

Department of Medicine

ANNUAL REPORT

July 1, 2015 – June 30, 2016

Submitted by:

Polly E. Parsons, MD

E.L. Amidon Professor and Chair Department of  
Medicine

Date: September 8, 2016

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## Department of Medicine

### Annual Report 2015-2016



#### Chair's Executive Summary

The Department of Medicine had incredible year: we were named the Clinical Department of the Year by the graduating medical school class, awarded over \$39 million in research funding expanded clinical services, welcomed nine faculty (with an additional 15 new faculty already hired to start in the current year, and celebrated the numerous achievements and recognition awards of our faculty, staff, housestaff and students. We also fully integrated subspecialty medicine and primary care internal medicine into a single health care service. With this integration we welcomed two new divisions into the Department: General Internal Medicine & Geriatrics led by Dr. Jen Gilwee and Hospital Medicine led by Dr. Mark Pasanen and expanded our breadth and expertise in Quality and Patient Safety with the recruitment of Dr. Allen Repp into a new role as Vice Chair for Quality. Allen, Jen and Mark have been outstanding additions to our leadership team.

The Department continued to expand its clinical practice across the University of Vermont Health Network and increase our collaboration with Burlington Veteran's administration. New clinical programs this year included an expansion of the roles and responsibilities for the transdisciplinary teams (TDT) in cancer, the launching of the Watchman device program in Cardiology, and, in GI, implementing an ultrasound-based noninvasive technique, which can often be used instead of tissue biopsy to define the extent of liver fibrosis. With the recent recruitment of Dr. Michael Lamantia, we are looking forward to expanding our clinical, education and research program in Geriatrics over the upcoming years.

Two faculty, Drs. Muriel Nathan and Joe Pierson, were awarded the Vision award from UVMMC in recognition of their quality of care and service to their patients.

Under the leadership of Dr. Allen Repp, the department has substantially increased our focus on and opportunities in quality and patient safety. Building on the highly productive and nationally recognized program, UVM High Value Care (previously known as Choosing Wisely) initiative led by Drs. Virginia Hood and Justin Stinnett -Donnelly, Allen Mead, and Pam Stevens, the quality program is expanding to both further improve patient care and enhance scholarship.

As evidenced by our recognition as the Clinical Department of the year and the success of our graduating residents and fellows, education is a core mission for the department. Faculty continue to engage innovative new programs at UVM as well as at our affiliate sites. This year, we expanded our medicine clerkship in the Western Connecticut Health Network and our Dermatology training program with the Burlington VA clinic. Four more faculty-- Maura Barry, MD, Jason Bartsch, MD, Shaden

Eldakar-Hein, MD, and Alan Rubin, MD-- became members of the teaching academy. 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 2017, the Cardiovascular, Respiratory & Renal Systems course, Directed by Dr. Laurie Leclair and Garth Garrison and taught by many of our faculty, won the award for Outstanding Foundations Course. Department of Medicine House Staff Awards were presented to Katherine Menson, DO, Sherrie Khadanga, MD, and Jonathan Wilfong, MD. Gatha Nair, MD, PGY2, was recently honored with the Arnold P. Gold Humanism and Excellence in Teaching award. In recognition of their contributions to resident education, Dr. Ryan Clouser 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.

The diversification of research throughout our divisions is a testament to our talented investigators. Key awards include: Dr. Michael Toth's project entitled, "Alternative Exercise Modalities to Improve Skeletal Muscle Function in Cancer Survivors," Dr. Ben Littenberg's PCORI award entitled, "Integrating Behavioral Health and Primary Care for Comorbid Behavioral and Medical Problems," Dr. Mercedes Rincon's NIGMS project entitled, "Fostering Entrepreneurship in Biomedical Research," Dr. Beth Kirkpatrick's Bill and Melinda Gates Foundation project entitled, "Using Cryptosporidium Human Challenge Models to Advance Therapeutics and Vaccines," and Dr. Renee Stapleton's NIA project entitled, "Improving Palliative Care for Older Seriously Hospitalized Patients and Their Families: A Randomized Trial of an Informed Assent Communication Intervention about CPR."

In aggregate, members of the department including students, residents, fellows (MD and PhD) published in high impact journals, as detailed within this report. They were asked to lead and 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. In recognition of their substantial contributions to scholarship Dr. Phil Ades was recognized as a University Scholar by UVM and Dr. Ralph Budd was awarded the highest faculty honor at UVM, University Distinguished Professor. The Department of Medicine also recognized two new endowed professors as the result of generous donations: Dr. Jack Leahy is the inaugural Sarah Nichols Gruening Green and Gold Professor In Diabetes Research and Dr. Phil Ades is the Philip Ades, MD, Endowed Professor of Cardiovascular Disease Prevention.

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

Quality

Allen Repp, MD

Director

Allen Mead

Assistant Director

Tammy Stockton, RN

Director, Cancer Center

Katie Michaud

Supervisor, Med Ops Support Svcs.

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 Research

J. Gilwee, MD, General Internal Medicine & Geriatrics

C. Verschraegen, MD, Hematology/Oncology

A. Dixon, MD, Pulmonary and Critical Care Medicine

Schneider, MD, Cardiolovascular

R. Solomon, MD, Nephrology

J. Vecchio, MD, Gastroenterology

Total faculty: 188

By rank –

Assistant Professors: 84

Associate Professors: 49

Professors: 53

Clinical Practice Physicians: 2

By gender – 76 female; 112 male

By track – Tenured: 38

Research Scholar Pathway: 8

Tenure Pathway: 5

Clinical Scholar Pathway: 130

Education Scholar Pathway: 5  
Clinical Practice Physician – 2

By gender – 76 female; 112 male  
By track – Tenured: 38  
Research Scholar Pathway: 8  
Tenure Pathway: 5  
Clinical Scholar Pathway: 130  
Education Scholar Pathway: 5  
Clinical Practice Physician – 2

Faculty Actions:

FALL 2015 – six green sheet promotions; 10 annual review reappointments

SPRING 2016 – 31 green sheet reappointments; five annual review reappointments; 15  
volunteer pathway faculty reappointments.

Promotions (7/1/16):

Gil Allen – to Professor, CSP  
Laurie Leclair – to Professor, CSP  
Julie Lin – to Associate Professor, CSP  
Daniel Lustgarten – to Professor, CSP  
Joseph Pierson – to Associate Professor, CSP  
Marie Sandoval – to Associate Professor, CSP

## **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 UVMMC 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: 49,212 (inpatients and bedded outpatients)  
Ambulatory Care Visits: 234,906 (166,012 specialty care and 68,894 primary care)  
Work RVUs: 554,697 work RVUs

### **UVMMC 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
- Sleep Medicine
- 

**Tilley Drive, South Burlington**

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

**Fanny Allen Hospital**

- Memory Clinic
- 

**UVMMC Outreach Sites:**Vermont

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), Pulmonary, Hem/Onc

Rutland (Rutland Regional) – Nephrology, Cardiology, Infectious Disease

Middlebury (Porter) – Cardiology, Hem/Onc

Newport (Newport Memorial) – Nephrology, Dermatology (Telederm)

New York

Malone (Alice Hyde) – Cardiology

Ticonderoga (Moses Luddington Hospital) – Dermatology

Canton- Potsdam – Cardiology

Massena (MMH) – Cardiology

Plattsburgh (CVPH) – Cardiology, Endocrinology

Massachusetts

Mass General Hospital, Boston – Cardiology

**Primary Care Sites (General Internal Medicine and Geriatrics):**

South Burlington

Essex Junction

Burlington (University Health Center)

Williston

**Nursing Homes and Other Locations:**

Starr Farm Nursing Facility

Birchwood Terrace Nursing Facility

Green Mountain Nursing Facility

Visiting Nursing Association of Vermont

The Department also participates in many multidisciplinary clinics:

**Department of Medicine Multidisciplinary Clinics and Case Conferences/Tumor Boards**  
(examples of participants in parentheses)

Active

- Maternal Fetal Medicine/Gestational Diabetes (Endocrine, Women's)
- Upper GI MDC and Tumor Board (Gastroenterology, Hematology/Oncology, Rad. Oncology, Pathology, Radiology, Surgery)
- Lung MDC and Tumor Board (Pulmonary, Surgery, Radiation Oncology, Hematology/Oncology, Pathology, Radiology)
- Breast MDC and Tumor Board (Hematology/Oncology, Radiology, Surgery, Radiation Oncology, Pathology)
- Hem Malignancy Conference (Hematology/Oncology, Pathology)
- Brain Tumor Board (Hematology/Oncology, Surgery, Radiology, Radiation Oncology)
- Sarcoma Tumor Board (Hematology/Oncology, Orthopaedics, Radiology, Pathology, Radiation Oncology)
- ENT MDC Tumor Board (Hematology/Oncology, Surgery, Radiation Oncology)
- GU MDC and Tumor Board (Hematology/Oncology, Surgery, Pathology)
- Melanoma Tumor Board (Dermatology, Surgery, Hematology/Oncology, Pathology)
- Familial Cancer Program Conference (Genetic counseling, medical oncology, pathology, surgical oncology, ob/gyn).
- 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**

### **Medical Education 2015-2016**

#### **1. Leadership**



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



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



**Shaden Eldakar-Hein, M.S., M.D., FACP – Associate Program Director**



**Dorothy Shelc – Program Administrator**

#### **2. Summary of Program Highlights 2015-2016**

#### Enhancements to Curriculum:

Beginning in 2015, we embarked on an overhaul of our noon lecture series – focusing our curriculum around subspecialty-specific months. This allows our residents, with the help of our faculty, to immerse themselves in a sub-specialty. We also encouraged our faculty to develop more interactive teaching methods – both of which have been well-received. We continue to incorporate sub-specialists into the vast majority of our Morning Reports, with the goal being to provide our residents with this expertise. For Geriatrics, we have convened a group of engaged faculty to refine both the curriculum and clinical experiences to optimize the resident experience.

We continue to provide MKSAP, the premier board review product, for all of our residents, and utilize MKSAP questions in many of our teaching sessions. In addition, for the second year we provided all 2<sup>nd</sup> and 3<sup>rd</sup> year residents with subscriptions to NEJM Knowledge (+), a mobile question-based board review product with an adaptive learning interface as part of our commitment to ABIM Board success – and resulting in a three-year board pass rate above the national mean.

#### Continuity Clinic Update:

As we move into the 5<sup>th</sup> year of a block schedule (4+1), we continue to take advantage of this structure to optimize education. With the leadership of Drs. Halle Sobel and Rich Pinckney, small group learning sessions continue to be developed and are extremely well-received by residents – all part of a comprehensive 3-year curriculum. Residents are educated on practice management, patient safety and quality and improvement and have initiated personal practice improvement projects. At the core of the experience is providing care for a diverse population of primary care patients. In addition, we've incorporated the PEAC self-learning modules, focused on common ambulatory issues, into the formal educational experience.

#### Wellness:

Over the last year, we have initiated a Resident Wellness Committee, with the goal of promoting resiliency by creating opportunities for our residents to engage in activities with each other and our community. Events have included attending a Lake Monsters game, picking apples and making cider as well as monthly dinners at the Hope Lodge (cooked and served by our residents).

#### Improvements in Evaluation/Assessment:

With leadership from Dr. Ramundo, we have developed a robust Clinical Competency Committee – which is charged with reviewing all of our residents at least bi-annually, providing milestone-based evaluations and feedback. In addition, this group now provides insight and guidance for residents who benefit from more structured support.

#### Recruitment:

With leadership from Dr. Eldakar-Hein, we had an incredible resident recruitment cycle. Given the significant increase in the number of programs each student applies to, it was critical to substantially increase the number of resident candidates we interviewed. Numerous faculty volunteered their time, resulting in one of our most successful recruitment seasons on record.

### **3. List of All Residents (as of July 1, 2016 –Graduating Residents and Match Results below)**

### **PGY-3**

Caitlin Baran  
Trace Barrett  
Lee-Anna Burgess  
Brendan Everett  
Steven Jarzembowski  
Shea Lambirth  
Kevin Leadholm  
Erica Monfred  
Lakshmi Nambiar  
Sara Roberts  
Moussa Takla  
Javaneh Tamiji  
Kaitlyn Vennard

University of Vermont  
Albany Medical College  
University of Queensland, Australia  
Rutgers Robert Wood Johnson  
George Washington University  
University of Kentucky  
Albany Medical College  
University of Maryland  
Royal College of Surgeons Ireland  
Pennsylvania State University  
University of Connecticut  
Royal College of Surgeons Ireland  
NY Institute of Tech College of Osteopathic Medicine

### **PGY-2**

Sarah Gillett  
Caitlin Greenberg  
Elena Kozakewich  
Lauren Miller  
Gatha Nair  
Hank Ng  
Nehpreet Pandhair  
Anthony Provenzano  
Vishal Shah  
Kelsey Sheahan  
Ross Stemmler  
Umer Syed  
Kathleen Whitbread  
Heather Wright  
Ann Vo

University of Vermont  
University of New England College of Osteopathic Medicine  
Albany Medical College  
Drexel University (Primary Care)  
University of Arizona  
University of Vermont  
JJM Medical College, India  
Wayne State University  
University of Vermont  
University of Vermont (Primary Care)  
Florida State University  
Chicago Medical School at Rosalind Franklin University  
University of Buffalo  
University of New England College of Osteopathic Medicine  
Touro University-California College of Osteopathic Medicine

### **Chief Medical Residents**

Jacqueline O'Toole  
Tara Scribner-Metcalf  
Samuel Stoyak

University of New England, Osteopathic Medicine  
University of Washington  
University of Pittsburgh

## **4. Resident Awards**

- **The Harriet P. Dustan, M.D. Award**  
*Sherrie Khadanga, M.D.*
- **The Frank L. Babbott, M.D. Memorial Award**  
*Katherine Menson, D.O..*
- **Richard E. Bouchard, M.D. Excellence in Primary Care Award**  
*Jonathan Wilfong, M.D.*
- **E.L. Amidon, M.D. Award Outstanding Teacher of the Year Subspecialty Medicine**  
*Ryan Clouser, D.O..*

- **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

### Clinical Research

**Khadanga S**, Savage P, Ades PA Insulin Resistance and Diabetes Mellitus in Contemporary Cardiac Rehabilitation Journal of Cardiopulmonary Rehabilitation and Prevention 2016

**Khadanga S**, Lakoski SG, Hart V, Sprague BL, Ba Y, Hampton JM, Higgins ST, Ades PA, Newcomb PA, Trentham-Dietz A. Partnership Status and Socioeconomic Factors in relation to Health Behavior Changes after a Diagnosis of Ductal Carcinoma In Situ Cancer Epidemiology Biomarkers Prev. 2016 Jan

**Menson K, O'Toole J**, Abdessamad A, Giri, C, Weise W. A retrospective study evaluating the etiologies of SIADH in an inpatient population and their clinical course. Abstract presentation at the American Thoracic Society Meeting 2016

**Solomon B**, Wood M Contribution of Extended Family History in Assessment of Risk for Breast and Colon Cancer Presented at the NE Clinical Oncology Society in Oct 2015

**Vennard K**, Crocker A, Apie O, Cuke M, Wood M, Evaluation of the Relationship Between Psychological Distress and Risk for Breast Cancer. Presented at the NE Clinical Oncology Society in Oct 2015

### Abstracts at VT ACP Meeting 2015

#### Clinical Vignettes:

A bad gut feeling. A Case of Plasmablastic Lymphoma. Jacqueline O'Toole, DO and Brendan Everett, MD

Primary peritonitis leading to streptococcal toxic shock syndrome in an otherwise healthy woman. James Enser, MD

Rapid Development of an Apical Thrombus in a Patient with Stress Cardiomyopathy. Steve Jarzembowski, MD

Examining beneath the surface: A rare case of Eosinophilic fasciitis. Sherrie Khadanga MD, Chi Chi Lau, MD

Bad Blood: A Case of Catastrophic Antiphospholipid Syndrome. Katherine Menson, DO

The octopus trap: the clinical course of stress cardiomyopathy. Lakshmi Nambiar MD

A Weatherman's Guide to Cytokine Storm: A Case of Hemophagocytic Lymphohistiocytosis. Caitlin N. Baran, MD

Vertebral Artery Dissection Following Cervical Spine Manipulation. Javaneh Tamiji, MD

A retrospective study evaluating the etiologies of SIADH in an inpatient population, the clinical course, and treatment options. Jacqueline O'Toole DO, Katherine Menson DO, Adel Abdessamad MD, Chudamani Giri MD, Wolfgang Weise MD

Making a Connection: Nephro-colonic Fistulas. Brendan Everett MD, James Enser MD

**Research Submissions:**

**Contribution of Extended Family History in Assessment of Risk for Breast and Colon Cancer. Benjamin Solomon, MD; Tiffany Rounds, MPH; Todd Whitman, MD; Marie Wood, MD**

**Use of anticoagulation in general medicine patients with elevated troponin. Tara Scribner-Metcalf, MD**

**Quality Improvement**

**Khadanga S, Dunbar E, Howard A, Sobel H** What is the Impact of a Community Health Team on Diabetes Management in a Resident Clinic? Oral Presentation at the Society of General Internal Medicine New England Regional Meeting in April of 2016 and the ACP National Meeting in May of 2016

**Case reports**

**Wilfong J, Agrawal V. A Novel Kidney-sparing Treatment for Oxalate Nephropathy in a Patient Status-post Roux-en-Y Gastric Bypass.** Clinical Vignette presented at the Regional ACP Meeting, October 2015 and the National ACP Meeting, May of 2016

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

<b>Champaloux, Marc</b>	<b>Hospitalist, Virginia</b>
<b>Dunbar, Edward</b>	<b>Hospitalist, University of Wisconsin</b>
<b>Enser, James</b>	<b>Infectious Disease Fellowship, UVMMC</b>
<b>Hall, Elizabeth</b>	<b>Oncology Research Position, UVMMC</b>
<b>Khadanga, Sherrie</b>	<b>Cardiology Fellowship, UVMMC</b>
<b>Menson, Katherine</b>	<b>Pulmonary/Critical Care Medicine Fellowship, UVMMC</b>
<b>O’Toole, Jacqueline</b>	<b>Chief Resident, UVMMC</b>
<b>Scribner-Metcalf, Tara</b>	<b>Chief Resident, UVMMC</b>
<b>Solomon, Benjamin</b>	<b>Hematology/Oncology Fellowship, University of Utah</b>
<b>Stoyak, Samuel</b>	<b>Chief Resident, UVMMC</b>
<b>Thach, Susanna</b>	<b>Palliative Care Fellowship – applying currently</b>
<b>Vanderloo, Matthew</b>	<b>Hospitalist, Minnesota</b>
<b>Wacker, Matthias</b>	<b>Nephrology Fellowship, Tufts University</b>
<b>Wilfong, Jonathan</b>	<b>Primary Care, North Shore Medical Center, Danvers, MA</b>

**CHIEF RESIDENTS:**

<b>Maria Burnett</b>	<b>Hospitalist, UVMMC</b>
<b>Jonathan Halevy</b>	<b>Cardiology Fellowship, UVMMC</b>
<b>Rachel McEntee</b>	<b>Hospitalist, UVMMC</b>

**7. MATCH RESULTS - Spring 2016**

**Categorical**

<b>Sean Bullis</b>	<b>University of Vermont</b>
<b>Alejandro Castro</b>	<b>University of Vermont</b>
<b>Gurpinder Gill</b>	<b>University of Vermont</b>
<b>Shah Khan</b>	<b>University of Texas – San Antonio</b>
<b>Elizabeth Levine</b>	<b>University of Texas – San Antonio</b>
<b>Julia Powelson</b>	<b>University of Alabama</b>
<b>Brennan Rigby</b>	<b>University of Utah</b>
<b>Avneet Singh</b>	<b>University of Toledo</b>
<b>Michael Stutzman</b>	<b>University of Minnesota</b>

**Kramer Wahlberg  
Sasha Waldstein**

**University of Washington  
University of Rochester**

**Primary Care**

**Gary Gilmond  
Emily Hadley Strout  
Elizabeth Wahlberg**

**University of Vermont  
University of Vermont  
University of Washington**

**Preliminary**

**Kylie Abe  
James East  
Robert Fuino  
Jeffrey Maneval  
Katelyn Shea  
Mutlay Sayan  
Michael Theriault**

**University of Queensland (Neurology)  
University of North Carolina – Chapel Hill (Radiology)  
University of Rochester (Neurology)  
Sidney Kimmel Medical College (Neurology)  
University of Vermont (Dermatology)  
University of Vermont (Radiation Oncology)  
New York Medical College (Neurology)**

**Preliminary Anesthesia (shared with Surgery)**

**Karl Hinrichs  
Virginia Horne  
Michael Kem  
Brandon King  
Alexa Pflaum  
Russell Shults**

**New York Medical College  
West Virginia University  
University of Colorado  
SUNY – Upstate  
University of Minnesota  
East Tennessee State University**

## Cardiovascular Division

David J. Schneider, MD, Director

<https://www.uvmhealth.org/medcenter/Pages/Departments-and-Programs/Cardiology.aspx>



The 2015-2016 academic year was a productive one for the Cardiovascular Division. Accomplishments included the recruitment of a new heart failure specialist . Johannes Steiner joined our faculty after completing subspecialty training in advanced heart failure at Massachusetts General Hospital (MGH). The addition of Dr. Steiner expands clinical options for our patients and teaching options for our fellows. He continues to be an active member of the heart failure team at MGH where he has regular inpatient rotations. His recruitment enabled us to create educational rotations for our fellows on the transplant service at MGH. We also completed the recruitment for an electrophysiologist, hiring Daniel Correa de Sa, who will join UVMHC faculty in August 2016. CVMC cardiology added a new cardiologist, Preeth Sundaran, who trained at UVMHC. Preeth will continue as an active member of our group performing regular inpatient rotations. In addition, we recruited a cardiologist who will be based primarily at Massena Medical Center beginning in July 2016. Dr. Aderonke Adeniyi has both general cardiology training as well as additional training in heart failure and pulmonary hypertension. We are actively recruiting a cardiologist at CVPH as well as an interventional cardiologist at UVMHC.

