
THE
University of Vermont
MEDICAL CENTER

Department of Medicine

ANNUAL REPORT

July 1, 2017 – June 30, 2018

Submitted by:

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E.L. Amidon Chair and Professor
Department of Medicine

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Department of Medicine

Annual Report 2017-2018



Chair's Executive Summary

The Department of Medicine had another incredible year: we welcomed 25 faculty (with an additional 15 new faculty already hired to start in the current calendar year and two in 2019), and celebrated the numerous achievements and recognition awards of our faculty, staff, house staff 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, Dermatology, Endocrinology, General Internal Medicine & Geriatrics, Hematology Oncology, Hospital Medicine, Infectious Disease, Immunobiology, Nephrology, and Rheumatology. They are helping to further collaboration between community and faculty colleagues and increase access to services in the region. In addition, new clinical services include ablation for ventricular tachycardia, the development of a statewide Antibiotic Stewardship Program, the development of a pathway in Cardiology for post-discharge care resulting in decrease readmissions; telemedicine for Dermatology, Infectious Disease, and Endocrine; enhanced endoscopic techniques in GI, expanded inpatient coverage in Hospital Medicine, a weight management program, and expansion into population health.

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, the Education Council, chaired by Kathryn Huggett, PhD., meets monthly to review education topics, issues, and initiatives. Garth Garrison, MD, E. Rosy Hill, MD, and Joel Schnure, MD recently became members of the Teaching Academy, and Emily Hadley Strout, MD became a Protégé of the Academy.

Education Council highlights from 2017-2018 included presentations and discussions on the following topics:

- Christa Zehle, MD, Associate Dean for Students, provided an update on NRMP procedures and LCOM match outcomes;

- Keith Curtis, MD, presented an overview of the medical student Point of Care Ultrasound (POCUS) curriculum;
- Adam Atherly, PhD, Director of Health Services Research Center, gave an overview of the Center and the council discussed how the Center could fit in with student education;
- Louis Polish, MD and Jason Bartsch, MD shared information about enhancements to the medical student clerkship

The faculty continue to receive awards including, but not limited, the following:

- *The Dean's Excellence in Research Awards 2017: Trainee Award for Outstanding Research Publication/Medical Student:* Katharine Runte, M.D. (mentor: Markus Meyer, M.D., Medicine);
- *Trainee Award for Outstanding Research Publication/Residents:* Kara Landry, M.D.'15, Clinical Instructor in Medicine (mentor: Mary Cushman, M.D., M.Sc., Medicine);
- *Mid-Career Investigator:* Christopher Huston, M.D., associate professor of medicine;

UVM Health Network Medical Group Awards presented by Claude Deschamps, M.D., president and CEO of the UVM Health Network Medical Group:

- *Junior Researcher of the Year:* Kim Dittus, M.D., Ph.D., assistant professor of medicine;
- *Senior Researcher of the Year:* Beth Kirkpatrick, M.D., professor of medicine.
- *The Frymoyer Scholar Award* went to **Andrew Hale, MD, and Steve Lidofsky, MD, PhD** Optimizing Care for Vermonters Infected with Hepatitis C Virus through a Statewide Educational Curriculum.

The Class of 2018 awards:

- *Clinical Teacher of the Year Award* recipient is Garth Garrison, M.D., assistant professor of medicine *Alpha Omega Alpha Honor Society Award* recipients included Laurie Leclair, M.D., professor of medicine and course director, Cardiovascular, Respiratory and Renal Systems (Faculty Award).

The Class of 2020 awards:

- *Outstanding Foundations Course Award: Cardiovascular, Renal and Respiratory Systems (CRR)* (Laurie Leclair, M.D., Course Director)
- *The Dean Warshaw Integration Award:* Laurie Leclair, M.D., Course Director, CRR, and Professor of Medicine. This award recognizes the faculty member whose teaching best captured the spirit of the VIC.

Additional award and highlights:

- Patricia King, MD was elected Chair of Federation of State Medical Board.
- Polly E. Parsons, MD serves President of the American Thoracic Society and as Scientific Director of the Parker B. Francis Foundation.

- Glenn Goldman is serving as Secretary Treasurer of American College of Mohs Surgery.

Department of Medicine Awards:

- Mentor: Residents and Fellows- Allen Repp, MD
 - Graduate Students and Post-Doctoral Fellows: Jason Bates, PhD
- Distinguished Clinicians:
 - David Kaminsky, MD
 - Florian Foerg, MD
- Quality Scholarship:
 - Marie Sandoval, MD

Recent promotions:

- Jason Botten, PhD: Associate Professor
- Ryan Clouser, DO: Associate Professor
- Kim Dittus, MD: Associate Professor
- Garth Garrison, MD: Associate Professor
- Varun Agrawal, MD: Associate Professor
- Chris Huston, MD: Professor
- Friederike Keating, MD: Professor
- Jeffrey Spees, PhD: Professor

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. Mercedes Rincon's project entitled "A Novel Target to Overcome Chemo Resistance in Breast Cancer", Dr. Rene Stapleton's project entitled "Novel Arm Restraint for Critically Ill Patients to Reduce Immobility, Sedation, Agitation and Cognitive Impairment", Dr. Matthew Poynter's project entitled "Ketone Body Supplementation in Obese Asthma", Dr. Timothy Plante's project entitled "Leveraging Health Records to Explain Rural Cardiovascular Disease Disparities" and Dr. Neil Zakai's project entitled "Contemporary Venous Thromboembolism Treatment".

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.

Physician Leader and Chair
Vice Chairs

Education Council
Research
Academic Affairs
Quality

Director
Assistant Director
Director, Cancer Center
Supervisor, Med Ops Support Svcs.
Financial Administrator
Grants Manager
Grants Manager
Financial Associate
HR Administrator

Polly E. Parsons, MD

Kathryn Huggett, MD
Charles Irvin, PhD
Benjamin Suratt, MD
Allen Repp, MD
Allen Mead
Tammy Stockton, RN
Katie Michaud
Laurie St. Gelais
Jessica Hendela
Eric Gagnon (through 5/31/18)
Tina Mazuzan
Marlene Frank
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
D. Schneider, MD, Cardiovascular
R. Solomon, MD, Nephrology
J. Vecchio, MD, Gastroenterology

Total faculty: 203

By rank –

Assistant Professors: 96

Associate Professors: 47

Professors: 53

Clinical Practice Physicians: 5

Faculty Scientists: 2

By gender – 88 female; 115 male

By track – Tenured: 35

Research Scholar Pathway: 5

Tenure Pathway: 9

Clinical Scholar Pathway: 141

Education Scholar Pathway: 6
Clinical Practice Physician – 5
Faculty Scientist: 2

Faculty Actions:

FALL 2017 – Eight (8) promotions; Two (2) reappointments; 20 annual review reappointments

SPRING 2018 – 19 full reappointments; 15 annual review reappointments; 16 volunteer pathway faculty reappointments.

Promotions (7/1/18):

Varun Agrawal – to Associate Professor, CSP
Jason Botten – to Associate Professor with tenure
Ryan Clouser – to Associate Professor, CSP
Kim Dittus – to Associate Professor, CSP
Garth Garrison – to Associate Professor, CSP
Christopher Huston – to Professor, Tenured
Friederike Keating – to Professor, CSP
Jeffrey Spees – to Professor, Tenured
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
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

Member	Division/Position
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: 42,954 (inpatients and bedded outpatients)

Ambulatory Care Visits: 247,077 (178,032 specialty care and 69,045 primary care)

Work RVUs: 591,751 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, Thrombosis Center, and
- Surgery: Gastroenterology
- **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)

UVMHC Outreach Sites:

Vermont

Brattleboro (BMH) – Infectious Disease

St. Albans (Northwestern Medical Center) –Nephrology and Cardiology

St. Johnsbury (Northeastern Medical Center) - Infectious Disease

Barre (Central Vermont) – Nephrology, Dermatology (starting in October), Pulmonary, Hem/Onc

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

Middlebury (Porter) – Cardiology, Hem/Onc

Newport (Newport Memorial) – Nephrology

New York

Massena (MMH) – Cardiology

Plattsburgh (CVPH) – Cardiology, Infectious Disease, Dermatology (starting in October)

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, Orthopedics, 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)
- Weight management clinic (Endocrinology and Bariatric Surgery)
- Teledermatology (Colchester Family Medicine and Dermatology)

Under Development

- Telemedicine (Infectious Disease and Brattleboro Memorial Hospital)
- Hepatitis C e-consults (Gastroenterology and General Internal Medicine)

Medical Education 2017-2018

1. Leadership

Mark E. Pasanen, M.D., FACP – Program Director

Mary Ramundo, M.D. – Associate Program Director (retiring as of July 31, 2018)

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

Kate Parker and Nicole Junjulas – Program Administrators

2. Summary of Program Highlights 2017-2018

Enhancements to Curriculum:

Starting in 2015, we embarked on an overhaul of our noon didactic lecture series – with a move to focus our curriculum around subspecialty-specific blocks. This included a decision to switch to an academic half-day model – in which residents have protected academic time for learning. Residents are split into two cohorts (first-year residents and senior residents), allowing our curriculum to be targeted at the learner level. In addition, as part of this change, we encouraged our faculty to develop more interactive teaching methods – which continues to be well-received by both faculty and residents. The switch to an academic half-day model allowed for a more robust curriculum, including enhanced Resident-As-Teacher, Improvement Science and Wellness initiatives. We have incorporated sub-specialists into the vast majority of our Morning Reports, with a goal of providing our residents with increased exposure to their expertise. For Geriatrics, a group of engaged faculty are working on enhancements to both the curriculum and clinical experiences, with a goal of optimizing the resident experience.

We continue to provide MKSAP, the premier board review product, for all of our residents, and utilize MKSAP questions in many of our teaching sessions. In addition, we provide 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 – and resulting in a three-year board pass rate of 93%, which is above the national mean.

Continuity Clinic Update:

As we move into the 6th year of a block schedule (4+1), we continue to take advantage of this structure to optimize education. With the leadership of Drs. Halle Sobel and Rich Pinckney, small group learning sessions continue to be developed and are extremely well-received by residents – all part of a comprehensive 3-year curriculum. Residents are educated on practice management, patient safety and quality improvement and continue to complete personal practice improvement projects. At the core of the experience is providing care for a diverse population of primary care patients. In addition, we've incorporated the PEAC self-learning modules and the Yale Ambulatory Curriculum, both focused on common ambulatory issues, into the formal educational experience.

Wellness:

Over the last 2 years, we have initiated a Resident Wellness Committee, with the goal of promoting resiliency by creating opportunities for our residents to engage in activities with each other and our community. Events have included attending a Lake Monsters game, picking apples

and making cider, paddle-boarding, paint-and-sip, along with dinners at the Hope Lodge (cooked and served by our residents every other month).

Improvements in Evaluation/Assessment:

With leadership from Dr. Ramundo, our robust 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 benefit from more structured support.

Recruitment:

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

Self-Study:

During 2017, the core Internal Medicine program and the subspecialty fellowship programs all participated in the ACGME-mandated self-study process. This included multiple meetings with faculty, residents and fellows to identify strengths, weaknesses, opportunities and threats. This resulted in specific improvement plans in anticipation of a site visit in 2019.

3. List of All Residents (as of July 1, 2018 –Graduating Residents and Match Results below)

PGY-3

Categorical

Sean Bullis	University of Vermont
Alejandro Castro	University of Vermont
Gurpinder Gill	University of Vermont
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
Kramer Wahlberg	University of Washington
Sasha Waldstein	University of Rochester

Primary Care

Gary Gilmond	University of Vermont
Emily Hadley Strout	University of Vermont
Elizabeth Wahlberg	University of Washington

PGY-2

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
Louis-Bassett Porter
Elly Riser
Brendan Thoms
Shawn Wayne
Andrew Wilks
Scott Young

University of New England College of Osteopathic Medicine
Pennsylvania State University
University of Washington
Imperial College of Medicine, United Kingdom
University of Wisconsin
Tufts University
University of Washington

Primary Care

Christopher Wargo

University of Queensland, Australia

Chief Medical Residents

Elena Kozakewich
Gatha Nair
Heather Wright

Albany Medical College
University of Arizona
University of New England College of Osteopathic Medicine

4. Resident Awards

- **The Harriet P. Dustan, M.D. Award**
Kara Landry, MD
Brendan Everett, MD
- **The Frank L. Babbott, M.D. Memorial Award**
Elena Kozakewich, MD
- **Richard E. Bouchard, M.D. Excellence in Primary Care Award**
Kathleen Whitbread, M.D.
- **E.L. Amidon, M.D. Award Outstanding Teacher of the Year Subspecialty Medicine**
Matthew Gilbert, D.O.
- **Mark A. Levine, M.D. Award Outstanding Teacher of the Year General Internal Medicine**
Halle Sobel, M.D.

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

Resident Research Day May 28, 2018

Elena Kozakewich, M.D.
Procalcitonin in the SICU
Mentor: Cindy Noyes, M.D.

Ross Stemmler, M.D.
Physician Barriers to Outpatient Advance Care Planning
Mentor: Marie Sandoval, M.D.

Hank Ng, M.D.

Drug Anticoagulant Interactions in Cancer Patients at High Risk for VTE initiating Outpatient Chemotherapy

Mentor: Steven Ades, M.D, Chris Holmes, M.D.

Heather Wright, D.O

Incidence of Potential Germline Mutations Detected in Cancer Patients with Genomic Testing

Mentor: Marie Wood, M.D.

Caitlin Greenberg, D.O.

ASCVD Calculator Utilization and Statin Use in Resident Practice: A Retrospective Study

Mentor: Halle Sobel, MD

Umer Syed, M.D.

ACLS Team Leadership Curriculum to Improve team Leader Confidence and Adherence to AHA ACLS Time Lines

Mentor: Amy Teleron. M.D.

Anthony Provenzano, M.D.

Dialysis Providers' Attitudes on Management of Depression

Mentor: Katharine Cheung, M.D., Ph.D.

Vishal Shah, M.D.

Hospitalists Perspectives on Quality Measurement and Quality Improvement

Mentor: Allen Repp, M.D.

Lauren Miller, M.D.

Risk Factors Determining Anticholinergic Burden in UVMMC Adult Primary Care Offices

Mentor: Michael LMantia, M.D.

Kelsey Sheahan, M.D.

Quality Improvement Project: DEXA Screening in Resident Clinic

Mentor: Halle Sobel, M.D.

Sarah Gillett, M.D., Ph.D.

Elevated Hepatocyte growth factor is associated with double the risk of incident ischemic stroke:

Mentors: Mary Cushman, MD, Neil Zakai, MD, Tim Plante, MD

Kathleen Whitbread, M.D.

Association Between Social Determinants of Health and Perceived Physical Function in Adults with Comorbid Chronic Medical and Behavioral Problems: A Cross-sectional Analysis

Mentor: Benjamin Littenberg, M.D.

Ann Vo, D.O.

Promoting the Appropriate Use of ESR and CRP Tests

Mentor: Allen Repp, M.D.

Kara Landry, M.D.

N-Terminal Pro-B-type Natriuretic Peptide and Risk of Stroke in those with and without Cerebrovascular Disease: the REGARDS Cohort

Mentor: Mary Cushman, M.D.

Hank Ng

Drug-Anticoagulant Interactions in Cancer Patients at High Risk for Venous Thromboembolism Initiating Outpatient Chemotherapy

Mentor: Britny Rogala, Joanna Schwartz, Taka Ashikaga, Steven Ades, Chris Holmes

Vishal Shah
Physician perceptions of bariatric surgery
Mentor: SM Wrenn, PW Callas, W Abu-Jaish

Luke Soelch
Hospital Responses to Mortality Measures: A Survey Study
Mentor: Allen Repp

Avneet Singh
Initiating a Protocol for Thorough Neuro-Prognostication of the Post-Cardiac Arrest Patient
Mentor: Michael Theriault, Ryan Clouser
Research, Research Award

Umer Syed
Thrombotic Thrombocytopenic Purpura Associated with Pazopanib
Clinical Vignette
Mentor: Dan Douce, Julian Sprague

Emily Strout
Clostridial Myonecrosis as a Complication of Treatment of Newly Diagnosed Burkitt's Lymphoma
Clinical Vignette
Mentor: Gatha Nair, Hank Ng, Vishal Shah

Hank Ng
Thyroidectomy for the Treatment of Thyroid Storm
Clinical Vignette
Mentor: Kaitlyn Vennard, Muriel Nathan, Joel Schnure

Kramer Wahlberg
The Forgotten Disease: A case of Lemierre's syndrome
Clinical Vignette

Vishal Shah
Puncture Me Once, Shame on Me. Puncture Me Twice...Can You Puncture Again?
Clinical Vignette
Mentor: Zechariah Gardner

Anthony Provenzano
Chain of Events: Amyloid Kidney Leading to Diagnosis of Multiple Myeloma
Clinical Vignette
Mentor: Alison Fitzgerald

Daniela E. DiMarco
A Missed Opportunity: Disseminated Blastomycosis Masquerades as Metastatic Malignancy
Clinical Vignette
Mentor: Mary Ramundo

Tyler W. Wark
A Case Report – Zebra Stripes on a Horse: An Unusual Presentation of Diabetic Nephropathy
Clinical Vignette
Mentor: Katharine L. Cheung, Pamela C. Gibson

Lauren Haggerty
Crystalluria in a Sedated Patient: an unusual finding
Clinical Vignette
Mentor: Varun Agrawal

Publications:

Neuromuscular complications of immune checkpoint inhibitor therapy.
Kolb NA, Trevino CR, Waheed W, Sobhani F, Landry KK, Thomas AA, Hehir M.
Muscle Nerve. 2018 Jan 17.

Early gastric adenocarcinoma arising within foveolar-type dysplasia in a patient with Muir-Torre variant Lynch syndrome.

McKnight TFP, Noffsinger AE, Landry KK, Ahmed O, Wilcox R.
Virchows Arch. 2017 Jul;471(1):129-132.

Association of stroke risk biomarkers with stroke symptoms: the Reasons for Geographic and Racial Differences in Stroke cohort.

Landry KK, Alexander KS, Zakai NA, Judd SE, Kleindorfer DO, Howard VJ, Howard G, Cushman M. J Thromb Haemost. 2017 Jan;15(1):21-27

National/Regional Presentations:

Heather Wright, D.O.

Skeletal Muscle Metastases Masquerading as Micro-abscesses
Northern New England Clinical Oncology Society 10/27/17

Venous Thromboembolism (VTE) Increases the Healthcare Burden in Patients with Malignant Glioma

American Society of Hematology 12/10/17

Peri-operative risk factors for venous thromboembolism development in patients with malignant glioma

Society for Neuro-Oncology 11/16/17

Avneet Singh, M.D.

Initiating a protocol for thorough neuro-prognostication of the post cardiac arrest patient.
ACP Internal Medicine 4/18/18

Umer Syed, M.D.

Pazopanib Induced Thrombotic Thrombocytopenic Purpura Case Report.
ACP Internal Medicine 4/18/18

Basset-Porter L M.D. and Elena Kozakewich M.D.

A "Retro" Case: Critically Advanced HIV/AIDS Presenting with Five Simultaneous Opportunistic Infections and CNS Lymphoma.
ACP Internal Medicine 4/18/18

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

Sarah Gillett (Oct '18)	Hematology/Oncology Fellowship, UVMMC
Caitlin Greenberg	General Internal Medicine, UVMMC
Elena Kozakewich	Chief Medical Resident
Kara Landry (Oct '18)	Applying to Hematology/Oncology Fellowship
Gatha Nair	Chief Medical Resident
Hank Ng	Hematology/Oncology Fellowship, Virginia Commonwealth

Nehpreet Pandhair
Anthony Provenzano
Vishal Shah
Ross Stemmler
Umer Syed
Heather Wright

Primary Care

Lauren Miller
Kelsey Sheahan (Aug '18)
Kathleen Whitbread
Ann Vo

Chief Medical Residents

Lee-Anna Burgess
Brendan Everett
Moussa Takla

Geriatrics Fellowship, The Ohio State University
Nephrology Fellowship, Duke
Hospitalist, Northwestern Medical Center (VT)
Primary Care Practice,
Hospitalist, UVMMC
Chief Medical Resident

Primary Care, Community Health Center (VT)
Endocrinology Fellowship, UVMMC
Primary Care, Rochester, NY
Primary Care, VA Clinic (VT)

Hospitalist, UVMMC
Gastroenterology Fellowship, UVMMC
Pulmonary and Critical Care Fellowship, Tufts

7. MATCH RESULTS - Spring 2018

Categorical

Eric Anderson
Jennifer Bergeron
Kenyon "KC" Bolton
Benjamin Depo
Matthew Gervais
J. Curtis Gwilliam
Sundas Khan
Carrie Mahurin
Emily McPherson
Akshat Mehta
Jacqueline Parker
Kevin Qin
Samantha Steinmetz-Wood
Andrew Wall
Joshua Zimmer

Medical College of Wisconsin
Tufts University
University of Vermont
State University of New York Upstate
Pennsylvania State University
University of Vermont
Temple University
University of North Dakota
University of New England School of Osteopathic Medicine
Mercer University
Weill Cornell
The University of Toledo
Royal College of Surgeons in Ireland
Albany Medical College
East Tennessee State University

Preliminary

Stephanie Blatch
Joseph Boyle
Karen Halldorsdottir
Elizabeth Isaacoff
Hannah Noah
Carolyn Riehle
Julia Shatten

Brown University
Mercer University
University of Iceland Faculty of Medicine
Sidney Kimmel Medical College of Thomas Jefferson Univ
University of North Carolina at Chapel Hill School of Med
University of New England College of Osteopathic Medicine
University of Vermont

Preliminary Anesthesia shared with Surgery

Rachel Carlson
Vivek Chittineni
Liana Dagdavyan
Justin Jones
Christina Litsakos
Angeli Thawani

University of Vermont
University of Minnesota
Western University of Health Sciences
Northeast Ohio Medical University
University of Vermont
New York Institute of Technology

Cardiovascular Division

David J. Schneider, MD, Director

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



The 2017-2018 academic year was a successful year for the cardiovascular division with expansion of our faculty as well as growth of our clinical, research, and education programs.

The Division seeks to offer advanced care for patients with cardiovascular disease. A robust catheter based structural heart disease program that is led by Harold Dauerman implanted over 200 aortic valves (transcatheter aortic valve replacement – TAVR) and more than 20 mitral clips – a catheter based technique to treat mitral regurgitation. Dan Lustgarten and Daniel Correa de Sa offer left atrial occlusion to patients with atrial fibrillation who have prohibitive risk of anticoagulation. The addition of Nathaniel Thompson enabled us to expand our program to treat ventricular tachycardia with catheter based ablation. We are developing a program to provide greater circulatory support for critically ill patients with extracorporeal membrane oxygenation.

Rony Lahoud, an interventional cardiologist who has expertise in structural heart interventions, joined our faculty in August 2017. He completed his cardiovascular training at the Cleveland Clinic. Nathaniel Thompson is an electrophysiologist who joined our clinical faculty in February 2018. He completed training in cardiovascular disease as well as electrophysiology at the University of Vermont. After completing his training in Vermont, he pursued advanced training in electrophysiology at the University of Bordeaux in France. We recently completed recruitment of Sherrie Khadanga who will join our faculty in July 2019. Sherrie trained at the University of Vermont and her clinical and research focus will be cardiovascular rehabilitation and prevention.

Clinical integration and coordination of cardiovascular services across the network remains a focus for the cardiovascular service line. Harold Dauerman has been named the Network Director of Interventional Cardiology. In this role, he oversees the cardiovascular catheterization laboratories at both UVMMC and CVPH. Electrophysiology services at Champlain Valley Physicians Hospital (CVPH) are provided by faculty practice electrophysiologists, Pierre Znojkwicz, as well as Joseph Winget and Robert Lobel. Johannes Steiner provides 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.

