

Department of Medicine

ANNUAL REPORT

July 1, 2016 – June 30, 2017

Submitted by:

Polly E. Parsons, MD

E.L. Amidon Professor and Chair Department of
Medicine

Date: September 25, 2017

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Department of Medicine

Annual Report 2016-2017



Chair's Executive Summary

The Department of Medicine had another incredible year: we welcomed 20 faculty (with an additional 14 new faculty already hired to start in the current calendar year), and celebrated the numerous achievements and recognition awards of our faculty, staff, housestaff and students .

The Department continues to further its integration into the new Health Network through the recruitment of new faculty and the expansion of clinical services. New faculty have joined the divisions of Cardiology, Infectious Disease, Nephrology, Hematology/Oncology, Pulmonary and Critical Care Medicine, Rheumatology, Endocrinology, Dermatology, Hospital Medicine, General Internal Medicine and Geriatrics.. They are helping to further collaboration between community and faculty colleagues and increase access to services in the region. In addition, they bring new services and expertise including bariatric care (Endocrinology), bone metabolism (Endocrinology), vasculitis (Rheumatology), ventricular ablation (Cardiology), and Pediatric Dermatology. Our Hospital Medicine program expanded to provide collaborative care for inpatient Hematology/Oncology and Geriatrics is working collaboratively with the neurology (Memory Center) to continue to enhance the care provided to our aging population. In General Internal Medicine, our focus remains on growing our capacity as population health takes center stage.

Under the leadership of the Vice Chairs – Allen Repp, MD (Quality); Benjamin Suratt, MD (Faculty Affairs); and Charles Irvin, PhD (Research), the department has substantially increased our focus and opportunities in quality (<http://www.med.uvm.edu/medicine/quality>); faculty development (<http://www.med.uvm.edu/medicine/subspecialty/Academic-Affairs/faculty-development-committee>); and research (<http://www.med.uvm.edu/medicine/research>).

Education is a core mission for the department. Faculty continue to engage innovative new programs at UVM as well as at our affiliate sites. To further enhance and integrate our education mission, we established an Education Council, chaired by Kathryn Huggett, PhD. Members of the Council include Mark Pasanen, MD, Program Director Internal Medicine; Joseph Pierson, MD, Fellowship Programs liaison; Roberta O'Brien, MD, Clinical Clerkship; and Jan Carney, D, Public Health and Undergraduate Education. Garth Garrison, MD, E. Rosy Hill, MD, and Joel Schnure, MD became members of the Teaching Academy, and Emily Hadley Strout, MD became a Protégé of the Academy. The faculty continue to receive awards including an Early Achievement Award presented to Kristen Pierce, MD from the UVM Medical Alumni Association; Gilman Allen, MD, Ryan Clouser, MD, and Joshua Farkas, MD have been awarded the UVM Health Network Better Together Awards recognizing the ICU collaboration

between UVM Medical Center and Central Vermont Medical Center; and Marvin Klikunas, MD was honored by the Larner College of Medicine Class of 2017 with the Leonard Tow Humanism in Medicine Award. Dennis Beatty, MD, Halle Sobel, MD, and David Rand, DO received 2017 Frymoyer Scholar awards. Polly E. Parsons, MD was awarded the 2017 Critical Care Lifetime Achievement Award from the Assembly on Critical Care of the American Thoracic Society. Jan Carney, MD MPH was honored as the recipient of the 2017 Crystal Heart Award at the American Heart Association's 10th annual Vermont Go Red for Women Luncheon.

Several faculty received awards from the University of Vermont Medical Group in December, 2016:

Senior Investigator of the Year – Anne Dixon, MD
Junior Investigator of the Year – Michael LaMantia, MD
CME Teacher of the Year – Patricia O'Brien, MD
Research Grant – Richard Zubarik, MD
Education Grant – Stephanie Mann, MD PI, and Mark Levine, MD as Co-PI
Education Grant – Laurie Leclair, MD

The Department continues to be a nationally/internationally recognized leader in research with contributions to new scientific knowledge. The breadth and depth of research throughout our divisions continues to be a testament to our talented investigators. Key grant awards include: Dr. Michael LaMantia's project entitled "Delirium Evaluation in the Emergency Department for Seniors (DEEDS)," Dr. Mary Cushman's project entitled, "The National Longitudinal Study of Adolescent Health," Dr. Dimitry Kremontsov's project entitled, "Mechanisms of Sex-Specific p38 MAPK-Mediated Pathogenesis in CNS Autoimmunity," Dr. Christopher Huston's project entitled, "PATH Cryosporidium Strain/Species Comparative Studies," and Dr. Anne Dixon's project entitled, "Pilot of Lifestyle in Asthma INTERvention (PLAN)." In addition, Several faculty received awards at the Dean's Excellence in Research Awards event at the Larner College of Medicine in November, 2016:

Research Mentorship – Charles Irvin, PhD
Research Laureate – Ralph Budd, MD
Trainee Award for Outstanding Research Publication/Graduate Student – E. Ross Colgate, MPH (Mentor, Beth Kirkpatrick, MD)
Trainee Award for Outstanding Research Publications/Postdoctoral Fellows – Nicholas Farina, PhD (Mentors for the Department of Medicine - Marie Wood, MD and Steven Ades, MD)
Trainee Award for Outstanding Research Publication/Postdoctoral Fellows – Vicki Hart, PhD, principal (Mentor – Julian Sprague, MD)

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.

Administrative Team:

Physician Leader and Chair
Vice Chairs

Polly E. Parsons, MD

Education Council	Kathryn Huggett, 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	Bridget Tully

Department of Medicine, University of Vermont Division Chiefs

R. Budd, MD, Immunobiology

B. Libman, MD, Rheumatology

W. Kemper Alston, 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. Holmes, MD, Interim, Hematology/Oncology

A. Dixon, MD, Pulmonary and Critical Care Medicine

Schneider, MD, Cardioloascular

R. Solomon, MD, Nephrology

J. Vecchio, MD, Gastroenterology

Total faculty: 203

By rank –

Assistant Professors: 97

Associate Professors: 48

Professors: 52

Clinical Practice Physicians: 6

By gender – 82 female; 121 male

By track – Tenured: 37

Research Scholar Pathway: 8

Tenure Pathway: 7

Clinical Scholar Pathway: 139

Education Scholar Pathway: 6

Clinical Practice Physician – 6

Faculty Actions:

FALL 2016 – Seven (7) promotions; seven (7) annual review reappointments

SPRING 2017 – 26 green sheet reappointments; 13 annual review reappointments; Nine (9) volunteer pathway faculty reappointments.

Promotions (7/1/17):

Shaden Eldakar-Hein – to Associate Professor, CSP

Patricia King – to Professor, CSP

Isaura Menzies – to Associate Professor, CSP

Allen Repp – to Professor, CSP

Julian Sprague – to Associate Professor, CSP

Michael Toth – to Professor, Tenured

Department of Medicine – Standing Committees

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.

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.

Fellowship Directors Education Committee

D. Kaminsky, Chair

F. Keating

N. Ferrentino

E. Gagnon

M. Gilbert

D. Kaminsky

B. Libman

M. Pasanen

K. Pierce

W. Weise

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.

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

Clinical Competency Committee

M. Ramundo, Chair
S. Eldakhar-Hein
J. Bartsch
H. Sobel
R. Clouser
E. Ganguly
M. Pasanen
F. Keating
T. Scribner-Metcalf
S. Stoyak
J. O'Toole
D. Shelc

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. Barry, MD
J. Bartsch, MD
R. Clouser, DO
F. Foerg, MD
E. Ganguly, MD
G. Garrison, MD
S. Grant, MD

M. Hockett, MD
W. Hopkins, MD
D. Kaminsky, MD
C. Lyon, MD
R. McEntee, MD
P. Menon, MD
M. Pasanen, MD
K. Pierce, MD
A. Repp, MD
C. Noyes, MD
M. Ramundo, MD
H. Sobel, MD
K. Speiss, DO
R. Stapleton, MD
A. Teleron, MD
J. Wingett, MD
M. Velez, MD

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

Allen Repp	Chair
Maria Airoidi	Pharmacy
Gil Allen	Pulmonary & Critical Care Medicine
Susan Bellemare	Nursing
Tammy Berrings	Nursing
Peg Gagne	Nursing
Amanda Kennedy	QI Scholar
Farrah Khan	Hematology-Oncology
Michael Latreille	Hospital Medicine
Scott Legunn	Rheumatology
Julie Lin	Dermatology
Allen Mead	Director
Mary Ramundo	Infectious Disease
Jeffrey Rimmer	Nephrology
Marie Sandoval	GIM & Geriatrics
Ross Stemmler	Resident

Pamela Stevens	Jeffords Institute
Peter Van Buren	Cardiology
Richard Zubarik	Gastroenterology

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

- J. Lin, Chair
- P. Menon
- K. Cheung
- A. Teleron
- C. Noyes
- F. Khan
- A. Gutierrez
- S. Legunn
- J. Pierson
- P. gogo
- M. Velez
- T. Stockton
- I. Menzies

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
- T. Jetton
- S. Lidofsky
- M. Wood
- M. Takla
- B. Everett
- L. Burgess

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

Keating, Friederike K - Chair
Schnure, Joel J.
Bethina, Narandra
Grant, Steven M.
Haddock, Diane
Holmes, Todd E.
Folefac, Edmund
Everett, Brendan T.
Smith, Lindsay M.
Kumar, Abhishek
Zubarik, Richard S.
Clouser, Ryan D.
Mead, Allen
Tammy Stockton

Committee Mission:

The Department of Medicine Operations Committee serves to improve operational efficiency and cross-divisional collaboration. To that end, the committee reviews operational data and compares practices across the Divisions, and advises the Departmental leadership (Chair and Unit Chiefs) regarding operational matters.

Department of Medicine Faculty Development Committee

The Faculty Development is composed of 1-2 faculty from each division in the Department of Medicine 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. The committee serves as a forum for junior and mid-level faculty to discuss faculty development within the DOM and to foster new initiatives to support the DOM faculty. Current efforts include the development and dissemination of:

- Faculty mentoring and career development support tools
- Promotion dossier (Green Sheet) guidance and a standardized Larner College of Medicine CV format
- Metrics and guidelines for career development and promotion within the Clinical Scholar Pathway
- Mechanisms to recognize and address faculty burnout
- The Quarterly Faculty Development newsletter for the DOM

The current membership of the committee is listed below. Please contact [Ben Suratt](#) or your divisional representative with questions.

Member	Division/Position
Benjamin Suratt, MD	Committee Chair, Vice Chair of Medicine for Academic Affairs
Laurie St. Gelais	Administration
Maura Barry, MD	Hematology/Oncology
Narandra Bethina, MD	Rheumatology
Jason Botten, PhD	Immunobiology
Garth Garrison, MD	Pulmonary & Critical Care Medicine
Nicholas Ferrentino, MD	Gastroenterology
Matthew Gilbert, DO	Endocrinology
Farrah Khan, MD	Hematology/Oncology
Robert Lobel, MD	Cardiology
Rachel McEntee MD	Hospitalist Medicine
John Miller, MD	Primary Care Medicine

Member	Division/Position
Kristen Pierce, MD	Infectious Disease
Marios Prikis, MD	Nephrology
Mario Velez, MD	Gastroenterology
Christine Weinberger, MD	Dermatology

Department of Medicine Reappointment, Promotions, and Tenure Committee

The Reappointment, Promotions, and Tenure Committee is composed of 3 subcommittees: The Tenure Pathway and Promotions Subcommittee, The Clinical Scholar Evaluation and Reappointment Subcommittee, and The Volunteer Pathway Reappointment Subcommittee. Each are composed of selected faculty from the divisions of the Department of Medicine. All three subcommittees participate in the Spring RPT cycle which addresses faculty reappointments, while the Tenure Pathway subcommittee also meets for the Fall RPT cycle as well to evaluate faculty going up for promotion.

The current membership of the committee is listed below. Please contact [Ben Suratt](#) with questions.

Tenure Pathway and Promotions Subcommittee

Member	Division/Position
Jason Bates, PhD	Chair
George Atweh, MD	Hematology/Oncology
Harold Dauerman, MD	Cardiology
Christopher Huston, MD	Infectious Disease
Beth Kirkpatrick, MD	Infectious Disease
Benjamin Littenberg, MD	GIM
Charles Maclean, MD	GIM
Joseph Pierson, MD	Dermatology

Committee Mission:

The mission of the Department of Medicine Tenure Pathway and Promotions Subcommittee is to provide support to the RPT Chair in the preparation of summary information required for reappointment and promotion of Department of Medicine faculty members on the Tenure Track Pathway, and for promotion dossiers of faculty on all promotion tracks. 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 Subcommittee will meet at least once during the faculty review cycle to finalize the summaries, which will then be forwarded by the Subcommittee Chair to the RPT Committee Chair.

Clinical Scholar Evaluation and Reappointment Subcommittee

Member	Division/Position
Kristen Pierce, MD	Chair
Tanya Bertsch, MD	GIM
Shaden Eldakhar-Hein, MD	Hospitalist Medicine
Matthew Gilbert, DO	Endocrinology
Chris Holmes, MD, PhD	Hematology/Oncology
Chi Chi Lau, MD	Rheumatology
Carolyn Lyon, MD	Hospitalist Medicine
Doris Strader, MD	Gastroenterology
Peter Van Buren, MD	Cardiology

Volunteer Pathway Reappointment Subcommittee

Member	Division/Position
Claudia Berger, MD	Chair
Roberta O'Brien, MD	GIM
Garth Garrison, MD	Pulmonary & Critical Care Medicine

Committee Mission:

The mission of the Department of Medicine Volunteer Pathway Reappointment Subcommittee is to provide support to the RPT Chair in the preparation of summary information required for reappointment of Department of Medicine faculty members on the Volunteer Pathway. The Committee is charged with reviewing the content of dossiers, assembled by each faculty member under consideration and corresponding unit director, and evaluating eligibility of the faculty member for reappointment on the Volunteer Pathway. The Subcommittee will meet at least once during the faculty review cycle to finalize the recommendations, which will then be forwarded by the Subcommittee Chair to the RPT Committee Chair.

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
M. Bui, MD PhD
S. Lidofsky, MD PhD
M. Meyer, MD
R. Solomon, MD
A. Repp, MD
C. MacLean, MD
C. Lyon, 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
L. McGevna, MD

Medical Service

Patient Days: Patient Days: 51,255 (inpatients and bedded outpatients)
Ambulatory Care Visits: 238,292 (168,647 specialty care and 69,645 primary care)
Work RVUs: 573,305 work RVUs

UVMHC Practice Sites:

Ambulatory Care Center – Medicine has a presence in five 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 (occupying two modules)
- Cancer Center: Hematology/Oncology, Breast Care Center and Multidisciplinary Clinic, Vermont Regional Hemophilia Treatment Center, and
- 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
- Vermont Lung Center (Pulmonary Research)

UVMMC Outreach Sites:

Vermont

Brattleboro (BMH) – Infectious Disease
Morrisville (Copley Hospital) – Cardiology
St. Albans (Northwestern Medical Center) –Nephrology and Cardiology
St. Johnsbury (Northeastern Medical Center) - Infectious Disease
Barre (Central Vermont) – 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, Infectious Disease

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
The Arbors at Shelburne
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 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).
- Geriatrics/Memory Center (Geriatrics and Neurology)
- 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)
- Accredited Stem Cell Transplant Program (Hematology and Pathology/Laboratory)

- Pediatric Hemophilia Clinic (Hematology/Oncology and Pediatrics)

Under Development

- Dermatology and OB/GYN

Medical Education 2016-2017 Annual Report

1. Leadership

Mark E. Pasanen , M.D., FACP – 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 2016-2017

Enhancements to Curriculum:

We launched our innovative approach to resident learning in January 2017. After over a year of planning, we replaced our noon lecture-based approach with Academic Half-Days. In this format, we have all of our first-year residents free from clinical duties one afternoon/week. During these weekly sessions, we utilize active-learning techniques, focusing on core material critical for success as an R1. For the senior resident half-day, we are able to expand to more complex concepts, but still utilize interactive and engaged learning. In addition, we have incorporated wellness activities, a robust improvement science curriculum (under the leadership of Dr. Allen Repp) and a Resident-As-Teacher series into these sessions.

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 third year we provided all 2nd and 3rd 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 – resulting in a three-year board pass rate above the national mean (and 100% of our 2016 graduates).

Continuity Clinic Update:

We completed our 5th year in a block schedule (4+1), and with the continued leadership of Drs. Halle Sobel and Rich Pinckney, small group learning sessions continue to be developed as part of a comprehensive 3-year curriculum. 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 along with the Yale Ambulatory Curriculum into the formal educational experience.

Wellness:

Over the last two years, we have started 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. This has included providing and serving monthly dinners at the Hope Lodge, where patients and families stay while undergoing cancer treatments.

Improvements in Evaluation/Assessment:

With leadership from Dr. Ramundo, our Clinical Competency Committee reviews 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 would benefit from a more structured improvement plan.

Recruitment:

With leadership from Dr. Eldakar-Hein, we had another incredibly successful resident recruitment season. Given the significant increase in the number of programs each student applies to, it continues to be critical to interview a relatively large number of candidates – requiring numerous faculty to volunteer their time for this critical process.

3. List of Senior Residents (as of July 1, 2017 –Graduating Residents and Match Results below)

PGY-3

Sarah Gillett	University of Vermont
Caitlin Greenberg	University of New England College of Osteopathic Medicine
Elena Kozakewich	Albany Medical College
Lauren Miller	Drexel University (Primary Care)
Gatha Nair	University of Arizona
Hank Ng	University of Vermont
Nehpreet Pandhair	JJM Medical College, India
Anthony Provenzano	Wayne State University
Vishal Shah	University of Vermont
Kelsey Sheahan	University of Vermont (Primary Care)
Ross Stemmler	Florida State University
Umer Syed	Chicago Medical School at Rosalind Franklin University
Kathleen Whitbread	University of Buffalo
Heather Wright	University of New England College of Osteopathic Medicine
Ann Vo	Touro University-California College of Osteopathic Medicine

PGY-2

Categorical

Sean Bullis	University of Vermont
Alejandro Castro	University of Vermont

Gurpinder Gill	University of Vermont
Gary Gilmond	University of Vermont (Primary Care)
Emily Hadley Strout	University of Vermont (Primary Care)
Shah Khan	University of Texas – San Antonio
Elizabeth Levine	University of Texas – San Antonio
Julia Powelson	University of Alabama
Brennan Rigby	University of Utah
Avneet Singh	University of Toledo
Michael Stutzman	University of Minnesota
Elizabeth Wahlberg	University of Washington
Kramer Wahlberg	University of Washington
Sasha Waldstein	University of Rochester

Chief Medical Residents

Lee-Anna Burgess	University of Queensland, Australia
Brendan Everett	Rutgers Robert Wood Johnson
Moussa Takla	University of Connecticut

4. Resident Awards

- **The Harriet P. Dustan, M.D. Award**
Lakshmi Nambiar, MBBS

Brendan Everett, MD

- **The Frank L. Babbott, M.D. Memorial Award**

Lee-Anna Burgess, MD

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

Sara Roberts, M.D.

- **E.L. Amidon, M.D. Award Outstanding Teacher of the Year**

Subspecialty Medicine

William Hopkins, M.D

- **William Osler, M.D. Award Outstanding Teacher of the Year**

General Internal Medicine

Emily Greenberger, M.D.

- **Fellow Award for Outstanding Teaching**
Amir Azarbal, M.D.

5. Resident presentations at meetings and publications

Abstracts at VT ACP Meeting 2016

Clinical Vignettes:

Acquired Brugada from a Fentanyl Variant?

Vishal Shah MD MS, Jacqueline O'Toole DO, Elizabeth Hall MD, Charlotte Teneback, MD

*Winner VT ACP Chapter Poster Session for Clinical Vignette Oct 2016

Leptomeningeal Carcinomatosis Masquerading as Bell's palsy

Julia Powelson MD

Thrombotic Thrombocytopenic Purpura presenting as Acute Coronary Syndrome

Lakshmi Nambiar MD

Duplicated superior vena cava: a case with clinical consequence

LeeAnna Burgess MD

Fulminant myocarditis in adult patient with hemophagocytic lymphohistiocytosis/macrophage activation syndrome in the setting of systemic lupus erythematosus.

Trace Barrett MD

Methotrexate Toxicity in Dialysis Patients

Hank Ng, MD

Piggyback infections: A tick-borne co-infection presenting with fevers, headache, transaminase elevation, and thrombocytopenia

Sara Roberts MD

Familial idiopathic pulmonary fibrosis - A case of short telomere syndrome

Javaneh Tamiji MD

Research/Quality Improvement:

ACLS Team leadership curriculum to improve team leader confidence and adherence to AHA ACLS time lines

Umer Syed MD, Amy Lynn Teleron MD

*Winner VT ACP Chapter Poster Session for Research/Quality Improvement October 2016

Evaluation of the relationship between psychological distress and risk for breast cancer

Kaitlyn Vennard DO, Abigail M Crocker, PhD, Ogheneruona O. Apoe M.D., Melissa Cuke MSc, Marie E Wood, MD

6. Graduating Residents – where are they going?

Caitlin Baran – University of Vermont

Palliative Care Fellowship – Harvard

Trace Barrett – Albany Medical College

Cardiovascular Disease Fellowship - University of Vermont Medical Center

Lee-Anna Burgess – University of Queensland, Australia

Chief Medical Resident – University of Vermont Medical Center

Brendan Everett – Rutgers Robert Wood Johnson

Chief Medical Resident – University of Vermont Medical Center

Steven Jarzembowski – George Washington University

Pulmonary / Critical Care Fellowship – Tufts University

Shea Lambirth – University of Kentucky

Hospitalist – KY

Kevin Leadholm – Albany Medical College

Hospitalist – Lahey Hospital & Medical Center, MA

Erica Monfred – University of Maryland

Primary Care Practice – VT

Lakshmi Nambiar – Royal College of Surgeons, Ireland

Cardiovascular Disease Fellowship - University of Vermont Medical Center

Sara Roberts – Pennsylvania State University

Primary Care – University of Vermont Medical Center

Moussa Takla – University of Connecticut

Chief Medical Resident – University of Vermont Medical Center

Javaneh Tamiji – Royal College of Surgeons, Ireland

Rheumatology Fellowship – University of Vermont Medical Center

Kaitlyn Vennard – NY Institute of Tech College of Osteopathic Medicine

Endocrinology Fellowship – University of Vermont Medical Center

7. MATCH RESULTS - Spring 2017

PGY-1

Categorical

Calvin Gilkey	University College Cork, Ireland
Edwin Goncharuk	University of New England College of Osteopathic Medicine
Benjamin Irvine	University of Wisconsin
Darren Knox	University of Wisconsin
Daniel Krakauer	Virginia Tech Carillion School of Medicine
Yao Li	Albany Medical College
Steven O'Neill	West Virginia University
Katherine Peterson	University of New England College of Osteopathic Medicine
Louis-Bassett Porter	Pennsylvania State University
Elly Riser	University of Washington
Brendan Thoms	Imperial College of Medicine, United Kingdom
Shawn Wayne	University of Wisconsin
Andrew Wilks	Tufts University
Scott Young	University of Washington

Primary Care

Christopher Wargo	University of Queensland, Australia
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Preliminary

Elizabeth Cozart	University of Rochester (Neurology)
Sidarth Dasari	Indiana University (Neurology)
Danielle Kostrubiak	Stony Brook University (Radiology)
Jameson Loyal	University of Vermont (Dermatology)
Lisa Midboe	West Virginia School of Osteopathic Medicine (Neurology)
Nicole Piccirillo	Edward Via College of Osteopathic Medicine (Neurology)
Daniel Rycewicz	Oregon Health & Science University (Radiology)

Preliminary Anesthesia shared with Surgery

Richard Dobson	Campbell University, School of Osteopathic Medicine
Benjamin Jorgensen	University of Vermont
Danielle Leahy	University of Vermont

Christopher Mayhew
Caroline Rekc
Benjamin Sanofsky

University of Vermont
Lake Erie College of Osteopathic Medicine
Stony Brook University

Cardiovascular Division

David J. Schneider, MD, Director

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



During the 2016-2017 academic year, the cardiovascular division developed new clinical programs, added new faculty members, established an endowed professorship in cardiovascular prevention, and pursued scholarly activity in education and research.

The Division continues to provide outstanding cardiovascular care and offers newly developed treatments to our patients. Dan Lustgarten participated in the multicenter trial demonstrating the clinical value of left atrial occlusion to prevent embolic complications of atrial fibrillation in patients who are not good candidates for long term anticoagulation. During the past academic year, Dan in collaboration with Daniel Correa de Sa initiated the clinical program of left atrial occlusion with the Watchman device. This is an important clinical alternative for selected patients. Harry Dauerman introduced mitral clip for the treatment of mitral regurgitation in patients with degenerative mitral valve disease who are not good surgical candidates. Similar to the Watchman device, this is an important clinical alternative for selected patients.