Clinical integration of cardiovascular services across the network continues. During the past academic year, the cardiologists at CVPH reorganized to work as a more cohesive group. Progress with integration has enabled us to markedly reduce outreach. UVMHC cardiologists will continue to offer subspecialty clinics in northern New York. Clinics for patients with advanced heart failure as well as pulmonary hypertension and congenital heart disease will be transitioned to CVPH beginning in the fall of 2016.

At UVMHC we have seen continued growth of catheter-based treatment for structural heart disease. Transcatheter aortic valve replacement is now performed in 10 to 12 patients per month. While this program is predominantly clinical, under the leadership of Harry Dauerman we continue to be actively involved in research to refine care. We are expanding therapeutic options for patients with structural heart disease by offering catheter-based treatment for mitral valve disease. The research efforts led by Daniel Lustgarten with the Watchman device (a device that occludes the left atrial appendage and obviates the need for anticoagulation as a treatment option for atrial fibrillation) have led to our initiation of a program for clinical use of this device in selected patients.

Faculty recognition and advancement during 2015-2016 include Daniel Lustgarten's promotion to Professor of Medicine, the selection of Philip Ades as a University Scholar and the first endowed Professor of Cardiovascular Disease Prevention, and the fellows' selection of Peter Spector as Teacher of the Year in the Cardiovascular Training Program.

Clinical and translational research remains active with 15 members of the division pursuing actively funded projects. Culmination of research projects is demonstrated by 53 publications during the past academic year.

Education continues to be a key focus with active training programs in cardiovascular disease, cardiovascular intervention, and electrophysiology.

## Faculty

### **David J. Schneider, MD**

Professor of Medicine  
Director, Cardiovascular Division  
Medical Director, Cardiovascular Services, University of Vermont Health Network  
Research and clinical interests

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

### **Philip A. 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

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 L. Dauerman, MD**

Professor of Medicine

Director of UVMMC Cardiovascular Services

Research and clinical interests

- 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 B. Gogo, MD**

Associate Professor of Medicine

Director, Cardiovascular Catheterization Laboratory

Director Interventional Cardiology Training Program

Research and clinical interests

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

**William E. 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

**Roger Ischac, MD**

Assistant Professor of Medicine

Clinical interests

- ischemic heart disease
- cardiac catheterization

- coronary intervention

### **Friederike Keating, MD**

Associate Professor of Medicine

Director, Nuclear Cardiology

Program Director, 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

Research interests

- molecular biology of cell differentiation
- mechanisms of cardiovascular remodeling
- regulation of gene expression
- protein-nucleic acid interactions

### **Martin M. LeWinter, MD**

Professor of Medicine and Molecular Physiology and Biophysics

Director, Heart Failure and Cardiomyopathy Program

Research and clinical interests

- heart failure and cardiomyopathies
- cardiac hypertrophy
- heart failure with preserved ejection fraction
- effects of hypertension and diabetes on the myocardium
- 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**

Professor of Medicine

Research and clinical interests

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

### **Markus Meyer, MD**

Associate Professor of Medicine

Research and clinical interests

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

### **Peter S. Spector, MD**

Professor of Medicine

Director, Cardiac Electrophysiology

Director, Electrophysiology Fellowship Training Program

Research and clinical interests

- catheter ablation
- atrial fibrillation

### **Jeffrey L. Spees, PhD**

Associate Professor of Medicine

Director, Stem Cell Core Facility

Research interests

- adult stem cell biology
- regenerative medicine
- repair of cardiac and CNS tissues
- vascular biology

### **Johannes Steiner, MD**

Assistant Professor of Medicine  
Research and clinical interests

- advanced heart failure
- echocardiography

**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 D. Tischler, MD**

Associate Professor of Medicine  
Director, Echocardiography Laboratory  
Research and clinical interests

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

**Michael J. Toth, PhD**

Associate Professor of Medicine

Research 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 W. Watkins, MD**

Professor of Medicine  
Director of Interventional Cardiology  
Research and clinical interests

- interventional cardiology
- ischemic heart disease

**Joseph Winget, MD**

Associate Professor of Medicine

Research and clinical interests

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

**Fellows**

Abraham Abernethy  
Imran Alkhalil  
Amir Azarbal  
Sreedivya Chava  
David Cleary  
Christine DeStephan  
Mohamed El-Haddad  
Jonathan Halevy

Patrick Hohl  
Sherrie Khadanga  
Sean McMahon  
Mehdi Rambod  
Ashwini Sharma  
Samvit Tandan  
Srinath Yeshwant

**Nurse Practitioners and Physician Assistants**

Elizabeth Carney, APRN  
Gregory Ehle, PA  
Karen Farrell, APRN

Margaret MacDonald, NP  
Cheryl McNeil, APRN  
Nancy Strong, APRN

Susan Ann Hamlyn-Prescott, APRN  
Ann Laramee, APRN

Barbara Worgan, APRN

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

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

Lauren A. Ferris, PhD student, Biochemistry Graduate Program

Tamar R. Wheeler, 2015 Summer Undergraduate Student Fellowship from the American Heart Association Founders Affiliate, 2016 Distinguished Undergraduate Research Award from the UVM College of Agriculture and Life Sciences

### **Martin M. LeWinter, MD**

Damien Callahan  
Abraham Abernethy  
Patrick Hohl  
Mentorship: Johannes Steiner

### **Peter S. Spector, MD**

Oliver Bates, PhD candidate  
Bryce Benson, PhD candidate, Biomedical Engineering  
Richard Carrick, PhD candidate  
Nicole Habel, post-doctoral fellow

### **Michael J. Toth, PhD**

Blas Guigni, CMB doctoral candidate  
Damien Callahan, PhD, post-doctoral  
Timothy W. Tourville, PhD, post-doc/K08 mentee

## Leadership in Professional Societies

### **Harold L. Dauerman, MD**

Data Safety and Monitoring Boards  
RADIANCE HTN (Renal Denervation) Trial

COAPT (Mitraclip) Trial  
LEADERS FREE (Drug Eluting Stent) Trial  
American College of Cardiology, Fellow  
American Heart Association, Fellow  
Society of Cardiac Angiography and Intervention, Fellow  
UVM Cardiovascular Research Institute, Board of Directors

**Prospero B. Gogo, MD**

Vermont Chapter of the American College of Cardiology, Governor and member  
Novation Cardiovascular Council

**William E. 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**

Vermont Chapter of the American College of Cardiology Governor-Elect  
American College of Cardiology, Fellow  
American Heart Association  
American Society of Nuclear Cardiology  
UVM Cardiology Student Interest Group, faculty contact  
Community Action Committee, VT AHA, member  
Cardiology Clinical Lead, EPIC / PRISM

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

UVM Institutional Biosafety Committee, Chair  
Student Progress Committee, Cellular, Molecular, and Biomedical Sciences Graduate Program,  
Chair  
Graduate Studies Committee, Department of Biochemistry, Chair

**Martin M. LeWinter, MD**



Research Committee, Chair  
Heart Failure Society of America  
Cardiovascular Self-Examination Committee, ABIM

**Daniel Lustgarten, MD**

Heart Rhythm Society, Fellow  
American College of Cardiology Political Action Committee, member  
Paul Dudley White Society - Cardiology Division, member

**Marc D. Tischler, MD**

American College of Cardiology, Fellow  
American Heart Association, Fellow  
American College of Physicians, Fellow  
Faculty Actions Committee, University of Vermont College of Medicine, Chair

## Editorships and Editorial Boards

**Philip A. Ades, MD**

Consulting Editor (former Editor-in-Chief): *Journal of Cardiopulmonary Rehabilitation and Prevention*  
Editorial Boards: *Coronary Artery Disease*, *Circulation*

**Harold L. Dauerman, MD**

Editor-in-Chief: *Coronary Artery Disease*, 2013-current  
Section Leader, Interventional Cardiology: *Journal of the College of Cardiology*, 2014-current  
Editorial Board: *Circulation Cardiovascular Interventions*, 2014-current

**William E. Hopkins, MD**

Associate Editor: *Coronary Artery Disease*

**Friederike Keating, MD**

Editorial Board: *Coronary Artery Disease*

**Martin M. LeWinter, MD**

Associate Editor: *Circulation, Coronary Artery Disease*

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**

Editorial Board: *Journal of Innovations in Cardiac Rhythm Management*

**David J. Schneider, MD**

Associate Editor: *Coronary Artery Disease*

Editorial Boards: *American Journal of Cardiology, Diabetes Care*

**Marc D. Tischler, MD**

Associate Editor: *Coronary Artery Disease*

**Michael J. Toth, PhD**

Editorial Boards: *American Journal of Physiology-Endocrinology and Metabolism, Journal of Cellular Biochemistry*

**Peter Van Buren, MD**

Editorial review for: *Biochemistry, Circulation Review, Coronary Artery Disease*

**Study Sections, National Advisory Boards, National/International Invited Talks**

**Harold L. Dauerman, MD**

Boston Scientific, Physician Executive Committee, 2014 to present

**William E. Hopkins, MD**

8<sup>th</sup> International Neonatal & Childhood Pulmonary Vascular Conference 2015, San Francisco, CA: “*The Right Ventricle in Eisenmengers*”

13<sup>th</sup> Annual Update in Pulmonary Hypertension 2015, Cambridge, MA: “*The Left Ventricle in WHO Group 2 PH: What’s Wrong?*”

**Martin M. LeWinter, MD**

Invited Presentation: International Society for Heart Research Annual Meeting, Buenos Aires, Argentina, April, 2016: “*Determinants of Diastolic Dysfunction in HFpEF*”

**Daniel Lustgarten, MD**

Medtronic Co-Management Council of Advisors, 2008-present

CardioFocus HeartLight Trial, Chair of the Data and Safety Monitoring Board

AdaptResponse Trial, Events Adjudication Committee, member

**Peter S. Spector, MD**

Biosense Webster, Inc., Physician’s Advisory Board, 2003 to present

Atrial Fibrillation Association-US (AFA-US), Medical Board 2011 to present

**Jeffrey L. Spees, PhD**

Vermont Cancer Center/LCCRO Scientific Review Committee, member 2015

AHA Study Section - Brain R1, member 2015 to present

Marsden Research Fund Grant Reviewer, New Zealand, 2015

NIH ZRG1 CB-J (55), Special Emphasis Panel for Stem Cell Animal Models, member

NIH BMBI Study Section, member 2016 (in June 2017, he will start a 4-year term for BMBI)

**Michael Toth, PhD**

ZRG MOSS-C SMEP Member Conflict Study Section, ad hoc member

NIH SMEP Study Section, ad hoc member

**Peter Van Buren, MD**

Medtronic Co-Management Council of Advisors, 2008-present

**Matthew W. Watkins, MD**

Green Mountain Care Advisory Board, State of Vermont, UVMMC physician representative

Northern New England Cardiovascular Disease Study Group – a multi-institutional, regional collaborative focused on improving outcomes in Interventional Cardiology and Cardiac Surgery

**Major Faculty Honors and Awards**

**Philip A. Ades, MD**

2015 - University Scholar, University of Vermont

2016 - University of Vermont Endowed Professor of Cardiovascular Disease Prevention

**Harold L. Dauerman, MD**

2016 - Induction into Association of University Cardiologists

2016 - Simon Dack Award for Outstanding Scholarship, ACC

**Markus Meyer, MD**

U.S. Patent #13/030740: Noninvasive approach to determine cardiac output

U.S. Patent #14/387,971: Cardiac Pacemakers and Uses Thereof

**Peter S. Spector, MD**

The University of Vermont Inventor Hall of Fame for commercializing the Methods and Treatments for Optimizing Treatment of Atrial Fibrillation, awarded April 2, 2015

U.S. Patent #9,033,893 B2: Methods and Systems for Assessing Cardiac Fibrillogenicity, awarded: May 19, 2016

Cardiology Division Teacher of the Year, 2015-2016

**Jeffrey L. Spees, PhD**

U.S. Patent in 2015: Compositions and Methods of Cardiac Tissue Repair  
2015 - Spees Lab invention “Cell-Kro” selected by Stanford University Spark Program to be presented at the BioInvestor Forum, San Francisco, CA  
2016 - Invited to become a charter member of BMBI (i.e., standing NIH study section member)

## Grants

### **Philip A. Ades, MD**

NIH: The National Institute of General Medical Sciences - P20GM103644-01A1  
Vermont Center for Behavior and Health (2013-2018)  
Role: Associate Director and Co-Principal Investigator (Steven Higgins, PI)

National Institute on Drug Abuse and U.S. Food and Drug Administration - P50DAO36114  
Tobacco Centers of Regulatory Science Award (2013-2018)  
Role: Investigator (Steven Higgins, PI)

### **Harold L. Dauerman, MD**

Boston Scientific  
EVOLVE SHORT DAPT: A National Registry of 3 Months Dual Antiplatelet Therapy in Conjunction with SYNERGY Bioresorbable Polymer Drug Eluting Stent for Patients at High Risk of Bleeding, National Steering Committee.  
Role: Site Principal Investigator

Edwards Lifesciences  
Transcatheter Aortic Valve Replacement to UNload the Left Ventricle in Patients with ADvanced Heart Failure: A randomized trial (TAVR UNLOAD)  
Role: Site Principal Investigator.

Bayer Healthcare  
GALILEO: A Randomized Trial of Antiplatelet versus Antithrombotic Strategy with Riviroxiban to Improve Outcomes after TAVR  
Role: Site Principal Investigator.

Medtronic  
CoreValveTranscatheter Aortic Valve Replacement in Patients at Low Risk for Surgical Aortic Valve Replacement  
Role: Site Principal Investigator

SURTA VI Randomized Trial--CoreValve TAVR vs Surgical AVR for Patients at Intermediate Risk for Mortality  
Role: Site Principal Investigator

**Dauerman Research and Education Fund**

A Paradoxical Decrease in Costs for Extreme Risk TAVR Patients; in conjunction with Jacob Martin, MD (Anesthesia), Joseph Schmoker, MD (CT Surgery), Taka Ashikaga, PhD (UVM Biostatistics) and Trainees Sridivya Chava, MD and Christopher Mayhew (UVM 4<sup>th</sup> year Med Student)

Correlation of Coronary CT Angiography with Invasive Cardiac Catheterization Assessment in Patients Referred for TAVR.

Role: Investigator Initiated Research, Site Principal Investigator

Trainee: Sridivya Chava, MD, in conjunction with UVM Biostatistics and George Gentchos, MD (Radiology)

**Friederike Keating, MD**

Nuclear Cardiology Projects: Safety of Regadenoson after NSTEMI

Improved Systems of Care for Inpatients with Elevated Troponin

Resident research project on troponin elevations in inpatients; with Tara Metcalf-Scribner, MD, Resident: ongoing.

Sarcoidosis and PET imaging – new protocols; with Mehdi Rambod, MD ASNC 2015

Sanofi

EFC11570 ODYSSEY Outcomes study

Role: Site Principal Investigator

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

NIH/NHLBI T32 HL007594-26-30

Hemostasis and Thrombosis Program for Academic Trainees (7/1/2015-6/30/2017)

Role: Research Mentor and Principal Investigator/Program Director

American Heart Association Founders Affiliate Grant-in-Aid 16GRNT31160006

Role of PURB in Controlling the Phenotypic Plasticity of Vascular Smooth Muscle Cells (7/1/2016-6/30/2018)

Role: Principal Investigator

**Martin M. LeWinter, MD**

NIH RO1 HL118524

Myofilament Basis of Diastolic Dysfunction in HFpEF (9/1/2014-6/30/2018)

Role: Principal Investigator

### **Robert Lobel, MD**

Product Surveillance Registry 09-167 Registry Study: Patients who have received specific leads in the past 30 days, examining the longevity of the system/leads once implanted

Role: Principal Investigator

### **Daniel Lustgarten, MD**

WRAP-IT 15-270: Determine the effectiveness of the TYRX absorbable envelope

Role: Principal Investigator

Protego DF4 PAS 15-35: Determine the effectiveness of Biotronik's DF4 lead

Role: Principal Investigator

CAP2 13-031: Continued access of the Prevail Study

Role: Principal Investigator

Prevail 11-035: Prospective Randomized Evaluation of Warfarin Therapy in Atrial Fibrillation Patients Versus WATCHMAN LAA Closure Technology (PREVAIL).

Role: Principal Investigator

St. Jude Quadripolar Pacing 13-013: Collect additional information on the safety and long-term performance of the St. Jude quadripolar CRT-D device system or any device with quadripolar pacing capabilities and the Quartet LV lead in patients that are indicated for CRT-D

Role: Principal Investigator

TEMPO 15-008: Evaluate the Effect of GS-6615 on Ventricular Arrhythmia in Subjects with an ICD or CRT-D

Role: Principal Investigator

### **Markus Meyer, MD**

NIH NHLBI 1 R01 HL122744-01A1

Tachycardia-Induced Sarcolemmal Calcium Extrusion Defect in Patients with Diastolic Dysfunction (2015-2020)

Role: Principal Investigator

Medtronic

Pacing-induced Remodeling in a Swine Model of Left Ventricular Hypertrophy (2013-2016)

Role: Principal Investigator

### **David J. Schneider, MD**

Janssen Pharmaceuticals LLC  
Novel Markers of Thrombotic Risk (7/1/2014 – 12/31/2016)  
Role: Principal Investigator

**Jeffrey Spees, PhD**

NIH/NHLBI R01 HL132264  
Vascular Protection by HGF/IgG Protein Complexes that Activate RYK (4/1/2016-3/13/2020)  
Role: Principal Investigator

NIH/NINDS/NIGMS R01 NS073815  
Control of Reactive Astrocytes by Notch1 and Amyloid Precursor Protein (7/1/2012-6/30/2016)  
Role: Principal Investigator

SPARK<sup>VT</sup> (UVM Medical Center)  
Role: Principal Investigator

**Peter S. Spector, MD**

Gilead (Tempo) 2015  
Medtronic (Wrap It) 2015  
Biotronic (Protego) 2016  
SP282 (Evslin Grant), 2015  
PSPEC (R&E), 2015  
EP (R&E), 2015  
BSW, 2015

**Michael J. Toth, PhD**

NIH R01 AG033547  
Muscle Disuse and Contractile Dysfunction in the Elderly  
Role: Principal Investigator

NIH R21 CA191532  
Alternative Exercise Modalities to Improve Skeletal Muscle Function in Cancer Survivors  
Role: Principal Investigator

NIH R01 AR065826  
Skeletal Muscle Atrophy and Dysfunction in Human Cancer  
Role: Principal Investigator

Dept. of Medicine Translational Science Award  
Nutrition and Exercise in Critical Illness (The NEXIS Trial): A pilot study



Role: Co-Investigator (Renee Stapleton, PI)

**Matthew W. Watkins, MD**

Capricor, Inc.

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

Role: Site Principal Investigator

NIH/Renova Therapeutics

Adenovirus Vector Type 5 (Ad5.hAC60 Expressing Human Adenylyl Cyclase Type 6)

Administered via Intracoronary Catheterization – enrollment completed 2014, study ongoing

Role: Site Principal Investigator

**Joseph Winget, MD**

AdaptResponse 15-066: Test the AdaptivCRT algorithm in CRT indicated patients

Role: Principal Investigator

CROSS X4 15-406: Evaluate the Presence of PNS in Patients Who Receive a BSCI Device with SJM LV Lead (study closed March 2016)

Role: Principal Investigator

**Peter VanBuren, MD**

NIH/NHLBI 5U10HL110342

New England, New York and Quebec Regional Clinical Center of the National Heart Failure Research Network (1/1/2012-12/31/2018)

Role: Principal Investigator

## Publications

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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 see over 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 will be adding Dr. Melanie Bui to our staff. She is joining her husband (a pathology researcher) in coming to UVM. Dr. Bui will see patients with all forms of dermatologic disease and has a special interest in research with cutaneous stem cells. We are working on a joint hire with CVPH to improve the care of patients in upstate New York.

Our new Veterans Administration clinic has opened at the outpatient center in Burlington under the direction of Dr. Joseph Pierson, and the VA is now sponsoring one of our residents. Dr. Laura McGevna will join Dr. Pierson in providing services at the VA.

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.

In the last year our surgical dermatologists and our dermatopathologists worked with Dr. Christian Jordan to develop a frozen tissue bank. Dr. Jordan has accepted a position at the Cleveland Clinic for his dermatology residency training. The tissue bank is expanded daily and will provide fresh frozen tissue for research for the foreseeable future.

This year has seen an explosion in the number of publications by our residents and students. This reflects an increasing focus on education and development.

Dr. Glenn Goldman is Chair of the American Society for Dermatologic Surgery International Travelling Mentorship Program. He and his fellow, Kendra Lesiak, MD travelled to Wroclaw, Poland for one week of instruction and surgery with the only Mohs surgeon in Poland, Dr. Andrzej Bieniek. Dr. Lesiak had the honor of lecturing to the Polish Society of Dermatology.