Friederike Keating and Jeffrey Spees were promoted to Professor of Medicine. Peter VanBuren was selected as the outstanding teaching by both residents in internal medicine 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. 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 51 scholarly publications during 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

- Advanced Heart Failure
- Pulmonary Hypertension

Philip A. Ades, MD

Endowed Philip Ades MD Professor of Cardiovascular Prevention

Director, Cardiac Rehabilitation

Research and clinical interests

- cardiac rehabilitation
- preventive cardiology
- ischemic heart disease

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

Network Director, Interventional Cardiology, UVM Health Network

Research and clinical interests

- coronary and structural heart intervention
- vascular biology, PCI pharmacology
- Systems of care and regional quality improvement programs

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

Professor of Medicine

Director, Nuclear Cardiology and Stress Laboratory

Program Director, Cardiovascular Fellowship

Leader, Women's Cardiac Care Program

Clinical interests

- cardiovascular disease in women
- cardiovascular imaging
- general cardiology

Research interests

- nuclear cardiology
- medical education
- platelet biology / transfusion

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

Rony Lahoud, MD

Assistant Professor of Medicine

Research and clinical interests

- cardiac catheterization
- coronary intervention
- structural heart disease
- renal injury and recovery with coronary and structural procedures
- optimal platelet therapy post coronary intervention

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
- His bundle pacing

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

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

Nathaniel Thompson, MD

Assistant Professor of Medicine

Research and clinical interests

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

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 Abernathy

Margaret Infeld

Imran Alkhalil

Sherrie Khadanga

Amir Azarbal

Lakshmi Nambiar

Trace Barrett

Mehdi Rambod

David Cleary

Ashwini Sharma

Christine DeStephan

Daniel Silverman

Jonathan Halevy

Samvit Tandan

Nurse Practitioners and Physician Assistants

Elizabeth Carney, APRN

Margaret MacDonald, NP

Gregory Ehle, PA

Cheryl McNeil, APRN

Karen Farrell, APRN

Nancy Strong, APRN

Susan Ann Hamlyn-Prescott, APRN

Barbara Worgan, APRN

Ann Laramée, APRN

Graduate Students, Post-doctoral Fellows, MD PhD Students

Philip A. Ades, MD

Sherrie Khadanga, MD

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

Lakshmi Nambiar

Amir Azarbal

Dan Silverman

Peter S. Spector, MD

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

Srinath Yeshwant, MD

Jeffrey L. Spees, PhD

John McInnis, B.S.

Nicholas Toker, B.S.

Lucy Greetham, B.S.

Michael J. Toth, PhD

Blas Guigni, CMB doctoral candidate

Timothy W. Tourville, PhD, K08 mentee

Leadership in Professional Societies

Harold L. Dauerman, MD

National Proctor and Faculty, Corevalve TAVR

Steering Committee, New England Structural Heart Consortium

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, Immediate Past Governor
Vizient Cardiovascular Council, Member
ABIM Item Writing Task Force for Interventional Cardiology
ABIM Standards-setting for Interventional Cardiology

William E. Hopkins, MD

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

Friederike Keating, MD

Vermont, Northern New England Chapter of the American College of Cardiology, Governor
Choosing Wisely Subcommittee of the Board of Governors, American College of Cardiology,
Chair
Health Policy Council, American Society of Nuclear Cardiology, Member
Cardiovascular Training Section, Leadership 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

Matthew W. Watkins, MD

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

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

Senior Guest Editor, *Circulation Cardiovascular Interventions*: 2018
Editor-in-Chief: *Coronary Artery Disease*, 2013-2018
Section Leader, Interventional Cardiology: *Journal of the College of Cardiology*, 2014-current
Editorial Board: *Circulation Cardiovascular Interventions*, 2014-2018

Prospero B. Gogo, MD

Reviewer: *American Journal of Cardiology* and *Coronary Disease*

Friederike Keating, MD

Editorial Board: *Coronary Artery Disease*

Martin M. LeWinter, MD

Associate Editor: *Coronary Artery Disease*
Section Editor: *Myopericardial Disease, Up-To-Date*
Book Review Editor, Circulation
Editorial Boards: *Circulation, 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*

Johannes Steiner, MD

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

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 A. Ades, MD

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

Harold L. Dauerman, MD

Cedars Sinai Medical Center (Los Angeles): TAVR and Kidney Recovery

ARCH Symposium (St. Louis): Plenary Lecture: Future of Structural Heart Interventions

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

Corevalve Transcatheter Aortic Valve Replacement: Best Practices, Chicago, Boston

Boston Scientific: Annual Executive Advisory Board (Minneapolis, Minnesota)

William E. Hopkins, MD

15th Annual Update in Pulmonary Hypertension 2017

Cambridge, MA

“*Difficult Cases in Patients with WHO Group 2 Pulmonary Hypertension*”

Martin M. LeWinter, MD

Ad hoc reviewer, NHLBI

Consultant, Kiniksa Therapeutics

Consultant, SOBI Orphan Therapeutics

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: Who is an ideal candidate for His bundle pacing? All you need to know about His Bundle Pacing. Heart Rhythm Scientific Sessions. Boston, MA. May 10, 2018.

Invited Speaker: Is there an optimal site for RV Pacing? Arrhythmia and Pacing Induced Cardiomyopathy: A 2018 Update. Heart Rhythm Scientific Sessions. Boston, MA. May 9, 2018.

Invited Speaker: Faculty /BIOTRONIK International Fellows Program. His bundle pacing: Technique and Illustrative Cases. New York, NY. November 17, 2017.

Invited Speaker: 1st Annual Physiology of Pacing Symposium. HBP for CRT, A Crossover Study. Chicago, IL. November 3, 2017.

Peter S. Spector, MD

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

Jeffrey L. Spees, PhD

Grant Review, Maine Medical Center, 2017, 2018

Member, NIH ZRG1 CVRS-L (80), R15 SEP for Cardiovascular and Respiratory Sciences, 2017

Member, Florida Department of Health Peer Review Committee, 2018

Co-chair, NIH ZRG1 CVRS-L (80), R15 SEP for Cardiovascular and Respiratory Sciences, 2018

Member, Pennsylvania Department of Health Peer Review Committee, 2018

Michael Toth, Ph.D.

Ad hoc member: NIH SMEP study section: 2/18

Ad hoc member: NIH F10B-B study section 7/18

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

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

Lakshmi Nambiar MD and Mehdi Rambod MD: American Heart Association Presentations

Jeffrey L. Spees, PhD (Patents)

US20120157381A1 Methods for Enhancing Cardiac Function with the Combination of CTGF/Insulin or IGF-1 (Sole inventor). 2017

US9913864B2 Compositions and Methods of Cardiac Tissue Repair (Sole inventor). 2018

Grants

Philip A. Ades, MD

NIH: The National Institute of General Medical Sciences - P20GM103644-01A1

Vermont Center for Behavior and Health (2013-2018)

Role: Associate Director and Co-Principal Investigator (Steven Higgins, PI)

National Institute on Drug Abuse and U.S. Food and Drug Administration - P50DAO36114

Tobacco Centers of Regulatory Science Award (2013-2018)

Role: Investigator (Steven Higgins, PI)

Harold L. Dauerman, MD

Boston Scientific

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

Role: Site Principal Investigator

Edwards Lifesciences

Transcatheter Aortic Valve Replacement to UNload the Left Ventricle in Patients with ADvanced Heart Failure: A randomized trial (TAVR UNLOAD)

Role: Site Principal Investigator

Bayer Healthcare

GALILEO: A Randomized Trial of Antiplatelet versus Antithrombotic Strategy with Riviroxiban to Improve Outcomes after TAVR

Role: Site Principal Investigator

Medtronic

CoreValveTranscatheter Aortic Valve Replacement in Patients at Low Risk for Surgical Aortic Valve Replacement

Role: Site Principal Investigator

Dauerman Research and Education Fund

Acute Kidney Recovery after TAVR: 1 Year Follow Up.

Role: Investigator Initiated Research, Site Principal Investigator

Trainees: Amir Azarbal, MD (Fellow) and Katherine Kurchena Medical Student and Erika Mendoza (Undergraduate student)

Acute Kidney Recover after TAVR vs Surgical AVR

Role: Investigator Initiated Research, Senior Investigator for the Northern New England Cardiovascular Disease Study Group

Trainees: Rony Lahoud MD (Junior Faculty)

Temporal Trends in Tricuspid Valve Surgery and Outcomes: A Report of the Nationwide Inpatient Sample

Role: Investigator Initiated Research, Senior Investigator

Trainees: Rony Lahoud MD (Junior Faculty) and Ashwini Sharma MD (Fellow)

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 (9/1/2014-6/30/2019)

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

AMULET- CHRMS #17-362

Role: Principal Investigator

Markus Meyer, MD

NIH NHLBI 1 R01 HL122744-01A1

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

Role: Principal Investigator

Medtronic - Feasibility of a nocturnal heart rate elevation to 100/min (2017)

This study confirmed that patients are asymptomatic when paced at 100/min for 4 weeks.

The six-minute walk test improved after the intervention.

Role: Principal Investigator

David J. Schneider, MD

Janssen Pharmaceuticals LLC

Novel Markers of Thrombotic Risk (7/1/2014 – 2/28/2018)

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

Peter S. Spector, MD

Medtronic

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

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

Abernethy A, Raza S, Tracy R, Steiner J, VanBuren P, LeWinter MM “Pro-inflammatory Biomarkers in Acutely Decompensated Versus Stable Heart Failure With Preserved Ejection Fraction”. *J Am Heart Assoc.* 2018 Apr 12;7(8)

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Dauerman HL. Five Years of Coronary Artery Disease. *Coronary Artery Disease*; 2018; 29: 366-367.

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Yeshwant SC, Zile MR, Lewis MR, LeWinter M, Meyer M. Safety and Feasibility of a Nocturnal Heart Rate Elevation- Exploration of a Novel Treatment Concept. *J Card Fail*. 2018 Jul 16;S1071-9164(18)30275-6

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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 the Department of Medicine. We currently have six general dermatologists, four surgical dermatologists, a pediatric dermatologist and five 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. In 2017 we saw 33,450 patients and generated 65,652 wrRVU.

This year we have added Dr. Ankit Gor and Dr. Aliza Fischer, two of our residents. Dr. Gor will split his time between the UVMMC and CVPH in Plattsburgh. Dr. Fischer will work at UVMMG and at the CVMC in Berlin. This represents the first time that UVM dermatology will have a presence both in Upstate NY and in Central Vermont.

This year marks a step forward for our telemedicine program. Under the direction of Dr. Julie Lin, telemedicine consults have been established through EPIC. A pilot program with Milton Family Practice is underway, and this will be gradually expanded to the community at large.

We have added the services of Pediatric Dermatology under the direction of Keith Morley, MD. He is the first fellowship-trained pediatric dermatologist in the State of Vermont and brings a wealth of knowledge and caring to our institution.

Melanie Bui, MD has received a funding award from the Department of Medicine for her work on somatic mutations in pre-cancerous actinic keratoses. She is also mentoring two research fellows who were granted competitive funding to investigate the role of propranolol in melanoma and appropriate lab monitoring for isotretinoin.

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 been named to the editorial board of the Journal of the American Academy of Dermatology.

Dr. Glenn Goldman was elected Secretary Treasurer of the American College of Mohs Surgery. As a member of the Executive Committee he will subsequently serve as Vice President and then President of the Organization. Dr. Goldman was also appointed to the Board of Directors of the American Society for Dermatologic Surgery where he serves as Chair of the International Travelling Mentorship Program. Dr. Todd Holmes continues as the Chair of the ITMP International Fellowship Program. Dr. Goldman, his fellow Matt Leboeuf, technician Jennifer Maxham and RN (and Medicine Director) Tammy Stockton recently travelled to Romania to perform surgery on very advanced skin cancer cases. Dr. Holmes travelled to the Netherlands where he evaluated a fellowship program for the ASDS. Later this year Dr. Goldman will travel to lecture and do fellowship evaluations in South

Africa and Colombia. This puts UVMMG at the forefront of international education in dermatologic surgery.

Along those lines, this year we were fortunate to train an international fellow, Dr. Yoav Metzger. Dr. Metzger obtained his dermatology training in Tel Aviv. As a dual citizen, and having passed his USMLE, he was able to train in the US as part of a program approved for international trainees by the ACGME. The year has been richly rewarding for all of us.

Dr. Goldman, Dr. Weinberger, Dr. Holmes, Dr. Lin, Dr. McGevna, Dr. Bui and Dr. Pierson serve on a number of UMMC committees. Dr. Julie Lin continues her involvement in EPIC, where she is the EPIC representative from the Department of Medicine.

Our residency and fellowship graduates continue to do great things. Ivy Norris PGY4 will complete a fellowship in Mohs Surgery and Dermatologic Oncology at the Medical University of South Carolina. Ankit Gor, MD and Alyssa Fischer are joining us as faculty. Emily Farrell PGY4 will take a position working in general dermatology at Dartmouth. Our surgery fellow, Matt Leboeuf PGY5 will take a position as faculty at Dartmouth. Our other fellow, Dr. Metzger will return to practice Mohs surgery and reconstruction in Tel Aviv.

Each month we host medical students for clinical or research 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.

Last, but not least, this year marks the retirement of Jamie Alpert, MD. Dr. Alpert has been on faculty for 25 years, during which time she has mentored dozens of students and residents. We are proud of her and will miss her smile and warm way with patients.

Faculty

Glenn Goldman, MD

Professor of Medicine

Director, Dermatology Division

Director, Mohs Surgery and Dermatologic Oncology Fellowship

Secretary Treasurer, American College of Mohs Surgery

Board of Directors, American Society for Dermatologic 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

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 surgery

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
- Skin Cancer in Solid Organ Transplant Recipients

David Chen, MD

Assistant Professor of Medicine

- Mohs Surgery and Reconstruction
- Cosmetic Dermatology

Keith Morley, MD

Assistant Professor of Medicine

- Pediatric Dermatology
- Pediatric Laser Surgery

Fellows MSDO 2017-2018

Matt Leboeuf, MD

Yoav Metzger, MD

Residents

Ankit Gor, MD, PGY-4

Ivy Norris, MD, PGY-4/Co-Chief

Emily Farrell, MD, PGY-4, Co-Chief

Alyssa Fischer, MD, PGY-4

Patrick Benson, MD, PGY-3

Corey DeWitt, MD, PGY-3

Dema Alnimi, MD, PGY-2

Katelyn Shea, MD, PGY-2

Physician Assistants:

Deb Roseman, PA:

Deb has been with us for over 15 years. She has decades of experience as a dermatology physician assistant and has a following of thousands of patients for whom she provides care. She is active in teaching students and in mentoring those with potential interest in becoming physician assistants.

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. She is also active in teaching students and in mentoring those with potential interest in becoming physician assistants.

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. Rich joined the UVMMC Medical Records Committee as a full-time sitting member this year. Rich continues to instruct Family Practice residents on a regular basis as part of both their core and elective educational curriculum, and presented a lecture at the 2018 Family Practice Review Course. He continues to lecture at our Dermatology for Primary Care meeting as well.

Emilie Rainville, PA

Emilie was our medical assistant prior to going to PA school. She has trained with us and hits the ground running with a strong background in dermatology.

Andrea Decker, PA

Andrea has worked for UVMMG for over a decade as a physician assistant, most recently in the emergency room. She has moved to dermatology where her excellent skills will be used for our patients in general dermatology.

Leadership in Professional Societies:

Vermont Dermatologic Society

Dr. Goldman President

American Society for Dermatologic Surgery

Dr. Goldman Board of Directors

Dr. Goldman Chair of the ASDS International Traveling Mentorship Committee

Dr. Holmes 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 Secretary Treasurer

Study Sections and Federal Advisory Boards:

Publications – Books, Peer reviewed, chapters,

Book Chapter

Peer-reviewed Articles

1. Muller IR, Chen DL, **Goldman GD**. Staffing Metrics in Mohs Surgery. Dermatol Surg 2018; [PMID29112526]

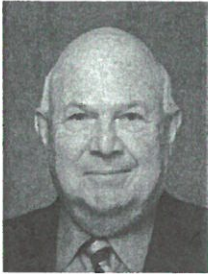
2. Chen DL, Collins LK, **Goldman GD**. Repair of a Deep Proximal Thumb Defect. *Dermatol Surg* 2017;0-:1-3
3. **Goldman GD**. Imperiled Mohs Surgery Match. Exemptions damage the match and should be restricted. *J Grad Med Ed*. 2017;December;787-788. [PMID 29270280]
4. Hankinson A, **Holmes T**. Use of Modified Transposition Flaps for Reconstruction of the Forehead. *Dermatol Surg*. 2018 Mar;44(3):459-462.

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 2017-2018 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 7 physicians, 2 nurse practitioners, and 3 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 outreach endocrine services at CVPH in Plattsburgh, NY. In addition, a telemedicine program is being initiated with Northwest Medical Center in Saint Albans, VT.



The Division made significant progress in its effort to expand services to patients in the areas of osteoporosis/metabolic bone disease and obesity. Jennifer Kelly, DO, is now serving as Director of the Osteoporosis/Metabolic Bone Disease

Clinic. Dr. Kelly was recruited from Upstate Medical University in Syracuse, NY, where she was Director of the Densitometry Lab; she joined our faculty in July, 2017.

Juan Pablo Perdomo Rodriguez, MD, our former fellow, also joined our faculty in 2017. He is focusing on the development of a network-wide weight management program, including an intensive training on clinical interventions for obesity. The weight management program is a joint effort with our bariatric surgeons, Drs. Abu-Jaish and Forgione of Bariatric Surgery and Dr. Mitchell in Hospital Medicine.

Our research initiatives continue at both the clinical and basic levels. The Endocrine Clinic continues its participation in a 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.

Analysis of a Division-initiated clinical research study also continues. This project reviewed the records of 200 pregnant women with diabetes who were seen at the UVM MC Maternal Fetal Medicine Clinic for the purpose of comparing serum fructosamine and HbA1c measurements throughout gestation as potential predictors of maternal and neonatal complications. Results of the research were presented at the Fellows' research teaching day and have been submitted to the American Diabetes Association by Dr. Amanda Fernandes, our recently-graduated fellow.

Other ongoing clinical research projects include a study looking at the various treatment modalities for enteral and parenteral feeding for inpatients and an analysis of the cost-effectiveness of inpatient consultation with Endocrinology. Initial planning has been completed for a study to assess the use of HbA1c and/or fructosamine in lieu of 24- to 28-week gestation glucose challenges and work under this protocol will continue into the 2018-2019 academic year.

The Division's basic research efforts continue to focus on pancreatic islet biology and diabetes and, in collaboration with Jana Kraft, PhD, on effects of dietary plant and dairy-derived bioactive lipids on gut microbiota eubiosis, glucose homeostasis regulation, and aging. Dr. Kraft is a lipid biochemist with expertise in human nutrition; in addition to her basic research with Drs. Jetton and Gupta, she is collaborating with Matthew Gilbert, DO, MPH on a clinical study on dietary dairy lipids.

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 is now finishing her first year as an endocrine fellow. Kelsey Sheahan, MD, who completes her medical residency in August 2018, will start her fellowship training with our Division immediately thereafter.

The Division's educational mission is also evidenced by faculty participation in LCOM initiatives: Dr. Schnure continues his service with The Teaching Academy, which promotes education and scholarship of faculty members; Dr. Gilbert continues to serve as Chair of the Inpatient Glycemic Control Committee, whose mission includes education of hospital physicians and staff on glucose management strategies; and Dr. Jetton was named Director of a new graduate course, Science Communication, which is now part of the required curriculum for the Molecular and Biomedical Sciences Program. 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 2017-2018 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
- 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
- Cost-effectiveness of endocrine consultation in inpatients with diabetes

Continued

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

Chairman, Inpatient Diabetes Management subcommittee of P and T

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

Jennifer Kelly, DO, FACP

Associate Professor of Medicine

Director of the Metabolic Bone Program

Research and clinical interests:

- Osteoporosis
- Metabolic bone disorders, including Paget's Disease of Bone
- Diabetes mellitus

Continued

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

Juan Pablo Perdomo Rodriguez, MD

Assistant Professor of Medicine

Research and clinical interests:

- Obesity and weight Management
- Diabetes mellitus

Fellows

Amanda Fernandes, MD (F5, began training 7/1/2016; completed 6/30/2018)

Kaitlyn Vennard (F5; began training 7/1/2017; expected completion 6/30/2019)

Kelsey Sheahan, MD (F4, will begin training 8/28/2018; expected completion 8/27/2020)

Nurse Practitioners and Certified Diabetes Educators

Margaret Costello, FNP, MS

Ann Gotham, ANP, MSN, ScM

Kristen Bolton, MS, RD, 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

Dhananjay (Jay) Gupta, PhD

American Diabetes Association

American Society for Biochemistry and Molecular Biology

Boston-Ithaca Islet Club

Thomas L. Jetton, PhD

Boston-Ithaca Islet Club, senior member

Jennifer J. Kelly, DO, FACE

National Osteoporosis Foundation, member of the Ambassadors Leadership Council
American Association of Clinical Endocrinologists national organization:
Task Force for Updating the AACE Osteoporosis Guidelines, member
Task Force to Update the AACE/ACE Postmenopausal Osteoporosis Clinical Practice Guidelines
Membership Committee, member
Bone and Parathyroid Disease State Network Committee, member
Thyroid Disease State Network Committee, member
American Association of Clinical Endocrinologists, New England Chapter, advisor to the Board of Directors
International Society of Clinical Densitometry, Web Advisory Committee member
New England Bone Club, 2018 Annual Meeting Planning Committee member

Muriel H. Nathan, MD, PhD

New England Thyroid Club, senior member

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

NIH (S10 SIG/SIFAR), 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

Department of Medicine (UVM) Catalyzation of Grant Competitiveness Award

Molecular Mechanisms of Adaptive Beta Cell Growth, Function and Survival (2018-2019)

Role: Principal Investigator

Department of Medicine (UVM) Translational Pilot Project Award

Mechanism of Diabetes Effects on ARDS (Acute Respiratory Distress Syndrome) (2017-2018)

Role: Co-Investigator (Benjamin Suratt, MD, 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

Bolton KC, Gilbert MP. A Case of Piezogenic Pedal Papules in a Man with Acromegaly. *Endocr Pract.* 2017 Nov 16. doi: 10.4158/EP-2017-0014. PMID: 29144816.

Ciolino AL, Gilbert MP, Anderson SR. Unique Practices in Cytopathology: The University of Vermont Medical Center Thyroid Ultrasound Simulation Experience. *American Society of Cytopathology: Program Directors' Communicator.* 2018;4(1).

Gilbert MP. Ace the Case: 55-Year-Old Woman with Type 1 Diabetes Mellitus Presents with Concerns About Osteoporosis. https://cme.healio.com/endocrinology/education-lab/ace-the-case/2018/01_january/55-year-old-woman-with-type-1-diabetes-mellitus-presents-with-concerns-about-osteoporosis/cme-information. Available 5/15/18-5/14/19.

Gilbert, MP. Point/Counter: Fractures represent an under-recognized complication of diabetes. *Endocrine Today* 2017;14:13.

Gilbert, MP. Prospective: Large weight loss raises fragility fracture in type 2 diabetes. *Endocrine Today* 2018;16(5):46.

Gilbert MP, Fernandes A. "Management of hyperglycemia in the critically ill". Polly E. Parsons, Jeanine Wiener-Kronish, Renee Stapleton and Lorenzo Berra, eds. *Critical Care Secrets*, 6th Edition. Philadelphia, PA. Elsevier, 2018 (March).

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;292:12449-12459/ PMID: 28487366.

Lee SL, Gilbert MP. Thymic cyst causes false-positive radioactive iodine scan. *Endocrine Today* 2017;15:13.

Lemay MR, Dunn J, Hoyt L, Ubags U, Antkowiak MC, Gupta D, Suratt BT. Subacute hyperglycemia is associated with increased alveolar inflammatory response. *Am J Respir Crit Care Med.* 2017;195:A4771.

Singh AK, Bodolan AA, Gilbert MP. A False Positive I-131 Metastatic Survey Caused by Radioactive Iodine Uptake by a Benign Thymic Cyst. *Case Reports in Endocrinology.* 2017 Dec; article ID 6469015. doi: 10.1155/2017/6469015.

Presentations

Perdomo-Rodriguez JP, Anderson S, Howard A, Gilbert MP. Implementation of a Multidisciplinary Thyroid Biopsy Clinic (MTBC) Reduces the Rate of Non-Diagnostic Cytology and the Number of Surgical Referrals. American Thyroid Association Annual Meeting; Victoria, BC, Canada; October 2017; Poster #2784074.

