-doc fellow, nine PhD students and two 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. We teach at all levels of the university including undergraduates, medical students, graduate students, residents, faculty development and continuing medical education

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

- Electronic Health Records
- Clinical Decision Support
- Clinical Data Mining and Natural Language Processing

**Amanda G. Kennedy, PharmD**

Clinical 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  
Matthew Gissel

Scott Hipko  
Kairn Kelley  
Carole McBride  
Prema Menon  
Sean Stephens  
Emily Tarleton

### **Endowed Professorships**

Benjamin Littenberg, MD  
Henry and Carleen Tufo Professor of Medicine

### **Leadership in Professional Societies**

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

Amanda Kennedy, PharmD  
Clinical Advisory Board Member, ISMP Medication Safety Alert! Community/Ambulatory Care newsletter, Institute for Safe Medication Practices, Huntingdon Valley, Pennsylvania  
Director and Academic Detailer, The Vermont Academic Detailing Program  
Faculty, NaRCAD Academic Detailing Training Program, National Resource Center for Academic Detailing

Benjamin Littenberg, MD  
Vermont Department of Health, *Chittenden County Medical Reserve Corp*  
Member, *GE-AUR Radiology Research Academic Fellowship (GERRAF) Advisory Board*, Association of University Radiologists  
Member, *AIC Registry Advisory Board*, New York City Department of Health and Mental Hygiene

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  
Chair, Provider Practice Workgroup, Vermont Blueprint for Health—Vermont AHS

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

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

### **Editorships and Editorial Boards**

Elizabeth Chen, PhD

Member, Editorial Board, *Methods of Information in Medicine*  
Amanda Kennedy., PharmD

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

Benjamin Littenberg, MD

Associate Editor, Patient Activation & Engagement, *Latino Medical Journal*

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

Elizabeth Chen, PhD

- Ad hoc Member, Biodata Management and Analysis (BDMA), National Institutes of Health
- Ad hoc Member, NLM Information Resource Grants to Reduce Health Disparities (G08), National Library of Medicine, National Institutes of Health Ad hoc Member, Special Emphasis Panel (K01/R21/R01), National Library of Medicine, National Institutes of Health [ZLM1 ZH-C (01)
- Ad hoc Member, Special Emphasis Panel (R21/R01), National Library of Medicine, National Institutes of Health [ZLM1 ZH-C (01)
- Ad hoc Member, Biodata Management and Analysis (BDMA), National Institutes of Health

Amanda Kennedy, PharmD

- Grant Reviewer, Agency for Healthcare Research and Quality, Rockville, Maryland

- Special Emphasis Panel/Scientific Review Group for Health Care Technology and Decision Science,

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,

Constance van Eeghen, DrPH

- NIH/AHRQ Study Section for Grant Review of Healthcare Information Technology Research (HITR) as Ad Hoc Reviewer (R21)
- Substance Abuse and Mental Health Services Administration (SAMHSA) Study Section for Grant Review of Screening, Brief Intervention, and Referral to Treatment (SBIRT) Health Professions Student Training (SBIRT- Student Training - TI-15-001)
- National Academy for State Health Policy (NASHP) 5th State Consortium to Advance Medical Homes, Supporting State Strategies to Design and Deliver Whole-Person Care in Ambulatory Settings, invited as an “on-call” faculty member to provide technical assistance to six states engaged in the integration of behavioral health and primary care.

## 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 S. Chen** Co-PI: Genevieve B. 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. This is collaborative effort between the University of Vermont and University of Minnesota.*

### Data Abstraction Project

Vermont Oxford Network (VON) 07/01/2013 – 06/30/2015

Principal Investigator: Indra Neil Sarkar Co-I: **Elizabeth S. Chen**

*The long-term goal is to leverage data that are collected as part of the VON database in combination with data within electronic health records to support quality improvement reporting*

activities of the VON membership, as well as clinical, epidemiological, and informatics research initiatives.

In-Silico Identification of Phyto-Therapies

NIH/NLM                      R01 LM011963                      09/01/2014 – 08/31/2017

Principal Investigator: Indra Neil Sarkar                      Co-I: **Elizabeth S. Chen**

*The overall goal of this project is to develop a semantically integrated framework that could be used to identify and validate potential phyto-therapies embedded within ethnobotanical and biomedical knowledge sources, and thus encourage the conservation of this knowledge and biodiversity*

The Vermont Academic Detailing Program

Vermont Department of Health                      7/1/14-6/30/15

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

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

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.*

Improving Opioid Prescribing: Sustainable Solutions for Vermont.

Vermont Department of Health 1/1/15-12/31/15

Principal Investigator: **Charles MacLean** Project Manager: **Connie van Eeghen**

Improve the quality of prescribing among health care providers (specifically specialty care and dentistry) with a long-term goal of reducing unintended negative health outcomes among patients

Vermont SBIRT Collaborative: Changing Care through Systems Redesign and Team Based Training SAMSHA 9/1/13-8/31/16

Co-Investigator: **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.

RE-ALMing Health Care Training: Team training in Evidence Based Behavioral Interventions- Vermont SBIRT

Substance Abuse and Mental Health Services Administration SAMHSA 1 U79 TI025395-01  
1/1/13-9/30/16

PI: Rodger Kessler Chief Evaluator: **Constance van Eeghen**

Design, implement, disseminate and evaluate a team based training model to deliver evidence supported behavioral interventions.

Implementation Toolkit to Integrate Behavioral Health Services into Primary Care. National Institute of Mental Health 1R03MH099157-01A1 7/1/13-6/30/15

PI: Rodger Kessler Co-I: **Connie Van Eeghen.**

The goal of this project is to improve patient access to needed mental health, behavioral health, or substance abuse services.

Panel Management of HTN and DM in primary care

Vermont Department of Health 3U58DP004834-02S1

PI: **Charles MacLean**      **Constance van Eeghen:** Quality Improvement Project Manager  
4/1/15- 6/29/15

Create a baseline assessment and planning for ambulatory patient panel management for hypertension, pre-diabetes and diabetes.

## **Publications**

Bakken S, Jia H, **Chen ES**, Choi J, John RM, Lee NJ, Mendonca E, Roberts WD, Velez O, Currie LM. The effect of a mobile health decision support system on diagnosis and management of obesity, tobacco use, and depression in adults and children. *The Journal for Nurse Practitioners*. 2014:774-80.

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**Chen ES**, Carter EW, Sarkar IN, Winden TJ, Melton GB. Examining the use, contents, and quality of free-text tobacco use documentation in the Electronic Health Record. *AMIA Annu Symp Proc*. 2014:366-74.

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**Chen ES**, Sarkar IN. \*informatics: identifying and tracking informatics sub-discipline terms in the literature. *Methods Inf Med*. 2015 May 22;54(4).

Rajamani S, **Chen ES**, Wang Y, Melton GB. Extending the HL7/LOINC Document Ontology settings of care. *AMIA Annu Symp Proc*. 2014:994-1001.

Rajamani S, **Chen ES**, Akre M, Wang Y, Melton GB. Assessing the adequacy of the HL7/LOINC Document Ontology role axis. *J Am Med Inform Assoc*. 2015 May;22(3):615-20.

Sarkar IN, **Chen ES**, Rosenau PT, Storer MB, Anderson B, Horbar JD. Using Arden Syntax to identify registry-eligible very low birth weight neonates from the Electronic Health Record. *AMIA Annu Symp Proc*. 2014:1028-36.

Winden TJ, **Chen ES**, Wang Y, Sarkar IN, Carter EW, Melton GB. Towards the standardized documentation of e-cigarette use in the electronic health record for population health surveillance and research. *AMIA Summits Transl Sci Proc*. 2015:199-203.

Zhang Y, Sarkar IN, **Chen ES**. PubMedMiner: mining and visualizing MeSH-based associations in PubMed. *AMIA Annu Symp Proc*. 2014:1990-99. [*Student Paper Competition Finalist*]

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Johnson KC, **Kennedy AG**, Henry SM. Clinical Measurements of Lymphedema: A Review. *Journal of Lymphatic Research and Biology*. 2014 Oct 15. PMID: 25317946

**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. Med*. 2014; 27:637-44.

Stewart EH, Davis B, Clemans-Taylor BL, **Littenberg B**, Estrada CA, Centor RM. Rapid Antigen Group A Streptococcus Test to Diagnose Pharyngitis: A Systematic Review and Meta-analysis. *PLoS ONE* 9(11): e111727.

Tarleton E, **Littenberg B**. Magnesium Intake and Depression in US Adults. *J Am Board Family Med* 2015; 28:249–56.

Kang SK, Zhang A, Pandharipande PV, Chandarana H, Braithwaite RS, **Littenberg B**. Diffusion Weighted Imaging for Renal Mass Characterization: Systematic Review and Meta-analysis of Diagnostic Test Performance. *American Journal of Roentgenology* 2014 (in press).

Chopan M, **Littenberg B**. C-Reactive Protein and Prescription Opioid Use. *Journal of Nature and Science*. 2015; 1:e122.

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health behavior services in patient-centered medical homes. *J Am Board Fam Med.* 2014 Sep-Oct;27(5):637-44. doi: 10.3122/jabfm.2014.05.140021

Rettew DC, Greenblatt J, Kamon J, Neal D, Harder V, Wasserman R, Berry P, **MacLean CD**, Hogue N, McMains W. Antipsychotic Medication Prescribing in Children Enrolled in Medicaid. *Pediatrics* 2015, DOI: 10.1542/peds.2014-2260.

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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 109:775-9.

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Kessler, R., **van Eeghen, C.** Health Policy Update: Panel-Based Behavioral Primary Care, *The Health Psychologist*, 2014. 36(3).

Kessler, R., **van Eeghen, C.**, Mullin, D., Auxier, A., Macchi, C., Littenberg, B. Measuring Behavioral Health in Primary Care Settings: The Vermont Integration Profile (VIP), *The Health Psychologist*, 2015.





## 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, 5 midlevel providers, about 70 nurses and staff in the outpatient clinic. New faculty joined our division: Drs. George Atweh,

Maura Barry, Edmund Folefac, and we look forward to the arrival of Dr. Eswar Tipirneni who will work at CVMC. Drs. Emmons and Lakoski have moved to join their families back home. The Division also supervises the Apheresis Program and the Hemophilia Center and has renewed accreditation for stem cell transplant this year. Our group embraces the mission of the COM and UVMMC with cost effective high quality care, cutting-edge research, and dedication to all aspects of teaching and research.

Clinical efforts for 2015 (pro-rated) include 27,854 outpatient visits (about 1,540 new patients), approximately 10,628 infusion patients and about 6,821 inpatient visits for a total of 49,064 RVU's. This is a 7.75% growth from last year. We are also the attending for patients of local private practices when they are hospitalized at UVMMC. Cancer visits to the UVM Cancer Center have been growing every year. Cancer care is being reorganized into a Cancer Service Line, which is a transdisciplinary effort to provide optimal patient-centered care. The Cancer Service Line is organized into Transdisciplinary Academic Teams (TDT), groups of expert physicians and scientists who focus on all aspect of academic medicine for the specific cancers they treat and research. These TDTs are being supported by global services including psychiatry and counseling services (Dr. Rabinowitz and 4 psychologists), palliative care (Janet Ely), nutrition, oncology rehabilitation (Dr. Dittus), genetic counseling and other needed services for cancer patients. TDTs' principles include tumor boards, multidisciplinary clinics where at a single visit patients may be seen by a number of oncologic or specialty provider's standardization of clinical care pathways, clinical trial menu and accrual, and education.

Established TDT clinics exist for breast, upper GI, ENT, lung cancer, GU, melanoma, sarcoma, leukemia's and lymphomas. We thank all members of other Divisions for their participation. Other TDT's will be created as needed. In 2015, 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 familial cancer genetics clinic (W. McKinnon), psychiatry services (Dr. Rabinowitz), palliative care (Janet Ely) and a high risk breast program (Dr. Wood). The Thrombosis and Hemostasis Program has undergone a period of recent growth through development of new initiatives. We experienced 476 arrived visits with a primary diagnosis of DVT (deep vein thrombosis), about a 13% increase from last year.

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 800 cancer patients are put on trials annually on the 100 studies opened to accruals (200 studies have patients on follow up). Approximately 15% of patients are enrolled on treatment clinical trials at UVMCC 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 UVMCC some of the LCCRO funds support Division research activities.

Publication highlights include the association of thromboembolic events with *KRAS* mutations in colon cancers (Drs Holmes and Ades), the safety profile of erlotinib in pregnancy (Drs. Ji and Verschraegen), the need for exercise in male patients to decrease cancer incidence (Dr. Lakoski), the lack of efficacy of mifepristone in meningioma in the first ever randomized study in this disease (Dr. Verschraegen, Yongli, Grunberg).

Dr. Greenblatt is the president of the Human Genome Variation Society and Dr. Cushman serves on the National Board of Directors of the American Heart Association. Dr. Wood serves on the American Society of Clinical Oncology CME committee as the liaison to the American Society of Clinical Oncology Prevention Committee, on the Board of the New England Clinical Oncology Society Board along with Dr. Ades, and on the Board of Trustees of the Alliance for Clinical Trials in Oncology, Dr. Nunnink serves on the Board of the American Society of Clinical Oncology and is the American Society of Clinical Oncology liaison to the American Medical Association, and Dr. Verschraegen has been appointed on the Board of Directors of the

Alliance for Clinical Trials in Oncology and on the National Cancer Institute Gynecologic Cancers Steering Committee.

## **Books**

Vermont Cancer Center Co-Director, Claire Verschraegen, MD with co-authors, Therese J. Bocklage, Robert H. Quinn, and Berndt P. Schmit has a new book out titled: “Bone and Soft Tissue Tumors: A Multidisciplinary Review with Case Presentations.”

