



Department of Medicine

ANNUAL REPORT  
July 1, 2012 – June 30, 2013

Submitted by:  
Polly E. Parsons, MD  
E.L. Amidon Professor and Chair  
Department of Medicine  
Date: August 13, 2013

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## Department of Medicine Annual Report 2012-2013



### Chair's Executive Summary

The Department of Medicine had another outstanding year with significant contributions in all areas of our mission: research, education, clinical care, and service.

The Department continues to be a nationally/internationally recognized leader in research with contributions to new scientific knowledge panning from the bench to the bedside to the community. In aggregate, members of the department published more than 300 manuscripts, reviews, chapters and books, and were asked to serve on NIH study sections and advisory councils, FDA review panels and editorial boards. They are invited from around the world to present at scientific meetings and to be visiting professors, and they are elected to leadership in national societies.

Despite the challenges facing the NIH budget and other sources of research funding, the faculty continue to find creative ways to lead and succeed in their respective fields, and the rich spirit of collaboration continues to be this department's greatest asset. Building on that asset, the department expanded two research funding programs and developed a third. The departmental bridge funding program is now more substantial and rigorous with aligned metrics to enhance investigators' success. The Translational Award program designed to foster innovation and new collaborations was launched and the first grants were awarded to Drs. Anne Dixon and Oliver Dienz and Dr. Michael Toth. SPARK<sup>VT</sup> was the new research initiative started this year. The goal of this program is to translate novel ideals into therapies, diagnostics, and devices that will improve the health of our patients. With the help of an exceptional panel of community consultants, the first two awards went to Drs. Renee Stapleton and Benjamin Suratt, and to Dr. Markus Meyer. In recognition of their contributions, Dr. Beth Kirkpatrick received the Bailey K. Ashford Medal for distinguished work in Tropical Medicine, and Dr. Virginia Hood was the recipient of the Vermont Medical Society Distinguished Service Award 2012.

Education is a core mission for the department and this year the entire department contributed to the enhancement of medical student and resident education. Preparation for the LCME site visit gave us a unique opportunity to evaluate medical student education and several enhancements were made to our clerkships at FAHC and at our partner sites in Danbury, West Palm Beach and Eastern Maine. In addition, Dr. Jan Carney developed a Certificate in Public Health Program that will benefit not only our medical students but many others in health care. The residency program increased in size to 42 categorical residents, 9 preliminary residents and 3 chief residents; and with this increase successfully transitioned to a new model called 4+1 that separates outpatient and inpatient rotations and allows for novel educational initiatives including a High Value Cost Conscious Care Curriculum. The faculty continued to participate extensively in the VIC curriculum and again received a number of honors and awards for their contributions to education. Dr. William Hopkins received the Foundations Course Director for the seventh consecutive year and was named the Best Clinical Teacher of the Year by the Class of 2015.

The Cardiovascular, Respiratory & Renal Systems course, Directed by Dr. Hopkins and taught by many of our faculty won the award for Outstanding Foundations Course for the seventh time. In recognition of their contributions to resident education, Dr. David Kaminsky received the E.L. Amidon MD Award for Subspecialty Medicine and Dr. Richard Pinckney received the William Osler, MD Award for General Internal Medicine. This year's recipient of the Department of Medicine Mentor Award was Dr. David Schneider.

This year the Department expanded its clinical practice and focused on providing high value cost conscious care modeled after the national program, Choosing Wisely. New clinical programs this year included the opening of a motility center and esophageal pH laboratory, expansion of the Oncology Rehabilitation program, telemedicine ICU Palliative care consultation, and expansion of ultrasound in Rheumatology. We also celebrated the 25<sup>th</sup> anniversary of the highly successful HIV Comprehensive Care Clinic Program directed by Dr. Christopher Grace. The PCIM faculty continued to be actively engaged in the transformation of primary care and working with Dr. Joel Schnure and colleagues in Endocrinology enacted the Diabetes Care Pathway to further the integration of PCIM and subspecialty medicine. The initial Choosing Wisely initiatives included a focus on testing in patients with chronic kidney disease, indications for colonoscopy and for rheumatologic testing. Results were presented both regionally and nationally and have already led to improvements in patient care and cost savings. Working with our partner institutions, Dr. David Schneider began to extend the quality assurance programs in cardiovascular disease across our network. These programs have helped the department lead the way for enhancing patient care in alignment with ongoing health care reform.

Administrative Team:

|                               |                      |
|-------------------------------|----------------------|
| Physician Leader and Chair    | Polly E. Parsons, MD |
| Vice Chairs                   |                      |
| Medical Education             | Mark Levine, MD      |
| Research                      | Charles Irvin, PhD   |
| Director                      | Allen Mead           |
| Assistant Director            | Tammy Stockton, RN   |
| Assistant Director            | Susan Webber         |
| Physician Executive Assistant | Laurie St.Gelais     |
| Financial Administrator       | Fiona Daigle         |
| Grants Manager                | Eric Gagnon          |
| Financial Associate           | Marlene Frank        |
| Department Assistant          | Katelyn Bolgioni     |

Department of Medicine, University of Vermont Division Chiefs

R. Budd, MD, Immunobiology  
 E. Leib, MD, Rheumatology  
 N. Fukagawa, MD, Geriatrics (acting)  
 R. Galbraith, MD, Clinical Pharmacology (acting)  
 C. Grace, MD, Infectious Diseases  
 G. Goldman, MD, Dermatology  
 J. Leahy, MD and Joel Schnure, MD, Endocrinology, Metabolism, & Diabetes

B. Littenberg, MD, General Internal Medicine  
A. Repp, MD, Primary Care Internal Medicine  
C. Verschraegen, MD, Hematology/Oncology  
A. Dixon, MD, Pulmonary and Critical Care Medicine  
C. Schneider, MD, Cardiology Unit and Vascular Biology Unit  
R. Solomon, MD, Nephrology  
J. Vecchio, MD, Gastroenterology

- Total faculty: 175
- By rank – Assistant Professors: 84  
Associate Professors: 43  
Professors: 44  
Research Associates: 4
- By gender – 68 female; 107 male
- By track – Tenured: 38  
Research Scholar Pathway: 14  
Tenure Pathway: 8  
Clinical Scholar Pathway: 112  
Education Scholar Pathway: 3

#### Faculty Actions:

FALL 2012– 15 green sheet reappointments; 1 pink sheet reappointments;  
10 promotions; 1 tenure

SPRING 2013 – 24 green sheet reappointments; 10 pink sheet  
reappointments, (11) volunteer faculty reappointments

#### Promotions:

Anne Dixon, M.A., B.M., B.Ch. –Professor (tenured)  
Eric Ganguly, MD –Associate Professor  
David Kaminsky, MD - Professor (tenured)  
Patricia King, MD - Associate Professor  
Beth Kirkpatrick, MD – Professor (tenured)  
Joel Schnure, MD – Professor  
Doris Strader, MD – Professor  
Jose Teixeira, PhD – Research Assistant Professor  
Neil Zakai, MD – Associate Professor, with Tenure  
AKA Tarikuz Zaman, PhD – Research Assistant Professor  
Richard Zubarik, MD – Professor

Standing Committees:

Operational Efficiency Committee

K. Schwarzenberger, MD, Chair  
S. Grunberg, MD  
F. Keating, MD  
B. Libman, MD  
Y. Mageto, MD  
A. Mead – Staff  
T. Stockton – Staff  
S. Webber - Staff  
L. Polish, MD  
J. Schnure, MD  
K. Schwarzenberger, MD  
A. Segal, MD  
D. Strader, MD

Education Committee:

M. Levine, MD, Chair  
G. Allen, MD  
A. Bantle, MD  
M. Degirmenci  
E. Ganguly, MD  
P. Hohl, MD  
F. Keating, MD  
M. Pasanen, MD  
L. Polish, MD  
W. Prabhu, MD  
M. Ramundo, MD  
S. Raza, MD  
D. Shelc  
P. Slavik, MD  
N. Zakai, MD

Fellowship Education Committee:

M. Levine, MD, Chair  
M. Capeless, MD  
N. Ferrentino, MD  
E. Gagnon  
C. Grace, MD  
D. Kaminsky, MD  
B. Libman, MD  
A. Marney, MD

K. Pierce, MD  
R. Pinckney, MD  
A. Segal, MD  
J. Sprague, MD

Clinical Competency Committee (formerly Housestaff Evaluation Committee)

M. Ramundo, MD  
A. Bantle, MD  
W. Prabhu, MD  
M. Pasanen, MD  
M. Levine, MD  
D. Shelc

Housestaff Selection Committee:

M. Levine, MD, Chair  
W. Alston, MD  
J. Bartsch, MD  
R. Clouser, DO  
E. Ganguly, MD  
P. Hohl, MD  
S. McMahan, MD  
P. Menon, MD  
M. Pasanen, MD  
K. Pierce, MD  
M. Ramundo, MD  
J. Sprague, MD  
Ms. D. Shelc

Medical Grand Rounds Education Program Committee:

R. Budd, MD, Chair  
C. Irvin, MD  
M. Levine, MD  
P. Parsons, MD  
T. Jetton, PhD  
S. Lidofsky, MD  
M. Wood, MD  
J. Bartsch, MD  
P. Hohl, MD  
S. McMahan, MD

Quality Assurance Committee - Medicine Health Care Service:

M. Levine, MD, Chair  
S. Ades, MD  
M. Airiodi

S. Bellemare  
D. Benway, RN  
T. Berrings, RN  
J. Blondin  
P. Bouchard, RN  
I. Bonin, RN  
M. Capeless, MD  
P. Gagne, RN  
Y. Mageto, MD  
D. Pepin, RN  
A. Repp, MD  
J. Stinnett-Donnelly, MD  
J. Rimmer, MD  
J. Vecchio, MD  
K. Walter

Quality Assurance Committee – Cardiac Catheterization Laboratory

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

Quality Assurance Committee – Dermatology

T. Holmes, MD  
K. Schwarzenberger, MD (until 3/13/13)  
G. Goldman, MD  
C. Weinberger, MD  
T. Stockton

Resident and Scholarly Activity

A. Marney, Chair  
V. Hood, MD  
C. Irvin, PhD  
M. Levine, MD  
R. Pinckney, MD  
C. Holmes, MD  
M. Meyer, MD  
D. Weiss, MD

Bylaws and Credentialing Committee

Glenn Goldman, Chair  
M. Lazarovich, MD

J. Trice, MD  
K. Pierce, MD  
D. Schneider, MD  
J. Schnure, MD  
R. Solomon, MD  
J. Vecchio, MD  
M. Wood, MD

Social Committee (Club Med –icine):

E. Terrien, Chair  
S. Chang, MD  
N. Hynes, MD  
A. Lee, MD  
P. Menon, MD  
F. Khan, MD  
A. Marney, MD  
J. Lin, MD  
C. Noyes, MD  
T. Stockton, RN  
K. Bolgioni

Research Committee

C Irvin, PhD, chair  
R. Budd, MD  
M. Poynter, PhD  
B. Kirkpatrick, MD  
T. Jetton, PhD  
M. Toth, PhD  
E. Gagnon - Staff  
M. Cushman, MD  
N. Fukagawa, MD PhD  
S. Lidofsky, MD PhD  
M. Meyer, MD  
R. Solomon, MD  
S. Webber – Staff

Promotions and Tenure

G.Davis, MD, Chair  
R. Pratley, MD  
E. Leib, MD  
J. Bates, PhD  
M. Levine, MD

Assistant Professor and Instructor Faculty Actions

M. Tischler, Chair  
D. Strader, MD  
C. Holmes, MD  
A. Repp, MD  
P. VanBuren, MD  
S. Lidofsky, MD

Part-time Faculty Actions

J. Alpert, M.D, Chair  
C. Berger, M.D.  
B. Libman, M.D.

Scientific Integrity Committee

R. Budd, M.D., Chair  
N. Fukagawa, M.D.  
C. Irvin, PhD

**Medical Service**

Patient Days: Patient Days: 48,230 (inpatients)  
Ambulatory Care Visits: 221,351 (149,496 specialty and 71,855 primary care)