Dr. Goldman, Dr. Weinberger, Dr. Holmes, Dr. Lin, Dr. McGevna and Dr. Pierson serve on a number of UVMMC committees. Dr. Julie Lin continues her involvement in PRISM, where she is the PRISM representative from the Department of Medicine. We continue to work on developing a functional telemedicine program and this year this venture is on the strategic plan for the institution.

Our residency and procedural dermatology fellowship remain successful and rewarding. This year Dr. Elizabeth Lester completed her training in dermatology and has begun a fellowship in dermatopathology here at the University of Vermont College of Medicine. Graduate Jeremy Hugh, MD accepted a position on the faculty at Dartmouth. 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. On a special note, one of our home-grown students matched with us and has begun her internship. Dr. Katelyn Shea started in dermatology six years ago as a medical assistant for Dr. Julie Lin. She had an immediate aptitude for dermatology and, after two years of work, matriculated at the UVM COM. She will be doing her transitional year here in Internal Medicine and will then move on to dermatology.

## **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 2014-2016

**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.

**Leadership in Professional Societies:**

**Vermont Dermatologic Society**

Dr. Joseph Pierson, President

**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**

**Peer-reviewed Articles**

Balla A, Pierson J, Hugh, J, Wojewoda C, Gibson P, Greene L. Disseminated cutaneous Curvularia infection in an immunocompromised host; diagnostic challenges and experience with voriconazole. J Cutan Pathol 2016;43(4):383-387

Benson PM, Frieling GW, Pierson JC, Weinberger CH. Firm Gray Nodule on the Scalp. Primary Cutaneous Mucinous Carcinoma. *Cutis* 2016;97(6):E8-E9.

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## Division of Endocrinology and Diabetes

John (Jack) L. Leahy, MD, Co-Director

Joel J. Schnure, MD, Co-Director

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



The 2015-2016 academic year was one of increased research and patient care opportunities for the Division of Endocrinology and Diabetes. We were pleased to recruit Dr. Sree Susmitha Garapati to our faculty following completion of her Endocrinology Fellowship with our Division; her recruitment brings our roster of healthcare providers to 5 physicians, 2 nurse practitioners, and 4 certified diabetes educators. Dr. Garapati is particularly skilled in in-patient diabetes management and she fills a key role in our in-patient diabetes management team, which works to ensure a multidisciplinary, comprehensive, patient-oriented approach to the care of patients with diabetes and their families.



The Division serves the residents of Vermont and upstate New York, with a goal of delivering seamless, system-wide care within the University of Vermont Health Network for endocrine-related disorders. We provide consultative and ongoing care through our out-patient endocrine clinic at Tilley Drive, which has approximately 14,000 visits per year (4<sup>th</sup> in the Department of Medicine). The Division also operates a consult service at the UVM Medical Center and continues to develop an endocrine service at CVPH in Plattsburgh, NY. Beginning in the autumn of 2016, the CVPH clinic will be staffed by Tina Kader, MD, who will join our Division as an adjunct faculty member.

The “Diabetes Initiative” developed in conjunction with PCIM and Family Medicine continues to be a valuable tool in use within the UVM Health Network. The roadmaps and algorithms for treatment that are included in this initiative ensure state of the art diabetes management for all patients treated by our diabetes care team. In response to the increasing number of patients monitoring their glucose control with apps on mobile devices, Dr. Schnure is beginning an exploration of methods to incorporate glucose monitoring data from a patient's mobile device into the electronic medical record.

The thyroid fine needle aspiration biopsy clinic developed in conjunction with cytopathology faculty continues to be an overwhelming success in providing our patients with early diagnosis and treatment of thyroid cancer and in providing endocrine and cytopathology fellows and trainees with immediate feedback in the development of their biopsy and diagnosis skills.

In July 2015, Dr. Nathan received the VISION Award from the UVM Medical Center. This award acknowledges a clinician's dedication to patient care and is based upon letters and recommendations received by colleagues and patients.

The Division's basic research efforts continue to focus on beta cell function, intracellular metabolism, and life cycle. Dr. Leahy's work in this area is world renown and was recognized locally with

his investiture in March 2016 as the inaugural Sarah Nichols Gruenig Green & Gold Professor in Diabetes Research. This endowment was established to fund research to improve treatment and find an eventual cure for diabetes.

Our clinical research includes participation in clinical trials involving incretin biology; new product development; novel treatments for hypertension, obesity, and insulin resistance; and research regarding cardiovascular outcomes. In conjunction with the Maternal Fetal Medicine Clinic, Dr. Schnure is studying the usefulness of glycosylated albumin (a test known as the fructosamine assay) as a measure of glucose control in pregnant women with diabetes. Historically, the hemoglobin A1c test, a measure of average blood glucose over 6 to 12 weeks, has been used—this time frame, however, is too long an interval for use in pregnancy. The fructosamine assay being studied provides glucose control information based on a 2-week turnaround time.

As part of our educational mission, Dr. Nathan served as the Course Director for the 2016 New England Thyroid Conference, held in April in Framingham, MA. This CME conference provided lectures and training on the care of patients with benign and malignant thyroid disorders and was attended by more than 70 physicians and other health professionals, fellows, and residents from the New England area.

Finally, each year Dr. Jetton teaches classes in human structure and function and in human physiology and pharmacology to graduate and medical students, and the Division's medical faculty train two Fellows in Endocrinology and work closely with the medical students and residents rotating through the endocrine service.

## Faculty

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

Professor of Medicine

Sarah Nichols Gruenig Green & Gold Professor in Diabetes Research

Co-Director, Division of Endocrinology and Diabetes

Research and clinical interests:

- Diabetes mellitus
- Islet beta-cell physiology and dysfunction

### **Joel J. Schnure, MD**

Professor of Medicine

Co-Director, Division of Endocrinology and Diabetes

Member, DOM Operations and Efficiency Committee

Lead, Diabetes Chronic Care Initiative

Lead, Task Force on In-patient Diabetes Education

Member, In-patient Diabetes Initiative

Research and clinical interests:

- Diabetes care, Types 1 and 2
- Diabetes in pregnancy
- Thyroid disease
- Pituitary disease
- Integration of home glucose monitoring into electronic medical records
- Fructosamine as an alternative to HbA1C in pregnancy

**Sree Susmitha Garapati, MD**

Assistant Professor of Medicine

Clinical interests:

- In-patient and out-patient diabetes management
- Thyroid disease, including thyroid ultrasound and biopsy
- Adrenal and pituitary diseases
- PCOS
- Male hypogonadism

**Matthew P. Gilbert, DO, MPH**

Associate Professor of Medicine

Director, Endocrinology Fellowship Program

Director, Inpatient Diabetes Management

Research and clinical interests:

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

**Dhananjay (Jay) Gupta, PhD**

Research Assistant Professor

Research interests:

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

**Thomas L. Jetton, PhD**

Professor of Medicine

Research interests:

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

Teaching interests:

- Human Structure and Function
- Human Physiology and Pharmacology

**Muriel H. Nathan, MD, PhD**

Professor of Medicine

Research and clinical interests:

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

## Fellows

Juan Pablo Perdomo Rodriguez, MD (F4; started July 1, 2015)

Anna Thottan, MD (F5; started July 28, 2014 and will complete training July 27, 2016)

## Nurse Practitioners and Certified Diabetes Educators

Margaret Costello, FNP, MS

Ann Gotham, ANP, MSN, ScM

Kristen Bolton, MS, RD, CDE

Rhonda Lapidow, RN, CDE

Mary Spence, RN, CDE

Linda Tilton, MS, RD, CDE

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

None

## Endowed Professorships

**Sarah Nichols Gruenig Green & Gold Professor in Diabetes Research**

March 2016 – John (Jack) L. Leahy, MD named inaugural professor

## Leadership in Professional Societies

**Muriel H. Nathan, MD, PhD**

New England Thyroid Conference, 2016 Course Director

**Thomas L. Jetton, PhD**

Boston-Ithaca Islet Club, senior member and program organizer

## Editorships and Editorial Boards

**Dhananjay (Jay) Gupta, PhD**



Editorial Board: *Journal of Endocrinology, Diabetes and Obesity*

Reviewer: *Diabetes, Science Reports, Journal of Nutritional Biochemistry, Life Sciences, International Journal of Chronic Diseases*

**Thomas L. Jetton, PhD**

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

**John (Jack) L. Leahy, MD**

Founding member and member of the Editorial Board: [BetaCellsInDiabetes.org](http://BetaCellsInDiabetes.org)

Associate Editor: *Journal of the Endocrine Society*

Editorial Board: *Journal of Biological Chemistry*

**Joel J. Schnure, MD**

Editorial Board: *Coronary Artery Disease*

## Study Sections and Federal Advisory Boards

**Dhananjay (Jay) Gupta, PhD**

Grant Review Panel, Diabetes UK

**Thomas L. Jetton, PhD**

EMNR-Study Section (SBIR and STTR), ad hoc reviewer

NIDDK, ad hoc reviewer

NIH, ad hoc reviewer

**John (Jack) L. Leahy, MD**

American Diabetes Association, Grant Review Panel

Hillblom Foundation, Scientific Advisory Board

## Major Faculty Awards

**Muriel H. Nathan, MD, PhD**

UVMVC VISION Award for dedication to patient care, July 2015

## Grants

**Dhananjay (Jay) Gupta, PhD**

Juvenile Diabetes Research Foundation International

Manipulating  $\beta$ -cell Inflammation and Survival via Cholinergic Pathways (09/01/13-08/31/16)

Role: Co-Investigator (Thomas Jetton, Principal Investigator)

University of Vermont REACH Award

Studying the Role of Dairy-Derived Bioactive Lipids as a Nutritional Intervention Targeting the Pathogenesis of Diabetes Mellitus (05/01/14-08/31/15)

Role: Co-Investigator (Jana Kraft, Principal Investigator)

### **Thomas L. Jetton, PhD**

Juvenile Diabetes Research Foundation International

Manipulating  $\beta$ -cell Inflammation and Survival via Cholinergic Pathways (09/01/13-08/31/16)

Role: Principal Investigator

Armin Grams Research Award – UVM Center on Aging

Nutritional Intervention with Plant- and Dairy-Based Bioactive Fatty Acids to Reduce Diabetes Risk in the Elderly (2015-2016)

Role: Principal Investigator

University of Vermont REACH Award

Studying the Role of Dairy-Derived Bioactive Lipids as a Nutritional Intervention Targeting the Pathogenesis of Diabetes Mellitus (05/01/14-08/31/15)

Role: Co-Investigator (Jana Kraft, Principal Investigator)

### **Muriel H. Nathan, MD, PhD**

University of Vermont Medical Group Grant

A Quality Initiative to Improve Glycemic Control in Diabetic and Non-diabetic Patients after Lower Extremity Bypass (2012-2015)

Role: Co-Investigator (Daniel J. Bertges, Principal Investigator)

University of Vermont Medical Center Investigator-Initiated Award

Molecular Tumorigenesis of Papillary Thyroid Microcarcinoma (2015-2017)

Role: Co-Investigator (Nikoletta Sidiropoulos and Frances Carr, co-Principal Investigators)

## **Publications**

Gilbert MP, Marre M, Holst JJ, Garber A, Baeres FM, Thomsen H, Pratley RE. Comparison of the long-term effects of liraglutide and glimepiride monotherapy on bone mineral density in patients with type 2 diabetes. *Endocr Pract.* 2016 Apr;22(4):406-11.

Goedde M, Tracey P, D'Epiro G, Gilbert M. Pharmacology of type 2 diabetes: team-based learning. AAMC MedEdPORTAL Publications. 2016 May;12(5):10395. [http://dx.doi.org/10.15766/mep\\_2374-8265.10395](http://dx.doi.org/10.15766/mep_2374-8265.10395).

Leahy JL. Technosphere inhaled insulin: is faster better? Diabetes Care. 2015 Dec;38(12): 2282-4.

The FLAT-SUGAR Trial Investigators: Probstfield JL, Hirsch IB, Davis BR, Ahmann A, Bergenstal R, Gilbert MP, Kingry C, Khakpour D, Lai D, Pressel SL, Branch KR, Riddle MC, O'Brien KD. Glucose variability in a 26-week randomized comparison of mealtime treatment with rapid-acting insulin versus GLP-1 agonist in participants with Type 2 diabetes at high cardiovascular risk. Diabetes Care. 2016 Jun;39(6):973-81.

## Division of Gastroenterology and Hepatology

James Vecchio, MD, FACP, AGAF, FACG , Director

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



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

In January, 2016, the GI Unit welcomed Dr. Gordon Jensen. Dr. Jensen is a world recognized expert in nutritional disorders and as well is Senior Associate Dean of Research at UVM. His clinical and research interests include nutrition assessment in chronic illnesses and short bowel syndrome.

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 and an electronic reporting system. Over 12,500 endoscopic procedures are performed each year. All aspects of diagnostic and therapeutic GI endoscopy are performed. Advanced endoscopic procedures include RFA (radio frequency ablation) of the esophagus and EUS (endoscopic ultrasound) of the stomach, pancreas and colon with onsite cytopathology, balloon enteroscopy and all modes of ERCP (endoscopic retrograde cholangiopancreatography) with cholangioscopy and laser lithotripsy with portable C-arm fluoroscopy are performed. A dedicated, specialized 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 newly created 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 medical school 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 detailed 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 of 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), maintaining nutrition in chronic illness, 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 an 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

Director, Gastroenterology Outpatient Ambulatory Care Center

- 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
- GERD

**Gordon Jensen, MD, Ph.D.**

Professor of Medicine and Nutrition

Senior Associate Dean of Research

- Nutrition assessment and therapy in chronic illness
- Short bowel syndrome

**Steven Lidofsky, MD, Ph.D.**

Professor of Medicine and Pharmacology

Director, Hepatology Section

Co-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

Co-Director, Gastrointestinal Research

- Inflammatory Bowel Disease
- Irritable Bowel Syndrome
- Therapeutic Endoscopy
- Translational research with Human Microbiota; Fecal Microbial Transplant

**Doris Strader, MD**

Professor of Medicine

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

**Richard Zubarik, MD**

Professor of Medicine

Director, Endoscopy

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

**Mario Velez, MD**

GI Fellow

**Aaron Cohn, MD**

GI Fellow

**Ovais Ahmed**

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

*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.



- 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

Vanner, S., B. Greenwood-Van Meerveld, **G.M. Mawe**, T Shea-Donohue, E Verdu, J.D. Wood and D Grundy (2016) Fundamentals of neurogastroenterology: Basic Science. *Gastroenterology* 150:1280-1291.

Spohn, S.N., F. Bianco, R.B. Scott, C.M. Keenan, C.H. O'Neill, E. Bonora, M. Dickey, B. Lavoie, R.L. Wilcox, W.K. MacNaughton, R. De Giorgio, K.A. Sharkey, **G.M. Mawe.** Protective actions of epithelial 5-HT<sub>4</sub> receptors in normal and inflamed colon. (In revision).

Ziegler TR, May A, Wischmeyer P, Evans M, Easley K, Griffith D, Nisha D, Kudsk K, Sax H, Blumberg HM, Jones DP, Hebbard G, Collier BR, Cotsonis GA, Hao L, Rosenberg ES, **Jensen GL**, Manatunga A, Galloway JR, Martin G, Leong T. Efficacy and Safety of Glutamine-Supplemented Parenteral Nutrition in Surgical ICU Patients: An American Multicenter Randomized Controlled Trial. *Annals of Surgery* Epub ahead of print 2015 Oct. 22.

Cheng FW, Gao X, **Jensen GL**. Weight change and all-cause mortality in older adults: A meta-analysis. *J of Nutrition in Gerontology and Geriatrics*. 34:343-368 (2015).

Cheng FW, Gao X, Mitchell DC, Wood C, Still CD, **Jensen GL**. Metabolic health status and the obesity paradox in older adults. *J of Nutrition in Gerontology and Geriatrics*. Accepted, (In Press 2016).

Cheng FW, Gao X, Mitchell DC, Wood C, Still CD, Rolston D, **Jensen GL**. Body mass index and all-cause mortality among older adults. *Obesity*. Accepted, (In Press 2016).

## General Internal Medicine & Geriatrics

Jennifer Gilwee, MD, Division Chief

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



The Division of General Internal Medicine & Geriatrics specializes in diagnosing, treating, and preventing medical problems in adolescents, adults, and the elderly. Our general internal medicine physicians work with their teams in the outpatient clinics to care for a large proportion of patients in our area. Our geriatricians provide expert consultation on geriatric issues and are responsible for the care delivered at a number of skilled nursing facilities.

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

### *Service:*

Our clinical service includes approximately 40 physicians, nurse practitioners and physician assistants. We have four outpatient sites in Chittenden County. We also see patients at numerous skilled nursing facilities and the memory center.

Over the past year we welcomed an exceptional new faculty member – Dr. Michael LaMantia (Section Chief of Geriatrics)

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. Our geriatrics section does consultation on geriatric outpatients through our Adult Primary Care Williston location and also at the Memory Center.

This year GIM & Geriatrics faculty and providers will conduct approximately 70,000 patient encounters and generate 100,000 work RVUs.

Our faculty and providers are extensively engaged in service at the state and national levels. A few examples include: Faculty participation in committees and task forces at the College of Medicine and UVM Medical Center is also wide-ranging.

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.

*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 member's 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), and 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.

Our educational endeavors extend to graduate students in analysis of clinical research, nurse practitioners in palliative care fellowship programs, and nurse practitioners early in their clinical rotations as they start to use the electronic health record in their encounters. We educate our

colleagues locally, regionally and nationally in a variety of venues. An example of this is the Vermont Academic Detailing Program which delivers educational outreach to Vermont's primary care providers. Additionally, our geriatricians are key presenters at the annual Vermont Geriatrics Conference which is a one-day symposium covering practical and innovative approaches to the medical care of older adults.

### ***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 the impact of innovative models for primary care, high value laboratory ordering practices, narcotic prescribing practices in the outpatient setting, the impact on the electronic medical record on patient-provider interactions and many initiatives around chronic disease management.

### **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

Co-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

**Jennifer Gilwee, MD**

Assistant Professor of Medicine  
Division Chief, General Internal Medicine and Geriatrics

**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)

Associate 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

**Michael LaMantia, MD**

Associate Professor of Medicine

- Chief, Section of Geriatrics

**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

**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

**Birchwood Nursing Center (Skilled Nursing Facility)**

Tara Meyer, NP

### **Leadership in Professional Societies:**

Mark Levine, MD

- American College of Physicians (ACP) Board of Regents member
- Chair, ACP Education and Publications Committee
- Vice President, VT Medical Society

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

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:**

- Teaching Academy Inductee in December 2015:
  - Member- Dr. Isaura Menzies
- Dr. Marie Sandoval was promoted to Associate Professor

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

1. Vu TR, Angus SV, Aronowitz PB, Harrell HE, Levine MA; et al. The Internal Medicine Subinternship—More Important Than Ever: A Joint CDIM-APDIM Position Paper J Gen Int Med 2015, 30:1369-75
2. Financing U.S. Graduate Medical Education: A Policy Position Paper of the Alliance for Academic Internal Medicine and the American College of Physicians. Ann Intern Med. 2016 Doi:10.7326/M15-2917.
3. Palumbo MV, Sandoval MB. Teaching Electronic Health Record Communication. Computers, Informatics and Nursing 2016, 34 (6); 254-258.

## 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 faculty focusing on benign hematology and thrombosis, 4 faculty treating benign and malignant hematology, 11 medical oncologists, 1 internist (lymphedema), 6 fellows, 3 post-doctoral fellows, 6 midlevel providers, and over 70 nurses and staff in the outpatient clinic. Dr. Eswar Tipirneni started in the fall of 2015 and replaces

Dr. Valentine at Central Vermont Medical Center (CVMC). He works with Dr. Ospina, and covers not only CVMC, but also Gifford Hospital in Randolph. Dr. Elvira Umyarova has joined our group in July 2016. She will focus her research and clinical expertise on acute leukemia. She is coming from the University of South Carolina in Charleston.

PROGRAMS: The Division supervises

- The Thrombosis & hemostasis Program, (Dr. Cushman, PI)
- The Apheresis Program, (Dr. Sprague, PI)
- The Hemophilia Treatment Center supported by a federal grant, (Dr. Holmes, PI)
- The Stem Cell Transplant Program, which was reaccredited in 2016, (Dr. Sprague, PI)
- The High Risk Breast Program, a clinical research program, (Dr. Wood, PI)
- Cancer Familial Genetics, (Drs. Wood and Greenblatt, PI's)
- Oncology Rehabilitation, (Dr. Dittus, PI)
- Lymphedema Services, (Dr. O'Brien, PI)

Our group embraces the mission of the COM and UVMHC with cost effective high quality care, cutting-edge research, and dedication to all aspects of teaching and research

### **Clinical work**

Clinical efforts for 2015-2016 included a heavy clinical load with 33,500 outpatient visits (about 2,300 new patients), approximately 12,100 treatment infusion/injection patients and about 7,000 inpatient visits. The Cancer Service Line, a transdisciplinary effort to provide optimal patient-centered care continues to grow and this year the Service Line is organized into Transdisciplinary Academic Teams (TDT), groups of expert physicians and scientists who focus on all aspects of academic medicine for the specific cancers they treat and research. Established TDT clinics exist for breast, upper GI, ENT, lung cancer, GU, melanoma, sarcoma, leukemia's and lymphomas. Approximately 674 cases were presented at the TDT clinics. We thank all members of other Divisions for their participation

### **Research**

Research within the Division is done in several collaborative ways (clinical trials, basic science research and epidemiology) covering a number of broad themes (new drug development, cancer

treatment and prevention, thrombosis, cardiovascular and stroke epidemiology, supportive care of cancer patients, cancer and exercise, and cancer and coagulation). Working within Transdisciplinary Teams, the faculty of the Hematology/Oncology Division are principal investigators for the majority of the over 200 cancer related studies at the University of Vermont, with 25% of these studies being investigator initiated. 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.