## **B. Faculty**

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

Associate Director, Hematology/Oncology Fellowship Program  
Leader, University of Vermont Medical Center Upper Gastrointestinal Oncology Transdisciplinary Team  
Co-Leader, University of Vermont Medical Center Medical Center Genitourinary Oncology Transdisciplinary Team  
In-Patient Hematology/Oncology Service Director  
Research interests include: GI and GU cancers, supportive care and thrombosis in malignancy

### **George F. Atweh, MD-Professor**

Clinical Director, Cancer Clinical Trials Office  
Member, Protocol Review and Monitoring Committee, UVM Medical Center  
Member, Data Safety Monitoring Board, UVM Cancer Center  
Cabinet Member, Division of Hematology/Oncology  
Research interests include: Molecular basis of benign and malignant blood disorders, and clinical trials in malignant hematology

### **Maura Barry, MD-Assistant Professor**

Associate Director, Hematology/Oncology Fellowship Program  
Research interests include: GI and head and neck cancers

### **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**

Medical Director of Oncology Rehabilitation  
Chair Research Committee, Program in Integrative Health  
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

### **Edmund Folefac, MD – Assistant Professor**

Research interests include: GI and lung cancers

### **Marc Greenblatt, MD – 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

Section Chief, Hematologic Malignancies

Research interests include: Venous thrombosis, platelet function and coagulation and cancer

**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

Research interests include: Oropharyngeal Cancer and GU Cancer

**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 of Medicine and Pathology**

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**

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**

Jamie Kelly, PA  
Penny Gibson, PA  
Janet Ely, NP  
Patricia Lewis, NP  
Emily Parenteau, MSN, FNP Nurse Practitioner, Thrombosis & Hemostasis Clinic

**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  
Matthew Lebow, BA, Post-Doctoral Associate. Research project mentored by Neil Zakai  
Wesley T. O'Neal, MD, MPH: Internal Medicine Resident at Wake Forest, Mentored project by Neil Zakai  
Nels Olson, PhD: Post-Doctoral Fellow, mentored by Neil Zakai and Mary Cushman for various projects

**F. Endowed Professorships**

**G. Leadership in Professional Societies**

**Steve Ades, MD**

Member, UVM Medical Department of Medicine Quality Assurance and Improvement Committee  
Member, UVM Faculty Senate Financial & Physical Planning Committee  
Member, UVM Hematology Faculty Search Committee  
Member, UVM Medical Center Hematology/Oncology Fellowship Program Evaluation Committee  
Member, UVM Medical Center Hematology/Oncology Fellowship Clinical Competency Committee  
Member, Vermont Cancer Center Protocol Review Committee  
President-Elect, Northern New England Clinical Oncology Society  
Member, Alliance Symptom Intervention Committee

**Maura Barry, MD**

Member, UVM Medical Center Faculty Development Committee,  
Member, UVM Medical Center Hematology/Oncology Fellowship Program Evaluation  
Committee  
Member, UVM Internal Medicine Residency Program Evaluation Committee

**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  
Heart 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.

**Kim Dittus, MD, PhD**

Member, Protocol Review Committee, UVM Cancer Center  
Member, Cancer Control Committee, UVM Medical Center  
Member, Champlain Valley Healthy Lifestyle Collaborative  
Member, Symptom Intervention Committee, Alliance

**Chris Holmes, MD, PhD**

Member, Thrombosis Committee, American Thrombosis and Hemostasis Network,  
Centers for Disease Control

**J. Chris Nunnink MD, FASCO**

Member, UVM Medical Center Clinical Integration Committee  
Member, UVM Medical Center CIC Committee representing Oncology  
Co-Chair, UVM Medical Center Head and Neck Multidisciplinary Clinic  
Director, UVM Cancer Center Network Development  
Member, American Society of Clinical Oncology Board of Directors  
Member, American Society of Clinical Oncology Strategic Planning Committee  
Member, American Society of Clinical Oncology Clinical Guidelines Committee  
Member, Northern New England Clinical Oncology Society Board of Directors

**Julian Sprague, MD**

Member, UVM Medical Center, Transfusion Committee  
Member, UVM Medical Center, Ethics Committee

Member, UVM Medical Center, Medical School Curriculum Committee

**Claire Verschraegen, MD**

Member, ACS New England Cancer Director's Roundtable, Boston, MA, Conference Committee

Member, NCI Gynecological Cancers Steering Committee, SWOG representative  
Board of Directors Alliance for Clinical Trials in Oncology

Member, NCI Uterine Cancer Task Force Member, SWOG representative

Member, SWOG Rare Cancers Task Force

Member, Vermonters Taking Action Against Cancer (VTAAC) –Steering Committee

Member, SWOG Early Therapeutics Committee

Member, SWOG Lung Cancer Committee

Member, SWOG Cancer Control and Prevention Committee

Member, Connective Tissue Oncology Society

Member, American College of Physicians

**Marie Wood, MD**

Member, Alliance, Prevention Committee

Member, Alliance Foundation, Board of Trustees

Member, American Society of Clinical Oncology, CME Committee

Member, Northern New England Clinical Oncology Society Board of Directors

**Neil Zakai, MD**

Member, American Heart Association, Disparities Research Network Peer Review Committee

Member, American Society of Hematology VTE Guideline Panel: Prevention of VTE in Medical Patients

Co-Chair, Hemophilia and Thrombosis Research Society, Research Committee

Vice Chair, American Heart Association Council on Epidemiology and Prevention, Publications Committee

Member, American Society of Hematology "Consult a Colleague" program-content expert "Hemostasis/Thrombosis"

Member, American Heart Association Representative to the American Association of Blood Banks: Blood Banks and Transfusion Services Standards Program Unit

Member, American Heart Association POP 2 Peer Review Committee

Coordinator, Hematology/Oncology Fellowship Quality Project Committee

Member, UVM Medical Center Hematology/Oncology Fellowship Research Committee

Member, UVM Medical Center Internal Medicine Residency Committee

**H. Editorships and Editorial Boards**

**I. Study Sections and Federal Advisory Boards**

**J. Major Faculty Awards**

Susan Lakoski, MD, M.S, Assistant Professor of Medicine & Colleagues received significant national coverage for an Online First publication in JAMA Oncology reporting the benefits of midlife fitness in terms of cancer incidence and survival in men. Media coverage of the study include a number of articles, including stories in the following outlets: TIME, HealthDay, Huffington Post, Medscape, Daily Mail (UK)

## **K. Grants**

### **Mary Cushman**

NICHD-NIDA

National Longitudinal Study on Adolescent Health 11/11/14-4/30/15

Role: PI

Exceptional Survival: Trajectories to Functional Aging 7/11/14-5/31/15  
(CHS All Stars)

Role: PI

Epidemiology of Venous Thrombosis and Pulmonary Embolism 8/21/14-3/31/15

Role: PI

Effects of Perfluoroalkyl Chemicals on Stroke Incidence and 1/27/15-5/31/15  
Mortality

Role: PI

Etiology of Geographic and Racial Differences in Stroke 4/9/15-11/30/15  
Mortality

Role: PI

### **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



Vermont Cancer Center 5/1/15-2/29/16  
Classifying DNS Mismatch Repair Gene Variants of Unknown  
Significance  
Role: PI

**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

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

Pazopanib with Gemcitabine and Docetaxel for the neoadjuvant  
Chemotherapy Treatment of High Risk Sarcomas – A Phase IB Study

SPARK award for the role of cymanquin in cancer

**L. Publications**

Olson, NC, **Cushman M**, Judd SE, McClure LA, **Lakoski SG**, Folsom AR, Safford MM, **Zakai NA**. American Heart Association's Life's Simple 7 and Risk of Venous Thromboembolism: The Reasons for Geographic and Racial Differences in Stroke (REGARDS) Study *J AM Heart Assoc.* 2015 Feb 27;4(3). Pii: e001494. Doi:10.1161/JAHA.114.001494

Muse ED, Feldman DI, Blaha MJ, Dardari ZA, Blumenthal RS, Budoff MJ, Nasir K, Criqui MH, **Cushman M**, McClelland RL, Allison MA, The association of resistin with cardiovascular disease in Multi-Ethnic Study of Atherosclerosis *Atherosclerosis.* 2015 Mar;239(1):101-8.

**Lakoski, S**, Willis, B, Barlow, C, Leonard D, Gao A, Radford N, Farrell S, Douglas P, Berry J, DeFina L, Jones L Midlife cardiorespiratory fitness, incident cancer, and survival after cancer in men the cooper center longitudinal study *JAMA Oncology* 2015, Mar 26

**Ades S**, Kumar S, M A, Goodwin A, Weckstein D, Dugan M, Ashikaga T, Evans M, **Verschraegen C**, **Holmes CE**. Tumor Oncogene (KRAS) Status and Risk of Venous Thrombosis in Patients with Metastatic Colorectal Cancer *J Thromb Haemost.* 2015 Mar 24. Doi:10.1111/jth.12910 [Epub ahead of print] PMID:25809746

O'Neil WT, **Lakoski SG**, Qureshi W, Judd SE, Howard G, Howard VJ, **Cushman M**, Soliman EZ. 5 Relation Between Cancer and Atrial Fibrillation (from the Reasons for Geographic And Racial Differences in Stroke Study *Am J Cardiol.* 2015 Apr 15;115(8):1090-4. Doi:10.1016/j.amjcard.2015.01.540.Epub 2015 Jan 31.PMID:25711434

Berkman AM, Trentham-Dietz A, **Dittus K**, Hart V, Vatovec CM, King JG, James TA, **Lakoski SG**, Sprague BL. Health behavior change following a diagnosis of ductal carcinoma in situ: An opportunity to improve health outcomes. *Prev Med.* 2015 Apr 6. Pii:S0091-7435(15)00098-5. Doi: 10.1016/j.ypmed.2015.03.020. [Epub ahead of print] PMID: 25858806

**Lakoski SG**, Savag PD, Berkman AM, Penalosa L, Crocker A, Ades PA, Kahn SR, **Cushman M**, J The Safety and Efficacy of Early Initiation Exercise Training After Acute Venous Thromboembolism: A Randomized Clinical Trial. *J Thromb Haemost.* 2015 Apr 24.doi:10.1111/jth.12989 [Epub ahead of print] PMID:25912176

Thompson HJ, Sedlacek SM, Playdon MC, Wolfe P, McGinely JN, Paul D, **Lakoski SG**, Weight Loss Interventions for Breast Cancer Survivors: Impact of Dietary Pattern *PLoS One.* 2015 May 26;10(5);e0127366. Doi:10.1371/journal.pone.0127366.eCollections 2015.PMID:26010254

Garg PK, McClelland RL, Jenny NS, Criqui MH, Greenland P, Rosenson RS, Siscovick DS, Jorgensen N, **Cushman M**. Lipoprotein-associated phospholipase A2 and risk of incident cardiovascular disease in multi-ethnic cohort: The multi ethnic study of atherosclerosis *Atherosclerosis* 2015 May 16;241(1):176-182 doi:10.1016/j.atherosclerosis.2015.05.006. [Epub ahead of print] PMID:26004387

Manwani D, Chen G, Carullo V, Serban S, Olowokure O, Jang J, Huggins M, Cohen HW, Billett H, **Atweh GF**, Frenette PS, Shi PA Single-dose intravenous gammaglobulin can stabilize neutrophil Mac-1 activation in sickle cell pain crisis *Am J Hematol*. 2015 May;90(5):381-5. Doi:10.1002/ajh.23956. Epub 2015 Apr 1. PMID:25616042

**Atweh GF**, Iancu-Rubin C p27 (Kip1) and STMN1: partners again? *Cell Cycle*. 2014;13(20):3163. Doi:10.4161/15384101.2014.966580. No abstract available. PMID 25485493

Pun SC, Nguyen A, **Ades S**, Storrington J, Ingrid H, Sebag M, Huynh T Predictive value of high-sensitivity cardiac troponin T, troponin I, NT-ProBNP and high sensitivity CRP in the detection of myocardial injury following anthracycline-based chemotherapy. *Journal of the American College of Cardiology*. 2015;65

Sudarshan M, Alcindor T, **Ades S**, Aloraini A, Van Huyse M, Asselah J, David M, Frechette D, Brisson S, Thirlwell M. Survival and recurrence patterns after neoadjuvant docetaxel, cisplatin, and 5-fluorouracil (DCF) for locally advanced esophagogastric adenocarcinoma *Annals of Surgical Oncology*. 2015;22:324-30

O'Toole J, **Ades S**, Waters B, Agarwal Z, Lamba G. Delayed HHV-6 encephalitis in an allogeneic stem cell transplant patient Accepted for publication Jan 2015

Othman E, Wang J, Sprague BL, Rounds T, Ji Y, Herschorn SD, **Wood ME** Comparison of false positive rates for screening breast magnetic resonance imaging (MRI) in high risk women performed on stacked versus alternating schedules *Springerplus*. 2015 Feb 12;4:77 doi:10.1186/s40064-015-0793-1.eCollection 2015 PMID:25741458

Butrick M, Kelly S, Peshkin BN, Luta G, Nusbaum R, Hooker GW, Graves K, Feeley L, Isaacs C, Valdimarsdottir HB, Jandorf L, DeMarco T, **Wood M**, McKinnon W, Garber J, McCormick SR, Schwartz MD. Disparities in uptake BRCA ½ genetic testing in randomized trial of telephone counseling. *Genet Med* 2015 Jun;17 (6):467-75. Doi:10.1038/gim.2014.125. Epub 2014 Sept 18

**Wood M**, Lu K, Wollins D, Hughes K Reply to A.S Sie et al, K Hemminki et al, and J Larsen Haidle. *J Clin Oncol* 2014 Oct 10;32(29):3346-7. Doi: 10.1200/JCO.2014.56.8535. Epub 2014 Sept 2. No abstract available

Alexander KS, **Zakai NA**, Gillett S, McClure LA, Wadley V, Unverzagt F, Cushman M. (2014). ABO blood type, factor VIII, and incident cognitive impairment in the REGARDS cohort. *Neurology*, 83(14), 1271-1276.

Mazzone M, Fleming L, Flowers D, Libby K, Parenteau E, **Zakai NA**, **Sprague J**, Homans A, **Cushman M**, Holmes CE. Improving Hemophilia Care Using the Electronic Health Record: A Single Institution Experience. *Am J Hematol*. 2014; 89: E88-E9.

Olson NC, **Cushman M**, Lutsey PL, McClure LA, Judd S, Tracy RP, Folsom AR, **Zakai NA** (2014). Inflammation markers and incident venous thromboembolism: the REasons for Geographic And Racial Differences in Stroke (REGARDS) cohort. *J Thromb Haemost*, 12(12), 1993-2001. doi: 10.1111/jth.12742

Gillett S R, Boyle RH, **Zakai NA**, McClure LA, Jenny NS, **Cushman M**. (2014). Validating laboratory results in a national observational cohort study without field centers: The Reasons for Geographic and Racial Differences in Stroke cohort. *Clin Biochem*. doi: 10.1016

Alexander KS, **Zakai NA**, Gillett S, McClure LA, Wadley V, Unverzagt F, Cushman M. (2014). ABO blood type, factor VIII, and incident cognitive impairment in the REGARDS cohort. *Neurology*, 83(14), 1271-1276.