**FAHC Practice Sites:**

Ambulatory Care Center – Medicine has a presence in four Modules:

- Medicine: Infectious Disease (including Travel Medicine), Osteoporosis Center, Rheumatology and Clinical Immunology, and Pulmonary (including PFTs), Lung Cancer Multidisciplinary Clinic
- Dermatology including Mohs Surgery and Melanoma Multidisciplinary Clinic
- Cancer Center: Hematology/Oncology, Breast Care Center and Multidisciplinary Clinic, and Head and Neck Cancer Multidisciplinary Clinic
- Surgery: Gastroenterology, Thrombosis Center [part of Hem/Onc and Vascular Surgery], and Gastrointestinal Multidisciplinary Center

University Health Center  
- Nephrology

Tilley Drive, South Burlington

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

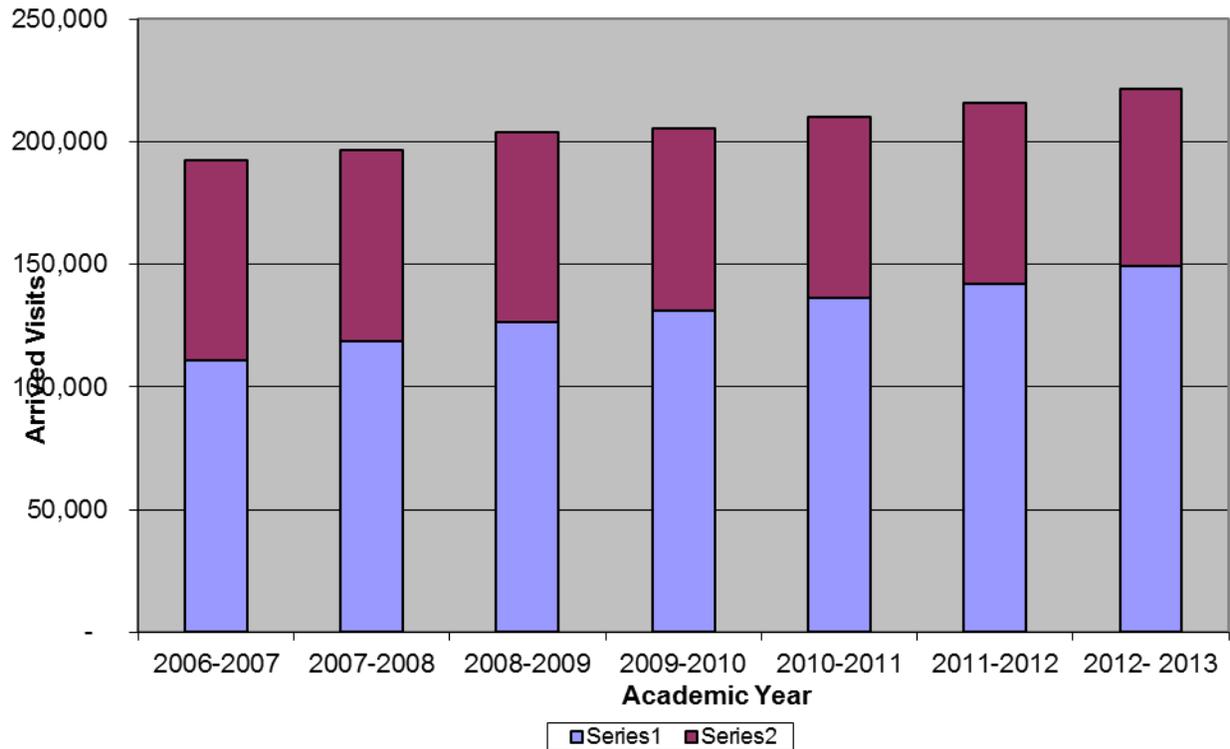
FAHC Outreach Sites:

- Bennington – Hematology/Oncology (Familial Cancer Program)
- Brattleboro (BMH) – Infectious Disease
- Morrisville (Copley Hospital) – Hem/Onc, Rheumatology
- St. Albans (Northwestern Medical Center) –Nephrology and Cardiology
- St. Johnsbury (Northeastern Medical Center) - Infectious Disease
- Barre (Central Vermont) – Rheumatology, Nephrology
- Rutland (Rutland Regional) – Nephrology, Cardiology, Infectious Disease
- Middlebury (Porter) - Cardiology
- Newport (Newport Memorial) – Nephrology
- Malone (Alice Hyde) – Cardiology
- Ticonderoga (Moses Luddington Hospital) – Dermatology, Cardiology
- Saranac Lake (Adirondack Medical Center) – Cardiology, Hematology/Oncology
- Canton- Potsdam – Cardiology
- Massena (MMH) – Cardiology

Primary Care Sites:

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

### Department of Medicine Arrived Clinic Visits



### Department of Medicine Arrived Visits

|                | 2006-2007 | 2007-2008 | 2008-2009 | 2009-2010 | 2010-2011 | 2011-2012 | 2012-2013 |
|----------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| Specialty Care | 110,794   | 118,880   | 126,256   | 130,912   | 136,223   | 142,151   | 149,496   |
| Primary Care   | 81,386    | 77,875    | 77,735    | 74,272    | 74,069    | 73,423    | 71,855    |
| Total          | 192,180   | 196,755   | 203,991   | 205,184   | 210,292   | 215,574   | 221,351   |

Graduate Students/Pre-Doctoral Trainees and Post-Doctoral Associates/Trainees

| <b>Last</b> | <b>First Name</b> | <b>System Title</b>         | <b>Department</b>       |
|-------------|-------------------|-----------------------------|-------------------------|
| RAO         | KRITHIKA          | Graduate Assistant          | Med-Cardiology          |
| ZIEGLER     | CHRISTOPHER       | Graduate Assistant          | Med-Immunobiology       |
| SATERIALE   | ADAM              | Graduate Rsrch/Teach Asst   | Med-Infectious Disease  |
| CALLAHAN    | DAMIEN            | Post Doct Fellow/Trainee    | Med-Cardiology          |
| SCKOLNICK   | MARIA             | Post Doct Fellow/Trainee    | Med-Cardiology          |
| THOMPSON    | NATHANIEL         | Post Doct Fellow/Trainee    | Med-Cardiology          |
| ALEXANDER   | KRISTINE          | Post Doct Fellow/Trainee    | Med-Hematology Oncology |
| KREMENTSOV  | DIMITRY           | Post Doct Fellow/Trainee    | Med-Immunobiology       |
| SMITH       | BRADFORD          | Post Doct Fellow/Trainee    | Med-Pulmonary           |
| WAGNER      | DARCY             | Post Doct Fellow/Trainee    | Med-Pulmonary           |
| HABEL       | NICOLE            | Post Doctoral Associate     | Med-Cardiology          |
| MCLEAN      | DANIELLE          | Post Doctoral Associate     | Med-Cardiology          |
| CASE        | LAURE             | Post Doctoral Associate     | Med-Immunobiology       |
| CHEUNG      | KATHARINE         | Post Doctoral Associate     | Med-Nephrology          |
| SIDELEVA    | OLGA              | Post Doctoral Associate     | Med-Pulmonary           |
| THARP       | WILLIAM           | Pre Doctoral Fellow/Trainee | Med-Endocrinology       |
| KLAUS       | JOSEPH            | Pre Doctoral Fellow/Trainee | Med-Immunobiology       |
| POTHEN      | JOSHUA            | Pre Doctoral Fellow/Trainee | Med-Pulmonary           |



## **Medical Education**

### **1. Leadership**



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



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



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



**Dorothy Shelc – Program Administrator**

### **2. Summary of Program Highlights 2012-2013**

A) Successful first year implementation of the newly redesigned residency schedule into the “4 +1” template leading to:

1) Separation of inpatient medicine and ambulatory medicine/continuity clinic, and elimination of the traditional tension residents have felt that was created by the need to leave the hospital to see patients in the clinic setting.

2) Enhanced subspecialty medicine ambulatory learning opportunities.

3) Dramatic improvement in resident ownership of their continuity clinic, patient continuity, and the educational opportunities that have developed in that setting.

B) Successful revitalization of the primary care track with enhanced educational opportunities during longitudinal and block rotations, improvement in practice management curriculum, development and improvement in delivery of comprehensive ambulatory medicine curriculum, and elective opportunities appropriate to that setting.

C) Increase in program size to 14 categorical residents per year plus 9 preliminary residents in the first year of training.

D) Increase from 2 to 3 Medicine Chief Residents with attendant expansion of clinical, teaching, quality, and research roles and opportunities effective 07-01-13.

E) Development of night float rotation on cardiology as of 07-01-13. This effectively eliminates overnight call in the entire program and will enable elimination of duty hour violations (as can no longer be subject to the 24 + 4 rule) and contribute to totally separate resident cardiology and MICU rotations.

F) Development of a redesigned inpatient ward medicine structure to improve allocation of admissions and keep weekend cross coverage responsibilities within teams – this eliminates the need for teams to cross cover patients they have no prior knowledge of and reduces the opportunity for transitions of care errors.

G) Transition to a developmental milestone based approach to evaluation.

H) Major resident-driven initiatives in the area of transition of care/sign-out.

I) Early involvement of residents in the Choosing Wisely initiative.

### 3. List of All Residents

#### PGY-3

|                             |  |
|-----------------------------|--|
| Bartsch, Jason              | George Washington University                         |
| Borofsky, Jennifer          | University of Vermont                                |
| Burke, Michele              | University of Vermont                                |
| Helminski, Aaron            | University of Vermont                                |
| Hill, Elizabeth             | University of Vermont                                |
| Hohl, Patrick               | University of New England, Osteopathic Medicine      |
| Jayaprakash-Sardana, Jasmol | Nova Southeastern University of Osteopathic Medicine |
| McMahon, Sean               | SUNY – Upstate                                       |
| Meyer, David                | East Tennessee State University                      |
| Meyer, Gabriela             | East Tennessee State University                      |
| Stinnett-Donnelly, Justin   | University of Vermont                                |

Sundaran, Preeth

Royal College of Surgeons, Ireland

**PGY-2**

Disantis, Robert  
Fashoyin, Adedayo  
Fitzgerald, Alison  
Houghton, Damon  
Keveson, Benjamin  
Leclair, Timothy  
Merrill, Samuel  
Parkhurst, Benjamin  
Rand, David  
Raza, Samreen  
Sharma, Deva  
Shenk, Heather  
Spiess, Krystine  
Trobaugh, Derinda

Penn State University  
University of Wisconsin  
University of Vermont  
University of North Carolina  
New York University  
University of Vermont  
Washington University  
University of Buffalo  
Philadelphia College of Osteopathic Medicine  
Imperial College – United Kingdom  
University of Maryland  
University of Vermont  
Kansas City Osteopathic Medicine  
University of Arkansas

**PGY-1**

**Categorical**

Agarwal, Zubin  
Arling, Timothy  
Burnett, Maria  
Cox, Courtney  
Dado, Christopher  
Degirmenci, Markus  
Halevy, Jonathan  
Koenen, Brian  
Lopez, Max  
McEntee, Rachel  
Pesta, Lynn  
Sandiford, Patrick  
Vadlamudi, Charita

Mayo Medical School  
University of Maryland  
University of Vermont  
Eastern Virginia Medical School  
Wayne State University  
University of Washington  
University of Pittsburgh  
University of Kansas  
Boston University  
University of Vermont  
Wayne State University  
Albany Medical College  
University of North Carolina

**Preliminary**

Love, Robert  
Moore, Alistair  
Odell, Ian  
Pace, Thomas  
Patlak, Johann  
Pizzini, Mario  
Schmidt, Thomas  
Semma, Makeda  
Wolf, James

University of Michigan (Radiology)  
University of Texas at San Antonio (Radiology)  
University of Vermont (Dermatology)  
University of Vermont (Anesthesia)  
University of Vermont (Anesthesia)  
University of Washington (Neurology)  
University of Toledo (Neurology)  
University of Vermont (Radiology)  
SUNY – Downstate (Anesthesia)

**Chief Medical Residents**

Bantle, Anne  
Prabhu, William

University of Minnesota  
SUNY - Upstate

**4. Resident Awards**

- **The Harriet P. Dustan, M.D. Award**  
*Justin Stinnett-Donnelly, M.D.*
- **The Frank L. Babbott, M.D. Memorial Award**

*Patrick Hohl, D.O., M.P.H.*

- **E.L. Amidon, M.D. Award**  
**Outstanding Teacher of the Year**  
**Subspecialty Medicine**  
*David Kaminsky, M.D.*
- **William Osler, M.D. Award**  
**Outstanding Teacher of the Year**  
**General Internal Medicine**  
*Richard Pinckney, M.D.*
- **Richard E. Bouchard, M.D.**  
**Excellence in Primary Care Award**  
*Elizabeth Hill, M.D.*

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

**Anne Bantle MD**, W Kemper Alston MD MPH. The Kinetics of the Leukocyte Response during Clostridium difficile Infection (CDI). Research presentation at ID Week 2012, San Diego, October 2012.