An electrophysiologist, Daniel Correa de Sa, joined our faculty in August 2016. Because of our growth in structural heart interventions, we added an interventional cardiologist who has expertise in structural heart interventions. We are pleased that Rony Lahoud will join our faculty in August 2017. He completed his cardiovascular training at the Cleveland Clinic. Recent additions within the University of Vermont Health Network, Dr. Preeth Sundaran and Dr. Aderonke Adeniyi perform clinical rotations at University of Vermont Medical Center

Clinical integration and coordination of cardiovascular services across the network remains a focus for the cardiovascular service line. During the past academic year, CVPH recruited a new cardiologist, Teimuraz Apridonidze who recently completed his training at Dartmouth. Samer Siouffi left CVPH and Pierre Znojkwicz moved his electrophysiology practice from Canton Potsdam Hospital to CVPH. Johannes Steiner began a subspecialty clinic at CVPH for patients with advanced heart failure. William Hopkins offers subspecialty care at CVPH for patients with pulmonary hypertension and congenital heart disease.

Dr. Philip Ades has been named the inaugural Philip Ades Professor of Cardiovascular Disease Prevention. His selection recognizes his extensive scholarly contributions throughout his career. Dr. Michael Toth was promoted to Professor of Medicine with tenure. William Hopkins

was once again recognized for his outstanding teaching being named the outstanding teacher by both residents in internal medicine as well as the fellows in cardiovascular training..

Scholarly activities are a major focus of the division. The cardiovascular division has active training programs in cardiovascular disease, cardiovascular intervention, and electrophysiology. Updating our teaching technique with the elimination of traditional didactic lectures is a focus of our educational efforts. Clinical and translational research remain active with both investigator initiated research as well as participation in multicenter clinical trials. The faculty of the cardiovascular division authored 45 publications in the past fiscal year.

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

Aderonke Adeniyi, MD

Assistant Professor of Medicine

Research and clinical interests

- cardiovascular disease

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

Daniel Correa de Sa, MD

Assistant Professor of Medicine

Research and clinical interests

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

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 and Stress Laboratory

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
- structural heart disease

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

Co-Director, Cardiac MRI Laboratory

Research and clinical interests

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

Michael J. Toth, PhD

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

Pierre Znojkwicz, MD

Assistant Professor of Medicine

Research and clinical interests

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

Fellows

Abraham Abernethy
Imran Alkhalil
Amir Azarbal
Trace Barrett
David Cleary
Christine DeStephan
Jonathan Halevy
Margaret Infeld

Sherrie Khadanga
Rony Lahoud
Laksimi Nambiar
Mehdi Rambod
Ashwini Sharma
Daniel Silverman
Samvit Tandan

Nurse Practitioners and Physician Assistants

Elizabeth Carney, APRN
Gregory Ehle, PA
Karen Farrell, APRN
Susan Ann Hamlyn-Prescott, APRN
Ann Laramee, APRN

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

Graduate Students, Post-doctoral Fellows, MD PhD Students

Robert J. Kelm, Jr., PhD

Lauren A. Ferris, PhD student, Biochemistry Graduate Program

Andrea Foote, PhD Student, Cellular, Molecular and Biomedical Sciences Graduate Program

Martin M. LeWinter, MD

Abraham Abernethy
Katherine Runte

Amir Azarbal

Peter S. Spector, MD

Bryce Benson, PhD candidate, Biomedical Engineering

Laura Unger, MSc Electrical Engineering and Information Technologies, KIT Germany

Jeffrey L. Spees, PhD

John McInnis, B.S.

Nicholas Toker, B.S.

Michael J. Toth, PhD

Blas Guigni, CMB doctoral candidate

Damien Callahan, PhD, post-doctoral fellow

Timothy W. Tourville, PhD, post-doc/K08 mentee

Leadership in Professional Societies

Harold L. Dauerman, MD

National Proctor and Faculty, Corevalve TAVR
Section Editor, Interventional Cardiology
Journal of the American College of Cardiology
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

New England Chapter of the American College of Cardiology – Governor
Choosing Wisely Subcommittee of the Board of Governors, College of Cardiology – Chair
Health Policy Committee, American Society of Nuclear Cardiology
Cardiovascular Training Section, Leadership Council, American College of Cardiology
Workgroup: Program Director Resources, CV Training Council, American College of Cardiology

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
Biochemistry Graduate Program, Director

Martin M. LeWinter, MD

Research Committee, Heart Failure Society of America
Council of Faculty and Academic Societies, AAMC
Self-Evaluation Exam Committee, ABIM
Ad-Hoc Grant Reviewer, NHLBI

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

Editorships and Editorial Boards

Philip A. Ades, MD

Consulting Editor (former Editor-in-Chief): *Journal of Cardiopulmonary Rehabilitation*

Consulting Editor: *Prevention, 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

Journal of the American College of Cardiology, 2005-current

Journal of Thrombosis and Thrombolysis, Associate Editor, 2009--current

Circulation: Cardiovascular Interventions, 2012--current

Prospero B. Gogo, MD

Reviewer: *American Journal of Cardiology and Coronary Disease*

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*

Book Review Editor, *Circulation*

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*

Ad Hoc Reviewer, *American Journal of Cardiology, Journal of American College of Cardiology, Journal of American Society of Echocardiography*

Michael J. Toth, PhD

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

Matthew W. Watkins, MD

Advisory Board, Green Mountain Care Board, State of Vermont, FAHC physician representative
Clinical advisory role in the design and implementation of the Vermont State global health care reform.

Northern New England Cardiovascular Disease Study Group (NNE)

Multi-institutional, regional collaboration focusing on improving patient outcomes in Interventional Cardiology and Cardiac Surgery. Recent projects include regional analysis of length of stay, STEMI outcomes and management of cardiogenic shock.

Peter Van Buren, MD

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

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

Philip Ades, MD

June 2017, NHLBI Mentored Patient Oriented Research Review Committee, Ad hoc reviewer

Harold L. Dauerman, MD

Association of University Cardiologists (Arizona): STEMI; Cedars Sinai Medical Center (Los Angeles): STEMI

ACC New England Regional Meeting (New Hampshire): TAVR: From Low Risk to Expanded Use

American College of Cardiology Interventional Board Review Course: Oral and Intravenous Antiplatelet Therapy for PCI; Genetics and Drug Interactions in PCI Pharmacology

Westchester Cardiovascular Symposium: Is There Still a Role for Fibrinolysis in STEMI?

Corevalve Transcatheter Aortic Valve Replacement: Best Practices, Chicago, Boston, Washington DC, New York City

William E. Hopkins, MD

14th Annual Update in Pulmonary Hypertension 2015

Cambridge, MA

“Group 2 PH”

Martin M. LeWinter, MD

Management of Acute Pericarditis”, Annual Jeresaty Symposium, Hartford Hospital,

Hartford, CT

“Mechanisms of Diastolic Dysfunction in LV Hypertrophy and HFpEF”, Association of University Cardiologists, Phoenix, AZ

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

Invited Speaker; His Bundle Pacing in Heart Failure: Alternative to CRT. Heart Rhythm 2017, the Heart Rhythm Society's 38th Annual Scientific Sessions. Chicago, IL. May 11, 2017.

Invited Speaker: HB Pacing vs CRT. ECAS_ Heart Rhythm 2017 Annual Conference. Rome, Italy. April 3, 2017.

Invited Speaker: His Bundle Pacing: Gone and Back Again...This Time for Good? EP on the Bayou: Gulf Coast EP Society. New Orleans, LA. March 11, 2017.

Invited Speaker: AVN ablation in CRT patients with AF with low biventricular pacing rate. XVII International Symposium. Rome, Italy. December 1, 2016.

Invited Speaker: Adaptive CRT Pacing in patients with normal AV conduction and LBBB. XVII International Symposium. Rome, Italy. November 29, 2016.

Peter S. Spector, MD

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

Jeffrey L. Spees, PhD

Reviewer for Maine Medical Center, Cancer Grants - 2016

Member, NIH BMBI Study Section - 2016

Member, AHA Study Section, Brain R1 - 2016

Reviewer, American Cancer Society; IRG Review Committee – 2016, 2-17

Member, NIH ZRG1 CB-J (55), Special Emphasis Panel for Stem Cell Animal Models - 2017

Member, NIH BMBI Study Section - 2017

Oschner Lifelong Learning Institute, Stowe, VT, Invited lecture - 2017

Michael Toth, Ph.D.

Ad hoc member: NIH SMEP study section: 6/17

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

2014: Distinguished Investigator: Cardiovascular Research Institute of Vermont

2015 University Scholar University of Vermont

2016 University of Vermont Philip Ades Endowed Professor of Cardiac Prevention

Harold L. Dauerman, MD

2016 - Induction into Association of University Cardiologists

2016 - Simon Dack Award for Outstanding Scholarship, ACC

William H. Hopkins, MD

2017 - E. L. Amidon, MD Award: Outstanding Teacher of the Year, *Subspecialty Medicine*, Outstanding Teacher Award. Cardiovascular Fellowship.

2017 - Nominated for the “Foundations Teaching Award”, University of Vermont College of Medicine

2017 - Nominated for the “Clinical Faculty of the Year Award” , University of Vermont College of Medicine

Martin M. LeWinter, MD

Cited in “Best Doctors in the Northeast” and “Best Doctors in America”

Markus Meyer, MD

Lakshmi Nambiar MD: Resident Research Award
Mehdi Rambod MD: Fellow Research, Oral Presentation

Anita Li MS: CVRI merit award

Betsy Runte MD: AHA Scientific Session 2016, Presentation

Peter S. Spector, MD

US patent application #13_844753: “Catheters, systems and related methods for mapping, minimizing and treating cardiac fibrillation” Patent awarded 03/23/2017

Jeffrey L. Spees, PhD

2016 - Featured in INQUIRY: a publication for Research, Scholarship and the Arts at UVM.
Article: Innovate and Incubate, by Jeffrey Wakefield.

2016 - News feature on WCAX (Channel 3) about a new biologic called “VasaPlex”, designed/developed by the Spees Lab and receipt of NIH R01 to fund pre-clinical testing to treat reperfusion injury after myocardial infarction.

2016 - Krithika S. Rao, Ph.D. (Spees Lab graduate student): Nominated for Dean's Excellence in Research Award

2016 - Matthew LeComte, M.D., Ph.D. (Spees Lab graduate student): Received Dean's Excellence in Research Award

2017 - Spees Lab selected to present research to UVM Provost and Board of Trustees

Michael Toth, PhD

LCOM Foundations Awards Ceremony 2017: Nominee for Foundations Teaching Award

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

REPRISE IV: Randomized Trial of Lotus vs Sapien 3 TAVR in Intermediate Risk Patients.

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

SURTAVI Randomized Trial--CoreValve TAVR vs Surgical AVR for Patients at Intermediate Risk for Mortality

Role: Site Principal Investigator

Dauerman Research and Education Fund

Acute Kidney Recovery after TAVR.

Role: Investigator Initiated Research, Site Principal Investigator

Trainees: Amir Azarbal, MD (Fellow) and Kevin Leadholm, MD (Resident), in conjunction with Richard Solomon, MD

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

Role: Investigator Initiated Research, Site Principal Investigator

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

Friederike Keating, MD

NIH 1U01HL133817-01

Myocardial Ischemia and Transfusion (MINT)

Role: Site Principal Investigator

Sanofi/Duke NCT01663402

ODYSSEY Outcomes: Evaluation of Cardiovascular Outcomes After an Acute Coronary Syndrome During Treatment With Alirocumab

Role: Site Principal Investigator

Robert J. Kelm, Jr., PhD

NIH/NHLBI T32 HL007594-26-30

Hemostasis and Thrombosis Program for Academic Trainees (7/1/2015-6/30/2018)

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

NHLBI U10 HL110342

New England, New York and Quebec Regional Clinical Center (1/1/12-12/31/19)

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

David J. Schneider, MD

Janssen Pharmaceuticals LLC

Novel Markers of Thrombotic Risk (7/1/2014 – 5/31/2017)

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 (7/1/2012-6/30/2017)

Role: Principal Investigator

Peter S. Spector, MD

Medtronic

SP282 (Evslin Grant)

PSPEC (R&E)

EP (R&E)

BSW

Michael J. Toth, PhD

NIH R21 AR069199

Prevention of Skeletal Muscle Adaptations to Traumatic Knee Injury and Surgery

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

NIH R01 AG050305

Skeletal Muscle Atrophy and Dysfunction Following Total Knee Arthroplasty

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)

LCOM/CEMS Biomedical Engineering Pilot Award

Cyber-physical System Innovations to Monitor and Improve Compliance with At-home Neuromuscular Rehabilitation

Role: Co-Principal Investigator (with Christian Skalka)

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

QP Excel 17-0163: Confirm safety and effectiveness of the Sentus QP LV lead and
BIOTRONIK CRT-D.

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

Ades PA. Effect of alirocumab dose increase on LDL-lowering and lipid goal attainment: is treatment to goal the way to go? *Coron Artery Dis.* 2017 May;28(3):186-7.

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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, four surgical dermatologists, a new pediatric dermatologist, 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 about 35,000 patients.

This year we have added Drs. David Chen and Keith Morley to our staff. Dr. Morley specializes in pediatric dermatology and will see pediatric and adult patients with all forms of dermatologic disease. Dr. Chen will be performing Mohs surgery, dermatologic surgery, cosmetic dermatology and will perform general skin checks.

Our Veterans Administration clinic continues to offer an outpatient center in Burlington under the direction of Dr. Laura McGevna, and the VA is sponsoring one of our residents.

We continue to volunteer regularly at the Community Health Center Free Clinic. Each month, an attending physician supervises the residents and Physician Assistants in the provision of free care to patients at the Community Health Center in Burlington. This provides a service to the community and is also a superior experience for our residents and fellow, who are able to participate in the care of an underserved population. Dr. Pierson has taken the lead in public education and skin cancer awareness.

Dr. Glenn Goldman is Chair of the American Society for Dermatologic Surgery International Travelling Mentorship Program. Dr. Todd Holmes has been appointed the Chair of the ITMP International Fellowship Program. Dr. Goldman recently travelled to Romania to work with Dr. Mihaela Leventer for her to obtain credentialing by the American Society for Dermatologic Surgery. While there he lectured at the Romanian Society for Plastic Surgery Annual Meeting. In December he will travel to Lahore, Pakistan to review a program there. Dr. Holmes will perform a site visit in the Netherlands in November. This puts UVMMG at the forefront of international education in dermatologic surgery.

Dr. Goldman, Dr. Weinberger, Dr. Holmes, Dr. Lin, Dr. McGevna and Dr. Pierson serve on a number of UMMC committees. Dr. Julie Lin continues her involvement in PRISM, where she is the PRISM representative from the Department of Medicine. This year she has accepted a new leadership position on the PRISM team. 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 a fellowship in dermatopathology here at the

University of Vermont College of Medicine. Fellow David Chen has decided to stay on as an attending physician at the UVMMG. We were fortunate this year to train a second fellow, Dr. Lindsey Collins from Dartmouth. She has accepted a position as a Mohs surgeon at the University of Oklahoma. Residency graduate Andrew Hankinson will be training in Mohs surgery at Geisinger in Pennsylvania and Michael Romano has taken a job in New York City performing general dermatology. 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 has begun her residency with us Dr. Katelyn Shea started in dermatology seven 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.

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

Melanie Bui, MD, PhD

Assistant Professor of Medicine

- General Medical Dermatology
- Immunology

Todd Holmes, MD

Associate Professor of Medicine

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

Julie Lin, MD

Associate Professor of Medicine

Department of Medicine PRISM Representative

- Cutaneous Lymphoma
- Electronic Medical Records
- Bioinformatics
- Teledermatology

Joseph Pierson, MD, Col US Army

Associate Professor of Medicine

- General Medical Dermatology
- Residency Education in Dermatology

Laura McGevna, MD

Assistant Professor of Medicine

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

Christine Weinberger, MD

Assistant Professor of Medicine

- Mohs Surgery and Reconstruction
- Mohs Surgery for Melanoma

Fellows

David Li-Kang Chen, MD

Procedural Dermatology Fellow 2014-2016

Elizabeth Lester, MD PGY-5

Dermatopathology Fellow 2016-2017

Residents

Andrew Hankinson, MD PGY-4/Co-Chief

Michael Romano, MD PGY-4/Co-Chief

Patrick Benson, MD, PGY-2

Corey DeWitt, MD, PGY-2

Emily Farrell, MD, PGY-3

Alyssa Fischer, MD, PGY-3

Ivy Norris, MD, PGY-3

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. Pierson, President

American Medical Association

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

American Society for Dermatologic Surgery

Dr. Goldman was appointed Chair of the ASDS International Traveling Mentorship Committee

Dr. Holmes was appointed Chair of the ASDS ITMP Fellowship Subcommittee

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

Study Sections and Federal Advisory Boards:

Publications – Books, Peer reviewed, chapters,

Book Chapter

Peer-reviewed Articles

Blechman AB, Cabell CE, Weinberger CH, Duckworth A, Leitenberger JJ, Zwald FO, Russell MA. [Aggressive Skin Cancers Occurring in Patients Treated With the Janus Kinase Inhibitor Ruxolitinib](#). J Drugs Dermatol. 2017 May 1;16(5):508-511.

Loyal J, Lester, E, Norris, I, Pierson, JC. Superficial Morphea: Case Report, Look-Alikes, and Treatment". Dermatol Online J. 2017 May 15;23(5).

Loyal, J, Pierson, J. Hyperpigmented hand lesion - a woodland's souvenir. Eur J Intern Med. 2016 Dec;36:e7-e8.

Pierson, JC. Reluctance Regarding Recurrent Herpes Zoster. J Am Acad Dermatol. 2017 Apr;76(4):e143.

Division of Endocrinology and Diabetes

Joel J. Schnure, MD, Co-Director

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

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



The 2016-2017 academic year was one of increased research and patient care opportunities for the Division of Endocrinology and Diabetes. The Division serves residents in 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. Our 5 physicians, 2 nurse practitioners, and 4 certified diabetes educators provide consultative and ongoing care through our out-patient clinic at Tilley Drive, which has approximately 14,000 visits per year (4th 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.



The Division laid the groundwork this year to expand services to patients in the areas of obesity and osteoporosis/metabolic bone disease. Our graduating fellow, Juan Pablo Perdomo Rodriguez, MD, focused his second year studies on weight management, including an intensive training on clinical interventions for obesity. Following completion of his fellowship, Dr. Perdomo Rodriguez will join our faculty and establish a weight management program in conjunction with Drs. Abu-Jaish and Forgione of Bariatric Surgery and Dr. Mitchell in Hospital Medicine. We also recruited Jennifer Kelly, DO to serve as a physician in the Division and as Co-Director of the Osteoporosis/Metabolic Bone Disease Clinic. Dr. Kelly comes from Upstate Medical University in Syracuse, NY, where she was Director of the Densitometry Lab; she joins our faculty in July.

Our research initiatives continue at both the clinical and basic levels. The Endocrine Clinic is participating in a 6-month pilot study of the Insulia[®] Diabetes Management Companion, a state-of-the-art prescription-only medical device that provides patients with insulin dose recommendations and educational coaching messages in response to blood glucose values and other diabetes-related data. The study will enroll 30 patients, who will be trained to use Insulia on either their personal smartphone or the web portal; health care providers will also be trained on this new technology. A research project to analyze the records of 200 pregnant women with diabetes who were seen at the UVM MC Maternal Fetal Medicine Clinic will compare serum fructosamine and HbA1c measurements throughout gestation as potential predictors of maternal and neonatal complications.

The Division's basic research efforts continue to focus on pancreatic islet biology and diabetes, with an emphasis now extending into the effects of dietary plant and dairy-derived bioactive lipids on gut microbiota eubiosis, glucose homeostasis regulation, and aging. This new emphasis is the result of a collaboration with Jana Kraft, PhD, Associate Professor of Animal and Veterinary Sciences, a lipid biochemist with expertise in human nutrition. In September 2016, Dr. Kraft received a secondary appointment to the Division of Endocrinology and

Diabetes. In addition to her research with Drs. Jetton and Gupta, she will begin a clinical study on dietary dairy lipids that will rely on a collaboration with Dr. Matthew Gilbert, DO, MPH, in our Division.

Our faculty participate in educational activities at multiple levels. Clinical faculty work closely with medical students and residents rotating through the Endocrine Service and they train two Fellows in Endocrinology each year—the strength of the training provided by our faculty is evidenced by the commitment of two UVM residents to continue their training with fellowships in our Division: Kaitlyn Vennard, DO, completed her UVM Internal Medicine Residency on June 30, 2017 and began her fellowship training with us the next day; Kelsey Sheahan, MD, will complete her residency next June and has committed to fellowship training with our Division beginning in July 2018.

The Division's educational mission is also evident by faculty participation in LCOM initiatives: During this academic year, Dr. Schnure was appointed to The Teaching Academy, which promotes education and scholarship of faculty members; Dr. Gilbert was named the Chair of the Inpatient Glycemic Control Committee, whose mission includes education of hospital physicians and staff on glucose management strategies; and Dr. Jetton, as a faculty member of the Cellular, Molecular and Biomedical Sciences Program, was active in development of a new curriculum for the 2017-2018 academic year. Dr. Jetton also continues to teach classes in human structure and function and in human physiology and pharmacology to graduate and medical students, as well as working one-on-one in his basic science lab to train undergraduate and graduate students in research techniques.

Clearly, the 2016-2017 year was a busy and productive one for the Division of Endocrinology and Diabetes and the programmatic and research strides made this year ensure the continued effectiveness of our service and education missions.

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, The Teaching Academy

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 for Type 1, Type 2, and diabetes in pregnancy
- Thyroid disease
- Pituitary disease
- Integration of home glucose monitoring into electronic medical records
- Fructosamine as an alternative to HbA1C in pregnancy *Continued*
- Web-based algorithms in titration of basal insulin in adults with Type 2 diabetes
- HbA1c and fructosamine in early pregnancy: correlation to 24-28 week OGTT

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:

- Nutrient and neural regulation of β -cell mass homeostasis
- Diet influence on intestinal microbiota and autoimmune disease susceptibility

Teaching interests:

- Human Structure and Function
- Gastrointestinal Physiology
- Regulation of Energy Homeostasis

- Science Communication

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

Amanda Fernandes, MD (F4; began training 7/1/2016; expected completion 6/30/2018)

Juan Pablo Perdomo Rodriguez, MD (F5; began training 7/1/2015; completed 6/30/2017)

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

Held by John (Jack) L. Leahy, MD

Leadership in Professional Societies

Muriel H. Nathan, MD, PhD

New England Thyroid Club, senior member

Thomas L. Jetton, PhD

Boston-Ithaca Islet Club, senior member

John (Jack) L. Leahy, MD

Endocrine Society, 2017 Annual Meeting Steering Committee, Clinical Science Chair

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

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

Federal review boards:

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

NIDDK/NIH, ad hoc reviewer

John (Jack) L. Leahy, MD

American Diabetes Association, Grant Review Panel

Hillblom Foundation, Scientific Advisory Board

Major Faculty Awards

None

Grants

Dhananjay (Jay) Gupta, PhD

Juvenile Diabetes Research Foundation International

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

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

Thomas L. Jetton, PhD

Juvenile Diabetes Research Foundation International

Manipulating β -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 (2015-6/2017)

Role: Principal Investigator

Muriel H. Nathan, MD, PhD

University of Vermont Medical Center Investigator-Initiated Award

Molecular Tumorigenesis of Papillary Thyroid Microcarcinoma (2015-2017)

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

Publications

Gilbert MP, Alvi MM, Schnure JJ, Nathan MH, DeSarno MS, Anderson SR. Multidisciplinary thyroid biopsy clinic at the University of Vermont -A comprehensive educational initiative and experience. *J Grad Med Educ.* 2016 Jul;8(3):448-9.

Gupta D, Jetton TL, LaRock K, Monga N, Satish B, Lausier J, Peshavaria M, Leahy JL. Temporal characterization of β -cell adaptive and maladaptive mechanisms during chronic high fat feeding in C57BL/6Ntac mice. *J Biol Chem.* 2017 May. pii: jbc.M117.781047.

Selen DJ, Gilbert MP. Nausea/vomiting – tachycardia – unintentional weight loss – Dx? *J Fam Pract.* 2017 Feb;66(2):E1-E2.

Tharp WG, Gupta D, Smith J, Jones KP, Jones AM, Pratley RE. Effects of glucose and insulin on secretion of amyloid- β by human adipose tissue cells. *Obesity (Silver Spring).* 2016 Jul;24(7):1471-9.

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 faculty members, three GI Fellows and three Ph.D.'s. Clinical care, teaching, and both basic science and clinical research are all major elements of the GI Unit. There are plans to add a fourth GI fellow in July 2018.