**Dittus K**, **Lakoski S**, Savage P, Kokinda N, Toth M, Stevens D, Woods K, O'Brien P, Ades P, Exercise-based Oncology Rehabilitation: Leveraging the Cardiac Rehabilitation Model. *Journal of Cardiopulmonary Rehabilitation and Prevention*. 35(2):130-9, 2015

Khadanga S, Solomon B, **Dittus K**, Hemophagocytic Lymphohistiocytosis (HLH) Associated with T-Cell Lymphomas: Broadening our Differential for Fever of Unknown Origin. *N Am J Med Sci*. 2014 Sep;6(9):484-6

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Vatovec C, Erten MZ, Kolodinsky J, Brown P, **Wood M**, James T, Sprague BL Ductal carcinoma in situ: a brief review of treatment variation and impacts on patients and society. *Crit Rev Eukaryot Gene Expr*. 2014;24(4) 281-6

Tong A, Kelly S, Nusbaum R, Graves K, Peshkin BN, Valdimarsdottir HB, **Wood M**, McKinnon W, Garber J, McCormick SR, Jandorf L, Schwartz MD. Intentions for risk-reducing surgery among high-risk women referred for BRCA1/BRCA2 genetic counseling. *Psychooncology*. 2015 Jan; 24(1)33-9 doi:10.1002/pon3560.Epub 2014 May 17

Gronwald J, Robidoux A, Kim-Sing C, Tung N, Lynch HT, Foulkes WD, Manoukian S, Ainsworth P, Neuhausen SL, **Wood M**, Demsky R, Eisen A, Singer CF, Saal H, Senter L, Eng C, Weitzel J, Moller P, Gilchrist DM, Olopade O, Ginsburg O, Sun P, Huzarski T, Lubinski J, Narod SA; Duration of tamoxifen use and the risk of contralateral breast cancer in BRCA1 and BRCA2 mutation carriers. Hereditary Breast Cancer Clinical Study Group. *Breast Cancer Res Treat*. 2014 Jul;146(2):421-7. doi: 10.1007/s10549-014-3026-3. Epub 2014 Jun 21.

Vinh-Hung V, **Verschraegen C**. Breast-conserving surgery with or without radiotherapy: pooled-analysis for risks of ipsilateral breast tumor recurrence and mortality. *J Natl Cancer Inst*.

## Division of Immunobiology

Ralph Budd, MD, Director

<http://www.uvm.edu/medicine/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 Immunology 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 the immune response in infections and autoimmune disorders. The core of the Immunobiology Program resides with the Department of Medicine and includes 8 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 (NCRR). 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 Vaccine Trials 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 206 articles and received nearly \$48 million in funding.

In 2011 the COBRE grant was renewed for a second 5 years. During this period the COBRE faculty published 210 articles and received \$45 million in funding. This also 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 2015), 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. We have just submitted the 5-year renewal of our COBRE grant.

### 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: Host response to viral infections

**Andreas Koenig, PhD**

Research Associate, Medicine

- Key Research Interests: Viral immunology, innate immunity, systemic lupus erythematosus

**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

**Dimitry Kremenstov, PhD**

Research Associate, Medicine

- Key Research Interests: Multiple Sclerosis murine models, p38 MAPK signaling

**Mercedes Rincón, PhD**

Professor of Medicine and Microbiology & Molecular Genetics

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

**Cory Teuscher, PhD**

Professor of Medicine and Pathology

- Key Research Interests: Immunogenetics, sex susceptibility to infectious and autoimmune diseases, Y chromosome effects on disease

## **Tina Thornton, PhD**

Research Associate, Medicine

- Key Research Interests: Understanding the interactions of signaling pathways that control early thymocyte development and survival, interaction of the p38 MAPK pathway and GSK3.

### **Graduate Students, Post-doctoral Fellows, MD PhD Students and brief statement on their research study:**

Laure Case, PhD (through 04/15) – Sex Chromosomes in Fetal Programming and Susceptibility to EAE

Devin Champagne (graduate student) – Role of MCJ as an endogenous inhibitor of mitochondrial respiration in T cell immune response, cancer and fatty liver diseases

Benjamin King (graduate student) – arenavirus infection.

Dimitry Kremmentsov, PhD (promoted to Research Associate, 02/15 – see interests in faculty section.)

Abbas Raza (graduate student) – Sex specific regulation of CNS autoimmunity by signaling lymphocyte activation molecule (SLAM) locus

Michael Secinaro (graduate student) – The regulation of caspases by the metabolic state of T cells

Rui Yang (graduate student) – Role of IL-6 in modulating CD4 and CD8 T cell function

Christopher Ziegler (graduate student) – Post Translation Modification and Cellular Interactome of the Arenavirus Matrix Protein

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

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

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

(Kremmentsov) Ad hoc reviewer for Infection and Immunity, Brain journal

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

(Botten) Ad hoc reviewer, Developmental Research Project Program for the NIH-NIGMS

funded NE-INBRE Program Awards

(Budd) Ad hoc reviewer, NIH NIAID U-19 grant reviews on Human Immunology

(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:**

(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 has allowed Ben to extend his studies on virus migration in cells to include high-definition microscopy at the Institut Pasteur. Ben will be there for through 06/15 and has helped form a new international collaboration between the two labs.

(Yang) Rui Yang applied for and received an American Association of Immunologists (AAI) Careers in immunology fellowship, \$23,000.

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

Grant Awards 07/01/14 – 06/30/15

NIH funding:

3 - R01

2 – R21

1 – T32

1 – COBRE

1 – Sub award through University of Utah

1 – Sub award through Drexel University



Foundation funding:

1 – NMSS project

2 – VCC Awards

1- Lupus Research Institute

Biotech Funding

1-Mitotherapeutix, LLC

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: Vermont Immunology / Infectious Diseases Center

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

Role: PI

Current Yr funding: \$2,525,955

Source: NIH/NCRR

Title: Vermont Immunology / Infectious Diseases Training Grant

Dates of Award: 09/01/05 – 08/31/16

Role: PI

Current Yr funding: \$279,067

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: \$190,625

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: \$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: \$190,625

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

Title: MCJ as a Metabolic Target

Dates of Award: 05/15/15-05/14/16

Role: PI

Current Yr funding: \$84,000

Source: Mitotherapeutix, LLC

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: \$137,250

Source: University of Utah

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 (no cost extension effective 1/1/15)

Source: NIH/ NINDS

Title: Identification of Gene-by-Environment Interactions Contributing to CNS Autoimmune Disease

Dates of Award: 4/1/15-3/31/18

Role: PI

Current Yr funding: \$450,383

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: \$112,064

Source: Drexel University (NMSS)

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

Bearoff F, Case LK, Kremmentsov DN, Wall EH, Saligrama N, Blankenhorn EP, Teuscher C. Identification of genetic determinants of the sexual dimorphism in CNS autoimmunity. PLoS One. 2015;10(2):e0117993. PubMed PMID: 25671658; PubMed Central PMCID: PMC4324900.

Case LK, Teuscher C. Y genetic variation and phenotypic diversity in health and disease. *Biol Sex Differ*. 2015;6:6. PubMed PMID: 25866616; PubMed Central PMCID: PMC4392626.

Case LK, Wall EH, Osmanski EE, Dragon JA, Saligrama N, Zachary JF, Lemos B, Blankenhorn EP, Teuscher C. Copy number variation in Y chromosome multicopy genes is linked to a paternal parent-of-origin effect on CNS autoimmune disease in female offspring. *Genome Biol*. 2015 Feb 10;16:28. PubMed PMID: 25886764; PubMed Central PMCID: PMC4396973.

Divan A, Budd RC, Tobin RP, Newell-Rogers MK.  $\gamma\delta$  T Cells and dendritic cells in refractory Lyme arthritis. *J Leukoc Biol*. 2015 Jan 20;PubMed PMID: 25605869.

Haist K, Ziegler C, Botten J. Strand-Specific Quantitative Reverse Transcription-Polymerase Chain Reaction Assay for Measurement of Arenavirus Genomic and Antigenomic RNAs. *PLoS One*. 2015 May 15;10(5):e0120043. PubMed PMID: 25978311; PubMed Central PMCID: PMC4433285.

Krementsov DN, Case LK, Hickey WF, Teuscher C. Exacerbation of autoimmune neuroinflammation by dietary sodium is genetically controlled and sex specific. *FASEB J*. 2015 Apr 27. [Epub ahead of print] PubMed PMID: 25917331.

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 Aug;13(4):765-8. PubMed PMID: 24621297; PubMed Central PMCID: PMC4326952.

Long PM, Tighe SW, Driscoll HE, Fortner KA, Viapiano MS, Jaworski DM. Acetate supplementation as a means of inducing glioblastoma stem-like cell growth arrest. *J Cell Physiol*. 2015 Aug;230(8):1929-43. PMID: 25573156; PubMed Central PMCID: PMC4414874.

Ma Y, Bramwell KK, Lochhead RB, Paquette JK, Zachary JF, Weis JH, Teuscher C, Weis JJ. *Borrelia burgdorferi* arthritis-associated locus Bbaa1 regulates Lyme arthritis and K/B $\times$ N serum transfer arthritis through intrinsic control of type I IFN production. *J Immunol*. 2014 Dec 15;193(12):6050-60. PubMed PMID: 25378596; NIHMSID: NIHMS636609; PubMed Central PMCID: PMC4258437.

Navasa N, Martín I, Iglesias-Pedraz JM, Beraza N, Atondo E, Izadi H, Ayaz F, Fernández-Álvarez S, Hatle K, Som A, Dienz O, Osborne BA, Martínez-Chantar ML, Rincón M, Anguita J. Regulation of oxidative stress by methylation-controlled J protein controls macrophage responses to inflammatory insults. *J Infect Dis*. 2015 Jan 1;211(1):135-45. PubMed PMID: 25028693; PubMed Central PMCID: PMC4326314.

Petruzzelli M, Schweiger M, Schreiber R, Campos-Olivas R, Tsoli M, Allen J, Swarbrick M, Rose-John S, Rincon M, Robertson G, Zechner R, Wagner EF. A switch from white to brown fat increases energy expenditure in cancer-associated cachexia. *Cell Metab*. 2014 Sep 2;20(3):433-47. PubMed PMID: 25043816.

Szalayova G, James TA, Rincon M. A framework for the role of acute inflammation in tumor progression. *Breast Cancer Res Treat.* 2015 Apr 19;PubMed PMID: 25893593

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 Aug;155(8):3025-35. PubMed PMID: 24708240; PubMed Central PMCID: PMC4097995.

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Wellman TL, Eckenstein M, Wong C, Rincon M, Ashikaga T, Mount SL, Francklyn CS, Lounsbury KM. Threonyl-tRNA synthetase overexpression correlates with angiogenic markers and progression of human ovarian cancer. *BMC Cancer.* 2014 Aug 27;14:620. PubMed PMID: 25163878; PubMed Central PMCID: PMC4155084.

Yang R, Lirussi D, Thornton TM, Jelley-Gibbs DM, Diehl SA, Case LK, Madesh M, Taatjes DJ, Teuscher C, Haynes L, Rincón M. Mitochondrial Ca<sup>2+</sup> and membrane potential, an alternative pathway for Interleukin 6 to regulate CD4 cell effector function. *Elife.* 2015 May 14;4. PubMed PMID: 25974216; PubMed Central PMCID: PMC4447996.

## Division of Infectious Diseases

Christopher Grace, MD, FACP, Director <http://www.uvm.edu/medicine/medicine/infectiousdisease/>



The Infectious Diseases (ID) Unit is a group of nine attending physicians dedicated to the diagnosis, management, prevention and investigation of infectious diseases. An additional clinical faculty member was recruited and will be starting in August 2015 bringing our group total up to ten. This past year we provided over 1,700 new inpatient consultations, the most we have done in 25 years. The outpatient clinics remain vibrant with about 6000 outpatient visits yearly. This effort includes the care of over 480 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 UVM Medical Center 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 14 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 past year our Graduated fellow won award for her poster that was presented at ID week Meeting In Philadelphia in the fall.

Within our unit we have two active research laboratories, which support a number of clinical and basic science research projects including those performed by our two PhD faculty members (Sean Diehl, PhD and Jose Teixeira, PhD), graduate students, laboratory technicians, clinical coordinators and often the 2<sup>nd</sup> year ID Fellow. Investigations currently center on the molecular biology and pathogenesis of *Entamoeba histolytica*, and *Cryptosporidium* pharmaceutical agent development. Continuing clinical research efforts include epidemiologic investigations into *Clostridium difficile* infection and risks, HIV service delivery models and outcomes, HIV-related biomarkers.

The University of Vermont Vaccine Testing Center (VTC) is part of the ID Unit which performs multiple phase I-II outpatient and inpatient vaccine clinical trials to investigate candidate tetravalent dengue vaccines and vaccines to prevent enteric infections. The VTC also performs international field trials to assess vaccine efficacy and expands our understanding of human immunologic responses to infections and vaccines.

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 UVM Medical Center directorships.

### **Faculty**

#### **Christopher Grace, MD FACP**

Professor of Medicine

- Director, Infectious Diseases
- Director at UVMC Part C, HRSA grant for HIV care
- Director at UVMC 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, UVM Medical Center
- Chair Infection Prevention Committee, Rutland Regional Medical Center
- Hospital Epidemiologist and Medical Director of Infection Prevention
- Associate Director, Infectious Disease Unit
- Consultant: Tuberculosis, State of Vermont
- Consultant for FDA, Antimicrobial Drugs Advisory Committee
- Consultant, Infection Prevention, Area hospitals (NMC and CPH)

#### **Christopher D. Huston, MD**

Associate Professor of Medicine with Tenure

- 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

- Interim Associate Dean for Clinical Research
- Director, UVM Vaccine Testing Center
- Research Interests: Vaccine development, Vaccine immunology, enteric infections , Dengue Fever



**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
- Assistant hospital epidemiologist

**Kristen K. Pierce, MD**

Associate Professor of Medicine

- Director, Infectious Disease Fellowship Training Program
- Lead Clinical Investigator, Vaccine Testing Center
- Research Interests: Development of Live Attenuated Dengue Vaccines
- Institutional Review Board

**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 Teixeria, 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 UVM Biosafety Committee
- Interests: Vaccine Development, Dengue Virus, Human immunology and Immune Memory

### **Fellows**

#### **Krystine Spiess, DO**

Infectious Disease 1<sup>st</sup> Year Fellow

- Infectious Disease Fellowship Training Program August 5, 2014 – August 4, 2016

#### **Vinod Mohan, MBBS**

Infectious Disease 2nd Year Fellow

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

### **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

#### **Laura Cato, ARNP**

Nurse Practitioner, Comprehensive Care clinic

- Travel health
- Vermont Refugee Clinic
- General ID

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

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

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

**Md Mahumulul Hasan** – PhD Student (Huston Laboratory)

**Huy Tu** – Graduate Student, Cellular and Molecular Biology Program (Vaccine Testing Center)

**Leadership in Professional Societies:**

Beth Kirkpatrick, MD - American Society of Tropical Medicine and Hygiene

Secretary / Treasurer of America Committee of Clinical Tropical Medicine and Traveler's health

**Editorships and Editorial Boards:**

W. Kemper Alston, MD

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

Beth Kirkpatrick, MD

- Section Editor, American Journal of Tropical Medicine and Hygiene 2014-present
- External Reviewer
  - American Journal Tropical Medicine and Hygiene
  - Clinical Infectious Diseases
  - Journal Infectious Diseases
  - Lancet Infectious Diseases

- PLOS Neglected Tropical Diseases
- Vaccine

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

Beth Kirkpatrick, MD

- Section Editor – American Journal of Tropical Medicine and Hygiene

**Study Sections and Federal Advisory Boards:**

Christopher Huston, MD

- Ad-Hoc Reviewer National Institutes of Allergy and Infectious diseases
  - 2015/05 MID 1 Microbiology and Infectious Diseases Research Committee; K08 grants, NIAID
  - ZRG1DM-M (03) M Vectors and Eukaryotic Pathogens, NIAID

**Major Faculty Awards:**

W. Kemper Alston, MD MPH

Director, Infection Prevention

Partners in Prevention Award 2014 (institutional award to UVM Medical Center)

Awarded by the US Department of Health and Human Services, Society for Healthcare Epidemiology of America and the Association for Professionals in Infection Control and Epidemiology.