Enkhtuyaa Mueller, MD, **William Prabhu, MD**, Michael DeSarno, MS, **Preeth Sundaran, MD** and Harold Dauerman, MD. Bleeding Complications with Regional Adaptation of a Prolonged Bivalirudin Regimen for ST Elevation Acute Myocardial Infarction. Published December 2012- American Journal of Cardiology and presented at the Annual G3 Research Day, May 24, 2013

**Patrick Hohl DO MPH**, Robert Lobel MD. Lyme Carditis in an Elderly Man with Native Conduction Disease: A Treatment Dilemma. Abstract presentation at the National ACP Meeting in San Francisco, CA April 2013.

**Samreen Raza MD**, **Jasmol Jayaprakash Sardana, DO** When biopsy prevails and therapy fails – a fascinating case of Rheumatoid Meningitis (necrotizing granulomatous meningitis) while on TNF blocking therapy Abstract presentation at the ACP Meeting in San Francisco, CA April 2013

**Deva Sharma MD**, **Derinda Trobaugh MD**, James Wolf MD, Krystine Spiess, DO An Unusual Case of Septic Shock, Pancytopenia and Acute Renal Failure in a Wildlife Enthusiast. Abstract Presentation at the National ACP Meeting, San Francisco, CA April 2013

**Benjamin Keveson MD** Bhatraju P, Cohen S, Evans L, Uppal A Patient Handoffs in the Medical ICU: A Survey of US internal Medicine Training Programs Abstract Presentation at the American Thoracic Society Meeting May 2013

**Jennifer Borofsky MD**, **Jason Bartsch MD**, Are inter-hospital communication practices associated with post-transfer adverse events? Abstract Presentation at the Annual Society for Hospital Medicine Conference, Washington, DC May 2013 and presented at the Annual G3 Research Day, May 24, 2013

**Michele Burke, M.D.** ADHD Quality Improvement Project in Resident Continuity Clinic Presented at the Annual Resident Research Day, May 24, 2013

**Justin Stinnett-Donnelly MD**, Patricia Bouchard RN MS, Virginia Hood MD. Choosing Wisely at Fletcher Allen Health Care – Facilitating Change through Resident Involvement and Education. Research presentation at the AAMC Integrating Quality: Improving Value and Educating for Quality Meeting, June 2013 and presented at the Annual G3 Research Day, May 24, 2013

**Aaron Helminski, M.D.** Effective Progress Notes in the Era of EMR--an Educational Project Clinic  
Presented at the Annual Resident Research Day, May 24, 2013

**Elizabeth Hill, M.D.** Non-Operative Management of Hip Fractures: Goals of Care and Patient Preference  
Currently in submission for the 2013 American Association of Hospice and Palliative Medicine Meeting.  
Presented at the Annual Resident Research Day, May 24, 2013

**Patrick Hohl DO, Martin LeWinter MD** Echocardiographic Measurements Predictive of LVEF Recovery  
in patients with Heart Failure with Reduced EF. Presented at the Annual Resident Research Day, May  
24, 2013

**Jasmol Jayaprakash, DO, Annis Marney MD**  
Pharmacokinetics and Adipocyte Clearance Receptor Expression of Brain Natriuretic Peptides in Obesity  
Presented at the Annual Resident Research Day, May 24, 2013

**Sean R. McMahon, MD, Janusz Kikut, MD, Richard Pinckney, MD, MPH, Friederike K. Keating, MD.**  
Feasibility of Stress Only Rubidium-82 PET Myocardial Perfusion Imaging  
Presented at ACC Scientific Sessions 2012. Manuscript in Submission. Presented at the Annual  
Resident Research Day, May 24, 2013

**David Meyer, M.D.** Survey of Vermont Mental Health Care in the Primary Care Sector Presented at the  
Annual Resident Research Day, May 24, 2013

**Gabriela Meyer MD, Nicole Hynes MD**

Eosinophilic Granulomatosis with Polyangitis: Recognizing an Easily Overlooked Classic Presentation

In the Primary Care Setting Presented at the Annual Resident Research Day, May 24, 2013

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

|                                  |  |
|----------------------------------|--|
| Jason Bartsch, M.D.              | Chief Medical Resident / Applying for Hospitalist Position for 2014-2015 |
| Jennifer Borofsky, M.D.          | Hospitalist - FAHC   |
| Michele Burke, M.D.              | Applying for Hospitalist Job in Vermont                                  |
| Aaron Helminski, M.D.            | Hospitalist, Brattleboro Memorial Hospital, Brattleboro, VT              |
| Elizabeth Hill, M.D.             | Geriatric Fellowship, Yale University, New Haven, CT                     |
| Patrick Hohl, D.O.               | Chief Medical Resident / Apply for Cardiology Fellowship for 2014-2015   |
| Jasmol Jayaprakash-Sardana, D.O. | General Internal Medicine Practice in Baltimore, Maryland                |
| Sean McMahon, M.D.               | Chief Medical Resident – Applying for Cardiology Fellowship 2014-2015    |
| David Meyer, M.D.                | General Internal Medicine Practice in North Carolina.                    |
| Gabriela Meyer, M.D.             | Geriatric Fellowship, Wake Forest, North Carolina                        |
| Justin Stinnett-Donnelly, M.D.   | Hospitalist, Central Vermont Hospital                                    |
| Preeth Sundaran, M.B.Ch.B.       | Cardiology Fellow at FAHC  |

7. **MATCH RESULTS 2013-2014**

**Categorical**

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

**Preliminary**

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

## Cardiovascular Division

David J. Schneider, MD, Director

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



During 2013 the Cardiovascular Division took a lead role in clinical integration among members of Fletcher Allen Partners and throughout the region. Major initiatives have been to develop a region wide quality assurance program and to enhance data sharing by implementing a common EPACs system. In April we began region wide quality assurance conferences for noninvasive testing. Five institutions (Central Vermont Medical Center, Northwest Medical Center, Champlain Valley Physicians Hospital, Alice Hyde Medical Center, and Canton Potsdam Medical Center) join together monthly to review both echocardiography and stress test results. In the fall of 2013 we will begin combined quality assurance testing for invasive procedures. In early 2014, we are targeting deployment of the Merge EPACs system at Central Vermont Medical Center. This system will allow storage and reporting of stress and echocardiography tests. Images and results performed at either Fletcher Allen or Central Vermont will be available to providers at both locations. During 2013, we updated our electrophysiology laboratory which allows for radiofrequency ablation of arrhythmias as well as one of our catheterization laboratories. These updates were necessary to continue to provide the best care to our patients. We continue a robust clinical and translational research program. A major research grant awarded to Dr. Spector has enabled him to develop software that is being used across the country for education of both nurses and physicians. In addition, he has developed a new approach to the mapping of atrial fibrillation. Several patent applications have been filed and new mapping technology is being developed based on his models. Our research continues to benefit patients. We are actively involved in a trial of new stents that are bioabsorbable. In total, the Cardiovascular Division published 82 manuscripts and chapters during the past year. On the education front, Dr. Hopkins continues a key role in the medical student curriculum. He was selected for the seventh consecutive year by the medical students of the College of Medicine as the recipient of the Course Director of the year. The course he directs, Cardiovascular, Respiratory, and Renal, has been selected again as best course. Dr. Hopkins was also once again the recipient of the best clinical teacher of the year. Dr. LeWinter was selected by the fellows in the Cardiovascular Training Program as the teacher of the year. Dr. Dauerman is the Chair of the Clinical Cardiology Council Programming of the American Heart Association National Scientific Meeting. Dr. Schneider was awarded the distinguished research mentor award by the Department of Medicine. On a sad note, Fletcher Allen and the University of Vermont lost a giant in cardiology in May of 2013 with the death of Burton E. Sobel.

## Faculty

David Schneider, MD  
Professor of Medicine  
Director, Cardiovascular Division  
Research and Clinical Interests

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

Philip Ades, MD  
Professor of Medicine  
Director, Cardiac Rehabilitation  
Research and Clinical Interests

- cardiac Rehabilitation
- preventive cardiology
- ischemic heart disease

Mark Capeless, MD  
Professor of Medicine  
Director, Cardiovascular Disease Training Program  
Director, Clinic Electrophysiology Training Program

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

- coronary intervention
- cardiac catheterization
- ischemic heart disease

Harold Dauerman, MD  
Professor of Medicine

- coronary intervention
- cardiac catheterization
- peripheral vascular intervention
- ischemic heart disease
- vascular biology

John Fitzgerald, MD  
Assistant Professor of Medicine  
Research and Clinical Interests

- preventive cardiology
- ischemic heart disease
- valvular heart disease

Prospero Gogo, MD  
Associate Professor of Medicine  
Director, Cardiovascular Catheterization Laboratory  
Associate Director Interventional Cardiology Training Program

Research and Clinical Interests

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

William Hopkins, MD  
Associate Professor of Medicine  
Director, Pulmonary Hypertension and Adult Congenital Heart Disease Program

Research and Clinical Interests

- pulmonary hypertension
- adult congenital heart disease
- genetic heart disease
- valvular heart disease
- echocardiography

Friederike Keating, MD  
Associate Professor of Medicine  
Director, Nuclear Cardiology  
Director, Cardiac Care Unit

Research and Clinical Interests

- cardiovascular disease in women
- cardiovascular imaging
- thrombosis
- platelet biology

Robert J. Kelm, Jr., PhD  
Associate Professor of Medicine  
Associate Professor of Biochemistry

- Molecular biology of smooth muscle cell differentiation
- Assembly and function of protein-nucleic acid complexes
- Biochemistry of purine-rich element binding proteins
- Mechanisms of dysfunctional cardiovascular remodeling

Martin M. LeWinter, MD  
Professor of Medicine  
Director, Heart Failure and Cardiomyopathy Program

Research and Clinical Interests

- cardiomyopathy
- coronary heart disease
- valvular heart disease

- heart failure
- pericardial disease

Robert Lobel, MD

Assistant Professor of Medicine

Research and Clinical Interests

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

Daniel Lustgarten, MD

Professor of Medicine

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

Markus Meyer, MD

Assistant Professor of Medicine

Research and Clinical Interests

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

Peter Spector, MD

Professor of Medicine

Director, Cardiac Electrophysiology

Research and Clinical Interests

- catheter ablation
- atrial fibrillation

Jeffrey Spees, PhD

Associate Professor of Medicine

Director, Stem Cell Core Facility

Research and Clinical Interests

- adult stem cell biology
- regenerative medicine

Edward Terrien, MD

Associate Professor of Medicine

Director, Ambulatory Cardiovascular Clinic

Research and Clinical Interests

- coronary intervention
- cardiac catheterization
- peripheral vascular intervention
- ischemic heart disease