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

As well, Dr. Mario Velez joined the UVM GI faculty in July 2017. Dr. Velez has special academic pursuits in therapeutic endoscopy and their application to bariatrics.

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 new HD endoscopes and HD monitors. Recently, a teaching audio-visual system has been installed to allow conferencing during therapeutic procedures. There are also plans for a new electronic endoscopic reporting system to be integrated in the fall of 2017. 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 specialty office setting is shared with General Surgery in the Digestive Disease Center located on the 5th 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 and team based learning initiatives in the Vermont Integrated Curriculum of the UVM Larner 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 and fatty liver (NASH and NAFLD), 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 a unique opportunity to explore translational research as it pertains to future aspects of clinical care.

James Vecchio, MD

Professor of Medicine

Director, Gastroenterology and Hepatology Division

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

Assistant Professor of Medicine

- Therapeutic endoscopy
- Endoscopic ultrasound
- Bariatric interventions

Ovais Ahmed, MD

GI Fellow

Sonja Dawsey, MD

GI Fellow

Joseph Frasca, MD

GI Fellow

Leadership in Professional Studies:

Steven Lidofsky, MD, Ph.D.

- Co-Chair Joint Research Awards Committee, American Association for the Study of Liver Diseases and American Liver Foundation
- Selected to the inaugural group of Fellows of the American Association for the Study of Liver Diseases
- AASLD Leadership: abstract review hepatobiliary neoplasia for Liver Meeting and DDW

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 offers 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
- Reviewer, American Society for Gastrointestinal Endoscopy Publications Committee

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.

- Pharma trial: Emricisan for NASH with hepatic fibrosis
- Trial: Emricisan for NAFLD cirrhosis with severe portal hypertension
- Trial: Volixibat for NASH
- Study MR fat quantification in hepatic resection for malignant metastases UVMCC Cancer Center

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)

Coates RF, **Ferrentino N**, Yang MX. Russell Body Inflammatory Polyp. Int J Surg Pathol. 2017 Feb;25(1):94-96.

PubMed ID: 27571792

Cheng FW, Gao X, Bao L, Mitchell DC, Wood C, Sliwinski MJ, Smiciklas-Wright H, Still CD, Rolston DDK, **Jensen GL**. Obesity as a risk factor for developing functional limitation among older adults: A conditional inference tree analysis. *Obesity*. 2017 Jul;25(7):1263-1269.

PubMed ID: 28544480

Compher C, Higashiguchi T, Yu J, **Jensen GL**. Does Low Body Mass Index Predict the Hospital Mortality of Adult Western or Asian Patients? *JPEN J Parenter Enteral Nutr*. 2017, Epub ahead of print 2017 Jun 1.

PubMed ID: 28644925

Jensen GL, Cederholm T. Global Leadership Initiative on Malnutrition: Progress Report From ASPEN Clinical Nutrition Week 2017. *JPEN J Parenter Enteral Nutr*. 2017, Epub ahead of print 2017 Apr 1.

PubMed ID: 28453391

Cederholm T, **Jensen GL**. To Create a Consensus on Malnutrition Diagnostic Criteria. *JPEN J Parenter Enteral Nutr*. 2017 Mar;41(3):311-314.

PubMed ID: 28333596

Cederholm T, **Jensen GL**. To create a consensus on malnutrition diagnostic criteria: A report from the Global Leadership Initiative on Malnutrition (GLIM) meeting at the ESPEN Congress 2016. *Clin Nutr*. 2017 Feb;36(1):7-10.

PubMed ID: 28034565

Shlisky J, Bloom DE, Beaudreault AR, Tucker KL, Keller HH, Freund-Levi Y, Fielding RA, Cheng FW, **Jensen GL**, Wu D, Meydani SN. Nutritional Considerations for Healthy Aging and Reduction in Age-Related Chronic Disease. *Adv Nutr*. 2017 Jan;8(1):17-26.

PubMed ID: 28096124

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*. 2016 Oct;24(10):2232-0.

PubMed ID: 27570944

Cheng FW, Gao X, Mitchell DC, Wood C, Rolston D, Still CD, **Jensen GL**. Metabolic health status and the obesity paradox in older adults. *J of Nutrition in Gerontology and Geriatrics*. 2016 Jul-Sept;35(3):161-76.

PubMed ID: 27559852

Jensen GL. Global Leadership Conversation: Addressing Malnutrition. *J Nutr Gerontol Geriatr*. *JPEN J Parenter Enteral Nutr*. 2016 May;40(4):455-7.

PubMed ID: 26993988

Ziegler TR, May AK, Hebbar G, Easley KA, Griffith DP, Dave N, Collier BR, Cotsonis GA, Hao L, Leong T, Manatunga AK, Rosenberg ES, Jones DP, Martin GS, **Jensen GL**, Sax HC, Kudsk KA, Galloway JR, Blumberg HM, Evans ME, Wischmeyer PE. Efficacy and Safety of Glutamine-Supplemented Parenteral Nutrition in Surgical ICU Patients: An American Multicenter Randomized Controlled Trial. *Annals of Surgery*, 2016 Apr;263(4):646-55

PubMed ID: 26501700

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*. 2015;34(4):343-368.

PubMed ID: 26571354

Lim N, **Lidofsky S.D.** Impact of physician specialty on quality care for patients hospitalized with decompensated cirrhosis. *PLoS ONE*. 2015 Apr 2;10(4):e0123490.

PubMed ID: 25837700

Lim N, DeSarno N, **Lidofsky SD**, **Ganguly EK**. Hospitalization for variceal hemorrhage in an era with more prevalent cirrhosis. *World J Gastroenterol*. 2014 Aug 28;20(32):11326-32.

PubMed ID: 25170218

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.

Barkun AN, Adam V, Martel M, AlNaamani K, **Moses PL**. Partially covered self-expandable metal stents versus polyethylene stents for malignant biliary obstruction: a cost-effectiveness analysis. *Can J Gastroenterol Hepatol*. 2015 Oct;29(7):377-83.

PubMed ID: 26125107

Moses PL, Alnaamani KM, Barkun AN, Gordon SR, Mitty RD, Branch MS, Kowalski TE, Martel M, Adam V. Randomized trial in malignant biliary obstruction: Plastic vs partially covered metal stents. *World Journal of Gastroenterology*. 2013 Dec 14;19(46):8638-46.

PubMed ID: 24379581

Yusta B, Matthews D, Flock GB, Ussher JR, Lavoie B, **Mawe GM**, Drucker DJ. Glucagon-like peptide-2 promotes gallbladder refilling via a TGR5-independent, GLP-2R-dependent pathway. *Mol Metab*. 2017 Mar 31;6(6):503-511.

PubMed ID: 28580281

Spohn SN, **Mawe GM**. Non-conventional features of peripheral serotonin signalling - the gut and beyond. *Nat Rev Gastroenterol Hepatol*. 2017 Jul;14(7):412-420.

PubMed ID: 28487547

Spohn SN, Bianco F, Scott RB, Keenan CM, Linton AA, O'Neill CH, Bonora E, Dickey M, Lavoie B, Wilcox RL, MacNaughton WK, De Giorgio R, Sharkey KA, **Mawe GM**. Protective Actions of Epithelial 5-Hydroxytryptamine 4 Receptors in Normal and Inflamed Colon. 2016 Nov;151(5):933-944.e3.

PubMed ID: 27480173

PubMed CID: PMC5159265 [Available on 2017-11-01]

Vanner S, Greenwood-Van Meerveld B, **Mawe G**, Shea-Donohue T, Verdu EF, Wood J, Grundy D. Fundamentals of neurogastroenterology: Basic Science. *Gastroenterology* 2016 Feb 18. pii: S0016-5085(16)00184-0

PubMed ID: 27144618

Mawe GM, Sharkey KA. The Intrinsic Reflex Circuitry of the Inflamed Colon. *Adv Exp Med Biol*. 2016;891:153-7.

PubMed ID: 27379643

Mawe GM. Colitis-induced neuroplasticity disrupts motility in the inflamed and post-inflamed colon. *J Clin Invest*. 2015 Mar 2;125(3):949-55.

PubMed ID: 25729851

Woods SE, Leonard MR, Hayden JA, Brophy MB, Bernert KR, Lavoie B, Muthupalani S, Whary MT, **Mawe GM**, Nolan EM, Carey MC, Fox JG. Impaired cholecystokinin-induced gallbladder emptying incriminated in spontaneous "black" pigment gallstone formation in germfree Swiss Webster mice. *Am J Physiol Gastrointest Liver Physiol*. 2015 Feb 15;308(4):G335-49.

PubMed ID: 25477375

Camilleri M, Drossman DA, Becker G, Webster LR, Davies AN, **Mawe GM**. Emerging treatments in neurogastroenterology: a multidisciplinary working group consensus statement on opioid-induced constipation. *Neurogastroenterol Motil*. 2014 Oct;26(10):1386-95.

PubMed ID: 25164154

Sharkey KA, **Mawe GM**. Neurohormonal signalling in the gastrointestinal tract: new frontiers. *J Physiol*. 2014 Jul 15;592(14):2923-5.

PubMed ID: 24928959

Farrugia G, **Mawe G**, Simren M, Bradesi S, Bredenoord A. Gut microbiota and neurogastroenterology and motility: the good the bad and the ugly. *Neurogastroenterology and Motility*. 2014 Mar;26(3):295.

PubMed ID: 24548255

Balemba OB, Stark TD, Lösch S, Patterson S, McMillan JS, **Mawe GM**, Hofmann T. (2R,3S,2'' R,3''R)-manniflavanone, a new gastrointestinal smooth muscle L-type calcium channel inhibitor, which underlies the spasmolytic properties of *Garcinia buchananii* stem bark extract. *J Smooth Muscle Res*. 2014;50:48-65.

PubMed ID: 26081368

Farrugia, G, **Mawe G**, Simren M, Bradesi S, Bredenoord A. Neurogastroenterology and Motility's impact factor. *Neurogastroenterology and Motility* 2013 Oct;25(10):779

PubMed ID: 24073825

Mawe, GM, Hoffman JM. Serotonin Signaling in the gastrointestinal tract: functions, dysfunctions, and therapeutic targets. *Nature Reviews Gastroenterology and Hepatology*. 2013 Oct;10(10):564.

PubMed ID: 23797870

Roberts, A.J, L. Durnan, K.A. Sharkey, V.N. Mutafova-Yambolieva, **Mawe GM**. Oxidative stress disrupts purinergic neuromuscular transmission in the inflamed colon. *Journal of Physiology (London)* 2013 Aug 1;591(15):3725-37.

PubMed ID: 23732648

Krementsov DN, Wall EH, Martin RA, Subramanian M, Noubade R, Del Rio R, **Mawe GM**, Bond JP, Poynter ME, Blankenhorn EP, Teuscher C. Histamine H₃ receptor integrates peripheral inflammatory signals in the neurogenic control of immune responses and autoimmune disease susceptibility. *PLoS One*. 2013 Jul 22;8(7):e62743.

PubMed ID: 23894272

Behar J, **Mawe G**, Carey MC. Roles of cholesterol and bile salts in the pathogenesis of gallbladder hypomotility and inflammation: cholecystitis is not caused by cystic duct obstruction.. *Neurogastroenterology and Motility*. 2013 Apr;25(4):283-90.

PubMed ID: 23414509

Thosani N, **Zubarik** RS, Kochar R, Kothari S, Sardana N, Nguyen T, Banerjee S. Prospective evaluation of bacteremia rates and infectious complications among patients undergoing single-operator choledochoscopy during ERCP. *Endoscopy*. (2016) May, 48(5):424-31.

PubMed ID: 26919263

Rogers TS, **Zubarik** RS, Wilcox R. A Rare Neoplasm Presents as Incidental Dilatation of the Common Bile Duct. *Clin Gastroenterol Hepatol*. (2016) Feb, 14(2):A29-30.

PubMed ID: 26386400

Zubarik R, **Ganguly** E, Nathan M, **Vecchio** J. Celiac disease detection in hypothyroid patients requiring elevated thyroid supplementation: A prospective cohort study. *Eur J Intern Med*. (2015) Dec, 26(10):825-9.

PubMed ID:

Meyer M, Bell SP, Sardana N, **Zubarik** R, Lewinter MM, Dauerman HL. Esophageal assessments of left ventricular filling pressures: A proof of concept study. *Int J Crit Illn Inj Sci*. (2014) Jan, 4(1):18-23.

PubMed ID: 24741493

Textbooks/Journals:

Mawe GM, Moses PL, Saccone GTP, Pozo MJ. Motility of the Biliary Tree. In *Textbook of Gastroenterology*, 6th edition T. Yamada, ed., Wiley-Blackwell. In press

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

General Internal Medicine & Geriatrics

Jennifer Gilwee, MD, Division Chief

<http://www.med.uvm.edu/medicine/generalinternalmedicinegeriatrics/home>



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 in the care of older adults 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.

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 consultations for the care of older adults 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.

Our faculty and providers are extensively engaged in service at the state and national levels. A few examples include:

American College of Physicians (ACP) Board of Regents member, Executive Council for the ACP Board of Governors member, Chair of the ACP Chapter Subcommittee, Chair of the Vermont Board of Medical Practice, President 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 member, OneCare Vermont Regional Clinician Representative, Vermont Care Organization Primary Care Advisory Board and Vermont Blueprint for Health Executive Committee.

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), Doctoring Skills (Dr. Rubin) and Outpatient Medicine Clerkship (Dr. O'Brien). Administrative leadership positions at the College of Medicine include Associate Dean for Clinical Education (Dr. Bertsch), Associate Dean for Primary Care (Dr. Maclean).

We also play key roles in the clinical education of the Internal Medicine residents. Our Adult Primary Care Burlington site 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 practitioner students in clinical compassion. 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, increasing advanced care planning documentation 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

Alberto Gutierrez, MD

Assistant Professor of Medicine

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

Anne Breña, MD

Assistant Professor of Medicine

Elizabeth Rosy Hill, MD

Assistant Professor of Medicine

- See also Geriatric Medicine

Marvin Klikunas, MD

Associate Professor of Medicine (*Emeritus*)

Medical Director, The Arbors

- See also Geriatric Medicine

Lucy Miller, MD (Site Clinical Leader)

Assistant Professor of Medicine

Dennis Plante, MD

Associate Professor of Medicine

Geriatric Medicine

Zail Berry, MD

Associate Professor of Medicine

Medical Director, Birchwood Terrace

Assistant Medical Director, Hospice for Visiting Nurses Association

Jaina Clough, MD

Assistant Professor of Medicine

Medical Director of Hospice for Visiting Nurses Association

Elizabeth Rosy Hill, MD

Assistant Professor of Medicine

- Geriatric Medicine

Marvin Klikunas, MD

Associate Professor of Medicine (*Emeritus*)

Medical Director, The Arbors

- Geriatric Medicine

Michael LaMantia, MD

Associate Professor of Medicine

- Chief, Section of Geriatrics

Isaura Menzies, MD

Assistant Professor of Medicine

Medical Director of Starr Farm Skilled Nursing Facility

- Geriatric 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:

- Frymoyer Grant recipients, October 2016:
 - Dr. Halle Sobel and Dr. Alison Landrey
 - Dr. Mia Hockett
- Dr. Marie Sandoval was promoted to Associate Professor July 2016

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

Haas JS, Barlow WE, Schapira MM, , MacLean CD, Klabunde CN, , Sprague BL, Beaber EF, Chen JS, Bitton A, , Onega T, Harris K, Tosteson A on behalf of the PROSPR consortium. Primary care providers' beliefs and recommendations and use of screening mammography by their patients. In press JGIM 2017;32:449. PMID: 28070772 .

Schapira MM, Sprague BL, Klabunde CN, Tosteson ANA, Bitton A, Chen JS, Beaber EF, Onega T, MacLean CD, Harris K, Howe K, Pearson L, Feldman S, Brawarsky P, Haas J on behalf of the PROSPR consortium. Inadequate Systems to Support Breast and Cervical Cancer Screening in Primary Care Practice. *JGIM* 2016;31:1148-55. PMID: 27251058.

Rose G, Ferraro T, Badger G, MacLean CD, Skelly J, Helzer J. A Randomized Controlled Trial of IVR-Based Alcohol Brief Intervention to Promote Patient-Provider Communication in Primary Care. *JGIM* 2016, 31: 1148-55.

Rose G, Badger G, Skelly J, MacLean CD, Ferraro T, Helzer J. A Randomized Controlled Trial of Brief Alcohol Intervention by Interactive Voice Response. *Alcohol and Alcoholism*. 2017; 52: 335-43. DOI: 10.1093/alcalc/agw102.

Matthew R. Jordan, MD, AEMT^{1,2}, Michael F. O’Keefe, MS, NRP^{1,3}, David Weiss, BS, AEMT¹, C. Wes Cubberley, MS-I, AEMT^{1,3}, Charles D. MacLean, MD³, Daniel L. Wolfson, MD, FACEP^{1,3,4}

Implementation of the Universal BLS Termination of Resuscitation Rule in a Rural EMS System. *Resuscitation*, 2017, In press.

Sandoval, Marie B; Palumbo, Mary Val; Hart, Vicki. Electronic Health Record's Effects on the Outpatient Office Visit and Clinical Education. **Journal of Innovation in Health Informatics**, [S.l.], v. 23, n. 4, p. 765–771, jan. 2017. ISSN 2058-4563. Available at: <<https://hijournal.bcs.org/index.php/jhi/article/view/151>>. Date accessed: 18 July 2017. doi:<http://dx.doi.org/10.14236/jhi.v23i4.151>

LaMantia MA, Perkins AJ, Gao S, Austrom MG, Alder CA, French DD, Litzelman DK, Cottingham AH, Boustani MA. Response to Depression Treatment in the Aging Brain Care Medical Home Model. *Clinical Interventions in Aging*.

LaMantia MA, Platts-Mills TF. Bending the Curve of Health Trajectories for Older Adults Discharged from the Emergency Department. *Annals of Emergency Medicine*. 2017; 69(4): 434-436. (Published on-line December 2016)

Callahan CM, Boustani MA, Schmid AA, LaMantia MA, Austrom MG, Miller DK, Gao S, Ferguson DY, Lane KA, Hendrie HC. Targeting Functional Decline: Results from the Alzheimer’s Disease Multiple Intervention Trial. *Annals of Internal Medicine*. 2017; 166(3): 164-171.

Alder CA, Austrom MG, LaMantia MA, Boustani MA. Aging Brain Care: A Model of Integrated Care for Dementia and Depression. Chapter in *Psychiatry, Primary Care, and Medical Specialties: Pathways for Integrated Care* (R. Feinstein, J. Connelly, and M. Feinstein editors). Oxford University Press.

Hematology Oncology

Chris Holmes, MD, Interim Director

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

Executive Summary



The Division of Hematology and Oncology has had a successful clinical and academic year with a continued dedication to our tripartite mission of teaching, cutting-edge research and high quality, patient centered care. The division has 17 faculty members who care for patients with oncologic and hematologic malignancies, benign hematology, as well as thrombotic and bleeding disorders. The clinical care enterprise is also comprised of 6 APPs and over 40 nurses and staff in the outpatient clinic. In 2016-2017, the division cared for about 2,470 new outpatients and provided over 18,000 outpatient consults and visits (in total) in addition to ~1,400 treatment infusion/injection patients and about 6,000 inpatient consults and visits. Inpatient services offered by the division include a hematology consult service, an oncology consult service and a heme-malignancy inpatient service. In addition to subspecialty, tertiary oncologic care and specialized hematology services, the division also provides unique services to our patient population. These include:

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

Research within the division focuses on clinical trials as well as epidemiologic and translational research. In the past year, faculty members have served as the site PI on 26 National Cancer Institute clinical trials; 13 industry sponsored trials and 10 investigator initiated institutional trials. Investigators within the Division receive funding from clinical trials (cooperative group and pharmaceutical trials), NIH NCI, NHLBI, NINDS and ACS, and through the UVM Cancer Center.

The division maintains an active fellowship program comprised of 6 fellows under the direction of Dr. Julian Sprague (Program Director) and Dr. Molly Barry (Associate Program Director). Specialized tracks in thrombosis & haemostasis, familial genetics and breast cancer are available to fellows and promote the academic careers of interested fellows. Fellows maintain an active clinical and research schedule including presentations and posters at relevant regional and national meetings. Hematology and Oncology fellows generated 5 publications this year and Dr. Hibba Rehman (third year fellow) received a Fibrolamellar Cancer Foundation Grant.

Multiple members of the division continue to serve in leading national and international positions. A few highlights include: Dr. Steven Ades was appointed as site PI for the NCI Alliance Network as well as served as the President of the Northern New England Clinical Oncology Society; Dr. Cushman now serves as the inaugural Editor in Chief of RPTH (Research and Practice in Thrombosis and Hemostasis), an international on-line journal dedicated to the dissemination of high quality research and clinical care in thrombosis and hemostasis as well as continued to serve on the Board of Directors for the American Heart Association; Dr. Greenblatt served as the President of the Human Genome Variation Society and member of the International Scientific Advisory Council for the Human Variome Project; Dr. Holmes served as National Chair for the American Society of Hematology Workgroup on Transitions and Member of the Thrombosis Committee for the American Thrombosis and Hemostasis Network; Dr. Nunnink was a member of the Board of Directors for the American Society of Oncology; Dr. Marie Wood served on the Alliance Prevention Committee and is Chair-Elect of the ASCO Continuing Education Committee and Dr. Zakai served as a member of the American Society of Hematology VTE Guidelines Panel and co-chair of the Hemophilia and Thrombosis Research Society, Research Committee.

Additional highlights and accomplishments that round out a successful year in hematology and oncology are found below.

Faculty

Steven Ades, MD, MSc – Associate Professor

Associate Director, Hematology/Oncology Fellowship Program
Leader, UVM Medical Upper Gastrointestinal Oncology Transdisciplinary Team
Co-Leader, University of Vermont Medical Center Medical Center Genitourinary Oncology Transdisciplinary Team
Director, In-Patient Hematology/Oncology—Outgoing
Clinical Director, Cancer Clinical Trials Office—Incoming
Member, Vermont Cancer Center Protocol Review and Monitoring Committee
Member, UVM Faculty Senate Financial & Physical Planning Committee
Member, UVM Medical Center Hematology/Oncology Fellowship Program Evaluation Committee
Member, UVM Medical Center Hematology/Oncology Fellowship Clinical Competency Committee
Member, Hematology/Oncology Division Chief Search Committee
Research and clinical interests include: GI and GU cancers, supportive care and thrombosis in malignancy

George F. Atweh, MD-Professor

Clinical Director, Cancer Clinical Trials Office—Outgoing
Member, Protocol Review and Monitoring Committee, UVM Medical Center
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
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
Research and clinical 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 Clinical Committee, Program in Integrative Health
Chair Research Committee, Program in Integrative Health
Member, Cancer Control Committee, UVM Medical Center
Research interests include: Cancer survivorship, diet/nutrition, exercise

Edmund Folefac, MD – Assistant Professor

Member, Vermont Cancer Center Protocol Review and Monitoring Committee
Research interests include: Lung cancer and melanoma; clinical trials

Marc Greenblatt, MD – Professor

Co-Chair, UVM Cancer Center Molecular Mechanisms of Malignancy Program
Assistant Director, Hematology/Oncology Fellowship Program
Research and clinical interests include: Cancer genetics and gastrointestinal cancers

Chris Holmes, MD, PhD – Associate Professor

Interim Director, Hematology/Oncology Division
Director, Vermont Regional Hemophilia Treatment Center
Assistant Director, Thrombosis and Hemostasis Program
Section Chief, Hematologic Malignancies
Associate Director, Clinical and Translational Research, UVM Cancer Center
Research interests include: Venous thrombosis, platelet function, coagulation and cancer

Farrah Khan, MD – Assistant Professor

Member: UVMMC Department of Medicine Faculty Development Committee, Faculty
Engagement Committee, QA&I Committee
Member, UVMMC Department of Medicine Quality Assurance and Improvement
Committee

Research and clinical interests include: Breast cancer, lung cancer, mesothelioma and sarcoma

J. Chris Nunnink, MD, FASCO – Associate Professor

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
Clinical 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—retired June 30, 2017

Julian Sprague, MD, PhD – Associate Professor

Director, Hematology/Oncology Fellowship Program
Director, Stem Cell Transplant Program, University of Vermont Medical Center
Clinical Director, Apheresis Services
Member, UVM Medical Center, Transfusion Committee
Member, UVM Medical Center, Ethics Committee
Member, UVM Medical Center, Medical School Curriculum Committee
Research and clinical interests include: Myeloma and neurotoxicity, hematologic malignancies

Eswar Tipirneni, MD—Clinical Practice Physician

Physician at CVMC

Elvira Umyarova, MD—Assistant Professor

Director, In-Patient Hematology/Oncology—Incoming
Research interests include: Malignant hematology, stem cell transplant, clinical trials

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

Chair, Data Safety and Monitoring Board, UVM Cancer Center
Member, UVMMC Pharmacy and Therapeutics Committee
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.