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

Sean Diehl, PhD

Immunonutrition in Malnourished infants

NIH, NIAID, Immunology COBRE P20RR021905

\$20,000. 12/1/2013-5/30/2014

Christopher Grace, MD FIDSA  
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 FIDSA  
Ryan White Care Act Part B  
7/1/2014 – 6/30/2015  
\$240,484 Federal

Christopher Grace, MD FIDSA  
TB Control and Surveillance, Public Health Preparedness & Response for Bioterrorism  
Centers for Disease Control and Prevention Investigations and Technical Assistance  
7/1/2014 - 06/30/2015  
\$25,000.00 Federal

Christopher Huston, MD  
NIAID  
R01 AI072021  
Molecular mechanism of *Entamoeba histolytica* phagocytosis  
Total Direct Costs: \$1,000,000 (2009-2014)

Christopher Huston, MD  
NIAID R21 AI101381  
Novel approaches to develop a treatment for cryptosporidiosis  
Total Direct Costs: \$275,000 (2013-2015)

Christopher Huston, MD  
Bill and Melinda Gates Foundation Grand Challenges Explorations  
Bovine model for *Cryptosporidium*  
Total Direct Costs \$100,000

Christopher Huston, MD  
Wellcome Trust  
Better drugs for cryptosporidiosis: hit-to-lead studies for confirmed MMV screening hits  
Total Direct Costs \$101,600

Christopher Huston, MD  
Program for Appropriate Technology in Health (PATH) PDS Drug Solutions  
Establishment of *Cryptosporidium* calf infection model and calf pharmacokinetic study  
Total Direct Costs \$568,349 (2014-2016)

Christopher Huston, MD  
Program for Appropriate Technology in Health (PATH) PDS Drug Solutions

*Cryptosporidium* strain/species comparative studies  
Total Direct Costs \$66,853

Christopher Huston, MD  
Bill and Melinda Gates Foundation  
Structure-guided drug discovery for tuberculosis and malaria *Cryptosporidium* supplement  
Direct Costs \$90,272

Beth D. Kirkpatrick, MD Principal Investigator  
Rotavirus Vaccine Underperformance and Correlates of Protection.  
\$2,200,000 (2015-2018) Bill and Melinda Gates Foundation

Beth D. Kirkpatrick, MD Principal Investigator  
Characterizing the immunoprotective and immunopathogenic responses to dengue viruses using  
the dengue human infection model  
\$2,200,000 (2014-2017)

Beth D. Kirkpatrick, MD Site Principal Investigator  
A phase III randomized, double-blind, placebo-controlled, efficacy trial of a single dose of live  
oral cholera vaccine candidate, PXVX0200 CVD 103-HgR strain, in preventing cholera  
following challenge with *Vibrio cholerae* O1 El Tor Inaba 10 days or 3 months after vaccination.  
\$1,900,000 (2013-2015) PaxVax Inc

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 (2010-2016) Bill and Melinda Gates Foundation

Beth D. Kirkpatrick, MD Site Principal Investigator  
Operation of a facility for the study of infectious agents, vaccines, and antimicrobials in adult  
and pediatric human subjects.  
\$9,000,000 (2009-2019) National Institutes of Health and Johns Hopkins University

Sarah Mooney, MD  
New England AIDS Education Training  
7/1/2014 – 6/30/2015  
\$58,000 Federal sub-award, UMASS

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

Sateriale A, Bessoff K, Sarkar IN, **Huston CD**. Drug repurposing: mining protozoan proteomes for known  
bioactive compounds. *Journal of the American Medical Informatics Association*. 2014. 21:238-44.  
PMID: 23757409.

Bessoff K, Spangenberg T, Foderaro J, Jumani R, Ward GE, **Huston CD**. Identification of *Cryptosporidium parvum* active chemical series by repurposing the open access Malaria Box. *Antimicrobial Agents and Chemotherapy*. 2014. 58:2731-9. PMID: 24566188.

Roncolato EC, Teixeira JE, Barbosa JE, Zambelli Ramalho LN, **Huston CD**. Immunization with the *Entamoeba histolytica* surface proteinase EhMSP-1 protects hamsters from amebic liver abscess. *Infection and Immunity*. 2015. 83:713-20. PMID: 25452550.

**Huston CD**. Leptospirosis. In: Schlossberg D, editor. *Clinical Infectious Disease*. 2<sup>nd</sup> ed. New York, NY: Cambridge University Press. 2014. p. 1072-1074.

**Huston CD**. Intestinal Protozoa. In: Feldman F, Friedman LS, Brandt LJ, editors. *Sleisenger and Fordtran's Gastrointestinal and Liver Disease*. 10<sup>th</sup> ed. Philadelphia, PA: Saunders Company. 2015. p. 1955-1968.

Checkley W, White AC, Jaganath D, Arrowood MJ, Chalmers RM, Chen XM, Fayer R, Griffiths J, Guerrant RL, Hedstrom L, **Huston CD**, Kotloff KL, Kang G, Mead JR, Miller M, Petri W, Priest JW, Roos DS, Striepen B, Thompson RCA, Ward HD, Van Voorhis W, Xiao L, Zhu G, Houpt ER. A Review of the Global Burden, Novel Diagnostics, Therapeutics and Vaccine Targets for Cryptosporidiosis. *Lancet Infectious Diseases*. 2015. 15:85-94. PMID: 25278220.

**Beth Kirkpatrick**, Anna Durbin, **Kristen Pierce**, Marya Carmolli, Sean Diehl, Caroline Lyon et al. Robust and Balanced Immune Responses to All 4 Dengue Virus Serotypes Following Administration of a Single Dose of a Live Attenuated Tetravalent Dengue Vaccine to Healthy, Flavivirus-Naive Adults. March 2015 Journal of Infectious Diseases

**Kirkpatrick BD**, Colgate ER, Mychaleckyj JC, Haque R, Dickson DM, Carmolli MP, Nayak U, Taniuchi M, Naylor C, Qadri F, Ma JZ, Alam M, Walsh MC, Diehl SA, Petri WA Jr. The Performance of Rotavirus and Oral Polio Vaccines in Developing Countries (PROVIDE) study: Description of Methods of an Interventional Study Designed to Explore Complex Biologic Problems. *American Journal Tropical Medicine and Hygiene* 2015; 92 (4): 744-51

Weiskopf D, Angelo MA, Bangs DJ, Sidney J, Paul S, Peters Bjoern Peters, deSilva AD, Lindow JC, Whitehead SS, Durbin A, **Kirkpatrick BD**, Sette A. The human CD8+ T cell responses induced by a live attenuated tetravalent dengue vaccine are directed against highly conserved epitopes and are similar in magnitude and breadth to those following natural infection. *Journal of Virology* 2015; 89 (10): 120-128.

Taniuchi M, Begum S, Uddin MJ, Platts-Mills JA, Liu J, **Kirkpatrick BD**, Chowdhury AH, Jamil KM, Haque R, Petri WA, Houpt E. Kinetics of polio shedding following oral vaccination as measured by qRT-PCR versus culture. *Journal of Clinical Microbiology* 2015; 53 (1): 206-2011

Fimlaid KA, Lindow JC, Tribble DR, Bunn JY, Maue AC, **Kirkpatrick BD**. Peripheral CD4+ T Cell Cytokine Responses Following Human Challenge and Re-challenge with *Campylobacter jejuni*. *PLOS ONE* 2014; 9 (11) e112513: 1-8

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**, Haque R, Colgate ER, Carmolli MP, Qadri F, Dickson DM, Mychaleckyj JC, Nayak U, Taniuchi M, Zaman K, Alam K, Diehl SA, PROVIDE study teams, Petri WA Jr. The Impact of Rotavirus Vaccination and Serum Zinc on the Burden of Rotavirus Diarrhea in Bangladesh: A Randomized Controlled Trial. *Submitted (PLOS Medicine)*.

Mychaleckyj JC Haque R, Colgate ER, Oberste S, Weldon W, Carmolli MP, Qadri F, Dickson DM, Nayak U, Taniuchi M, Zaman K, Alam K, Diehl SA, PROVIDE study teams, **Kirkpatrick BD**, Petri WA Jr. Effect of Substituting an inactivated polio vaccine dose for the fourth trivalent oral vaccination on intestinal and systemic immunity in Bangladeshi infants: an open-labelled randomized controlled trial with active controls. *Submitted (Lancet)*.



## Division of Nephrology



### A. Executive Summary:

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.

Service: The multidisciplinary clinics established last year with Transplant Surgery and Urology respectively have continued to flourish and grow. Both have created databases from which quality improvement projects have been initiated. This step enables larger clinical research projects to develop.

Education: Residents in Medicine rotate for 2 weeks on the Nephrology Service. This previously was an inpatient rotation. Starting 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. Dr Agrawal has solicited feedback from last years graduating residents. This clinic rotation received some of the highest favorable responses. The clinic continues and has been very well received by the medical residents. A survey of this years graduating residents is currently underway. We have opened the outpatient clinic experience to medical students taking an elective rotation on the Nephrology Service. We have not yet received feedback from this group.

Research: Investigator initiated research includes a study of urine electrolytes in patients admitted to the hospital with acute decompensated heart failure (R. Solomon, PI). This study has enrolled ~20 patients to date. A study of urine pO<sub>2</sub> measurements in patients undergoing cardiopulmonary bypass was to start last year but didn't get off the ground because of a licensing issue. That has been resolved and we expect our first patients to be enrolled this coming summer. 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. Zubin Agarwal, a graduating 3<sup>rd</sup> year resident reviewed our incidence of AKI in the last 500 CABG patients at this institute. The rate was 29% (using KIDIGO criteria). Preoperative hemoglobin, nadir hemoglobin during cardiopulmonary bypass, and the use of interoperative transfusion were all associated with post bypass AKI. The Division is currently enrolling in 5 trials involving diabetic nephropathy (Solomon, PI), one trial involving autosomal dominant polycystic kidney disease (Segal, PI), and a number of trials involving patients on hemodialysis (Rimmer, PI). 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 was presented to an ACO leadership last Fall. 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.

**B. Faculty:**

Varun Agrawal, MD  
Assistant Professor  
Medical Director of Barre Dialysis Unit  
Resident education

Shirley Chang, MD (leaving)  
Assistant Professor  
Transplant Nephrology

F. John Gennari, MD  
Emeritus Professor  
Electrolyte disorders

Virginia Hood, MD  
Professor of Medicine  
Acid-base physiology

Osun Kwon, MD (leaving)  
Associate Professor  
Transplant Nephrology

Dana Negoï, MD  
Associate Professor  
Medical Director, St. Albans Dialysis Unit and Home Dialysis Program  
Home based dialysis therapies

Chris Rich, MD (leaving)  
Assistant Professor  
Medical Director, Newport Dialysis Unit  
Immunosuppressive therapy for primary renal diseases

Jeff Rimmer, MD  
Professor of Medicine  
Medical Director Chittenden Dialysis Unit  
Hemodialysis

Alan Segal, MD  
Associate Professor

Program Director, Renal Fellowship  
Sodium and potassium transport within the renal tubule  
Hyponatremia/hypotonicity disorders  
dominant polycystic kidney disease

Richard Solomon, MD  
Professor of Medicine  
Director, Division of Nephrology  
Acute kidney injury – contrast induced nephropathy  
Diabetic kidney disease

Wolfgang Weise, MD  
Associate Professor of Medicine  
Medical Director, Rutland Dialysis Unit  
Primary kidney disease

**C. Fellows:**

Ziad Arabi  
Adam Horeish  
Sree Susarla  
Sadik Sharef

**D. PA/NP:**

Margaret Butler, APRN

**E. Post doctoral Fellows (Ph.D)**

Katherine Cheung, MD

**F. Endowed Professorship**

Patrick Professorship (Dr. Solomon)

**G. Leadership in Professional Societies**

2014- 2015 Councilor for Women in Nephrology (WIN) (D. Negoj)

Kidney Disease Outcome Quality Initiative Education committee, National Kidney Foundation (V. Agrawal)

Lecturer: Acid-base and electrolyte disorders course, American Society of Nephrology national meeting, 2015. (J. Gennari)

Member, ACP Patient Partnership in Health Care Advisory Board (V. Hood)

Member, Sydney University Graduate Union North America Board of Trustees (V. Hood)

President Emerita, American College of Physicians (V. Hood)

#### H. Editorships and Editorial Boards

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

Associate Editor, Journal of Medical Case Reports. Nov 2014 to present (V. Agrawal)

#### I. Study Section and Federal Advisory Boards

Biomarker Consortium member for fNIH (Dr. Solomon)

#### J. Major Faculty Awards

#### K. Grants (all grant accounts show a positive balance)

Studies in patients with end stage kidney disease.

The use of Vascugel® for injury to hemodialysis access and during creation of hemodialysis access [Jeff Rimmer, PI].

Amgen: use of cinacalcet for secondary hyperparathyroidism [J. Rimmer, PI]

Fermagate and sevelamer in hemodialysis patient with hyperphosphatemia [W. Weise, PI]

Ferric citrate for patients with ESRD and hyperphosphatemia [D. Negoj, PI]

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

Bayer: Use of fineronone for prevention of cardiovascular complications of diabetes in patients with chronic kidney disease (R. Solomon, PI)

AbbVie: SONAR: study of diabetic nephropathy with Atrasentan [R. Solomon, PI]

Nephrogenix: Pyridorin for prevention of progression of diabetic nephropathy

Gilead: an AKT agonists for prevention of diabetic nephropathy

Janssen: SGLT2 inhibition in diabetic nephropathy

Studies in patients with autosomal dominant polycystic kidney disease

Use of MRI for following cyst volumes [W. Weise, PI]

Tolvaptan for slowing progression of autosomal dominant polycystic kidney disease (Segal, PI)

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

#### L. Publications

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

Agrawal V, Gibson PC, Sahota A, Nasr SH. Crystalline nephropathy in an identical twin. *Am J Kidney Dis*. 2015 May;65(5):A17-9.