Faculty continue to publish in high impact journals and serve in national leadership as documented below.

### **THP**

The Mission of the Thrombosis and Hemostasis Program (THP) is to deliver high quality evidence-based care to patients with venous thromboembolism (VTE), stroke, post-thrombotic syndrome and bleeding disorders, as well as rare disorders. The THP group, including clinicians and clinic staff, meets twice a month to discuss operations, projects and research.

Clinicians working in the program include 3 faculty, Drs. Cushman, Zakai and Holmes, 1 chief medicine resident, Dr. Halevy, 2 hematology oncology fellows doing continuity clinic, 2 nurse practitioners and 2 nurses. There were 740 THP referrals in 2015, an 8.2% increase over 2014. The THP group led or collaborated in over 30 quality improvement project/activities in 2015.

### **New Program to reduce VTE in Patients with Cancer**

This quality initiative program, led by Dr. Chris Holmes, is aimed at preventing venous thromboembolism (VTE) without increasing bleed risk for patients with cancer. This new clinical intervention called VTE-PACC (VTE Prevention in the Ambulatory Cancer Center) was launched by our division, in collaboration with the Jeffords Institute for Quality on October 1, 2015. The program is fully operational and assesses risk for clotting and bleeding for all patients beginning chemotherapy or biologic therapy in the UVM Cancer Center clinic. To date over 300 patients have been assessed. Patients found to be at high risk for VTE are referred to the Thrombosis and Hemostasis Program for follow-up and recommendations. The program involves a team-based approach to educate all patients on their risk of blood clots and tailors VTE prevention treatments to the patient's needs and risks by collaborating with oncologists, hematologists, nursing staff and pharmacists. Of all the patients assessed, 94% have received VTE education, 22% of the patients were found to be high risk of thrombosis and approximately 75% of these were treated prophylactically. To date there have been less than 3% of bleeding adverse events that required holding the preventative anticoagulation. The rate of VTE has declined from 14% to <5% among all patient screened and educated through the program.

### **Hemophilia Treatment Center (HCT)**

The hemophilia treatment center is directed by Dr. Holmes. It is one of 140 federally funded centers offering comprehensive care to patients with hemophilia and other bleeding disorders. The HTC is supported, in part, by two active grants-one from the Centers for Disease Control (CDC) and the other from the Federal Health Resources and Services Administration (HRSA). Annually, the Vermont HTC participates in 4 national surveillance programs; Population Surveillance, American Thrombosis and Hemostasis Network (ATHN) database, Community Counts and Rare Bleeding Disorders. For the first time this year, we participated in a national patient experience survey on transition for pediatric patients. Dr. Holmes sits on the Region 1 Executive Committee, which develops regional and national policies relevant to the care of patients with bleeding disorders. In addition, UVMHC is also now participating in a national program to access transitions of care with Dr. Holmes as the site PI for this multi-institutional quality grant from the ATHN.

## **B. Faculty**

### **Steven 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

### **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, coagulation, and cancer

**Farrah Khan, MD – Assistant Professor**

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

**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

**Eswar Tipirneni, MD—Clinical Assistant Professor**

Physician at CVMC

**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**

Samir Ambrale, MD – 3<sup>rd</sup> year fellow

Inder Lal, MD – 3<sup>rd</sup> year fellow

Hibba Rehman, MD – 2<sup>nd</sup> year fellow

Jose Ruades, MD – 2<sup>nd</sup> year fellow

Bhargavi Pulluri, MD – 1<sup>st</sup> year fellow

Purva Sharma, MD – 1<sup>st</sup> year fellow



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

Jamie Kelly, PA  
Penny Gibson, PA  
Anne Berkowitz, NP  
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**

Katharine Cheung, MD, Post-Doctoral Associate  
Kara Landry, MD, Post-Doctoral  
Daniel Douce, MD, Graduate Student, LCCRO Fellow  
Elizabeth Hall, MD, Resident Research Project mentored by Neil Zakai  
Matthew Lebow, BS, Post-BACC Student  
Damon Houghton, MD: Heme/Onc Fellow UNC, mentored by Neil Zakai

**F. Endowed Professorships**

**G. Leadership in Professional Societies**

**Steven Ades, MD**

Member, UVM Faculty Senate Financial & Physical Planning Committee  
Member, UVM Surgical Oncology Faculty Search Committee  
Associate Program Director, Hematology Oncology Fellowship Program  
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 and Monitoring Committee  
President, 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  
Member, UVM Medical Center Hematology/Oncology Fellowship Clinical Competency Committee

**Mary Cushman, MD, MSc**

Member, Scientific Program Planning Committee, World Heart Federation and American Board Director, American Heart Association  
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.

Board Director, North American Thrombosis and Hemostasis Society  
President, Board of Directors Vermont District, American Heart Association  
Member, Medical Alumni Executive Committee  
Member, Volunteer Oversight Group, American Heart Association  
Member, Quality Committee, American Society of Hematology  
Member, Media Experts Committee, American Society of Hematology  
Member, Statistics Committee, American Heart Association  
Member, Corporate Relations Review Committee  
Member, ASH Maintenance of Certification Committee

**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

**Marc Greenblatt, MD**

Member, American Association of Cancer Research  
Member, American Society of Clinical Oncology  
Member, American Society of Human Genetics  
Member, Collaborative Group of the Americas on Inherited Colorectal Cancer  
Member, International Society for Gastrointestinal Hereditary Tumors (InSiGHT)  
Member, Human Genome Organization Mutation Database Initiative  
Member, Human Genome Variation Society  
Member, Human Variome Project (HVP)  
Member, International Mismatch Repair Consortium (IMRC)  
Member, Cancer and Leukemia Group B- Alliance for Clinical Trials  
Member, National Surgical Adjuvant Breast Program  
Member, Vermont Medical Society  
Co-Chair, Working Group on Assessment of Pathogenicity, Human Variome Project  
Core Member, Variant Interpretation Committee, International Society for  
Gastrointestinal Hereditary Tumors (InSiGHT)  
Co-Chair, Working Group on Assessment of Pathogenicity, Collaborative Group of the  
Americas on Inherited Colorectal Cancer (CGA-ICC)  
Member, Scientific Advisory Council, Human Variome Project  
Present, Human Genome Variation Society (HGVS)

**Chris Holmes, MD, PhD**

Member, Thrombosis Committee, American Thrombosis and Hemostasis Network,  
Centers for Disease Control  
National Chair, Hemophilia Transitions, American Society of Hematology Workgroup on  
Transitions; American College of Physicians Pediatric to Adult Care Transition Initiative  
Executive Board Member, National Network, Health and Human Services New England  
Comprehensive Hemophilia Diagnostic and Treatment Centers  
Director, Community Counts-Vermont, Centers for Disease Control (CDC) Public Health  
Monitoring Program, Division of Blood Disorders

Member, Institutional Review Board, Committee on Human Research in the Medical Sciences (CHRMS), University of Vermont

**Farrah Khan, MD**

Chair, Breast Research Meeting

Member: UVMDC Department of Medicine Faculty Development Committee, Faculty Engagement Committee

Member, UVMDC Department of Medicine Quality Assurance and Improvement Committee

**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

Member, American Society of Hematology

Member, American Society of Clinical Oncology

Member, American College of Physicians

**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

Board of Director, Alliance for Clinical Trials in Oncology

Board of Director, National Cancer Institute Gynecologic Cancers Steering Committee

**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  
Member, American College of Physicians  
Member, National Surgical Adjuvant Breast and Bowel Project

**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  
Member, Hemophilia and Thrombosis Research Society Membership 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  
Guest Editor, Circulation

**H. Editorships and Editorial Boards**

**Neil Zakai**

Guest Editor, Circulation

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

**Clair Verschraegen**

NCI Special Emphasis Panel  
NCIC Review Section

**J. Major Faculty Awards**

**K. Grants**

**George Atweh**

NIHU01 HL117709                      Punam, Malik (PI)                      08/15/13-05/31/18  
Cincinnati Center Excellence in Hemoglobinopathies Research  
Role: Co-Investigator

**Maura Barry**

University of Vermont Medical Center Foundation                      12/1/15-12/1/17  
Victoria Buffum Endowment

Quality of Life Assessment for Head and Neck Cancer Patients Undergoing Treatment in  
The First Year of Survivorship  
Role: PI

**Mary Cushman**

NINDS 08/01/02-11/30/17  
U01 NS041588  
Etiology of Geographic and Racial Differences in Stroke  
Mortality  
G Howard, PI, University of Alabama at Birmingham  
ADC (current Vermont subcontract): \$684,296  
Role: Subcontract PI, 20%

NHLBI 01/01/98-03/31/17  
R01 HL59367  
Epidemiology of Venous Thrombosis and Pulmonary Embolism  
AR Folsom, PI, University of Minnesota  
ADC (current Vermont Contract): \$33,723  
Role: Subcontract PI, 10%

NHLBI 08/15/00-08/14/21  
HHSN2682015000031  
Multiethnic Study of Atherosclerosis  
R. McClelland, PI, University of Washington  
ADC (current Vermont Subcontract): \$92,375 (current cycle)  
Role: Subcontract PI, 5%

NIH 07/01/14-06/30/19  
P01HD03192116A1  
The National Longitudinal Study of Adolescent Health - Wave V  
ADC: (Vermont Subcontract): \$478,373  
K Harris, PI; University of North Carolina, Chapel Hill  
ADC: (Vermont Subcontract): \$478,373  
Role: Subcontract PI, 10%

NIH 09/08/14-05/30/19  
P20GM109098  
Effects of Perfluoroalkyl Chemicals on Stroke Incidence and Mortality  
S Frisbee, PI  
ADC (Subcontract): \$6,978  
Role: Subcontract, PI, 2%

NIH 04/01/16-03/31/21  
NICHD  
Social Context, Life Course and Genetic Transcription in Add Health  
ADC (subcontract): \$23,489

Role: Subcontract PI, 2.5%

NIH  
Transitions to Family Caregiving and its Impact on Health Indicators  
ADC: \$75,466  
Role: Co-Investigator, 5%

**Kim Dittus**

NIH-NIGMS  
1P20GM103644-01A1  
Higgins (PI)  
9/15/13-7/31/18  
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  
U01 HG007437-01  
Berg, Jonathan (PI)  
11/1/13-10/31/17  
A Knowledge Base for Clinically Relevant Genes and Variants  
Role: Co-Investigator

1 ROI CA164944  
NIH/NCI  
03/01/13-02-28-17  
Classifying DNA Mismatch Repair Gene Variants of Unknown Significance  
Role: Co-PI

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

**Chris Holmes**

20694075  
01/01/16-12/31/18  
The Joint Commission Oversight  
Pfizer & Bristol-Myers Squibb Funding  
Transition of Care for Patients with Venous Thromboembolism at ATHN Affiliated Sites  
Rajpurkar and DeSancho (Co-Is)  
Role: Site PI

ATHN2011001-1-1  
Centers for Disease Control and Prevention  
American Thrombosis and Hemostasis Network  
09/30/11-09/29/16  
Public Health Surveillance for the Prevention of Complications of Bleeding and Clotting  
Disorders  
Role: Sub-Investigator

**Claire Verschraegen**

Lake Champlain Cancer Research Organization (LCCRO) Verschraegen (PI) 2011-Present  
Role: PI

Alliance for Clinical Trials in Oncology 2013-Present  
Role: Site PI

SPARK VT, Award \$50,000 2014-Present  
Role: Co-PI

**Neil Zakai**

NINDS U01 NS041588 04/2014-04/2019  
Etiology of Geographic and Racial Differences in Stroke Mortality  
PI: G Howard, University of Alabama at Birmingham  
Role: Co-investigator 10%

**L. Publications**

Lanktree MB, Elbers CC, Li Y, Zhang G, Duan Q, Karczewski KJ, Guo Y, Tragante V, North KE, **Cushman M**, Asselbergs FW, Wilson JG, Lange LA, Drenos F, Reiner AP, Barnes MR, Keating BJ. Genetic Meta-Analysis of 14,901 African Americans Identifies Variation in EXOC3L1 is Associated with HDL Concentration. *J Lipid Res* 2015 Jul pii: jlr P059477 (Epub ahead of print) PMID: 26199122

Gunter MJ, Wang T, **Cushman M**, Xue X, Wassertheil-Smoller S, Strickler HD, Rohan TE, Manson JE, McTiernan A, Kaplan RC, Scherer PE, Chlebowski RT, Snetselaar L, Wang D, Ho GY. Circulating Adipokines and Inflammatory Markers and Postmenopausal Breast Cancer. *J Natl Cancer Inst*. 2015 Jul 16;107(9). pii:djv169. Doi: 10.1093/jnci/djv169. Print 2015 Sep. PMID: 26185195

Ho GY, Zheng SL, **Cushman M**, Perez-Soler R, Kim M, Xue X, Wang T, Schlecht NF, Tinker L, Rohan TE, Wassertheil-Smoller S, Wallace R, Chen C, Xu J, Yu H. Associations of Insulin and IGFBP-3 with Lung Cancer Susceptibility in Current Smokers. *J Natl Cancer Inst* 2016 Apr 12;108-(7) pii: djw012. doi: 10.1093/jnci/djw012. PMID: 27071409

Ji Y, Schwartz J, Ramsey J, Phillips J, **Verschraegen C**. Successful Treatment of Non-Small Cell Lung Cancer with Erlotinib Throughout Pregnancy. *JAMA Oncol*. 2015 July 9. doi: 10.1001/jamaoncol.2015.1300

Engbers MJ, Karasu A, Blom JW, **Cushman M**, Rosendaal FR, van Hylckama Vlieg A. Br. Clinical Features of Venous Insufficiency and the Risk of Venous Thrombosis in Older People. *J Haematol*. 2015 Jul 27. doi: 10.1111/bjh.13579. (Epub ahead of print) PMID: 26221838

Olson NC, Butenas S, Lange, LA, Lange, EM, **Cushman, M**, Jenny NS, Walston J, Souto JC, Soria JM, Chauhan G, Debette S, Longstreth WT, Seshadri S, Reiner AP, Tracy RP. Coagulation Factor XII Genetic Variation, Ex Vivo Thrombin Generation and Stroke Risk in the Elderly:

Results from the Cardiovascular Health Study. *J Thromb Haemost.* 2015 Aug 19. doi: 10.1111/jth.13111 (Epub ahead of print) PMID: 26286125

Folsom AR, Tang W, Roetker NS, Heckbert SR, **Cushman M**, Pankow JS. Prospective Study of Circulating Factor XI and Incident Venous Thromboembolism: The Longitudinal Investigation of Thromboembolism Etiology (LITE) *Am J Hematol.* 2015 Aug 11. doi: 10.1002/ajh.24168. (Epub ahead of print) PMID: 26260105

Durda P, Sabourin J, Lange EM, Nalls MA, Mychalecky JC, Jenny NS, Li J, Walston J, Harris TB, Patsy BM, Valdar W, Liu Y, **Cushman M**, Reiner AP, Tracy RP, Lange LA. Genomoe-Plasma Levels of Soluble IL-2 Receptor A: Associations with Clinical Cardiovascular Events and Wide Association Scan. *Arterioscler Thromb Vasc Biol.* 2015 Aug 20. pii: ATVBAHA.115.305289 (Epub ahead of print) PMID: 26293465

Bingham N, Wallace III HJ, Monterroso J, **Verschraegen C**, Waters BL, Anker CJ. Urothelial Superior Vena Cava Syndrome with Limited Response to Radiation Therapy. *Case Rep Oncol Med.* 2015 Oct ; 2015:513685 PMID: 26634162

Ji Y, Rankin C, Grunberg S, Sherrod AE, Ahmadi J, Townsend JJ, Feun LG, Fredericks RK, Russell CA, Kabbinavar FF, Stelzer KJ, Schott A, **Verschraegen C**. Double-Blind Phase III Randomized Trial of the Antiprogestin Agent Mifepristone in the Treatment of Unresectable Meningioma: SWOG S9005. *J Clin Oncol.* 2015 Dec 1; 33(34):4093-8. doi: 10.1200/JCO.2015.61.6490 PMID: 26527781

Schott AF, Welch JJ, **Verschraegen CF**, Kurzrock R. The National Clinical Trials Network: Conducting Successful Clinical Trials of New Therapies for Rare Cancers. *Semin Oncol.* 2015 Oct;42(5):731-9. doi: 10.1053/j.seminoncol.2015.07.010 PMID: 26433554

Bell EJ, Folsom AR, Lutsey PL, Selvin E, **Zakai NA**, **Cushman M**, Alonso A. Diabetes Mellitus and Venous Thromboembolism: A Systematic Review and Meta-Analysis. *Diabetes Res Clin Pract.* 2015 Nov 10. pii: S0168-8227(15)00420-9. doi: 10.1016/j.diabres.2015.10.019 (Epub ahead of print) PMID: 26612139

Huffman JE, deVries PS, Morrison AC, Sabater-Lleal M, Kacprowski T, Auer PL, **Cushman M**, Reiner AP, O'Donnell CJ, Smith NL. Rare and Low-Frequency Variants and their Association with Plasma Levels of Fibrinogen FVII, FVIII and vWF. *Blood* 2015;126:e19-29. PMID: 26105150

Peralta CA, Muntner P, Scherzer R, Judd S, **Cushman M**, Shlipak MG. A Risk Score to Guide Cystatin C Testing to Detect Occult Reduced Estimated Glomerular Filtration Rate. *Am J Nephrol* 2015; 42:141-7. PMID: 26381887

Gunter MJ, Wang T, **Cushman M**, Xue X, Wassertheil-Smoller S, Strickler HD, Rohan TE, Manson JE, McTiernan A, Kaplan RC, Scherer PE, Chlebowski RT, Snetselaar L, Wang D, Ho



GY. Circulating Adipokines and Inflammatory Markers and Postmenopausal Breast Cancer Risk. *J Natl Cancer Inst* 2015;107:djv169. PMID: 26185195

O'Neal WT, Soliman EZ, Howard G, Howard VJ, Safford MM, **Cushman M**, **Zakai NA**. Inflammation and Hemostasis in Atrial Fibrillation and Coronary Heart Disease. The Reasons for Geographic and Racial Differences in Stroke Study. *Atherosclerosis* 2015;243:192-7 PMID: 26398291

Folsom AR, Alonso A, George KM, Roetker NS, Tang W, **Cushman M**. Prospective Study of Plasma D-Dimer and Incident Venous Thromboembolism: The Atherosclerosis Risk in Communities (ARIC) Study. *Thromb Res* 2015;136:781-5 PMID: 26337932

Olson NC, Butenas S, Lange E, Lange LA, Jenny NS, Walston J, **Cushman M**, Tracy RP, Reiner AP. Coagulation Factor XII Genetic Variation Ex Vivo Thrombin Generation and Stroke Risk in the Elderly: Results from the Cardiovascular Health Study. *J Thromb Haemost* 2015;13:1867-77 PMID: 26286125

Folsom AR, Tang W, Roetker NS, Heckbert SR, **Cushman M**, Pankow JS. Prospective Study of Circulating factor XI and Incident Venous Thromboembolism: The Longitudinal Investigation of Thromboembolism Etiology (LITE). *Am J Hematol* 2015;90:1047-51. PMID: 26260105

Durda P, Sabourin J, Lange EM, Nalls MA, Mychaleckyi JC, Jenny NS, Li J, Walston J, Harris TB, Psaty BM, Valdar W, Liu Y, **Cushman M**, Reiner AP, Tracy RP, Lange LA. Plasma Levels of Soluble Interleukin-2 Receptor  $\alpha$ : Associations with Clinical Cardiovascular Events and Genome-Wide Association Scan. *Arterioscler Thromb Vasc Biol* 2015;35:2246-53. PMID: 26293465

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## Division of Hospital Medicine – Update 2015-2016

Chief: Mark E. Pasanen, MD, FACP



The University of Vermont College of Medicine's Division of Hospital Medicine pursues excellence in academic hospital medicine by:

- Delivering compassionate, responsive, integrated care to medical inpatients 24 hours a day
- Teaching the science, art, and joy of medicine to students, trainees, and colleagues
- Promoting knowledge through research and educational efforts
- Cultivating a collegial and sustainable practice environment
- Collaborating with members of the hospital and university community to improve the quality, safety and value of inpatient care

Our hospitalist faculty physicians are involved in all aspects of the academic teaching hospital mission, including providing valuable clinical services, teaching a broad range of learners, engaging in leadership and system improvement while advancing a broad research agenda.

### *Service:*

The Internal Medicine Hospitalist Service specializes in the diagnosis and treatment of hospitalized adults, both as the primary service and in the role of consultant – with our service providing 24x7 attending coverage. We serve as physician leadership for the rapid response team (CATS Team), which responds to inpatients with medical emergencies throughout the hospital. Our hospitalists work in multi-disciplinary teams to provide effective, safe, timely and patient-centered care. We also offer medical consultation to patients in the inpatient acute rehabilitation program at Fanny Allen Rehabilitation Center.