Hematology/Oncology Fellows

Hibba Rehman, MD – 3rd year fellow
Jose Ruades, MD – 3rd year fellow
Bhargavi Pulluri, MD – 2nd year fellow
Purva Sharma, MD – 2nd year fellow
Daniel Douce, MD – 1st year fellow
Saranya Kodali, MD – 1st year fellow

NP's and PA's

Jamie Kelly, PA
Penny Gibson, PA
Anne Berkowitz, NP
Janet Ely, NP
Patricia Lewis, NP
Emily Parenteau, MSN, FNP

Graduate students, post-doctoral fellows, MD PHD students

Katharine Cheung, MD, Post-Doctoral Fellow
Kara Landry, MD, Post-Doctoral, mentored by Mary Cushman
Elizabeth Hall, MD, LCCRO Fellow
Daniel Douce, MD, Post-Doctoral Fellow, mentored by Neil Zakai

Leadership in Professional Societies

Steven Ades, MD

Immediate Past President, Northern New England Clinical Oncology Society
Member, Alliance Cooperative Group Symptom Intervention 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.
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
Member, Medical Advisory Committee for the Foundation for Women and Girls with Blood Disorders

Kim Dittus, MD, PhD

Member, Cancer Control Committee, UVM Medical Center
Member, Champlain Valley Healthy Lifestyle Collaborative

Marc Greenblatt, MD

President, Human Genome Variation Society (HGVS)
Member, International Scientific Advisory Council, Human Variome Project
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 (CGA-ICC),
Co-Chair, Working Group on Assessment of Pathogenicity
Member, International Society of Gastrointestinal Hereditary Tumors (InSiGHT)
Core Member, Variant Interpretation Committee
Member, International Mismatch Repair Consortium (IMRC)
Member, Cancer and Leukemia Group B-Alliance for Clinical Trials
Member, Vermont Medical Society

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

J. Chris Nunnink MD, FASCO

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, American Society of Hematology
Member, American Society of Clinical Oncology
Member, American College of Physicians
Member, Committee on Training, American Society of Hematology

Liaison, Committee on Quality from the Committee on Training, American Society of Hematology

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
Chair-Elect, ASCO Continuing Education Committee

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 Research Committee
Chair, Malignant Hematologist Faculty Search Committee
Chair, Medication Safety Subcommittee for the Pharmacy & Therapeutics Committee
Guest Editor, Circulation

Editorships and Editorial Boards

Neil Zakai

Guest Editor, Circulation
Editorial Board, Research and Practice of Thrombosis and Haemostasis

Mary Cushman

Editor-in-Chief, Research and Practice in Thrombosis and Haemostasis

Study Sections and Federal Advisory Boards

Chris Holmes

NIH, Patient-Centered Outcomes Research Institute (PCORI), merit review panel member,
Management of Care Transitions for Emerging Adults with Sickle Cell Disease

NIH, National Heart, Lung, and Blood Institute (NHLBI), ad-hoc member, Clinical Trials
Review Committee (CLTR)

Grants

Steven Ades

University of Vermont Medical Group Yang (PI) 01/01/17-12/31/17
Delineating Tumors of Pancreatic Origin
Role: Co-PI

George Atweh

NIHUO1 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

University of Vermont Medical Group Yang (PI) 01/01/17-12/31/17
Delineating Tumors of Pancreatic Origin
Role: Co-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 01/01/98-03/31/20
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 HHSN2682015000031 Multiethnic Study of Atherosclerosis R. McClelland, PI, University of Washington ADC (current Vermont Subcontract): \$92,375 (current cycle) Role: Subcontract PI, 5%	08/15/00-08/14/21
NIH 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%	07/01/14-06/30/19
NIH P20GM109098 Effects of Perfluoroalkyl Chemicals on Stroke Incidence and Mortality S Frisbee, PI ADC (Subcontract): \$6,978 Role: Subcontract, PI, 2%	09/08/14-05/30/19
NIH NICHD Social Context, Life Course and Genetic Transcription in Add Health ADC (subcontract): \$23,489 Role: Subcontract PI, 2.5%	04/01/16-03/31/21
NIH Transitions to Family Caregiving and its Impact on Health Indicators ADC: \$75,466 Role: Co-Investigator, 5%	06/01/16-05/31/21
Kim Dittus NIH-NIGMS 1P20GM103644-01A1 Vermont Center on Behavior and Health, COBRE Junior Investigator Project: Predictors of Weight Loss Success in Overweight Breast Cancer Survivors Role: PI, Junior Investigator Project	Higgins (PI) 9/15/13-7/31/18
ACS-IRG BeMobile: A Randomized Control Trial of a Novel, Technology-Based Intervention to Support Physical Activity in Cancer Survivors Role: Mentor	Gell (PI) 04/01/17-03/31/18

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%

NHLBI-R01 Reiner (PI) 04/01/17-03/31/17
The Epidemiology of Thrombosis in African Americans
Role: Site PI

NHLBI-R01 Pamir (PI) 09/01/17-08/31/22
Identification of the Role of HDL Function in Human Cardiovascular Disease through
Proteomics and Genetics
Role: Site PI

Publications

Erten MZ, Fernandez LP, Ng HK, **McKinnon WC**, Heald B, Koliba CJ, **Greenblatt MS**. Universal versus Targeted Screening for Lynch Syndrome: Comparing Ascertainment and Costs Based on Clinical Experience, *Dig Dis Sci*, 2016 Jul in press. PMID: 27384051

Hermel DJ, **McKinnon WC**, **Wood ME**, **Greenblatt MS**. Multi-gene Panel Testing for Hereditary Cancer Susceptibility in a Rural Familial Cancer Program, *Familial Cancer* 2016, Jul in press. PMID: 27401692

Cushman M, O'Meara ES, Heckbert SR, **Zakai NA**, Rosamond W, Folsom AR. Body size measures, hemostatic and inflammatory markers, and risk of venous thrombosis: The Longitudinal Investigation of Thromboembolism Etiology. *Thromb Res* 2016; Aug; 144:127-32. doi: 10.1016/j.thromres.2016.06.012. PMID: 27328432

Colantonio LD, Gamboa CM, Kleindorfer DO, Carson AP, Howard VJ, Muntner P, **Cushman M**, Howard G, Safford MM. Stroke symptoms and risk for incident coronary heart disease in the REasons for Geographic and Racial Differences in Stroke (REGARDS) study. *Int J Cardiol* 2016; Oct 1;220:122-8. doi: 10.1016/j.ijcard.2016.06.030. PMID: 27376567

Chami N, Chen MH, Slater AJ, Eicher JD, **Cushman M**, Evangelou E, Tajuddin SM, Love-Gregory L, Kacprowski T, Schick UM, Nomura A, Giri A, Lessard S, Brody JA, Schurmann C, Pankratz N, Yanek LR, Manichaikul A, Pazoki R, Mihailov E, Hill, WD, Raffield LM, Burt A, Bartz TM, Becker DM, Becker LC, Boerwinkle, E, Bork-Jensen J, Bottinger EP, O'Donoghue LM, Crosslin DR, deDenus S, Dube MP, Elliott P, Engstrom G, Evans MK, Floyd JS, Fornage M, Gao H, Greinacher A, Gudnason V, Hansen T, Harris TB, Hayward C, Hernessniemi J, Highland HM, Hirschhorn JN, Hofman A, Irvin MR, Kahonen M, Lange E, Launer LJ, Lehtimaki T, Li J, Liewald DC, Linneberg A, Liu Y, Lu Y, Lyytikainen LP, Magi R, Mathias RA, Melander O, Metspalu A, Mononen N, Nalls MA, Nickerson DA, Nikus K, O'Donnell CJ, Orho-Melander M, Pedersen O, petersmann A, Polfus L, Psaty BM, Raitakari OT, Raitoharju E, Richard M, Rice KM,

Rivadeneira F, Rotter JI, Schmidt F, Smith AV, Starr JM, Taylor KD, Teumer A, Thuesen BH, Torstenson ES, Tracy RP, Tzoulaki I, **Zakai NA**, Vacchi-Suzzi C, van Duijn CM van Rooij FJ, Deary IJ, VelezEdwards DR, Vergnaud AC, Wallentin L, Waterworth DM, White HD, Wilson JG, Zonderman AB, Kathiresan S, Grarup N, Esko T, Loos RJ, Lange LA, Faraday N, Abumrad NA, Edwards TL, R Ganesh SK, Auer PL, Johnson AD, Reiner AP, Lettre G. Exome Genotyping Identifies Pleiotropic Variants Associated with Red Blood Cell Traits. *Am J Hum Genet* 2016; Jul 7;99(1):8-21. doi. 10.1016/j.ajhg.2016.05.007. PMID: 27346685

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Hospital Medicine

Chief: Mark E. Pasanen, MD, FACP



The Division of Hospital Medicine at the Larner College of Medicine at the University of Vermont 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 55,000 work RVU's. This year also marked our largest recruitment effort to date, having added 9 new providers during the last academic year to improve our night coverage and to support patient care and education across new services and patient populations. This included the development and implementation of a

new Medical Oncology service – which works closely with Oncology to provide inpatient care to patients with solid tumors. In addition, we've added a swing shift, to provide coverage for night admissions for the Family Medicine and Hematology/Oncology services, along with Medical Consults and cross-coverage of our increased number of non-resident patients. We continue to significantly expand our use and teaching of bedside ultrasound techniques under the expert guidance of Dr. Mohit Jindal. 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. Our most recent successful project focused on improving our communication with primary care providers, which involved standardizing our processes and increasing the rate of verbal sign-out. In the last few years, we have also significantly reduced the number of unnecessary labs performed on our inpatients, improved the completion of accurate problem lists at the time of discharge and decreased the wait time of orders for patients admitted through the Emergency Department.

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 four 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 continues to take 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. In addition, through the leadership of Dr. Jason Bartsch, we've developed the Hospital Medicine academic half-days curriculum. 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. Greenberger received the William Osler, M.D. Award for Outstanding Teacher of the Year in General Internal Medicine in 2017.

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. Bartsch). However, our faculty are also involved in other

teaching activities including Foundations courses as well as Professionalism, Communication and Reflection.

We educate our colleagues locally, regionally and nationally in a variety of venues. This includes our annual University of Vermont Continuing Medical Education Course in Hospital Medicine, attracting a national audience and with faculty largely from the Division of Hospital Medicine and other 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 opioid-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

Jason Bartsch, MD

Assistant Professor of Medicine

Director of Medical Education, Division of Hospital Medicine

Maria Burnett, MD

Assistant Professor of Medicine

Thi Dang, MD

Assistant Professor of Medicine

Shaden Eldakar-Hein, MD

Associate Professor of Medicine

Associate Program Director, Internal Medicine Residency

Florian Foerg, MD

Assistant Professor of Medicine

Director, Medicine Consult Service

Jon Ford, PA

Zechariah Gardner, MD

Assistant Professor of Medicine

Steve Grant, MD

Associate Professor of Medicine

Associate Director, Hospitalist Service

HR Physician Liaison, UVM Medical Group

Emily Greenberger, MD

Assistant Professor of Medicine

Naomi Hodde, MD

Assistant Professor of Medicine

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

Rachel McEntee, MD

Assistant Professor of Medicine

Sadie Mills, MD

Assistant Professor of Medicine

Chad Mitchell, MD

Assistant Professor of Medicine

Preetika Muthukrishnan, MD

Assistant Professor of Medicine

Meagan Oakes, PA

Mark Pasanen, MD

Associate Professor of Medicine

Program Director, Internal Medicine Residency Program

Chief, Division of Hospital Medicine

David Rand, DO

Assistant Professor of Medicine

Allen Repp, MD, MS

Professor of Medicine

Vice-Chair for Quality

Paul Slavik, MD

Assistant Professor of Medicine

Amy Lynn Teleron, MD

Assistant Professor of Medicine

Dennis Woods, MD

Assistant Professor of Medicine

Leadership in Professional Societies:

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 (past Governor and advisory council membership) and past president of the UVM Medical Alumni President

Faculty participation in committees and task forces at the Larner College of Medicine and the University of Vermont Medical Center is also wide-ranging. Highlights include leadership and/or participation on the Tenure and Promotions committee, Committee for Advancement Rapid Response committee, Resuscitation committee, Patient Experience/Patient-Family Centered Care workgroup, Accountable Care Unit workgroup, Operations/Workforce, Quality Improvement, Ethics and 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. Drs. Rachel McEntee and Chad Mitchell have been instrumental in helping to optimize PRISM, our electronic health record, through their work and leadership as a Physician Informaticists. Dr. Amy Teleron has provided leadership in significantly improving our Rapid Response and Resuscitation training and implementation. Dr. Repp serves as Vice Chair of Quality for the Department of Medicine.

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, 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. Emily Greenberger received the 2017 Osler Award from the IM residents for the general medicine attending who demonstrates excellence in teaching and patient care
- Promotions:
 - Dr. Allen Repp to Professor
 - Dr. Shaden Eldakar-Hein to Associate Professor

Grants:

Jason Bartsch, MD and Rachel McEntee, MD

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

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

[Adult Intraosseous Access by Advanced EMTs: A Statewide Non-Inferiority Study.](#)

Wolfson DL, Tandoh MA, **Jindal M**, Forgione PM, Harder VS.

Prehosp Emerg Care. 2017 Jan-Feb;21(1):7-13.

The Live Attenuated Cholera Vaccine CVD 103-HgR Primes Responses to the Toxin-Coregulated Pilus Antigen TcpA in Subjects Challenged with Wild-Type Vibrio cholerae.

Mayo-Smith LM, Simon JK, Chen WH, Haney D, Lock M, Lyon CE, Calderwood SB, Kirkpatrick BD, Cohen M, Levine MM, Gurwith M, Harris JB.

Clin Vaccine Immunol. 2017 Jan 5;24(1)

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):1329-1335

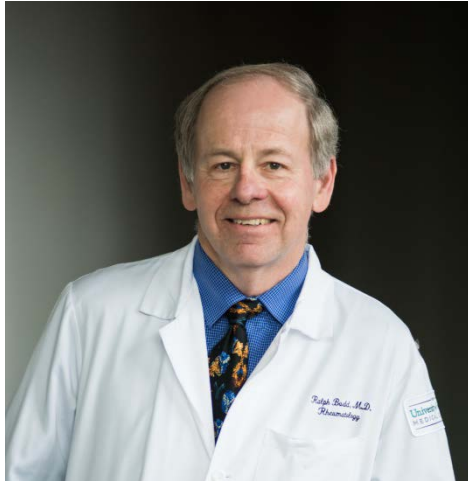
La Crosse Encephalitis: An Adult Case Series. [Teleron AL](#), [Rose BK](#), [Williams DM](#), [Kemper SE](#), [McJunkin JE](#). [Am J Med](#). 2016 Aug;129(8):881-4.

Division of Immunobiology

Ralph Budd, MD, Director

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

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



The Division of Immunobiology currently has seven research faculty and five graduate students. Research covers a variety of areas, including the immune response to infections, autoimmune mechanisms, and inflammation in cancer. Research support includes numerous individuals grants as well as a Center of Biomedical Research Excellence (COBRE) Award from NIH. Now in its 12th year, the COBRE grant supports the activities of the Vermont Center for Immunology and Infectious Diseases (VCIID), which now numbers 25 faculty in 8 departments in 4 colleges and is in close alliance with the Vaccine Testing Center. The VCIID has a weekly joint Research-in-Progress meeting, seminar series, and a journal club. This provides a regular 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. We also have a T32 Training Grant from NIH to support the salaries of our graduate students.

Faculty

Ralph Budd, MD

University Distinguished 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

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

Assistant Professor of Medicine

- Key Research Interests: autoimmunity, genetics, environment, sex differences, microbiome

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

Tina Thornton, PhD

Assistant Professor of 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

Felipe Valenca Pereira (postdoc) – Thymocyte development

Abbas Raza (graduate student) – Immunogenetics of EAE and control of sensitivity to vasoactive amines.

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

Christopher Ziegler (graduate student/postdoc) – 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, 2017

Editorships and Editorial Boards:

(Budd) Senior Editor for “Textbook of Rheumatology” 11th Edition, Elsevier

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

(Krementsov) reviewer for PLoS One – Metabolic Brain Disease; Brain; Infection and Immunity

Study Sections and Federal Advisory Boards:

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

(Budd) NIH ZAI1 ZL-1 (M1)1 AITRC Independent SEP

(Budd) NIH ZRG1 F07-J (20) L Fellowships Immunology

(Krementsov) National MS Society Pilot Project Review Committee

(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, Senior Research Laureate Larner College of Medicine

(Rincon) The University of Vermont-based biomedical entrepreneurship training program (supported by a \$2 million, five-year grant from the National Institutes of Health (NIH) to Professor of Medicine Mercedes Rincon, Ph.D.) called I-Trep sponsored an intense summer course at the Larner College of Medicine at UVM June 16 to 23, 2017. This unique course blended medicine, business, and innovation. Participants included faculty, postdoctoral fellows, and graduate students from Vermont, Maine, New Hampshire, Alaska, and Puerto Rico.

The course’s instructors include Rincon, Erik Monsen, Ph.D., Steven Grossman Endowed Chair in Entrepreneurship and Associate Professor in the Grossman School of Business, and Corine Farewell, D.V.M., M.B.A, Director, UVM Innovations, in the Office of Technology Commercialization. In addition to Monsen and Farewell, the I-Trep course development team includes Charles Irvin, Ph.D., Professor of Medicine and Associate Dean for Faculty Affairs, who provides the course’s ethics training component, and Tina Thornton, Ph.D., I-Trep Coordinator and Assistant Professor of Medicine.

(Teuscher) Department of Medicine Mentor

Grants – list all active by faculty member, PI

Grant Awards 07/01/16 – 06/30/17

NIH funding:

2 - R01

6 – R21

1 – R56

1 – R25

1 – T32

1 – COBRE (P20)

1 – COBRE (P30)

1 – Sub award through University of Utah

1 – Sub award through Drexel University

1 – AAI Fellowship

Foundation funding:

2 – NMSS project

1 - Lupus Research Institute

1- Gates Foundation

Biotech Funding

1-Mitotherapeutix, LLC

State of Vermont

1-Vermont Agency of Commerce & Community

UVM Funding

1 – LCOM IGP

2 – OVPR FISAR

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: \$233,438

Source: NIH/NIAID

Title: Vermont Immunology / Infectious Diseases Center

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

Role: PI

Current Yr funding: \$0 NCE

Source: NIH/NIGMS

Title: Vermont Immunology / Infectious Diseases Center

Dates of Award: 08/05/2016 – 07/31/21

Role: PI

Current Yr funding: \$1,157,709
Source: NIH/NIGMS

Title: Vermont Immunology / Infectious Diseases Training Grant
Dates of Award: 09/01/05 – 08/31/21
Role: PI
Current Yr funding: \$288,616
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: \$192,438
Source: NIH/NIAID

Title: RIG-I Regulation of Interferon Signature in SLE
Dates of Award: 01/01/14 – 12/31/17
Role: PI
Current Yr funding: \$0 NCE
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

P20RR021905 (Budd, R.) 7/20/11 - 6/30/17

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.

Title: Impact of Defective Interfering particles on host fitness lymphocytic virus infection
Dates of Award: 01/09/17-06/30/19
Role: PI
Current Yr funding: \$75,000
Source: LCOM

Title: Arenavirus Attenuation
Dates of Award: 07/01/16-06/30/17
Role: PI
Current Yr funding: \$50,000
Source: Vermont Agency of Commerce & Community/ UVM Discoveries

Fortner:

Title: T Lymphocyte Homeostasis in Obesity
Dates of Award: 06/01/14 – 05/31/17
Role: PI
Current Yr funding: \$0 NCE
Source: NIH/NIAID

Krementsov:

Title: Interactions Between Host Genetics and the Gut Microbiome in CNS Autoimmunity
Dates of Award: 3/15/17 – 1/31/22
Role: PI
Current Yr funding: \$339,883
Source: NIH

Title: Mechanisms of Sex-Specific p38 MAPK-Mediated Pathogenesis in CNS Autoimmunity
Dates of Award: 10/1/16-9/30/19
Role: PI
Current Yr funding: \$552,845
Source: NMSS

Title: A biomaterials approach to cell type-specific targeting... in models of MS -LY
Dates of Award: 1/4/16-6/30/17
Role: PI
Current Yr funding: \$39,491

Source: UVM OVPR

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: Treatment of Fatty Liver Diseases using Sonoporation...in mouse models

Dates of Award: 01/04/16-06/30/17

Role: PI

Current Yr funding: \$39,427

Source: UVM OVPR

Title: MCJ as a Metabolic Target

Dates of Award: 05/15/15-05/14/18

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: 05/01/16-04/30/18

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: \$76,250

Source: University of Utah

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

Title: Genome-wide physical mapping of IAV-QTL using wild-derived inbred mice

Dates of Award: 12/1/16 – 11/30/18

Role: PI

Current Yr funding: \$232,688

Source: NIH

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

Bearoff F, Del Rio R, Case LK, Dragon JA, Nguyen-Vu T, Lin CY, Blankenhorn EP, Teuscher C, Kremontsov DN. Natural genetic variation profoundly regulates gene expression in immune cells and dictates susceptibility to CNS autoimmunity. *Genes Immun.* 2016 Dec;17(7):386-395. PMID: 27653816

Bewley MA, Belchamber KB, Chana KK, Budd RC, Donaldson G, Wedzicha JA, Brightling CE, Kilty I, Donnelly LE, Barnes PJ, Singh D, Whyte MK, Dockrell DH; COPDMAP. Differential Effects of p38, MAPK, PI3K or Rho Kinase Inhibitors on Bacterial Phagocytosis and Efferocytosis by Macrophages in COPD. *PLoS One.* 2016 Sep 28;11(9):e0163139. PMID: 27680884

Bewley MA, Preston JA, Mohasin M, Marriott HM, Budd RC, Swales J, Collini P, Greaves DR, Craig RW, Brightling CE, Donnelly LE, Barnes PJ, Singh D, Shapiro SD, Whyte MKB,

Dockrell DH. Impaired Mitochondrial Microbicidal Responses in Chronic Obstructive Pulmonary Disease Macrophages. *Am J Respir Crit Care Med.* 2017 May 30. PMID: 28557543

Buskiewicz IA, Montgomery T, Yasewicz EC, Huber SA, Murphy MP, Hartley RC, Kelly R, Crow MK, Perl A, Budd RC, Koenig A. Reactive oxygen species induce virus-independent MAVS oligomerization in systemic lupus erythematosus. *Sci Signal*. 2016 Nov 29;9(456):ra115. Erratum in: *Sci Signal*. 2017 May 16;10 (479):. PMID: 27899525

Collins CC, Bashant K, Erikson C, Thwe PM, Fortner KA, Wang H, Morita CT, Budd RC. Necroptosis of Dendritic Cells Promotes Activation of $\gamma\delta$ T Cells. *J Innate Immun*. 2016;8(5):479-92. Epub 2016 Jul 19. PMID: 27431410

Dalsgaard T, Sonkusare SK, Teuscher C, Poynter ME, Nelson MT. Pharmacological inhibitors of TRPV4 channels reduce cytokine production, restore endothelial function and increase survival in septic mice. *Sci Rep*. 2016 Sep 22;6:33841. PMID: 27653046

Dixon AE, Rincón M. Metabolic dysfunction: mediator of the link between obesity and asthma? *Lancet Respir Med*. 2016 Jul;4(7):533-4. doi: 10.1016/S2213-2600(16)30104-7 PMID: 27283229

Fortner KA, Bond JP, Austin JW, Boss JM, Budd RC. The molecular signature of murine T cell homeostatic proliferation reveals both inflammatory and immune inhibition patterns. *J Autoimmun*. 2017 Aug;82:47-61. doi: 10.1016/j.jaut.2017.05.003. PMID: 28551033

Grifoni A, Angelo M, Sidney J, Paul S, Peters B, de Silva AD, Phillips E, Mallal S, Diehl SA, Botten J, Boyson J, Kirkpatrick BD, Whitehead SS, Durbin AP, Sette A, Weiskopf D. Patterns of Cellular Immunity Associated with Experimental Infection with rDEN2 Δ 30 (Tonga/74) Support Its Suitability as a Human Dengue Virus Challenge Strain. *J Virol*. 2017 Mar 29;91(8). pii: e02133-16. doi: 10.1128/JVI.02133-16. PMID: 28148797

King BR, Hershkowitz D, Eisenhauer PL, Weir ME, Ziegler CM, Russo J, Bruce EA, Ballif BA, Botten J. A Map of the Arenavirus Nucleoprotein-Host Protein Interactome Reveals that Junín Virus Selectively Impairs the Antiviral Activity of Double-Stranded RNA-Activated Protein Kinase (PKR). *J Virol*. 2017 Jul 12;91(15). pii: e00763-17. doi: 10.1128/JVI.00763-17. PMID: 28539447

Krementsov DN, Case LK, Dienz O, Raza A, Fang Q, Ather JL, Poynter ME, Boyson JE, Bunn JY, Teuscher C. Genetic variation in chromosome Y regulates susceptibility to influenza A virus infection. *Proc Natl Acad Sci U S A*. 2017 Mar 28;114(13):3491-3496. PMID: 28242695

Mei F, Lehmann-Horn K, Shen YA, Rankin KA, Stebbins KJ, Lorrain DS, Pekarek K, A Sagan S, Xiao L, Teuscher C, von Büdingen HC, Wess J, Lawrence JJ, Green AJ, Fancy SP, Zamvil SS, Chan JR. Accelerated remyelination during inflammatory demyelination prevents axonal loss and improves functional recovery. *Elife*. 2016 Sep 27;5. pii: e18246. doi: 10.7554/eLife.18246. PMID: 27671734

Pero SC, Sun YJ, Shukla GS, Carman CL, Krag CC, Teuscher C, Krementsov DN, Krag DN. Vaccine draining lymph nodes are a source of antigen-specific B cells. *Vaccine*. 2017 Mar 1;35(9):1259-1265. PMID: 28161423

Reynolds JD, Case LK, Kremmentsov DN, Raza A, Bartiss R, Teuscher C. Modeling month-season of birth as a risk factor in mouse models of chronic disease: from multiple sclerosis to autoimmune encephalomyelitis. *FASEB J.* 2017 Jun;31(6):2709-2719. PMID: 28292961

Yang R, Masters AR, Fortner KA, Champagne DP, Yanguas-Casás N, Silberger DJ, Weaver CT, Haynes L, Rincon M. IL-6 promotes the differentiation of a subset of naive CD8+ T cells into IL-21-producing B helper CD8+ T cells. *J Exp Med.* 2016 Oct 17;213(11):2281-2291. PMID: 27670591

Ziegler CM, Eisenhauer P, Bruce EA, Beganovic V, King BR, Weir ME, Ballif BA, Botten J. A novel phosphoserine motif in the LCMV matrix protein Z regulates the release of infectious virus and defective interfering particles. *J Gen Virol.* 2016 Sep;97(9):2084-9. doi: 10.1099/jgv.0.000550. PMID: 27421645

Division of Infectious Diseases - Annual Report July 2016–June 2017

W. Kemper Alston, MD, MPH, Director <http://www.uvm.edu/medicine/medicine/infectiousdisease/>



The Infectious Diseases (ID) Division is comprised of ten attending physicians dedicated to the diagnosis, management, prevention and investigation of infectious diseases. This past year we added a part-time physician assistant to support our nurse practitioner in the outpatient clinic. Last year the Division performed over 1,650 new inpatient consultations. The outpatient clinics remain busy with over 6,000 arrived visits. This effort includes the care of over 470 active patients with HIV in four federally funded Comprehensive Care Clinics in Vermont. In total the ID Division performed over 15,000 work RVU's last year. In addition to providing care for those living with HIV, the outpatient clinic includes the international travel clinic, refugee clinic, home IV antibiotic management, and care for patients with general infectious diseases. The Division works collaboratively with the Vermont Department of Health on antibiotic stewardship, the 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, Director of Antibiotic Stewardship, 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. Our Division recognizes the retirement of Dr. Christopher Grace after nearly 30 years of leadership and service. We are very excited about the successful recruitment of two new faculty members.