Marc Tischler, MD

Associate Professor of Medicine

Director, Echocardiography Laboratory

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

Michael Toth, PhD

Associate Professor of Medicine

Research and Clinical Interests

- skeletal muscle physiology
- heart failure
- aging
- physical disability
- muscle disuse

Anthony Tramontano, MD

Assistant Professor of Medicine

Research and Clinical Interests

- ischemic heart disease
- heart failure and cardiomyopathy
- echocardiography
- cardiac magnetic resonance imaging

Peter Van Buren, MD

Associate Professor of Medicine

Associate Professor of Molecular Physiology and Biophysics

Associate Director Cardiovascular Training Program

Research and Clinical Interests

- specialist in heart failure
- echocardiography
- nuclear cardiology

Matthew Watkins, MD

Professor of Medicine

Director of Interventional Cardiology

Director of Interventional Cardiology Fellowship Training Program

Research and Clinical Interests

- interventional cardiology
- ischemic heart disease

Joseph Winget, MD

Associate Professor of Medicine

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

Fellows

Sreedivya Chava  
 David Coyle (interventional cardiology)  
 Mohamed El-Haddad  
 Mark Lee  
 Stefan Lischke  
 Shahab Moossavi  
 Sadi Raza  
 Zohair Raza  
 Sukit Ringwala  
 Ali Saab  
 Naveen Seecheran  
 Preeth Sundaran  
 Nathaniel Thompson (electrophysiology)  
 Srinath Yeshwant,  
 Magdalena Zeglin-Sawczuk, (interventional cardiology)

Nurse Practitioners and Physician Assistants:

Elizabeth Carney, APRN  
 Gregory Ehle, PA  
 Karen Farrell, APRN  
 Susan Ann Hamlyn-Prescott, APRN  
 Ann Laramee, APRN  
 Cheryl McNeil, APRN  
 Nancy Strong, APRN

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

Robert Kelm, Jr., PhD  
 Amy E. Rumora (PhD student, Biochemistry Program)  
 Lauren A. Ferris (PhD student, Biochemistry Program)

Martin LeWinter, MD  
 Burton Tanner

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

Michael J. Toth, Ph.D.

Damien Callahan, Ph.D. – post doctoral  
Mark Miller, Ph.D. – K01 Mentee

## **Leadership in Professional Societies:**

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

Scientific Task Force American Heart Association 2008- 2014  
Mission: Lifeline National STEMI Quality Improvement Initiative

Member, Steering Committee for American College of Cardiology 2013-2016  
Get with the Guidelines/ACTION Registry

Data Safety and Monitoring Board, current 2012-2014

Chairman, Clinical Cardiology Council Programming 2012-2014  
American Heart Association National Scientific Meeting

Co-Chairman  
The Annual Platelet Colloquium Meeting 2008-2013  
<http://www.theplateletcolloquium.org/>

### **Prospero B. Gogo, MD**

Governor-elect, Vermont Chapter of the American College of Cardiology; member  
Novation Cardiovascular Council

### **William Hopkins, MD**

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

### **Matthew W. Watkins, MD**

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

### **Martin LeWinter, MD**

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

## **Editorships and Editorial Boards:**

### **Philip Ades, MD**

Consulting Editor (Former Editor--in-Chief) Journal of Cardiopulmonary Rehabilitation and Prevention

Associate Editor: Coronary Artery Disease

Editorial Board: Circulation

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

Editor in Chief, *Coronary Artery Disease*

Wolters Kluwer, Lippincott Williams Wilkins

July 1, 2013-

*Journal of the American College of Cardiology*

2005-current

*Journal of Thrombosis and Thrombolysis, Associate Editor*

2009—2013

### **William Hopkins, MD**

Associate Editor, *Coronary Artery Disease*

### **Prospero B. Gogo, MD**

Reviewer for American Journal of Cardiology and Coronary Artery Disease

### **Martin LeWinter, MD**

Associate Editor, Circulation

Associate Editor, Coronary Artery Disease

Section Editor, Myopericardial Disease, UpToDate

Editorial Boards: Heart and Vessels. Experimental and Clinical Cardiology, Current Cardiology Reviews, Heart Failure Reviews

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

Associate Editor, Coronary Artery Disease

Editorial Board, American Journal of Cardiology

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

Editorial Board: Coronary Artery Disease.

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

**Marc D. Tischler, MD**  
Associate Editor, *Coronary Artery Disease*

**Michael J. Toth, Ph.D.**  
**Editorial board: American Journal of Physiology**

**Peter Van Buren, MD**  
Performed editorial review for the following journals: *Biochemistry*, *Circulation Review*,  
*Coronary Artery Disease*

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

**Harold L. Dauerman, MD**

- RIVER PCI Trial (Ranolazine for incomplete revascularization)
- WISE Trial (Carotid stenting with novel distal protection)

Data Safety and Monitoring Board 2010-2012  
National Heart Lung and Blood Institute  
Immunomodulatory, Inflammatory and Vasoregulatory Properties of Transfused Red Blood  
Cells as a Function of Storage (RO1).

Data Safety and Monitoring Board 2010-2012  
Massachusetts Department of Public Health, MASS COM Trial  
Safety of PCI at Hospitals With and Without Cardiac Surgery

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

Consultant and Project Coordinator, Fate Therapeutics, Inc., San Diego, CA 2012-  
Chief Scientist, ArchisAcres, LLC, Escondido, CA 2013-  
Meetings with ArchisAcres, White House Staff, members of the Pentagon, and Sec. Agriculture  
Tom Vilsack in Washington, DC. 2013-  
NIH Special Emphasis Panel, Cardiovascular Sciences 2013  
German-Isreali Research Foundation 2013  
Connecticut Academy of Science and Engineering, Stem Cell Peer Review 2013

**Michael J. Toth, Ph.D.**  
NIA-C: Clinical Aging study section

**Peter Van Buren, MD**  
Veterans Administration Cardiovascular Study Section Panel Member

## Major Faculty Awards:

### Friederike Keating, MD

- Associate Director Cardiovascular Training Program
- Selected as 2012 UVM COM faculty member to participate in the AAMC Mid-Career Women Faculty Professional Development Seminar

### William Hopkins, MD

University of Vermont College of Medicine

- The Above and Beyond Award, 2013
- Foundations Course Director Award, 2013
- Outstanding Foundations Course Award, 2013

### Martin LeWinter, MD

Cardiology Teaching Award, 2013

### David J. Schneider, MD

Department of Medicine, Distinguished Research Mentor Award, 2013

## Grants:

### Philip Ades, MD

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

Major goal is to define the effects of chronic disuse on skeletal muscle contractile function in elderly individuals at the single muscle fiber level.

Period: 6/1/10 - 5/31/11 PI: 10% time

The goal of this award is to provide biometry support and salary support to finalize obesity-related manuscript preparation and to provide support for the preparation of a multi-center RO-1 application to the NHLBI.

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

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

The goal of this award is to establish a Center for Biomedical Research Excellence (COBRE) in Behavior and Health at the University of Vermont (UVM). The proposed center will investigate relationships between personal behaviors and risk for chronic disease and premature death.

### Harold L. Dauerman, MD

COREVALVE---Transcatheter Aortic Valve Implantation versus Conventional Care for Critical Aortic Stenosis. Competitive grant—300 applicants and 40 U.S investigators chosen to participate. 2011-2013. Estimated Grant: Medtronic, 200,000 dollars.

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

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

**Prospero B. Gogo, MD**

Restricted Educational Grants (for fellow salaries/expenses only) from  
Medtronic Vascular, 20,000 dollars  
Boston Scientific, 20,000 dollars  
St. Jude Medical, 20,000 dollars

**Friederike Keating, MD**

Local PI, Odyssey Outcome Trial (Sanofi EFC11570), with DCRI

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

Fearons Cancer Research Fund Award  
Vermont Cancer Center  
09/01/2012 – 08/31/2013  
\$30,000 total direct costs

Exploring the Role of Novel ssDNA-Interacting Targets, Pur $\alpha$  and Pur $\beta$ , in Hematologic Malignancies

**Martin LeWinter, MD**

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

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

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

**Markus Meyer, MD**

SparkVT Competition Winner, 50,000 dollars

07/01/13-

**Medtronics, 60,000 dollars**

07/01/13

Pacing-Mediated LV Remodeling for the Treatment of Heart Failure with Preserved Ejection Fraction

**David J. Schneider, MD**

The Medicines Company \$251,436

01/01/13

A study of the transition from IV cangrelor to oral ticagrelor, and ticagrelor to cangrelor, in patients with coronary artery disease

Astra Zeneca                      \$154,880                      05/01/13  
Ticagrelor and Clopidogrel in CABG Patients

The Medicines Company      \$198,181                      06/01/13  
A study of the transition from IV cangrelor to oral prasugrel, and prasugrel to cangrelor, in patients with coronary artery disease

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

R01 NS073815 NIH/NINDS/NIGMS (Spees)                      1/1/2013-12/31/2016  
Control of reactive astrocytes by Notch1 and Amyloid Precursor Protein.  
\$219,000 direct funding per year

R01 HL085210-02 NIH/NHLBI (Spees)                      4.80 calendar                      1/1/2008– 12/31/2013  
“Factors Responsible for Cardiac Preservation Conferred by Adult Marrow Stem Cells”  
\$225,000 direct funding per year      (currently no-cost extension)

Neuroscience COBRE pilot grant (UVM)                      7/1/2012- 6/30/2013

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

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

NIH R01 AR-033547 Muscle disuse and contractile dysfunction in the elderly  
Dept of Medicine Translational Science Award - Skeletal muscle dysfunction in the elderly with acute muscle disuse  
Peter Van Buren, MD

P01 HL059408-11 (Warshaw)                      February 1, 2010- January 31, 2015

NIH/NHLBI

*Cardiac Myosin Binding Protein-C: Structure, Function and Regulation.*

Project 2 Warshaw (PI) cMyBP-C: Molecular Mechanisms of Actomyosin Modulation.

This project focuses on the molecular mechanics of cMyBP-C as it modulates power generation by the cardiac actomyosin motor.

Role: Co-Investigator

UO1 HL 084899                      LeWinter (PI)                      July 1,2007-June 30, 2013

NIH/NHLBI

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

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

Role: Co-Investigator

### **Matthew W. Watkins, MD**

“Ad5.AC6 Gene Transfer for CHF” NIH protocol 13761, FAHC PI Matthew Watkins  
Use of intracoronary AC6 gene therapy to improve symptomatic heart failure

### **Publications:**

Dauerman HL. Overview of the ACC-AHA PCI Guidelines. Cath Sap-3, Editor D Moliterno. AHA Publications 2008 and Cath SAP 4, 2013

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

Jia,H.; Abtahian,F.; Aguirre,A.D.; Lee,S.; Chia,S.; Lowe,H.; Kato,K.; Yonetsu,T.; Vergallo,R.; Hu,S.; Tian,J.; Lee,H.; Park,S.J.; Jang,Y.S.; Raffel,O.C.; Mizuno,K.; Uemura,S.; Itoh,T.; Kakuta,T.; Choi,S.Y.; Dauerman,H.L.; Prasad,A.; Toma,C.; McNulty,I.; Zhang,S.; Yu,B.; Fuster,V.; Narula,J.; Virmani,R.; Jang,I.K. In Vivo Diagnosis of Plaque Erosion and Calcified Nodule in Patients with Acute Coronary Syndrome by Intravascular Optical Coherence Tomography. *J Am Coll Cardiol* 2013 epub ahead of print.

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

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

Zeglin-Sawczuk M, Jang IK, Kato K, Yonetsu T, Kim S, Choi SY, Kratlian C, Lee H and Dauerman HL. More frequent and complex coronary stent dissections in women compared to men. *Journal of Thrombosis and Thrombolysis* 2013, in press.

Donaldson CW, Schneider DJ, Bertges DJ, Adams JE, Elgharib NZ, Mueller E, Prabhu W, Ashikaga T and Dauerman HL. Increased local cytokine production at culprit superficial femoral artery plaques. *J. Thrombosis and Thrombolysis* Jan 9, 2013 (epub ahead of print).