In the past year, the Internal Medicine Hospitalist Service faculty conducted over 23,000 patient encounters, generating more than 51,000 work RVU's. This year also marked our largest recruitment effort to date, as we will be adding 8 new providers for the 2016-2017 academic year to improve our night coverage and to support patient care and education across new services and patient populations. We continue to significantly expand our use and teaching of bedside ultrasound techniques. Evidence of strong clinical performance includes a low overall re-admission rate of <5%.

Our Hospitalists have been engaged in numerous institutional quality improvement and safety initiatives. Recent successful projects include significantly reducing the number of unnecessary labs performed on our inpatients, reducing the time to admission orders for patients being admitted through the Emergency Department and improvement in completion of accurate problem lists at the time of discharge. In addition, we have developed or modified order sets to improve the quality and consistency of care, with specific interventions for patients presenting with an exacerbation of chronic obstructive lung disease and patients being discharged, with a focus on those patients being transferred to skilled nursing.

*Education:*

Our faculty teaches general internal medicine and hospital medicine to medical students, resident physicians, professional colleagues, and community members.

Hospitalists serve as teaching attendings for the 4 General Medicine teaching teams throughout the year – offering clinical supervision, bedside 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, including residents from Orthopedic Surgery.

Our faculty are regular participants and facilitators at Resident Morning Report and Intern Report. Amy Teleron has taken the lead in updating our Adult Code training for our resident, with a focus on team dynamics and communication – resulting in recognized improvement in code performance. Several of our faculty also serve as preceptors for the Internal Medicine Resident Clinic.

Dr. Pasanen and Dr. Eldakar-Hein serve as the Director and Associate Director for the Internal Medicine Residency Program, respectively. 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 once again in 2016.

At the UVM College of Medicine, our primary teaching is in the hospital setting, focusing on the Internal Medicine Inpatient Clerkship, Internal Medicine Acting Internship and the Clinical Tutor program (which is directed by one of our Hospitalists, Dr. Anawati). However, our faculty are also involved in other teaching activities including Foundation and Professionalism, Communication and Reflection.

We educate our colleagues locally, regionally and nationally in a variety of venues. This includes the University of Vermont Continuing Medical Education Course in Hospital Medicine with a national audience and faculty largely from the Division of Hospital Medicine along with numerous divisions of the Department of Medicine.

The Internal Medicine Hospitalist Service faculty are also very involved in mentorship and advising. This includes advising numerous medical students on career choice and residency match issues. Residents

also frequently seek out our hospitalists to serve as advisors, especially those going into the growing field of Hospital Medicine.

### ***Research***

In addition to our clinical work and focus on quality and safety, we have a diversity of scholarly interests among our faculty. This includes externally funded clinical trials of immunizations and high value laboratory ordering practices. In addition, internal funding supports work in teamwork with a focus on communication during rapid response calls, a particularly challenging issue. Other areas of interest include narcotic-related adverse events in inpatients, interosseus access by EMTs prior to hospitalization, adult code communication and performance and VTE prevention in acute medically ill patients.

### **Faculty**

#### **Division of Hospital Medicine**

##### **Mireille Anawati, MD**

Assistant Professor of Medicine

Director of Ultrasound CME course (at our annual Hospital Medicine CME course)

##### **Jason Bartsch, MD**

Assistant Professor of Medicine

Director of Medical Education, Division of Hospital Medicine

##### **Jennifer Borofsky, MD**

Assistant Professor of Medicine

##### **Shaden Eldakar-Hein, MD**

Assistant Professor of Medicine

Associate Program Director, Internal Medicine Residency

##### **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  
Director of Ultrasound Education, Division of Hospital Medicine

**Erin Kurek, MD, MPH**

Assistant Professor of Medicine

**Michael Latreille, MD**

Assistant Professor of Medicine  
Director of Quality and Safety, Division of Hospital Medicine

**Carrie Lyon, MD, MPH**

Associate Professor of Medicine  
Director, Hospital Medicine CME course

**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  
Chief, Division of Hospital Medicine

**Allen Repp, MD, MS**

Associate Professor of Medicine  
Vice-Chair for Quality

**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

**Leadership in Professional Societies:**

Mark Pasanen, M.D.

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

The Internal Medicine Hospitalist Service faculty members are extensively engaged in service at the national, state and institutional levels. National and regional involvement includes the OneCare Vermont Clinical Advisory Board, Vermont Chapter for the American College of Physicians (including current Governor and advisory council membership), immediate past president of the UVM Medical Alumni President and the Vermont Medicaid Drug Utilization Board.

Faculty participation in committees and task forces at the College of Medicine and Fletcher Allen Health Care is also wide-ranging. Highlights include leadership and/or participation on the Rapid Response committee, Resuscitation committee, Patient Experience/Patient-Family Centered Care workgroup, Accountable Care Unit workgroup, Operations/Workforce, Quality Improvement, Ethics and the PRISM/IT.

There are numerous specific examples of leadership within the faculty. Dr. Chad Mitchell serves a critical role in Utilization Review, providing real-time reviews in coordination with Case Management. Dr. Steven Grant serves as the Physician Human Resources Liaison, leading to significant improvements in Physician Recruitment and Orientation. Dr. Jaspinder Sra has been instrumental in helping to optimize PRISM, our electronic health record, through his work and leadership as a Physician Informaticist.

We have worked closely with other departments in an effort to optimize patient care. This has included the addition of Co-Management services for the Orthopedics Spine Service, in addition to existing Co-Management on the Trauma Service. We have also developed a shared model of care with the Renal Transplant Service.

**Editorships and Editorial Boards:**

Mark E. Pasanen, MD

- Reviewer: MKSAP Syllabus, American College of Physicians,

Allen Repp, MD, MS

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



### **Major Faculty Awards:**

- Dr. Florian Foerg received the 2016 Osler Award from the IM residents for the general medicine attending who demonstrates excellence in teaching and patient care
- Teaching Academy Inductees in March 2016:
  - Jason Bartsch and Shaden Eldakar-Hein

### **Grants:**

Allen Repp, MD (Co-Principal Investigator)

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

Jason Bartsch, MD and Rachel McEntee, MD

- “Rapid Resonse Team Simulation: Teaching interproffesional communication and clinical reasoning to improve patient care.” – funded by a Frymoyer Grant

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

Single-dose Live Oral Cholera Vaccine CVD 103-HgR Protects Against Human Experimental Infection With *Vibrio cholerae* O1 El Tor.

Chen WH, Cohen MB, Kirkpatrick BD, Brady RC, Galloway D, Gurwith M, Hall RH, Kessler RA, Lock M, Haney D, Lyon CE, Pasetti MF, Simon JK, Szabo F, Tennant S, Levine MM. Clin Infect Dis. 2016 Jun 1;62(11):1329-35

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. 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. J Infect Dis. 2015 Sep 1;212(5):702-10

Central venous catheters and upper extremity deep vein thrombosis in medical inpatients: the Medical Inpatients and Thrombosis (MITH) Study. Winters JP, Callas PW, Cushman M, Repp AB, Zakai NA. J Thromb Haemost. 2015 Dec;13(12):2155-60.



## Division of Immunobiology

Ralph Budd, MD, Director

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

<http://www.med.uvm.edu/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 Testing Center, headed by Dr. Beth Kirkpatrick, one of the VCIID faculty. The VCIID has a weekly joint Research-in-Progress meeting, seminar series, and a journal club. This provides a weekly forum for students and postdoctoral fellows to present their research progress as well as for faculty to review hypotheses and specific aims of planned grants. During the first 10 years of COBRE funding, VCIID faculty published 419 articles and received over \$92 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 (opened spring, 2016), and to recruit new faculty to the theme of the host response to infection. In the past year we have successfully renewed for another 5 years, both our NIH T32 Training Grant for graduate students, as well as our Phase III COBRE grant.

### **Faculty**

#### **Ralph Budd, MD**

Professor of Medicine and Microbiology & Molecular Genetics  
Director, Vermont Center of Immunology & Infectious Diseases

- Key Research Interests: Autoimmune mechanisms, immune cell death, Lyme arthritis, caspase regulation, immune metabolism

**Jason Botten, PhD**

Assistant Professor of Medicine, Adjunct in Microbiology and Molecular Genetics

- Key Research Interests: Virus-host interactions; regulation of viral protein function; development of vaccines and therapeutics; host response to viral infections

**Andreas Koenig, PhD**

Research Associate, Medicine (through May 2016)

- 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 and liver disease; autoimmunity

**Dimitry Kremontsov, PhD**

Research Associate through 4/16; Assistant Professor as of 05/16, Medicine

- Key Research Interests: autoimmunity, inflammation, multiple sclerosis, sex differences

**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 though 04/16; Assistant Professor as of 05/16, 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:**

Emily Bruce, PhD (Postdoc) – Role of RAB proteins for arenavirus propagation

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 replication dynamics and interactions of the viral nucleoprotein with host cellular machinery

Inessa Manuelyan (graduate student) – Identification of key human proteins required for Zika virus propagation

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) – Posttranslational modification as a means to regulate viral protein function and identification of key host proteins required for arenavirus propagation

**Leadership in Professional Societies:**

(Budd) Chair of T Cell Biology Section of the American College of Rheumatology Annual meeting, 2016

**Editorships and Editorial Boards:**

(Budd) Senior Editor for “Textbook of Rheumatology” 10<sup>th</sup> Edition, Elsevier

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

(Krementsov) 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) ACTS (Arthritis, Connective Tissue, and Skin Biology Section, NIH/NIAMS

(Budd) ZGM1 RCB-3 (C2) Renewal of Centers of Biomedical Research Excellence, NIH/NIGMS

(Rincón) Charter member, Cellular and Molecular Immunology NIH study section. CMI-A  
Chair of study section

(Teuscher) Ad hoc reviewer for NIH reviewers pool

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

**Major Faculty / Research Awards:**

(Budd) University Distinguished Professor

(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 07/01/15 – 06/30/16

NIH funding:

1 - R01

5 – R21

1 – R56

1 – R25

1 – T32

1 – COBRE (P20)

1 – Sub award through University of Utah

1 – Sub award through Drexel University

1 – AAI Fellowship

Foundation funding:

1 – NMSS project

1 – VCC Awards

1 - Lupus Research Institute

Biotech Funding

1-Mitotherapeutix, LLC

**Budd:**

Title: Metabolic Regulation of Caspases and Survival in T Cells

Dates of Award: 04/01/16-03/31/18

Role: PI

Current Yr funding: \$192,969

Source: NIH/NIAID

Title: Vermont Immunology / Infectious Diseases Center

Dates of Award: 08/01/2006 – 06/30/2017

Role: PI

Current Yr funding: \$3,033,448

Source: NIH/NIGMS

Title: Vermont Immunology / Infectious Diseases Training Grant

Dates of Award: 09/01/05 – 08/31/16

Role: PI

Current Yr funding: \$185,478

Source: NIH/NIAID

Title: Structure and Ligand(s) for Human Synovial TCR-Gamma/Delta

Dates of Award: 01/13/16-12/31/17

Role: PI

Current Yr funding: \$243,813

Source: NIH/NIAID

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

Botten:

OPP1109415 (Kirkpatrick, B.) 11/5/14-9/30/17

Bill and Melinda Gates Foundation

Characterizing the Immunoprotective and Immunopathogenic Responses to Dengue Viruses using the Dengue Human Infection Model.

Goal: To use advanced immunologic techniques such as immunophenotyping, epitope mapping, and antibody cloning technologies to better understand the immunopathogenesis of dengue infections.

Role: Co-investigator

P2ORR021905 (Budd, R.) 7/20/11 - 6/30/16

NIH/NCRR

Centers of Biological Research Excellence (COBRE)

Vermont Immunobiology/Infectious Disease Center

Dr. Botten is the PI of a subproject to define the hantavirus-host protein interactome and is a co-director of the BSL-3 core facility established through this Center of Excellence.

Fortner:

Title: T Lymphocyte Homeostasis in Obesity

Dates of Award: 06/01/14 – 05/31/17

Role: PI

Current Yr funding: \$190,625

Source: NIH/NIAID

Rincón:

Title: Fostering Entrepreneurship in Biomedical Research

Dates of Award: 04/01/16-02/28/21

Role: PI

Current Yr funding: \$440,063

Source: NIH/NIGMS

Title: Regulation of Mitochondrial Function in T Cells

Dates of Award: 02/10/14 – 01/31/17

Role: PI

Current Yr funding: \$0 No Cost Extension

Source: NIH/NIAID

Title: N-MCJ Peptides as Therapy to Overcome Chemoresistance in Breast Cancer

Dates of Award: 07/01/15-06/30/16

Role: Co-PI

Current Yr funding: \$25,000

Source: VCC/LCCRO

Title: MCJ as a Metabolic Target

Dates of Award: 05/15/15-05/14/17

Role: PI

Current Yr funding: \$0 No Cost Extension

Source: Mitotherapeutix, LLC

Title: IL-6 as a Regulator of Mitochondria Function in T Cells

Dates of Award: 05/01/16-04/30/17

Role: PI

Current Yr funding: \$386,041

Source: NIH/NIAID

Title: Regulation of CD8 Cell Function by IL-6

Dates of Award: 09/01/15-08/31/16

Role: PI

Current Yr funding: \$22,920

Source: AAI

Teuscher:

Title: Molecular Genetics of Arthritis in Murine Lyme Disease

Dates of Award: 08/15/2004 – 09/18/19

Role: Co-PI

Current Yr funding: \$137,250

Source: University of Utah



Title: H1R Signaling and Immune Deviation in EAE  
Dates of Award: 01/19/10-12/31/15  
Role: PI (Diehl, Co-PI)  
Current Yr funding: \$0 No Cost Extension  
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: 10/01/15-09/30/16  
Role: PI  
Current Yr funding: \$84,240  
Source: Drexel University (NMSS)

Title: Gene-Environment Interactions in CNS Autoimmune Disease  
Dates of Award: 06/15/16-05/31/18  
Role: PI  
Current Yr funding: \$231,688  
Source: NIH/NINDS

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

Borries C, Perlman RF, Koenig A. Characteristics of alpha males in Nepal gray langurs. *Am J Primatol*. 2015 Jun 26. doi: 10.1002/ajp.22437. [Epub ahead of print] PubMed PMID: 26118909.

Bramwell KK, Mock K, Ma Y, Weis JH, Teuscher C, Weis JJ.  $\beta$ -Glucuronidase, a Regulator of Lyme Arthritis Severity, Modulates Lysosomal Trafficking and MMP-9 Secretion in Response to Inflammatory Stimuli. *J Immunol*. 2015 Aug 15;195(4):1647-56. doi: 10.4049/jimmunol.1500212. Epub 2015 Jul 13. PubMed PMID: 26170381; PubMed Central PMCID: PMC4530054.

Champagne DP, Hatle KM, Fortner KA, D'Alessandro A, Thornton TM, Yang R, Torralba D, Tomás-Cortázar J, Jun YW, Ahn KH, Hansen KC, Haynes L, Anguita J, Rincon M. Fine-Tuning of CD8(+) T Cell Mitochondrial Metabolism by the Respiratory Chain Repressor MCJ Dictates Protection to Influenza Virus. *Immunity*. 2016 Jun 21;44(6):1299-311. doi: 10.1016/j.immuni.2016.02.018. Epub 2016 May 24. PubMed PMID: 27234056; PubMed Central PMCID: PMC4917451.

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Case LK, Dienz O, Raza A, Kremontsov DN, Boyson J, and Teuscher C. Genetic variation in chromosome Y regulates susceptibility to influenza A virus infection. *Proc. Natl. Acad. Sci*. 2016 (accepted pending revisions).

Zeigler, C., Eisenhauer, P., Bruce, E.A., Beganovic, V., King, B., Wier, M., Ballif, B., Botten, J. (2016) A novel phosphoserine motif in the LCMV matrix protein Z regulates the release of infectious virus and defective interfering particles. *Journal of General Virology*, In Press.

## Division of Infectious Diseases

W. Kemper Alston, MD, MPH, Interim 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 started in August 2015 bringing our group total up to ten for the first quarter. This past year we provided over 1,600 new inpatient consultations. The outpatient clinics remain vibrant with over 6,200 arrived visits. This effort includes the care of over 480 active patients with HIV in four federally funded Comprehensive Care Clinics in Vermont. In total the ID Unit performed over 15,000 work RVU's annually. The ID Unit outpatient care includes the international travel clinic, refugee clinic, home IV antibiotics and care for patients with general infectious diseases. 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 Director of Infection Prevention, 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 15 years. This program includes a year of research that has resulted in abstract presentations at the national ID meetings, peer reviewed publications and book chapters.

Within our unit we have two active research laboratories led by Drs. Huston and Kirkpatrick, 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. Dr. Huston's work currently centers on the molecular biology and pathogenesis of *Entamoeba histolytica*, and *Cryptosporidium* pharmaceutical agent development.

Dr. Kirkpatrick leads The Vaccine Testing Center (VTC). This growing group, (now 24), continues to focus on improving global health through the development and assessment of vaccines. The VTC received significant international media attention in 2016 after the published article in Science Translational Medicine on the the NIH's tetravalent dengue vaccine which demonstrated protective efficacy for the first time in a human model. There was increased media attention for the VTC for its upcoming participation in the NIH-led Zika vaccine clinical trials. The VTC continues to work on understanding the immune correlates of protection and developing candidate vaccines against Dengue, Zika, and enteric

infections. Work on two new awards from the Gates Foundation was begun in 2016; the first is looking at improving the effectiveness of rotavirus vaccines (led by Drs. Kirkpatrick, Diehl, Lee) and the second is developing a model to evaluate candidate drugs against the parasite, *Cryptosporidium* (led by Drs. Huston, Lyon, Kirkpatrick). Also in 2016, the VTC expanded its global health work by starting dengue vaccine clinical trials with longstanding collaborators in Bangladesh.

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**

#### **W. Kemper Alston, MD, MPH**

Professor

- Interim Director, Infectious Disease Unit
- Hospital Epidemiologist and Medical Director of Infection Prevention
- Chair, Infection Prevention Committee, UVM Medical Center
- Tuberculosis Consultant, State of Vermont
- Medical Director, UVMHC Employee Health
- US Food and Drug Administration, Special Government Employee, Antimicrobial Drugs Advisory Committee
- Chair Infection Prevention Committee, Rutland Regional Medical Center
- Infection Prevention Consultant, Northwestern Medical Center
- HIV care provider, Brattleboro Memorial Hospital, Comprehensive Care Clinic
- Member, Medical Staff Quality Assessment and Improvement Committee, UVMHC
- Member, Infectious Diseases Practice Subcommittee, Pharmacy and Therapeutics Committee, UVMHC

#### **Christopher Grace, MD, FIDSA**

Professor Emeritus

- 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, State of Vermont

#### **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
- Residency Research Committee, Dept. of Medicine

**Beth D. Kirkpatrick, MD, DTMH**

Professor of Medicine with Tenure

- Director, UVM Vaccine Testing Center
- Research Interests: Vaccine development, vaccine immunology, enteric and flavivirus infections

**Sarah Mooney, MBBCh**

Assistant Professor of Medicine (July 1 – Sept 30, 2015)

- 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 Inpatient Medicine Clerkship Program
- Co-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

### **Lindsay M. Smith, MD**

Assistant Professor of Medicine

- Clinical Faculty
- Interests: Antibiotic Stewardship

### **Jose E. Teixeira, PhD**

Research Assistant Professor

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

### **Sean Diehl, PhD**

Assistant Professor

- Associate Chair, UVM Institutional Biosafety Committee
- Interests: Vaccine Development, Dengue and Zika Virus, Human immunology and Immune Memory

### **Fellows**

#### **Porntip Kiatsimkul, MD**

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

- Infectious Disease Fellowship Training Program July 1, 2015 – June 30, 2017

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

Infectious Disease 2nd Year Fellow

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

**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

Christopher Huston, M.D.- American Society for Microbiology, Chair, Division AA (Free-living, symbiotic, and parasitic protists)

**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
  - PLoS Pathogens
  - PLoS Neglected Tropical Diseases
  - PLoS ONE
  - Antimicrobial Agents and Chemotherapy
  - Journal of Infectious Diseases
  - Molecular and Biochemical Parasitology
  - Journal of Clinical Microbiology
  - American Journal of Tropical Medicine and Hygiene
  - Deutsche Forschungsgemeinschaft (DFG) German Research Foundation, German-African Cooperation Projects in Infectology
  - External Advisor, Strategic Advisory Group for Cryptosporidiosis: *Cryptosporidium* drug development; The Bill and Melinda Gates Foundation; Washington D.C.