Gilbert MP, Bain SC, Franek E, Jodar-Gimeno E, Nauck MA, Pratley RE, Rea R, Saraiva J, Rasmussen S, Tornoe K, von Scholten BJ, Buse JB. Effect of Liraglutide on Cardiovascular Outcomes in Elderly Patients in the LEADER trial. American College of Cardiology, Scientific Sessions; Orlando, FL; March 2018. Oral presentation #911-06.

Schnure JJ, Barnes S, Improved Access for Endocrine Consultations at the University of Vermont Medical Group. Alliance for Academic Internal Medicine, Annual Meeting; San Antonio, TX; March 2018

Gupta D. CHRNA7 Modulates Anti-inflammatory and Pro-survival Signaling in Beta Cells. Boston-Ithaca Islet Club, Annual Meeting (invited presentation); UMass Medical School, Worcester, MA; April 2018.

Fernandes A, Gilbert MP. A Mystic Cystic Mass: A case of a benign thymic cyst in a patient with papillary thyroid cancer. American Association of Clinical Endocrinologist, 27th Annual Scientific & Clinical Congress; Boston, MA, May 2018.

Vennard KC, Ng H, Nathan MH, Schnure JJ. Thyroidectomy for the Treatment of Thyroid Storm. American Association of Clinical Endocrinologists, 27th Annual Scientific & Clinical Congress; Boston, MA; May 2018.

Selen D, Gilbert MP. Evaluation of Insulin Regimen and Glycemic Control in Non-Critically Ill Hospitalized Patients with Type 2 Diabetes Receiving Continuous Enteral Nutrition Therapy. American Diabetes Association, 78th Scientific Session; Orlando, FL; June 2018. Poster # 2283-A.

Pratley RE, Emerson SS, Franek E, Gilbert MP, Marso SP, McGuire, DK, Pieber TR, Poulter NR, Hansen CT, Hansen MV, Mark T, Moses A, Zinman B on behalf of the DEVOTE Study Group. Cardiovascular (CV) Safety and Severe Hypoglycemia Benefit of Insulin Degludec vs Insulin Glargine U100 in Older Patients (≥ 65 years) with Type 2 Diabetes (T2D): Observations from DEVOTE. American Diabetes Association, 78th Scientific Session; Orlando, FL; June 2018. Oral presentation # 2018-A.

Division of Gastroenterology and Hepatology

Richard Zubarik, MD, Interim Director

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



The Gastroenterology and Hepatology Division at the University of Vermont College of Medicine/University of Vermont Medical Center has five full-time faculty members, four GI Fellows and two Ph.D.'s. A fourth GI fellow was added in July 2018. Clinical care, teaching, and both basic science and clinical research are all essential elements to our Unit.

This year there was transition in our Division. Both Dr. Peter Moses and Dr. James Vecchio received academic achievement awards for their work over the past 23 years, and were recognized with an Emeritus Professorship on the occasion of their Retirement. Their expertise will be missed by their colleagues and patients. In addition, our newest faculty, Dr. Mario Velez left the organization for other opportunities. Dr. Eric Ganguly, who has served at our institution for 12 years, with a particular interest in therapeutic endoscopy, has accepted the position of interim Chief of Endoscopy at UVMHC. We also have hired a Nurse Practitioner, Maia Stamieszkin, who will start in the fall of 2018.

With a view to the future the Gastroenterology and Hepatology Division is reorganizing how we provide clinical care to better serve our patients. This year, in order to better serve our patients with inflammatory bowel disease, we began the process of developing a patient oriented Inflammatory Bowel Disease Center. We are also restructuring how we provide specialty care to patients with liver disease so that we can better serve our patients across the University of Vermont Health Network.

Exceptional clinical care is a cornerstone to our Unit. We provide both inpatient and outpatient consultative care. Our outpatient clinics are located in the Digestive Disease Center located on the 5th floor of the Ambulatory Care Center. Clinics are dedicated to liver disease and each aspect of luminal gastroenterology. All this is accomplished with an integrated out-patient and in-patient electronic medical record.

Our endoscopy Unit performs over 12,500 procedures each year. We perform both general gastroenterology as well as advanced therapeutic procedures. This year we installed a system throughout our endoscopy unit which enables us to integrate real-time endoscopic, fluoroscopic, endosonographic and cytologic imaging. We have also implemented endovault, which is a new electronic endoscopy report generating system. To ensure we are providing quality care for our patients we have linked the endovault system to our pathology report generating system so that we can assess our individual and collective adenoma detection rates (ADR), which is the best quality benchmark for colorectal cancer screening.

The Gastroenterology and Hepatology Unit takes pride in the quality of medical education it provides. Nationally we educate other Gastroenterologists through participating in educational committees in the American Association of Liver Disease and the American Society for Gastrointestinal Endoscopy. Dr. Strader participated in an AASLD Webinar devoted to the treatment of hepatitis C. Faculty formally teach Medical Residents locally by presiding at Morning Report and leading the Academic Half Day Educational Series section dedicated to Gastroenterology and Hepatology. A weekly clinical GI Conference is held and led by GI Faculty and guest speakers from other divisions. As well, there is a bi-weekly GI Pathology Conference led by specialty trained GI pathologists. At this meeting, 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.

Fellowship training remains extremely strong. The Gastroenterology Board passage rate of our fellows over the last 20 years is 100%. Our longstanding Gastroenterology Fellowship Director, Dr. Nicholas Ferrentino, has recently improved the program by incorporating a wider spectrum of physicians into the training of our fellows. Collaborative conferences with other Divisions at our institution, broadening the scope of our Gastroenterology lecture series, and providing opportunity for sub-specialized training at other Institutions are all occurring to enhance the education of our Gastroenterology Fellows.

Research in our unit is flourishing. Ongoing clinical research projects in non-alcoholic steatohepatitis, hepatitis C, hepatitis B, Resident education, Barrett's esophagus, esophageal dilation, Intestinal motility, chronic constipation, serotonin signaling, and hepatobiliary disorders are being performed. This year Dr. Lidofsky was the recipient of the Frymoyer Scholar Award, in conjunction with Dr. Hale from Infectious Disease, to study optimization of hepatitis C care in Vermont.

I am honored to be part of this prolific Unit, with its diverse research interests, devotion to teaching, and tireless clinical service to the community.

Richard Zubarik, MD

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

Interim Director

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

Maia Stamieszkin, NP
Nurse Practitioner

Ovais Ahmed, MD
GI Fellow

Sonja Dawsey, MD
GI Fellow

Brendan Everett, MD
GI Fellow

Joseph Frasca, MD
GI Fellow

Jason Heffley, MD
GI Fellow

Leadership in Professional Studies:

Steven Lidofsky, MD, Ph.D.

- AASLD Leadership
- Public and Clinical Policy Committee
- Abstract review hepatobiliary neoplasia for Liver Meeting and DDW

Gary Mawe, Ph.D.

- Strategic Planning Committee, American Neurogastroenterology and Motility Society, 2015-present
- Faculty panelist and facilitator, Young Investigator Forum, American Neurogastroenterology and Motility Society, August, 2017
- Member of the Clinical, Integrative, and Molecular Gastroenterology Study Section, Center for Scientific Review, NIH, 2013 - 2017.
- Councilor, Nerve-Gut Motility section of the American Gastroenterology Association; 2014-2017.
- Fundamentals of Neurogastroenterology - Basic Science Committee, The Rome Foundation. The purpose of this committee is to develop a summary of the research and literature to date related to functional gastrointestinal disorders, and then offer guidelines or recommendations to help advance future research. 2012-present

Editorships and Editorial Boards:

Steven Lidofsky, MD, Ph.D.

- Ad hoc reviewer for American Journal of Gastroenterology

Gary Mawe, Ph.D.

- 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

Doris Strader, M.D.

- Reviewer, Digestive Diseases and Sciences 2010- present

- Reviewer, AASLD publication, *Hepatology Journal* 2010-present

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
- Reviewer, *Journal of Endocrinological Investigation*, 2015-Present

Study Sections and Federal Advisory Boards:

Steven Lidofsky, MD, Ph.D.

- Vermont Department of Health Steering Committee for Viral Hepatitis

Gary Mawe, Ph.D.

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

Doris Strader, MD

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

Grants – list all active by faculty member, PI (I NEED TO VERIFY BELOW)

Gary Mawe, Ph.D.

- Autoimmune mechanisms of gastrointestinal dysmotility in multiple sclerosis (G. Mawe, Principal Investigator). NIH RO1 Grant Number R01 DK113800; 9/1/2017-8/31/2021. 40% effort. The goal of this project is to determine the mechanism responsible for altered intestinal motility in multiple sclerosis.
- Studies of the prokinetic and anti-inflammatory actions of lumenally restricted 5-HT4 receptor agonists (G. Mawe, Principal Investigator). Takeda Pharmaceuticals; requested funding period: 7/1/2017-6/30/2020. 10% effort. The goal of this project is to test the effectiveness of non-absorbable 5-HT4 agonists for the treatment of constipation and colitis.

Steven Lidofsky, MD, Ph.D.

- University of Vermont Cancer Center/Lake Champlain Cancer Regional Organization Award: Magnetic resonance-based determination of hepatic steatosis for optimization of outcomes following surgical resection of liver metastases

Peter Moses, MD

- FMT in Ulcerative Colitis

James Vecchio, MD

- SECURE / A Non-Interventional Long-term Post-Marketing Registry of Patients Treated with Certolizumab Pegol (Cimzia®) for Crohn's Disease

Pharmaceutical Sponsored Research

Steven Lidofsky, MD, Ph.D.

- Intercept: A phase 3 randomized long-term placebo-controlled multicenter study evaluating the safety and efficacy of obeticholic acid in subjects with nonalcoholic steatohepatitis (NASH)
- Conatus: A phase 2 multi-center double-blind randomized placebo-controlled trial of emricasan in subjects with NASH fibrosis
- Shire: A phase 2 multi-center double-blind randomized placebo-controlled trial of volixibat in subjects with nonalcoholic steatohepatitis
- Gilead: A phase 3 multi-center double-blind randomized placebo-controlled trial of selonsertib in subjects with nonalcoholic steatohepatitis and advanced hepatic fibrosis
- Target Pharmsolutions: A multi-center study of the management and outcomes of subjects with nonalcoholic fatty liver disease
- Conatus: A phase 2 multi-center double-blind randomized placebo-controlled trial of emricasan in subjects with NASH cirrhosis and severe portal hypertension
- Abbvie: A multi-center double-blind randomized placebo-controlled trial of glecaprevir/pribentasvir for chronic hepatitis C and nonelevated AST to Platelet Ratio Index
- Gilead: A phase 2 multi-center, double-blind, randomized, placebo-controlled trial of combinations of selonsertib, a small molecule FXR agonist and a small molecule ACC antagonist in subjects with nonalcoholic steatohepatitis and advanced hepatic fibrosis

- Intercept: A phase 2 randomized, long-term placebo-controlled multicenter study evaluating the safety and efficacy of obeticholic acid in subjects with cirrhosis due to NASH

Other Research

Richard Zubarik, MD

- Pancreatic Cancer Screening Employing CA 19-9 and Targeted Endoscopic Ultrasound (EUS) in a High Risk Population
- A Pilot Study to Determine if the Endoscopic Dilator Monitor can Create Real-Time Pressure/Volume and Pressure/Time Curves during Endoscopic Balloon Dilator of Esophageal Strictures, and if these Curves Vary According to Stricture Etiology.
- Choledocholithiasis After Normal Diagnostic Cholangiogram or Endoscopic Clearance of Bile Duct
- 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. Epub 2016 Sep 24. Review. PMID: 27571792

Kamboj AK, Kahn A, Wolfsen HC, Trindade AJ, **Ganguly EK**, Otaki F, Chan D, Zakko L, Visrodia K, Lutzke L, Wang KK, Leggett CL. Volumetric laser endomicroscopy interpretation and feature analysis in dysplastic Barrett's esophagus. J Gastroenterol Hepatol. 2018 Apr 6. [Epub ahead of print] PMID: 29633412

Everett BT, **Lidofsky SD**. Adherence to surveillance endoscopy following hospitalization for index esophageal variceal hemorrhage. World J Gastrointest Surg. 2018 Apr 27;10(4):40-48. PMID: 29707105

Alexander KS, Zakai NA, **Lidofsky SD**, Callas PW, Judd SE, Tracy RP, Cushman M. Non-alcoholic fatty liver disease, liver biomarkers and stroke risk: The Reasons for Geographic and Racial Differences in Stroke cohort. PLoS One. 2018 Mar 12;13(3):e0194153. eCollection 2018. PMID: 29529073

MacLean CD, Berger C, Cangiano ML, Ziegelman D, **Lidofsky SD**. Impact of electronic reminder systems on hepatitis C screening in primary care. J Viral Hepat. 2018 Feb 25 PMID: 29478306

- Spohn, S.N. and **G.M. Mawe** (2017) Non-conventional features of peripheral serotonin signaling. *Nature Reviews Gastroenterology and Hepatology* 14:412-420.
- Coates, M.D., I Tekin, K.E. Vrana and **G.M. Mawe** (2017) The Many Potential Roles of Intestinal Serotonin Signaling in Inflammatory Bowel Disease. *Alimentary Pharmacology and Therapeutics* 46:569–580.
- Raza, A. J.W. Crothers, M.M. McGill, **G.M. Mawe**, C. Teuscher, and D.N. Kremontsov (2017) Anti-inflammatory roles of p38 α MAPK in macrophages are context-dependent and require IL-10. *Journal of Leukocyte Biology* 102: 1219–1227 PMID:28877953.
- Camilleri, M., A.Ford, **G.M. Mawe**, P. Dinning, S. Rao, W. Chey, M. Simren, A. Lembo, T. Young-Fadok, and L. Chang (2017) Chronic Constipation *Nature Reviews Disease Primers*. 3:1-19. PMID: 29239347
- Lavoie, B. J.B. Lian and **G.M. Mawe** (2017) Regulation of Bone Metabolism by Serotonin. *Advances in Experimental Medicine and Biology*. 1033:35-46. PMID:29101650
- Chang, L., C. DiLorenzo, G. Farrugia, F.A. Hamilton, **G.M. Mawe**, P.J. Pasricha, and J.W. Wiley (2018) Functional Bowel Disorders: A Roadmap to Guide the Next Generation of Research *Gastroenterology*. 154:723-735 (authors listed alphabetically) PMID:29288656
- Spear, E.T., E.A. Holt, E.J. Joyce, M.M. Haag, S.M. Mawe, G.W. Hennig, B Lavoie, A.M. Applebee, C. Teuscher, and **G.M. Mawe** (2018) Altered gastrointestinal motility involving autoantibodies in the experimental autoimmune encephalomyelitis model of multiple sclerosis. *Neurogastroenterology and Motility* PMID:29644797
- Lavoie, B., J.A. Roberts, M.M. Haag, S.N. Spohn, K.G. Margolis, K.A. Sharkey, J.B. Lian and **G.M. Mawe** (2017) Gut-derived serotonin contributes to bone deficits in colitis. *Pharmacological Research*. In Press
- Mawe, G.M.** B. Lavoie, M.T. Nelson and M. J. Pozo (2018) Neuromuscular Function in the Biliary Tract. In *Physiology of the Gastrointestinal Tract*, 6th edition H.M. Said, ed., Elsevier. Chapter 30, pp 453-468.
- Yang MX, Coates RF, Ambaye A, Cortright V, Mitchell JM, Buskey AM, **Zubarik R**, Liu JG, Ades S, Barry MM. NKX2.2, PDX-1 and CDX-2 as potential biomarkers to differentiate well-differentiated neuroendocrine tumors. *Biomark Res*. 2018 Apr 18;6:15. eCollection 2018. PMID: 29713473
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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 35 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, President-Elect of the New England Society of General Internal Medicine, 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, OneCare Vermont Regional Clinician Representative, 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.

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

Michael Latreille, MD
Assistant Professor of 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

Karen Abernathy, MD
Assistant Professor of Medicine

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

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 (*Emeritus*)

Alison Landrey, MD

Assistant Professor of Medicine

Sarah Roberts, 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

Alexandra Messerli, MD
Assistant Professor of Medicine
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

Jonathan Benjamin Wilfong, MD
Assistant 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

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

Alexandra Messerli, MD

Assistant Professor of Medicine

Medical Director, The Arbors

- Geriatric Medicine

Lynn Wilkinson, MD

Clinical Assistant Professor of Medicine

Nurse Practitioners, Physician Assistants, and Mental Health Specialists:

Adult Primary Care - Burlington

Laurel Kelliher, 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

Sarah McLaughlin, NP

Adult Primary Care - Williston

Kirsten Berggren, NP

Genevieve Flanders, PA

Starr Farm (Skilled Nursing Facility)

Katharine Murphy PhD, MS, APRN

Birchwood Nursing Center (Skilled Nursing Facility)

Tara Meyer, NP

Leadership in Professional Societies:

Patricia King, MD, PhD

- Chair, Board of Directors, Federation of State Medical Boards
- Chair, Composite Committee of United States Medical Licensing Exam

Halle Sobel, MD

- President-Elect, New England Chapter of Society of General Internal Medicine

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:

Michael LaMantia, MD

- Deputy Editor, 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 2017:
 - Dr. Dennis Beatty
 - Dr. Halle Sobel
- Mark Levine, MD GME General Internal Medicine Teacher of the Year 2018
 - Dr. Halle Sobel
- Director of the Center on Aging at UVM
 - Dr. Michael LaMantia

- Master Teacher designation, Teaching Academy at UVM
 - Dr. Michael LaMantia
- National Academy of Primary Care Research, Pearl Award 2017
 - Dr. Marie Sandoval

Grants

Beatty, Dennis, MD: Frymoyer Grant 7/1/17-6/30/19: Clinical Reasoning Curriculum Development and Implementation.

Berger, Claudia, MD: UVMCMC Innovation Grant: Implementing Nurse-lead Annual Wellness Exams

Sobel, Halle MD: Frymoyer Grant 7/1/17-6/30/19: Medication Assisted Treatment (MAT) Integration into a Primary Care Internal Medicine Residency: A Novel Interprofessional Addiction Treatment Curriculum

Plante, Timothy, MD: U54 GM115516 Rosen, Stein
(MPIs) 01/01/2018 - 12/31/2018
NIH - NIGMS

Leveraging Health Records to Explain Rural Cardiovascular Disease Disparities
The Rural/Urban Disparities in Cardiovascular Assessment (RUDICA) pilot project was selected by the Northern New England Clinical and Translational Research (NNE-CTR) network. The aims are to identify the reasons for a greater burden of cardiovascular disease in rural adults. We will merge a deidentified database of the electronic health records from the University of Vermont Health Network and MaineHealth to determine if cardiovascular burden is due to low levels of screening and management of known risk factors for cardiovascular disease. From these findings, we will formulate methods to address these disparities and reduce the burden of cardiovascular disease among rural adults.
Role: Subaward PI
Direct costs year 1: \$50,000
Total period: 01/1/2018 – 12/31/2018, no cost extension through 5/30/2018

Plante, Timothy, MD: U54 GM115516 Rosen, Stein (MPIs), Harder (sub-
PI) 07/01/2018 - 06/30/2019
NIH - NIGMS

Hospital Utilization for Opioid Overdose: A Community Engaged Multidisciplinary Approach to Measure the Impact of Policy Change and Inform Interventions
This project aims to leverage claims data and the RUDICA database to identify unintended consequences of opioid policy reform in Vermont and Maine. I am leading the RUDICA analysis.
Role: Co-investigator, 5% salary support
Direct costs year 1: \$118,683

Total period: 07/1/2018 – 06/30/2019.

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

Journal Articles:

Halle G. Sobel, Rachel Swigris, Karen M. Chacko, Alison Landrey, Monica McNulty, Kaitlyn Vennard, Susan Michelle Nikels, Kathleen Suddarth, Edward N. Murphy, and Eva Aagaard (2017) Resident and Preceptor Perceptions of Preceptor Integration Into Resident Clinic Scheduling Templates. *Journal of Graduate Medical Education*. August 2017, Vol. 9, No. 4, pp. 497-502.

Halle G. Sobel, Elise Everett, Laura Lipold. The role of vaginal cytology after a benign hysterectomy: An unnecessary practice in women's healthcare. *The Cleveland Clinic Journal of Medicine*. June 2018, Vol. 85, No. 6, pp. 456-458.

Fujii MH, Hodges AC, Russell RL, Roensch K, Beynnon B, Ahern TP, Holoch P, Moore JS, Ames SE, **MacLean CD**. Post-Discharge Opioid Prescribing and Use after Common Surgical Procedure. *J Am Coll Surg*. 2018 Jun;226(6):1004-1012. doi: 10.1016/j.jamcollsurg.2018.01.058. Epub 2018 Feb 28. PubMed PMID: 29499361; PubMed Central PMCID: PMC5971152.

MacLean CD, **Berger C**, Cangiano ML, **Ziegelman D**, Lidofsky SD. Impact of electronic reminder systems on hepatitis C screening in primary care. *J Viral Hepat*. 2018 Feb 25. doi: 10.1111/jvh.12885. [Epub ahead of print] PubMed PMID: 29478306.

Gulec N, Lahey J, Suozzi JC, Sholl M, **MacLean CD**, Wolfson DL. Basic and Advanced EMS Providers Are Equally Effective in Naloxone Administration for Opioid Overdose in Northern New England. *Prehosp Emerg Care*. 2018 Mar-Apr;22(2):163-169. doi: 10.1080/10903127.2017.1371262. Epub 2017 Oct 12. PubMed PMID: 29023172.

Jordan MR, O'Keefe MF, Weiss D, Cubberley CW, **MacLean CD**, Wolfson DL. Implementation of the universal BLS termination of resuscitation rule in a rural EMS system. *Resuscitation*. 2017 Sep;118:75-81. doi: 10.1016/j.resuscitation.2017.07.004. Epub 2017 Jul 13. PubMed PMID: 28713042.

Tarleton EK, **Littenberg B**, **MacLean CD**, Kennedy AG, Daley C. Role of magnesium supplementation in the treatment of depression: A randomized clinical trial. *PLoS One*. 2017 Jun 27;12(6):e0180067. doi: 10.1371/journal.pone.0180067. eCollection

2017. PubMed PMID: 28654669; PubMed Central PMCID: PMC5487054.

Plante TB, O'Kelly AC, Macfarlane ZT, Urrea B, Appel LJ, Miller ER, Blumenthal RS, Martin SS. Trends in user ratings and reviews of a popular yet inaccurate blood pressure-measuring smartphone app. *J Am Med Inform Assoc*. E-published June 7, 2018.
<https://doi.org/10.1093/jamia/ocy060>

Plante TB, O'Kelly AC, Urrea B, MacFarlane ZT, Blumenthal RS, Charleston J, Miller ER, Appel LJ, Martin SS. User experience of Instant Blood Pressure: Exploring reasons for the popularity of an inaccurate mobile health app. *npj Digital Medicine*. In press. Pending DOI.

Plante TB, Juraschek SP, Miller ER, Appel LJ, Cushman M, Littenberg B. Comparison of frequency of atherosclerotic cardiovascular and safety events with systolic blood pressure <120 mm Hg versus 135-139 mm Hg in a SPRINT primary prevention subgroup. *Am J Cardiol*. In press. <https://doi.org/10.1016/j.amjcard.2018.06.041>

DeBaremore B, Pandey A, **Plante TB**, Wilner B, Rohm Young D, and Matthews AT. Highlights: AHA's EPI|Lifestyle 2018 Scientific Sessions. *JAHA*. 2018;7(13):e09313.
<https://doi.org/10.1161/JAHA.118.009313>

Austrom MG, Boustani M, **LaMantia MA**. Ongoing medical management to maximize health and well-being for persons living with dementia. *The Gerontologist*. 2018; Jan 18; 58(supplement 1): S48-S57.

Harrawood A, Fowler NR, Perkins AJ, **LaMantia M**, Boustani MA. Acceptability and results of Alzheimer's Disease screening among older adults in the United States. *Current Alzheimer Research*. 2018; 15(1):51-55.