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. Our fellows have presented abstracts at national ID meetings, published peer reviewed publications, and authored book chapters.

Within our Division we have several active research laboratories, which support a number of clinical and basic science research projects including those performed by our two PhD faculty members (Sean Diehl, PhD and Jose Teixeira, PhD), graduate and visiting students, laboratory technicians, and often the 2nd year ID Fellow.

Investigations of the Huston laboratory currently center on the molecular biology and pathogenesis of *Entamoeba histolytica*, and *Cryptosporidium* pharmaceutical agent development.

Investigations of the Kirkpatrick laboratories and Vaccine Testing Center (VTC) focus focus on improving global health through the assessment of candidate vaccines and the understand of human protective immune responses following vaccination and infection. Under the auspices of the VTC, research by Drs. Kirkpatrick, Pierce and Diehl of the ID division (as well as Drs. Botten, Boyson, Lyon and Lee from other divisions/departments) continues to work on development of the NIH's live attenuated tetravalent dengue vaccine, extensive work on dengue human immunology and correlates of protection, Zika vaccine development and immunology, rotavirus immune correlates of protection and human experimental challenge models for *Cryptosporidium*. New projects in 2017 include a new inpatient study to test a new Adenovirus vaccine (Dr. Lyon), and a higher dose rotavirus vaccine in Bangladesh (Dr. Lee). A phase II trial of the first dengue vaccine in South Asia was completed.

In addition to clinical revenues, financial support is provided by grants from the National Institutes of Health (NIH), especially NIAID; the Health Services Research Administration (HRSA); the Bill & Melinda Gates Foundation; PaxVax and other industry supporters, as well as contracts with regional hospitals and UVM Medical Center directorships. Several large grant and center-development applications are also currently under review at the NIH.

Faculty

W. Kemper Alston, MD, MPH

Professor

- Director, Infectious Disease Division
- 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
- 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
- Member, Professional Advisory Committee, Visiting Nurse Association

Sean Diehl, PhD

Assistant Professor

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

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, UVM
- Residency Research Committee, Dept. of Medicine
- Reappointment, Promotions and Tenure Committee, Dept. of Medicine, UVM College of Medicine

Beth D. Kirkpatrick, MD, FIDSA, FASTMH

Professor of Medicine with Tenure

- Director, UVM Vaccine Testing Center
- Research Interests: Vaccine development, vaccine immunology, enteric and flavivirus infections, human experimental infection models.
- Faculty Senate Committee on Research, Scholarship and the Creative Arts. UVM
- Dean's Research Leadership Group. UVM Larner College of Medicine.
- Physician-Scientist Working Group. UVM Larner College of Medicine
- Reappointment, Promotions and Tenure Committee, Dept. of Medicine, UVM Larner College of Medicine
- Strategic Planning Committee, UVM Larner College of Medicine.

Cindy Noyes, MD

Assistant Professor of Medicine

- Clinical Faculty
- Associate 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 Flavivirus 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

- Director, UVMCC Antimicrobial Stewardship Program
- Co-Chair, Infectious Disease Practice sub-committee, Pharmacy and Therapeutics Committee, UVMCC

Krystine R. Spiess, DO

Assistant Professor of Medicine

- Associate Program Director, UVMCC Part C, HRSA grant for HIV care
- Associate Program Director, UVMCC Part B, HRSA for HIV Care(VDH sub-award)
- Director, AIDS Education Training Center

Jose E. Teixeira, PhD

Research Assistant Professor

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

Fellows

Porntip Kiatsimkul, MD

Infectious Disease 2nd Year Fellow

- Infectious Disease Fellowship Training Program July 1, 2015 – June 30, 2017
- Research Project: Increasing Evidence of Blastomycosis Infection in Vermont

J. Jacob Enser, MD

Infectious Disease 1st Year Fellow

- Infectious Disease Fellowship Training Program July 1, 2016 – June 30, 2018

Nurse Practitioners and Physician Assistants:

Hella Douglas, PsychNP

Comprehensive Care clinic, HIV patient

- HIV Patient Care, mental health

Laura Catoe, ARNP

Nurse Practitioner, Comprehensive Care clinic

- Travel health
- Vermont Refugee Clinic
- General ID

Mary Claire Walsh, NP

Nurse Practitioner, Comprehensive Care Clinic / Vaccine Testing Center

- 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)

Elizabeth Colgate-PhD student, Clinical and Translational Sciences (Vaccine Testing Center)

Leadership in Professional Societies:

Christopher Huston, M.D.

- Chairman for 2017-2018, American Society for Microbiology, Division AA (Free-living, symbiotic, and parasitic protists)
- Member, American Society for Microbiology Council on Microbial Sciences

Beth Kirkpatrick, MD

- Secretary / Treasurer of America Committee of Clinical Tropical Medicine and Traveler's health
- Scientific Advisory Board. Symposium on Controlled Human Experimental Infection Models. International Alliance for Biologic Standardization (IABS)

External Reviewer, Editorships and Editorial Boards:

W. Kemper Alston, MD

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

Sean Diehl, PhD

- External reviewer
 - Nature Microbiology
 - Journal of Cellular Physiology
 - Nature Scientific Reports

- PLoS Neglected Tropical Diseases

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
 - Member, Drug Screening, Chemistry, and Pharmacology Cryptosporidiosis Working Group; The Bill and Melinda Gates Foundation
 - Member, *Cryptosporidium In Vivo* Testing Working Group; The Bill and Melinda Gates Foundation

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
 - PLOS Pathogens
 - PLOS ONE
 - Vaccine

Kristen Pierce, MD

- External reviewer
 - American Society of Tropical Medicine and Hygiene

Study Sections and Federal Advisory Boards:

Sean Diehl, PhD

- 2016 Vaccines for Microbial Diseases, NIH – Study section

- 2017 NIH Special Emphasis Panel “Zika-related complications” ZRG1-IDM-P-90-S

Christopher Huston, MD

- Ad-Hoc Reviewer - National Institutes of Allergy and Infectious diseases
 - 2017, ZRG1 IDM-M(02) (Vector and Eukaryotic Pathogens Study Section).

Beth Kirkpatrick, MD

- Ad-Hoc Reviewer – NIH National Institutes of Allergy and Infectious diseases
 - 2017, Vaccines for Microbial Diseases (VMD)

Major Faculty Awards:

Beth Kirkpatrick, MD

Elected to Physician Honor Society, American Society for Clinical Investigation (March 2017)

- Nominated as Fellow, Infectious Disease Society of America (October 2016)
- Nominated as Fellow, American Society of Clinical Investigations (Fall 2016)

Kristen K. Pierce, MD

Early Achievement Award, UVM Alumni Association

- June 2017

Grants – list all active by faculty member, PI

Sean Diehl, PhD

Subcontract PI

5R01 AI107731 (DeSilva) NIH/ NIAID

Molecular Basis of Dengue virus Neutralization by Human Antibodies

8/2016-7/2018

\$154,000

Sean Diehl, PhD

Co- Investigator

UVM Biomedical Engineering Pilot Research Program

Integrating omics and clinical data to study dengue infection.

5/2017-8/2018

\$40,000

Sean Diehl, PhD

Co- Investigator

NIH/ NIAID Intramural Research Contract HHSN272200900010C

Kinetic and Phenotypic Analysis of B cell responses to ZIKA virus exposure

2/2017 – 6/2019

\$154,000

Sean Diehl, PhD

CDC BAA 201-N-18041 (DeSilva)

Elucidate the molecular Basis for Humoral Immunity to Flaviviruses

6/1/2007-5/31/2022

\$750,000

Christopher Grace, MD FIDSA

Krystine Spiess, MD (Associate PI)

Ryan White Part C Grant for HIV Care

Non- competing grant award

5/1/2016 – 4/30/2017

\$ 551,481 Federal HRSA

Christopher Grace, MD FIDSA

Krystine Spiess, MD (Associate PI)

Ryan White Care Act Part B

7/1/2016 – 12/31/2016

\$120,242 Federal HRSA Extension

Christopher Grace, MD FIDSA

Krystine Spiess, MD (Associate PI)

Ryan White Care Act Part B (VDH)

Incentives pilot program

7/1/2016 – 12/31/2016

\$15,000 Federal HRSA

Christopher Grace, MD FIDSA

Krystine Spiess, MD (Associate PI)

Ryan White Care Act Part B

1/1/2017– 12/31/2017

\$249,636 Federal HRSA

Christopher Grace, MD FIDSA

TB Control and Surveillance, Public Health Preparedness & Response for Bioterrorism

Centers for Disease Control and Prevention Investigations and Technical Assistance

7/1/2016 - 06/30/2017

\$26,000.00 Federal

Christopher Huston, MD (Co-Investigator)
Program for Appropriate Technology in Health (PATH) PDS Drug Solutions
Establishment of *Cryptosporidium* calf infection model and calf pharmacokinetic study
2014-2017
Total annual Costs \$205,513

Christopher Huston, MD
Subcontract to Grant #OPP103258 from University of Toronto (Walpole, PI)
Bill and Melinda Gates Foundation
Structure-guided drug discovery for tuberculosis and malaria *Cryptosporidium* supplement
2015-2017
Total annual costs: 154,299

Christopher Huston, MD
Subcontract from Anacor, Inc. (Huston, PI)
Bill and Melinda Gates Foundation Research Contract
In vivo testing of boron-based anti-*Cryptosporidium* screening hits
2015-2017
Total annual costs: \$46,439

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
2015-2017
Total annual costs: \$806,449

Christopher Huston, MD
Merck-EMD Serono
Screening the Merck Serono mini-library for anti-*Cryptosporidium* compounds
2016-2017
Total Costs \$67,032

Christopher Huston, MD (Co-investigator)
Bill and Melinda Gates Foundation
Using *Cryptosporidium* human challenge models to advance therapeutics and vaccines
2015-2018
Total Costs \$3,283,817

Christopher Huston, MD
Bill and Melinda Gates Foundation Grand Challenges 17
Continuous propagation of *Cryptosporidium* using small molecule inhibitors of differentiation
2016-2018
Total costs: \$100,000

Christopher Huston, MD

Bill and Melinda Gates Foundation
Subcontract from Grant #OPP1032518 to The Broad Institute of MIT and Harvard (Morningstar, M (PI))

Lead optimization of a novel bicyclic azetidine series for treatment of cryptosporidiosis
2016-2017

Total costs: \$154,127

Christopher Huston, MD

NIAID R21 proposal (AI130807)

Continuous in vitro culture and treatment of *Cryptosporidium* using small molecule differentiation inhibitors

2017-2019

Total costs: \$419,375

Christopher Huston, MD

Program for Appropriate Technology in Health (PATH) PDS Drug Solutions

Cryptosporidium strain/species comparative study

Total costs: \$209,564

Christopher Huston, MD

Subcontract from Grant #OPP1161880 from St. Louis University (Griggs, PI)

Bill and Melinda Gates Foundation

Pharmacokinetic and pharmacodynamics profiling of compounds with known anti *Cryptosporidial* activity to promote their improvement and advancement for clinical development.

2017-2019

Total costs: \$128,369

Christopher Huston, MD

UVM Immunobiology COBRE Pilot Grant Program

Manipulating the gut microbiota to prevent cryptosporidiosis.

2017-2018

Total costs: \$50,000

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 (2014-2019)

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

Planning grant for Dengue Human Experimental Infection Model in Bangladesh. Principal
Investigator. National Institutes of Health, NIAID, R34.
150,000 (2016-2017)

Lindsay M. Smith, MD
Vermont Department of Health Antimicrobial Stewardship Grant
6/1/17 – 5/30/19
Total Direct Costs \$307,939

Krystine Spiess, DO
New England AIDS Education Training
7/1/2016 – 6/30/2017
\$51,620 Federal sub-award, UMASS

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

Kwakkenbos MJ, Diehl SA, Yasuda E, Bakker AQ, VanGeelen CM, Lukens MV, VanBleek GM,
Widjojoatmodjo MN, Gogers WM, Mei H, Radbruch A, Scheeren FA, Spits H, Beaumont T.
Corregenjum: Generation of stable monoclonal antibody-producing B Cell Receptor-positive human
memory B cells by genetic programming. Nat Med. 2016 Dec 6;22 (12):1502 doi 1038 PMID 27923028

Wesley C. Van Voorhis MD PhD, John H. Adams PhD, Roberto Adelfio MSc, Vida Ah Yong, Myles H.
Akabas M.D., Ph.D., Pietro Alano PhD, Aintzane Alday PhD, Yesmalie Alemán Resto, MS, Aishah Alsibae
BSc., Ainhoa Alzualde PhD, Katherine T Andrews PhD, Simon V. Avery, PhD, Vicky M Avery PhD,
Lawrence Ayong, Ph.D, Mark Baker PhD MSc, Stephen Baker PhD, Choukri Ben Mamoum PhD, Sangeeta
Bhatia MD, PhD, Quentin Bickle PhD, Lotfi Bounaadja, PhD, Tana Bowling, Jürgen Bosch PhD, Lauren E.
Boucher PhD, Fabrice F. Boyom PhD, Jose, Brea PhD, Marian Brennan BSc, MSc, PhD, Audrey Burton,
Conor R. Caffrey Ph.D., Grazia Camarda, PhD, Manuela Carrasquilla B.S., Dee Carter PhD, Maria Belen
Cassera PhD, Ken Chih-Chien Cheng, Worathad Chindaudomsate MSc, Anthony Chubb BSc, MSc, PhD,
Beatrice L. Colon MS., Daisy C. Colón-López. Yolanda Corbett PhD, Gregory J. Crowther Ph.D., Noemi
Cowan, MSc, Sarah D'Alessandro PhD, Na Le Dang MA, Michael Delves PhD, Joseph L. DeRisi PhD, Joseph
L. DeRisi PhD, Alan Y. Du, Shima Abd El-Salam El-Sayed MVS, José A. Fernández Robledo Ph.D., David A.
Fidock PhD, Isabelle Florent PhD, Patrick V. T. Fokou PhD, Ani Galstian BS, Francisco Javier Gamo, PhD,
Suzanne Gokool PhD, Ben Gold Ph.D., Todd Golub MD, PhD, Suzanne Gokool PhD, Gregory M Goldgof,
Rajarshi Guha, W. Armand Guiguemde, Nil Gural, R. Kiplin Guy, Ph.D., Michael Hansen Ph.D, Kirsten K.
Hanson PhD, Andrew Hemphill PhD, Takaaki Horii Ph.D., Paul Horrocks PhD, Tyler B. Hughes M.S.,

Christopher Huston M.D., Ikuo Igarashi DVM, PhD, Katrin Ingram-Sieber PhD, Maurice A. Itoe PhD, Ajit Jadhav, Amornrat Naranuntarat Jensen, Laran T. Jensen, Rays HY Jiang PhD, Annette Kaiser Ph.D., Jennifer Keiser PhD, Thomas Ketas, Sebastien Kicka PhD, Sunyoung Kim Ph.D., Kieran Kirk PhD, Vidya Kumar PhD, Dennis E. Kyle Ph.D., Maria Jose Lafuente, PhD, Scott Landfear Ph.D., Nathan Lee, BS, Sukjun Lee M.Sc, Adele Lehane PhD, Fengwu Li Ph.D., David Little, Liqiong Liu Ph.D., Manuel Llinás Ph.D., Maria I. Loza PhD, Aristeia Lubar B.S., Leonardo Lucantoni PhD, Isabelle Lucet PhD, Louis Maes, DVM, PhD, Nuha R. Mansour PhD, Sandra March PhD, Sheena McGowan PhD, Iset Medina Vera PhD, Stephan Meister Ph.D., Luke Mercer, Jordi Mestres PhD, Alvine N. Mfopa MSc., Raj N. Misra, A.B., Ph.D., Seunghyun Moon Ph.D, John P. Moore PhD, Joachim Müller PhD, Arantza Muriana, Stephen Nakazawa Hewitt M.S., Bakela Nare PhD, Carl Nathan MD, Nathalie Narraidoo PhD, Sujeevi Nawaratna, Kayode K. Ojo PhD, Diana Ortiz Ph.D., Gordana Panic M.Sc., George Papadatos PhD, Silvia Parapini PhD, Kailash Patra Ph.D., Ngoc Pham, Ph.D., Sarah Prats, David M. Plouffe, Sally-Ann Poulsen PhD, Celai Quevedo PhD, Ronald J. Quinn, PhD., Christopher A. Rice PhD., Mohamed Abdo Rizk, MVS, Andrea Ruecker PhD, Robert St.Onge Ph.D., Jasmeet Samra, B.S., Natalie G., Sanders (now Robinett), BS, Ulrich Schlecht Ph.D., Marjorie Schmitt, PhD, Robert Sinden PhD, Francesco Silvestrini PhD, Dennis A. Smith, Ph.D., Thierry Soldati, Prof. Dr. Andreas Spitzmüller PhD, Serge Maximilian Stamm, David J. Sullivan MD, William Sullivan Ph. D., Sundari Suresh M.Sc., Brian M. Suzuki M.S., Yo Suzuki Ph.D., S. Joshua Swamidass M.D. Ph.D., Donatella Taramelli PhD, Lauve R. Y. Tchokouaha, MSc., David Thomas MD, PhD, Kathryn F Tonissen PhD, Simon Townson PhD, Abhai K. Tripathi PhD, Valentin Trofimov PhD, Ken Udenze MPH, Imran Ullah MSc, Cindy Vallieres PhD, Edgar Vigil, Joseph M. Vinetz MD, Phat Voong Vinh BSc, Hoan Vu, Ph.D., Nao-aki Watanabe Ph.D., Kate Weatherby, BSc, Pamela M. White, Elizabeth A. Winzeler PhD, Edward Wojcik Ph.D., Melanie Wree MD, Wesley Wu PhD, Naoaki Yokoyama DVM, PhD, Paul H. A. Zollo, PhD, Benjamin Blasco PhD, Jeremy Burrows PhD, Nada Abla Geiser PharmD, PhD, Benoît Laleu, PhD, Didier Leroy PhD, Thomas Spangenberg, Ph.D., Timothy Wells PhD, Paul Willis PhD Open Source Drug Discovery with the Malaria Box Compound Collection for Neglected

Diseases and Beyond. *PLoS Pathogens*. 12(7)“e1005763. Doi:10.1371/journal .ppat. 1005763.

Osman KT, Ye J, Shi Z, Toker C, Lovato D, Jumani RS, Zuercher W, **Huston CD**, Edwards AM, Lautens M, Santhakumar V, Hui R. Discovery and structure activity relationship of the first potent *Cryptosporidium* FIKK kinase inhibitor. *Bioorganic and Medicinal Chemistry*. 2017. 25:1672-1680. PMID: 28162900.

Love MS, Beasley FC, Jumani RS, Right TM, Chatterjee AK, **Huston CD**, Schultz PG, McNamara CW. A high-throughput phenotypic screen identifies clofazimine as a potential treatment for cryptosporidiosis. *PLoS Neglected Tropical Diseases*. 2017. Feb 3; 11(2):e0005373. PMID: 28158186.

Jain V, Yogavel M, Kikuchi H, Oshima Y, Haraguchi N, Matsumoto M, Goel P, Touquet B, Jumani R, Tacchini-Cottier F, **Huston C**, Hakimi MA, Sharma A. Targeting translational enzyme prolyl-tRNA synthetase to accelerate drug discovery against malaria, leishmaniasis, toxoplasmosis, cryptosporidiosis, and coccidiosis. *Structure Journal*. 2017. In press (accepted).

Bayih AB, Debnath A, Mitre E, **Huston C**, Laleu B, Leroy D, Blasco B, Campo B, Wells T, Willis P, Sjoe P, Van Voorhis W, Pillai DR. Susceptibility testing of medically important

parasites. *Clinical Microbiology Reviews*. 2017. 30:647-669. [Peer Reviewed] PMID: 28446445.