**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

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

Christopher Grace, MD FIDSA

Ryan White Part C Grant for HIV Care

Non- competing grant award

5/1/2015 – 4/30/2016

\$ 551,481 Federal HRSA

Christopher Grace, MD FIDSA

Ryan White Care Act Part B

7/1/2015 – 6/30/2016

\$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  
7/1/2015 - 06/30/2016  
\$26,000.00 Federal

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

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

Christopher Huston, MD  
Anacor, Inc.  
*In vivo* testing of boron-based anti-*Cryptosporidium* screening hits  
Direct Costs \$42,217

Christopher Huston, MD  
Merck-EMD Serono  
Screening the Merck Serono mini-library for anti-*Cryptosporidium* compounds  
Direct Costs \$8,000

Christopher Huston, MD  
California Institute for Biomedical Research (Calibr)  
Anticryptosporidial drug discovery  
Direct Costs \$90,621

Christopher Huston, MD (Co-investigator)  
Bill and Melinda Gates Foundation  
Using *Cryptosporidium* human challenge models to advance therapeutics and vaccines  
Direct Costs \$2,985,288

Christopher Huston, MD  
Bill and Melinda Gates Foundation

OPP1132796: Using pharmacokinetic and efficacy studies of nitazoxanide and azithromycin to standardize the calf clinical model of cryptosporidiosis  
Direct Costs \$739,135

Beth D. Kirkpatrick, MD Principal Investigator  
Using Cryptosporidium Human Challenge Models to Advance Therapeutics and Vaccines.  
\$3,300,000 (2015-2018) Bill and Melinda Gates Foundation

Beth D. Kirkpatrick, MD Principal Investigator  
Improving Rotavirus Vaccination: Refining Correlates of Protection and Evaluating Durability.  
\$2,200,000 (2015-2018) Bill and Melinda Gates Foundation

Beth D. Kirkpatrick, MD Principal Investigator  
The Dengue Human Infection Model: Defining Correlates of Protection and Advancing Vaccine Development.  
\$2,100,000 (2014-2017)

Beth D. Kirkpatrick MD. Co-Principal Investigator  
Exploration of the Biologic Basis for Underperformance of OPV and Rotavirus Vaccines in Bangladesh.  
\$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  
7/1/2015 – 6/30/2016  
\$58,000 Federal sub-award, UMASS

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

Gavioli ML, McMillian WD, Ames SE, Endicott JA, **Alston WK**. A Retrospective Study on the Protective Effects of Topical Vancomycin in Patients undergoing multilevel Spinal Fusion. *Pharmacotherapy* 2016;36(1):19-25

**Huston C**, Spangenburg T, Burrows J, Willis P, Wells T, Vanvoorhis W. A proposed Target Product Profile and Developmental Cascade for New Cryptosporidiosis Treatments. *PLOS Neglected Tropical Diseases* doi: 10.1371/Journal.pntd.0003987 October 8, 2015. PMID 26447884

Saterial A, Miller P, **Huston CD**. Knockdown of Five Genes Encoding Uncharacterized Proteins Inhibits *Entamoeba histolytica* Phagocytosis of Dead Host Cells. *Infect Immun*. 2016 Mar 24;84(4):1045-53 doi: 10.1128/IAI.01325-15 Apr. PMID: 26810036

**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

Colgate ER, Haque R, Dickson DM, Carmolli MP, Mychaleckyj JC, Nayak U, Qadri F, Alam M, Walsh MC, Diehl SA, Zaman K, Petri WA, **Kirkpatrick BD**. Delayed Dosing of Oral Rotavirus Vaccine Demonstrates Decreased Risk of Rotavirus Gastroenteritis Associate with Serum Zinc: A Randomized Controlled Trial. *Clin Infect Dis*. 2016 May 23. pii: ciw346. PMID 27217217

Taniuchi M, Platts-Mills JA, Begum S, Uddin MD, Subuz SU, Liu J, **Kirkpatrick BD**, Colgate ER, Carmolli MP, Dickson DM, Nayak U, Haque R, Petri WA Jr, Houpt ER. Impact of enterovirus and other enteric pathogens on oral polio and rotavirus vaccine performance in Bangladeshi infants. *Vaccine*. 2016 June 8;34(27):3068-75. Doi 10.1016/j.vaccine.2016.04.080. epub May 3. PMID 27154394

**Kirkpatrick BD**, Whitehead SS, **Pierce KK**, Tibery CM, Grier PL, Hynes NA, Larsson CJ, Sabundayo BP, Talaat KR, Janiak A, Carmolli MP, Luke CJ, **Diehl SA**, Durbin AP. The live attenuated dengue vaccine TV003 elicits complete protection against dengue in a human challenge model. *Sci Transl Med*. 2016 March 16;8(330):330ra36 doi: 10.1126/scitranslmed.aaf1517. Epub 2016 March 16 PMID: 270018047

Chen WH, Cohen MB, **Kirkpatrick BD**, Brady RC, Galloway D, Gurwith M, Hall RH, Kessler RA, Lock M, Daney D, Lyon CE, Pasetti MD, Simon JK, Szabo F, Tennant S, Levine MM. Single-dose Live Oral Cholera Vaccine CVD 103-HgR Protects Against Human Experimental Infection with *Vibrio cholera* O1 El Tor. *Clin Infect Dis*. 2016 June 1;62(11):1329-35 doi 1093/cid/ciw145. Epub 2016 March 21 PMID 27001804

**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. *J Infect Disease* 2015 Sept 1;212(5):702-10 doi: 10.1093/infdis/jiv082. Epub 2015 Mar 22 PMID 25801652

Durbin AP, **Kirkpatrick BK**, **Pierce KK**, Carmolli MP, Tibery CM, Grier PL, Hynes N, Opert K, Jarvis AP, Sabundayo BP, McElvany BD, Sendra EA, Larsson CJ, Jo M, Lovchik JM, Luke CJ, Walsh MC, Fraser EA, Subbarao K, Whitehead SS. A 12-Month-Interval Dosing Study in Adults Indicates That a Single Dose of the National Institute of Allergy and Infectious Diseases Tetravalent Dengue Vaccine Induces a Robust Neutralizing Antibody Response. *J Infect Dis*. 2016 Feb 16. Pii: jiw067

PMID 26908742

Donowitz JR, Haque R, **Kirkpatrick BD**, Alam M, Lu M, Kabir M, Kakon SH, Islam BZ, Afreen S, Musa A, Khan SS, Colgate ER, Carmolli MP, Ma JZ, Petri WA Jr.. Small Intestine Bacterial Overgrowth and Environmental Enteropathy in Bangladeshi Children. *MBio*. 2016 Jan 12;7(1):e02102-15 doi 10.1128/mbio.2102-15 PMID 26758185

Mychaleckyj JC, Haque R, Carmolli M, Zhang D, Colgate ER, Nayak U, Taniuchi M, Dickson D, Weldon WC, Oberste MS, Zaman K, Houpt ER, Alam M, **Kirkpatrick BD**, Petri WA Jr. Effect of substituting IPV for tOPV on immunity to poliovirus in Bangladeshi infants: An open-label randomized controlled trial. *Vaccine*. 2016 Jan 12;34(3):358-66. Doi 10.1016/j.vaccine.2015.11.046 Epub 2015 Nov 28. PMID 26643930

Burgess SL, Lu M, Ma JZ, Naylor C, Donowitz JR, **Kirkpatrick BD**, Haque R, Petri WA Jr. Inflammatory markers predict episodes of wheezing during the first year of life in Bangladesh. *Respir Med*. 2016 Jan;110:53-7. Doi:10.1016/j.rmed.2015.11.009 epub 2015 Nov 22. PMID 26631486

**Kirkpatrick BD**, Mychaleckyj JC. Polio eradication: inching forward, with safety nets. *Lancet Infect Dis*. 2015 Nov;15(11):1244-5. Doi: 10.1016/S1473-3099(15)00261-3. Epub 2015 Aug 26. PMID 26318713

**Mooney S**, Tracy R, Osler T, **Grace C**. Elevated Biomarkers of Inflammation and Coagulation in Patients with HIV Are Associated with Higher Framingham and VACS Risk Index Scores. *PLoSOne* 2015 Dec 7;10(12): e0144312. Doi 10.1371/journal.pone.0144312 PMID 26641655

MacDougall J, Ahern J, Civalier M, **Pierce K**, Cohen R. Identification of Risk Factors for initial Elevated Vancomycin Trough Concentrations. *Pharmacotherapy* 2016 Jan;36(1):19-25 dio: 10.1002/phar.1678.

## Division of Nephrology



### 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 UVMHC. 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.

**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 Negoj, 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

### **Fellows:**

Ziad Arabi

Adam Horeish

Sree Susarla

Sadik Sharef

### **PA/NP:**

Margaret Butler, APRN

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

Katherine Cheung, MD

### **Endowed Professorship**

Patrick Professorship (Dr. Solomon)

### **Leadership in Professional Societies**

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

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)

### **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)

### **Study Section and Federal Advisory Boards**

Biomarker Consortium member for fNIH (Dr. Solomon)

### **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 as 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

### **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, Dweyer 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

## Division of Pulmonary and Critical Care Medicine

Anne Dixon MA, BM BCh, 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, and asthma. The Division provides a full range of pulmonary diagnostic services: these include bronchoscopy, pulmonary function testing, evaluation of sleep disorders, lung cancer screening and evaluation, an interventional pulmonary program, and a nationally certified pulmonary rehabilitation program.

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 70 peer reviewed articles during the last year, and obtained significant funding from the NIH (including new RO1 and K23 grants) and foundations. The Division continues to be a leader in the area of Cystic Fibrosis Research, participating in many of the new ground-breaking clinical trials performed by the Cystic Fibrosis Therapeutic Development Network. The clinical research of the Division was also recognized when the site was renewed as a member of the American Lung Association-Airways Clinical Research Centers Network in a highly competitive grant application process that attracted applications from leading research centers across the country. The research program continues to expand, and enjoys considerable success and major recognition.

Members of the Division continue to have major leadership roles on national committees, national grant review committees, and editorial boards for major publications.

The Division is committed to education and training. Drs. Laurie Leclair and Garth Garrison direct the Cardiovascular Respiratory and Renal Foundations Course in the second year of the Medical School curriculum: Dr. Leclair was recognized by the medical students as the top Foundations Course Director, and the course received the award for the top Foundations course this year. Dr. Garrison also directs the Internal Medicine Acting Internship program. Dr. Clouser was recognized by the Medicine Residents as the top sub-specialty medicine teacher. Dr. Huggett, as Assistant Dean for Medical Education is leading major innovations in training the teachers through her leadership of the Teaching Academy. Dr. Jan Carney, as Associate Dean for Public Health leads the very successful MPH program at the University of Vermont.

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, MA, BM BCh**

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

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

Professor of Medicine  
Director of Critical Care Services

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

Professor of Medicine  
Department of Molecular Physiology & Biophysics

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

Assistant Professor of Medicine  
Public Health Program

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

Professor of Medicine  
Associate Dean for Public Health

### **Ryan Clouser, DO**

Assistant Professor of Medicine  
MICU Director

### **Susan Dunning, MD**

Assistant Professor, Department of Medicine & Department of Neurological Sciences  
Medical Director, UVM Medical Center Sleep Program & Sleep Laboratory  
Fellowship Director, Sleep Medicine

### **Joshua Farkas, MD**

Assistant Professor of Medicine

### **Garth Garrison, MD**

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

**Kathryn N. Huggett, PhD**

Director, The Teaching Academy at the UVM College of Medicine

Robert Larner, MD '42 Professor in Medical Education

Assistant Dean for Medical Education

Curriculum design and evaluation

Faculty development

Medical education research

**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

Medical Director, Pulmonary Function Lab

Program Director, Pulmonary and Critical Care Fellowship

Pulmonary physiology, pulmonary function testing, asthma, COPD

**C. Matthew Kinsey, MD, MPH**

Assistant Professor of Medicine

Director of Interventional Pulmonary

-Quantitative imaging and computational modeling for identification of lung cancer

-Application of endobronchial ultrasound transbronchial needle aspiration for development of novel precision medicine therapies for lung cancer

-Interventional trials for COPD

**Laurie Whittaker Leclair, MD**

Professor of Medicine

Adult CF Program Director, CF Center Member

**Prema Menon, MD**

Assistant Professor of Medicine

**Lennart Lundblad, PhD**

Associate Professor

Co-Director, Lung Phenotyping Core

Lung physiology and pharmacology

The role of mast cells and bacterial infection

**Yolanda Mageto, MD, MPH**

Professor of Medicine  
Director, Pulmonary Ambulatory Care Clinics  
Director, Interstitial Lung Disease Clinic

**Polly E. Parsons, MD**

E.L. Amidon Professor of Medicine  
Chair, Department of Medicine

**Matthew E. Poynter, PhD**

Professor  
Director of the Cellular, Molecular, and Biomedical Sciences Graduate Program  
Associate Director of the Vermont Lung Center  
Associate Director of the Multidisciplinary Training in Lung Biology T32 Training Grant  
    Immunobiology of asthma  
    Pathophysiology of obese asthma  
    Alcohol-induced immunosuppression

**Renee Stapleton, MD, PhD**

Associate Professor of Medicine

**Benjamin Suratt, MD**

Professor of Medicine  
Vice Chair, Department of Medicine  
Associate Chief, PCCM  
Associate Director, PCCM Fellowship Training Program  
    Pulmonary complications of cancer survivorship  
    Effects of obesity and the metabolic syndrome on lung disease and critical illness

**Charlotte Teneback, MD**

Assistant Professor  
Medical Director, Pulmonary Rehabilitation  
Associate Director, Adult Cystic Fibrosis Center  
Director, Cystic Fibrosis Therapeutic Development Center  
    Cystic fibrosis clinical care and research  
    Pulmonary rehabilitation clinical practice and research

**Daniel Weiss, MD, PhD**

Professor of Medicine

### **Fellows**

Hill Enuh, MD  
Radhika Parikh, MD  
Sivajothi Kanagalingam, MD  
Benjamin Keveson, MD  
Timothy Leclair, MD  
Lucas Mikulic, MD

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

Lily Sender, PA  
Sarah Wagner, NP

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

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

Joshua J. Pothen: MD PhD (graduated with PhD in Bioengineering in May, 2016)  
Bradford J. Smith, PhD: post-doc  
Catharine L. Hamlington, PhD: post-doc

#### **Lennart Lundblad, PhD**

Christa Frodella

#### **Matthew Poynter, PhD**

Matthew J. Randall, PhD (post-doctoral fellow)

#### **Renee Stapleton, MD PhD**

Prema Menon, MD, Assistant Professor (research mentor)  
Timothy Leclair, MD, Senior Fellow (research mentor)  
Radhika Parikh, MD, Senior Fellow (research mentor)

#### **Daniel Weiss, MD PhD**

Franciska Uhl PhD  
Robert Pouliot PhD (starts Aug 2016)  
Juan Jose Uriarte PhD (start October 2016)  
Lena Thiebes PhD (visiting post-doc 9/16-2/17)

### **Leadership in Professional Societies:**

**Gilman Allen, MD**

Member of Program Committee for Critical Care Assembly of the American Thoracic Society (ATS). Reviewed > 100 abstracts for Annual 2016 ATS conference

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

Chair, Green Mountain Section of the Institute of Electrical & Electronic Engineers (IEEE)  
Co-Chair, Northern New England Chapter of the IEEE Engineering in Medicine & Biology Society

**Anne Dixon, MD**

Member: American Thoracic Society Finance Committee  
Member: American Thoracic Society Planning and Evaluation Committee  
President, Association of Directors of Pulmonary, Critical Care and Sleep Medicine

**Kathryn N. Huggett, PhD**

Member, Board of Directors, International Association of Medical Science Educators (IAMSE)  
  
2017 Conference Program Chair, International Association of Medical Science Educators (IAMSE)  
  
AAMC Council of Faculty and Academic Societies (CFAS) Junior representative from the Society of Directors of Research in Medical Education

**C. Matthew Kinsey, MD MPH**

Member, Drug, Device, Development, and Discovery Committee of the American Thoracic Society.

**Lennart Lundblad, PhD**

Member of the Board of Directors of the Pulmonary research Group

**Yolanda Mageto, MD MPH**

American Thoracic Society  
Chair Minority Training Awards Subcommittee 2012 – Present  
Chair Membership Committee 2013 – Present

American College of Chest Physicians Member  
FACCP – Fellow of the American College of Chest Physicians 2012 – Present

Society for Critical Care Medicine Member 2012 - Present

Contributing Faculty PILOT Steering Committee France Foundation (Pulmonary Fibrosis identification: Lessons for Optimizing Treatment)

Chair, DSMB Allogeneic Human Cells (hMSC) in Patients with Idiopathic Pulmonary Fibrosis via Intravenous Delivery (AETHER) University of Miami Stem Cell Institute



Chair, DSMB Allogenic Human Cells (hMSC) in Patients with Mild asthma University of Miami  
Stem Cell Institute

**Renee Stapleton, MD PhD**

American Thoracic Society

Critical Care Assembly Program Committee

Chair-Elect, 2015-2016

Chair, 2016-2017

Behavioral Sciences and Health Services Assembly Program Committee,  
2012-2015

Scientific Advisory Committee (reviews all ATS grants), 2013-present

Education Committee, 2013-2016

Clinical Year in Review Committee Chair, 2014-2015

Unrepresented Patients Working Group, member 2016-present

Canadian Critical Care Nutrition Clinical Practice Guidelines Committee, External Panel  
Member, 2008-present

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

Chair of Data Safety Monitoring Board, "Investigation of Radiographic, Epigenetic, and  
Molecular Biomarkers for Lung Cancer (MEROPTIC)," PI CM Kinsey, University of Vermont, 2015  
present.

Chair of Data Safety Monitoring Board, "A Phase 2, Multicenter, Randomized, Double-Blind,  
Comparator-Controlled Study of the Efficacy, Safety, and Pharmacokinetics of Intravenous  
Ulimorelin (LP101) in Patients with Enteral Feeding Intolerance, Lyric Pharmaceuticals, Inc.,  
2016-present.

**Daniel Weiss, MD PHD**

Emeritus Chairman, ATS RCMB Stem Cell Working Group

Chief Scientific Officer, International Society for Cellular Therapies

**Editorships and Editorial Boards:**

**Jason Bates, PhD, DSc**

Deputy Editor, Journal of Applied Physiology

Editorial Board Member, Journal of Clinical Monitoring & Computing

Editorial Board Member, CRC Critical Reviews in Biomedical Engineering

**Kathryn N. Huggett, PhD**

Editorial Board Member, AMA Journal of Ethics

**Lennart Lundblad, PhD**

Proceedings Editor for the Pulmonary Research Group

**Matthew Poynter, PhD**

Editorial Board, American Journal of Respiratory Cell and Molecular Biology

**Daniel Weiss, MD PhD**

Molecular Therapy, Am J Resp Cell and Mol Biology

**Study Sections and Federal Advisory Boards:**

**Jason Bates, PhD, DSc**

Standing member of the NIH RIBT Study Section

**Anne Dixon, MD**

Member, VA Merit Review Panel for Pulmonary, December 2015, June 2016  
Roche-Genentech Studies GB28688/GB28689/WB28183/WA29249/WB28182  
Member 2013 – present (Chair: Michael Matthay, UCSF)

**Matthew Poynter, PhD**

Member, NIH Lung Cellular, Molecular and Immunology Study Section  
Ad hoc member, AIBS FAMRI Study Section

**Renee Stapleton, MD PhD**

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

**Daniel Weiss, MD PhD**

American Flight Attendant Research Foundation, Canadian CF Foundation

**Major Faculty Awards:**

**Jason Bates, PhD, DSc**

2016 University Scholar

**Kathryn N. Huggett, PhD**

Distinguished Educator, The Teaching Academy at the University of Vermont College of Medicine. Inducted December 3, 2015.

**Laurie Leclair, MD**

Outstanding Foundations Course  
Foundations Course Director Award  
Teaching Academy Faculty Associate

**Renee Stapleton, MD PhD**

2016 Department of Medicine Resident and Fellow Research Mentor of the Year

**Charlotte Teneback, MD**

Junior Researcher of the Year 2015, awarded by the UVM medical group

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

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

R01 HL124052

08/01/2014 – 03/31/2018

NIH/NHLBI Role: PI 3 calendar months

Personalized mechanical ventilation for the injured lung.

\$461,523 annual direct costs

P30 GM 103532

PI: Irvin

08/15/10 – 07/31/2016

NIH/NIGMS Role: Co-PI 1.2 calendar months

\$716,808 annual direct costs (no-cost extension)

T32 HL076122

PI: Irvin

04/01/04-04/30/19

NIH/NHLBI Role: Co-PI 0.6 calendar months Multidisciplinary

Training in Lung Biology

\$404,874 annual direct costs

R01 HL130847

PI: Bates/Dixon

03/15/16-2/29/20

NIH/NHLBI Role: Co-PI 3 calendar months

Non-Allergic Late-Onset Asthma of Obesity: Pathophysiology and Therapy

\$398,322 annual direct costs

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

**Jan Kirk 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 to Boston University); Jan K. Carney MD MPH, Principal Investigator, University of Vermont Subcontract, \$20,000 2015; \$50,000 2016

2015 – 2017 Robert Wood Johnson Foundation/AARP. “Vermont Action Coalition State Implementation Program - Future of Nursing” \$150,000 (Co-PI)

**Anne Dixon, MD**

R01 HL130847-01                      03/01/2016 – 02/29/2020                      3.0 Calendar year

Non-Allergic Late-Onset Asthma of Obesity: Pathophysiology and Therapy

Role: MPI (Bates, Dixon)

The goal of this project is to test the hypothesis that late onset, non-allergic asthma developing in the setting of obesity is related to increased airway closure related to changes in the mechanics of the small airways, and that this can be treated with volume elevating therapy.

Pfizer (Dixon)                      5/01/2014 – 04/30/2016                      1.2 calendar

Biomarkers in Asthma

Role: PI

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

UVMG Grant (Dixon)                      01/01/2015 - 12/31/2016                      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.

**Kathryn N. Huggett, PhD.**

Kassis K, Binkley P, Blanco M, Borges N, Huggett K, Hurtubise L. 2016 AAMC GEA National Grant awardee. Personality Compatibility within Faculty Mentoring Dyads: Can we predict career success? Awarded June 17, 2016.