Textbooks:

Leading An Academic Medical Practice

Editors: Lee Lu, EP Barrett, Craig Noroha, **Halle Sobel** and Daniel Tobin.

Chapter 1: Clinic Director's Roles and Expectations

Halle Sobel and Mark Pasanen

Chapter 2: Supervising and Supporting Faculty

Alaka Ray, Priya Radhakrishnan and **Halle Sobel**

Chapter 11: Population Health Management for Residents

Robert Fortuna and **Halle Sobel**

Division of Hematology and Oncology

Chris Holmes, MD, Interim Director

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

A. Executive Summary



The Division of Hematology and Oncology has had a successful clinical and academic year with a continued dedication to our tri-partite mission of teaching, research and high quality, patient centered care. The division has 16 faculty members who care for patients with oncologic and hematologic malignancies, benign hematology, as well as thrombotic and bleeding disorders. This includes two new junior faculty members, Dr. Hibba Rehman, who specializes in solid tumor oncology with an interest in tumor genomics and Dr. Timothy Plante, who joined the Thrombosis and Hemostasis team. In 2017-2018, the division provided over 18,500 outpatient consults and visits in addition to approximately 13,500 infusion and procedures. Currently, the Hematology and Oncology clinic is actively involved in planning for and executing a renovation of its clinic space which will be an expansion beyond the boundary of the existing footprint and will

include dedicated space for clinical research. Inpatient services offered by the division include a hematology consult service, an oncology consult service and a heme-malignancy inpatient service. In addition to specialized hematology services and subspecialty, tertiary oncologic care, the division also provides unique services to our patient population including:

- 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, reaccruited 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 Care and Expertise, (Dr. O'Brien, PI)

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 & hemostasis, 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. In addition to mentoring and teaching fellows, multiple faculty members serve as mentors to both medical students and internal medicine residents.

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 34 national interventional clinical trials; 15 industry sponsored national trials and 31 investigator initiated

institutional trials. Investigators within the Division receive funding from clinical trials (cooperative group and pharmaceutical trials), NIH NCI, NHLBI, AHA, NINDS and the American Cancer Society. Additionally, several division members hold key leadership positions within the University of Vermont Cancer Center (Ades, Greenblatt, Holmes and Wood) and The Cardiovascular Research Institute of Vermont (Cushman).

The division faculty and fellows published 54 manuscripts in the last year and were involved in numerous local, national and international abstract presentations. Hematology research highlights include new scientific insights and discoveries on a bi-directional association between atrial fibrillation and venous thromboembolism (Cushman), the impact of rosuvastatin on risk markers for VTE in cancer patients (Ades, Holmes Cushman), the association of sickle cell trait with end stage renal disease (Cushman, Zakai), the pharmacoepidemiology assessment of the direct oral anticoagulants and mortality risk when treating VTE (Zakai), arterial risk factors as risk factors for VTE (Cushman, Zakai), anticoagulation strategies and outcomes in hematologic malignancy patients with vte (Zakai, Douce (fellow)). Additional oncology research include a potentially predictive miRNA signature for Breast Cancer Risk (Wood), a refinement of criteria for classifying sequence variants in genes that predispose to hereditary cancer and other genetic conditions (Greenblatt), a report on the effectiveness of aprepitant in addition to ondansetron in the prevention of nausea and vomiting following radiotherapy to the abdomen (Ades), the impact of a behaviorally-based weight loss intervention on parameters of insulin resistance in breast cancer survivors (Dittus) and characterization of a novel biomarker in acute myelogenous leukemia prognostication (Holmes).

Additional accomplishments that round out a successful year in hematology and oncology include: Dr. Mary Cushman served as the inaugural editor in chief of Research and Practice in Thrombosis and Haemostasis, an official journal of the International Society on Thrombosis and Haemostasis. The first issue of the new journal was launched in July 2017 and has just been accepted for indexing in PubMed Central. Dr. Marie Wood was named Fellow of the American Society of Clinical Oncology (FASCO) at this year's annual meeting. The distinction recognizes ASCO members for their extraordinary volunteer service, dedication, and commitment to ASCO. Recipients have carried out efforts that benefit ASCO, the specialty of oncology, and, most importantly, the patients whom they serve. Dr. Steven Ades served as site PI for the NCI Alliance Network and Medical Director of Clinical Trials at the UVM Cancer Center; Dr. Nunnink served as a member of the Board of Directors for the American Society of Oncology; Dr. Marie Wood served as the Chair-Elect of the ASCO Continuing Education Committee; Dr. Zakai served as of the co-chair of the Research Committee of the Hemophilia and Thrombosis Research Society and Dr. Greenblatt served as a member of the International Scientific Advisory Council for the Human Variome Project.

Faculty

Jose Acostamadiedo, MD-Clinical Practice Physician

Physician at CVPH

Steven Ades, MD, MSc – Associate Professor

Leader, UVM Medical Upper Gastrointestinal Oncology Transdisciplinary Team
Co-Leader, UVM Medical Center Genitourinary Oncology Transdisciplinary Team
Medical Director, UVM Cancer Center Clinical Trials Office
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
Member, UVM Robert Larner College of Medicine, Committee on Fitness
Research and clinical interests include: GI and GU cancers, supportive care and thrombosis in malignancy

Maura Barry, MD-Assistant Professor

Associate Program 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
Member, Hematology/Oncology Division Chief Search 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 cardiovascular diseases, stroke, cognitive impairment and other chronic diseases; racial disparities; venous thrombosis and post thrombotic syndrome

Kim Dittus, MD, PhD – Assistant Professor

Medical Director of Oncology Rehabilitation
Director, Inpatient Hematology/Oncology
Chair Clinical Committee, Program in Integrative Health
Member, Cancer Control Committee, UVM Medical Center
Research interests include: Cancer survivorship, diet/nutrition, exercise

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 Division Chief, 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, Quality Assurance 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

Hibba tul Rehman, MD—Assistant Professor

Research interests include: Lung cancer, sarcoma, breast cancer and rare tumors

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, Inpatient Hematology/Oncology—July-January
Research interests include: Malignant hematology, stem cell transplant, clinical trials

Marie Wood, MD – Professor

Director, Familial Cancer Program
Assistant Director, Hematology/Oncology Division
Associate Director, Cancer Control
Co-leader, University of Vermont Cancer Center, Control & Populations Health Science Program
Research interests include biomarkers of breast cancer risk, genetic testing in rural areas, breast cancer screening and prevention

Neil Zakai, MD, MSc – Associate Professor of Medicine and Pathology

Chair, UVM Cancer Center Data Safety and Monitoring Board
Member, UVM Medical Center Pharmacy and Therapeutics 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, Oncology Search Committee
Chair, Medication Safety Subcommittee for the Pharmacy & 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

Bhargavi Pulluri, MD –3rd year fellow
Purva Sharma, MD – 3rd year fellow
Daniel Douce, MD –2st year fellow
Saranya Kodali, MD –2st year fellow
Kitty Victoria, MD—1st year fellow
Waqas Jehangir, MD—1st year fellow

NP's and PA's

Jamie Kelly, PA
Penny Gibson, PA
Jordan Tolstoi, 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, Graduate Student, completed PhD in Clinical & Translational Sciences May 2018

Kara Landry, MD, Post-Doctoral Research, N-Terminal pro-B-type Natriuretic Peptide & Risk of Recurrent Stroke. Harriet Dustan Research Award from DOM mentored by Mary Cushman

Christina Cahill, MPH. Mitigating the Genetic Risk of Venous Thrombosis through Lifestyle. Received the North American Society on Thrombosis and Hemostasis Medical Student Scholarship, mentored by Mary Cushman

Matt Lebow, Medical Student (2nd year) UVM, mentored by Neil Zakai

Jordan Munger, Medical Student (2nd year) UVM, mentored by Neil Zakai

Dan Douce, MD, 3rd year Hematology/Oncology Fellow, UVM, mentored by Neil Zakai

Damon Houghton, MD, Hemoglobin and Cardiovascular Disease risk in REGARDS cohort, Junior Faculty Mayo Clinic, mentored by Neil Zakai

Julie Jaffrey, MD, CHAT Registry, Junior Faculty, Pediatric Hematology Children's Hospital of Los Angeles, mentored by Neil Zakai

Leadership in Professional Societies

Steven Ades, MD

Member, Board of Directors Northern New England Clinical Oncology Society

Site Principal Investigator, Alliance for Clinical Trials in Oncology

Member, Alliance 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

Chair, Guideline Panel, Prevention of Venous Thromboembolism in Medical Patients. American Society of Hematology

Member, Leadership Council of the International Society on Thrombosis and Haemostasis, ex officio non-voting

American Heart Association 2020 Goal Metrics Committee

Vascular Health 2020 Vision Task Force, American Heart Association

Publishing Committee (ex officio), International Society on Thrombosis and Hemostasis

Medical Advisory Committee, Foundation for Women & Girls with Blood Disorders

Planning Committee, 2018 HTRS/NASTH Research Colloquium, Developing a Sustainable Research Career in Hemostasis and Thrombosis

Media Experts Subcommittee, American Society of Hematology
Chair, Task Force on Women in Science and Medicine, American Heart Association

Kim Dittus, MD, PhD

Member, Cancer Control Committee, UVM Medical Center

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

Farrah Khan, MD

Member, American Society of Clinical Oncology
Member, Northern New England Clinical Oncology Society
Member, International Association for the Study of Lung Cancer

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

Hibba tul Rehman, MD

Member, American Society of Clinical Oncology
Member, American Society of Hematology

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

Co-Chair, Alliance, Prevention Committee
Member, Alliance Foundation, Board of Trustees
Member, NCI Prevention Steering Committee
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, Executive Committee, American Heart Association Council on Epidemiology and Prevention
Member, American Society of Hematology VTE Guideline Panel: Prevention of VTE in Medical Patients
Co-Chair, Hemophilia and Thrombosis Research Society, Research Committee
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 POP 2 Peer Review Committee
Member, Hemophilia and Thrombosis Research Society Membership Committee
Faculty, American Society of Hematology Clinical Research Training Institute

Editorships and Editorial Boards

Mary Cushman, MD

Editor-in-Chief, Research and Practice in Thrombosis and Haemostasis
Editorial Board, Coronary Artery Disease
Editorial Board, Journal of Thrombosis and Haemostasis
Editorial Board, Circulation

Marie Wood, MD

Editorial Board, The Breast
Editorial Board, Journal of the National Cancer Institute

Neil Zakai, MD
Guest Editor, Circulation
Editorial Board, Research and Practice of 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

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 02/15/18-01/31/23
U01 NS041588
VCID and Stroke in a Bi-Racial National Cohort
G Howard, PI, University of Alabama at Birmingham
ADC (current Vermont subcontract): \$393,924
Role: Subcontract PI, 25%

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

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

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

NIH 04/01/16-03/31/21
NICHD
Social Context, Life Course and Genetic Transcription in Add Health
ADC (subcontract): \$23,489
Role: Subcontract PI, 2.5%

NIH 06/01/16-05/31/21
Transitions to Family Caregiving and its Impact on Health Indicators
ADC: \$75,466
Role: Co-Investigator, 5%

Kim Dittus

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

Marie Wood

Alliance #A211601 Wood (PI) 02/24/17-02/23/18
Alliance Protocol Development Support: Concept A211601 A Companion to A011501:
Evaluation of Mammographic Breast Density Effect of Aspirin
Role: PI

Alliance 31828 Wood (PI) 08/01/17-11/04/21
Prevention Committee Co-Chair/Concept
Role: PI

Alliance #A211601 Wood (PI) 08/01/17-06/15/18
NCORP Research Base
A Companion to A011502: Evaluation of Mammographic Breast Density Effect of
Aspirin
Role: PI

NNECOS Wood (PI) 04/01/18-03/31/19
DNA Repair Landscape of Discordant Sibling Pairs from Hereditary Breast Cancer
Families
Role: (PI)

Neil Zakai

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

R01 1R01HL131579 Lutsey (PI) 10/01/16-09/30/20
NIH/NHLBI
Contemporary Venous Thromboembolism Treatment
Recent introduction of novel oral anticoagulant drugs have transformed the management
of venous thromboembolism (VTE), however we have little real-world experience with
the side-effects of these medications. This grant uses data from two large U.S.
commercial claims databases (OptumInsight and MarketScan) to see whether real-life
outcomes differ between traditional treatment of VTE and novel treatments and if
bleeding and recurrent thrombosis differ
Role: Subcontract PI

R01 HL132947 Reiner (PI) 04/01/17-03/31/21
NIH/NHLBI
Thrombosis Genetics in African Americans
The primary objective of this project is to measure several emerging thrombosis and
inflammation plasma biomarkers that are likely to reflect and/or account for increased
thrombogenicity and therefore may contribute to higher rates of CVD in African

Americans, and to assess the association of thrombosis biomarkers and biomarker-associated genetic variants with more complex subclinical and clinical CVD endpoints available in JHS and other African American cohorts, including REGARDS

Role: Subcontract PI

RO1 HL136373

Pamir (PI)

04/01/18-03/31/23

NIH/NHLBI

Identification of the Role of HDL Function in Human Cardiovascular Disease through Proteomics and Genetics.

The primary aims seek to assess whether high-density lipoprotein cholesterol efflux capacity and the protein composition of HDL provide predictive value of assessing the risk of coronary heart disease and stroke in Caucasian and African-Americans relative to HDL cholesterol and apolipoprotein A1 levels

Role: Subcontract PI

Publications

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):182-90. doi: 10.1053/j.ajkd.2016.10.039. PMID: 28126238

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Howard G, Kleindorfer D, **Cushman M**, Long DL, Jasne A, Judd SE, Higginbotham JC, Howard VJ, Contributors to the excess stroke mortality in rural areas in the United States. *Stroke* 2017 Jul;48(7):1773-1778. doi: 1161/STROKEAHA.117.017089. PMID: 28626048

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relationship to CVD risk in the Jackson Heart Study. *Arterioscler Thromb Vasc Biol* 2017;37:2220-7.

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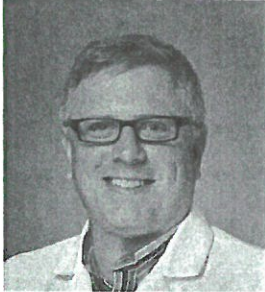
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Division of Hospital Medicine – Update 2017-2018

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 35,000 patient encounters, generating more than 68,000 work RVU's. This includes the recent addition of a Medical Oncology service – which works closely with Oncology to provide inpatient care to patients with solid tumors. In addition, we've added an evening swing shift,

to provide enhanced 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%. We are very proud that Dr. Florian Foerg received the 2018 Distinguished Clinician Award from the Department of Medicine.

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. We are currently engaged in work to improve glycemic control for hospitalized adults.

Education:

Our faculty teaches General Internal Medicine and Hospital Medicine to medical students, resident physicians, professional colleagues, and community members.

Hospitalists serve as the teaching attending for the four General Medicine teaching teams throughout the year – offering clinical supervision, bedside and didactic education, along with feedback 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. Dr. Amy Teleron continues to take the lead in our Adult Code training for our residents, 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 Program Director and Associate Program Director for the Internal Medicine Residency, 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, following Dr. Florian Foerg in 2016.

At the UVM College of Medicine, our primary teaching is in the hospital setting, focusing on the Internal Medicine Inpatient Clerkship, Internal Medicine Acting Internship and the Clinical Tutor program (which

is directed by one of our Hospitalists, Dr. Bartsch). However, our faculty are also involved in other teaching activities including Foundations courses, Convergence and Professionalism, Communication and Reflection. Over the last year, Dr. Eldakar-Hein has served as the Associate Course Director – and will be taking over as Course Director in 2018.

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. Dr. Allen Repp was awarded the 2018 Clinical Resident Mentor Award by the Department of 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 has included externally funded clinical trials of immunizations and high value laboratory ordering practices. In addition, internal funding currently supports work on teaching trainees to facilitate code status discussions. Previous funding has supported work on 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
Co-Director of Quality and Safety, Division of Hospital Medicine

Markus Degirmenci, MD
Assistant Professor of Medicine

Shaden Eldakar-Hein, MD
Associate Professor of Medicine
Associate Program Director, Internal Medicine Residency
Course Director, Professionalism, Communication and Reflection

Florian Foerg, MD
Assistant Professor of Medicine
Director, Hospital Medicine Consult Service

Jon Ford, PA

Zechariah Gardner, MD
Assistant Professor of Medicine

Steve Grant, MD
Associate Professor of Medicine
Associate Director, Hospitalist Service
Associate Chief Medical Officer for Care Coordination and Patient Transitions

Emily Greenberger, MD (recently moved to General Internal Medicine)
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

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
Co-Director of Quality and Safety, Division of Hospital Medicine

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, Department of Medicine

Paul Slavik, MD
Assistant Professor of Medicine

Amy Lynn Teleron, MD
Assistant Professor of Medicine
Medical Director, Critical Access and Rapid Response Teams

Eric Westphal, PA

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 Governor-Elect and 3 members of the advisory council membership) and past president of the UVM Medical Alumni President. Dr. Repp serves on the Society of Hospital Medicine Performance Measurement and Reporting Committee.

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 EPIC/IT. In addition, we have had active engagement in the newly formed Adult Hospital Medicine Specialty Council – directed by Dr. Mark Pasanen.

There are numerous specific examples of leadership within the faculty. Dr. Steven Grant has been selected as the Associate Chief Medical Officer for Care Coordination and Patient Transitions. Drs. Chad

Mitchell, Mohit Jindal and Steve Grant serve a critical role in Utilization Review, providing real-time reviews in coordination with Case Management. Drs. Rachel McEntee has been instrumental in helping to optimize EPIC, our electronic health record, through their work and leadership as a Physician Informaticist. 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:

Allen Repp, MD, MS

- Reviewer: Journal of Hospital Medicine
- Editorial Board: JSM Clinical Case Reports

Major Faculty Awards:

- Dr. Florian Foerg: Distinguished Clinician Award from the Department of Medicine 2018
- Dr Allen Repp: Resident Mentor Award from the Department of Medicine 2018
- Dr. Emily Greenberger: William Osler, M.D. Award for Outstanding Teacher of the Year in General Internal Medicine 2017
- Dr. Allen Repp (with Marie Sandoval): NAPCRG Pearl, North American Primary Care Research Group. Awarded to the top research studies presented at the NAPCRG Annual Meeting that will impact clinical practice. Awarded for presentation entitled, "Can We Increase the Rate of Obtaining Advance Directives in Our Primary Care Clinics?"

Grants:

Frymoyer Grant 2017-2019: Drs. Rand and Eldakar – "Conversation About End of Life Wishes: Teaching Trainees to Facilitate Code Status Discussions"

UHC Grant 2018: Dr. Rachel McEntee – "Improving Electronic Medical Record User Satisfaction"

Vermont Child Health Improvement Program (VCHIP), 07/01/2018-06/30/2019, Robinson (PI), Dr. Repp Co-Investigator. Pediatric to Adult Specialty Care Transition Project to improve Medicaid eligible youth and young adult access to and utilization of high quality care in pediatric and adult specialty care clinics.

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

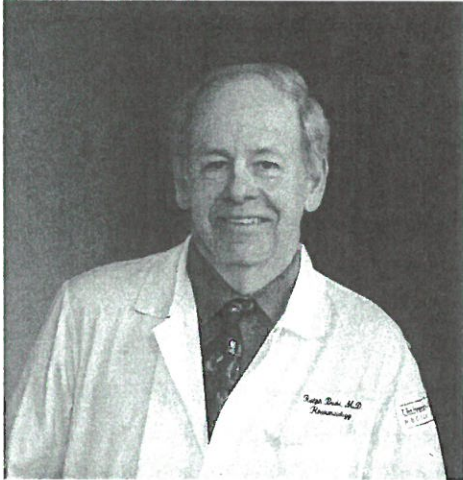
Repp AB, Bartsch JC, Pasanen ME (2018) What the "non-teaching" service can teach us. Acad Med. 93(1):41-44

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, virus-host interactions, 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 3 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

Associate Professor of Medicine, Adjunct in Microbiology and Molecular Genetics

- Key Research Interests: Identification of key virus-host interactions required for viruses (e.g. arenaviruses, flaviviruses, hantaviruses) to complete their life cycle and/or cause human disease; understanding how host-driven posttranslational modifications (e.g. phosphorylation) of viral proteins regulate their functionality; understanding the natural history of host T and B cell responses to virus infection and how these immune cells contribute to protective immunity or immune-mediated pathogenesis; translating our basic science discoveries into vaccines and therapeutics.

Emily Bruce, PhD

Faculty Scientist

- Key Research Interests: Understanding how viruses (arenaviruses, hantaviruses, influenza virus) interact with host cellular machinery to facilitate virus particle assembly and release and the identification of neutralizing antibodies against these viruses.

Karen Fortner, PhD

Faculty Scientist

- 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

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:

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

Annalis Norman (graduate student) – Identification of human monoclonal antibodies for treatment of hantavirus disease in humans; identification of key host proteins required for arenavirus propagation.

Inessa Manuelyan (graduate student) – Identification of key human proteins required for Zika and dengue 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 (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

Study Sections and Federal Advisory Boards:

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

ZRG1 F07-J (20) L Fellowships Immunology

NIH Immunity and host Defense

(Botten) Ad hoc reviewer, Virology B Study Section, National Institute of Health. Received

invitations to review for (i) Small Business: Non-HIV Anti-Infective Therapeutics, NIH, (ii) Special Emphasis Panel ZAI1-JRR-M-J3 for PAR-16-106 Rapid Assessment of Zika Virus Complications (R21), NIH, and (iii) Online Discovery Award-Vaccine Discovery for Infectious Disease peer review panel of the 2018 Peer Reviewed Medical Research Program for the Department of Defense Congressionally Directed Medical Research Programs

(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) American College of Rheumatology Annual Meeting, San Diego, CA (November, 2017)

Malaghan Institute for Medical Research, Wellington, New Zealand (April, 2018)

(Botten) Promotion to Associate Professor with Tenure.

(Bruce) Promotion to Faculty Scientist

(Botten) 2 graduate students (Benjamin King and Chris Ziegler) successfully defended their

PhDs.

(Botten) Plenary speaker at the 2017 American Society for Tropical Medicine and Hygiene

symposium entitled The dengue controlled human infection model (CHIM) – a tool to deconstruct the immune response toward the identification of immune correlates of protection

(Botten) Invited speaker at the 2018 International Negative Sense Virus meeting in Verona, Italy

(Bruce) Invited speaker at the 2018 International Negative Sense Virus meeting in Verona, Italy

(Botten) Co-taught the International NDPIA Course entitled “Emerging Viral Diseases –

Preparing for the Unknown” at the Karolinska Institute in Stockholm, Sweden

(Botten) Undergraduate Lorraine Dang received the UVM Biology Department’s 2018 Kurt

Milton Pickett Award in recognition of her excellence for the research done in Dr. Botten's lab.

Grants – list all active by faculty member, PI

Budd:

R21 AI 119979 Budd (PI)

Title: Metabolic Regulation of Caspases and Survival in T Cells

Dates of Award: 04/01/16-03/31/19

Role: PI

Current Yr funding: \$0 No Cost Extension

Source: NIH/NIAID

P30 GM118228 Budd (PI)

Title: Vermont Immunology / Infectious Diseases Center

Dates of Award: 08/05/2016 – 07/31/21

Role: PI

Current Yr funding: \$1,167,438

Source: NIH/NIGMS

T32 AI 055402 Budd (PI)

Title: Vermont Immunology / Infectious Diseases Training Grant

Dates of Award: 09/01/05 – 08/31/21

Role: PI

Current Yr funding: \$189,470

Source: NIH/NIAID

R21 AI 107298 Budd (PI)

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

Dates of Award: 01/13/16-12/31/18

Role: PI

Current Yr funding: \$192,438

Source: NIH/NIAID

Botten:

OPP1109415 (Kirkpatrick, B.) 11/5/14-9/30/18

Bill and Melinda Gates Foundation

Title: 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-PI of subproject

Med Res Awd (Botten, J.) 01/09/17-06/30/19

Title: *The impact of defective interfering particles on host fitness during persistent lymphocytic choriomeningitis virus infection*

Current Yr funding: \$75,000

Source: LCOM

SPARK2017 (Botten, J.) 2017-2018

SPARK-VT Competition, UVM

Title: *Therapeutic antibodies for treatment of hantavirus cardiopulmonary syndrome*

The goal of this award is to develop human monoclonal antibodies for treatment of New World hantavirus disease.