Pierce K, Whitehead S, **Kirkpatrick B**, Grier P, Jarvis A, Kenney H, Carmolli M, Reynolds C, Tibery C, Lovchic J, Janiak A, Luke C, Durbin A, Pletnev AG. A Live Attenuated Chimeric Virus rWN/DEN4Δ30 is Well-Tolerated and Immunogenic in Healthy Older Adult Volunteers. *Journal of Infectious Diseases*- 2017 Jan 1;215(1):52-55 doi 10.1093 PMID 28077583

Whitehead SS, Durbin AP, **Pierce KK**, Elwood D, MeElvany BD, Fraser EA, Carmolli MP, Tibery CM, Hynes NA, Jo M, Lovchik JM, Larsson CJ, Doty EA, Dickson DM, Luke CJ, Subbarao K, **Diehl SA**, **Kirkpatrick BD**. In randomized trial, the live attenuated tetravalent dengue vaccine TV003 is well tolerated and highly immunogenic in subjects with flavivirus exposure prior to vaccination. *PLoS Negl Trop Dis*. 2017 May 8;11(5):e0005584. PMID 284818

Upfill-Brown A, Taniuchi M, Platts-Mills JA, **Kirkpatrick B**, Burgess SL, Oberste MS, Weldon W, Hout E, Haque R, Zaman K, Petri WA Jr.. Non-Specific Effects of Oral Polio Vaccine on diarrheal Burden and Etiology among Bangladeshi Infants. *Clin. Infect Dis*. 2017 April 24. doi: 10.1093 PMID 28444240

Lu M, Zhou J, Naylor C, **Kirkpatrick BD**, Haque R, Petri WA Jr., Ma JZ. Application of penalized linear regression methods to the selection of enteropathy biomarkers. *Biomark Res* 2017 Mar 9;5:9. Doi 10.1186 PMID 28293424

Nayak U, Kanungo S, Zhang D, Ross Colgate E, Carmoli MP, Dey A, Alam M, Manna B, Nandy RK, Kim DR, Paul DK, Choudhury S, Sahoo S, Harris WS, Wierzbica TF, Ahmet T, **Kirkpatrick BD**, Haque R, Petri WA Jr., Mychaleckyj JC. Influence of Maternal and socioeconomic factors on breast milk fatty acid composition in urban, low income families. *Matern Child Nutr*. 2017 Feb. Doi 10.1111 PMID 28198164

Grifoni A, Angelo M, Sidney J, Paul S, Peters B, deSilva AD, Phillips E, Mallal S, **Diehl SA**, Botten J., Boyson J, **Kirkpatrick BD**, Whitehead SS, Durbin AP, Sette A, Weiskopf D. Patterns of Cellular Immunity Associated with Experimental infection with rDEN2Δ30 (Tonga/74) Support Its Suitability as a Human Dengue Virus Challenge Strain. *J Virol*. 2017 Mar 29;91(8). Doi. 10.1128 PMID 28148797

Angelo MA, Grifoni A, O'Rourke PH, Sidney J, Paul B, deSilva AD, Phillips E, Mallal S, Diehl SA, **Kirkpatrick BD**, Durbin AP, Sette A, Weiskopf D. Human CD4 T Cell Responses to an Attenuated Tetravalent Dengue Vaccine Parallel Those Induced by Natural Infection in Magnitude, HLA Restriction, and Antigen Specificity. *J. Virol*. 2017 Feb 14;91(5) doi 10.1128 PMID 27974563

Mayo-Smith LM, Simon JK, Chen WH, Haney D, Lock M, Lyon CE, Calderwood SB, **Kirkpatrick BD**, Cohen M, Levine MM, Gerwith M, Harris JB. The Live Attenuated Cholera Vaccine CVD 103-HgR Primes Responses to the Toxin-Coregulated Pilus Antigen TcpA in Subjects Challenged with Wild-Type *Vibrio cholera*. *Clin Vaccine Immunol* 2017 Jan 5;24(1) doi 10.1128 PMID 27847368

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 BK** . Delayed Dosing of Oral Rotavirus Vaccine Demonstrates Decreased Risk of Rotavirus Gastroenteritis Associated with Serum Zinc: A Randomized Controlled Trial. *Clin Infect Dis*. 2016 Sept 1;63(5):634-41 doi 10.1093 PMID 27217217

Jiang NM, Tofail F, Ma JZ, Haque R, **Kirkpatrick BD**, Nelson CA, Petri WA. Early Life Inflammation and Neurodevelopmental Outcomes in Bangladeshi Infants Growing up in Diversity. *AJTMH*, *accepted*.

Mychaleckyj JC, Zhang D, Nayak U, Kanungo S, Dey A, Carmolli M, Dickson D, Manna B, Nandy RK, Kim DR, Paul DK, Sahoo S, Ahmed T, Wierzba TF, Alam M, **Kirkpatrick BD**, Haque R, Petri WA. Influence of maternal and socioeconomic factors on breast milk fatty acid composition in urban low-income families. *Maternal and Child Nutrition*. 2017: *epub ahead of print*. PMID 28198164.

Leslie M. Mayo-Smith, Jakub K. Simon, Wilbur H. Chen, Douglas Haney, Caroline E. Lyon, Stephen B. Calderwood, **Beth D. Kirkpatrick**, Mitchell Cohen, Myron M. Levine, Marc Gurwith and Jason B. Harris. The live attenuated cholera vaccine, CVD 103-HgR, primes responses to the toxin-coregulated pilus antigen TcpA in subjects challenged with wild type *Vibrio cholera*. *Clin Vacc Immunol* 2017; 5; 24 (10): 1-10.

A. Executive Summary:

Service:

The Nephrology service is in the midst of a significant transition. During the past year, we, like the majority of our colleagues throughout the nation, were unable to fill our fellowship slots. Therefore in July 2017, we began adapting to an attending only in-hospital consult service. This is taking a toll on staff that are already stretched because of the absence of two senior attendings who left in June and July for jobs on the West Coast. We have been able to hire one new attending (Alison Fitzgerald) and are currently interviewing for the second position. We plan to hire a nurse practitioner (two have been interviewed thus far) to manage the hospital dialysis population. The Nephrology fellowship applications opened a few weeks ago and thus far we have 9 qualified applicants.

The service is also aging with three practitioners above the age of 70. One will retire in 2018, one will reduce time/effort to 75% also in 2018. We have started discussions within the group regarding ‘no evening or weekend call’ for those over this age and how to compensate the younger members of the Division.

Education:

Residents in Medicine rotate for 2 weeks on the Nephrology Service. This previously was an inpatient rotation. Starting 4 years ago, the rotation has been split into a one week in-patient and one week outpatient 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 year’s 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. We have opened the outpatient clinic experience to medical students taking an elective rotation on the Nephrology Service.

Research:

A number of active trials in chronic kidney disease are supported by Pharmaceutical funds (Solomon, Rimmer).

An investigator initiated trial in an early marker of acute kidney injury was funded by the Department of Medicine through a competitive translational grant process (Solomon).

Funding for a study of patient frailty in those with chronic kidney disease approaching dialysis has been obtained (Cheung).

B. Faculty:

Varun Agrawal, MD

Assistant Professor
Medical Director of Barre Dialysis Unit
Resident education

F. John Gennari, MD

Emeritus Professor
Electrolyte disorders

Virginia Hood, MD

Professor of Medicine
Acid-base physiology

Abhishek Kumar, MD

Assistant Professor of Medicine

Dana Negoi, MD

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

Marios Prikis, MD

Associate Professor of Medicine
Medical Director of Transplantation

Jeff Rimmer, MD

Professor of Medicine
Medical Director Chittenden Dialysis Unit
Hemodialysis

Alan Segal, MD

Associate Professor
Program Director, Renal Fellowship

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

Richard Solomon, MD

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

Wolfgang Weise, MD

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

C. Fellows:

Paul El Azoury
Alison Fitzgerald
Nina Narasimhadevara
Monika Zimna

D. PA/NP:

Margaret Butler, APRN
Caroline Tassej, APRN (per diem)

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

Katherine Cheung, MD

F. Endowed Professorship

Patrick Professorship (Dr. Solomon)

G. Leadership in Professional Societies

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

Faculty mentor, American Society of Nephrology Kidney Students and
Residents program. American Society of Nephrology Kidney Week 2016,
Chicago IL. (Nov 17-20, 2016) (Agrawal)

Faculty mentor for the 'Point of Care Ultrasound for

the Nephrologist.’ Course director: Kenar Jhaveri, MD, FNKF. National Kidney Foundation Spring Clinical Meeting 2017, Orlando FL, USA, April 2018 (Agrawal)

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

Chair of ASN abstract section on Educational Research for Kidney Week 2016 (Cheung)

Chair of ASN abstract section on Educational Research for Kidney Week 2016 (Cheung)

Member, UVM Medical Center Board of Trustees, 2014-present (Hood)

Chair, UVM Health Network Population and Quality Committee, 2017-present (Hood)

Member, UVM Health Network Board of Trustees, 2017 –present (Hood)

Member, UVM Health Network Finance Committee, 2017 – present (Hood)

Member Executive Committee, International Society Internal Medicine 2015-present (Hood)

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

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

President Emeritus, American College of Physicians (Hood)

Member of the European Board of Transplant Medicine (Prikis)

Board Member and Examiner for the Transplant Medicine certification of the European Union of Medical Specialties (UEMS). (Prikis)

H. Editorships and Editorial Boards

Associate Editor: Acid-base and electrolyte disorders, teaching cases, American Journal of Kidney Diseases, (J. Gennari)

Associate Editor, BioMed Central Nephrology. Nov 2016 to present (V. Agrawal)

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

I. Study Section and Federal Advisory Boards

Biomarker Consortium member for fNIH (Dr. Solomon)

J. Major Faculty Awards

K. Grants (all grant accounts show a positive balance) – active 2016-2017

Grants:

Uppaluri. The Efficacy of 24-hour Urine Evaluations on Kidney Stone prevention. UVM Medical Student Summer Research Fellowship, 2016. \$3000.00 (Sternberg K, Hood VL)

Frailty and Resilience in Older Adults with Advanced Kidney Disease. Armin Grams Memorial Research Award, UVM Center on Aging at UVM, 2016-2018. \$50,000. (Cheung KL, Hood VL)

Department of Medicine Developmental Fund

Dialysis Nurses' Perspectives on Advance Care Planning

The goal of this qualitative study is to explore dialysis nurses' perspectives on their role in advance care planning and to identify barriers and facilitators to implementing advance care planning in the dialysis unit. Dec 2015- Dec 2016

Funding: \$15,000 (Cheung KL)

University of Vermont Center on Aging

Trajectories of Frailty and Resilience in Older Adults with Advanced Chronic Kidney Disease

The goal of this study is to identify risk factors for frailty and resilience among older patients with CKD, determine the prevalence and trajectories of frailty and resilience in the period around initiation of dialysis and the outcomes of frailty and resilience in this rural population. June 2016 June 2018.

Funding: \$50,000 (Cheung KL, Hood VL)

American Society of Nephrology

The American Society of Nephrology

Communication skills training for dialysis nurses to promote interdisciplinary advance care planning and palliative care. July 2016 – July 2017

Funding: \$4878 (Cheung, KL)

Principal Investigator in just approved multi-Center study. Parallel-Group, Placebo-Controlled

Randomized Study Investigating the Effect of Intravenous Iso-osmolar Iodinated Contrast Material Iodixanol (Visipaque™ Injection 320 mgI/mL) on Renal Function in Adults with Chronic Kidney Disease (CKD) Stage III or Stage IV Who Have Undergone Endovascular Aneurysm Repair (EVAR)". (M Prikis)

Active during the year (multicenter pharmaceutical supported grants)

Bayer Figaro and Fidelio Trials: Use of finerenone for patient with diabetes and chronic kidney disease.

Janssen –Credence Trial: Use of SGLT2 inhibitor in diabetes and chronic kidney disease

AbbVie – Sonar trial: Use of in diabetes and chronic kidney disease

Medtronic – Symplicity Trial: renal denervation for resistant hypertension

Otsuka – Tolvaptan for treatment of polycystic kidney disease (R. Solomon)

Funded but not yet started:

Transitional Medicine grant: Urinary oxygen in patients undergoing cardiac surgery. \$50,000 (R. Solomon)

Submitted:

NIH: IMPROVE AKI: A Cluster-Randomized Trial of Team-Based Coaching Interventions to IMPROVE Acute Kidney Injury (subInvestigator) (R. Solomon)

L. Publications

1. Marano, M, Marano S, **Gennari FJ**. Beyond bicarbonate: complete acid-base assessment in patients receiving intermittent hemodialysis. NDT Mar21, 2016, pii: gfw022 (epub ahead of print).
2. **Agrawal V**. Editorial: Oxalate Mediated Renal Complications after Roux-en-Y Gastric Bypass: Weighing the Risks vs. Benefits, Surg Obes Relat Dis. 2016 Sep - Oct;12(8):1521-1522
3. **Agrawal V**, Wilfong JB, Rich CE, Gibson PC. Reversal of Gastric Bypass Resolves Hyperoxaluria and Improves Oxalate Nephropathy Secondary to Roux-en-Y Gastric Bypass. Case Rep Nephrol Dial 2016;6:114–119
4. **Agrawal V**, Jhaveri K, Shah H. Perspective: Enhancing outpatient nephrology experience for internal medicine residents. Clin Kidney J 2017 sfx019. doi: 10.1093/ckj/sfx019
5. **Agrawal V**. ‘Enteric Hyperoxaluria, Calcium Oxalate Nephrolithiasis and Oxalate Nephropathy after Roux-en-Y Gastric Bypass’ in Pathophysiology of Bariatric Surgery:

Metabolism, Nutrition, Procedures, Outcomes and Adverse Effects (Elsevier) Editor: Victor R. Preedy, Rajkumar Rajendram and Colin R. Martin. 2017, 361-370.

6. **Cheung KL**, Zakai NA, Folsom AR, Kurella Tamura M, Peralta CA, Judd SE, Callas PW, Cushman M. [Measures of Kidney Disease and the Risk of Venous Thromboembolism in the REGARDS \(Reasons for Geographic and Racial Differences in Stroke\) Study](#). Am J Kidney Dis. 2017 Aug;70(2):182-190. doi: 10.1053/j.ajkd.2016.10.039. Epub 2017 Jan 23. PubMed PMID: 28126238; PubMed Central PMCID: PMC5522772.
7. **Cheung KL**, Periyakoil VS. [Renal Palliative Care Studies: Coming of Age](#). J Palliat Med. 2016 Jun;19(6):582-3. doi: 10.1089/jpm.2016.0175. Epub 2016 May 16. PubMed PMID: 27183468.
8. **Cheung KL**, Periyakoil VS. Renal Palliative Care Studies: Coming of Age. [J Palliat Med](#). 2016 Jun;19(6):582-3. Doi: 10.1089/jpm.2016.0175. Epub 2016 May 16.
9. **Kumar A, Agrawal V**. 'Hypertensive crises' in Critical Care Secrets (Elsevier). Editor: Polly E. Parsons and Renee D. Stapleton (accepted, in publication) 2017
10. **Solomon, R**. Improving intravenous fluid therapy for prevention of contrast induced nephropathy: how to give more without causing heart failure. JACC Cardiovasc Interv 2016, 9: 97-9. PMID: 26685076
11. Brown JR, Pearlman DM, MacKenzie TA, Recio-Mayoral A, Gomes VO, Kim B, Jensen LO, Mueller C, Maioli M, **Solomon RJ**. Meta-analysis of individual patient data of sodium bicarbonate and sodium chloride for all-cause mortality after coronary angiography. Am J Cardiol 2016,118:1473-9. PMID 27642111.
12. Chu, LL, Katzberg RW, **Solomon RJ**, Southard J, Evans SJ, Rao SR, Li CS, McDonald JS, Payne C, Boone JM. Clinical Significance of Persistent Global and Focal CT Nephrograms after Cardiac Catheterization and Their Relationships to Urinary Biomarkers of Kidney Damage and Procedural Factors: Pilot Study. Invest Radiology 2016. PMID:26974312
13. Phillips, JK, McBride C, Hale S, **Solomon R**, Bernstein IM. Examination of Prepregnancy and Pregnancy Urinary Protein Levels in Healthy Nulliparous Women. Am J Obstet Gynec 2016. PMID:27460407
14. Brown JR, **Solomon R**, Plomondon ME, Maddox TM, Matheny ME, Tsai TT, Rumsfeld, J Lee R, Robey RB, Sarnak MJ. Chronic kidney disease progression and cardiovascular outcome following cardiac catheterization – A population-controlled study. J Am Heart Assoc 2016, 5(10). E003812, PMID 27742616.

15. Parsh J, Seth M, Briguori C, Grossman P, **Solomon, R**, Gurm HS. The optimal definition of contrast-induced acute kidney injury for prediction of inpatient mortality in patients undergoing percutaneous coronary interventions. *Am Heart J* 2016, 175: 160-7. PMID: 27179735.
16. **Solomon R**, Dauerman HL. Acute kidney injury: culprits, cures, and consequences. *Circ Cardiovasc Interv.* 2017 Jan;10(1):e004742

POSTER

Reducing Blood Volume Waste from Dialysis Central Venous Catheters (CVCs). Emily Xue, Bette Gilmartin, **(Hood V)**. ASN Annual Meeting, Chicago, November 19, 2016

INVITED SPEAKER

National and International:

Chronic Kidney Disease: what the internist can do. WCIM, Nusa Dua, Bali, August 23, 2016 **(Hood VL)**

Ensuring Value for patients in a Cost Conscious World: developing a culture of high value care. **(Hood VL)**

WCIM, Nusa Dua, Bali, August 24, 2016 **(Hood VL)**

Cases in electrolyte and acid base disorders: management of acute severe hyponatremia and hyperkalemia. **(Hood VL)**

Meet the Professor: ACP IM 2017, San Diego CA, March 30, 2017 (Hood VL)

Hypertension Treatment Challenges: Family Medicine 43rd Review Course, Burlington, VT June 7, 2017 **(Hood VL)**

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, cancer survivorship, pulmonary hypertension, 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, critical care, stem cell research, and obesity and lung disease. Members of the Division published over 100 peer reviewed articles during the last year, obtained significant funding from the NIH (including a number new RO1 and R34 grants) and foundations, and served as members of a number of national review panels. The Division continues to work with other Departments, and across the campus at the University of Vermont, particularly with the School of Engineering, and has a number of highly successful multi-disciplinary research programs. Members of the Division lead graduate programs in Cell and Molecular Biology, and also in Bioengineering. 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 recognized for its active role in quality improvement and clinical excellence. Drs. Ryan Clouser, Josh Farkas, and Gil Allen, as leaders of the critical care team that led the collaboration with Central Vermont Medical Center, were awarded the “Better Together Award”, this award those who are part of an exemplary team committed to providing the best possible care while delivering high quality patient and family experience across our University of Vermont Health network. Gil Allen was also awarded the UVMMC Vision Award, a quarterly award which recognizes employees and physicians of UVMMC who have significantly contributed to the attainment of our strategic goals through their actions, attitude and results – Gil received this award for his outstanding leadership in critical care for UVMMC and our region. Dr. Allen also received one of the inaugural Department of Medicine Distinguished Clinician Awards for his leadership in Critical Care Medicine.

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 with the Dean Warshaw Integration Award – an award that recognizes the faculty member whose teaching best captured the spirit of the VIC. Dr. Garrison also directs the Internal Medicine Acting Internship program. 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

Lennart Lundblad, PhD

Associate Professor
Co-Director, Lung Phenotyping Core
Lung physiology and pharmacology
The role of mast cells and bacterial infection

Prema Menon, MD, PhD
Assistant Professor of Medicine

Haitham Nsour, MD
Assistant Professor of Medicine

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
Associate 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
Benjamin Keveson, MD
Marta Kokoszyuska, MD
Timothy Leclair, MD
Katherine Menson, DO
Radhika Parikh, MD

Nurse Practitioners and Physician Assistants:

Lily Sender, PA
Sarah Wagner, NP
Suzanne DeCapua, PA

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

Jason H. T. Bates, PhD, DSc

Christa Frodella – PhD student in Bioengineering
Ubong Peters, PhD – postdoc in Medicine
Grahame McKlugler – masters student in Mechanical Engineering

Jan Kirk Carney, MD MPH

As of July 2017, in UVM's Banner system, there are 122 graduate public health students.

Charles Irvin, PhD

David Chapman, PhD

C. Matthew Kinsey, MD, MPH

Tim Leclair (Pulmonary Fellow)
Greg Roy (Medical Student)

Matthew Poynter, PhD

Matthew 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)
E. Ross Colgate, Graduate Student (dissertation committee)
Hill Enuh, Senior Fellow (research mentor)
Jacqueline O'Toole, Fellow (research mentor)
John Halevy, Senior Fellow (research mentor)
Maria Burnett, Assistant Professor (research mentor)

Benjamin Suratt, MD

Joseph Bivona (CMB)

Daniel Weiss, MD PhD

Post-Docs:

Soraia Abreu
Hee-Eon Park
Robert Pouliot
Franziska Uhl
Juan Uriarte

Surgical Residents (research year in the lab)

Jessica Louie
Benefsha Mohammed
Tovah Moss
Zachary Philipps
Alexander Riveron

Grad Students (Visiting)

Lena Thiebes (Aachen, Germany)
Sally Kim (Sydney)

Endowed Professorships:

Kathryn Huggett, PhD

Robert Larner, M.D. '42 Professor in Medical Education

Leadership in Professional Societies:

Gilman Allen, MD

Program Committee, Society of Critical Care Medicine
Program Committee, Critical Care Assembly, American Thoracic Society

Jason H.T. Bates, PhD, DSc

Co-Chair, Green Mountain Section of the Institute for Electrical & Electronic Engineering

Jan Kirk Carney, MD MPH

Vermont Governor, American College of Physicians
National ACP Committees: Health and Public Policy; Patient Partnership in Health Care

Ryan Clouser, DO

Member ATS critical care program planning committee

Anne E. Dixon, MA, BM BCh

Member ATS Planning and Evaluation Committee
Member ATS Nominating Committee
President Association of Pulmonary, Critical Care and Sleep Division Directors

Susan Dunning, MD

American Academy of Sleep Medicine - Innovative Fellowship Model Implementation
Presidential Committee

Kathryn Huggett, PhD

Academies Collaborative Steering Committee

International Association of Medical Science Educators (IAMSE)

- a. Program Chair, IAMSE 2017 Annual Meeting
- b. Member, IAMSE Board of Directors

Senior Representative for the Society of Directors of Medical Education (SDRME) to the
AAMC Council of Faculty and Academic Societies (CFAS)

David Kaminsky, MD

Chair, ATS Proficiency Standards for Pulmonary Function Laboratories Committee
Chair, ATS Pulmonary Function Laboratory Accreditation Program

Lennart Lundblad, PhD

Director of the Board of the Pulmonary Research Group

Polly E. Parsons MD

President-elect, American Thoracic Society
Council Member, Association of Professors of Medicine
Parker B. Francis Foundation:

Scientific Advisory Council:

Scientific Director, Fellowship Program
NHLBI PETAL network: DSMB Chair

NHLBI Understanding Health Disadvantages Across high Income Countries

Workshop Member

Renee Stapleton, MD PhD

American Thoracic Society

- a. Critical Care Assembly Program Committee
 - Member, 2009-2012, 2015-present
 - Chair-Elect, 2015-2016
 - Chair, 2016-2017
- b. Scientific Advisory Committee (reviews all ATS grants)
 - Member, 2013-present
 - Vice-Chair, 2016-present
- c. 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.

Chair of Data Safety Monitoring Board, "The NEUROlogically-impaired Extubation Timing Trial (NEURO-ETT)," 2016-present.

Charlotte Teneback, MD

Member, Board of Directors, American Association of Cardiopulmonary Rehabilitation

Daniel Weiss, MD PhD

Chief Scientific Officer, International Society for Cellular Therapies

Emeritus Chair, Stem Cell Working Group, ATS

Editorships and Editorial Boards:

Jason H.T. Bates, PhD, DSc

Deputy Editor, Journal of Applied Physiology
Editorial Board, Journal of Clinical Monitoring and Computing
Editorial Board, Critical Reviews in Biomedical Engineering

Kathryn Huggett, PhD

AAMC Medical Education Research Certificate Program (MERC)
Past Chair and Member, Steering Committee

AMA Journal of Ethics Editorial Board
Member

Charles Irvin, PhD

COPD journal, AJRCMB

Lennart Lundblad, PhD

Proceedings Editor for the Pulmonary Research Group

Polly Parsons MD

Up-to-Date: Editor-in-Chief, Pulmonary, Critical Care and Sleep

Section Editor, Critical Care Section 2004-present
Editorial Board: American Journal of Respiratory and Critical Care Medicine
Editorial Board: Chest

Matthew Poynter, PhD

Associate Editor, American Journal of Respiratory Cell and Molecular Biology

Daniel Weiss, MD PhD

Editor, Molecular Therapy

Study Sections and Federal Advisory Boards:

Jason H.T. Bates, PhD, DSc

Standing member of the RIBT study section for NHLBI

Anne E. Dixon, MA, BM BCH

Member VA Merit Review Section

Charles Irvin, PhD

Chair, COBRE Review, 2GM-1 RCB-9 (C1), NIGMS, National Institutes of Health
Co-chair, UO1 & R21 Innovation Grant Review, ZTR1 C1-4 (01), NCATS, National
Institutes of Health

Ad hoc, LRP panel, Panel 2, NIMND, National Institutes of Health

Ad hoc, LRP panel, Panel 1, NIMND, National Institutes of Health

Ad hoc, CTSA Reviews, NCATS, National Institutes of Health

Matthew Poynter, PhD

NIH Lung Cellular, Molecular, and Immunobiology (LCMI) study section

Flight Attendant Medical Research Institute review panel

Renee Stapleton, MD PhD

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

Daniel Weiss, MD PhD

NIH Bioengineering R21

Canadian CF Foundation

Dutch Lung Foundation

Ontario Institute for Regenerative Medicine

Major Faculty Awards:

Gilman Allen, MD

Vision Award, UVM Medical Center, February 2017

Distinguished Clinician Award, Department of Medicine, UVM COM, June 2017

Better Together Award, UVM Health Network, May 2017

Jason H.T. Bates, PhD, DSc

2016-17 UVM University Scholar

Jan Kirk Carney, MD MPH

2017 Crystal Heart Award, American Heart Association of Vermont

Charles Irvin, PhD

Larner College of Medicine Dean's Research Mentorship

Robert Hyatt Memorial Lecture, Mayo Clinic

Polly Parsons MD

2017 ATS Assembly on Critical Care 9th Annual Lifetime Achievement Award

Grants – list all active by faculty member, PI

Jason H.T. Bates, PhD, DSc

R01 HL130847 NHLBI PI: Jason Bates & Anne Dixon

Non-allergic late-onset asthma of obesity: pathophysiology and therapy

R01 HL124052 NHLBI PI: Jason Bates

Personalized mechanical ventilation for the injured lung.