Agrawal V, Giri C, Solomon RJ. The effects of glucose-lowering therapies on diabetic kidney disease. *Current Diabetes Reviews* 2015;11(3):191-200.

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.

Solomon, R, Gordon P, Manoukian SV, Abbott, JD, Kereiakes DJ, Jeremias A, Kim M, Dauerman HL. Bicarbonate for the prevention of renal outcomes and mortality in patients undergoing angiography: the BOSS trial. 2015 *CJASN* (accepted).

Sadat, U, and Solomon, R. Contrast induced-acute kidney injury – risk factors and risk assessment models critically reviewed. *CardioRenal Med* 2015.

Li, LP, Lu J, Franklin T, Zhou Y, Solomon R, Prasad P. Effect of iodinated contrast medium in diabetic rat kidneys as evaluated by blood-oxygenation-level-dependent magnetic resonance imaging and urinary neutrophil gelatinase-associated lipocalin. *Investigative Radiology* 2015.

Jeremiah R. Brown, Richard J. Solomon, Meg E. Plomondon, Thomas M. Maddox, Michael E. Matheny, Thomas T. Tsai, John Rumsfeld, MD, Richard Lee, R. Brooks Robey, Mark J. Sarnak. Progression of Chronic Kidney Disease After Angioplasty and Population Controls in the United States. (submitted)

Jeremiah R. Brown, Daniel M. Pearlman, Todd A. MacKenzie, Alejandro Recio-Mayoral MD, Vitor O. Gomes, Bokyoung Kim MS, Lisette O. Jensen, Christian Mueller, Mauro Maioli,

Richard J. Solomon. Individual patient data meta-analysis of sodium bicarbonate vs normal saline for all-cause mortality hazard after coronary angiography or intervention. (submitted)

Fernandez L, Koliba, C, Zia A, Cheung, K, Solomon, R, Jones, C. Systemic dynamics modeling can be leveraged to predict critical care pathways and costs for end stage renal disease (ESRD): US population to 2020. J Health Economics and Outcome Research 2015 (accepted).

Yagil Y, Fadem SZ, Kant KS, Bhatt U, Sika M, Lewis J, Dana Negoj for the Collaborative Study Group. Managing hyperphosphatemia in patients with chronic kidney disease on dialysis with ferric citrate: latest evidence and clinical usefulness. Therapeutic Advances in Chronic Disease 2040622315589934, first published on line before print on June 14, 2015

Umanath K, Jalal D, Greco B, Umeukeje E, Reisin E, Manley J, Negoj D, Hiremath A, Blumenthal S, Sika M, Niecestro R, Koury M, Ma K, Greene T, Lewis J, Dwyer JP for the Collaborative Study group. Ferric Citrate Reduces Intravenous Iron and Erythropoiesis – Stimulating Agent Use in ESRD. Journal of American Society of Nephrology . Published online before print on March 3, 2015

## 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, hospital 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 and physician assistants. 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 exceptional new faculty members and providers – Drs. Jason Bartsch and Michael Latreille (Internal Medicine Hospitalist Service); Dr. E. Rosy Hill (Geriatric Medicine); Dr. Zail Berry (Geriatrics and Palliative Care); Dr. Diane Hakey, Dr. Susan Weinstein, Dr. Andrea Fossati (*per diem*) and Ruth Polishuk, APRN (Adult Primary Care South Burlington); and Dr. Jessica Lunardini (Adult Primary Care Essex).

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 3 Patient Centered Medical Homes. Our physicians care for many geriatric patients in Chittenden County, attending to elderly patients living independently, in assisted living, in local nursing homes, and at hospice.

In the inpatient setting, our hospitalist service provides 24x7 attending and consultative care at UVM Medical Center. 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.

We have introduced a number of new clinical services and partnerships over the past year. Dr. Zail Berry and Dr. Jaina Clough have been instrumental in starting our Partners in Acute and Transitional Care at Home (PATCH) Program. This program offers care at home to patients who have difficulty accessing our primary care clinics. We collaborated with Rosemary Dale, ANP, PhD in the UVM College of Nursing to help establish an innovative nurse practitioner based primary care practice. Dr. Fossati started to offer Integrative Medicine consults at our South Burlington site. In our efforts to provide comprehensive care to our patients, Dr. Berry assumed the role of medical director at Birchwood Terrace Transitional Care and Rehab and Dr. Hill took over the medical directorship at Green Mountain Nursing and Rehabilitation, while Dr. Isaura Menzies remains the medical director at Starr Farm Nursing 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:

American College of Physicians (ACP) Board of Regents member, Executive Council for the ACP Board of Governors member, Chair of the ACP Chapter Subcommittee, Chair of the Vermont Board of Medical Practice, member of the Board of Directors of the Federation of State Medical Boards, member of the State Board Advisory Committee to the USMLE, member of the Vermont Commissioner of Health's Task Force on Opioid Prescribing, USMLE Composite Committee member, Vermont Medicaid Drug Utilization Board members, Green Mountain Care Board Technical Advisory Group member, OneCare Vermont Accountable Care Organization Clinical Advisory Board members and OneCare Vermont Regional Clinician Representative.

Faculty participation in committees and task forces at the College of Medicine and UVM Medical Center 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), and Bridge (Dr. Beatty). Administrative leadership positions at the College of Medicine include Associate Dean for Clinical Education (Dr. Bertsch), Associate Dean for Primary Care (Dr. Maclean), Vice 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 Adult Primary Care 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. Drs. Pinckney and Sobel lead the curricular coordination for the Resident Clinic. In the inpatient setting, hospitalists serve as teaching attendings 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.

Dr. Pasanen and Dr. Eldakar-Hein serve as the Director and Associate Director for the Internal Medicine Residency Program, respectively. Dr. Levine enters his 2<sup>nd</sup> year as Designated Institution Official at UVM Medical Center and Associate Dean for Graduate Medical Education at the College of Medicine. Our faculty members have been recognized numerous times by the resident physicians for teaching excellence. Dr. Foerg received the William Osler, M.D. Award for Outstanding Teacher of the Year in General Internal Medicine in 2015.

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 a national audience and 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, high value laboratory ordering practices, narcotic prescribing practices in the outpatient setting, inter-hospital transfer practices and mortality, and VTE prevention in acute medically ill patients.

## **Faculty**

### Adult Primary Care - Burlington

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

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

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  
Associate Professor of Medicine  
Co-Director, Internal Medicine Resident Clinic

### Adult Primary Care - Essex

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 UVM Medical Center and Associate Dean for Graduate  
Medical Education at the UVM College of Medicine

Jessica Lunardini, MD  
Assistant Professor 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

Adult Primary Care – South Burlington

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

Diane Hakey, 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

Susan Weinstein, DO  
Assistant Professor of Medicine

David Ziegelman, MD  
Assistant Professor of Medicine

Adult Primary Care - Williston

Zail Berry, MD  
Associate Professor of Medicine  
Medical Director, Birchwood Terrace

Anne Breña, MD  
Assistant Professor of Medicine

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

Elizabeth Rosy Hill, MD  
Assistant Professor of Medicine  
Geriatric Medicine

Marvin Klikunas, MD  
Associate Professor of Medicine (Emeritus)  
Medical Director, The Arbors  
Geriatric Medicine

Isaura Menzies, MD  
Assistant Professor of Medicine  
Medical Director of Starr Farm Skilled Nursing Facility  
Geriatric Medicine

Lucy Miller, MD  
Assistant Professor of Medicine

Dennis Plante, MD (Site Clinical Leader)  
Associate Professor of Medicine

Internal Medicine Hospitalist Service

Mireille Anawati, MD  
Assistant Professor of Medicine

Jason Bartsch, 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

Michael Latreille, MD  
Assistant Professor of Medicine

Carrie Lyon, MD, MPH  
Associate 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:

Adult Primary Care - Burlington

Candis Cousins, PA  
Gabrielle Mikula, NP  
Tracey Niquette, NP

Adult Primary Care - Essex

Sarah Bushweller, PA  
Alison Hall, PA

Adult Primary Care - South Burlington

Tristin Adie, NP  
Diane Bell, NP  
Rachel Brodie, PA  
Ruth Polishuk, NP

Adult Primary Care - Williston

Kirsten Berggren, NP

Starr Farm (Skilled Nursing Facility)  
Katharine Murphy PhD, MS, APRN

**Leadership in Professional Societies:**

Mark Levine, MD

- American College of Physicians (ACP) Board of Regents member

Mark Pasanen, M.D.

- Immediate Past Governor, Vermont Chapter of the American College of Physicians (ACP)
- Executive Council for the ACP Board of Governors member
- Chair of the ACP Chapter Subcommittee

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, Journal for Healthcare Quality
- 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:**

- Dr. Mark Levine was elected a member of the American College of Physicians (ACP) Board of Regents
- Dr. Florian Foerg received the 2015 Osler Award from the IM residents for the general medicine attending who demonstrates excellence in teaching and patient care
- Teaching Academy Inductees in March 2015:
  - Jason Bartsch & Shaden Eldakar-Hein - Members
  - Dennis Beatty & Pat King – Master Teachers
  - Mark Levine – Distinguished Educator
- Drs. Carrie Lyon and Halle Sobel were promoted to Associate Professor

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

1. Repp AB. The exponential times. *Hospital Medicine Clinics*. April 2015; 4(2): A9-A10.
2. Farkas JD and Anawati MK. Bedside ultrasonography evaluation of shock. *Hospital Medicine Clinics*. April 2015; 4(2): 135-149.
3. Pasanen ME. Guillain-Barre syndrome. *Hospital Medicine Clinics*. April 2015; 4(2):177-190.
4. Foerg F and Gardner Z. Pericarditis. *Hospital Medicine Clinics*. April 2015; 4(2):205-215
5. McVeigh U and Eldakar-Hein S. Terminal extubation. *Hospital Medicine Clinics*. April 2015; 4(2): 272-281.



6. Borofsky JS, Bartsch JC, Howard AB, Repp AB. Quality of interhospital transfer communication practices and association with adverse events on an internal medicine hospitalist service. *J Healthc Qual.* 2015 Mar 25. [Epub ahead of print]
7. Kirkpatrick BD, Durbin AP, Pierce KK, Carmolli MP, Tibery CM, Grier PL, Hynes N, Diehl SA, Elwood D, Jarvis AP, Sabundayo BP, Lyon CE, Larsson CJ, Jo M, Lovchik JM, Luke CJ, Walsh MC, Fraser EA, Subbarao K, Whitehead SS. Robust and Balanced Immune Responses to All 4 Dengue Virus Serotypes Following Administration of a Single Dose of a Live Attenuated Tetravalent Dengue Vaccine to Healthy, Flavivirus-Naive Adults. *J Infect Dis.* 2015 Mar 22. pii: jiv082. [Epub ahead of print]



## Division of Pulmonary and Critical Care Medicine

Anne Dixon MD, Director

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



The Pulmonary Critical Care Division has had a very successful year in terms of our clinical programs, and our teaching and research efforts.

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. A major new initiative within the last 12 months is the institution of a lung cancer screening program. Lung Cancer is the number one cause of cancer death in men and women in the United States, and only during the last year have screening programs been approved and recommended by national societies. This effort has been led by Dr. Garth Garrison, and is a major new program for patients 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. Dr. Jan Carney leads the Certificate in Public Health and Master's of Public Health Program. Drs. Laurie Leclair and Garth Garrison took over leadership of the Cardiovascular Respiratory and Renal Foundations Course, and received the award for the top Foundations course this year. 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**

Assistant Professor of Medicine

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

Associate Dean for Public Health

Professor of Medicine

### **Ryan Clouser, DO**

Assistant Professor of Medicine

MICU Director

- Critical Care Medicine and Pulmonary Disease

### **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

**Prema Menon, MD**

Assistant Professor of Medicine

**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 Professor of Medicine  
Chair, Department of Medicine

**Matthew Poynter, PhD**

Associate Professor of Medicine  
Associate Director, Vermont Lung Center

**Renee Stapleton, MD, PhD**

Associate 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  
Benjamin Keveson, MD  
Timothy Leclair, MD  
Lucas Mikulic, MD

**Nurse Practitioners and Physician Assistants:**

Lily Sender, PA

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

Jason H. T. Bates, PhD, DSc  
    Joshua J. Pothan: MD PhD student doing his PhD in Bioengineering  
    Bradford J. Smith, PhD: post-doc  
    Catharine L. Hamlington, PhD: post-doc

Jan Carney, MD MPH

    Master of Public Health (MPH) Students enrolled: 2015 (11 as of April 30); 2014 (N=21);  
    Certificate of Graduate Study in Public Health students enrolled: 2015 (8 as of April 30);  
    2014 (N=27)

Lennart Lundblad, PhD

PhD student: Christa Frodella, MS

Matthew Poynter, PhD

Ed Burgess, CMB PhD student

Renee Stapleton, MD PhD

Prema Menon, MD, Assistant Professor (research mentor)

Timothy Leclair, MD, Senior Fellow (research mentor)

Marc Champaloux, MD, Senior Resident (research mentor)

Benjamin Suratt, MD

Niki Ubags, graduate student, Maastricht University, The Netherlands.

MaryEllen Antkowiak, Fellow, PCCM.

Daniel Weiss, MD PhD

Post-Docs in lab: Mariana Antunes, Juan Jose Diaz, Franciska Uhl

Thesis Committees: Patrick Charron (Masters), Spencer Fenn (graduate), Joshua Pothen (MD PhD)

**Leadership in Professional Societies:**

Gilman Allen, MD

Program Planning Committee, Critical Care Assembly, American Thoracic Society

Jason H. T. Bates, PhD, DSc

Chair, Green Mountain Section of the Institute of Electrical and Electronic Engineers (IEEE)

Co-Chair, Northern New England Chapter of the IEEE Engineering in Medicine and Biology Society

Jan Carney, MD MPH

Governor, Vermont Chapter American College of Physicians (began April 2015 for 4-year term)

Anne Dixon, MD

Member: American Thoracic Society Finance Committee

Member: American Thoracic Society Planning and Evaluation Committee

C. Matthew Kinsey, MD, MPH

Member, Drug, Device, Discovery, and Development Committee; American Thoracic Society

Lennart Lundblad, PhD  
Director: The Pulmonary Research Group

Yolanda Mageto, MD MPH  
Chair Membership Committee ATS

Polly E. Parsons, MD  
American Thoracic Society:  
Nominating Committee: member 2013-2014  
Board of Directors: 2015-present  
Secretary-Treasurer (elected) 2015-present

Association of Professors of Medicine:  
APM Council member: 2014-present  
Robert H. Williams, MD, Distinguished Chair of Medicine Award selection committee  
2015

Alliance for Academic Internal Medicine:  
ACGME Milestones project: 2013-2014  
Governance Committee member: 2014-present  
Education Committee member: 2014-present

Renee Stapleton, MD PhD

- American Thoracic Society
  - a. Critical Care Assembly Program Committee
    - Member, 2009-2012
    - Chair-Elect, 2015-2016
    - Chair, 2016-2017
  - b. Behavioral Sciences and Health Services Assembly Program Committee, 2012-2015
  - c. Scientific Advisory Committee (reviews all ATS grants), 2013-present
  - d. Education Committee, 2013-present
  - e. Clinical Year in Review Committee
    - Member, 2012-2014
    - Chair, 2014-2015
- 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, 2009-2014.