Current Yr Funding: \$50,000

P30GM118228 (Budd, R.) 08/01/18 - 07/31/19

NIH/NIGMS

Centers of Biological Research Excellence (COBRE), Vermont Immunobiology/Infectious Disease Center

Dr. Botten is the PI of a pilot project to develop a therapeutic molecule to target ERGIC-53-sensitive viruses

Current Yr Funding: \$50,000

R41AI132047 (STTR) (Botten, J.) 08/08/2017-07/31/2019

NIH/NIAID

Therapeutic antibodies for treatment of hantavirus cardiopulmonary syndrome

Major goal is to capture the repertoire of antibodies generated against Andes hantavirus

during acute infection and identify those that could be used to therapeutically treat disease.

Direct costs of this subproject: \$400,348 (Total costs with indirect costs: \$599,772)

3R41AI132047-01S1 (Supplement to R41AI132047) (Botten, J.) 12/01/2017-07/31/2019

NIH/NIAID

Therapeutic antibodies for treatment of hantavirus cardiopulmonary syndrome

The major goal of this research supplement is to provide support for a scientist in my group to reenter the workforce full time and use a novel approach (that is complementary to the approach used in the parent grant) to identify therapeutic antibodies for treatment of hantavirus disease.

Direct costs for supplement: \$131,664 (Total costs with indirect costs: \$205,396)

R21AI135265 (Botten, J.) 06/01/2018-05/31/2020

NIH/NIAID

Title: *Mapping the Zika virus phosphoproteome*

Major goal is to map the phosphorylation sites on the arenavirus proteome and determine which modifications regulate the functionality of arenavirus proteins.

Total direct costs: \$275,000 (Total costs with indirect costs: \$425,218)

1R43AI142911-01 (SBIR) (Botten, J., Co-PI) 10/01/2018-11/01/2020

NIH/NIAID

A novel antibody therapy for Sin Nombre virus infection

Major goal is to capture the repertoire of antibodies generated against Sin Nombre hantavirus during acute infection and identify those that could be used to therapeutically treat disease.

Direct costs of this subproject: \$400,348 (Total costs with indirect costs: \$599,772)

*Pending council review (impact score 20; interim payline 30)

SPARK2018 (Botten, J.) 2018-2019

SPARK-VT Competition, UVM

Title: *Development of monoclonal antibodies for treatment of hantavirus disease in North America*

The goal of this award is to develop human monoclonal antibodies for treatment of hantavirus disease in North America.

Current Yr Funding: \$50,000

Rincón:

R25 GM116701

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

R01 AI051454

Title: GSK3B in TCR Repertoire and Immune Diseases

Dates of Award: 08/05/16-07/31/20

Role: PI

Current Yr funding: \$388,775

Source: NIH/NIAID

R41 DK112429

Title: A Novel Approach to Treat Non-Alcoholic Steatohepatitis (NASH)

Dates of Award: 07/05/17-06/30/19

Role: PI

Current Yr funding: \$0 No Cost Extension

Source NIH (sub award through Mitotherapeutix)

R21 CA223389

Title: A Novel Target to Overcome Chemoresistance in Breast Cancer

Dates of Award: 06/01/18-05/31/20

Role: PI

Current Yr funding: \$203,580

Source: NIH

Teuscher:

Title: Molecular Genetics of Arthritis in Murine Lyme Disease

Dates of Award: 08/15/2004 – 06/30/19

Role: Co-PI

Current Yr funding: \$76,250

Source: University of Utah

RG 5170A6/1

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

Dates of Award: 4/1/15-3/31/19

Role: PI

Current Yr funding: \$0 No Cost Extension

Source: NMSS

R21 NS095007

Title: Gene-Environment Interactions in CNS Autoimmune Disease

Dates of Award: 06/15/16-05/31/19

Role: PI

Current Yr funding: \$0 No Cost Extension

Source: NIH/NINDS

R21AI128595

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: \$195,000

Source: NIH

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

Anathy V, Lahue KG, Chapman DG, Chia SB, Casey DT, Aboushousha R, van der Velden JLJ, Elko E, Hoffman SM, McMillan DH, Jones JT, Nolin JD, Abdalla S, Schneider R, Seward DJ, Roberson EC, Liptak MD, Cousins ME, Butnor KJ, Taatjes DJ, **Budd RC**, Irvin CG, Ho YS, Hakem R, Brown KK, Matsui R, Bachschmid MM, Gomez JL, Kaminski N, van der Vliet A, Janssen-Heininger YMW. Reducing protein oxidation reverses lung fibrosis. Nat Med. 2018 Jul 9. doi: 10.1038/s41591-018-0090-y. PubMed PMID: 29988126.

Barbier-Torres L, Iruzubieta P, Fernández-Ramos D, Delgado TC, Taibo D, Guitiérrez-de-Juan V, Varela-Rey M, Azkargorta M, Navasa N, Fernández-Tussy P, Zubieta-Franco I, Simon J, Lopitz-Otsoa F, Lachiondo-Ortega S, Crespo J, Masson S, McCain MV, Villa E, Reeves H, Elortza F, Lucena MI, Hernández-Alvarez MI, Zorzano A, Andrade RJ, Lu SC, Mato JM, Anguita J, **Rincón M**, Martínez-Chantar ML. The mitochondrial negative regulator MCJ is a therapeutic target for acetaminophen-induced liver injury. *Nat Commun*. 2017 Dec 12;8(1):2068. doi: 10.1038/s41467-017-01970-x. PubMed PMID: 29233977; PubMed Central PMCID: PMC5727217.

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. PubMed PMID: 28551033; PubMed Central PMCID: PMC5902411.

Hare BD, **Thornton TM**, **Rincon M**, Golijanin B, King SB, Jaworski DM, Falls WA. Two Weeks of Variable Stress Increases Gamma-H2AX Levels in the Mouse Bed Nucleus of the Stria Terminalis. *Neuroscience*. 2018 Mar 1;373:137-144. doi: 10.1016/j.neuroscience.2018.01.024. PubMed PMID: 29352998; PubMed Central PMCID: PMC6033054.

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King BR, Kellner S, Eisenhauer PL, **Bruce EA**, **Ziegler CM**, Zenklusen D, **Botten JW**. Visualization of the lymphocytic choriomeningitis mammarenavirus (LCMV) genome reveals the early endosome as a possible site for genome replication and viral particle pre-assembly. *J Gen Virol*. 2017 Sep 27. doi: 10.1099/jgv.0.000930. PubMed PMID: 28949905; PubMed Central PMCID: PMC5725993.

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****This article was selected by the editors of the Journal of Virology for inclusion in "Spotlight," a feature in the Journal that highlights research articles of significant interest.**

Division of Infectious Diseases - Annual Report July 2017–June 2018

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



The Infectious Diseases (ID) Division is comprised of eleven attending physicians dedicated to the diagnosis, management, prevention and investigation of infectious diseases. The Division also includes a part-time physician assistant and a nurse practitioner in the outpatient clinic. During this past year, one faculty member left our group, Kristine Spiess, and two new faculty were recruited, Jean DeJace and Andrew Hale.

Dr. Beth Kirkpatrick was named the Chair of UVM's Microbiology and Molecular Genetics Department. Drs. DeJace and Hale spend 25% of their time doing inpatient clinical work at Champlain Valley Physicians Hospital in Plattsburgh, NY. This is a new collaboration with a member of the UVM Health Network.

Last year the Division performed over 1,700 new inpatient consultations on the medical center campus. The outpatient clinics remain busy with over 6,000 arrived visits. This effort includes the care of nearly 500 patients with HIV in four federally funded Comprehensive Care Clinics in Vermont. In total the ID Division performed over 15,500 work RVU's last year. In addition to providing care for those living with HIV, the outpatient clinic includes the care of those with international travel, refugees, hepatitis C, outpatient IV antibiotics, and the full scope of general infectious diseases. The Division has contracts with the Vermont Department of Health to collaborate on antibiotic stewardship, the diagnosis and treatment of tuberculosis, and biological and pandemic influenza preparedness. The Division has a contract with the VT Department of Corrections to consult on HIV and hepatitis C. 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 Residency Director, the Larner College of Medicine Clerkship Director for the Department of Medicine, and the Director of the Vaccine Testing Center at UVM.

In addition to daily teaching rounds with medical students, residents and fellows, the faculty are actively involved in teaching several courses in the Larner College of Medicine. The ID Division has one fellow per year in a two-year fellowship training program. The graduating fellows have a 100% board certification pass rate over the past 18 years. Our fellows have presented abstracts at national ID meetings, published peer reviewed articles, and authored book chapters.

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

The Huston laboratory has been continuously funded by the NIH as well as the Gates Foundation and is working on the discovery of therapeutic agents for *Cryptosporidium*. He has also worked extensively on the molecular biology and pathogenesis of *Entamoeba histolytica*.

Investigations of the Kirkpatrick laboratories and Vaccine Testing Center (VTC) have moved this year to the Department of Microbiology and Molecular Genetics (MMG). Dr. Beth Kirkpatrick, has assumed the role of the Chair of the Department of MMG, bringing new opportunities for collaboration with basic scientists in Microbiology to the ID Division. Dr. Sean Diehl has also moved to MMG with the VTC.

The VTC remains in tight collaboration with the division of Infectious Diseases. It focuses on improving global health through the assessment of candidate vaccines, microbial diseases, and the understanding of human protective immune responses following vaccination and infection. Under the auspices of the VTC, research includes faculty from the ID division (Drs. Pierce and Huston) as well as Drs. Benjamin Lee (Pediatrics), Kelly Cowan (Pediatrics), Jessica Crothers (Pathology), Jason Botten (Medicine), Jon Boyson (Surgery), and Caroline Lyon (Medicine). The team continues to work on development of the NIH's live attenuated tetravalent dengue vaccine, performs 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 2018 include a fractional dose inactivated polio vaccine with mucosal adjuvant, examination of the persistence of *Campylobacter* in infants of the developing world and our first Zika vaccine phase I trial (led by Dr. Kristen Pierce).

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) as well as contracts with regional hospitals, the VT Department of Health, and UVM Medical Center directorships.

Faculty

W. Kemper Alston, MD, MPH

Professor

- Director, Infectious Disease Division
- Interim Director, UVMMC Part C, HRSA grant for HIV care
- Hospital Epidemiologist and Medical Director of Infection Prevention
- Chair, Infection Prevention Committee, UVM Medical Center
- Tuberculosis Consultant, State of Vermont
- Medical Director, UVMMC 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, UVMMC

- Member, Infectious Diseases Practice Subcommittee, Pharmacy and Therapeutics Committee, UVMCC
- Member, Professional Advisory Committee, Visiting Nurse Association

Jean Dejace, MD

Assistant Professor

- Attending Physician for Infectious Disease
- CVPH attending

Sean Diehl, PhD (July to March)

Assistant Professor

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

Andrew Hale, MD

Assistant Professor

- Attending Physician for Infectious Disease
- Director, Infectious Elective Rotation
- Course Director, How the Hospital Works, 4th yr medical student course
- Course Director, Comparative Physiology, Mount Desert Island Biological Laboratories
- Chair, Vermont Hepatitis C Taskforce

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, Department. of Medicine
- Research Committee, Department of Medicine
- Reappointment, Promotions and Tenure Committee, Department. of Medicine, UVM College of Medicine
- New Research Building Advisory Group, UVM Larner College of Medicine

Beth D. Kirkpatrick, MD, FIDSA, FASTMH

Professor of Medicine with Tenure

Chair, Department of Microbiology and Molecular Genetics (April 2018)

- 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
- Associate Director, Infection Prevention

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

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, UVMHC Antimicrobial Stewardship Program
- Co-Chair, Infectious Disease Practice Committee (IDPC)
- Co-Chair, IDCP sub-committee, Pharmacy and Therapeutics Committee

Krystine R. Spiess, DO (July to April)

Assistant Professor of Medicine

- Program Director, UVMHC Part C, HRSA grant for HIV care
- Program Director, UVMHC 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

Daniela Dimarco, MD

Infectious Disease 1st Year Fellow

- Infectious Disease Fellowship Training Program July 1, 2017 – June 30, 2019
- Poster presentation topic: Blastomycosis

J. Jacob Enser, MD

Infectious Disease 2nd Year Fellow

- Infectious Disease Fellowship Training Program July 1, 2016 – June 30, 2018
- Poster presentation topic: West Nile Virus
- Research Project: The impact of an educational intervention on fluoroquinolone prescribing in an academic outpatient setting

Nurse Practitioners and Physician Assistants:

Hella Douglas, PsychNP (July – September)

Comprehensive Care clinic, HIV patients

- 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)

Endowed Professorships:

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

Andrew Hale, MD

- External reviewer
 - Medical Teacher
 - Teaching and Learning in Medicine
 - Manson's Tropical Diseases, 23rd Edition, Farrar et al
 - Clinical Cases in Tropical Medicine, 1st Edition, Rothe
 - Infectious Diseases, 4th Edition, Cohen, Powell, Opal
 - BMJ open

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:

Christopher Huston, MD

- Ad-Hoc Reviewer - National Institutes of Allergy and Infectious diseases
 - 2017, ZRG1 IDM-M(02) (Vector and Eukaryotic Pathogens Study Section)
 - 2018, 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

Nominated as a Fellow of the American College of Physicians (2017)

University of Vermont Medical Center, Senior Investigator of the Year (2017)

Christopher Huston, MD

University of Vermont Medical Center, Junior Investigator of the Year (2017)

Grants – list all active by faculty member, PI

W. Kemper Alston, MD (Interim PI)
 Ryan White Part C Grant for HIV Care
 Non-Competing grant award
 5/1/2018 – 4/30/2019
 \$ 530,005 Federal HRSA

W. Kemper Alston, MD (InterimPI)
 Ryan White Care Act Part B
 5/1/2018– 7/9/2018
 \$249,633 annual Federal HRSA

W. Kemper Alston, MD
 TB Control and Surveillance, Public Health Preparedness & Response for Bioterrorism
 Centers for Disease Control and Prevention Investigations and Technical Assistance
 7/1/2017- 06/30/2018
 \$26,000.00 Federal

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

Krystine Spiess, DO (PI)
Ryan White Part C Grant for HIV Care
Competing grant award
5/1/2017 – 4/30/2018
\$ 540,646 Federal HRSA

Krystine Spiess, DO (PI)
Ryan White Care Act Part B
1/1/2017– 12/31/2017
\$249,633 Federal HRSA

Krystine Spiess, DO (PI)
Ryan White Care Act Part B
1/1/2018– 4/30/2018
\$249,633 annual Federal HRSA

Walpole (PI)
Subcontract from University of Toronto
Bill and Melinda Gates Foundation
Project title: Structure-guided drug discovery for tuberculosis and malaria *Cryptosporidium*
supplement
Role: Principal investigator on UVM subcontract (10% effort)
2/20/2015-12/31/2018
UVM Direct costs: \$ 37,823 UVM Total costs: \$ 41,605

Huston (PI)
Bill and Melinda Gates Foundation

Project title: OPP1132796: Using pharmacokinetic and efficacy studies of nitazoxanide and azithromycin to standardize the calf clinical model of cryptosporidiosis

Role: Principal investigator (30% effort)

10/14/2015-09/30/2018

Direct costs: \$733,136 Total costs: \$806,449

Huston (PI)

Merck Serono

Project title: Screening the Merck “mini-library” for anti-*Cryptosporidium* drug activity

Role: Principal investigator (2.6% effort)

12/1/2015-10/31/2018

Direct costs: \$ 35,807 Total costs: \$ 55,143

Huston (PI)

NIAID R21 AI130807

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

Role: Principal investigator (10% effort)

1/25/2017-1/24/2019

Direct costs: \$275,000 Total costs: \$ 424,435

Huston (PI)

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

Project title: *Cryptosporidium* strain/species comparative study

Role: Principal investigator (10% effort)

11/1/2016-3/31/2018

Direct costs: \$190,513 Total costs: \$209,564

Griggs (PI)

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

Bill and Melinda Gates Foundation

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

Role: Principal investigator on UVM subcontract

07/01/2017-06/31/2019

UVM Direct costs: \$116,699 UVM Total costs: \$ 132,274

Huston (PI)

UVM Immunobiology COBRE Pilot Grant Program

Project Title: Manipulating the gut microbiota to prevent cryptosporidiosis.

Role: Principal Investigator (0% effort)

07/01/2017-06/31/2019

Direct costs: \$50,000 Total costs: \$ 78,000

Huston (PI) Program for Appropriate
Technology in Health (PATH) PDS Drug Solutions
Project title: *Cryptosporidium in vitro* and *in vivo* efficacy studies
Role: Principal investigator (5% effort)
07/31/2017-12/15/2018
Direct costs: \$58,933 Total costs: \$64,826

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
7/1/2017 – 6/30/2018
\$51,620 Federal sub-award, UMASS

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

Susheela A, **Hale A**. Patients with common variable immunodeficiency paradoxically have increased rates of autoimmune disorders. *BJM Case Reports* October 2017; doi:10.1136/bcr-2017-221657

Modjarad K, Lin L, George S, Stephenson K, Eckels K, DeLaBarrea R, Jarman R, Sondergaard E, Tennant J, Ansel J, Mills K, Koren M, Robb M, Barrett J, Thompson J, Kosel A, Dawson P, **Hale A**, Tan CS, Walsh S, Meyer K, Brien J, Crowel T, Blazevic A, Mosby K, Larocca R, Abbink P, Boyd M, Bricault C, Seaman M, Basil A, Walsh M, Tonwe V, Hoft D, Thomas S, Barouch D, Michael N. Preliminary aggregate safety and immunogenicity results from three trials of a purified inactivated zika virus vaccine candidate: phase 1, randomized, double-blind, placebo-controlled clinical trials. December 3, 2017 *the Lancet.com* [http://dx.doi.org/10.1016/S0140-6736\(17\)33106-9](http://dx.doi.org/10.1016/S0140-6736(17)33106-9)

Hale A, Ricotta D, Freed J, Smith C, Huang G. Adapting Maslows Hierarchy of Needs as a Framework for Resident Wellness. April 30, 2018 doi:10.1080/10401334.2018.1456928

Hale A. What the North Korean Defector's Infections Really Tell Us. *Infectious Diseases in Clinical Practice*. May 2018 Vol 26, No 3

Hale A, Snyder G, Ahern J, Eliopoulos G, Ricotta D, **Alston WK**. When are Oral Antibiotics a Safe and Effective Choice for Bacterial Bloodstream Infections? An Evidence-Based Narrative Review. February 2018 *Journal of Hospital Medicine* doi:10.12788/jhm.2949

Foster G, Fessler D, Kociol R, Witkins A, **Hale A**. Blastomycosis masquerading as severe community acquired pneumonia in a non-endemic region: a case report and literature review. *Infectious Diseases in Clinical Practice*. Online August 25, 2017. DOI 10.1097/IPC.0000000000000533

Ricotta D, Huang G, **Hale A**, Freed J, Smith CC. Mindset theory in medical education. *Clinical Teacher*. Feb 12, 2018/ DPO" 10.1111/tct.12765

Hale A, LaSalvia M, Vicks E, Giurini J, Karchmer AW. Methicillin-Resistant Staphylococcus Aureus Endocarditis from Diabetic Foot Ulcers: Understanding and mitigating the risk. Accepted at the *Journal of Academic Podiatric Medicine Association* February 2, 2018

Hale A, Ricotta D, Freed J, Smith CC, Huang G. Adapting Maslow's Hierarchy of Needs as a Framework for Resident Wellness. Accepted at *Teaching and Learning in Medicine* February 28, 2015

Genetu Bayih A, Debnath A, Mitre E, **Huston CD**, Laleu B, Leroy D, Blasco B, Campo B, Wells T, Willis P, Sjo P, VanVoorhis W Pillai D Susceptibility Testing of Medically Important Parasites. *American Society for Microbiology, Clinical Microbiology Reviews* July 2017, Vol 30, no3 647-669

PMID 28446445

Jain V, Yogavel M, Kikuchi H, Oshima Y, Hariguchi N, Matsumoto M, Goel P, Touquet B, Jumani RS, Tacchini-Cottier F, Harlos K, **Huston CD**, Hakimi MA, Sharma A. Targeting Prolyl-tRNA Synthetase to

Accelerate Drug Discovery against Malaria, Leishaniasis, Toxoplasmosis, Cryptosporidiosis, and coccidiosis. 2017 Oct 3;25(10):1495-1505.e6. doi: 10.1016/j.str.2017.07.015. Epub 2017 Aug 31.

PMID 28867614

Junami R, Bessof K, Love M, Miller P, Stebbins E, Teixeira J, Campbell M, Meyers M, Zambriski J, Nunez V, Woods A, McNamara C, **Huston C**. April 2018 Vol. 62 Issue 4 e01505-17

Stebbins E, Junami R, Klopfer C, Barlow J, Miller P, Campbell M, Meyers M, Griggs D, **Huston C**. Clinical and Microbiologic efficacy of the piperazine-based drug lead MMV665917 in the dairy calf cryptosporidiosis model. PLOS Neglected Tropical Diseases. January 2018 doi 12(1):e0006183

Open Access Malaria Box. *Antimicrobial Agents and Chemotherapy*. 2018. 62(4). Pii. E01505-17. PMID: 29339392.

Hasan M, Teixeira JE, **Huston CD**. Invadosome-mediated human extracellular matrix degradation by *Entamoeba histolytica*. *Infection and Immunity*. 2018. Jun 18. pii: IAI.00287-18. doi: 10.1128/IAI.00287-18. [Epub ahead of print]. PMID: 29914929.

Rogawski ET, Platts-Mills JA, Colgate ER, Haque R, Zaman K, Petri WA Jr, **Kirkpatrick BD**. Quantifying the impact of natural immunity on rotavirus vaccine efficacy estimates: a clinical trial in Dhaka, Bangladesh (PROVIDE) and a simulation study. *J Infect Disease*. 2018; 217: 861-8.

Mychaleckyj JC, Nayak U, Colgate ER, Zhang D, Carstensen T, Ahmed S, Ahmed T, Mentzer AJ, Alam M, **Kirkpatrick BD**, Haque R, Faruque ASG, Petri WA Jr. Multiplex genomewide association analysis of breast milk fatty acid composition extends the phenotypic association and potential selection of *FADS1* variants to arachidonic acid, a critical infant micronutrient. *J Med Genet* 2018. doi: 10.1136/jmedgenet-2017-105134. [epub ahead of print].

Lee B, Carmolli M, Dickson DM, Colgate ER, Diehl SA, Uddin MI, Islam S, Hossain M, Rafique TA, Bhuiyan TR, Alam M, Nayak U, Mychaleckyj JC, McNeal MM, Petri WA Jr, Qadri F, Haque R, **Kirkpatrick BD**. Rotavirus-specific IgA Responses are Impaired and Serve as a Sub-Optimal Correlate of Protection among Infants in Bangladesh. *Clin Infect Dis* 2018. doi: 10.1093/cid/ciy076 [epub ahead of print].