**David Kaminsky, MD**

Lake Champlain Cancer Research Organization  
LCCRO 016 Pilot Project (C3)

Ventilation Heterogeneity on CT Imaging and its Association with Lung Cancer

PI: David Kaminsky, MD 07/01/16-06/30/17

R34 HL113290-01, NIH/NHLBI

The Efficacy of Pranayama in COPD

PI: David Kaminsky, MD (10%) 05/01/12-10/31/16

University of Vermont REACH Award

Ventilation Heterogeneity and its Association with Lung Cancer

PI: David Kaminsky, MD 05/1/15-8/31/16

American Lung Association - Asthma Clinical Research Center

PI: Charles G. Irvin, Ph.D. Role on Project: Co-Investigator (5%) 7/1/04-6/30/18

United Therapeutics, Inc.

Changes in the Diffusing Capacity of the Lung for Carbon Monoxide (DLCO) in Response to Vasodilator Therapy in Patients with Pulmonary Arterial Hypertension

PI: David Kaminsky, MD (< 5%) 5/1/13-4/30/17

### **C. Matthew Kinsey, MD MPH**

PI: NIH NHLBI K23 "CT Characteristics of Emphysema for Evaluation of Pulmonary Nodules

### **Laurie Leclair, MD**

Coordination of Mental Health Services for CF Patients and Care givers 2016-2018

\$150,000 (direct)

The goal of this award is to screen for and coordinate mental health care for individuals/care givers with anxiety/depression.

Role on Grant: PI

### **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 PhD**

PI Improving Communication with Mechanically Ventilated Patients

University of Vermont FISAR Grant

\$40,000 2015-2017

PI: Improving Family Satisfaction with Communication in the ICU

UVM Medical Group Research Award

\$50,000 2015-2017

**Lennart Lundblad, PhD**

1R21AI112804-01 (Lundblad)

07/01/2014 – No cost ext.

NIH/NIAID

\$150,000

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.

1R21AI121076-01 (Hill and Lundblad)

3/01/2016 – 12/31/2017

NIH/NIAID

Role: Co-PI

Toward Rapid, Non-Invasive, Highly Sensitive, Multiplex Detection of Respiratory Pathogens

This project will address the hypothesis that exhaled breath volatiles can be used to diagnose infections of the lung, and specifically, to distinguish between different pathogens, even during co-infection for acute febrile illnesses. The data from this study is expected to support forthcoming studies in humans and the development of analytical devices for use in the clinic.

NKT Therapeutics Inc. (Lundblad)

07/01/2013 – (no cost ext.)

NKT Therapeutics Inc.

\$89,307

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.

**Matthew Poynter, PhD.**

K. Grants (PI in parentheses)

NIH 1R01HL107291 (Poynter) 04/01/2012 – 02/28/2017 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.

NIH 1R01ES021476 (van der Vliet) 06/07/2012 - 02/31/2017 1.20 calendar

NIH/NIEHS ADC: \$250,000

Cigarette smoke-derived electrophilic aldehydes and airway inflammation

The objectives are to explore the impact of acrolein exposure on allergic sensitization and inflammation and to identify protein targets for alkylation that may relate to these functional alterations. Secondly, we aim to determine the importance of two endogenous detoxification mechanisms (GSTP and hydrogen sulfide) in mitigating these responses.

R21 AI112804 (Lundblad) 07/01/2014 – 06/30/2016 1.00 calendar

NIH/NIAID ADC: \$137,500

iNKT cells regulating lung mast cells: new treatment opportunity for asthma

The objective of the proposed studies is to evaluate the effectiveness of a murineized NTK cell-depleting antibody in a house dust mite model of allergic asthma and to determine the contribution of NKT cells to mast cell metaplasia.

R01 HL122383-01A1 (Anathy) 01/01/2015 - 12/31/2019 0.94 calendar

NIH/NHLBI ADC: \$250,000

Endoplasmic reticulum stress signaling in allergen induced airway remodeling

The over-arching objective of this project is to elucidate the role of the endoplasmic reticulum (ER) in activating allergen mediated death of airway epithelial cells, development of scar in the lung and subsequent decrease in lung function.

VCIID Pilot Project (Poynter)                      10/01/2015 – 09/30/2016                      0.00 calendar  
NIH/NIGMS    ADC: \$49,091

A relevant environmental allergen exposure model for the sensitization to house dust mite and exacerbation of allergic asthma

Role: PI

Our principle objective is to develop an improved mouse model of allergic sensitization that better reflects the natural route, dosing, and duration of allergen exposure experienced by approximately one half of all asthmatics worldwide (house dust mite), with which we can mechanistically dissect its consequences on the most important phenotypes of asthma, specifically methacholine responsiveness, lung remodeling, and immune function, as well as to expose the mice to a battery of asthma-relevant challenges representative of the types that cause disease exacerbation in asthmatic patients.

T32-HL076122 (Irvin)                                      05/01/2014 - 04/09/2019                      0.60 calendar  
NIH/NHLBI    ADC: \$364,962

Multidisciplinary Training in Lung Biology

Role: Co-Director (predoctoral training)

This program supports a group of collaborative and productive pre (4) and postdoctoral (3) trainees who are investigating the causes, diagnosis and cures of debilitating lung disease such as asthma, interstitial lung disease, cystic fibrosis, acute lung injury and infections of the lung.

**Renee Stapleton, MD PhD**

R01 AG050698, 5/01/2016-2/28/2021

“Improving Palliative Care for Older Seriously Ill Hospitalized Patients and Their Families: A Randomized Trial of an Informed Assent Communication Intervention about CPR”

NIH/NIA                                      Direct: \$2,276,543                      Role: PI

Department of Medicine Translational Medicine Pilot Award “Nutrition and Exercise in Critical Illness: A Pilot Study”

6/1/16-6/30/17                      Direct: \$50,000                      Role: PI

UVM Frymoyer Scholar Award

“Enhancing Education, Resources, and Opportunities in Biomedical Research for Doctor of Medicine and Doctor of Nursing Practice Students: Creation of a Research Track”

7/01/16-6/30/18                      Direct: \$25,000 per year for two years                      Role: PI

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

Phase I Study of Zinc in Severe Sepsis



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

Role: PI

1U01HL102547-01, 7/01/2010-8/31/2016

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

1U01HL102547-01, 7/01/2010-8/31/2016

NIH/NHLBI 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.

The SOLUTION study: “A phase 3, randomized, open-label, assessor-blind, non-inferiority, active-comparator study evaluating the efficacy and safety of lipomatase in subjects with cystic fibrosis-related exocrine pancreatic insufficiency.” Anthera Pharmaceuticals. PI. \$107,550.00. Current

A prospective observational study in cystic fibrosis patients with chronic respiratory Pseudomonas Aeruginosa infection treated with TOBI Podhaler or other FDA approved inhaled antipseudomonal antibacterial drugs. Novartis. PI. \$46,000. Current

A point prevalence study to evaluate the prevalence of antibodies to selected porcine viruses in patients with cystic fibrosis who are receiving porcine-derived pancreatic enzyme replacement therapy: A harmonized protocol across sponsors. Abbvie, Aptalis, Janssen. PI. \$9,603.00. Current

**Daniel Weiss, MD PhD**

ACTIVE

R01 HL127144-01 (Weiss, PI)

4/30/15-3/31/20

4.8 calendar

NIH/NHLBI

\$1,250,000 total direct (requested)

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. The proposal was submitted in response to PA-12-284, Exploratory/Developmental Bioengineering Research Grants.

United Therapeutics Inc.

(Weiss PI)

11/1/15-10/31/17

2.4 calendar

\$353,252 direct

Assessing the immunogenicity of decellularized pig lungs as xenogeneic scaffolds for ex vivo lung bioengineering

The goals of this project are to assess potential immunogenicity of transgenic pig lungs for ex vivo lung bioengineering

Athersys Inc. (Weiss, PI) 9/1/15-8/31/16 no salary support  
\$35,000 direct

Effects of Lung BAL Fluid on MSC Behaviors

The major goals of this project are to assess effects of different lung inflammatory environments on release of anti-inflammatory mediators by MSCs. Athersys is funding the laboratory costs for this project.

UVM Department of Medicine/SPARK (Weiss PI) 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

5) DoD Medical Discovery Award (Weiss PI) 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

Vermont Cancer Center Pilot Award (Weiss, PI) 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.

Cystic Fibrosis Research Grant (DJ Weiss, C dos Santos Co-PIs)

1/1/16-12/31/17 0.5 calendar

\$150,000 direct

Optimization of MSC Based Cell Therapies for CF

The major goal of this project is to understand the effect of the CF lung environment on MSC behavior.

BioTek Inc (Weiss PI) 10/1/15-5/31/16 no salary support

High throughput 3D bioprinting of airway models

The major goal of this project is to develop a novel 3D bioprinting approach for human lung airway models

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

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## Division of Rheumatology

Bonita Libman, M.D., Unit Division Chief

<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, a clinician pharmacist and a physician's assistant. The Rheumatology Division and the Osteoporosis Center (a part of our division) welcomed over 12,000 patients, generating more than 20,000 work RVUs for the academic year. In addition to bone densitometry, we have an on-site infusion center for parenteral rheumatologic and osteoporosis medications, and provide point of care diagnostic and procedural (guided injections) musculoskeletal ultrasound. We offer a metabolic bone clinic in addition to our rheumatology services. 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.

Our fully accredited rheumatology fellowship program accepts 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 work with each of the faculty thus experiencing a variety of practice styles. Several medical students completed one month elective rotations in our outpatient clinic. Each year we participate in the Vermont Integrated Curriculum Connections course for 2<sup>nd</sup> year medical students, teaching them rheumatology, metabolic bone disease, and musculoskeletal physical examination skills.

Our faculty engage in clinical research including the use of IL-17 inhibition on psoriatic arthritis, and analysis of Trabecular Bone Score (TBS) in women with breast cancer on aromatase inhibitors and in kidney transplant patients. Our faculty are actively engaged in QI projects that include: incorporation of the Rapid 3 tool (measuring pain and function) into clinic; development of a fracture liaison service for the inpatient hospital; assessment of adherence to EULAR guidelines for treatment of psoriatic arthritis; 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 collaborated 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, M.D.**

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 was a member of the American College of Physicians (ACP) MKSAP 17 Rheumatology Committee; after successful publication of the MKSAP 17, she was asked to return as a member of the ACP MKSAP 18 Rheumatology Committee. She developed and implemented the inaugural Rheumatology Research Day, aimed at promoting research through communication and collaboration between clinicians and bench researchers. She is a member of 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, M.D.**

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 is an internationally known leading authority on developing guidelines and positions on the appropriate use of bone densitometry. Earlier this year he was a Visiting Professor at New York University (NYU) Rheumatology Division, and presented a seminar on "Assessing Fracture Risk." He continues to be actively engaged in research, most recently utilizing a new technology for ascertaining fracture risk called trabecular bone score (TBS). In the past year, he co-authored two papers, one on bone status in glucocorticoid treated men and women, and the other on TBS in glucocorticoid induced osteoporosis patients treated with alendronate and teriparatide. He mentored two UVM medical students and a rheumatology fellow in research studies. He is also involved in quality improvement initiatives and is developing an institution wide fracture liaison service that will

improve quality of care to patients with osteoporotic fractures. 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 a reviewer for several osteoporosis related journals, most notably Bone and Osteoporosis International.

**Grants:**

**Rheumatology Research Foundation**, “Trabecular Bone Score in women with breast cancer on aromatase inhibitors”, with UVM medical student Jeanne Gosselin, \$3000

**Sheldon Cooper, M.D., 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. He is also collaborating with Dr. Lau on a research project involving frequency of assessment of liver enzymes in patients treated with methotrexate.

**Ralph Budd, M.D.**

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 was invited to give seminars at Dartmouth Medical School, Hanover, NH (May, 2016) and the Kennedy Institute for Rheumatology, Oxford University, Oxford, England (June, 2016)

Dr. Budd is an editor of the *Textbook of Rheumatology* 9th Edition, the Director of the Vermont Center for Immunology and Infectious Diseases, and has been a member of several NIH study sections. He is a UVM University Distinguished Professor. He is a former Pew Scholar in the Biomedical Sciences and former UVM University Scholar. He is also a member of the Association of American Physicians.

Active Grants:

<b>T32 AI 055402</b>	Immunology/Infectious Diseases Training Grant 9/1/05-7/31/21
<b>P20 GM103496-07</b>	Vermont Immunobiology/Infectious Diseases Center (COBRE) 8/1/06-6/30/21
<b>Lupus Research Institute</b>	RIG-I Regulation of Interferon Signature in SLE
<b>R21 AI 107298</b>	Structure and Ligand(s) for Human Synovial TCR-Gamma/Delta 2/1/16-1/31/18
<b>R21 AI 119979</b>	Metabolic Regulation of Caspases and Survival in T Cells 3/1/16-2/28/18

**Chi Chi Lau, M.D.**

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 “Systemic Lupus in Women” to the Women’s Health Conference, Burlington, Vermont in September 2016.

Dr. Lau incorporated the Rapid 3, a pain and function measurement tool useful for QI and clinical studies, into the rheumatology clinic. Working with UVM Medical Center computer services, she was able to incorporate the Rapid 3 directly into PRISM. Dr. Lau is currently working on a research project involving frequency of assessment of liver enzymes in patients treated with methotrexate.

### **Nicole Hynes, M.D.**

Assistant Professor of Medicine

- Inflammatory arthritis
- Connective tissue disorders
- Regional pain syndromes

Dr. Hynes provides outreach specialty care in rural areas of Vermont at Copley Hospital and Central Vermont Medical Center. She was 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 facilitates adoption and adherence of “Treat To Target” principles for RA treatment with goal of better patient outcomes and alignment with RA treatment guidelines.

### **Narandra Bethina, M.B.B.S.**

Assistant Professor of Medicine

Associate Program Director, Rheumatology Fellowship Training 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). He taught at the USSONAR MSK Ultrasound Course at the national ACR meeting

November 2015, and has been invited to return for the upcoming meeting in November 2016. Dr. Bethina is the Associate Program Director for the Rheumatology Fellowship Program.

**Scott Legunn, M.D.**

Clinical Assistant Professor of Medicine

Rheumatoid Arthritis

Polymyalgia Rheumatica/Giant Cell Arteritis

Psoriatic Arthritis

Vasculitis

Dr. Legunn provides specialty care for patients with a variety of rheumatologic diseases. He has been active in the teaching program, frequently working with rotating internal medicine residents in clinic and teaching rheumatology fellows and medical students. Working with Dr. Budd, he completed a research project on homeostatic T cell proliferation in patients with rheumatoid arthritis and lupus.

**Suzanne Trost, M.D.**

Osteoporosis

Metabolic Bone Disease

Dr. Trost is a board certified endocrinologist with expertise in metabolic bone disease. She is an attending physician at our affiliated institution, Central Vermont Medical Center. She joins Dr. Leib in metabolic bone clinic providing patient care and teaching rheumatology and endocrinology fellows over their two years of training as part of their metabolic bone rotation.

**Amanda G. Kennedy, PharmD, BCPS**

Pharmacist Clinician (Rheumatology/Dermatology), UVM Medical Center Specialty Pharmacy

Associate Professor

Director, Vermont Academic Detailing Program

Dr. Kennedy is an integral member of the Division. She provides expert clinical care to patients who require counseling and information on their medications and educates the division on all aspects of medications we prescribe. She advocated for patient care on May 18, 2016 when she made a presentation with Dr. Charles MacLean to the U.S. House of Representatives in Washington D.C on "Getting the Medications Right: An essential ingredient in achieving the goals of H.R. 4878 – the

Medicare Better Care, Lower Cost Act. Updates from Vermont.” She is very active in research and has focused on quality improvement initiatives. She is the rheumatology division representative on the Department of Medicine Quality Assurance and Improvement Committee. She is a clinical advisory board member for ISMP Medication Safety Alert! Community/Ambulatory Care newsletter, Institute for Safe Medication Practices, Huntingdon Valley, Pennsylvania and is a grant reviewer for the UVM REACH Grant Program.

Grants: **Pfizer, Inc.** “Promoting Shared Decision Making in Rheumatoid Arthritis through Patient Education” \$11,344; the purpose of this proof-of-concept project is to design and implement an education program to promote shared decision making and a treat-to-target (T2T) approach for patients with Rheumatoid Arthritis (RA). Dr. Kennedy coordinated the funding and methodology for this project, but is receiving no salary or other financial support for this project. All funding is going directly to the UVM Medical Center Rheumatology clinic.

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

##### **Jill Geoffrion, PA-C**

PA Geoffrion sees patients in rheumatology clinic and in metabolic bone disease clinic. She is actively participating in an ongoing pharmaceutical sponsored research trial of secukinumab in psoriatic arthritis.

#### **Fellows**

##### **Sahithi Jarugula, M.B.B.S.**

Completed fellowship June 2016

##### **Syeda Maria Sayeed, M.B.B.S.**

Will complete fellowship in June 2017

##### **Kateryna Bertuch, M.D.**

Will begin fellowship July 2016

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

“Trabecular Bone Score in Patients with Chronic Glucocorticoid-Induced Osteoporosis Treated with Alendronate or Teriparatide.” Saag KG, Agnusdei D, Hans D, Kohlmeier LA, Krohn KD, **Leib ES**, MacLaughlin EJ, Alam J, Simonelli C, Taylor KA, Marcus R. Arthritis Rheumatol. 2016 Apr 25.

“Bone status in glucocorticoid-treated men and women.” **Leib ES**, Winzenrieth R. Osteoporos Int. 2016 Jan;27(1):39-48.

“Medical Knowledge Self Assessment Program (MKSAP) 17.” Masters P (editor), Rheumatology Committee: Pillinger M (section editor), Collier V, Crittenden D, Gardner G, Kolasinski S, **Libman B**, Majithia V. Published by the American College of Physicians, Part A (includes rheumatology) print edition



July 31, 2015.

“Evaluating the impact of a post-graduate multi-disciplinary team-based learning teaching approach for lupus nephritis: a prospective cohort study.” Pearson L, Chang S, **Libman B**, Segal A, Gibson P. Poster presented at The Stick Season Education Symposium of The Teaching Academy at the UVM College of Medicine, Burlington, VT. December 3-4, 2015.

“Psoriatic Arthritis.” Farrell JF, **Kennedy AG**. In: Dong BJ, Elliott DP, eds. ACSAP 2016 Book 1 Endocrinologic/Rheumatologic Care. Lenexa KS: American College of Clinical Pharmacy (ACCP); 2016, ISBN-13:978-1-939862-22-8

Koenig A, Sateriale A, **Budd RC**, Huber SA, Buskiewicz IA. The role of sex differences in autophagy in the heart during coxsackievirus B3-induced myocarditis. *J Cardiovasc Transl Res.* 7:182-91, 2015.

Buskiewicz, I.A., Koenig, A., Moussawi, M., Roberts, B., Russell, J.Q., Shi, C., Lee, S-W, Jung, J., Huber, A., and **Budd R.C.** c-FLIP-Short reduces type I interferon production and increases viremia with coxsackievirus B3. *Plos One* 9:e96156, 2015.