- Steering Committee, “A Randomized double-Blind Placebo-Controlled Trial of Ganciclovir/Valganciclovir for Prevention of Cytomegalovirus Reactivation in Acute Lung Injury,” PI M Boeckh, University of Washington, 2010-present.

Benjamin Suratt, MD

Member, Planning Committee, Allergy, Inflammation & Immunology Section, ATS.

Daniel Weiss, MD PhD

ATS: Chair: RCMB Stem Cell Working Group Chair

ATS: Research Advisory Committee

ALA: Research and Scientific Advisory Committee

International Society for Cellular Therapies (ISCT): Executive Committee

ISCT: Scientific Chair

ISCT: Planning Committee

UVM/FAHC Activities

Faculty Senate

Resident Research Committee

Pulm/CC Fellowship Selection Committee

**Editorships and Editorial Boards:**

Jason Bates, PhD, DSc

Deputy Editor, Journal of Applied Physiology

Editorial Board Member of the Journal of Clinical Monitoring and Computing

Editorial Board Member of CRC Critical Reviews in Biomedical Engineering

Lennart Lundblad, PhD

Proceedings Editor for the Pulmonary Research Group

Matthew Poynter, PhD

Editorial Board, American Journal of Respiratory Cell and Molecular Biology

Member, NIH Lung Cellular, Molecular and Immunology Study Section

Polly E. Parsons, MD

Up-to-Date:

Editor-in-Chief, Pulmonary, Critical Care and Sleep 2004-present

Section Editor, Critical Care Section 2004-present

American Journal of Respiratory and Critical Care Medicine Editorial Board 2005-present  
CHEST Editorial Board 2005-present

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

Editorial Boards: Red Journal, Molecular Therapy

**Study Sections and Federal Advisory Boards:**

**Jason Bates, PhD, DSc**

Standing member of the RIBT Study Section for the NIH

**Anne Dixon, MD**

Ad-Hoc Member, VA Merit Review Panel for Pulmonary, June 2015  
Member, NHLBI Lung Tissue Research Consortium Review Panel June 2015  
Roche-Genentech Studies GB28688/GB28689/WB28183/WA29249/WB28182  
Member 2013 – present (Chair: Michael Matthay, UCSF)

**Polly E. Parsons, MD**

NHLBI Scientific Advisory Council: member 2011-2015  
NHLBI Cell Therapy Think Tank 2014  
NHLBAC Asthma Expert Panel Working Group 2014-2015  
NHLBI Think Tank on Sickle Cell Disease 2014  
NHLBI PETAL network: DSMB Chair 2015-present

**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.

Member of NIH SBIR Review Panel [2015/01 ZRG1 CVRS-M (11) B Small Business: Respiratory Sciences], November 2014.

American Thoracic Scientific Advisory Committee (responsible for reviewing all ATS grants), 2013-present

**Daniel Weiss, MD PhD**

Study Sections/Grant Reviewer: Canadian Cystic Fibrosis Foundation, Flight Attendants Medical Research Institute

**Major Faculty Awards:**

Jan Carney, MD MPH

Distinguished Educator in the Teaching Academy at the UVM College of Medicine, 2015

Ryan Clouser, DO

AOA inductee 2015 (class of 2015)

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.

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

Gilman Allen, MD

R01 Lung Injury Grant (Bates PI), 10% effort

Jason H. T. Bates, PhD, DSc

R01 HL124052 PI: Bates 08/01/2014 – 03/31/2018

NIH/NHLBI Role: PI 3 calendar months support

Personalized mechanical ventilation for the injured lung.

\$461,523 per year direct funds.

COBRE Pilot Project Grant PI: Bates 02/01/2014 – 01/31/2015

NIH/NIGMS Role: PI no salary support

\$49,933

SPARK Grant PI: Bates 07/01/2015 – 06/30/2015

UVM Dept. Medicine Role: PI no salary support

Disposable impedance adaptor.

\$46,950

Jan Carney, MD MPH

2014 - 2018 New England Public Health Training Center (NEPHTC) Grant. Health Resources and Services Administration (HRSA) (4-year grant \$850,000 per year); Carney JK, Principal Investigator, University of Vermont Subcontract, \$20,000

Anne Dixon, MD

Pfizer (Dixon)

5/1/14 – 4/30/16 1.2 calendar

Biomarkers in Asthma

\$140,000

Role: PI

This is an investigator initiated grant to identify biomarkers associated with asthma control

UVMMG Grant (Dixon)

1/1/15 12/31/16 0.6 Calendar

Role: PI

Airway Compliance in the Asthma of Obesity

This is a pilot project to determine if the airways of obese late-onset asthmatics are more compliant than obese controls and lean asthmatics.

C. Matthew Kinsey, MD MPH

VCC Translational Research Award

Lennart Lundblad, PhD

1R21AI112804-01 (Lundblad)

07/01/2014 – 06/30/2016

NIH/NIAID

Role: PI

iNKT cells regulating mast cells: New treatment opportunity for asthma

The aim of this project is to investigate if iNKT cells are involved in the recruitment and maturation of mast cells in allergic lung disease. We will also elucidate the role of IL-33 signaling from iNKT cells. Specific Aim 1: To determine if elimination of iNKT cells with iNKT Ab reduces airways hyperresponsiveness and allergen-induced acute bronchoconstriction. Specific Aim 2: To determine if IL-33 signaling is sufficient and necessary for the inflammatory and physiological phenotype.

Internal Grant Program (Lundblad)

03/04/2014 – 03/03/2016

University of Vermont College of Medicine

Role: PI

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. Specific Aim 1: To determine if elimination of IL-33 reduces the development of allergic AHR and allergen induced

bronchoconstriction. Specific Aim 2: To determine if IL-33 and innate lymphoid cells (ILC) are necessary for the inflammatory lung phenotype.

NKT Therapeutics Inc. (Lundblad)

07/01/2013 – (no cost ext.)

NKT Therapeutics Inc.

Role: PI

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

Role: PI

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.

Role: PI

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.

Yolanda Mageto, MD MPH

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 (Bristol Myers Squibb)

2013-present 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 (Fibrogen)

2014-Present PI

A phase II, Randomized, Double-Blind Placebo-Controlled study to assess the efficacy and safety of Lebirkizumab in Patients with Idiopathic Pulmonary Fibrosis (Genentech)

2014-Present PI

A Treatment Protocol to Allow Patients in the U.S. with Idiopathic Pulmonary Fibrosis Access to Pirfenidone (Intermune)

Prema Menon, MD

PI Telemedicine as a Tool for Early Family Conferences in the Critically Ill Patient

National Palliative Care Research Center

Career Development

Currently in no-cost extension

2- year grant (ends June 30 2016)

Matthew Poynter, PhD.

NIH 1R01HL107291 (Poynter) 04/01/2012 – 03/31/2016 3.00 calendar  
NIH/NHLBI ADC: \$250,000

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) 07/01/2012 – 06/30/2015 2.9 calendar  
FAMRI ADC: \$100,000

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)      10/01/2013 – 09/31/2014      0.00 calendar  
NIH      \$26,103

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)      03/01/2014 – 12/30/2014      0.00 calendar  
Vermont Lung Center CoBRE      \$50,000

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)      10/01/2013 – 06/30/2014      0.00 calendar  
NIH      \$20,000

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

Phase I Study of Zinc in Severe Sepsis

UVM College of Medicine Bridge Award, 7/1/15-6/30/17

Direct: \$50,000 over 2 years for research, 0.2 FTE salary for each of 2 years

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 - 6/30/2015 (no-cost extension through 6/30/16)  
 \$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

Charlotte Teneback, MD

Cystic Fibrosis Therapeutic Development Center Award, January 2015-December 2016.  
 \$142,500.

ARC research coordinator support award from the Cystic Fibrosis Foundation. January 2015-December 2016. \$142,792.

Improving Quality in CF clinic research – the eQUIP CR program. October 2014-May 2015.  
 \$4,350.

Daniel Weiss, MD PhD

1)	R01 HL127144-01 ( <b>Weiss, PI</b> )	4/30/15-3/31/20	1.8 calendar
	NIH/NHLBI	\$1,000,000 total direct	

Optimizing Functional Recellularization of Acellular Human Lung Scaffolds

The goal of the current proposal is to provide a detailed assessment of effects and utility of the alginate coatings on lung mechanics and on re-cellularization of the de-cellularized human lung pieces. Importantly, the proposal furthers the collaboration of a bioengineer, Dr. Oldinski and a lung biologist, Dr. Weiss, two leading investigators that have pioneered this approach. The proposal was submitted in response to PA-12-284, Exploratory/Developmental Bioengineering Research Grants.

2)	R13 HL097533 ( <b>Weiss, PI</b> )	7/1/2015-6/30/2016	0.2 calendar
	NIH/NHLBI	\$30,000 total direct	

Stem Cells, Cell Therapies, and Bioengineering in Lung Biology and Lung Diseases 1.0 score

3)	United Therapeutics Inc. ( <b>Weiss, PI</b> )	9/1/13-8/31/15	0.6 calendar
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Research Project \$167,833 direct  
Decellularization and recellularization of pig lungs as xenogeneic scaffolds  
 The goals of this project are to develop techniques and comprehensively assess decellularization and recellularization of pig lungs with a variety of human lung cells.

4) Athersys Inc. (**Weiss, PI**) 5/1/14-4/30/15 no salary support  
Unrestricted research grant \$65,000 direct

5) UVM College of Medicine (**Weiss, PI**) 9/1/13-8/30/15 2.4 calendar  
\$40,000 direct

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

6) UVM Department of Medicine seed (**Weiss PI**) 9/1/14-7/14/16 no salary support  
\$10,000 direct

Development of a novel alginate pleural sealant  
 The goal of this project is to further develop an alginate-based pleural sealant patch

7) UVM Department of Medicine/SPARK (**Weiss PI, Oldinski Co-I**) 7/15/15-7/14/16 no salary support  
\$50,000 direct

Development of a novel alginate pleural sealant  
 The goal of this project is to further develop an alginate-based pleural sealant patch

8) DoD Medical Discovery Award (**Weiss PI, Oldinski Co-I**) 3/1/2015-9/30/2016 1.2 calendar  
 Dept. of Defense \$292,360 direct

Development of a novel alginate-based liquid pleural sealant  
 The goal of this project is to further develop an alginate-based pleural sealant patch

9) Vermont Cancer Center Pilot Award (**Weiss, PI, James and Clark, Co-Is**)  
6/15/15-6/14/16 no salary support  
\$50,000 direct

Development of novel 3D bioprinted scaffolds for reconstructive use in breast cancer patients  
 The goal of this project is to perform initial materials studies for use in 3D bioprinting of customized breast implants for mastectomy patients

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## Division of Rheumatology

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<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 contiguous communities, teach UVM Medical Center resident physicians and UVM College of Medicine medical students, and perform both bench and clinical research. Our faculty consists of nine physicians, all of whom are board certified in Rheumatology, and a Physician's Assistant. The combined Rheumatology staff and the Osteoporosis Center, a part of our Unit, welcomed an average of more than 1200 patients monthly, generating an average of 1800 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 outpatient satellite clinics at Central Vermont Medical Center and Copley Hospital. We cover inpatient consults at the University of Vermont Medical Center on a 24-7 basis.

We have an accredited Rheumatology Fellowship Program, and accept one new Fellow annually in a competitive match. The Internal Medicine Residency program incorporated an outpatient Rheumatology Rotation into the schedule of each Resident; they are able to work with each of the faculty so they can experience a variety of practice styles. Several medical students have also done elective one month rotations in our outpatient clinic. Annually, we participate in the Vermont Integrated Curriculum Connections Course for 2<sup>nd</sup> year medical students, teaching them about Rheumatology and Metabolic Bone Disease and also how to perform a Musculoskeletal Physical Examination.

Our faculty are engaged in clinical research including the use of IL-17 inhibition on psoriatic arthritis, 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. Our faculty are actively engaged in QI projects including pneumococcal vaccination in patients on biological drugs, incorporation of the Rapid 3 tool (measuring pain and function) into clinic, and participation in the "Treat To Target" TRACTION project, a multi-center national trial with the goal of better patient outcomes and alignment with RA treatment guidelines. We also collaborate with the division of Immunobiology on effect of IL-6 inhibition on cellular function, and assessment of T cell homeostatic proliferation in patients with RA and SLE.

## **Faculty**

### **Bonita Libman, MD**

Professor of Medicine

Division Chief, Rheumatology and Clinical Immunology

Program Director, Rheumatology Fellowship Training Program.

- Connective Tissue Disorders
- Systemic Lupus
- Rheumatoid Arthritis
- Psoriatic Arthritis

Dr. Libman 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 Research Preceptorship Award in 2014, and two \$500 Rheumatology Research Foundation Medical Student Clinical Preceptorships in 2015. Dr. Libman is a member of the American College of Physicians MKSAP 17 Rheumatology Committee, the American College of Rheumatology Student and Resident Outreach Subcommittee, and the UVM Graduate Medical Education Committee. She also chairs the UVM Medical Center Medical Records Committee.

### **Edward Leib, MD**

Professor Emeritus of Medicine

Director, The Osteoporosis Center, UVM Medical Center

- Osteoporosis and Metabolic Bone Diseases

Dr. Leib, an emeritus professor, specializes in the study and care of individuals with osteoporosis and other metabolic bone diseases. He 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, the World Congress of Osteoporosis and the International Society of Clinical Densitometry and publications on the same topic have appeared in *Bone*, *Calcified Tissue International* and *Journal of Clinical Densitometry*. He mentored Murtaza Bharmal, recipient of a \$4000 Medical Student Research Preceptorship from the Rheumatology Research Foundation and in addition is presently mentoring research projects for a 4<sup>th</sup> year medical student and a rheumatology fellow. 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

Director, Immunobiology

- 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. This research is now exploring T cell homeostatic proliferation in patients with rheumatoid arthritis and systemic lupus erythematosus. Another 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 U-19 Special Emphasis review committee, and ad hoc reviewer for NIH NIAID U-19 grant reviews on Human Immunology. He is also a member of the Association of American Physicians.