Lee B, Dickson DM, deCamp AC, Colgate ER, Diehl SA, Uddin MI, Sharmin S, Islam S, Bhuiyan TR, Alam M, Nayak U, Mychaleckyj JC, Taniuchi M, Petri WA Jr., Haque R, Qadri F, **Kirkpatrick BD**. Histoblood Group Antigen Phenotype Determines Susceptibility to Genotypes-specific Rotavirus Infections and Impacts Measures of Rotavirus Vaccine Efficacy. *J Infect Dis* 2018. doi: 10.1093/infdis/jiy054. [Epub ahead of print]

Church JA, Ntozini R, Carmolli M, **Kirkpatrick BD**, Humphrey J, Diehl SA, Prendergast A. Immune responses to oral poliovirus vaccine in HIV-exposed uninfected Zimbabwean infants. *Human Vaccines & Immunotherapeutics*. 2017; 13 (11): 2543-2547

Division of Nephrology

July 1, 2017- June 30, 2018

A. Executive Summary

Service:

The Nephrology Division represents the only nephrologist in the State of Vermont and provides coverage of 5 satellite dialysis units – St. Albans, South Burlington, Barre, Newport, and Rutland. At each satellite facility, an outpatient clinic for management of patients with chronic kidney disease, hypertension and electrolyte disorders has been established. At each site, the nephrologist also does inpatient consults as requested. In addition to face-to-face visits, the nephrology division provides telephone consults to providers in Vermont and Upstate New York. The Division has successfully recruited two new providers to replace Drs. Segal and Negoj who left last summer. Dr. Onuigbo is a midlevel career academic nephrologist who joins us from one of the Mayo Clinic affiliates. Dr. Narasimhadevara is a recent graduate of our own fellowship program. Both are excellent clinicians and committed to academic careers. Because of the lack of candidates for Nephrology fellowships across the country, we hired Megan Houston, an APP, to the inpatient dialysis unit where she will provide continuity to the chronic dialysis patients who cycle in and out of the acute dialysis unit whenever they are hospitalized for medical or surgical issues. Dr. John Gennari is retiring (officially) this summer after 39 years of service in the Division.

Education:

A number of members of the Division joined the Teaching Academy this past year. As we gear up for the transition to 100% active learning in the medical school curriculum, these individuals are expected to take an increasingly important role in that process and are already taking on additional teaching responsibilities in the CRR course and the 3rd year medical clerkship. Within the Division, we are also developing our own curriculum for the faculty and the students/residents/fellows based upon the monthly NEPHSAP questions.

Research:

The Division has active research protocols (both investigator-initiated and sponsored) with three research coordinators (2 FTE) in a dietitian, a nurse and a research assistant. A number of new projects were initiated in the past year. These include successful competition for small grant from the Department of Medicine for measurement of urinary oxygen as an early biomarker of AKI in patients undergoing cardiac surgery (Solomon). While we are still collecting data, this has led to another IRB submission to use the technology for physiologic studies that address the mechanisms to prevent AKI (Onuigbo, Narasimhadevara). We have also started a trial to determine the renal toxicity of contrast media using patients undergoing surveillance CT's following EVAR procedure (Prikis).

Additional sponsored research projects involve delaying progression of chronic kidney disease in patients with diabetes, novel treatment of anemia of chronic kidney disease, use of tolvaptan to delay progression of autosomal dominant polycystic kidney disease.

Dr. Cheung received a career development award from the Palliative Care Society for her studies on frailty in patients starting hemodialysis.

B. Faculty:

Varun Agrawal, MD

Assistant Professor of Medicine
Medical Director, Barre Dialysis Unit

Katherine (Kat) Cheung, MD

Assistant Professor of Medicine
Palliative Care in Nephrology

Paul El Azoury, MD

Assistant Professor of Medicine

Alison Fitzgerald, MD

Assistant Professor of Medicine
Medical Director, St. Albans and Newport Dialysis Units

John Gennari, MD

Emeritus Professor of Medicine

Virginia Hood, MD

Professor of Medicine

Abhishek Kumar, MD

Assistant Professor of Medicine

Macaulay Onuigbo, MD

Medical Director, Home Dialysis unit

Marios Prikis, MD

Assistant Professor of Medicine
Director, Medical Transplantation

Jeff Rimmer, MD

Professor of Medicine
Medical Director, South Burlington Dialysis Unit

Richard Solomon, MD

Professor of Medicine

Director, Division of Nephrology

Sree Susarla, MD

Assistant Professor of Medicine
Medical Director, Rutland Dialysis Unit

Wolfgang Weise, MD

Professor of Medicine

C. Fellows:

Nina Narasimhadevara, MD
Monika Zimna, MD

D. PA/NP:

Margaret Butler, APRN
Outpatient Dialysis

Megan Houston, APRN
Inpatient Dialysis

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

Katharine Cheung, MD

F. Endowed Professorship

Patrick Professorship in Medicine

G. Leadership in Professional Societies

Member, National Kidney Foundation Kidney Education committee (Nov 2013 - present;

Directors: Bernard Jaar M.D. and Michael Choi M.D., Johns Hopkins University)

https://www.kidney.org/professionals/research/education_committee (Agrawal)

American College of Physicians Well-being champion (Vermont chapter) Apr 2018 - present (Agrawal)

International Society of Internal Medicine: Member of the Executive Committee (Hood)

Sydney University Graduates Union North America Board of Trustees (Hood)

UVMHC Board of Trustees, 2014-2019 (Hood)

UVMHN Quality and Population Health Committee, Chair Jan 2017- present (Hood)

UVMHN Finance committee, Jan 2017 – present (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)

Editorships and Editorial Boards

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

Associate Editor, BMC Nephrology (Epidemiology and Health Outcomes), Nov
2016 to present (Agrawal)

Editorial Board Member, Journal of Medical Case Reports (Kumar)

Editorial Board Member. International Journal of Clinical Practice: Sept 2010 –
Present. (Onuigbo)

Editorial Board Member, BioMed Research International: Editorial Board Member. Feb
2013 – Present. (Onuigbo)

Editorial Board Member, (Section Editor, Renoprevention), Journal of Renal Injury
Prevention: Editorial Board, August 2013 – Present. (Onuigbo)

Editorial Board Member, Nigerian Journal of Clinical Practice,
March 2014 – Present. (Onuigbo)

I. Study Section and Federal Advisory Boards

Member of Organ and Tissue Donation Workgroup, Vermont Department of
Health (Kumar)

NIH-NIDDK Workshop Committee Participant: Chronic Kidney Diseases in
Agricultural Communities. Bethesda Marriott, 5151 Pooks Hill Road, Bethesda,
MD. June 25-26, 2018. An NIH Study Section Workshop. An NIDDK-NIEHS
Workshop on Chronic Kidney Diseases in Agricultural Communities. National
Institute of Diabetes and Digestive and Kidney Diseases (NIDDK) and the
National Institute of Environmental Health Sciences (NIEHS). (Onuigbo)

J. Major Faculty Awards

Teaching Academy (Master Teacher), Larner College of Medicine, University of
Vermont, Burlington VT (Jan 2018 - present) (Agrawal)

Election to membership, O'Brien Kidney Research Center, MAYO CLINIC,
Rochester, MN, USA. September 2016 – January 2018. (Onuigbo)

Member of the Teaching Academy (Prikis)

K. Grants (all grant accounts show a positive balance) – active 2017-2018

Center on Aging, University of Vermont: June 2016-June 2019 (Cheung)

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 K, Hood VL)

BAY 17530 : A randomized, double blind, placebo-controlled, parallel-group, multicenter, event-driven Phase III study to investigate the efficacy and safety of finerenone on the reduction of cardiovascular morbidity and mortality in subjects with type 2 diabetes mellitus and the clinical diagnosis of diabetic kidney disease in addition to standard of care. (Solomon)

BAY 16244: A randomized, double blind, placebo-controlled, parallel-group, multicenter, event-driven Phase III study to investigate the efficacy and safety of finerenone, in addition to standard of care, on the progression of kidney disease in subjects with type 2 diabetes mellitus and the clinical diagnosis of diabetic kidney. (Solomon)

SONAR: A randomized, multicountry, multicenter, double-blind, parallel, placebo-controlled study of the effects of atrasentan on renal outcomes in subjects with type 2 diabetes and nephropathy. (Solomon)

CREDENCE: A randomized, double-blind, event-driven, placebo-controlled, multicenter study of the effects of canagliflozin on renal and cardiovascular outcomes in subjects with type 2 diabetes mellitus and diabetic nephropathy. (Solomon)

Gilead: A phase 2 double-blind, placebo-controlled, dose-ranging study evaluating the efficacy, safety, and tolerability of GS-4997 in subjects with diabetic kidney disease. (Solomon)

REPRISE: A phase 3b, multi-center, randomized-withdrawal, placebo-controlled, double-blind, parallel-group trial to compare the efficacy and safety of Tolvaptan (45-120 mg/day, split dose) in subjects with chronic kidney disease between late Stage 2 and early stage 4 due to autosomal dominant polycystic kidney disease. (Solomon)

L. Publications

1. Book chapter: Kumar A, Agrawal V. 'Hypertensive crises' in Critical Care Secrets (Elsevier) 2019. Editors: Polly E. Parsons, Jeanine P. Wiener-Kronish, Renee D. Stapleton and Lorenzo Berra. Pages 295-301. ISBN : 0323527892

2. Blog: **Cheung KL** and Kurella Tamura M. Advances in Kidney Supportive Care: Communication Skills Training for Nephrology. May 18, 2018. <https://palliativeinpractice.org>
3. Book chapter: **Cheung KL**. Acute Kidney Injury. Polly E. Parsons PE, Jeanine P. Wiener-Kronish, Renee D. Stapleton, and Lorenzo Berra, eds. *Critical Care Secrets*. 6th Edition. Philadelphia, PA, Elsevier, 2018
4. **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, 2017
5. **Onuigbo, MA**, Agbasi N. The Ignored Role of Intraoperative Hypotension in Producing Postoperative Acute Kidney Injury-An Obligatory Appeal for More Preventative Nephrology. *Curr Hypertens Rev*. 2017;13(1):71-78
6. Golestaneh L; Alvarez PJ, MBA; Reaven NL; Funk SE; McGaughey KJ; Romero A; **Onuigbo MA**. Longitudinal Study of Chronic Kidney Disease Progression and Associated Costs. *Journal of Clinical Pathways* 2017; 3(9): 40-48.
7. Hickson L, Thorsteinsdottir B, Ramar P, Reinalda M, Crowson C, Williams A, Albright R, **Onuigbo M**, Rule AD, Shah N. Hospital readmission among new dialysis patients associated with young age and poor functional status. *Nephron*. 2018 Jan 9. [Epub ahead of print].
8. **Onuigbo MA**, Samuel E, Agbasi N, Zurob A. Proposed laboratory surrogate markers for the management of acute kidney injury in ethylene glycol poisoning in resource-challenged countries; a Mayo Clinic Health System, Wisconsin, case analysis. *J Nephropharmacol*. 2018;7(x):x-x. DOI: 10.15171/npj.2018.xx.
9. **Onuigbo MA**, Samuel E, Agbasi N. The demise of contrast nephropathy; can this be true? A contrarian view; a representative case report of contrast nephropathy from Mayo Clinic Health System in Northwestern Wisconsin. *J Nephropharmacol*. 2018;7(x):x-x. DOI: 10.15171/npj.2018.xx.
10. **Onuigbo MA**. The guiding evidence based therapy using biomarker intensified treatment in heart failure (GUIDE-IT) study; the utility of decongestive diuresis in type 1 cardiorenal syndrome with rising pro-BNP levels. *J Nephropharmacol*. 2018;7(x):x-x. DOI: 10.15171/npj.2018.xx.
11. **Onuigbo MA**, Agbasi N, Amadi EJ, Okeke UC, Khan A. Sequential cerebral salt wasting complicating SIADH in a patient following head trauma. *J Renal Inj Prev*. 2018;7(x):x-x. DOI: 10.15171/jrip.2018.xx.
12. **Onuigbo MA**. Acute Kidney Injury Following Cardiopulmonary Bypass Surgery: Challenges of Acute Kidney Injury after Open Heart Surgery in Sub-Saharan Africa. *Nig J of Cardiovascular & Thoracic Surgery*, 2017; 2(2): 44-45.
13. **Onuigbo MA**, Mohammed R, Agbasi N, Henry Alon MH, Sammour Y, Culver T, et al. Symptomatic life-threatening hyponatremia complicating sever COPD exacerbation, pulmonary edema and pulmonary hypertension-a critical role for conivaptan. *J Renal Inj Prev*. 2018;7(x):x-x. DOI: 10.15171/jrip.2018.xx.
14. Chen J, Thorsteindottir B, Vaughan L, Feely M, Albright R, **Onuigbo M**, Norby S, Gossett C, D'Uscio M, Williams A, Dillon J, Hickson L. End of Life, Withdrawal and Palliative Care Utilization among Patients Receiving Maintenance Hemodialysis Therapy. *Clin J Am Soc Nephrol* 2018. In Press.

15. **Onuigbo M.** End-stage renal disease risk in different glomerulonephropathies. *Mayo Clin. Proc.* (Letter to the Editor). Accepted for publication, May 9, 2018.
16. Mendelson, NL, Fitzgerald A, Kumar A, Pineda JA, MacDougall J, Solomon RJ, Gibson, PC, **Prikis, M**, Marroquin, CE. Impact of Ethylene Glycol Toxicity on Donor Organ Viability : A case report. *Transplantation Proceedings*, v 49:10; Pages 2411-2414, 2017.
17. **Solomon R,** Goldstein S. Real-time measurement of glomerular filtration rate. *Curr Opin Crit Care* 2017 Dec; 23(6): 4700-474, PMID 28953557.
18. **Solomon R.** Hydration to prevent acute kidney injury after angiography: the AMACING trial. *Coron Artery Dis.* 2017 Dec; 28(8): 629-631. PMID 29095208.
19. Mendelson, N, Fitzgerald, A, Kuman, A, Pineda, JA, MacDougall, J, **Solomon, R**, Gibson, P, Prikis, M, Marroquin, CE. The impact of Ethylene glycol toxicity on donor organ viability. *Transplantation Proc.* 2017,49: 2411-14, PMID 29198693
20. **Solomon, R.** Death, coronary revascularization choices and chronic kidney disease. *Coron Artery Dis.* 2017, 29: 4-5, PMID 29211933.
21. Azarbal, M, Leadholm, K.L., Ashikaga, T., **Solomon, R**, Dauerman, H.L. Frequency and prognostic significance of acute kidney recovery in patients who underwent transcatheter aortic valve implantation. *Am J Cardiol* 2018, 121: 634-641. PMID 29329828.
22. **Solomon, R.** Acute kidney injury: antioxidants do not PRESERVE kidney function after contrast exposure. *Nat Rev Nephrol* 2018, 14:148-149, PMID 29355174.
23. **Solomon, R,** Lahoud, R. Oral hydrations: does it have a role in prevention of angiography-associated acute kidney injury. *Coron Artery Dis* 2018, 29: 283-285, PMID 29698321.
24. **Solomon, R.** PRESERVE: the end or the beginning of a new era in prevention of contrast-associated acute kidney injury. *Am J Kid Dis* 2018, doi: 10.1053/ajkd.2018.03.013, PMID 29751980.

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 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 100 peer-reviewed articles during the last year, obtained significant funding from the NIH (including a number new R01 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 doctoral programs in Cellular, Molecular, and Biomedical Sciences, and also in Bioengineering. The Division is particularly recognized for its very successful clinical research enterprise, and is leading cutting edge NIH funded clinical research studies in lung cancer, critical illness, and asthma, while also being a very successful participant in multi-center clinical trials led by the CF therapeutic Development Network, PCORI and industry. The research program continues to expand, and enjoys considerable success and major recognition.

Members of the Division continue to have major leadership roles: Dr Parsons is President of the American Thoracic Society, Dr. Stapleton is the Chair Elect of the Critical Care Assembly of the American Thoracic Society and Dr. Dixon has been appointed to the American Lung Association National Board of Directors. Division members serve on numerous national grant review committees, and editorial boards for major publications.

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. Some individuals were recognized for their clinical expertise this year: Dr. Kaminsky was recognized as Clinician of the Year by the Department of Medicine, and Dr. Dixon was appointed to the NHLBI's expert panel which will revise the current asthma treatment guidelines for the U.S.

The Division is committed to education and training, and trains 2 clinical fellows per year in pulmonary and critical care medicine. Dr. Garth Garrison was recognized by the graduating medical school class when he was awarded the clinical teacher of the year by the Medical School Class of 2018.

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

MaryEllen Antkowiak, MD

Assistant Professor of Medicine

Jason H.T. Bates, PhD DSc

Professor of Medicine

Department of Molecular Physiology & Biophysics

Jan Kirk Carney, MD MPH

Professor of Medicine

Associate Dean for Public Health

Ryan Clouser, DO

Associate Professor of Medicine

Network Medical Officer for Network Regional Transport System

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

Associate Professor of Medicine

Program Director, Pulmonary and Critical Care Fellowship

Co-Director, Lung Cancer Screening Program

Kathryn N. Huggett, PhD

Director, 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

Pulmonary physiology, pulmonary function testing, asthma, COPD

C. Matthew Kinsey, MD, MPH

Assistant Professor of Medicine

Director of Interventional Pulmonary

-Quantitative imaging and computational modeling for identification of lung cancer

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

-Interventional trials for COPD

Laurie Whittaker Leclair, MD

Professor of Medicine

Adult CF Program Director, CF Center Member

Prema Menon, MD, PhD

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

Brett Erdreich, MD

Glenda Euceda, MD

Marta Kokoszynska, MD

Katherine Menson, DO

Radhika Parikh, MD

Nurse Practitioners and Physician Assistants:

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

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

Jason Bates, PhD, DSc

Ubong Peters, PhD post-doctoral associate
Vitor Mori, BSc PhD student

Charles Irvin, PhD

Wyatt Chia PhD Candidate, UVM

C. Matthew Kinsey, MD, PhD

Heng Tan Medical Student

Matthew Poynter, PhD

Matthew Randall, PhD
Katherine Menson, DO

Renee Stapleton, MD, PhD

Prema Menon, MD, Assistant Professor (research mentor)
Maria Burnett, Assistant Professor (research mentor)
Katharine Cheung, Assistant Professor (research mentor)
Radhika Parikh, MD, Senior Fellow (research mentor)
E. Ross Colgate, Graduate Student (dissertation committee)
Hill Enuh, Senior Fellow (research mentor for QI project)
John Halevy, Senior Fellow (research mentor)

Benjamin Suratt, MD

JJ Bivona – CMB graduate student
Marta Kokoszynska – Pulmonary fellow
Glenda Euceda – Pulmonary fellow

Daniel Weiss, MD, PhD

Post docs: Soraia Abreu Phd, Sara Enes PhD, Hee Eon Park PhD, Robert Pouliot Phd, Franciska Uhl PhD, Juan Uriarte PhD

Endowed Professorships:

Leadership in Professional Societies:

Gilman Allen, MD

Society of Critical Care Medicine Congress Planning Committee (3 year appointment)
American Thoracic Society Critical Care Assembly Program Committee (3 year appointment)

Jason Bates, PhD, DSc

IEEE, Member of Nomination Committee, Region 1
ATS, Member of Program Committee

Ryan Clouser, DO

ATS Critical Care Section planning committee member

Anne Dixon, MA BM BCH

Association of Pulmonary, Critical Care and Sleep Division Directors, Past President (2018-2019)
American Lung Association National Board of Directors, Member (2018-)
American Lung Association Scientific Advisory Committee, Vice Chair (2018-)

Garth Garrison, MD

Member of American Thoracic Society Education Committee

Kathryn N. Huggett, PhD

Senior Representative for Society of Directors of Research in Medical Education (SDRME) to the
AAMC Council of Faculty and Academic Societies (CFAS)
AAMC Northeast Group on Educational Affairs, Member at Large/MESRE Vice Chair
Academies Collaborative Steering Committee, Chair

Charles Irvin, PhD

Steering Committee, Northern New England Network of Faculty Affairs NENFA
Co-Chairman, Northern New England Network of Faculty Affairs NENFA

C. Matthew Kinsey, MD PhD

Board of Directors, American Association of Bronchology and Interventional Pulmonology

David Kaminsky, MD

Chair, ATS Proficiency Standards for Pulmonary Function Laboratories Committee

Polly Parsons, MD

President-elect and President, American Thoracic Society
Executive Council, Association of Professors of Medicine

Renee Stapleton, MD, PhD

American Thoracic Society

- a. Critical Care Assembly
Chair-Elect 2019-19, Chair 2020-2022
- b. Critical Care Assembly Program Committee
Member, 2009-2012, 2015-2018
Chair-Elect, 2015-2016
Chair, 2016-2017
- c. Scientific Advisory Committee (reviews all ATS grants)
Member, 2013-present
Vice-Chair, 2016-present
- d. 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, 2010-2017.

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., 2016-2018.

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

International Round Table Conference on Metabolic Care, member, March 2018, Brussels, Belgium.

International Consensus on the use of High Flow Therapy (HFT) with Nasal Cannula, member, March 2018-present.

Charlotte Teneback, MD

Board of Directors, American Association of Cardiopulmonary Rehabilitation

Daniel Weiss, MD, PhD

Chief Scientific Officer, International Society for Cellular Therapies

Member of multiple ATS and ISCT committees

Editorships and Editorial Boards:

Jason Bates, PhD, DSc

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

Kathryn N. Huggett, PhD

AMA Journal of Ethics Editorial Board

Charles Irvin, PhD

Editorial Board, COPD Journal

Polly Parsons, MD

Editorial board: American Journal of Respiratory and Critical Care Medicine
Chest
Editor-in Chief, Pulmonary, Critical Care and sleep: Up to Date
Section Editor, Critical Care, Up-to-Date

Matthew Poynter, PhD

American Journal of Respiratory Cell and Molecular Biology (editorial board member)

Renee Stapleton, MD, PhD

Critical Care Secrets, 6th Edition. Polly E. Parsons, Jeanine P. Wiener-Kronish, Lorenzo Berra, and Renee D. Stapleton, eds. Elsevier, Inc, Philadelphia, PA, 2018.
Murray & Nadel's Textbook of Respiratory Medicine. Co-Editors: V. Courtney Broaddus, Lynn M. Schnapp, Joel D. Ernst, Talmadge E. King Jr, Stephen C. Lazarus, Renee D. Stapleton. Elsevier Saunders, Philadelphia, publication expected 2021.

Daniel Weiss, MD, PhD

Editorial board: Am J Resp Cell and Mol Biology, Molecular Therapy

Study Sections and Federal Advisory Boards:

Anne Dixon, MA BM BCh

Member of the NHLBI Expert Panel-4 (EPR-4) Working Group to update the Guidelines for the Diagnosis and Management of Asthma
Member American Board of Internal Medicine Pulmonary Examination Committee
Member, VA Merit Review for Pulmonary, 2015 – present

Charles Irvin, PhD

External Advisory Committee, NIH COBRE (PI: Rounds), Brown University
External Advisory Committee, Lung T32 (PI: Levy, Brigham and Women's Hospital, Boston
External Advisory Committee, Lung T32 (PI: Wise), Johns Hopkins, Baltimore

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
Chair, COBRE Review, ZGM1 RCB-9 (CT). NIGMS, National Institutes of Health
Ad hoc, LRP panel, Panel 1, NIMND, National Institutes of Health
Ad hoc, CTSA Reviews, NCATS, National Institutes of Health
Chair, CTSA 001, R21, NCATS, National Institutes of Health

David, Kaminsky, MD

NHLBI, HLBP Workgroup, PPG P01 HL144460-01 Review Committee

Polly Parsons, MD

Scientific Director, Parker B. Francis Fellowship Program
Chair, DSMB, NIH: NHLBI Petal network

Matthew Poynter, PhD

NHLBI PrecISE Asthma Networks Clinical Centers
NIH Hypersensitivity, Allergies and Mucosal Immunology (HAMI) IMM-T57 Special Emphasis Panel

Renee Stapleton, MD, PhD

American Thoracic Scientific Advisory Committee (responsible for reviewing all ATS grants), 2013-present
Member of CT-LDI (Clinical Trial – Lung Diseases and Injury) peer review panel of Peer Reviewed Medical Research Program (PRMRP) for the Department of Defense Congressionally Directed Medical Research Programs (CDMRP), December 2017.

Daniel Weiss, MD, PhD

NIH Bioengineering R21 grant reviewer
California Institute for Regenerative Medicine grant reviewer
DOD grant reviewer

Major Faculty Awards:

Charles Irvin, PhD

Visiting Professor, Mayo Clinic, Scottsdale, AZ

Invited Speaker, Robert Hyatt Memorial Lecture in Respiratory Physiology, Mayo Clinic,
Rochester MN

Visiting Professor, John Hunter Hospital, Newcastle, Australia

Visiting Professor, Alfred Hospital, Melbourne, Australia

Visiting Professor, Woolcock Institute, University of Sydney, Australia

David Kaminsky, MD

Distinguished Clinician Award, Dept. of Medicine

Polly Parsons, MD

American Thoracic Society Fellow

Patriotic Employer Recognition from the Office of the Secretary of Defense

Grants – list all active by faculty member, PI

Jason Bates, PhD, DSc

NIH U01 HL139466

A multi-scale computational model of the extracellular matrix of the lung.