Mueller E, Prabhu W, Desarno M, Sundaran P and Dauerman HL. Bleeding complications with regional adaptation of a prolonged bivalirudin regimen for ST elevation acute myocardial infarction. *Am J Cardiol* 2012; 110: 1607-1612.

Rodes-Cabau J, Dauerman HL, Cohen MG, Mehran R, Small E, Smyth SS, Costa MA, Mega JL, O'Donoghue ML, Ohman ME, Becker RC. Antithrombotic Treatment in Transcatheter Aortic Valve Implantation: Insights for Cerebrovascular and Bleeding Events. *J Am Coll Cardiology* 2013, epub ahead of print March 29, 2013.

Ahmed B and Dauerman HL. Women, Bleeding and Coronary Intervention. *Circulation* 2013; 127; 641-649.

Ahmed,B.; Lischke,S.; De,Sarno M.; Holterman,L.A.; Straight,F.; Dauerman,H.L. Gender related differences in predictors of vascular complications: role of vessel size and BMI. *J. Thrombosis and Thrombolysis* 2013; 36: 84-90.

Rowley,J.W.; Finn,A.V.; French,P.A.; Jennings,L.K.; Bluestein,D.; Gross,P.L.; Freedman,J.E.; Steinhubl,S.R.; Zimmerman,G.A.; Becker,R.C.; Dauerman,H.L.; Smyth,S.S. Cardiovascular devices and platelet interactions: understanding the role of injury, flow, and cellular responses. *Circulation Cardiovascular Interventions* 2012; 5: 296-304.

Dauerman HL and Sobel BE. Towards a comprehensive approach to pharmacoinvasive therapy for patients with ST elevation myocardial infarction. *Journal of Thrombosis and Thrombolysis* 2012; 34: 180-186.

Wang T, Angiolillo D, Cushman M, Sabatine M, Bray P, Smyth SS, Dauerman HL, French P, Becker RC. Platelet Biology and Response to Antiplatelet Therapy in Women. *J Am Coll Cardiology* 2012; 59: 891-900.

White,H.D.; Chew,D.P.; Dauerman,H.L.; Mahaffey,K.W.; Gibson,C.M.; Harrington,R.A.; Bhatt,D.L.Reduced Immediate Ischemic Events with Cangrelor in Pci Using the Universal Definition of MI: Pooled Analysis of the Cangrelor Versus Standard Therapy to Achieve Optimal Management of Platelet Inhibition Trials. *Am Heart J* 2012;163:182-190.

Preston IR, Klinger JR, Hopkins WE, Hill NS. Obesity and pulmonary hypertension. *European Resp Monogr* 2012; 57:194-207.

Rubin, LJ, Hopkins, WE. Overview of Pulmonary Hypertension. In: UpToDate, Rose, BD (ed), UpToDate, Waltham, MA 2013.

Rubin, LJ, Hopkins, WE. Diagnostic Evaluation of Pulmonary Hypertension. In: UpToDate, Rose, BD (ed), UpToDate, Waltham, MA 2013.

Rubin, LJ, Hopkins, WE. Pathogenesis of Pulmonary Hypertension. In: UpToDate, Rose, BD (ed), UpToDate, Waltham, MA 2013.

Rubin, LJ, Hopkins, WE. Treatment of Pulmonary Hypertension. In: UpToDate, Rose, BD (ed), UpToDate, Waltham, MA 2013.

Zaman, AKM T, McLean DL, Sobel BE. The Efficacy and Tolerability of Azilsartan in Obese Insulin Resistant Mice with Left Ventricular Pressure Overload. *J Cardiovasc Pharmacol*. 2013 (In press)

Zaman, AKM T, Spees JL, Sobel BE. Attenuation of cardiac vascular remodelling: a promising therapeutic target. *Coron Artery Dis* 2013;24(3):245-52.

Baumann PQ, Zaman AK, McElroy-Yaggy K, Sobel BE. The Efficacy and Tolerability of Azilsartan in Mice with Left Ventricular Pressure Overload or Acute Myocardial Infarction. *J Cardiovasc Pharmacol*. 2013;61(5):437-43

Zaman AKM T and Sobel BE. Causes, consequences, and amelioration of late adverse ventricular remodeling after myocardial infarction. *Coron Artery Dis* 2012;23(3):221-222.

Sobel BE and Zaman AKM T. Ignoratio elenchi: myocardial conditioning and reperfusion 'injury.' *Coron Artery Dis* 2012;23(2):133-136.

Meyer M, Bell SP, Chen Z, Nyotowidjojo I, Lachapelle RR, Christian TF, Gibson PF, Keating FF, Dauerman HL, LeWinter MM. High Dose Intracoronary N-Acetylcysteine in a Porcine Model of ST-Elevation Myocardial Infarction. *J Thrombosis and Thrombolysis*. 2013. DOI: 10.1007/s11239-013-0901-4

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Wang Y, Tanner BC, Lombardo AT, Tremble SM, Maughan DW, Vanburen P, Lewinter MM, Robbins J, Palmer BM. Cardiac myosin isoforms exhibit differential rates of MgADP release and MgATP binding detected by myocardial viscoelasticity. *J Mol Cell Cardiol*. 2013 Jan;54:1-8.

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Toth MJ, Miller MS, VanBuren P, Bedrin NG, LeWinter MM, Ades PA, Palmer BM. Resistance training alters skeletal muscle structure and function in human heart failure: effects at the tissue, cellular and molecular levels. *J Physiol*. 2012 Mar 1;590(Pt 5):1243-59.

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Ades PA, Gaalema D. Coronary Heart Disease as a Case Study in Prevention: Potential Role of Incentives. *Prev Med.* 2012 Nov;55 Suppl:S75-9.

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Lakings DB, Janzen MC, Schneider DJ. Pharmacokinetic modeling of the high-dose bolus regimen of tirofiban in patients with severe renal impairment. *Coron Artery Dis* 2012;23(3):208-14

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## **Division of Clinical Pharmacology**

Richard Galbraith, MD, PhD, Acting Director

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



The Clinical Pharmacology Division comprises faculty members who are primarily interested in various research agendas within the general field of Clinical Pharmacology. Areas of interest include muscle atrophy, oxidative stress, appetite regulation, nutrition, and amino acid metabolism.

Dr. Galbraith's long-term interests concern the clinical management and research issues relevant to the porphyrias. He also has worked extensively in the clinical pharmacology of metal-substituted porphyrins in the treatment of jaundice, porphyria and obesity.

Dr. Dwight Matthews leads a group of researchers who have used stable isotopically labeled tracers and kinetic models to answer questions of human physiology and biochemistry. The research program of his group in chemistry focuses on developing new methods and techniques of mass spectrometry to measure stable isotopes in biological molecules and mathematical and computer models to interpret the stable isotope tracer kinetic data obtained from biological samples.

### **Faculty**

(list all faculty, Director first, then alphabetically with academic rank (note any medical administrative position, i.e. MICU Director), ex:

#### **Richard Galbraith, MD, PhD**

Professor of Medicine

Acting Director, Clinical Pharmacology

- Internal Medicine
- Endocrinology
- Metabolism

Director, Clinical Research Center

Director, Center for Clinical and Translational Science

#### **Dwight Matthews, PhD**

Professor of Medicine and Chemistry

Chair, Department of Chemistry, College of Arts and Sciences

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

#### **Galbraith:**

Chair, Clinical Research Subcommittee of FASEB Science Policy Committee

Member, Research Information Subcommittee of the FASEB Science Policy Committee

Member, Board of Directors of the Association for the Accreditation of Human Research Protection Programs.

Member, Board of Directors, American Porphyria Association

**Editorships and Editorial Boards:**

Ad Hoc Reviewer, Pharmacology, Hepatology, European Journal of Clinical Investigation, Pediatrics, Pediatric Research, Journal of Coronary Artery Disease

Reviewer, Clinical Therapeutics and Medical Economics Publications

Reviewer, The American Journal of Clinical Nutrition

Matthews:

Editorial Board, Current Opinion in Clinical Nutrition and Metabolic Care

Section Editor, *Assessment of Nutritional Status and Analytical Methods*, Current Opinion in Clinical Nutrition and Metabolic Care

Advisory Board, Sport Sciences for Health

**Matthews:**

Editorial Board, Current Opinion in Clinical Nutrition and Metabolic Care

Section Editor, *Assessment of Nutritional Status and Analytical Methods*, Current Opinion in Clinical Nutrition and Metabolic Care

Advisory Board, Sport Sciences for Health

**Study Sections and Federal Advisory Boards:**

**Galbraith:**

NIH Director's Pioneer Awards Review Committee

**Matthews:**

NIH Special Emphasis Panel/NCI SBIR Topic 320: Cancer-related Standards for Metabolomics

NIH Integrated Nutrition and Metabolic Processes Study Section

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

### **Matthews:**

4/1/10-3/31/14

#### **NIH grant R01 DK082803**

Palmitate Metabolism and Insulin Resistance

P.I.: Craig Lawrence Kien, M.D., Ph.D.

TDC: \$2,186,329

7/20/11 - 6/30/16

#### **NIH grant P20 RR020165**

Vermont Immunobiology/Infectious Diseases Center

P.I.: Ralph C. Budd, M.D.

TDC: \$7,381,759

Proteomics Core

P.I.: **D.E. Matthews**, Ph.D.

TDC: \$500,000

9/15/11 - 8/31/14

#### **NSF grant CHE-1126265**

MRI: Acquisition of a 500 MHz NMR Spectrometer for Chemistry at the Univ of Vermont

P.I.: DE Matthews, Ph.D.

TDC: \$535,000

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

### **Galbraith:**

Bond, J.S. and GALBRAITH, R.A. The Challenge of engaging basic scientists in translational research. The AAMC Reporter, Dec 2012.

Gallin, E.K., Bond, E., Califf, R., Crowley, W.F., Davis, P., Galbraith, R., Reece, E.A. Forging stronger partnerships between academic health centers and patient-driven organizations. Academic Medicine, in press.

### **Matthews:**

Matthews, DE. Proteins and amino acids. In: *Modern Nutrition in Health and Disease*, AC Ross, B Caballero, RJ Cousins, KL Tucker & TR Ziegler, eds. Philadelphia: Lippincott, Williams & Wilkins, 2012, 3-35.

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Krudysz-Amblo, J, Jennings, ME, Knight, T, Matthews, DE, Mann, KG & Butenas, S. Disulfide reduction abolishes tissue factor cofactor function. *Biochim. Biophys. Acta* 1830: 3489-3496, 2013.

## **Division of Dermatology**

Glenn Goldman, MD, Director

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



Dermatology at Fletcher Allen Health Care is a division of Medicine with four general medical dermatologists, four surgical dermatologists, and four experienced physician assistants. We provide general dermatology care to the community as well as highly-specialized consultation with particular strengths in the treatment of psoriasis, cutaneous lupus, dermatomyositis, cutaneous lymphoma, and all forms of skin cancer including melanoma. We also provide cosmetic services for lasers and fillers in an ever growing area of dermatology. Our new wing on EP-3 is up and running smoothly. For 2013-2014 we have hired Col. Joseph Pierson, an experienced academic military dermatologist who will begin as an Assistant Professor and will practice general dermatology. In addition, our current Chief Resident has signed on to be an Assistant Professor seeing general dermatology patients with a focus on women's dermatology. This year we will have approximately 25,712 patient visits producing about 58,085 wRVU.

This year Dr. Kathryn Schwarzenberger left mid-year to take a position as the Chief of Dermatology at the University of Tennessee, Memphis. This was a setback for the division and resulted in a greatly-increased workload for a number of our faculty. Despite her leaving, we have managed to see the same volume of patients, and the residency has moved forward without a hitch. Dr. Goldman reassumed the position of residency director on an interim basis. Dr. Joseph Pierson, our new hire, has agreed to take over as residency director, and he will be an excellent successor in this position.

In 2013 enlarged the scope of our 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.