**Kennedy AG**, Edwards MR, **Lau CC**, **Libman BS**. Standardizing Medication Monitoring in Rheumatology: An Inter-professional Approach to Medication Safety. Poster presented at: University of Vermont Medical Center Jeffords Institute for Quality 13th Annual Quality Forum, May 3, 2016, Burlington, Vermont

**Department of Medicine**

FY2016 UVM Research Funding by Division by PI

Division	Principal Investigator	Sponsor	Project Title	Start	End	Direct	Indirect	Total
Cardiology	LeWinter, Martin M	University of Arizona	Myofilament Based Mechanisms of Diastolic Dysfunction in HFpEF	01-Sep-15	30-Jun-16	\$ 190,105	\$ 99,805	\$ 289,910
Cardiology	LeWinter, Martin M	Duke University	Functional Impact of GLP-1 for Heart Failure Treatment	30-Jun-16	31-Dec-99	\$ 1,037	\$ 293	\$ 1,330
Cardiology	Meyer, Markus F.	Medtronic, Inc	Heart Rate Dependent Remodeling of the Heart – A Safety and Feasibility Study	05-Jul-15	05-Jul-18	\$ 51,473	\$ 12,213	\$ 63,686
Cardiology	Meyer, Markus F.	Medtronic, Inc	Pacing-Mediated LV Remodeling for the Treatment of Heart Failure with Preserved Ejection Fraction	16-Jun-15	15-Jun-18	\$ 42,469	\$ 11,042	\$ 53,511
Cardiology	Meyer, Markus F.	National Heart, Lung, and Blood Institute/NIH/DHHS	Sarcolemmal Calcium Extrusion Defect in Patients with Diastolic Dysfunction	01-Apr-16	31-Mar-17	\$ 250,000	\$ 122,325	\$ 372,325
Cardiology	Schneider, David John	Janssen Research and Development	Novel Biomarkers of Thrombotic Risk	01-Jul-15	31-Dec-99	\$ 284,645	\$ 80,270	\$ 364,915
Cardiology	Spector, Peter S	Biosense Webster, Inc.	Catheter and System Development Proposal: Mapping Tools for Patient Specific Ablation of Atrial Fibrillation	11-Nov-14	14-May-16	\$ 284,000	\$ 71,000	\$ 355,000
Cardiology	Spees, Jeffrey L.	National Heart, Lung, and Blood Institute/NIH/DHHS	Vascular Protection by HGF/IgG Protein Complexes That Activate RYK	01-Apr-16	31-Mar-17	\$ 266,989	\$ 131,582	\$ 398,571
Cardiology	Toth, Michael John	National Cancer Institute/NIH/DHHS	Alternative Exercise Modalities to Improve Skeletal Muscle Function in Cancer Survivors	01-Apr-16	31-Mar-17	\$ 130,500	\$ 70,960	\$ 201,460
Cardiology	Van Buren, Peter C	National Heart, Lung, and Blood Institute/NIH/DHHS	New England, New York and Quebec Regional Clinical Center	01-Jan-16	31-Dec-16	\$ 292,561	\$ 37,719	\$ 330,280
Cardiology	Van Buren, Peter C	Duke University	Oral Iron Repletion effects ON Oxygen UpTake in Heart Failure: IRONOUT-HF	30-Jun-16	31-Dec-99	\$ 19,903	\$ 5,613	\$ 25,515
Cardiology	Van Buren, Peter C	Duke University	Aldosterone Targeted Neurohormonal Combined with Natriuresis Therapy – HF	30-Jun-16	31-Dec-19	\$ 8,495	\$ 2,395	\$ 10,890
<b>Cardiology Total</b>						<b>\$ 1,822,177</b>	<b>\$ 645,217</b>	<b>\$ 2,467,393</b>
Endocrinology	Jetton, Thomas L	Agricultural Research Service/Department of Agriculture	Metabolic Effects of Prenatal Exposure to Particulate Matter	01-Sep-15	31-Aug-20	\$ 380,000	\$ -	\$ 380,000
Endocrinology	Jetton, Thomas L	Juvenile Diabetes Foundation International	Manipulating $\beta$ -cell Inflammation and Survival via Cholinergic Pathways	01-Sep-15	31-Aug-16	\$ 150,000	\$ 15,000	\$ 165,000
<b>Endocrinology Total</b>						<b>\$ 530,000</b>	<b>\$ 15,000</b>	<b>\$ 545,000</b>
Gastroenterology	Ganguly, Eric K	University of California, San Francisco	PIANO: Pregnancy in Inflammatory Bowel Disease and Neonatal Outcomes	30-Jun-16	31-Dec-19	\$ 351	\$ 99	\$ 450
Gastroenterology	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-15	30-Jun-16	\$ 45	\$ 5	\$ 50
Gastroenterology	Jensen, Gordon L	Pennsylvania State University	Inspiring Dietitians to Elevate and Advance (IDEA) their Roles as Leaders in Nutrition Care Using Computer Gaming Simulations	01-Jan-16	31-Aug-16	\$ 6,823	\$ 682	\$ 7,505
Gastroenterology	Jensen, Gordon L	Geisinger Clinic	Rural Aging Study	01-Jan-16	31-Jul-16	\$ 18,180	\$ 1,818	\$ 19,998
<b>Gastroenterology Total</b>						<b>\$ 25,399</b>	<b>\$ 2,604</b>	<b>\$ 28,003</b>
GIMR	Littenberg, Benjamin	Patient-Centered Outcomes Research Institute (PCORI)	Integrating Behavioral Health and Primary Care for Comorbid Behavioral and Medical Problems	01-Apr-16	28-Feb-22	\$ 16,575,358	\$ 1,966,237	\$ 18,541,595
GIMR	MacLean, Charles D	Vermont AHS Department of Health	Vermont Academic Detailing Program FY16	01-Jul-15	30-Jun-16	\$ 144,928	\$ 55,072	\$ 200,000
GIMR	MacLean, Charles D	Health Resources and Services Administration/DHHS	HRSA AHEC	01-Sep-15	31-Aug-16	\$ 304,897	\$ 5,753	\$ 310,650
GIMR	MacLean, Charles D	Vermont AHS Department of Health	Hypertension and Diabetes Panel Management Quality Improvement Project	01-Oct-15	30-Sep-16	\$ 46,458	\$ 17,654	\$ 64,112
GIMR	MacLean, Charles D	Vermont AHS Department of Health	Population Reporting for Opioid Prescribers from the VT Prescription Monitoring System	01-Dec-15	30-Nov-16	\$ 108,980	\$ 41,412	\$ 150,392
<b>GIMR Total</b>						<b>\$ 17,180,621</b>	<b>\$ 2,086,128</b>	<b>\$ 19,266,749</b>

**Department of Medicine**

FY2016 UVM Research Funding by Division by PI

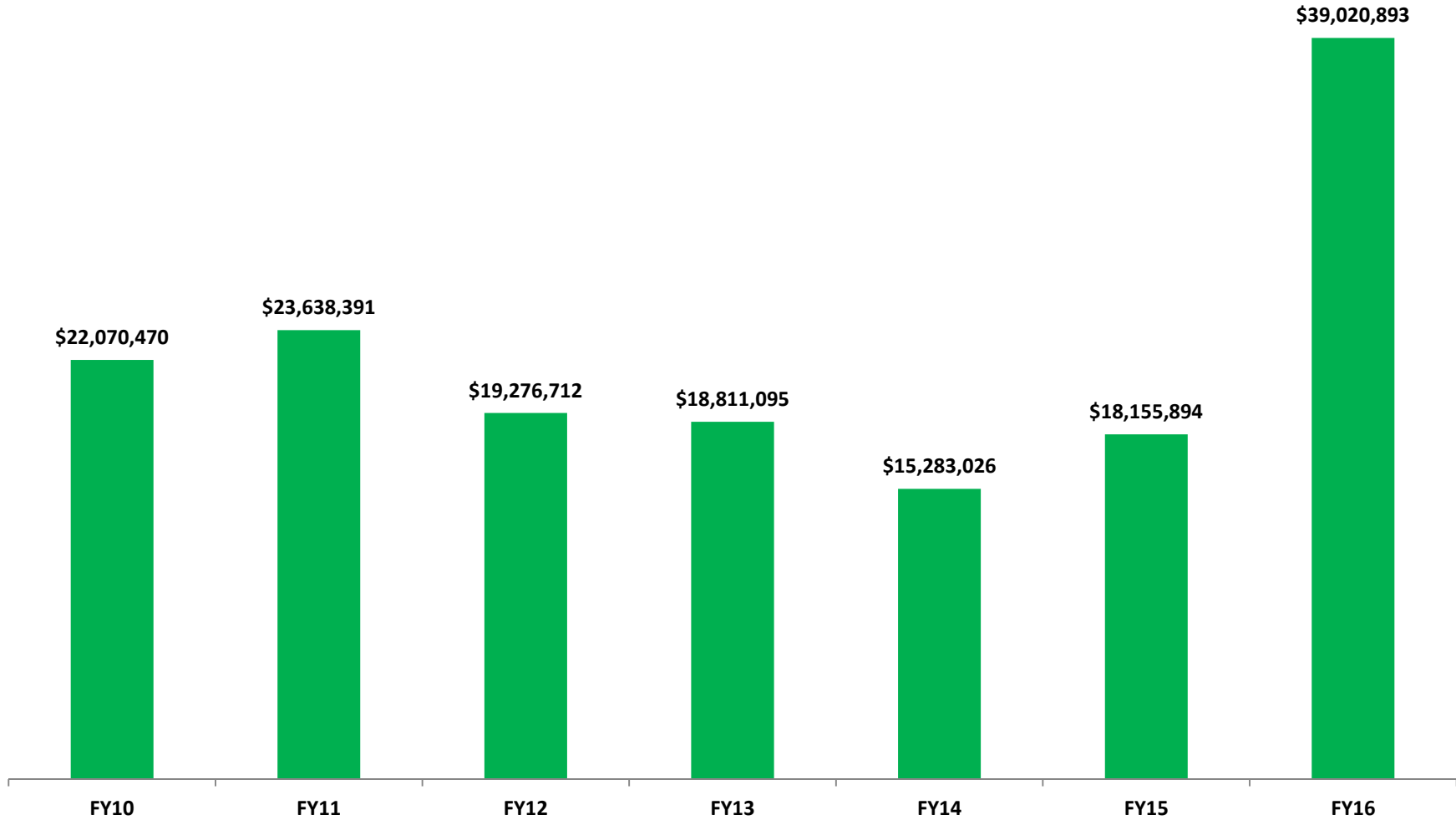
Division	Principal Investigator	Sponsor	Project Title	Start	End	Direct	Indirect	Total
Hem/Onc	Cushman, Mary	American Society of Hematology	C-reactive Protein and Stroke Risk in African-Americans and Whites	01-Jun-15	01-Aug-16	\$ 5,000	\$ -	\$ 5,000
Hem/Onc	Cushman, Mary	West Virginia University	Effects of Perfluoroalkyl Chemicals on Stroke Incidence and Mortality	01-Jun-15	31-May-16	\$ 6,978	\$ 3,663	\$ 10,641
Hem/Onc	Cushman, Mary	University of Pittsburgh	Exceptional Survival: Trajectories to Functional Aging (CHS All Stars)	01-Sep-15	31-May-16	\$ 36,266	\$ 19,040	\$ 55,306
Hem/Onc	Cushman, Mary	University of Minnesota	Epidemiology of Venous Thrombosis and Pulmonary Embolism	01-Apr-15	31-Mar-16	\$ 45,931	\$ 17,705	\$ 63,636
Hem/Onc	Cushman, Mary	University of North Carolina	The National Longitudinal Study of Adolescent Health	01-May-15	30-Apr-16	\$ 478,373	\$ 223,514	\$ 701,887
Hem/Onc	Cushman, Mary	University of Alabama at Birmingham	Etiology of Geographic and Racial Differences in Stroke Mortality	01-Dec-14	30-Nov-15	\$ 45,815	\$ 24,339	\$ 70,154
Hem/Onc	Cushman, Mary	University of Alabama at Birmingham	Etiology of Geographic and Racial Differences in Stroke Mortality	01-Dec-15	30-Nov-16	\$ 699,493	\$ 344,084	\$ 1,043,577
Hem/Onc	Cushman, Mary	diaDexus, Inc.	Lipoprotein-Associated Phospholipase A2 (Lp-PLA2) Activity and the Risk of Stroke, Coronary Heart Disease and Cognitive Decline in REGARDS	01-Dec-15	30-Nov-16	\$ 106,958	\$ 58,264	\$ 165,222
Hem/Onc	Greenblatt, Marc Steven	University of North Carolina	A Knowledge Base for Clinically Relevant Genes and Variants	01-Aug-15	31-Jul-16	\$ 23,234	\$ 12,199	\$ 35,433
Hem/Onc	Greenblatt, Marc Steven	University of Utah	Classifying DNS Mismatch Repair Gene Variants of Unknown Significance	01-Dec-15	28-Feb-17	\$ 61,589	\$ 32,334	\$ 93,923
Hem/Onc	Verschraegen, Claire F	Lake Champlain Cancer Research Organization	Lake Champlain Cancer Research	01-Jan-16	31-Dec-16	\$ 758,000	\$ -	\$ 758,000
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	30-Jun-16	31-Dec-99	\$ 42,160	\$ 11,805	\$ 53,964
Hem/Onc	Wood, Marie E.	Ohio State University	Increasing Adherence to Adjuvant Hormonal Therapy Among Breast Cancer Patients: Phase 2 - Pilot Test of Intervention for Feasibility	27-May-15	26-May-16	\$ -	\$ -	\$ -
<b>Hem/Onc Total</b>						<b>\$ 2,309,797</b>	<b>\$ 746,947</b>	<b>\$ 3,056,743</b>
Immunobiology	Budd, Ralph C	National Institute of Allergy and Infectious Diseases/NIH/DHHS	Metabolic Regulation of Caspases and Survival in T Cells	01-Apr-16	31-Mar-17	\$ 125,001	\$ 67,969	\$ 192,970
Immunobiology	Budd, Ralph C	National Institute of Allergy and Infectious Diseases/NIH/DHHS	Structure and Ligand(s) for Human Synovial TCR-Gamma/Delta	13-Jan-16	31-Dec-16	\$ 175,992	\$ 67,821	\$ 243,813
Immunobiology	Rincon, Mercedes	New Jersey ME/CFS Association, Inc.	Does Citrullination of Proteins Underlie Myalgic Encephalomyelitis	01-Aug-15	01-Nov-15	\$ 7,150	\$ -	\$ 7,150
Immunobiology	Rincon, Mercedes	National Institute of General Medical Sciences/NIH/DHHS	Fostering Entrepreneurship in Biomedical Research	01-Apr-16	28-Feb-17	\$ 415,466	\$ 24,597	\$ 440,063
Immunobiology	Rincon, Mercedes	National Institute of Allergy and Infectious Diseases/NIH/DHHS	IL-6 as a Regulator of Mitochondria Function in T Cells	01-Apr-16	31-Mar-17	\$ 249,998	\$ 136,043	\$ 386,041
Immunobiology	Teuscher, Cory	University of Utah	Molecular Genetics of Lyme Arthritis	01-Jul-15	30-Jun-16	\$ 50,000	\$ 26,250	\$ 76,250
Immunobiology	Teuscher, Cory	National Multiple Sclerosis Society	Identification of Gene-by-Environment Interactions Contributing to CNS Autoimmune Disease	01-Jan-16	31-Dec-16	\$ 35,905	\$ 3,591	\$ 39,496
Immunobiology	Teuscher, Cory	Drexel University	Refining the Genetic Basis of EAE to Establish a Model for MS-GWAS Testing	01-Oct-15	30-Sep-16	\$ 76,582	\$ 7,658	\$ 84,240
<b>Immunobiology Total</b>						<b>\$ 1,136,094</b>	<b>\$ 333,929</b>	<b>\$ 1,470,023</b>
Infectious Diseases	Huston, Christopher Dwight	Anacor Pharmaceuticals, Inc.	Discovery of Benzoxaboroles for the Treatment of Cryptosporidiosis	19-Aug-15	18-Aug-16	\$ 42,217	\$ 4,222	\$ 46,439
Infectious Diseases	Huston, Christopher Dwight	Gates (Bill and Melinda) Foundation	Natural Calf Model to Develop Treatments for Cryptosporidiosis	14-Oct-15	30-Sep-17	\$ 733,136	\$ 73,313	\$ 806,449
Infectious Diseases	Huston, Christopher Dwight	Merck KGaK - EMD Serono, Inc.	Screening the Merck Serono Mini Library for Cryptosporidium Parvum Inhibitors	01-Jan-16	31-Dec-16	\$ 8,000	\$ 4,340	\$ 12,340
Infectious Diseases	Kirkpatrick, Beth D.	Gates (Bill and Melinda) Foundation	Improving Rotavirus Vaccination: Refining Correlates of Protection and Evaluating Durability	07-Jul-15	31-Dec-18	\$ 2,006,286	\$ 200,628	\$ 2,206,914
Infectious Diseases	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-16	\$ 34,965	\$ 3,497	\$ 38,462
Infectious Diseases	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	15-Sep-15	16-Sep-17	\$ 1,294,067	\$ 371,634	\$ 1,665,701
Infectious Diseases	Kirkpatrick, Beth D.	Gates (Bill and Melinda) Foundation	Using Cryptosporidium Human Challenge Models to Advance Therapeutics and Vaccines	19-Nov-15	31-Mar-19	\$ 2,985,287	\$ 298,529	\$ 3,283,816
<b>Infectious Diseases Total</b>						<b>\$ 7,103,958</b>	<b>\$ 956,163</b>	<b>\$ 8,060,121</b>
Nephrology	Negoi, Dana G	Arbor Research Collaborative for Health	Dialysis Outcomes and Practice Patterns Study (DOPPS 5)	01-Jul-14	30-Jun-15	\$ 2,227	\$ 628	\$ 2,855
<b>Nephrology Total</b>						<b>\$ 2,227</b>	<b>\$ 628</b>	<b>\$ 2,855</b>
Pulmonary	Bates, Jason H.	National Heart, Lung, and Blood Institute/NIH/DHHS	Personalized Mechanical Ventilation for the Injured Lung	01-Apr-16	31-Mar-17	\$ 465,641	\$ 121,558	\$ 587,199

**Department of Medicine**

FY2016 UVM Research Funding by Division by PI

Division	Principal Investigator	Sponsor	Project Title	Start	End	Direct	Indirect	Total
Pulmonary	Bates, Jason H.	National Heart, Lung, and Blood Institute/NIH/DHHS	Non-Allergic Late-Onset Asthma of Obesity: Pathophysiology and Therapy	15-Mar-16	28-Feb-17	\$ 398,322	\$ 190,342	\$ 588,664
Pulmonary	Carney, Jan Kirk	Boston University	New England Public Health Training Center (NEPHTC)	01-Sep-15	31-Aug-16	\$ 46,296	\$ 3,704	\$ 50,000
Pulmonary	Dixon, Anne Elizabeth	Pfizer Inc., U.S. Pharmaceuticals Group	Biomarkers in Uncontrolled Asthma	01-Jun-15	31-May-16	\$ 53,098	\$ 13,806	\$ 66,904
Pulmonary	Irvin, Charles G	American Lung Association	ALA-Asthma Clinical Research Center-CORE Award	01-Jul-15	30-Jun-16	\$ 75,000	\$ -	\$ 75,000
Pulmonary	Irvin, Charles G	American Lung Association	Airways Clinical Research Center (ACRC) Core Award	01-Jul-16	30-Jun-17	\$ 100,000	\$ -	\$ 100,000
Pulmonary	Irvin, Charles G	American Lung Association	ALA-Asthma Clinical Research Center-CORE Award	01-Mar-16	28-Feb-17	\$ 21,000	\$ 11,410	\$ 32,410
Pulmonary	Irvin, Charles G	National Heart, Lung, and Blood Institute/NIH/DHHS	Multidisciplinary Training in Lung Biology	01-May-16	30-Apr-17	\$ 418,722	\$ 24,538	\$ 443,260
Pulmonary	Irvin, Charles G	American Lung Association	ALA-Asthma Clinical Research Center-CORE Award	30-Jun-16	28-Feb-18	\$ 225	\$ -	\$ 225
Pulmonary	Leclair, Laurie W.	Cystic Fibrosis Foundation	Coordination of Mental Health Services for CF Patients and Care Givers	01-Jan-16	31-Dec-16	\$ 47,230	\$ 3,778	\$ 51,008
Pulmonary	Lundblad, Lennart K.A.	Syntrix Biosystems	Immune-Mediated Chronic Lung Injury and Remodeling	09-Nov-15	15-Jun-16	\$ 30,407	\$ 16,419	\$ 46,826
Pulmonary	Lundblad, Lennart K.A.	Syntrix Biosystems	Immune-Mediated Chronic Lung Injury and Remodeling	09-Nov-15	15-Jun-16	\$ 3,500	\$ -	\$ 3,500
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-15	31-Jul-16	\$ 43,120	\$ 14,238	\$ 57,358
Pulmonary	Smith, Bradford J	National Heart, Lung, and Blood Institute/NIH/DHHS	The Importance of Inhomogeneity in the Pathogenesis of Lung Injury	15-Jul-15	30-Jun-16	\$ 103,625	\$ 8,145	\$ 111,770
Pulmonary	Stapleton, Renee D.	National Institute on Aging/NIH/DHHS	Improving Palliative Care for Older Seriously Hospitalized Patients and Their Families: A Randomized Trial of an Informed Assent Communication Intervention about CPR	01-May-16	28-Feb-17	\$ 502,183	\$ 77,563	\$ 579,746
Pulmonary	Stapleton, Renee D.	Fred Hutchinson Cancer Center	A Randomized Phase II Trial of CMV Prevention in Acute Lung Injury	30-Jun-16	31-Aug-16	\$ 3,500	\$ 987	\$ 4,487
Pulmonary	Teneback, Charlotte C	Cystic Fibrosis Foundation Therapeutics, Inc.	Cystic Fibrosis Foundation Research Support	01-Dec-15	30-Nov-16	\$ 60,098	\$ 4,808	\$ 64,906
Pulmonary	Teneback, Charlotte C	Cystic Fibrosis Foundation Therapeutics, Inc.	Therapeutics Development Center	01-Jan-16	31-Dec-16	\$ 68,708	\$ 5,497	\$ 74,205
Pulmonary	Weiss, Daniel J	National Heart, Lung, and Blood Institute/NIH/DHHS	Stem Cells, Cell Therapies, and Bioengineering in Lung Biology in Lung Diseases Conference	01-Jul-15	30-Jun-16	\$ 30,000	\$ -	\$ 30,000
Pulmonary	Weiss, Daniel J	United Therapeutics Corporation	De-Cellularization and Re-Cellularization of Lungs: Developing a Xenogeneic Strategy for Lung Transplantation	11-Nov-15	11-Nov-17	\$ 353,251	\$ 105,976	\$ 459,227
Pulmonary	Weiss, Daniel J	Cystic Fibrosis Foundation Therapeutics, Inc.	Optimizing Mesenchymal Stem Cells for Treatment of CF Lung Disease	01-Jan-16	31-Dec-16	\$ 300,000	\$ 16,060	\$ 316,060
Pulmonary	Weiss, Daniel J	National Heart, Lung, and Blood Institute/NIH/DHHS	Optimizing Functional Recellularization of Acellular Human Lung Scaffolds	01-Apr-16	31-Mar-17	\$ 250,001	\$ 131,250	\$ 381,251
<b>Pulmonary Total</b>						<b>\$ 3,373,927</b>	<b>\$ 750,079</b>	<b>\$ 4,124,006</b>
<b>Grand Total</b>						<b>\$ 33,484,200</b>	<b>\$ 5,536,695</b>	<b>\$ 39,020,893</b>

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UVM Research Funding (Direct & Indirect), FY10-FY16



## Department of Medicine

### UVM Research Funding (Direct & Indirect) by Division, FY2012-FY2016