T32 HL076122 NHLBI PI: Charles Irvin

My role: Co-PI

Multidisciplinary Training in Lung Biology

R01 HL133920 NHLBI PI: Matthew Poynter & Anne Dixon

My role: co-investigator

Obese Allergic Asthma and the Impact of Weight Loss on Airway Epithelial Function

Jan Kirk Carney, MD MPH

Health Resources and Services Administration (HRSA): 2014-2018

New England Public Health Training Center (NEPHTC)

Role: PI, University of Vermont Subcontract.

Anne E. Dixon, MA, BM BCH

Dixon: NIH R34 HL135361: Trial of Roflumilast in Asthma Management (TRIM)

Dixon: NIH R34 HL136755 Pilot of Lifestyle in Asthma Intervention (PLAN) -

Poynter/Dixon NIH R01HL133920-Obese Allergic Asthma and the Impact of Weight Loss on Airway Epithelial Function

Bates, Dixon - R01 HL130847-01Non-Allergic Late-Onset Asthma of Obesity: Pathophysiology and Therapy

Irvin American Lung Association : Asthma Clinical Research Center:

Kathryn 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.

Charles Irvin, PhD

American Lung Association
Asthma Clinical Research Center
Principal Investigator: Charles G. Irvin

National Heart Lung & Blood Institute (NHLBI) T32 HL076122-10-15
Multidisciplinary Training in Lung Biology
Principal Investigator: Charles Irvin

National Institute of General Medical Sciences (NIH/NIGMS) P30 GM103532
Translational Research in Lung Biology and Disease
Principal Investigator: Charles G. Irvin

Others grants:

1P50DA036114-01
National Institutes of Health/DHHS Tobacco Regulatory Science Center and FDA
Principal Investigator: Stephen Higgins

R25GM116701
NIGMS
Fostering entrepreneurship in biomedical research
Principal Investigator: Mercedes Rincon, Ph.D.
Co-PI: Charles Irvin

R35 HL135828
NIH/NHLBI
Title: S-glutathionylation chemistry in fibrotic lung remodeling
Principal Investigator: Janssen-Heininger
Co-Investigator: Charles Irvin

R01 HL122383
NIH/NHLBI
Title: Endoplasmic Reticulum Stress Signaling in Allergen-induced Airway Remodeling
Principal Investigator: Anathy
Co-Investigator: Charles Irvin

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
07/01/12/31/17

R01 HL130847, NIH/NHLBI
Non-allergic Late-onset Asthma of Obesity: Pathophysiology and Therapy
PI: Anne Dixon, MD
Role on Project: Co-Investigatory (15%)
3/15/16-2/29/20

University of Vermont REACH Award
Ventilation Heterogeneity and its Association with Lung Cancer
PI: David Kaminsky, MD
05/1/15-8/31/17

C. Matthew Kinsey, MD MPH
NIH K23, Kinsey PI

Lennart Lundblad, PhD

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.

1R21AI112804-01 (Lundblad) 07/01/2014 – 06/30/17
NIH/NIAID
Role: PI

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

NKT Therapeutics Inc. (Lundblad) 07/01/2013 – (no cost ext.)
NKT Therapeutics Inc.
Role: PI

Selective elimination of iNKT cells on the asthmatic phenotype in experimental asthma
The goal of this pilot project is to study the effects of iNKT cell elimination in mouse model of mast cell – independent allergic airway inflammation. We will determine the role of iNKT cells on airways hyperresponsiveness and the airway inflammation in mice sensitized with ovalbumin.

RO1 HL124052 (Bates) 08/01/2014 – 03/31/2018
NIH/NHLBI
Role: Lundblad Co-investigator

Personalized mechanical ventilation for the injured lung

The goal of this project is to develop computational models of how ventilator-induced lung injury develops as a result of the stress and strains of mechanical ventilation, and link these models to lung mechanical function. Experiments will be performed in mouse models of ventilator-induced lung injury.

2R01HL085646-05A1. (van der Vliet)

07/01/2013-06/20/2018

NIH/NHLBI

Role: Lundblad Co-investigator

Dual oxidase in airway epithelial repair and inflammation

The goal of this grant is to establish the role of the NADPH oxidase DUOX1 in IL-33 secretion and subsequent allergic inflammation by protease allergens, to clarify the downstream redox mechanisms by which DUOX1 activation promotes IL-33 nuclear export and secretion, and to determine associations between DUOX1 and IL-33 in allergen-mediated airway inflammation and airway responsiveness in mice and in nasal epithelial cells or secretions from healthy human subjects and subjects with allergic asthma in response to allergen challenge.

1R01HL107291-A1 (Poynter)

04/01/2012 – 03/31/2017

NIH/NHLBI

Role: Lundblad Co-investigator

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 wild type 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.

1R01EB020964 (Oldinski)

9/1/2016-8/31/2020

NIH/NIBIB

Role: Lundblad Co-investigator

Development of a polysaccharide-based patch for use as a therapeutic lung sealant

The goal of the current proposal is to provide a tissue sealant for lung injuries as well as control the release of therapeutics to encourage wound healing. An alginate and hyaluronan blend material will be formed into a patch, for immediate adhesion to lung tissue. The patch shall be elastic, and facilitate wound healing with the introduction of biologics such as fibroblast growth factor.

Harvard School of Public Health (Lundblad)

01/01/16 – 12/31/17

Subcontract through Harvard (Gates Foundation)

Role: PI

Toward development of a human challenge strain: microbial construct assessment for volatile biomarkers

The goal of this project is to evaluate the utility of using volatile molecules to determine the bacterial burden for *Mycobacteria*.

Prema Menon, MD PhD

Improving Communication with Mechanically Ventilated Patients

University of Vermont FISAR Grant

\$40,000

Improving Family Satisfaction with Communication in the ICU

UVM Medical Group

\$50,000

Utilizing a novel tool to improve communication with mechanically ventilated patients

UVM College of Medicine Health Services Pilot Grant

\$50,000

Matthew Poynter, PhD

R01-HL133920 (Poynter & Dixon)

08/15/2016-07/30/2021

3.6 calendar

NIH/NHLBI

ADC: \$497,231

Role: MPI

Obese allergic asthma and the impact of weight loss on airway epithelial function

Our objective is to explore the contribution of the specific cells and their secreted mediators that are released from visceral adipose tissue of obese allergic asthmatics to the mitochondrial function of airway epithelial cells and their activation by allergen, which then cause the structural alterations and methacholine hyperresponsiveness that manifest in severe disease in obese allergic asthmatics.

R01-HL107291 (Poynter)

04/01/2012 – 02/28/2016

3.00 calendar

No cost extension until 02/28/2017

NI/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.

UVM Discoveries (Poynter) VT Agency of Commerce Role: PI	11/01/2015-06/30/2017 TDC: \$20,000	0.0 calendar
Short-chain alcohol inhibition of NLRP3 inflammasome activation Our objectives are to further refine the structural requirements for our alcohol-based NLRP3 inflammasome inhibitors and to test the hypothesis that it is through phosphatase activation that this inhibition is elicited.		
R01-HL122383 (Anathy) NIH/NHLBI Role: Co-I	01/01/2015-12/31/2019 ADC: \$250,000	0.9 calendar
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.		
R21-AI112804 (Lundblad) NIH/NIAID Role: Co-I	07/01/2014-06/30/2017 ADC: \$137,500	1.0 calendar
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.		
T32 HL076122 (Irvin) NIH / NHLBI Role: Co-Director (pre-doctoral training)	04/01/2004-04/30/2019 ADC: \$418,722	0.6 calendar
Multidisciplinary training in lung biology The major goal of this training grant is to produce outstanding, independent biomedical scientists who investigate the mechanisms, manifestations, preventions and cures for lung disorders.		
R01ES021476 (van der Vliet) NIH / NIEHS Role: Co-I	06/07/2012-08/31/2017 (NCE) ADC: \$250,000	0.0 calendar
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.		
VCIID Pilot Project (Poynter) NIH / NIGMS	10/01/2015-06/30/2017 ADC: \$49,091	0.0 calendar

Role: PI

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

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.

Renee Stapleton, MD PhD

Nutrition and Exercise in Critical Illness (The NEXIS Trial): A Randomized Trial of Combined Cycle Ergometry and Amino Acids in the ICU

R01 HL132887, 4/01/2017-3/31/2022 NIH/NHLBI Direct: \$ 2,884,464

Role: PI

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

Charlotte Teneback, MD

Clinical pharmacy support grant, PI. Funding for cystic fibrosis clinical pharmacy support. January 2017-December 2019. \$200,000. No salary support.

Cystic Fibrosis Therapeutic Development Center Award, January 2017-December 2017. \$82,890.

Includes salary support.

PIPE Award: Principal Investigator Protected Effort Award, Cystic Fibrosis Foundation, January 2017-December 2017. \$24,649. Salary support.

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

The EASY study: An Open-Label Study Evaluating the Efficacy and Safety of Liprotamase in Subjects with Exocrine Pancreatic Insufficiency due to Cystic Fibrosis (Extended Access to Sollpura over Years). Anthera Pharmaceuticals. Local PI. \$18,750. Indirect salary support.

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. Local PI. \$46,000. Indirect salary support.

Completed:

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. Completed

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

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

Daniel Weiss, MD PhD

R01 HL127144-01 (DJ Weiss, PI)	4/30/2015-3/31/2019	4.8 calendar
NIH/NHLBI	\$250,000	

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.

R21 EB024329 (DJ Weiss, PI)	02/15/2017-01/31/2019	1.2 calendar
NIH/NHLBI	\$124,799	

Decellularized Avian Lungs for Use in Pulmonary Therapeutics

The goals of this project are to fully characterize de- and recellularization of representative avian lung, develop initial technologies for novel Avian Lung Assist Devices (ALAD) incorporating recellularized avian lungs that could be potentially utilized for independent, portable or implantable lung assist devices.

United Therapeutics Inc. (DJ Weiss PI) 11/1/2015-11/10/2017 0.6 calendar
\$176,929 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

Cystic Fibrosis Research Grant (DJ Weiss, C dos Santos Co-PIs)
WEISS15XX0 1/1/2016-12/31/2017 0.6 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.

University of Vermont Dept. of Surgery Internal Grant (L Fabricant PI, DJ Weiss Co-I)
8/1/2016-7/31/2017 0 calendar
\$11,000 total

Assess the use of novel materials including modified alginates in an in vitro porcine lung injury model

The major goal of this project is to assess the use of novel materials including modified alginates in an in vitro porcine lung injury model.

Department of Defense, US Army SBIR Phase 1 (J Fortune PI, DJ Weiss CO-I)
9/1/2016-4/1/17 0 calendar
\$140,910 total

Devices to Prevent and Treat Retained Hemothorax after Chest Injury

The major goal of this project is to develop a new chest tube device

Cystic Fibrosis Research Grant (DJ Weiss, PI)
WEISS16GO 3/1/2017-2/28/2019 0.90 calendar
\$100,000 annual direct

Mechanisms of MSC Actions that Ameliorate Bacterial Lung Infections in CF

The major goal of this project is to further understand the mechanisms by which the mesenchymal stromal cells (MSCs) may be beneficial in treating bacterial infections in lungs of CF patients and use this to maximize any potential therapeutic approaches.

R13 (Weiss)

07/01/2017 – 06/30/2018

0.24 calendar

NIH/NHLBI

\$30,000

Stem Cell, Cell Therapies and Bioengineering in Lung Biology and Lung Diseases

The goals of this project are: 1) To convene national and international experts in stem cells and lung biology to discuss and debate recent advances in the roles of stem cells and cell therapies in lung biology and lung diseases. 2) To address critical issues in this field, including the role of endogenous lung progenitor cells, translational studies, and clinical cell therapy approaches for lung diseases. 3) To address breaking new areas in the field including embryonic stem cells, induced pluripotent stem cells, stem cells and lung cancer, and bioengineering approaches to lung regeneration. 4) To provide a forum for junior investigators, graduate students, post-doctoral associates, and pulmonary research fellows to participate and present data in poster format. 5) To craft a series of recommendations for the NHLBI, FDA, and other relevant organizations to utilize for guiding basic and translational research in stem cells and cell therapy approaches in lung diseases. These same guidelines will also be designed to help investigators pursue NIH and other funding opportunities.

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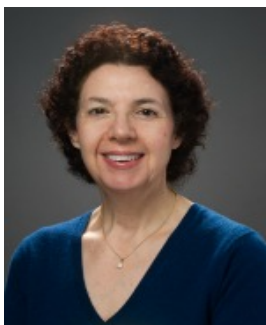
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Division of Rheumatology

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 seven physicians, a clinician pharmacist and a nurse practitioner. The Rheumatology Division and the Osteoporosis Center (a part of our division) welcomed over 13,000 patients, generating almost 18,000 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 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 continues to participate in a required outpatient rheumatology rotation where residents work with all of the faculty thus experiencing a variety of practice styles. All faculty participated in the successful launch of the Internal Medicine Academic Half Day. Several medical students completed one month elective rotations in our outpatient clinic. Each year we participate in the Vermont Integrated Curriculum Connections course for 2nd 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 and research such as: development of a fracture liaison service for the inpatient hospital; patient education on monitoring for hydroxychloroquine side effects; liver function test monitoring during methotrexate therapy in rheumatoid arthritis patients. We also continue to collaborate with the Division of Immunobiology on research in molecular physiology in rheumatoid arthritis and lupus patients.

Faculty

Narandra Bethina, M.D.

Assistant Professor of Medicine

Associate Program Director, Rheumatology Fellowship Training Program

- Rheumatoid Arthritis
- Psoriatic Arthritis
- Scleroderma
- Sjogren's Syndrome
- Gout
- Autoimmune disorders
- Musculoskeletal Ultrasound

Dr. Bethina manages patients with multiple rheumatologic conditions. Dr. Bethina is certified in Rheumatology through the American Board of Internal Medicine and in Musculoskeletal Ultrasound by American College of Rheumatology. He is the Rheumatology Division expert in diagnostic and procedural

(guided injections) Musculoskeletal Ultrasound procedures. He is an instructor and mentor for Rheumatology fellows from multiple institutions and rheumatologists in practice who participate in Musculoskeletal Ultrasound training through the USSONAR (Ultrasound School of North American Rheumatologists) training program. He also teaches at the national American College of Rheumatology meeting every year at the Musculoskeletal Ultrasound Course conducted by American College of Rheumatology. Dr. Bethina is the Associate Program Director for the Rheumatology Fellowship Program and in addition to teaching fellows, he teaches Internal Medicine residents during Morning Report and Academic Half Day, and medical students during their 2nd year VIC Connections course and their 4th year Internal Medicine clerkship.

Ralph Budd, M.D.

University Distinguished Professor of Medicine, Microbiology & Molecular Genetics

Director, Immunobiology and Vermont Center for Immunology and Infectious Diseases

- Systemic Lupus Erythematosus (SLE)
- Inflammatory Arthritis ($\gamma\delta$ T cells)
- T cell homeostatic proliferation in autoimmune diseases
- Metabolic regulation of cell death in the immune system

Dr. Budd and his team currently have investigations in four projects in immunology. The first is a study of the type I Interferon (IFN-I) signature in SLE. We observe that a mitochondrial protein known as MAVS spontaneously oligomerizes in SLE PBL leading to an IFN-I response, and this is driven by reactive oxygen species. Second, we are defining ligands for $\gamma\delta$ T cells that accumulate in inflamed joints in Lyme and rheumatoid arthritis. Third, our studies in T cell homeostatic proliferation reveal that this is enhanced in both mice and humans with SLE. This results in upregulation of several cytolytic molecules that could provoke inflammation of organs. This has implications for why it is important to eliminate these T cells, lest they precipitate autoimmune sequelae. Fourth, we have determined that the metabolic state of T cells greatly influences their susceptibility to cell death. Thus, glycolytic T cells, driven by IL-2, have elevated levels of active caspase-3 and are prone to cell death, whereas non-glycolytic T cells, driven by IL-15, manifest the opposite phenotype. This has important implications for rheumatoid arthritis in which the synovium is rich in IL-15. It is also relevant for which T cells survive an immune response to confer immune memory.

Dr. Budd was invited to give a seminar at the Lupus Research Alliance meeting, New York City, NY (October, 2016)

Dr. Budd is an editor of the *Textbook of Rheumatology* 10th 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:

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

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 and Co-investigator on several research projects that evaluate the effectiveness and mechanism of action of biologic drugs in the treatment of Rheumatoid Arthritis. A focus is on tocilizumab, a monoclonal antibody to the IL-6 receptor. Recent studies performed with Dr. Mercedes Rincon have demonstrated that IL-6 blockade selectively 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.

Dr. Cooper and Dr. Lau are collaborating on a research project to determine the most appropriate frequency for monitoring blood tests of liver enzymes in patients treated with methotrexate. The thesis is that abnormal liver function tests occur infrequently and irregularly, and rarely lead to changes in methotrexate use. They expect to show that the current recommendation for lab testing every 2-3 months is far too frequent. They are also analyzing what actions were taken when elevated transaminase levels were encountered.

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 certification. She teaches second year UVM medical students utilizing the innovative Team Based Learning technique, and teaches as part of the Internal Medicine 4th year clerkship. She teaches residents in Morning Report as well as during Internal Medicine Academic Half Day. Dr. Lau presented a well-received lecture on "Fibromyalgia" 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; this project was deemed worthy of biostatistics support awarded by the Department of Medicine. This was presented as a poster ("The Effect of Liver Enzyme Monitoring on Methotrexate Therapy in Rheumatoid Arthritis Patients") at Internal Medicine Fellow Research Day 6/2/17.

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, working with rotating internal medicine residents in clinic, participating in the Internal Medicine Academic Half Day, and teaching rheumatology fellows. He teaches 2nd year medical students during their VIC Connections course, and also 4th year medical students during their Internal Medicine clerkship. Working with Dr. Budd, he completed a research project on homeostatic T cell proliferation in patients with rheumatoid arthritis and lupus.

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. He presently serves as director of the Osteoporosis Center and heads the Metabolic Bone Clinics at the University of Vermont Medical Center. He continues to be actively engaged in research, most recently utilizing a new technology for ascertaining fracture risk called trabecular bone score (TBS). In 2016, 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 in 2016 and in 2017 is mentoring a medical student for a summer research project and a medical resident, now rheumatology fellow in a quality improvement project improving the identification of fracture patients and promoting ongoing care to prevent further fractures. He 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, class of 2016, \$3000 and student Anna Lidofsky, class of 2020, \$3000.

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, chief of the rheumatology division and director of the rheumatology fellowship program, was a member of the American College of Physicians (ACP) MKSAP 17 Rheumatology Committee; after successful publication of the MKSAP 17, she became a current member of the ACP MKSAP 18 Rheumatology Committee. She developed and implemented the annual Rheumatology Research Day, aimed at promoting research through communication and collaboration between clinicians and bench researchers. She is a member of the UVM Graduate Medical Education Committee. She chairs the UVM Medical Center Medical Records Committee. She teaches medical students during their 2nd year VIC Connections course and their 4th year Internal Medicine clerkship. She also teaches Internal Medicine residents during Morning Report, Academic Half Day and in clinic.

Grants:

Rheumatology Research Foundation Clinical Preceptorship Award with UVM

Medical Student Kyna Donohue, \$2000, 2017; supports clinical experience for medical student interested in rheumatology as a career choice

Ongoing Research Support

2015-present

CAIN457F2336: "A Phase III, Randomized, Double-Blind, Placebo-Controlled Multicenter Study of Subcutaneous secukinumab (150 mg) in Pre-filled Syringe, With or Without Loading Regimen, to Demonstrate Efficacy, Safety and Tolerability up to 2 years in Patients with Active Psoriatic Arthritis (FUTURE 4),"

Role: Principal Investigator

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.

Nurse Practitioners and Physician Assistants:

Morgan Merchand, APRN

Before joining the rheumatology division in March 2017, Ms. Merchand obtained her Masters of Science in Nursing: Family Nurse Practitioner degree in 2012 and worked at Dartmouth Hitchcock Medical Center. She is a member of the American Academy of Nurse Practitioners and the Association of Rheumatology Health Professionals.

Fellows

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

Completed fellowship in June 2017

Kateryna Bertuch, M.D.

Will complete fellowship July 2018

Javaneh Tamiji, M.D.

Will begin fellowship July 2017

Publications – peer reviewed, chapters, etc.

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Department of Medicine
FY2017 UVM Research Funding by Division by PI