We held two UVM / FAHC continuing medical education conferences this year. First we held Advanced Dermatology for the Primary Care Provider. This conference was attended by over 80 primary care providers from around the country. Later in the season we held the 24th annual Winter Dermatology Conference in Stowe, VT. This coming year will be the 25th Anniversary of this Conference.

Dr. Glenn Goldman continues to hold numerous national leadership positions. He just completed a 5 year rotation on the Fellowship Training Committee of the American College of Mohs Surgery. He is also the ACMS advisor to the American Medical Association Resource Based Relative Value Utilization Committee. His book, Facial Flap Surgery, has sold over 1000 copies and was the leading sales book at the Annual Meeting of the American College of Mohs Surgery. He has been tasked with the writing of another book on Dermatologic Surgery to be

published in 2015. Dr. Holmes is writing the chapter on random pattern flaps for the most widely-read text of dermatologic surgery.

Dr. Holmes and Dr. Goldman have become involved in volunteer international work for dermatologic surgery through the American Society for Dermatologic Surgery. Working with a mentor from the ASDS, they have developed and are formalizing an international listserve for reconstructive advice in dermatologic surgery. In addition, Dr. Goldman participated in a volunteer surgery trip to Romania with the Blade and Light Surgery group, performing Mohs surgery and reconstruction on extensive tumors.

Several of our attending physicians are regular participants in Fletcher Allen administrative processes. Dr. Goldman and Dr. Holmes serve on a number of FAHC committees. Dr. Julie Lin continues her involvement in PRISM, where she is the PRISM representative from the Department of Medicine. She is also developing a teledermatology pilot program for store and forward dermatology consultation. If this goes well, we will institute a full-scale permanent teledermatology consultation service for patients and providers who live at a substantial distance from the medical center.

Our residency and procedural dermatology fellowship continue to be successful and rewarding. We received a four-year accreditation for the Procedural Dermatology Fellowship. Starting this year we will have a total of six residents, or two per PGY year. Our residents and fellows have an excellent employment track record. Six of our graduates are in private practice in general dermatology. Three have gone on to complete fellowships in procedural dermatology. Two of our residents have chosen academic medicine for their careers. Dr. Todd Holmes remains on faculty at Fletcher Allen Health Care, and Dr. Melissa Pugliano-Mauro has started a new Mohs surgery unit in conjunction with the University of Pittsburgh. We frequently host residents from other institutions for rotations in subspecialty areas of dermatology, especially in surgery, in which Dr. Goldman is a preceptor for the American Society of Dermatologic Surgery.

This year the dermatologic surgery fellow is once again engaged in an exciting study of rotation flap and transposition flap design variations. These porcine experiments will provide valuable data for the clinical practice of dermatologic surgery, and will confirm or contradict accepted flap design dogmas which have been espoused, but never proven in clinical practice. This work is being supported by a private donation to the residents and medical students.

On average we receive over 250 applications for our residency spots annually, and approximately 40 applications are received for our single procedural dermatology fellowship slot. Residents and fellows present regularly at our local and regional meetings, and the senior residents and fellows are currently involved in a number of publications.

Each month we host several third or fourth year students for rotations in dermatology. On average one or two University of Vermont medical students per year choose to enter the field of dermatology. Due to the tremendously-competitive nature of dermatology as a specialty, each student requires careful guidance and assistance in procuring a residency. As usual, this year, our students got the dermatology residencies of their choices. Naira Barbosa, MD was graduated and

will matriculate in dermatology residency at the Mayo Clinic. Bill Damsky, MD, was graduated and will matriculate in dermatology at Yale, where he will be able to pursue his excellence in basic science research.

## **Faculty**

### **Glenn Goldman, MD**

Professor of Medicine  
Director, Dermatology Division  
Director, Procedural Dermatology Program  
RUC Representative, American College Of Mohs Surgery

- Mohs Surgery and Reconstructive Surgery
- Management of high-risk skin cancers
- Cosmetic Dermatology
- Procedural Dermatology Education
- National Health Care Policy
- Continuing Medical Education
- International Dermatologic Surgery
- Flap tension in vivo research

### **Jamie Alpert, MD**

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

- General Medical Dermatology

### **Todd Holmes, MD**

Assistant Professor of Medicine

- Surgical Dermatology
- Mohs and Reconstructive Surgery
- Resident Education

### **Julie Lin, MD**

Assistant Professor of Medicine  
Department of Medicine PRISM Representative

- Cutaneous Lymphoma
- Electronic Medical Records
- Bioinformatics
- Teledermatology

### **Christine Weinberger, MD**

Assistant Professor of Medicine

- Mohs Surgery and Reconstruction

- Mohs Surgery for Melanoma

**Christopher Yelverton, MD, MBA**

Assistant Professor of Medicine

- Mohs Surgery and Reconstruction
- General Medical Dermatology
- Cosmetic Dermatology
- Residency Education

**Joseph Pierson, MD, Col US Army**

Assistant Professor of Medicine

- General Medical Dermatology
- Residency Education in Dermatology

**Laura McGevna, MD**

- Current Chief Resident, UVM Medical Graduate
- General Medical Dermatology
- Women'
- Residency Education in Dermatology

**Fellow**

**Aelayna Meyer, MD**

Procedural Dermatology Fellow 2013-2014

**Residents**

|                           |                                   |
|---------------------------|-----------------------------------|
| <b>Ryan Rogers, MD</b>    | PGY-4 / Chief first half of year  |
| <b>Elizabeth Zeek, MD</b> | PGY-4 / Chief second half of year |
| Kendra Lesiak, MD         | PGY-3                             |
| Andrew Tegeder, MD        | PGY-3                             |
| Elizabeth Lester, MD      | PGY-2                             |
| Jeremy Hugh, MD           | PGY-2                             |

**Physician Assistants:**

**Deb Roseman, PA**

Deb has been with us for over ten years. She has decades of experience as a dermatology physician assistant and has a following of thousands of patients for whom she provides care.

### **Anne Klein, PA**

Anne is a surgical PA, and works with the dermatologic surgeons daily. She trained for years with a plastic surgeon and has exceptional procedural skills. A testament to her skill is that physicians refer patients to her regularly for surgical excisions.

### **Rich Callahan, PA**

A newer member to our staff, Rich is experienced in dermatology and provides both medical and minor surgical dermatology care. He brings with him many patients from his former practice.

### **Christine Sowle, PA**

Christine trained with us and stayed on as a dermatology PA. She has been working with us for almost ten years and has a large following of thousands of patients who see her on a regular basis.

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

#### **American Medical Association**

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

#### **Dermatology Foundation**

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

#### **American College of Mohs Surgery**

Dr. Goldman – Fellowship Training Committee

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

**Goldman GD, Dzubow LM, Yelverton CB.** Facial Flap Surgery. McGraw Hill;New York; 2013.

Abramson, AK, Krasny MJ, **Goldman GD.** Tangential shave removal of basal cell carcinoma. Dermatol Surg 2013;39:387-92.

**Holmes TE.** Crescentic apical triangle island pedicle flap for repair of the medial upper lip. Dermatol Surg 2013;39:784-8.

Tajirian AL, Yelverton CB, **Goldman GD.** Eyebrow reconstruction after removal of melanoma in situ. Dermatol Surg 2013; IN PRINT

Lichon VC, **Goldman GD**. Surgical treatment of larger skin cancers. *Fac Plast Surg* 2013; IN PRINT

## Division of Endocrinology

Jack Leahy, MD, Co-Director

Joel Schnure, MD, Co-Director

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



The Division of Endocrinology, Diabetes and Metabolism has 5 physicians, 3 nurse practitioners, 3 certified diabetes educators (CDEs).

The Division performs consultative and ongoing endocrine care for Vermonters and upstate New Yorkers. The largest portion of our clinical enterprise is delivering diabetes care to both in-patients and out-patients. Our mission is to combine cutting edge research in basic metabolism and cell biology and physiology while establishing an exemplary center for clinically excellent patient care. Our goal is to strive to deliver seamless system-wide diabetes care.



In this regard, we have recently developed a clinical pathway, in conjunction with PCIM and Family Medicine, for use in the nine Medical Home sites at FAHC. These pathways are incorporated into a model for the integration of specialty and primary care for chronic

diseases, diabetes being the initial focus. These roadmaps will allow for state of the art diabetes management to reach more patients with diabetes at FAHC and eventually in the State of Vermont and in our general catchment area. The hallmarks of this effort are to facilitate seamless care between specialty and primary care and to allow all the patients to have complete diabetes education. In addition we have developed algorithms for intensive in-patient diabetes management. We also provide more intensified regimens for the growing cohort of individuals on insulin infusion pumps. Our diabetes care team offers classes to individuals, families and groups to assist in achieving targeted glycemic control for all patients with diabetes. In cooperation with, and imbedded in the Community Health Teams, our Certified Diabetes Educators are able to reach many more individuals who are cared for within the FAHC system.

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

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

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

The Division's research efforts have focused on beta cell function, intracellular metabolism and life cycle. Dr Leahy's work in this area is world renown. We are also involved in clinical research and clinical trials involving incretin biology, new product development, hypertension, obesity, insulin resistance and cardiovascular outcomes.

Our education mission continues to expand. There are two Fellows in Endocrinology. We have had approximately 30 students rotating through the service and the number of residents electing endocrinology is on the increase.

## **Faculty**

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

Professor of Medicine

Co-Director, Endocrinology, Diabetes and Metabolism Division

- Diabetes mellitus
- Islet beta-cell physiology and dysfunction

### **Joel Schnure, MD**

Professor of Medicine

Co-Director, Endocrinology, Diabetes and Metabolism Division

Member, DOM Operations and Efficiency Committee

Lead, Diabetes Chronic Care Initiative

Lead, Task Force on In-Patient Diabetes Education

Member, In-Patient Diabetes Initiative

- Diabetes care, type 1 & 2
- Diabetes in pregnancy
- Thyroid disease
- Pituitary disease

### **Matthew P Gilbert, DO, MPH**

Assistant Professor of Medicine

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

### **Dhananjay (Jay) Gupta, PhD**

Research Assistant Professor

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

### **Thomas Jetton, PhD**

Associate Professor of Medicine

- Regulation of glucose homeostasis
- $\beta$ -cell biology

- Nutrient and neural regulation of  $\beta$ -cell growth

**Annis Marney, MD, MSCI**

Assistant Professor of Medicine

Director, Endocrinology Fellowship Program

Director, Medical Student and Residency Endocrine Elective

Chair, Resident Research and Scholarly Activity Committee

Patient Care and Operations Committee

Clinical Research Center Scientific Advisory Committee

- General endocrinology

**Muriel Nathan, MD, PhD**

Professor of Medicine

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

**Fellows**

Yew-Xin Teh, MD (F5; completed her fellowship 6/30/2013)

Madiha Alvi, MD (F4; started July 1, 2012)

**Nurse Practitioners and Certified Diabetes Educators**

Margaret Costello, FNP, MS

Maureen Dwyer, ANP, ACNP, GNP

Ann Gotham, ANP, MSN, ScM

Kristen Bolton, MS, RD, CDE

Rhonda Lapidow, RN, CDE

Linda Tilton, MS, RD, CDE

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

William Tharp (MD, PhD Student)

**Endowed Professorships**

**Leadership in Professional Societies**

Thomas Jetton

- Organizer and Senior Member: Boston-Ithaca Islet Club

## **Editorships and Editorial Boards**

Dhananjay Gupta

- Editorial Board: Journal of Endocrinology, Diabetes and Obesity

Thomas Jetton

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

Jack Leahy

- Diabetes Section Editor, [ENDOTEXT.COM](http://ENDOTEXT.COM)
- Founding member, and member of the Editorial Board for [BetaCellsInDiabetes.org](http://BetaCellsInDiabetes.org)
- Co-editor, Insulin Therapy, Endocrinology and Metabolism Clinics of North America, Volume 41