Active Grants:

NIH/NIAMS

NIH/NCRR

NIH/NIAID

VCC/LCCRO

Lupus Research Institute

### **Chi Chi Lau, MD**

Associate Professor of Medicine

- Systemic Lupus
- Inflammatory arthritis
- Connective tissue disorders

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 a well-received lecture on Gout to UVM Medical Center Medicine Grand Rounds in September 2014. Dr. Lau was a member of the Rheumatology Division Chief Search Committee.

Dr. Lau incorporated the Rapid 3, a pain and function measurement tool useful for QI and clinical studies, into the rheumatology clinic. She is working with the Opiate Pain Committee to have the Rapid 3 incorporated into PRISM. Dr. Lau is also involved in the TRACTION project, a multi-center trial developed by Dr. Daniel Solomon and others at Brigham and Women's Hospital that will facilitate adoption and adherence of "Treat To Target" principles for RA treatment with goal of better patient outcomes and alignment with RA treatment guidelines. Dr. Lau completed certification in the NIH Clinical Research Course October 2014-March 2015.



### **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. 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 provides care in less well served areas at Copley Hospital and Central Vermont Medical Center. She is the UVM Team Leader for the TRACTION project, a multi-center trial developed by Dr. Daniel Solomon and others at Brigham and Women's Hospital that will facilitate adoption and adherence of "Treat To Target" principles for RA treatment with goal of better patient outcomes and alignment with RA treatment guidelines.

### **James Trice, MD**

Assistant Professor of Medicine

- Osteoporosis
- Inflammatory Arthritis
- Connective Tissue Disease
- Vasculitis
- Clinical Trials

Dr. Trice joined the faculty in 2011. He reads bone densities for the Osteoporosis Center and teaches Rheumatology and Endocrinology Fellows in the Metabolic Bone Clinic. He is Co-Chair of the Osteoporosis Committee and serves on the Fellow Education Committee.

**Narandra Bethina, MD**

Assistant Professor of Medicine

Associate Chair, Rheumatology Fellowship Program

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

Dr. Bethina manages patients with multiple rheumatologic conditions. Dr. Bethina is certified in Musculoskeletal Ultrasound by the Ultrasound School of North American Rheumatologists (USSONAR) and is the Rheumatology Division expert in diagnostic and procedural (guided injections) MSK ultrasound. He is an instructor and mentor for USSONAR (Ultrasound School of North American Rheumatologists), and was one of 15 international experts in the OMERACT Gout study for assessment of validity of MSK Ultrasound in crystalline arthropathies at the national American College of Rheumatology (ACR) meeting in November 2014. He has been invited to help teach the USSONAR MSK Ultrasound Course at the upcoming national ACR meeting November 2015. With Dr. Libman, Dr. Bethina is a co-recipient of two \$500 Rheumatology Research Foundation Medical Student Clinical Preceptorships in 2015. Dr. Bethina is the Associate Program Director for the Rheumatology Fellowship Program.

**Fellows**

**Scott Legunn, MD**

Will complete Fellowship in June 2015 and will join our division in July 2015

**Sahithi Jarugula, MD**

Will complete Fellowship in June 2016

**Syeda Maria Sayeed, MBBS**

Will complete Fellowship in June 2017

**Nurse Practitioners and Physician Assistants:**

**Jill Geoffrion, PA-C**

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

1. Stephens D, Schwarzenberger K, Jones C, Cooper S. The Holster Sign: An Overlooked Cutaneous Finding in the Diagnosis of Dermatomyositis. *J Arthritis* 2015; 4:145. doi: 10.4172/2167-7921.1000145
2. Divan A, Budd RC, Tobin RP, Newell-Rogers MK.  $\gamma\delta$  T Cells and dendritic cells in refractory Lyme arthritis. *J Leukoc Biol.* 2015 Jan 20;PubMed PMID: 25605869.
3. 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 Aug;13(4):765-8. PubMed PMID: 24621297; PubMed Central PMCID: PMC4326952.
4. Leib E, Winzenrieth R, Aubry-Rozier B, Hans D. Vertebral Microarchitecture and Fragility Fracture in Men: A TBS Study. *Bone.* 62(5):51-55, 2014
5. Leib ES, Winzenrieth R. Bone Status in Glucocorticoid Treated Men and Women. Accepted for Publication, *Osteoporos Int.*
6. Anathy, V., Roberson, E., Cunniff, B., Nolin, J., Hoffman, S., Speiss, P., Guala, A.S., Lahue, K., Goldman, D., Flemer, S., van der Vliet, A., Heintz, N.H., Budd, R.C., Tew, K.D., and Janssen-Heininger, Y.M.W. Oxidative processing of latent Fas in the endoplasmic reticulum controls the strength of apoptosis. *Mol. Cell. Biol.* In press. 2015.

**Department of Medicine**

FY2015 UVM Research Funding by Division by PI

Division	Principal Investigator	Sponsor	Project Title	Start	End	Direct	Indirect	Total
Cardiology	Callahan, Damien M	American Federation for Aging Research	Acute Disuse Muscle Atrophy: Investigating Mechanisms and Countermeasures in Older Adults	31-Dec-14	30-Dec-15	\$ 54,000	\$ -	\$ 54,000
Cardiology	LeWinter, Martin M	Duke University	Nitrates Effect on Activity Tolerance in Heart Failure with Preserved Ejection Fraction	10-Jul-14	31-Dec-99	\$ -	\$ -	\$ -
Cardiology	LeWinter, Martin M	University of Arizona	Myofilament Based Mechanisms of Diastolic Dysfunction in HFpEF	01-Sep-14	30-Jun-15	\$ 193,000	\$ 101,325	\$ 294,325
Cardiology	LeWinter, Martin M	Duke University	Functional Impact of GLP-1 for Heart Failure Treatment	22-May-13	31-Dec-99	\$ 25,429	\$ 7,171	\$ 32,600
Cardiology	LeWinter, Martin M	Duke University	Nitrates Effect on Activity Tolerance in Heart Failure with Preserved Ejection Fraction	10-Jul-14	31-Dec-99	\$ 17,115	\$ 8,985	\$ 26,100
Cardiology	Meyer, Markus F.	Medtronic, Inc	Pacing-Mediated LV Remodeling for the Treatment of Heart Failure with Preserved Ejection Fraction	01-Apr-14	31-Dec-99	\$ 15,874	\$ 4,127	\$ 20,001
Cardiology	Meyer, Markus F.	National Heart, Lung, and Blood Institute/NIH/DHHS	Sarcolemmal Calcium Extrusion Defect in Patients with Diastolic Dysfunction	02-Apr-15	31-Mar-16	\$ 250,000	\$ 122,325	\$ 372,325
Cardiology	Spees, Jeffrey L.	National Institute of Neurological Disorders and Stroke/NIH/DHHS	Control of Reactive Astrocytes by Notch1 and Amyloid Precursor Protein	01-Jun-15	31-May-16	\$ 220,854	\$ 112,740	\$ 333,594
Cardiology	Van Buren, Peter C	Duke University	Oral Iron Repletion effects ON Oxygen UpTake in Heart Failure: IRONOUT-HF	21-Oct-14	31-Dec-99	\$ 2,040	\$ 575	\$ 2,615
Cardiology	Van Buren, Peter C	Duke University	Aldosterone Targeted Neurohormonal Combined with Natriuresis Therapy – HF	21-Jan-15	31-Dec-19	\$ -	\$ -	\$ -
Cardiology	Van Buren, Peter C	National Heart, Lung, and Blood Institute/NIH/DHHS	New England, New York and Quebec Regional Clinical Center	01-Jan-15	31-Dec-15	\$ 297,850	\$ 32,430	\$ 330,280
Cardiology	Van Buren, Peter C	Duke University	Oral Iron Repletion effects ON Oxygen UpTake in Heart Failure: IRONOUT-HF	21-Oct-14	31-Dec-99	\$ 3,417	\$ 963	\$ 4,380
Cardiology	Watkins, Matthew W	Veterans Medical Research Foundation	AC6 in Clinical Heart Failure	01-Apr-12	31-Dec-15	\$ -	\$ -	\$ -
Cardiology	Watkins, Matthew W	Veterans Medical Research Foundation	AC6 in Clinical Heart Failure	01-Apr-15	31-Mar-16	\$ 74,814	\$ 21,098	\$ 95,912
Cardiology	Wheeler, Tamar	American Heart Association - Founders Affiliate	Molecular Basis of Vascular Gene Repression by Purine-Rich Element Binding Protein B	14-May-15	31-Aug-15	\$ 5,000	\$ -	\$ 5,000
<b>Cardiology Total</b>						\$ 1,159,393	\$ 411,739	\$ 1,571,132
Endocrinology	Jetton, Thomas L	Juvenile Diabetes Foundation International	Manipulating B-cell Inflammation and Survival via Cholinergic Pathways	01-Sep-14	31-Aug-15	\$ 150,000	\$ 15,000	\$ 165,000
<b>Endocrinology Total</b>						\$ 150,000	\$ 15,000	\$ 165,000
General Internal Medicine	Kennedy, Amanda G.	Vermont AHS Department of Health	Academic Detailing	01-Jul-14	30-Jun-15	\$ 148,699	\$ 51,301	\$ 200,000
General Internal Medicine	MacLean, Charles D	Health Resources and Services Administration/DHHS	HRSA AHEC	01-Sep-14	31-Aug-15	\$ 300,337	\$ 5,663	\$ 306,000
General Internal Medicine	MacLean, Charles D	Vermont AHS Department of Health	Opioid Prescribing: Sustainable Solutions for Vermont	01-Jun-15	15-Mar-16	\$ 30,111	\$ 11,443	\$ 41,554
General Internal Medicine	MacLean, Charles D	Vermont AHS Department of Health	Hypertension and Diabetes Panel Management Quality Improvement Project	01-Apr-15	29-Jun-15	\$ 26,766	\$ 9,234	\$ 36,000
General Internal Medicine	Repp, Allen B	Vermont Medical Society (VMS) Education and Research Foundation, Inc.	Vermont Hospital Medicine Choosing Wisely Project	01-Jul-14	30-Jun-16	\$ 253,668	\$ 25,367	\$ 279,035
<b>General Internal Medicine Total</b>						\$ 759,581	\$ 103,008	\$ 862,589
GI	Ganguly, Eric K	University of California, San Francisco	PIANO: Pregnancy in IBD and Neonatal Outcomes: In Utero Exposure to Biologics and Increased Neonatal Infections	01-Jul-13	30-Jun-16	\$ -	\$ -	\$ -
GI	Ganguly, Eric K	University of California, San Francisco	PIANO: Pregnancy in IBD and Neonatal Outcomes: In Utero Exposure to Biologics and Increased Neonatal Infections	01-Jul-14	30-Jun-15	\$ 214	\$ 36	\$ 250
<b>GI Total</b>						\$ 214	\$ 36	\$ 250
Hem/Onc	Cushman, Mary	University of Pittsburgh	Exceptional Survival: Trajectories to Functional Aging (CHS All Stars)	15-Jun-14	31-May-15	\$ 24,365	\$ 12,791	\$ 37,156
Hem/Onc	Cushman, Mary	University of Minnesota	Epidemiology of Venous Thrombosis and Pulmonary Embolism	01-Apr-14	31-Mar-15	\$ 205,334	\$ 107,800	\$ 313,134
Hem/Onc	Cushman, Mary	University of North Carolina	The National Longitudinal Study of Adolescent Health	16-Jul-14	30-Apr-15	\$ 72,198	\$ 37,904	\$ 110,102
Hem/Onc	Cushman, Mary	West Virginia University	Effects of Perfluoroalkyl Chemicals on Stroke Incidence and Mortality	08-Sep-14	31-May-15	\$ 6,746	\$ 3,542	\$ 10,288
Hem/Onc	Cushman, Mary	University of Alabama at Birmingham	Etiology of Geographic and Racial Differences in Stroke Mortality	01-Dec-14	30-Nov-15	\$ 1,056,215	\$ 526,547	\$ 1,582,762
Hem/Onc	Greenblatt, Marc Steven	University of North Carolina	A Knowledge Base for Clinically Relevant Genes and Variants	01-Aug-14	31-Jul-15	\$ 65,574	\$ 34,426	\$ 100,000
Hem/Onc	Greenblatt, Marc Steven	University of Utah	Classifying DNS Mismatch Repair Gene Variants of Unknown Significance	01-Mar-15	29-Feb-16	\$ 30,572	\$ 16,050	\$ 46,622
Hem/Onc	Greenblatt, Marc Steven	University of Utah	Classifying DNS Mismatch Repair Gene Variants of Unknown Significance	01-Mar-13	28-Feb-15	\$ 4,421	\$ 2,321	\$ 6,742
Hem/Onc	Grunberg, Steven M.	Brigham and Women's Hospital, Inc.	CALGB: Cancer and Leukemia Group B Case Study Services	01-Apr-10	31-Mar-99	\$ 45,182	\$ 4,518	\$ 49,700
Hem/Onc	Verschraegen, Claire F	Lake Champlain Cancer Research Organization	Lake Champlain Cancer Research	01-Jan-14	31-May-15	\$ 36,000	\$ 18,900	\$ 54,900