Division	PI	Sponsor	Project Title	Start	End	Direct	Indirect	Total
Cardiology	Kelm, Robert J	American Heart Association - Founders Affiliate	Role of PURB in Controlling the Phenotypic Plasticity of Vascular Smooth Muscle Cells	01-Jul-16	30-Jun-18	\$ 140,000	\$ 14,000	\$ 154,000
Cardiology	LeWinter, Martin M	University of Arizona	Myofibril Based Mechanisms of Diastolic Dysfunction in HFpEF	01-Jul-16	30-Jun-17	\$ 193,000	\$ 101,325	\$ 294,325
Cardiology	Meyer, Markus F.	National Heart, Lung, and Blood Institute/NIH/DHHS	Sarcolemmal Calcium Extrusion Defect in Patients with Diastolic Dysfunction	01-Apr-17	31-Mar-18	\$ 244,750	\$ 128,100	\$ 372,850
Cardiology	Schneider, David John	Janssen Research and Development	Novel Biomarkers of Thrombotic Risk	01-Jul-15	31-Dec-99	\$ 9,167	\$ 1,760	\$ 10,927
Cardiology	Schneider, David John	Janssen Research and Development	Novel Biomarkers of Thrombotic Risk	01-Jul-16	30-Jun-17	\$ 36,383	\$ 10,187	\$ 46,571
Cardiology	Spector, Peter S	Medtronic, Inc	Distinguished Research Center Agreement - Master Agreement	06-Dec-16	15-Dec-19	\$ -	\$ -	\$ -
Cardiology	Spees, Jeffrey L.	National Heart, Lung, and Blood Institute/NIH/DHHS	Vascular Protection by HGF/IgG Protein Complexes That Activate RYK	01-Apr-17	31-Mar-18	\$ 223,651	\$ 124,406	\$ 348,057
Cardiology	Toth, Michael John	National Institute of Arthritis & Musculoskeletal & Skin Diseases/NIH/DHHS	Skeletal Muscle Atrophy and Dysfunction in Human Cancer	01-Jul-16	30-Jun-17	\$ 271,701	\$ 147,260	\$ 418,961
Cardiology	Toth, Michael John	National Institute of Arthritis & Musculoskeletal & Skin Diseases/NIH/DHHS	Prevention of Skeletal Muscle Adaptations to Traumatic Knee Injury and Surgery	01-Sep-16	31-Aug-17	\$ 132,000	\$ 72,435	\$ 204,435
Cardiology	Toth, Michael John	National Institute on Aging/NIH/DHHS	Skeletal Muscle Atrophy and Dysfunction Following Total Knee	01-Sep-16	31-May-17	\$ 294,306	\$ 160,397	\$ 454,703
Cardiology	Toth, Michael John	National Cancer Institute/NIH/DHHS	Alternative Exercise Modalities to Improve Skeletal Muscle Function in Cancer Survivors	01-Apr-17	31-Mar-18	\$ 108,830	\$ 60,414	\$ 169,244
Cardiology	Toth, Michael John	National Institute of Arthritis & Musculoskeletal & Skin Diseases/NIH/DHHS	Skeletal Muscle Atrophy and Dysfunction in Human Cancer	01-Jul-17	30-Jun-18	\$ 272,316	\$ 147,520	\$ 419,836
Cardiology	Van Buren, Peter C	Duke University	Inorganic Nitrite Delivery to Improve Exercise Capacity in HFpEF	06-Oct-16	31-Oct-18	\$ 4,200	\$ -	\$ 4,200
Cardiology	Van Buren, Peter C	Duke University	Characterizing HIV-related Diastolic Dysfunction	14-Dec-16	31-Oct-18	\$ -	\$ -	\$ -
Cardiology	Van Buren, Peter C	National Heart, Lung, and Blood Institute/NIH/DHHS	New England, New York and Quebec Regional Clinical Center	01-Jan-17	31-Dec-17	\$ 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	01-Jul-16	30-Jun-17	\$ 39	\$ 11	\$ 50
Cardiology Total						\$ 2,222,904	\$ 1,005,534	\$ 3,228,439
GI	Jensen, Gordon L	Geisinger Clinic	Rural Aging Study	01-Aug-16	31-Jul-17	\$ 18,181	\$ 1,819	\$ 20,000
GI Total						\$ 18,181	\$ 1,819	\$ 20,000
GIMR	LaMantia, Michael A	National Institute on Aging/NIH/DHHS	Delirium Evaluation in the Emergency Department for Seniors (DEEDS)	01-May-17	31-Mar-18	\$ 115,130	\$ 9,050	\$ 124,180
GIMR	MacLean, Charles D	Vermont AHS Department of Health	FY17 Vermont Academic Detailing Program	01-Jul-16	30-Jun-17	\$ 144,928	\$ 55,072	\$ 200,000
GIMR	MacLean, Charles D	Health Resources and Services Administration/DHHS	Model State-Supported Area Health Education Centers (VT AHEC)	01-Sep-16	31-Aug-17	\$ 310,457	\$ 5,858	\$ 316,315
GIMR	MacLean, Charles D	Vermont AHS Department of Health	Hypertension and Diabetes Panel Management Quality Improvement Project	01-Oct-16	30-Jun-18	\$ 81,169	\$ 30,845	\$ 112,014
GIMR	MacLean, Charles D	Vermont AHS Department of Health	Prescription Drug Overdose Prevention	01-Dec-16	30-Nov-17	\$ 108,980	\$ 41,412	\$ 150,392
GIMR Total						\$ 760,664	\$ 142,237	\$ 902,901
Hem/Onc	Cushman, Mary	University of Minnesota	Epidemiology of Venous Thrombosis and Pulmonary Embolism	01-Apr-16	31-Mar-17	\$ 22,704	\$ 11,919	\$ 34,623
Hem/Onc	Cushman, Mary	University of North Carolina	The National Longitudinal Study of Adolescent Health	01-May-16	30-Apr-17	\$ 222,868	\$ 106,437	\$ 329,306
Hem/Onc	Cushman, Mary	University of North Carolina	Social Context, the Life Course, and Genetic Transcription in Add Health	09-Sep-16	31-May-17	\$ 40,433	\$ 15,005	\$ 55,438
Hem/Onc	Cushman, Mary	University of Minnesota	Epidemiology of Venous Thrombosis and Pulmonary Embolism	01-Apr-17	31-Mar-18	\$ 223,963	\$ 124,581	\$ 348,544
Hem/Onc	Cushman, Mary	University of Alabama at Birmingham	Etiology of Geographic and Racial Differences in Stroke Mortality	01-Dec-16	30-Nov-17	\$ 223,238	\$ 123,067	\$ 346,305
Hem/Onc	Greenblatt, Marc Steven	University of North Carolina	A Knowledge Base for Clinically Relevant Genes and Variants	01-Aug-16	31-Jul-17	\$ 23,675	\$ 12,429	\$ 36,104
Hem/Onc	Greenblatt, Marc Steven	University of Utah	Classifying DNS Mismatch Repair Gene Variants of Unknown Significance	01-Mar-17	28-Feb-18	\$ 22,823	\$ 12,667	\$ 35,490
Hem/Onc	Rehman, Hibba Tul	Fibrolamellar Cancer Foundation	Screening for Inhibitors of the Fibrolamellar Hepatocellular Carcinoma DnaJ-PRKACA Chimeric Protein	01-Jan-17	31-Dec-17	\$ 65,245	\$ -	\$ 65,245
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	01-Jul-16	30-Jun-17	\$ 27,183	\$ 7,611	\$ 34,794
Hem/Onc	Wood, Marie E.	Mayo Clinic	Alliance Cancer Control Program - Prevention Committee Co-Chair Salary Support	05-Nov-16	04-Nov-17	\$ 17,006	\$ 9,358	\$ 26,364
Hem/Onc	Wood, Marie E.	Mayo Clinic	Alliance NCORP Research Base - Protocol Development	24-Feb-17	31-Jul-17	\$ 4,917	\$ 2,729	\$ 7,646
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	01-May-16	26-May-16	\$ 262	\$ 138	\$ 400
Hem/Onc	Zakai, Neil A	Northern New England Clinical Oncology Society	Relative and Absolute Platelet Count Drops as a Risk Factor for Mortality, Bleeding and Thrombosis in Hospitalized Oncology Patients	01-Jul-16	01-Jul-17	\$ 2,085	\$ -	\$ 2,085
Hem/Onc Total						\$ 896,402	\$ 425,941	\$ 1,322,344

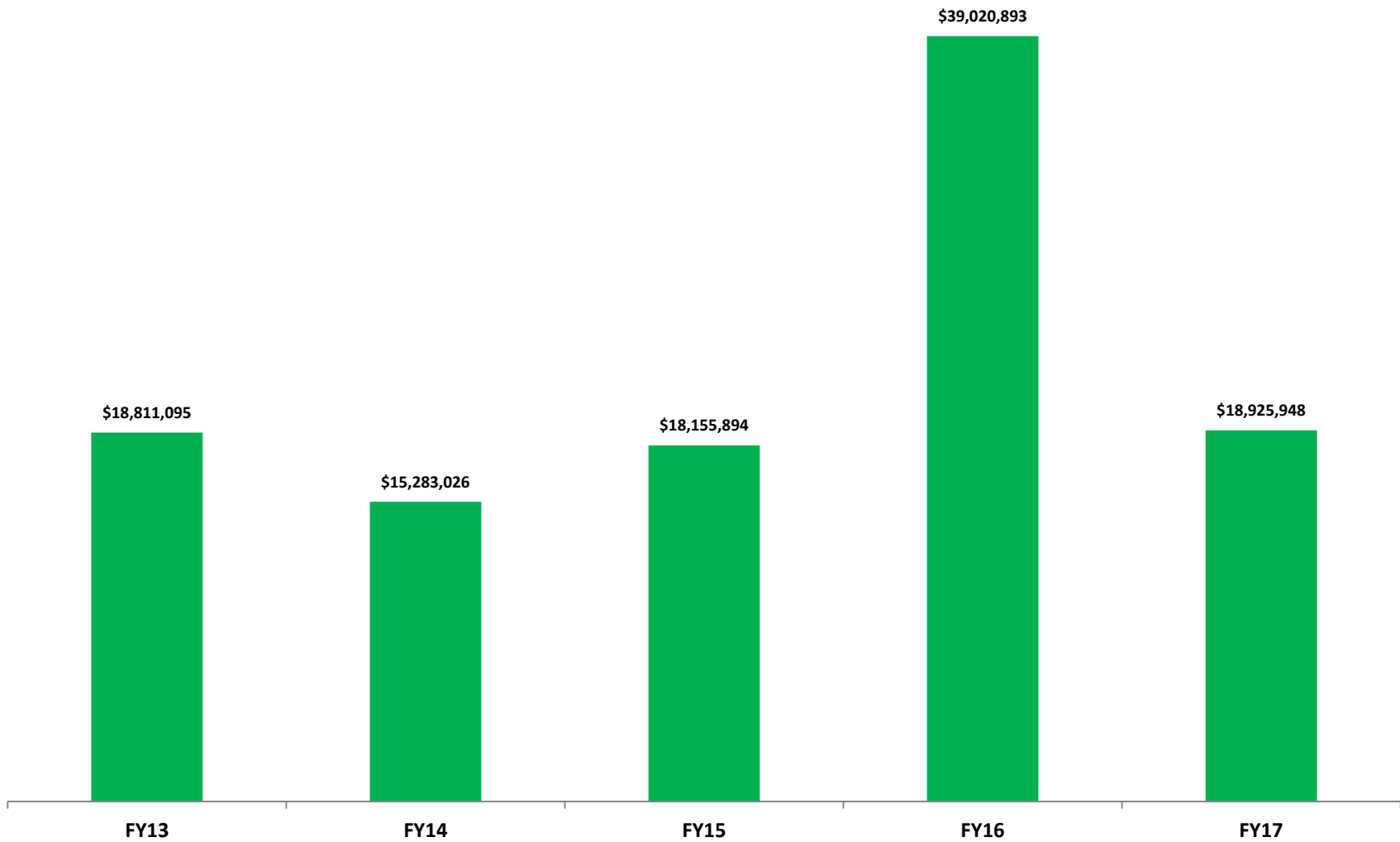
Department of Medicine
FY2017 UVM Research Funding by Division by PI

Division	PI	Sponsor	Project Title	Start	End	Direct	Indirect	Total
Immunobiology	Budd, Ralph C	National Institute of Allergy and Infectious Diseases/NIH/DHHS	Vermont Immunology / Infectious Diseases Training Grant	01-Sep-16	31-Aug-17	\$ 178,304	\$ 9,144	\$ 187,448
Immunobiology	Budd, Ralph C	National Institute of General Medical Sciences/NIH/DHHS	Vermont Immunology/Infectious Diseases Center	05-Aug-16	31-Jul-17	\$ 748,115	\$ 409,593	\$ 1,157,708
Immunobiology	Budd, Ralph C	National Institute of Allergy and Infectious Diseases/NIH/DHHS	Structure and Ligand(s) for Human Synovial TCR-Gamma/Delta	01-Jan-17	31-Dec-17	\$ 151,000	\$ 41,438	\$ 192,438
Immunobiology	Budd, Ralph C	National Institute of Allergy and Infectious Diseases/NIH/DHHS	Metabolic Regulation of Caspases and Survival in T Cells	01-Apr-17	31-Mar-18	\$ 150,001	\$ 83,438	\$ 233,439
Immunobiology	Budd, Ralph C	National Institute of Allergy and Infectious Diseases/NIH/DHHS	Vermont Immunology / Infectious Diseases Training Grant	01-Sep-17	31-Aug-18	\$ 178,304	\$ 9,144	\$ 187,448
Immunobiology	Krementsov, Dmitry N	National Multiple Sclerosis Society	Mechanisms of Sex-Specific p38 MAPK-Mediated Pathogenesis in CNS Autoimmunity	01-Oct-16	30-Sep-19	\$ 502,586	\$ 50,259	\$ 552,845
Immunobiology	Krementsov, Dmitry N	National Institute of Neurological Disorders and Stroke/NIH/DHHS	Interactions Between Host Genetics and the Gut Microbiome in CNS Autoimmunity	15-Mar-17	31-Jan-18	\$ 220,543	\$ 119,340	\$ 339,883
Immunobiology	Rincon, Mercedes	National Institute of Allergy and Infectious Diseases/NIH/DHHS	GSK3B in TCR Repertoire and Immune Diseases	05-Aug-16	31-Jul-17	\$ 268,375	\$ 131,100	\$ 399,475
Immunobiology	Rincon, Mercedes	National Institute of General Medical Sciences/NIH/DHHS	Fostering Entrepreneurship in Biomedical Research	01-Apr-17	28-Feb-18	\$ 388,902	\$ 182,606	\$ 571,508
Immunobiology	Teuscher, Cory	National Institute of Neurological Disorders and Stroke/NIH/DHHS	Gene-Environment Interactions in CNS Autoimmune Disease	15-Jun-16	31-May-17	\$ 149,981	\$ 81,707	\$ 231,688
Immunobiology	Teuscher, Cory	National Institute of Allergy and Infectious Diseases/NIH/DHHS	Genome-Wide Physical Mapping of IAV-QTL	01-Dec-16	30-Nov-17	\$ 150,563	\$ 82,125	\$ 232,688
Immunobiology	Teuscher, Cory	University of Utah	Molecular Genetics of Lyme Arthritis	01-Jul-16	30-Jun-17	\$ 50,000	\$ 26,250	\$ 76,250
Immunobiology	Teuscher, Cory	National Institute of Neurological Disorders and Stroke/NIH/DHHS	Gene-Environment Interactions in CNS Autoimmune Disease	01-Jun-17	31-May-18	\$ 124,899	\$ 69,944	\$ 194,843
Immunobiology Total						\$ 3,261,573	\$ 1,296,088	\$ 4,557,661
Infectious Diseases	Diehl, Sean A	University of North Carolina	Molecular Basis of Dengue Virus Neutralization by Human Antibodies	01-Aug-16	31-Jul-18	\$ 100,895	\$ 51,274	\$ 152,169
Infectious Diseases	Huston, Christopher Dwight	Anacor Pharmaceuticals, Inc.	Discovery of Benzoxaboroles for the Treatment of Cryptosporidiosis	19-Aug-16	31-Mar-17	\$ 3,993	\$ 399	\$ 4,392
Infectious Diseases	Huston, Christopher Dwight	Gates (Bill and Melinda) Foundation	Continuous Cryptosporidium Propagation by Inhibiting Sexual Differentiation	01-Nov-16	30-Apr-18	\$ 100,000	\$ -	\$ 100,000
Infectious Diseases	Huston, Christopher Dwight	Structural Genomics Consortium	Structure-Guided Drug Discovery of Tuberculosis and Malaria	01-Nov-16	31-Dec-17	\$ 48,727	\$ 4,873	\$ 53,600
Infectious Diseases	Huston, Christopher Dwight	National Institute of Allergy and Infectious Diseases/NIH/DHHS	Continuous In Vitro Culture and Treatment of Cryptosporidium Using Small Molecule Differentiation Inhibitors	25-Jan-17	31-Dec-17	\$ 127,141	\$ 66,922	\$ 194,063
Infectious Diseases	Huston, Christopher Dwight	Broad Institute	Chemical Diversity Towards Malaria and Tuberculosis	01-Oct-16	31-Aug-17	\$ 140,115	\$ 14,011	\$ 154,126
Infectious Diseases	Huston, Christopher Dwight	Merck KGaA - EMD Serono, Inc.	Screening the Merck Serono Mini Library for Cryptosporidium Parvum Inhibitors	01-Nov-16	31-Oct-17	\$ 35,807	\$ 19,336	\$ 55,143
Infectious Diseases	Huston, Christopher Dwight	PATH	PATH Cryptosporidium Strain/Species Comparative Studies	13-Mar-17	31-Mar-18	\$ 191,173	\$ 18,391	\$ 209,564
Infectious Diseases	Kirkpatrick, Beth D.	National Institute of Allergy and Infectious Diseases/NIH/DHHS	A Phase I/II Trial of the Safety, Tolerability and Immunogenicity of a Live Attenuated Tetravalent Dengue Virus Vaccine in Adults in Dengue-Endemic Bangladesh	30-Jun-16	31-May-17	\$ 154,265	\$ 79,713	\$ 233,978
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	\$ 45,455	\$ 4,545	\$ 50,000
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	01-Sep-16	30-Jun-18	\$ 1,561,668	\$ 441,129	\$ 2,002,797
Infectious Diseases	Lee, Benjamin	Hood (Charles H.) Foundation	The Effects of Increased Inoculum on Oral Rotavirus Vaccine Take and Immunogenicity	01-Jan-17	30-Dec-18	\$ 136,364	\$ 13,636	\$ 150,000
Infectious Diseases Total						\$ 2,645,603	\$ 714,229	\$ 3,359,832
Nephrology	Cheung, Katharine L	American Society of Nephrology	Geriatric Nephrology/Palliative Care Small Grant	01-Jul-16	30-Jun-17	\$ 4,878	\$ -	\$ 4,878
Nephrology Total						\$ 4,878	\$ -	\$ 4,878
Pulmonary	Antkowiak, MaryEllen	United Therapeutics Corporation	The Effect of Obesity on Biomarkers of Endothelial Dysfunction and Inflammation in Pulmonary Arterial Hypertension	06-Jul-16	05-Jul-19	\$ 19,293	\$ 10,707	\$ 30,000
Pulmonary	Bates, Jason H.	National Heart, Lung, and Blood Institute/NIH/DHHS	Non-Allergic Late-Onset Asthma of Obesity: Pathophysiology and Therapy	01-Mar-17	28-Feb-18	\$ 378,472	\$ 199,507	\$ 577,979
Pulmonary	Bates, Jason H.	National Heart, Lung, and Blood Institute/NIH/DHHS	Personalized Mechanical Ventilation for the Injured Lung	01-Apr-17	31-Mar-18	\$ 466,695	\$ 120,504	\$ 587,199
Pulmonary	Carney, Jan Kirk	Boston University	New England Public Health Training Center (NEPHTC)	01-Sep-16	31-Aug-17	\$ 46,296	\$ 3,704	\$ 50,000
Pulmonary	Dixon, Anne Elizabeth	National Heart, Lung, and Blood Institute/NIH/DHHS	Trial of Roflumilast in Asthma Management (TRIM)	01-May-17	30-Apr-18	\$ 163,395	\$ 39,883	\$ 203,278

Department of Medicine
FY2017 UVM Research Funding by Division by PI

Division	PI	Sponsor	Project Title	Start	End	Direct	Indirect	Total
Pulmonary	Dixon, Anne Elizabeth	National Heart, Lung, and Blood Institute/NIH/DHHS	Pilot of Lifestyle in Asthma Intervention (PLAN)	01-May-17	30-Apr-18	\$ 182,293	\$ 79,895	\$ 262,188
Pulmonary	Dixon, Anne Elizabeth	Pfizer Inc., U.S. Pharmaceuticals Group	Biomarkers in Uncontrolled Asthma	01-Jul-16	31-Dec-16	\$ 60,199	\$ 15,652	\$ 75,851
Pulmonary	Irvin, Charles G	National Institute of General Medical Sciences/NIH/DHHS	Translation Research in Lung Biology and Disease	01-Aug-14	30-Jun-17	\$ 295,327	\$ 109,225	\$ 404,552
Pulmonary	Irvin, Charles G	National Heart, Lung, and Blood Institute/NIH/DHHS	Multidisciplinary Training in Lung Biology	01-May-17	30-Apr-18	\$ 236,645	\$ 9,971	\$ 246,616
Pulmonary	Irvin, Charles G	National Heart, Lung, and Blood Institute/NIH/DHHS	Multidisciplinary Training in Lung Biology	01-Dec-16	30-Apr-17	\$ 4,599	\$ 368	\$ 4,967
Pulmonary	Irvin, Charles G	American Lung Association	Airways Clinical Research Center (ACRC) Core Award	01-Jul-17	30-Jun-18	\$ 100,000	\$ -	\$ 100,000
Pulmonary	Kinsey, C. Matthew	National Heart, Lung, and Blood Institute/NIH/DHHS	CT Characteristics of Emphysema for Evaluation of Pulmonary Nodules	01-Sep-16	31-Jul-17	\$ 165,436	\$ 13,235	\$ 178,671
Pulmonary	Leclair, Laurie W.	Cystic Fibrosis Foundation	Coordination of Mental Health Services for CF Patients and Care Givers	01-Jan-17	31-Dec-17	\$ 50,370	\$ 4,030	\$ 54,400
Pulmonary	Lundblad, Lennart K.A.	Harvard University	Toward Development of a Human Challenge Strain: Microbial Construct Assessment for Volatile Biomarkers	01-Mar-16	28-Feb-17	\$ 9,772	\$ 977	\$ 10,749
Pulmonary	Lundblad, Lennart K.A.	Dartmouth College	Toward Rapid, Non-Invasive, Highly Sensitive, Multiplex Detection of Respiratory Pathogens	10-Mar-16	28-Feb-17	\$ 43,214	\$ 23,485	\$ 66,699
Pulmonary	Lundblad, Lennart K.A.	Dartmouth College	Toward Rapid, Non-Invasive, Highly Sensitive, Multiplex Detection of Respiratory Pathogens	01-Mar-17	28-Feb-18	\$ 43,794	\$ 24,361	\$ 68,155
Pulmonary	Poynter, Matthew Edward	National Heart, Lung, and Blood Institute/NIH/DHHS	Obese Allergic Asthma and the Impact of Weight Loss on Airway Epithelial Function	15-Aug-16	31-Jul-17	\$ 495,446	\$ 270,655	\$ 766,101
Pulmonary	Smith, Bradford J	National Heart, Lung, and Blood Institute/NIH/DHHS	The Importance of Inhomogeneity in the Pathogenesis of Lung Injury	01-Jul-16	31-Aug-16	\$ 103,735	\$ 8,009	\$ 111,744
Pulmonary	Stapleton, Renee D.	Social & Scientific Systems, Inc.	A Randomized Double-Blind, Phase 3 Study Comparing the Efficacy and Safety of High-Titer Versus Low-Titer Anti-Influenza Immune Plasma for the Treatment of Severe Influenza A	20-Jun-16	30-Sep-16	\$ 13,956	\$ 5,643	\$ 19,599
Pulmonary	Stapleton, Renee D.	National Heart, Lung, and Blood Institute/NIH/DHHS	Nutrition and Exercise in Critical Illness (The NEXIS Trial): A Randomized Trial of Combined Cycle Ergometry and Amino Acids in the ICU	01-Apr-17	31-Mar-18	\$ 597,366	\$ 136,959	\$ 734,325
Pulmonary	Stapleton, Renee D.	Social & Scientific Systems, Inc.	A Randomized Double-Blind, Phase 3 Study Comparing the Efficacy and Safety of High-Titer Versus Low-Titer Anti-Influenza Immune Plasma for the Treatment of Severe Influenza A	20-Jun-16	30-Sep-17	\$ 9,615	\$ 5,380	\$ 14,995
Pulmonary	Stapleton, Renee D.	Social & Scientific Systems, Inc.	A Randomized Double-Blind, Phase 3 Study Comparing the Efficacy and Safety of High-Titer Versus Low-Titer Anti-Influenza Immune Plasma for the Treatment of Severe Influenza A	01-Jul-16	30-Jun-17	\$ 16,026	\$ 8,974	\$ 25,000
Pulmonary	Teneback, Charlotte C	Seattle Children's Hospital	Standardized Treatment of Pulmonary Exacerbations II (STOP 2)	01-Jan-16	31-Dec-99	\$ -	\$ -	\$ -
Pulmonary	Teneback, Charlotte C	Cystic Fibrosis Foundation	Award for a Pharmacist and Pharmacy Technician	01-Nov-16	31-Oct-17	\$ 62,000	\$ 4,960	\$ 66,960
Pulmonary	Teneback, Charlotte C	Cystic Fibrosis Foundation Therapeutics, Inc.	Cystic Fibrosis Foundation Research Support	01-Dec-16	30-Nov-17	\$ 28,136	\$ 2,251	\$ 30,387
Pulmonary	Teneback, Charlotte C	Cystic Fibrosis Foundation Therapeutics, Inc.	Therapeutics Development Center	01-Jan-17	31-Dec-17	\$ 76,749	\$ 6,141	\$ 82,890
Pulmonary	Teneback, Charlotte C	Cystic Fibrosis Foundation Therapeutics, Inc.	Therapeutics Development Center	01-Jan-17	31-Dec-17	\$ 22,823	\$ 1,826	\$ 24,649
Pulmonary	Teneback, Charlotte C	Seattle Children's Hospital	Standardized Treatment of Pulmonary Exacerbations II (STOP 2)	01-Jul-16	30-Jun-17	\$ 7,844	\$ 628	\$ 8,471
Pulmonary	Weiss, Daniel J	United Therapeutics Corporation	Stem Cells, Cell Therapies and Bioengineering and Lung Biology and Diseases	24-Jul-17	26-Jul-17	\$ 5,000	\$ -	\$ 5,000
Pulmonary	Weiss, Daniel J	National Institute of Biomedical Imaging and Bioengineering/NIH/DHHS	Decellularized Avian Lungs for Use in Pulmonary Therapeutics	15-Feb-17	31-Jan-18	\$ 124,899	\$ 69,319	\$ 194,218
Pulmonary	Weiss, Daniel J	Alpha-1 Foundation	2017 Stem Cell Conference	01-Jul-17	31-Aug-17	\$ 5,000	\$ -	\$ 5,000
Pulmonary	Weiss, Daniel J	Cystic Fibrosis Foundation	Mechanisms of MSC Actions that Ameliorate Bacterial Lung Infections in CF	01-Mar-17	28-Feb-18	\$ 100,000	\$ 8,000	\$ 108,000
Pulmonary	Weiss, Daniel J	National Heart, Lung, and Blood Institute/NIH/DHHS	Optimizing Functional Recellularization of Acellular Human Lung Scaffolds	01-Apr-17	31-Mar-18	\$ 250,000	\$ 131,250	\$ 381,250
Pulmonary	Weiss, Daniel J	National Heart, Lung, and Blood Institute/NIH/DHHS	Stem Cell, Cell Therapies, and Bioengineering in Lung Biology and Lung Diseases	01-Jul-17	30-Jun-18	\$ 30,000	\$ -	\$ 30,000
Pulmonary Total						\$ 4,214,395	\$ 1,315,499	\$ 5,529,893
Grand Total						\$ 14,024,600	\$ 4,901,347	\$ 18,925,948

Department of Medicine
UVM Research Funding (Direct & Indirect), FY13-FY17



Department of Medicine UVM Research Funding (Direct & Indirect) by Division, FY2013-FY2017