Joel J. Schnure

- Editorial Board, Coronary Artery Disease

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

Dhananjay Gupta

- Grant Review Panel, Diabetes UK

Thomas Jetton

- NIH/MMPC MicroMouse Grant Review Panel Member

Jack Leahy

- Grant Review Panel, American Diabetes Association

## **Major Faculty Awards**

### **Grants**

Dhananjay Gupta

(PI)

Role of Peroxisome Proliferator Activated-receptor gamma (PPAR gamma) Signaling in Adaptive Islet Beta Cell Growth and Function (PI)

2011-2012

College of Medicine and Department of Medicine

Thomas Jetton

PPARy and Uterine Vascular Dysfunction in Diabetic Pregnancy (Gokina, PI)

9/1/2008-7/30/12

Jetton, Co-I (5% effort)  
NIH/NHLBI R01 HL088245

$\beta$ -cell PPAR-gamma Signaling in Fat Fed Mice (Leahy, PI)  
1/1/10-12/31/12 (no cost extension through 6/30/2013)  
Jetton, Co-I (16% effort)  
American Diabetes Association Research Grant

Additive Effects of TZD and DPP-4 inhibitor Therapy on Beta-cell Mass and Function (Leahy, PI)  
8/25/10-2/25/13  
Jetton, Co-I (22.5% effort)  
Takeda Pharmaceuticals

$\beta$ -cell Compensation in Partial Pancreatectomy Mice (Leahy, PI)  
9/1/10 – 8/31/15  
Jetton, Co-I (24% effort)  
NIH/NIDDK R01 DK56818-10

Jack Leahy

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

$\beta$ -cell PPAR-gamma Signaling in Fat Fed Mice (PI)  
1/1/10-12/31/12 (no cost extension through 6/30/2013)  
American Diabetes Association Research Grant

Additive Effects of TZD and DPP-4 inhibitor Therapy on Beta-Cell Mass and Function (PI)  
8/25/10-2/25/13  
Takeda Pharmaceuticals

Annis Marney

Effect of Sitagliptin on Short-term Metabolic Dysregulation of Oral Glucocorticoid Therapy (PI)  
08/11-07/13  
Merck (Investigator Initiated Study)

The Utility of Continuous Glucose Monitoring (CGM) in Detecting Cardiac Autonomic Neuropathy (CAN) and its Impact on Glucose Variability and Cardiac Function in Patients with Type 2 Diabetes Mellitus and Heart Failure  
(PI)  
3/13-3/15  
Medtronic (Investigator Initiated Study)

Muriel Nathan

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

2012-2015

Nathan, Co-I

University of Vermont Medical Group Grant

Detection and Treatment of Celiac Disease in Patients with Hypothyroidism (Zubarik, PI)

4/12/12-4/12/14

Nathan, Co-I

Department of Medicine

### **Publications**

Carlson AL, Marney AM, Anderson SR, Gilbert MP. Bilateral adrenal incidentalomas: A case report and review of diagnostic challenges. *Case Rep Endocrinol* 2013; 2013, Article ID 953052, 4 pages. doi:10.1155/2013/953052. [Epub 2013 Jan 17]

DeFronzo RA, Mehta RJ, Schnure JJ. Pleiotropic effects of thiazolidinediones: Implications for the treatment of patients with type 2 diabetes mellitus. *Hosp Pract* 2013; 41(2):132-147.

Gilbert MP, Schneider A. Management of hyperglycemia in the critically ill. In: Parsons, PE, Weiner-Kronish, J, (eds.): *Critical Care Secrets*, 5<sup>th</sup> ed. St Louis, Mosby-Elsevier, 2012, pp 369-373.

Gokina NI, Chan S, Chapman AC, Oppenheimer K, Jetton T, Cipolla MJ. Inhibition of PPAR $\gamma$  during rat pregnancy causes intrauterine growth restriction and attenuation of uterine vasodilation. *Front Physiol* 2013; 26 (In Press).

Gupta D, Leahy AA, Monga N, Peshavaria M, Jetton TL, Leahy JL. PPAR $\gamma$  and its target genes are downstream effectors of FoxO1 in islet beta-cells: Mechanism of beta-cell compensation and failure. *J Biol Chem* 2013; Jun 20. [Epub ahead of print]

Hirsch IB, Buse JB, Leahy J, McGill JB, Peters A, Rodbard HW, Rubin RR, Skyler JS, Verderese CA, Riddle MC. Options for prandial glucose management in type 2 diabetes patients using basal insulin: Addition of a short-acting GLP-1 analogue versus progression to basal-bolus therapy. *Diabetes Obes Metab* (In Press).

Leahy JL. Insulin therapy in type 2 diabetes mellitus. *Endocrinol Metab Clin North Am* 2012; 41:119-144.

Marney AM. Thyroid disease in the intensive care unit In: Parsons, PE, Weiner-Kronish, J, (eds.): *Critical Care Secrets*, 5<sup>th</sup> ed. St Louis, Mosby-Elsevier, 2012, pp 379-383.

Rhodes CJ, White MF, Leahy JL, Kahn SE. A direct autocrine action of insulin on  $\beta$ -cells: Does it make physiological sense? *Diabetes* (In Press).

Schnure JJ, Leahy JL. Diabetic ketoacidosis and hyperosmolar hyperglycemic state. In: Parsons, PE, Weiner-Kronish, J, (eds.): *Critical Care Secrets*, 5<sup>th</sup> ed. St Louis, Mosby-Elsevier, 2012, pp 359-368.

Swett DS, Gilbert MP. Necrobiosis lipoidica. *J Am Osteopath Assoc* 2013 Apr; 113(4):363.



## Division of Gastroenterology and Hepatology

James Vecchio, MD, Director

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



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

Cutting edge clinical care and state of the art endoscopy are just two components of the Faculty's responsibility. A newly constructed modern 8-room Endoscopy Center is equipped with the latest HD endoscopes, to allow the performance of over 12,000 procedures per year. All aspects of diagnostic and therapeutic GI endoscopy are performed. Advanced procedures including EUS (endoscopic ultrasound) with onsite cytopathology, and all modes of ERCP (endoscopic retrograde cholangiopancreatography) with cholangioscopy and laser lithotripsy with portable fluoroscopy are performed. A new motility center and esophageal pH laboratory is now open. A dedicated nursing staff and ancillary personnel of the Endoscopy Center ensure a seamless flow of patients each day.

In the Rowell Building of the University of Vermont there is a Simulation Center. At the Simulation Center, GI Fellows may practice their skills in endoscopy on newly designed and highly sophisticated computerized models of the GI tract.

A daily clinical office setting is shared with General Surgery in the Digestive Disease Center located on the 5<sup>th</sup> floor of the new Ambulatory Care Center. There is a very close working relationship with the Colorectal Surgery and General Surgery divisions. There are dedicated liver clinics, and each aspect of luminal gastroenterology is represented in the various clinics. All this is accomplished with an integrated out-patient and in-patient electronic medical record.

All members of the GI Unit are actively involved in a variety of aspects of teaching. The members of the GI Faculty have very active roles in lectures in the Vermont Integrated Curriculum of the UVM College of Medicine. UVM medical students are team members on the consult service and in the clinical office setting. The members of the GI Faculty are responsible for the vast majority of the teaching in the GI Fellowship Program. Members of the GI Faculty give lectures to both medical and surgical residents, preside at Residents' Morning Report and are part of the integrated Teaching Attending Service at FAHC. A weekly clinical GI Conference is held and led by GI Faculty and guest speakers from other divisions. Two Journal Clubs occur each month where an in-depth analysis and review of recent published articles is accomplished. A monthly Quality Care Review Committee Meeting enables a constant improvement of clinical care and endoscopic practices. And finally, a monthly GI Research Meeting of all the GI Faculty and Fellows meets to review present and future research endeavors.

Each Faculty member and each GI Fellow is actively engaged in an academic research pursuit. Research projects to date span the field of gastroenterology and hepatology from eosinophilic esophagitis, to new therapy for Barrett's esophagus with radiofrequency ablation (RFA), to all

aspects of chronic liver disease, new therapies for hepatitis C, new medications for inflammatory bowel disease (IBD) and irritable bowel syndrome (IBS), and exploring methods for early detection of pancreatic cancer.

The Gastroenterology and Hepatology Unit at the University of Vermont fosters a close cooperation, collaboration and interaction with other research departments throughout UVM which allows a unique opportunity to explore translational research as it pertains to future aspects of clinical care.

**James Vecchio, MD**

Professor of Medicine

Director, Gastroenterology and Hepatology Division

- GERD
- Celiac Disease
- Inflammatory Bowel Diseases – Crohn’s and Ulcerative Colitis
- Therapeutic Endoscopy

**Nicholas Ferrentino, MD**

Associate Professor of Medicine

Director, GI Fellowship Program

- Chronic Viral Hepatitis
- Management of Cirrhosis
- General Gastroenterology and General Hepatology
- Therapeutic Endoscopy

**Eric Ganguly, MD**

Associate Professor of Medicine

- Endoscopic Ultrasound and GI Malignancies
- Barrett’s Esophagus and Radiofrequency Ablation for Barrett’s Esophagus
- Therapeutic Endoscopy
- General Gastroenterology

**Allen Lee, MD**

Assistant Professor of Medicine

- Director of GI Motility Lab
- Esophageal Manometry and pH Monitoring
- Motility Disorders
- GERD
- Wireless Motility Capsule Monitoring
- Small Bowel Endoscopy

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

Professor of Medicine and Pharmacology

Director, Hepatology Section

Director, Gastrointestinal Research

Director, MD-Ph.D. Program

- Liver Cell Biology
- Portal Hypertension
- Hepatocellular Carcinoma
- Viral Hepatitis
- Metabolic Syndrome and the Liver

**Gary Mawe, Ph.D.**

Professor of Neurological Sciences; Adjunct Professor of Medicine and of Pharmacology

- Neural Regulation of the Digestive Tract  
(understanding changes in enteric neural circuits that contribute to altered gut function in inflammatory bowel disease and irritable bowel syndrome)

**Peter Moses, MD**

Professor of Medicine

- Inflammatory Bowel Disease
- Irritable Bowel Syndrome
- Therapeutic Endoscopy
- Translational research with Human Microbiota

**Doris Strader, MD**

Professor of Medicine

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

**André-Denis Wright, Ph.D.**

Professor

Chair, Department of Animal Science

- Human Gut Microbiology
  - a) Determination of bacterial and methanogen profiles in individuals from five major colonic groups: healthy colon, diverticulosis, inflammatory bowel disease, colon polyps and colorectal cancer.
  - b) The dynamics of the methanogen population, and methane production in humans.
  - c) Determination of the dietary effects on different microbial populations in the gut.
  - d) The link between gut microorganisms and obesity.

**Richard Zubarik, MD**

Professor of Medicine

Director, Endoscopy

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

**Nick Lim, MD**

GI Fellow

**John Randles, MD**

GI Fellow

**Neeraj Sardana, MD**

GI Fellow

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

- Benoit St-Pierre, MD (Post Doc)
- Laura Cersosimo (Ph.D Student)
- Sue Ishaq (Ph.D. Student)
- Jane Roberts (MD/Ph.D Student)
- Alejandro Salgado (Ph.D Student)
- Stephanie Sophn (Ph.D Student)

**Leadership in Professional Studies:**

*Steven Lidofsky, MD, Ph.D.*

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

*Gary Mawe, Ph.D.*

- Organizing Committee, International Foundation for Functional Gastrointestinal Disorders Planning Committee - 9th International Symposium to be held in Milwaukee, WI in April, 2013
- Fundamentals of Neurogastroenterology - Basic Science Committee, The Rome Foundation, 2012-2014. The purpose of this committee is to develop a summary of the research and literature to date related to functional gastrointestinal disorders, and then offer guidelines or recommendations to help advance future research.
- Scientific Advisory Board, The International Foundation for Functional Gastrointestinal Disorders, 2008 – present
- Chair, Research Committee, American Neurogastroenterology and Motility Society, 2012-present
- Councilor, American Neurogastroenterology and Motility Society, 2006-present

*Peter Moses, MD*

- Nominated for Governor of The American College of Gastroenterology

- Elected member of the University of VT Professional Standards Committee, 2012-2013
- Member of the Green Mountain Care Board Technical Advisory Group

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

*Steven Lidofsky, MD, Ph.D.*

- Editorial Board, Clinical Therapeutics
- Ad hoc Grants Reviewer for: Burroughs Wellcome Foundation, Medical Research Council of Canada, Natural Sciences and Engineering Research Council of Canada
- Ad hoc Reviewer for the following selected Journals: American Journal of Medicine, American Journal of Physiology, American Journal of Transplantation, British Journal of Pharmacology, Gastroenterology, Hepatology, Journal of Biological Chemistry, Journal of Cellular Physiology, Journal of Clinical Investigation, Journal of Critical Illness, Journal of Hepatology, Journal of Membrane Biology, Journal of Physiology, Molecular and Cellular Biochemistry, Molecular and Cellular Biology, Pediatrics, Nature Medicine, New England Journal of Medicine, Proceedings of the National Academy of Sciences, U.S.A.