Role Co-PI (site PI at the University of Vermont, with Bela Suki as lead PI at Boston University).

\$2,488,933 total direct funds over 5 years.

Anne Dixon, MA BM BCh

R34 HL135361, Dixon (PI) NIH/NHLBI, "Trial of Roflumilast in Asthma Management (TRIM)"

R34 HL136755 Dixon, PI NIH/NHLBI "Pilot of Lifestyle in Asthma Intervention (PLAN)"

R01HL133920, Poynter/Dixon (MPI), NIH/ NHLBI "Obese Allergic Asthma and the Impact of Weight Loss on Airway Epithelial Function"

R01 HL130847 , Bates/Dixon (MPI), NIH/NHLBI, "Non-Allergic Late-Onset Asthma of Obesity: Pathophysiology and Therapy"

R01 HL137268, van der Vliet/Dixon (MPI), NIH/NHLBI, "S-glutathionylation chemistry, glycolysis and obese allergic asthma"

Garth Garrison, MD

ACS-IRG Grant

Kathryn N. Huggett, PhD

Kassis K, Binkley P, Blanco M, Borges N, Huggett K, Hurtubise L. 2016 AAMC GEA National Grant awardee. Personality Compatibility within Faculty Mentoring Dyads: Can we predict career success? Awarded June 17, 2016-June 2018.

Charles Irvin, PhD

American Lung Association

Asthma Clinical Research Center

Principal Investigator: Charles G. Irvin

T32 HL076122 National Heart Lung & Blood Institute (NHLBI)

Multidisciplinary Training in Lung Biology

Principal Investigator: Charles Irvin

P30 GM103532 National Institute of General Medical Sciences (NIH/NIGMS)

Translational Research in Lung Biology and Disease

Principal Investigator: Charles G. Irvin

R25GM1167 NIGMS

Fostering entrepreneurship in biomedical research

Principal Investigator: Mercedes Rincon, Ph.D.

Co-PI: Charles Irvin (Irvin effort: 15%)

R35 HL135828 (Janssen-Heininger)

NIH/NHLBI

Title: S-glutathionylation chemistry in fibrotic lung remodeling

Co-Investigator: Charles Irvin

\$600,000 (Irvin effort: 01%)

R01 HL122383 (Anathy)

NIH/NHLBI

Title: Endoplasmic Reticulum Stress Signaling in Allergen-induced Airway Remodeling

Role: Co-Investigator: Charles Irvin

\$250,000 (Irvin effort: 01%)

1P50DA036114-01

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

Principal Investigator: Stephen Higgins (Irvin effort 5%)

David Kaminsky, MD

University of Vermont College of Medicine Internal Grant Program

Trial of Tauroursodeoxycholic Acid (TUDCA) in Asthma

PI: David Kaminsky, MD (co-PI, Vikas Anathy, PhD)

7/1/18-6/30/20

Lake Champlain Cancer Research Organization

LCCRO 016 Pilot Project (C3)

Ventilation Heterogeneity on CT Imaging and its Association with Lung Cancer

PI: David Kaminsky, MD

07/01/16-6/30/18

R01 HL130847, NIH/NHLBI

Non-allergic Late-onset Asthma of Obesity: Pathophysiology and Therapy

PI: Anne Dixon, MD

Role on Project: Co-Investigator (15%)

3/15/16-2/29/20

American Lung Association - Asthma Clinical Research Center

PI: Charles G. Irvin, Ph.D.

Role on Project: Co-Investigator (5%)

7/1/04-6/30/18

United Therapeutics, Inc.

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

PI: David Kaminsky, MD (< 5%)

5/1/13-open

C. Matthew Kinsey, MD PhD

1K23HL133476-01, NIH NHLBI

Kinsey, C. Matthew (PI) 09/01/16-06/30/21 Role: PI

Translational Medicine Pilot Award, University of Vermont Medical Center Department of Medicine

Kinsey, C. Matthew (PI) 07/01/17-06/30/19 Role: PI

Matthew Poynter, PhD

1 R01 HL142081 04/01/2018 – 03/31/2022 2.40 calendar

NIH/NHLBI ADC: \$293,984

Ketone Body Supplementation in Obese Asthma

Role: PI

We will evaluate using in vivo mouse models whether therapeutic augmentation of ketone body concentrations in the circulation elicit improvements in obese inherent and allergic asthma. We will also conduct mechanistic studies using tissues and in vitro primary cell culture systems to assess whether the intrinsic differences in cytokine secretion, glycolysis, mitochondrial oxidative stress, and endoplasmic reticulum stress between cells from lean and obese mice are modulated by ketone bodies and examine candidate receptors for these effects.

R01-HL133920 (Poynter & Dixon) 08/15/2016 – 07/30/2021 3.60 calendar

NIH ADC: \$497,229
 Obese allergic asthma and the impact of weight loss on airway epithelial function
 Role: Co-PI
 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. The ultimate purpose of this work is to understand why allergic asthma is so much more severe in patients with obesity, and to develop therapies specifically targeted for such patients.

R01 HL122383-01A1 (Anathy) 01/01/2015 - 12/31/2019 0.94 calendar
 NIH/NHLBI ADC: \$250,000
 Endoplasmic reticulum stress signaling in allergen induced airway remodeling
 Role: Co-I
 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.

NDC 2777 (Kraft) 11/01/2017 – 12/31/2020 0.96 calendar
 National Dairy Council ADC: \$171,505
 Full-Fat Yogurt and Glucose Tolerance
 Role: Co-I
 The overall objective of this proposal is to determine if substituting full-fat yogurt (i.e., whole, 3.25% fat) for non-fat yogurt in the diet can reduce the risk of type 2 diabetes and inflammation in association with changes in the composition of the gastrointestinal bacteria.

T32-HL076122 (Irvin) 05/01/2014 - 04/09/2019 0.60 calendar
 NIH/NHLBI ADC: \$364,962
 Multidisciplinary Training in Lung Biology
 Role: Co-Director (predoctoral training)
 This program supports a group of collaborative and productive pre (4) and postdoctoral (3) trainees who are investigating the causes, diagnosis and cures of debilitating lung disease such as asthma, interstitial lung disease, cystic fibrosis, acute lung injury and infections of the lung.

2 R01 HL085646-09 (van der Vliet) 09/01/2017 -08/31/2022 0.6 calendar
 NIH/NHLBI ADC: \$265,225
 Dual Oxidase in Airway Epithelial Injury and Inflammation
 Role: Co-I
 This renewal application will extend ongoing studies towards the role of the NADPH oxidase homolog DUOX1 within the respiratory epithelium. In the previous funding cycle, we discovered that DUOX1 plays a critical role in innate airway responses to airborne allergens, and contributes to various important features of allergic asthma. This proposal seeks to further understand the molecular mechanisms by which DUOX1 controls these processes, and to develop pharmacological approaches to selectively inhibit DUOX1 for potential clinical development in treatment of severe asthma.

R01 HL138708 (van der Vliet) 08/03/2017-06/30/2021 0.6 calendar
 NIH/NHLBI ADC: \$341,282

DUOX1 and Mitochondria in Obese Asthma

Role: Co-I

This project will address the importance of the NADPH oxidase DUOX1, a major oxidant source within the respiratory epithelium, combined with mitochondrial dysfunction, as an important feature of metabolic disease in mediating redox-dependent processes leading to altered or exaggerated allergic inflammation due to obesity.

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

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

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

NIH/NIA

Direct: \$2,276,543

Role: PI

Novel Arm Restraint for Critically Ill Patients To Reduce Immobility, Sedation, Agitation and Cognitive Impairment

R42 AG059451, 4/01/18-3/31/21

NIH/NIA

Direct: \$1,276,182

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

NIAID Influenza Research Collaboration (NIRC)

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

7/01/16-6/30/18

Direct: Reimbursed per patient capitation rate

Role: Site PI

Benjamin Suratt, MD

Small Grant Program (R03), NIAID, AI117069 (Wargo), \$142,000: 2015 – 2017
“Developing obese mouse models of *Pseudomonas aeruginosa* pneumonia”
Role on grant: Co- investigator

Translational Medicine Pilot Project, UVM Department of Medicine (Suratt), \$50,000: 2017 – 2018
“Mechanisms of diabetes effects on ARDS pathogenesis and outcomes”
Role on grant: PI

CFF Grant, Cystic Fibrosis Foundation, 538753 (Wargo), \$100,000: 2017 – 2019
“Identifying Virulence Determinants in *Stenotrophomonas maltophilia*”
Role on grant: Co- investigator

Research Project Grant (R01), NHLBI, R01HL142081 (Poynter), \$1.9M: 2018 – 2022
“Ketone Body Supplementation in Obese Asthma”
Role on grant: Co-Investigator

Charlotte Teneback, MD

Clinical pharmacy support grant, PI. Funding for cystic fibrosis clinical pharmacy support. January 2017-
December 2019. \$200,000.

Cystic Fibrosis Therapeutic Development Center Award, January 2018-December 2018.
\$86,460. PI.

PIPE Award: Principal Investigator Protected Effort Award, Cystic Fibrosis Foundation, January 2018-
December 2018. \$24,649. PI.

SAV005-04 Protocol-A Phase III, randomized, double-blind, placebo-controlled study of
AeroVanc for the treatment of persistent methicillin-resistant *Staphylococcus aureus* lung infection in
cystic fibrosis patients. Savara Pharmaceuticals. Local PI. \$194,295.

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.

VX17-445-102: A phase 3, randomized, double-blind, controlled study evaluating the efficacy and safety
of VX 445 combination therapy in subjects with cystic fibrosis who are heterozygous for the F508del
mutation and a minimal function mutation (F/MF). Vertex Pharmaceuticals. Local PI. \$92,072.

VX17-445-103: A phase 3, randomized, double-blind, controlled study evaluating the efficacy and safety of VX 445 combination therapy in subjects with cystic fibrosis who are homozygous for the F508del mutation and a minimal function mutation (F/F). Vertex Pharmaceuticals, local PI. \$25,254

VX17-445-105: A phase 3, open-label study evaluating the long-term safety and efficacy of VX-445 Combination therapy in subjects with cystic fibrosis who are homozygous or heterozygous for the F508del mutation. Local PI. \$143,724

Daniel Weiss, MD, PhD

United Therapeutics Inc.	\$176,929	2015-2018
Assessing the immunogenicity of decellularized pig lungs as xenogenic scaffolds for ex vivo lung bioengineering		
R01 HL127144-01	\$1,250,000 direct	2015-2019
Optimizing Functional Recellularization of Acellular Human Lung Scaffolds		
R21 EB024329	\$275,000 direct	2017-2019
Decellularized Avian Lungs for Use in Pulmonary Therapeutics		
Cystic Fibrosis Research Grant (DJ Weiss, C dos Santos Co-PIs)		2016-2018
Optimization of MSC Based Cell Therapies for CF	\$150,00	
Cystic Fibrosis Foundation Research Grant (DJ Weiss, M Wargo Co-PIs)		2017-2019
Mechanisms of MSC Actions that Ameliorate Bacterial Lung Infections in CF	\$200,000	
Medical Technology Enterprise Consortium (Lee, Jake, PI; Weiss co-I)		2017-2018
Development of Multi-Functional Extracorporeal Life Support (ECLS) System for Lung and Kidney Support Pneuma-K ECLS System	\$1,000,000	
United Therapeutics Inc.	\$50,000	2018-2019
Development of Novel Pleural Sealants		
SPARK, UVM (DJ Weiss/Adam Jakus, Dimensions Inc.)	\$45,000	2018-2020
Development of novel lung bioinks		

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 7400 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 that is integrated with rheumatology care. We have an interdisciplinary 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 an outpatient rheumatology rotation where residents work with all of the faculty thus experiencing a variety of practice styles. Faculty participated in the annual Internal Medicine Academic Half Day. Medical students complete one month elective rotations in our outpatient clinic. Each year we participate in the Vermont Integrated Curriculum Connections course teaching 2nd year medical students rheumatology, metabolic bone disease, and musculoskeletal physical examination skills.

Our faculty engage in clinical research including the use of IL-17 inhibition in psoriatic arthritis, and technology driven Fracture Liaison Service. Our faculty are actively engaged in QI research projects such as: development of a fracture liaison service for the inpatient hospital; pneumococcal vaccine in patients on biological drugs; 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. As the only Rheumatologist trained and certified in musculoskeletal ultrasound (MSKUS) by the American College of Rheumatology (ACR) in the state of Vermont, he founded and successfully conducts our Musculoskeletal Ultrasound Clinic within the Rheumatology Division, where he provides MSKUS services that are integrated with rheumatology care. This service is limited to few institutions and rheumatology practices in the country. He is an instructor and mentor nationwide 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 the MSKUS course at the national American College of Rheumatology meeting every year. Dr. Bethina is the Associate Program Director for the Rheumatology Fellowship Program and in addition to teaching fellows, 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 did a mini-sabbatical at Malaghan Institute in Wellington, New Zealand, March-April 2018.

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

R21 AI 107298

Structure and Ligand(s) for Human Synovial TCR-Gamma/Delta 2/1/16-1/31/19

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 Division's CME reporting and certification. In addition to teaching rheumatology fellows, she teaches second year UVM medical students utilizing the innovative Team Based Learning technique, and teaches students during their Internal Medicine 4th year clerkship. She teaches residents in Morning Report as well as during Internal Medicine Academic Half Day.

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 EPIC. Dr. Lau has completed work 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. It was presented as an oral abstract during a Concurrent Abstract Session at the national American College of Rheumatology Annual Meeting, November 2017, titled "Are we over-testing for liver enzyme abnormalities in Rheumatoid Arthritis patients prescribed Methotrexate?"

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. Dr. Legunn is the rheumatology division representative on the Department of Medicine QA&I Committee, and participated in the analysis and poster presentation of our QI project on pneumococcal vaccination in patients taking biological drugs. He also participates as a co-investigator in divisional pharmaceutical-sponsored clinical research trials.

Edward Leib, M.D.

Professor Emeritus of Medicine

Member, 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 is former director of the Osteoporosis Program and participates in Metabolic Bone Clinic at the University of Vermont Medical Center. He continues to be actively engaged in research, and mentored a rheumatology fellow in a quality improvement and research project on a technology driven Fracture Liaison Service that lead to an oral abstract at the 24th Annual International Society for Clinical Densitometry Meeting 2018. 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 *Journal of Bone and Mineral Research*, *Journal of Clinical Densitometry* and *Osteoporosis International*.

Bonita Libman, M.D.

Professor of Medicine

Division Chief, Rheumatology and Clinical Immunology

Program Director, Rheumatology Fellowship Training Program.

- Connective Tissue Disorders
- Systemic Lupus Erythematosus
- 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 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 American College of Rheumatology (ACR) Division Director Special Committee, and serves as Co-Chair for the ACR Division Directors Conference. 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. In addition to teaching fellows, she teaches Internal Medicine residents during Morning Report, Academic Half Day and in clinic.

Ongoing Research Support

2015-2018

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

2018-present

CAIN457F2366: "A randomized, double-blind, active control, multicenter study to

evaluate the efficacy at week 52 of subcutaneously administered secukinumab monotherapy compared with subcutaneously administered adalimumab monotherapy in patients with active psoriatic arthritis

Role: Principal Investigator

Alana Nevares, M.D.

Assistant Professor of Medicine

- Giant Cell Arteritis
- ANCA Associated Vasculitis
- Autoimmune Eye Disease

Dr. Nevares provides specialty care for patients with a variety of rheumatologic diseases, and has a special interest in vasculitis and inflammatory ocular disease. She is 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. She teaches 2nd year medical students during their VIC Connections course, and 4th year medical students during their Internal Medicine clerkship. She is pursuing her Master's Degree in clinical research with a goal of establishing a strong and prolific clinical research program in the rheumatology division.

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 and Dr. Kelly 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

Ms. Merchand provides specialty care for patients with a variety of rheumatologic diseases, and also provides specialty care in the Metabolic Bone Clinic. She is a member of the American Academy of Nurse Practitioners and the Association of Rheumatology Health Professionals. She is an active participant in divisional quality improvement projects including QI research, and divisional pharmaceutical-sponsored clinical research trials. She is our divisional EPIC super-user responsible for training everyone for EPIC upgrades.

Fellows

Kateryna Bertuch, M.D.

Completed fellowship June 2018

Javaneh Tamiji, M.D.

Will complete fellowship July 2019

Matthew Jaenicke, M.D.

Will begin fellowship July 2018

Publications

Peer Reviewed Articles

Impaired Mitochondrial Microbicidal Responses in Chronic Obstructive Pulmonary Disease Macrophages. 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. *Am J Respir Crit Care Med.* 2017 Oct 1;196(7):845-855. doi: 10.1164/rccm.201608-1714OC. PMID:28557543

Glycolysis promotes caspase-3 activation in lipid rafts in T cells. Secinaro MA, Fortner KA, Dieng O, Logan A, Murphy MP, Anathy V, Boyson JE, **Budd RC**. *Cell Death Dis.* 2018 Jan 19;9(2):62. doi: 10.1038/s41419-017-0099-z. PMID:29352186

Opsonic Phagocytosis in Chronic Obstructive Pulmonary Disease is Enhanced by Nrf2 Agonists. Bewley MA, **Budd RC**, Ryan E, Cole J, Collini P, Marshall J, Kolsum U, Beech G, Emes RD, Tcherniaeva I, Berbers GAM, Walmsley SR, Donaldson G, Wedzicha JA, Kilty I, Rumsey W, Sanchez Y, Brightling CE, Donnelly LE, Barnes PJ, Singh D, Whyte MKB, Dockrell DH; COPDMAP. *Am J Respir Crit Care Med.* 2018 Mar 16. doi: 10.1164/rccm.201705-0903OC. PMID:29547002

Book Chapters

Nevares, A. (2017). Introduction to Autoimmune Rheumatic Disorders. The Merck Manual on line. <https://www.merckmanuals.com/professional/musculoskeletal-and-connective-tissue-disorders/autoimmune-rheumatic-disorders/introduction-to-autoimmune-rheumatic-disorders>

Anvari E, Ferreira Provenzano L, **Nevares A**, Herlitz L, Smith H (2017) Lupus Nephritis (Including Antiphospholipid Antibody Syndrome), Adult. In: Trachtman H, Hogan J, Herlitz L, Lerma E (eds) Glomerulonephritis. Springer, Cham DOI https://doi.org/10.1007/978-3-319-27334-1_14-1, Online ISBN 978-3-319-27334-1, eBook Packages Medicine

Abstract Presentations at national American College of Rheumatology meeting 2017:

Are We over-Testing for Liver Enzyme Abnormalities in Rheumatoid Arthritis Patients Prescribed Methotrexate? **oral presentation** Chi Chi Lau¹, Syeda Maria Sayeed¹, Amanda Kennedy², Joan Skelly³ and Sheldon Cooper⁴, ¹Rheumatology/ Medicine, University of Vermont, Burlington, VT, ²Internal Medicine, University of Vermont, Burlington, VT, ³Biostatistics, University of Vermont, Burlington, VT, ⁴Department of Medicine/Rheumatology, University of Vermont, Burlington, VT

Nurse Telephone Education for Promoting a Treat-to-Target Approach in Recently Diagnosed Rheumatoid Arthritis Patients – a Preliminary Review. Bonita Libman¹, Siobhan Farley¹, Melinda Edwards¹, Carl Possidente² and Amanda Kennedy³, ¹Medicine/Rheumatology, University of Vermont Medical Center, Burlington, VT, ²Medical Affairs, Pfizer, Inc., Jericho Center, VT, ³Internal Medicine, University of Vermont, Burlington, VT

Selective Effect of Rituximab on IgG4 Anti-CCP Autoantibodies in Rheumatoid Arthritis Patients. Mercedes Rincon^{1,2}, Sarah Kelso³, Janice Bunn⁴ and Sheldon Cooper⁵, ¹Department of Medicine/Rheumatology, University of Vermont, Burlington VT, VT, ²Department of Medicine/Immunobiology, University of Vermont, Burlington, VT, ³Department of Medicine/Rheumatology, University of Vermont, Burlington, VT, ⁴Mathematics and Statistics, University of Vermont, Burlington, VT, ⁵Department of Medicine/Rheumatology, University of Vermont, Burlington, VT

Poster Presentations at 24th Annual International Society for Clinical Densitometry Meeting 2018:

Early Findings of a Technology-driven and Multi-disciplinary Fracture Liaison Service in Diagnosis and Treatment of Osteoporosis in Hip Fracture Patients. **oral presentation** Lyons J.¹, Ames E.², Foerg F.¹, Schottel P.², Hill E.¹, Kennedy A.¹, Wilson A.¹, Leib E.¹ Department of Medicine¹, Department of Orthopedics and Rehabilitation² University of Vermont, Larner College of Medicine.