**Department of Medicine**  
FY2015 UVM Research Funding by Division by PI

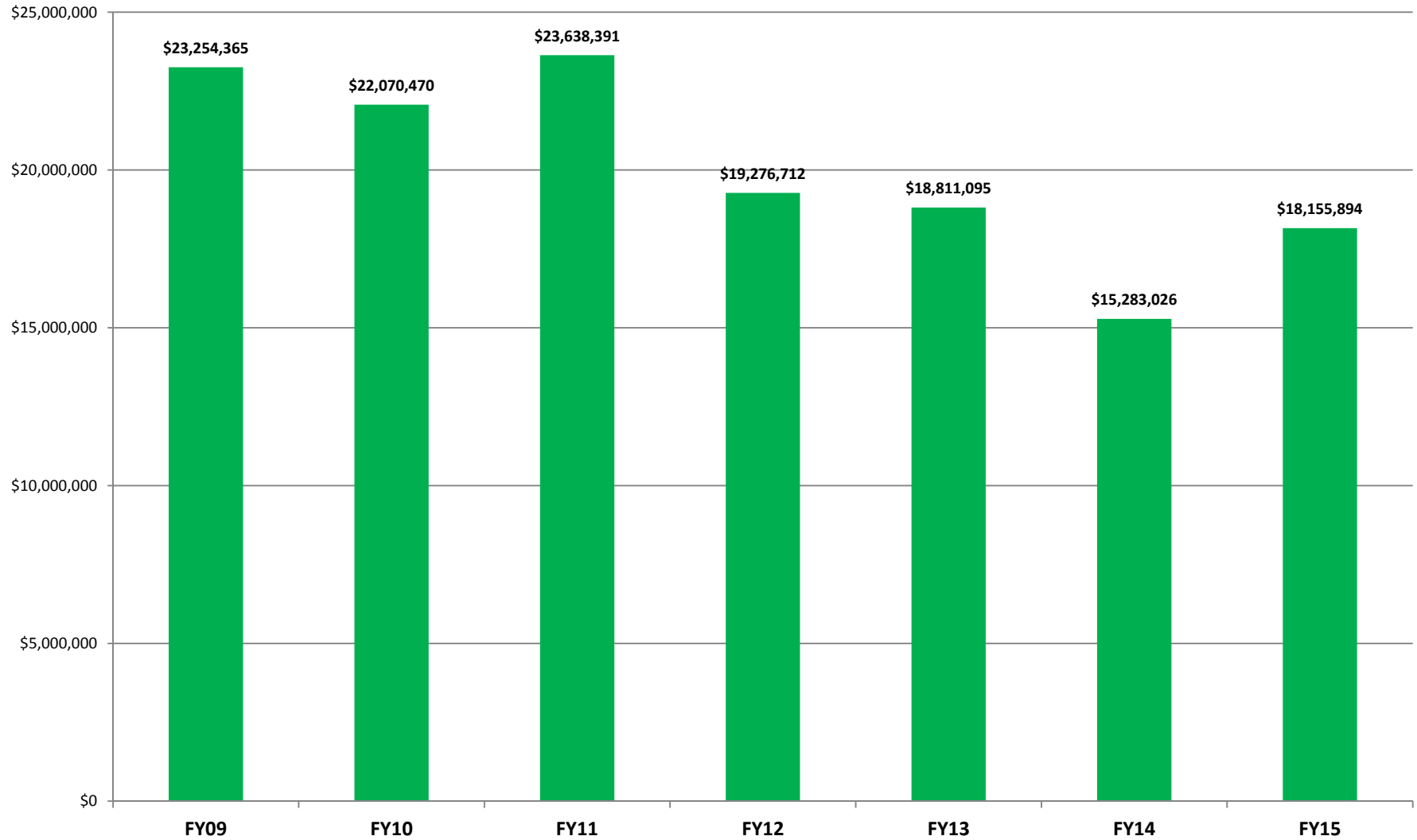
Division	Principal Investigator	Sponsor	Project Title	Start	End	Direct	Indirect	Total
Hem/Onc	Verschraegen, Claire F	Lake Champlain Cancer Research Organization	Lake Champlain Cancer Research	01-Jan-15	31-Dec-15	\$ 660,000	\$ -	\$ 660,000
Hem/Onc	Verschraegen, Claire F	Brigham and Women's Hospital, Inc.	Alliance for Clinical Trials in Oncology - Master Agreement	04-Jun-15	31-Dec-99	\$ -	\$ -	\$ -
Hem/Onc	Verschraegen, Claire F	Novartis Pharmaceuticals, Inc.	Pazopanib With Gemcitabine and Docetaxel For The Neoadjuvant Chemotherapy Treatment Of High Risk Sarcomas - A Phase IB Study	09-Oct-12	31-Dec-99	\$ 1,172	\$ 328	\$ 1,500
<b>Hem/Onc Total</b>						<b>\$ 2,207,779</b>	<b>\$ 765,127</b>	<b>\$ 2,972,906</b>
ID	Huston, Christopher Dwight	PATH	Natural Calf Model to Develop Treatments for Cryptosporidiosis	01-Aug-14	31-Jul-15	\$ -	\$ -	\$ -
ID	Huston, Christopher Dwight	PATH	Establishment of Cryptosporidium Calf Infection Model and Calf Pharmacokinetic Study	01-Aug-14	31-Jul-15	\$ 187,651	\$ 17,862	\$ 205,513
ID	Huston, Christopher Dwight	PATH	Strain and Species Variability in Cryptosporidium Drug Susceptibility	01-Dec-14	30-Nov-15	\$ 60,775	\$ 6,078	\$ 66,853
ID	Huston, Christopher Dwight	Structural Genomics Consortium	Structure-Guided Drug Discovery of Tuberculosis and Malaria	20-Feb-15	31-Oct-16	\$ 90,272	\$ 9,027	\$ 99,299
ID	Kirkpatrick, Beth D.	Johns Hopkins University	Operation of a Facility for the Study of Infectious Agents, Vaccines and Antimicrobials in Adult and Pediatric Human Subjects	01-Oct-14	31-Mar-16	\$ 1,142,247	\$ 460,399	\$ 1,602,646
ID	Kirkpatrick, Beth D.	Johns Hopkins University	Operation of a Facility for the Study of Infectious Agents, Vaccines and Antimicrobials in Adult and Pediatric Human Subjects	20-Feb-15	31-Oct-15	\$ 120,031	\$ 56,719	\$ 176,750
ID	Kirkpatrick, Beth D.	University of Virginia	Exploration of the Biologic Basis for Underperformance of OPV and Rotavirus Vaccines in Bangladesh	01-Dec-14	30-Nov-15	\$ 81,818	\$ 8,182	\$ 90,000
ID	Kirkpatrick, Beth D.	Johns Hopkins University	The Dengue Human Infection Model: Defining Correlates of Protection and Advancing Vaccine Development	01-Nov-14	30-Sep-17	\$ 1,913,924	\$ 177,910	\$ 2,091,834
<b>ID Total</b>						<b>\$ 3,596,718</b>	<b>\$ 736,177</b>	<b>\$ 4,332,895</b>
Immunobiology	Budd, Ralph C	National Institute of Allergy and Infectious Diseases/NIH/DHHS	Vermont Immunology/Infectious Diseases Training Grant	01-Sep-14	31-Aug-15	\$ 174,704	\$ 8,856	\$ 183,560
Immunobiology	Budd, Ralph C	National Institute of General Medical Sciences/NIH/DHHS	Vermont Immunobiology/Infectious Disease Center	01-Jul-14	30-Jun-15	\$ 1,416,046	\$ 743,424	\$ 2,159,470
Immunobiology	Budd, Ralph C	Rheumatology Research Foundation	Medical Student Research Preceptorship	08-Apr-15	07-Apr-16	\$ 1,000	\$ -	\$ 1,000
Immunobiology	Fortner, Karen A	National Institute of Allergy and Infectious Diseases/NIH/DHHS	T Lymphocyte Homeostasis in Obesity	01-Jun-15	31-May-16	\$ 125,000	\$ 65,625	\$ 190,625
Immunobiology	King, Benjamin R	Embassy of France Office for Science & Technology	Areavirus Host-Pathogen Interactions and the Dynamics of Viral Replication Factories	01-Sep-14	14-Apr-15	\$ 11,417	\$ -	\$ 11,417
Immunobiology	Rincon, Mercedes	National Institute of Allergy and Infectious Diseases/NIH/DHHS	Regulation of Mitochondrial Function in T Cells	01-Feb-15	31-Jan-16	\$ 125,000	\$ 65,625	\$ 190,625
Immunobiology	Rincon, Mercedes	American Association of Immunologists	Regulation of CD8 Cell Function by IL-6	01-Sep-15	31-Aug-16	\$ 22,920	\$ -	\$ 22,920
Immunobiology	Rincon, Mercedes	Mitotherapeutix	MCJ as a Metabolic Target	15-May-15	14-May-16	\$ 84,000	\$ -	\$ 84,000
Immunobiology	Teuscher, Cory	Drexel University	Refining the Genetic Basis of EAE to Establish a Model for MS-GWAS Testing	01-Jul-14	30-Jun-15	\$ 68,926	\$ 6,893	\$ 75,819
Immunobiology	Teuscher, Cory	University of Utah	Molecular Genetics of Lyme Arthritis	19-Sep-14	18-Sep-15	\$ 90,000	\$ 47,250	\$ 137,250
Immunobiology	Teuscher, Cory	National Multiple Sclerosis Society	Identification of Gene-by-Environment Interactions Contributing to CNS Autoimmune Disease	01-Apr-15	31-Mar-18	\$ 409,439	\$ 40,944	\$ 450,383
<b>Immunobiology Total</b>						<b>\$ 2,528,452</b>	<b>\$ 978,617</b>	<b>\$ 3,507,069</b>
Nephrology	Negoi, Dana G	Arbor Research Collaborative for Health	Dialysis Outcomes and Practice Patterns Study (DOPPS 4)	01-Jan-15	31-Dec-15	\$ 4,481	\$ 1,264	\$ 5,745
<b>Nephrology Total</b>						<b>\$ 4,481</b>	<b>\$ 1,264</b>	<b>\$ 5,745</b>
Pulmonary	Bates, Jason H.	National Heart, Lung, and Blood Institute/NIH/DHHS	Personalized Mechanical Ventilation for the Injured Lung	01-Aug-14	31-Mar-15	\$ 461,523	\$ 138,800	\$ 600,323
Pulmonary	Bates, Jason H.	National Heart, Lung, and Blood Institute/NIH/DHHS	Personalized Mechanical Ventilation for the Injured Lung	01-Apr-15	31-Mar-16	\$ 452,689	\$ 125,702	\$ 578,391
Pulmonary	Carney, Jan Kirk	Boston University	New England Public Health Training Center (NEPHTC)	01-Sep-14	31-Aug-15	\$ 18,519	\$ 1,481	\$ 20,000
Pulmonary	Dixon, Anne Elizabeth	National Heart, Lung, and Blood Institute/NIH/DHHS	Study of Asthma and Nasal Steroids	01-Jul-13	30-Jun-14	\$ 183,588	\$ 41,415	\$ 225,003
Pulmonary	Dixon, Anne Elizabeth	Pfizer Inc., U.S. Pharmaceuticals Group	Biomarkers in Uncontrolled Asthma	01-Jun-14	31-May-16	\$ 21,333	\$ 5,547	\$ 26,880
Pulmonary	Irvin, Charles G	Hydra Biosciences, Inc.	HydraBioscience Project 1	18-Apr-14	17-Apr-15	\$ 13,115	\$ 6,885	\$ 20,000
Pulmonary	Irvin, Charles G	National Institute of General Medical Sciences/NIH/DHHS	Translation Research in Lung Biology and Disease	01-Aug-14	31-Jul-16	\$ 716,808	\$ 376,324	\$ 1,093,132
Pulmonary	Irvin, Charles G	American Lung Association	ALA-Asthma Clinical Research Center-CORE Award	01-Dec-13	30-Nov-15	\$ 28,917	\$ -	\$ 28,917
Pulmonary	Irvin, Charles G	American Lung Association	ALA-Asthma Clinical Research Center-CORE Award	01-Jul-14	30-Jun-15	\$ 75,000	\$ -	\$ 75,000
Pulmonary	Irvin, Charles G	National Institute of General Medical Sciences/NIH/DHHS	National IDEa Symposium of Biomedical Research Excellence (NISBRE)	01-Jan-15	31-Dec-15	\$ 45,391	\$ -	\$ 45,391

**Department of Medicine**

FY2015 UVM Research Funding by Division by PI

Division	Principal Investigator	Sponsor	Project Title	Start	End	Direct	Indirect	Total
Pulmonary	Irvin, Charles G	National Heart, Lung, and Blood Institute/NIH/DHHS	Multidisciplinary Training in Lung Biology	01-May-15	30-Apr-16	\$ 404,874	\$ 23,430	\$ 428,304
Pulmonary	Lundblad, Lennart K.A.	National Institute of Allergy and Infectious Diseases/NIH/DHHS	iNKT Cells Regulating Lung Mast Cells: New Treatment Opportunity for Asthma	01-Jul-15	30-Jun-16	\$ 125,000	\$ 65,625	\$ 190,625
Pulmonary	Parsons, Polly E	Fred Hutchinson Cancer Center	A Randomized Phase II Trial of CMV Prevention in Acute Lung Injury	01-Sep-12	31-Aug-15	\$ 23,900	\$ 6,740	\$ 30,640
Pulmonary	Pothen, Joshua J	National Institute of Biomedical Imaging and Bioengineering/NIH/DHHS	The Inflammatory Twitch: Discerning the Nature of Chronic Inflammatory Diseases	01-Aug-14	31-Jul-15	\$ 42,676	\$ -	\$ 42,676
Pulmonary	Poynter, Matthew Edward	Flight Attendant Medical Research Institute	Airway Epithelial Control of Asthma Severity	01-Jul-14	30-Jun-16	\$ 100,000	\$ 8,500	\$ 108,500
Pulmonary	Poynter, Matthew Edward	National Heart, Lung, and Blood Institute/NIH/DHHS	Serum Amyloid A3 in Allergic Asthma: An Endogenous Mediator of Disease Severity	01-Mar-15	29-Feb-16	\$ 246,250	\$ 129,281	\$ 375,531
Pulmonary	Teneback, Charlotte C	Cystic Fibrosis Foundation Therapeutics, Inc.	Improving Quality in Cystic Fibrosis Research	01-Oct-14	31-Mar-15	\$ 4,350	\$ -	\$ 4,350
Pulmonary	Teneback, Charlotte C	Cystic Fibrosis Foundation Therapeutics, Inc.	Cystic Fibrosis Foundation Research Support	01-Dec-14	30-Nov-15	\$ 72,117	\$ 5,769	\$ 77,886
Pulmonary	Teneback, Charlotte C	Cystic Fibrosis Foundation Therapeutics, Inc.	Therapeutics Development Center	01-Jan-15	31-Dec-15	\$ 71,206	\$ 5,696	\$ 76,902
Pulmonary	Teneback, Charlotte C	Cystic Fibrosis Foundation Therapeutics, Inc.	Therapeutics Development Network (TDN) Spring Meeting Funding	01-Feb-15	31-Jul-15	\$ 3,048	\$ 244	\$ 3,292
Pulmonary	Weiss, Daniel J	Alpha-1 Foundation	Stem Cells, Cell Therapies, and Bioengineering in Lung Biology in Lung Diseases Conference	01-Jul-15	31-Aug-15	\$ 5,000	\$ -	\$ 5,000
Pulmonary	Weiss, Daniel J	National Heart, Lung, and Blood Institute/NIH/DHHS	Optimizing Functional Recellularization of Acellular Human Lung Scaffolds	15-Apr-15	31-Mar-16	\$ 250,000	\$ 131,250	\$ 381,250
Pulmonary	Weiss, Daniel J	Department of Defense	Development of a Novel Alginate-Based Pleural Sealant	15-Jun-15	14-Jun-16	\$ 200,000	\$ 100,315	\$ 300,315
<b>Pulmonary Total</b>						<b>\$ 3,565,304</b>	<b>\$ 1,173,004</b>	<b>\$ 4,738,308</b>
<b>Grand Total</b>						<b>\$ 13,971,922</b>	<b>\$ 4,183,972</b>	<b>\$ 18,155,894</b>

Department of Medicine  
UVM Research Funding (Direct & Indirect), FY09-FY15



## Department of Medicine FY2015 UVM Research Funding (Direct & Indirect) by Division