Department of Medicine
 FY2018 UVM Research Funding by Division by PI

Division	PI	Sponsor	Project Title	Start Date	End Date	Direct	Indirect	Total
Cardiology	Correa de Sa, Daniel D	CoreMap, Inc.	CoreMap Mapping of Atrial Fibrillation	3/23/2018	3/22/2019	\$0	\$0	\$0
Cardiology	Correa de Sa, Daniel D	CoreMap, Inc.	CoreMap Mapping of Atrial Fibrillation	3/23/2018	6/30/2018	\$2,186	\$1,224	\$3,410
Cardiology	Keating, Friederike Kyra	Rutgers University	Myocardial Ischemia and Transfusion (MINT) - CCC	6/1/2017	5/31/2018	\$1,925	\$1,076	\$3,001
Cardiology	Keating, Friederike Kyra	Rutgers University	Myocardial Ischemia and Transfusion (MINT) - CCC	10/1/2017	6/30/2018	\$3,205	\$1,795	\$5,000
Cardiology	LeWinter, Martin M	University of Arizona	Myofilament Based Mechanisms of Diastolic Dysfunction in HFpEF	7/1/2017	6/30/2019	\$192,702	\$101,169	\$293,871
Cardiology	Meyer, Markus F.	Natl Heart Lung and Blood Inst/NHLBI/NIH	Sarcolemmal Calcium Extrusion Defect in Patients with Diastolic Dysfunction	4/1/2018	3/31/2019	\$239,680	\$134,221	\$373,901
Cardiology	Schneider, David John	Janssen Research & Development, LLC	Novel Biomarkers of Thrombotic Risk	7/1/2017	9/30/2017	\$8,142	\$2,296	\$10,438
Cardiology	Schneider, David John	Janssen Research & Development, LLC	Novel Biomarkers of Thrombotic Risk	10/1/2017	6/30/2018	\$45,283	\$12,770	\$58,053
Cardiology	Spees, Jeffrey L.	Natl Heart Lung and Blood Inst/NHLBI/NIH	Vascular Protection by HGF α gG Protein Complexes That Activate RYK	4/1/2018	3/31/2019	\$245,839	\$137,670	\$383,509
Cardiology	Toth, Michael John	Natl Inst Arthritis Musculosk/NIAMS/NIH	Prevention of Skeletal Muscle Adaptations to Traumatic Knee Injury and Surgery	9/1/2017	8/31/2018	\$110,000	\$61,600	\$171,600
Cardiology	Toth, Michael John	Natl Inst on Aging/NIA/NIH	Skeletal Muscle Atrophy and Dysfunction Following Total Knee Arthroplasty	7/15/2017	5/31/2018	\$283,515	\$140,660	\$424,175
Cardiology	Toth, Michael John	Natl Inst on Aging/NIA/NIH	Skeletal Muscle Atrophy and Dysfunction Following Total Knee Arthroplasty	6/16/2018	5/31/2019	\$280,066	\$142,601	\$422,667
Cardiology	Toth, Michael John	University of Massachusetts Amherst	Sex-Specific Adaptation to Different Resistance Exercise Programs in Older Adults	9/1/2017	3/31/2018	\$24,685	\$13,824	\$38,509
Cardiology	Toth, Michael John	University of Massachusetts Amherst	Sex-Specific Adaptation to Different Resistance Exercise Programs in Older Adults	4/1/2018	3/31/2019	\$20,291	\$11,363	\$31,654
Cardiology	Van Buren, Peter C	Duke University	Inorganic Nitrite Delivery to Improve Exercise Capacity in HFpEF	7/1/2017	9/30/2017	\$1,571	\$879	\$2,450
Cardiology	Van Buren, Peter C	Duke University	Inorganic Nitrite Delivery to Improve Exercise Capacity in HFpEF	10/1/2017	6/30/2018	\$2,468	\$1,382	\$3,850
Cardiology	Van Buren, Peter C	Duke University	Characterizing HIV-related Diastolic Dysfunction	7/1/2017	9/30/2017	\$15,301	\$8,339	\$23,640
Cardiology	Van Buren, Peter C	Duke University	Characterizing HIV-related Diastolic Dysfunction	10/1/2017	6/30/2018	\$13,540	\$7,380	\$20,920
Cardiology	Van Buren, Peter C	Duke University	Subcutaneous Furosemide in Acute Decompensated Heart Failure - The SUBQ-HF Study	1/18/2018	12/31/2099	\$0	\$0	\$0
Cardiology	Van Buren, Peter C	Natl Heart Lung and Blood Inst/NHLBI/NIH	New England, New York and Quebec Regional Clinical Center	1/1/2018	12/31/2018	\$297,850	\$32,430	\$330,280
Cardiology Total						\$1,788,249	\$812,678	\$2,600,927
GI	Jensen, Gordon L	Geisinger Clinic	Rural Aging Study	8/1/2017	7/31/2018	\$18,183	\$1,818	\$20,001
GI Total						\$18,183	\$1,818	\$20,001
GIMR	Plante, Timothy B.	Maine Medical Center	Leveraging Electronic Health Records to Explain Cardiovascular Disease Disparities Among Rural Populations	5/1/2018	6/30/2018	\$12,439	\$6,966	\$19,405
GIMR Total						\$12,439	\$6,966	\$19,405
Hem/Onc	Cushman, Mary	University of Alabama at Birmingham	Etiology of Geographic and Racial Differences in Stroke Mortality	12/1/2017	2/14/2018	\$46,159	\$25,849	\$72,008
Hem/Onc	Cushman, Mary	University of Alabama at Birmingham	VCID and Stroke in a Bi-Racial National Cohort	2/15/2018	1/31/2019	\$441,530	\$247,257	\$688,787
Hem/Onc	Cushman, Mary	University of North Carolina	The National Longitudinal Study of Adolescent Health	5/1/2017	4/30/2018	\$279,539	\$146,758	\$426,297
Hem/Onc	Cushman, Mary	University of North Carolina	Social Context, the Life Course, and Genetic Transcription in Add Health	6/1/2017	5/31/2018	\$21,031	\$11,436	\$32,467
Hem/Onc	Cushman, Mary	University of North Carolina	Social Context, the Life Course, and Genetic Transcription in Add Health	6/1/2018	5/31/2019	\$17,006	\$9,523	\$26,529
Hem/Onc	Cushman, Mary	University of Pittsburgh	Exceptional Survival: Trajectories to Functional Aging (CHS All Stars)	6/1/2017	5/31/2018	\$14,895	\$8,323	\$23,218
Hem/Onc	Wood, Marie E.	Mayo Clinic	Alliance Cancer Control Program - Prevention Committee Co-Chair Salary Support	8/1/2017	7/31/2018	\$23,057	\$12,912	\$35,969
Hem/Onc	Wood, Marie E.	Mayo Clinic	Alliance NCORP Research Base - Protocol Development	8/1/2017	2/23/2018	\$6,538	\$3,661	\$10,199
Hem/Onc	Zakai, Neil A	University of Minnesota	Contemporary Venous Thromboembolism Treatment	1/1/2017	12/31/2017	\$69,732	\$38,527	\$108,259
Hem/Onc	Zakai, Neil A	University of Minnesota	Contemporary Venous Thromboembolism Treatment	1/1/2018	11/30/2018	\$75,797	\$42,446	\$118,243
Hem/Onc Total						\$995,284	\$546,692	\$1,541,976
Immunobiology	Botten, Jason W.	Celdara Medical, LLC	Therapeutic Antibodies for Treatment of Hantavirus Cardiopulmonary Syndrome	8/8/2017	8/7/2018	\$68,923	\$38,597	\$107,520
Immunobiology	Botten, Jason W.	Celdara Medical, LLC	Therapeutic Antibodies for Treatment of Hantavirus Cardiopulmonary Syndrome	4/20/2018	7/31/2019	\$34,666	\$19,413	\$54,079

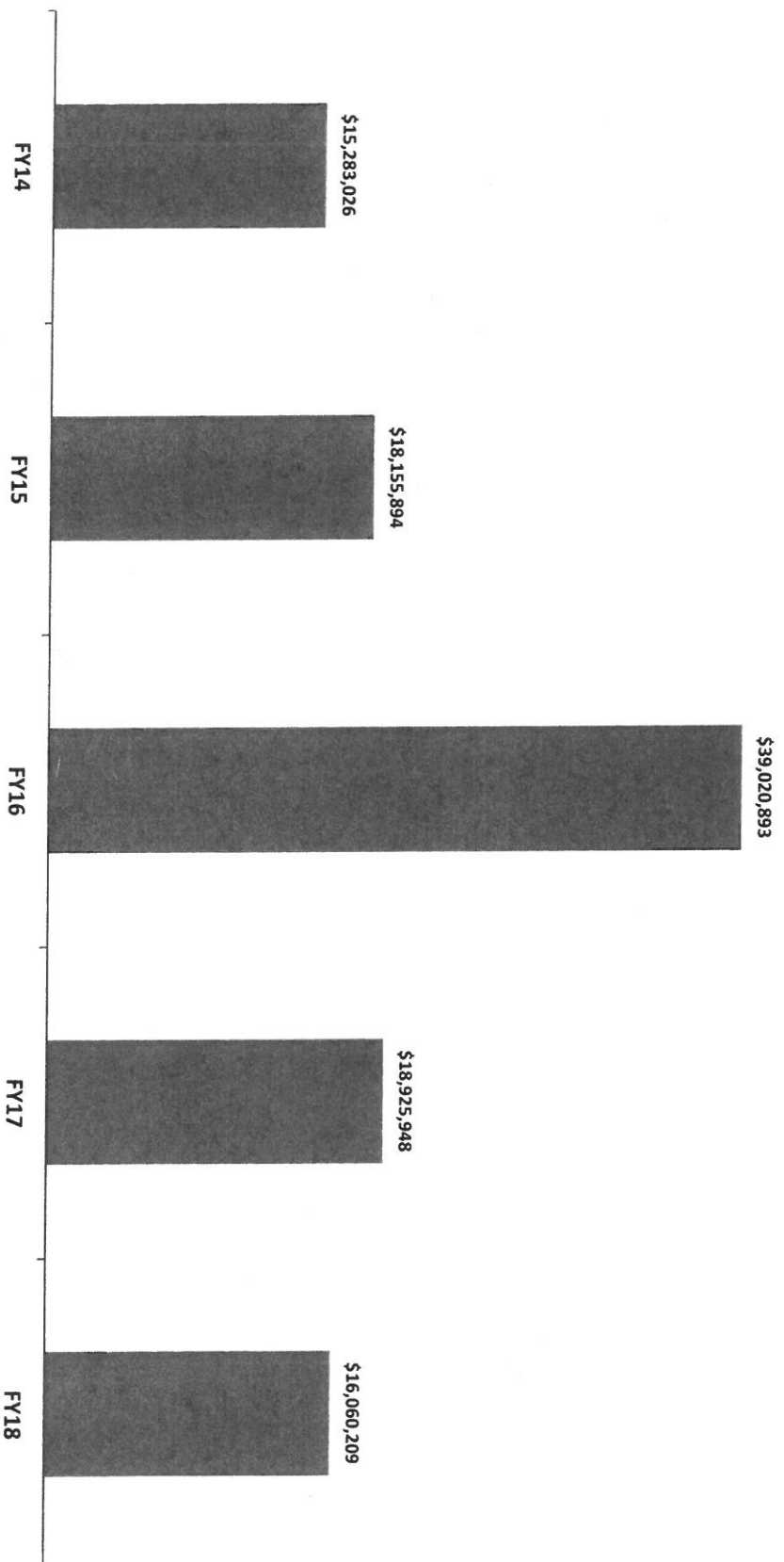
Department of Medicine
 FY2018 UVM Research Funding by Division by PI

Division	PI	Sponsor	Project Title	Start Date	End Date	Direct	Indirect	Total
Immunobiology	Budd, Ralph C	Natl Inst Gen Medical Sciences/NIGMS/NIH	Vermont Immunology/Infectious Diseases Center	8/1/2017	7/31/2018	\$748,358	\$419,080	\$1,167,439
Immunobiology	Rincon, Mercedes	Milotherapeutix, LLC	A Novel Approach to Treat Non-Alcoholic Steatohepatitis (NASH)	7/5/2017	6/30/2018	\$108,671	\$60,856	\$169,527
Immunobiology	Rincon, Mercedes	Natl Cancer Institute/NCI/NIH	A Novel Target to Overcome Chemoresistance in Breast Cancer	6/1/2018	5/31/2019	\$130,500	\$73,080	\$203,580
Immunobiology	Rincon, Mercedes	Natl Inst Allergy Infectious/NIAID/NIH	GSK3B in TCR Repertoire and Immune Diseases	8/1/2017	7/31/2018	\$268,375	\$120,400	\$388,775
Immunobiology	Rincon, Mercedes	Natl Inst Gen Medical Sciences/NIGMS/NIH	Fostering Entrepreneurship in Biomedical Research	3/1/2018	2/28/2019	\$414,480	\$25,583	\$440,063
Immunobiology	Teuscher, Cory	Natl Inst Allergy Infectious/NIAID/NIH	Genome-Wide Physical Mapping of IAV-QTL	12/1/2017	11/30/2018	\$125,000	\$70,000	\$195,000
Immunobiology	Teuscher, Cory	University of Utah	Molecular Genetics of Lyme Arthritis	7/1/2017	6/30/2018	\$50,000	\$26,250	\$76,250
Immunobiology Total						\$1,948,973	\$853,259	\$2,802,232
Infectious Diseases	Diehl, Sean A	University of North Carolina	Zika Diagnostics Development: Diagnosing Recent and Remote Zika Infections	4/17/2017	4/16/2018	\$98,376	\$51,284	\$149,660
Infectious Diseases	Diehl, Sean A	University of North Carolina	Zika Diagnostics Development: Diagnosing Recent and Remote Zika Infections	4/17/2018	4/16/2019	\$98,606	\$51,697	\$150,303
Infectious Diseases	Huston, Christopher Dwight	Natl Inst Allergy Infectious/NIAID/NIH	Continuous In Vitro Culture and Treatment of Cryptosporidium Using Small Molecule Differentiation Inhibitors	1/1/2018	12/31/2018	\$149,277	\$80,372	\$229,649
Infectious Diseases	Huston, Christopher Dwight	PATH	PATH Cryptosporidium In Vitro and In Vivo Efficacy Studies	6/1/2017	12/31/2018	\$58,933	\$5,893	\$64,826
Infectious Diseases	Huston, Christopher Dwight	Saint Louis University	Pharmacokinetic and Pharmacodynamic Profiling of Compounds with Known Anti-Cryptosporidial Activity to Promote their Improvement and Advancement for Clinical Development	7/15/2017	6/30/2018	\$60,226	\$6,023	\$66,249
Infectious Diseases	Huston, Christopher Dwight	Saint Louis University	Pharmacokinetic and Pharmacodynamic Profiling of Compounds with Known Anti-Cryptosporidial Activity to Promote their Improvement and Advancement for Clinical Development	7/1/2018	6/30/2019	\$61,840	\$6,184	\$68,024
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	9/17/2017	9/16/2019	\$281,870	\$78,782	\$360,652
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 (Task O)	7/1/2017	12/31/2018	\$381,170	\$192,184	\$573,354
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 (Task DM)	7/1/2017	6/30/2019	\$54,829	\$30,704	\$85,533
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 - Task Order Y	11/1/2017	4/30/2019	\$567,648	\$182,352	\$750,000
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 - Task Order Z	11/1/2017	4/30/2019	\$471,209	\$178,791	\$650,000
Infectious Diseases Total						\$2,263,984	\$864,266	\$3,148,250
Pulmonary	Bates, Jason H.	Natl Heart Lung and Blood Inst/NHLBI/NIH	Non-Allergic Late-Onset Asthma of Obesity: Pathophysiology and Therapy	3/1/2018	2/28/2019	\$378,336	\$201,441	\$579,777
Pulmonary	Carney, Jan Kirk	Boston University	New England Public Health Training Center (NEPHTC)	9/1/2017	8/31/2018	\$37,037	\$2,963	\$40,000
Pulmonary	Dixon, Anne Elizabeth	Natl Heart Lung and Blood Inst/NHLBI/NIH	Trial of Roflumilast in Asthma Management (TRIM)	5/1/2018	4/30/2019	\$163,396	\$33,383	\$196,779
Pulmonary	Dixon, Anne Elizabeth	Natl Heart Lung and Blood Inst/NHLBI/NIH	Pilot of Lifestyle in Asthma Intervention (PLAN)	5/1/2018	4/30/2019	\$180,988	\$51,848	\$232,836
Pulmonary	Dixon, Anne Elizabeth	University of Illinois	Roflumilast or Azithromycin to Prevent COPD Exacerbations (RELANCE)	11/1/2017	12/15/2018	\$5,000	\$2,000	\$7,000
Pulmonary	Irvin, Charles G	American Lung Association	ALA-Asthma Clinical Research Center-CORE Award	10/1/2017	6/30/2018	\$1,299	\$701	\$2,000
Pulmonary	Irvin, Charles G	American Lung Association	Airways Clinical Research Center (ACRC) Core Award	10/1/2017	6/30/2018	\$8,600	\$0	\$8,600
Pulmonary	Irvin, Charles G	Natl Heart Lung and Blood Inst/NHLBI/NIH	Multidisciplinary Training in Lung Biology	5/1/2018	4/30/2019	\$426,798	\$25,183	\$451,981
Pulmonary	Kaminsky, David A	University of Alabama at Birmingham	Beta Blockers for the Prevention of Acute Exacerbations of COPD	10/1/2018	9/30/2019	\$36,584	\$9,745	\$46,329
Pulmonary	Kinsey, C. Matthew	Natl Heart Lung and Blood Inst/NHLBI/NIH	CT Characteristics of Emphysema for Evaluation of Pulmonary Nodules	8/1/2017	7/31/2018	\$165,970	\$13,278	\$179,248

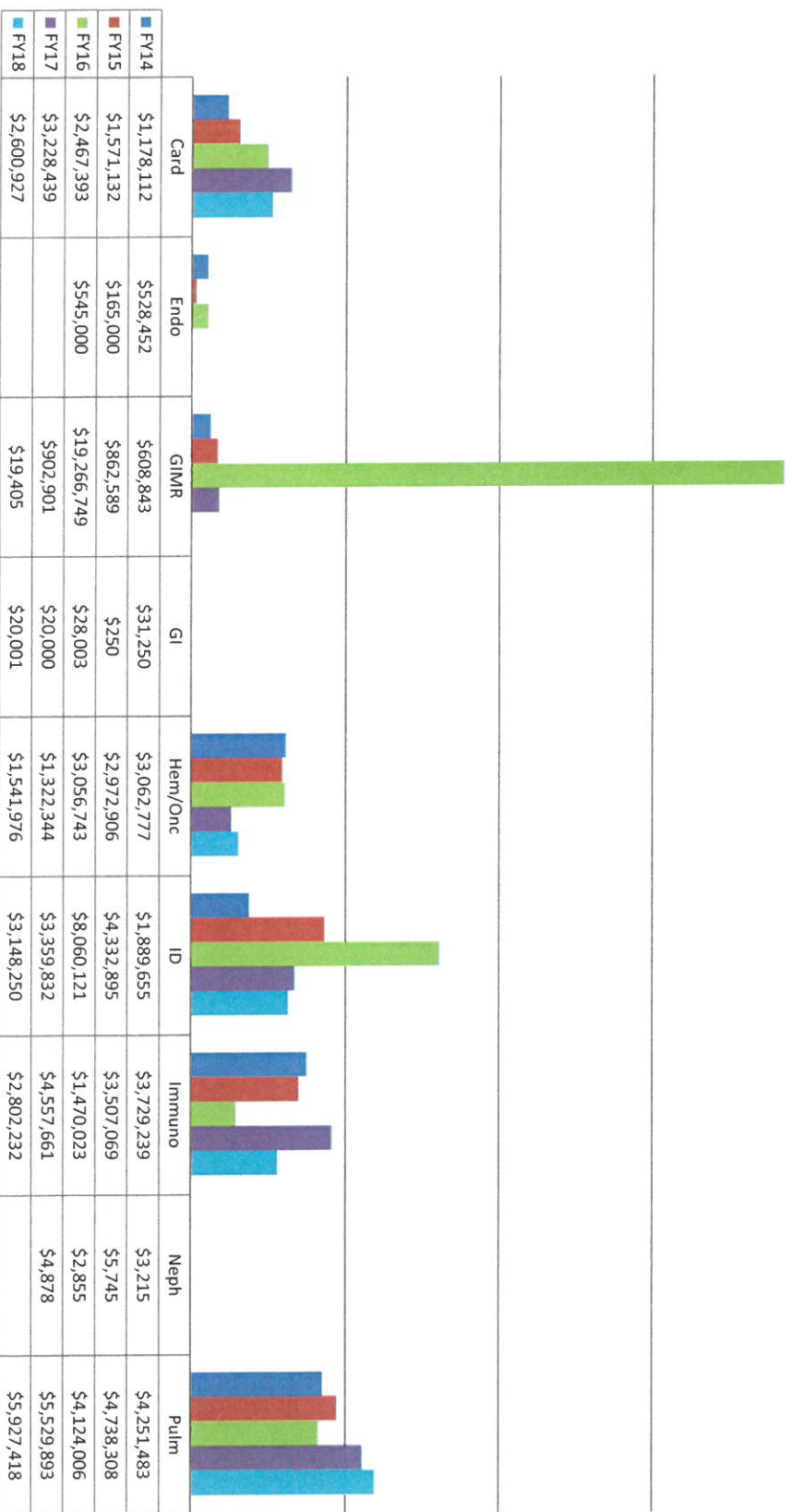
Department of Medicine
 FY2018 UVM Research Funding by Division by PI

Division	PI	Sponsor	Project Title	Start Date	End Date	Direct	Indirect	Total
Pulmonary	Leclair, Laurie W.	Cystic Fibrosis Foundation	Coordination of Mental Health Services for CF Patients and Care Givers	1/1/2018	12/31/2018	\$50,370	\$4,030	\$54,400
Pulmonary	Menon, Prema R.	Pulmonary Fibrosis Foundation	Breathe Vermont- Pulmonary Fibrosis Support Group	11/1/2017	12/31/2018	\$500	\$0	\$500
Pulmonary	Poynter, Matthew Edward	Natl Heart Lung and Blood Inst/NHLBI/NIH	Obese Allergic Asthma and the Impact of Weight Loss on Airway Epithelial Function	8/1/2017	7/31/2018	\$497,231	\$278,449	\$775,680
Pulmonary	Poynter, Matthew Edward	Natl Heart Lung and Blood Inst/NHLBI/NIH	Ketone Body Supplementation in Obese Asthma	4/1/2018	3/31/2019	\$305,463	\$157,651	\$463,114
Pulmonary	Stapleton, Renee D.	Baxter Healthcare Corporation	A Randomized Controlled Trial of a Combined Nutrition (Protein Supplementation) and EXERCISE Intervention in Mechanically Ventilated Critically Ill Patients the NEXIS Trial	8/21/2017	2/28/2021	\$150,706	\$15,000	\$165,706
Pulmonary	Stapleton, Renee D.	Healthy Design Ltd. Co.	Novel Arm Restraint for Critically Ill Patients to Reduce Immobility, Sedation, Agitation and Cognitive Impairment	4/1/2018	3/31/2019	\$87,443	\$48,274	\$135,717
Pulmonary	Stapleton, Renee D.	Natl Heart Lung and Blood Inst/NHLBI/NIH	Nutrition and Exercise in Critical Illness (The NEXIS Trial): A Randomized Trial of Combined Cycle Ergometry and Amino Acids in the ICU	4/1/2018	3/31/2019	\$634,107	\$67,186	\$701,293
Pulmonary	Stapleton, Renee D.	Natl Inst on Aging/NIA/NIH	Improving Palliative Care for Older Seriously Hospitalized Patients and Their Families: A Randomized Trial of an Informed Assent Communication Intervention about CPR	4/1/2017	2/28/2018	\$446,622	\$55,801	\$502,423
Pulmonary	Stapleton, Renee D.	Natl Inst on Aging/NIA/NIH	Improving Palliative Care for Older Seriously Hospitalized Patients and Their Families: A Randomized Trial of an Informed Assent Communication Intervention about CPR	3/1/2018	2/28/2019	\$407,843	\$43,130	\$450,973
Pulmonary	Stapleton, Renee D.	Natl Inst on Aging/NIA/NIH	Improving Palliative Care for Older Seriously Hospitalized Patients and Their Families: A Randomized Trial of an Informed Assent Communication Intervention about CPR	3/1/2018	2/28/2019	\$39,147	\$10,961	\$50,108
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	10/1/2017	9/30/2018	\$11,923	\$6,677	\$18,600
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	10/1/2017	6/30/2018	\$16,795	\$9,405	\$26,200
Pulmonary	Teneback, Charlotte C	Cystic Fibrosis Fdn Therapeutics, Inc	Cystic Fibrosis Foundation Research Support	12/1/2017	11/30/2018	\$22,980	\$1,838	\$24,818
Pulmonary	Teneback, Charlotte C	Cystic Fibrosis Fdn Therapeutics, Inc	Therapeutics Development Center	1/1/2018	12/31/2018	\$24,112	\$1,839	\$25,951
Pulmonary	Teneback, Charlotte C	Cystic Fibrosis Fdn Therapeutics, Inc	Therapeutics Development Center	1/1/2018	12/31/2018	\$86,860	\$6,949	\$93,809
Pulmonary	Teneback, Charlotte C	Cystic Fibrosis Foundation	Implementation of Outpatient Clinical Pharmacy Services: Award for A Pharmacist and/or Pharmacy Technician	11/1/2017	10/31/2018	\$62,000	\$4,960	\$66,960
Pulmonary	Teneback, Charlotte C	Seattle Children's Hospital	Standardized Treatment of Pulmonary Exacerbations II (STOP 2)	7/1/2017	9/30/2017	\$7,110	\$569	\$7,678
Pulmonary	Teneback, Charlotte C	Seattle Children's Hospital	Standardized Treatment of Pulmonary Exacerbations II (STOP 2)	10/1/2017	6/30/2018	\$3,330	\$266	\$3,597
Pulmonary	Weiss, Daniel J	Natl Heart Lung and Blood Inst/NHLBI/NIH	Optimizing Functional Recellularization of Acellular Human Lung Scaffolds	4/1/2018	3/31/2019	\$244,503	\$136,747	\$381,250
Pulmonary	Weiss, Daniel J	Natl Inst Biomedical Imaging/NIBIB/NIH	Decellularized Avian Lungs for Use in Pulmonary Therapeutics	2/1/2018	1/31/2019	\$135,000	\$75,600	\$210,600
Pulmonary	Weiss, Daniel J	Natl Inst Biomedical Imaging/NIBIB/NIH	Decellularized Avian Lungs for Use in Pulmonary Therapeutics	2/1/2018	1/31/2019	\$15,000	\$8,400	\$23,400
Pulmonary Total						\$4,653,143	\$1,274,275	\$5,927,418
Grand Total						\$11,700,255	\$4,359,954	\$16,060,209

Department of Medicine UVM Research Funding (Direct & Indirect), FY14-FY18



Department of Medicine UVM Research Funding (Direct & Indirect) by Division, FY2014-FY2018



Department of Medicine
UVMMG Research Revenue (Direct & Indirect), FY14-FY18