*Gary Mawe, Ph.D.*

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

*Peter Moses, MD*

- Editorial Board Member, The Journal of Clinical Gastroenterology (Yale)
- Editorial Board Member, The World Journal of Gastroenterology (China)
- Reviewer, The American Journal of Gastroenterology
- Reviewer, Gastroenterology
- Reviewer, Alimentary Pharmacology
- Reviewer, Neurogastroenterology and Motility
- UVM Professional Standards Committee

*André-Denis Wright, Ph.D.*

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

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

*Gary Mawe, Ph.D.*

- Member of the Clinical, Integrative, and Molecular Gastroenterology Study Section, Center for Scientific Review, NIH, 2013 - 2017.
- COBRE III Review Panel, National Institute of General Medical Sciences (NIGMS), NIH, October, 2012.

*Peter Moses, MD*

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

*Doris Strader, MD*

- FDA Advisory Committee for Anti-Viral Drugs
- Director of Data Safety Monitoring Board for NIH Hepatitis B Research Network

*André-Denis Wright, Ph.D.*

- USDA
- NSF

### **Major Faculty Awards:**

*Gary Mawe, Ph.D.*

Senior Investigator – Basic Science Award, International Foundation for Functional Gastrointestinal Disorders, 2013

*André-Denis Wright, Ph.D.*

Nominated, Graduate Advisor of the Year, by the Graduate Student Senate, UVM, 2013

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

*Eric Ganguly, MD*

- A Multicenter National Prospective Study of Pregnancy and Neonatal Outcomes in Women with Inflammatory Bowel Disease
- HALO Patient Registry: Ablation of Barrett's Esophagus

*Allen Lee, MD*

- A Pilot Study on the Efficacy and Safety of Olanzapine in Improving Symptoms and Gastric Motility in Gastroparesis

*Steven Lidofsky, MD, Ph.D.*

- Non-interventional, prospective, cohort study of the effectiveness, safety, and utilization of two approved pegylated interferon-based direct acting triple therapies in the management of genotype 1 hepatitis C in routine clinical practice in the USA (PegBase).
- A randomized, double-blind, controlled Study to evaluate the efficacy and safety of the combination of ABT-450/Ritonavir/ABT-267 (ABT-450/r/ABT-267) and ABT-333 with

and without ribavirin (RBV) in treatment-naïve adults with genotype 1b chronic hepatitis C virus (HCV) infection (PEARL-III)

*Gary Mawe, Ph.D.*

- Neuronal excitability and motility in colitis (G. Mawe, Principal Investigator). NIH RO1 Grant Award (DK 62267); 7/15/02-3/31/2017. 40% effort. The goal of this project is to determine what changes occur in colonic neural circuitry in an animal model of colitis.

*Peter Moses, MD*

- A Phase II Randomized, Placebo-Controlled, Double-Blind, Dose Ranging Study to Assess the Immunogenicity and Safety of a *Clostridium Difficile* Toxoid Vaccine (ACAM-CDIFF™) in Subjects with *Clostridium Difficile* Infection (CDI)
- Furiex Mu-Delta Agonist for the treatment of IBS with diarrhea

*Doris Strader, MD*

- Treatment of Eosinophilic Esophagitis with High-Dose Proton Pump Inhibition and Swallowed Fluticasone

*James Vecchio, MD*

- Prospective, Multicenter, Randomized, Double-Blind, Placebo-Controlled Trial Comparing REMICADE® (infliximab) and Placebo in the Prevention of Recurrence in Crohn's Disease Patients Undergoing Surgical Resection Who Are at an Increased Risk of Recurrence (PREVENT)
- SECURE / A Non-Interventional Long-term Post-Marketing Registry of Patients Treated with Certolizumab Pegol (Cimzia®) for Crohn's Disease

*André-Denis Wright, Ph.D.*

- Vermont Agency of Agriculture. Characterization of methane-producing microorganisms in dairy cow waste anaerobic digesters.
- Vermont Dairy Center of Excellence. Microbial community gene expression in dairy cow waste anaerobic digesters.
- Central Vermont Public Service (CVPS) Cow Power
- Lintilhac Foundation
- USDA Hatch. Examination of the methanogen microbiome in five breeds of lactating dairy cows.

*Richard Zubarik, MD*

- Can Endoscopic Ultrasound (EUS) Stigmata of Chronic Pancreatitis Predict the Response to Pancreatic Enzymes
- International Registry for Intraductal Papillary Mucinous Neoplasms
- Prospective Study of Bacteremia and the Infection Rates Following Cholangioscopy with the Spyglass Cholangioscope

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

Barkun, Alan N. MD, Adam, Viviane MSc, Martel, Myriam, BSc, **Moses, Peter L. MD** Partially covered self-expandable metal stent versus Polyethylene stent for malignant biliary obstructions: A cost-effectiveness analysis. Accepted for publication: Gastrointestinal Endoscopy- July 2013 5-Year Impact Factor: 5.276

Behar, J., **G.M. Mawe**, and M.C. Carey (2013) Roles of cholesterol and bile salts in the pathogenesis of gallbladder hypomotility and inflammation. *Neurogastroenterology and Motility* 25:283-290.

Coury, D., P. Ashwood, A. Fasano, G. Fuchs, M. Geraghty, A. Kaul, **G.M. Mawe**, and P. Patterson and N.E. Jones (2012) Developing a Research Agenda for Gastrointestinal Conditions in Children with Autism Spectrum Disorders. *Pediatrics* 130 (suppl 2): 160-168.

Facey, H.V., K.S. Northwood, & **A.-D.G. Wright**. 2012. Molecular Diversity of Methanogens in fecal samples from captive Sumatran Orangutans (*Pongo abelii*). *Amer. J. Primatol.* 74: 460-468. Impact Factor: 2.22.

**Ferrentino, N** Contributing author, Gastroenterology & Hepatology Board Review: chapters on Hepatic Infectious Disorders and Hepatic Vascular Disorders; Third Edition, 2012

Franzolin, R., B. St-Pierre, K.S. Northwood, & **A.-D.G. Wright**. 2012. Analysis of Rumen Methanogen diversity in water buffaloes (*Bubalus bubalis*) under three different diets. *Microbial Ecol.* 64: 131-139.  
Impact Factor: 3.25

G. Farrugia, G. M. Simren, and **G.M. Mawe** (2013) Introducing Our Associates. *Neurogastroenterology and Motility* In press

Hoffman, Jill M, Tyler, Karl, MacEachern, Sarah J, Balemba, Onesmo B, Johnson, Anthony C, Brooks, Elice M, Zhao, Hong, Swain, Greg M, **Moses, Peter L**, Galligan, James J, Sharkey, Keith A, Greenwood-Van Meerveld, Beverley, **Mawe, Gary M** Activation of colonic mucosal 5-HT(4) receptors accelerates propulsive motility and inhibits visceral hypersensitivity. *Gastroenterology* 01/2012; 142(4):844-854.e4. • 11.68 Impact Factor

Hook, S.E., J. Dijkstra, **A.-D.G. Wright**, B.W. McBride, & J. France. 2012. Modelling the distribution of ciliate protozoa in the reticulo-rumen using linear programming. *J. Dairy Sci.* 95: 255-265. Impact Factor: 2.56

Huang, X.D., H.Y. Tan, R. Long, J.B. Liang & **A.-D.G. Wright**. 2012. Comparison of methanogen diversity of yak (*Bos grunniens*) and cattle (*Bos taurus*) from the Qinghai-Tibetan plateau, China. *BMC Microbiology.* 12: 237. Highly Accessed. Impact Factor: 3.04.

Ishaq, S.L. & **A-D.G. Wright**. 2012. Insight into the bacterial gut microbiome of the North American moose (*Alces alces*). *BMC Microbiology*. 12: 212. Highly Accessed. Impact Factor: 3.04.

Ivan, M., H.V. Petit, J. Chiquette & **A-D.G. Wright**. 2013. Rumen fermentation and microbial population in lactating dairy cows receiving diets containing oilseeds rich in C-18 fatty acids. *Brit. J. Nutrit.* 109: 1211-1218. Impact Factor: 3.45

Krause, D.O., T.G. Nagaraja, **A-D.G. Wright** & T.R. Callaway. 2013. Invited Review: Rumen microbiology: Leading the way in microbial ecology and animal science. *J. Anim. Sci.* 91:331-341. Impact Factor: 2.47

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

Lavoie, B., B. Nausch, E.A. Zane, M.R. Leonard, O.B. Balemba, A.C. Bartoo, R. Wilcox, M.T. Nelson, M.C. Carey and **G.M. Mawe** (2012) Disruption of Gallbladder Smooth Muscle Function is an Early Feature in the Development of Cholesterol Gallstone Disease. *Neurogastroenterology and Motility* 24: e313–e324.

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

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

Luo, Y, **A-D.G. Wright**, Y. Li, H. Li, Q. Yang, L. Luo, M. Yang. 2013. Diversity of methanogens in feces of captive white rhinoceroses, *Ceratotherium simum*. *Submitted to BMC Microbiology*. In Press

Luo, Y., Y. Su, **A-D.G. Wright**, L. Zhang, H. Smidt, & Z. Wei-yun. 2012. Lean breed Landrace pigs harbor fecal methanogens at higher diversity and density than obese breed Erhualian pigs. *Archaea* 2012: 1-9. Impact Factor: n/a until mid-2013.

Lynn, D.H. & **A-D.G. Wright**. 2013. Biodiversity and molecular phylogeny of Australian *Clevelandella* species (Class Armophorea, Order Clevelandellida, Family Clevelandellidae), intestinal endosymbiotic ciliates in the wood-feeding roach *Panesthia cribrata* Saussure, 1864. *J. Euk. Microbiol.* In Press

**Mawe, G.M.** B. Lavoie, M.T. Nelson and M. J. Pozo (2012) Neuromuscular Function in the Gallbladder and Sphincter of Oddi. In *Physiology of the Gastrointestinal Tract*, 5th edition L.R. Johnson, ed., Elsevier. Chapter 30, pp 847-860.

**Mawe, G.M. P.L. Moses** G.T.P. Saccone and M. J. Pozo Motility of the Biliary Tree. In Textbook of Gastroenterology, 6th edition T. Yamada, ed., Wiley-Blackwell. In preparation

**Mawe, G.M.** and J.M. Hoffman Serotonin Signaling in the Gastrointestinal Tract: Functions, dysfunctions, and therapeutic targets. Nature Reviews Gastroenterology and Hepatology In press

**Moses, Peter L, MD**, AlNaamani, Khalid M. MD, Barkun, Alan C MD, Gordon, Stuart R. MD, Mitty, Roger D. MD, Branch, M. Stanley MD, Kowalski, Thomas E MD, Martel, Myriam BSc, Adam, Viviane MSc. A Randomized Multicenter Trial Comparing 10-French Plastic to Partially Covered Metal Stents for the Palliation of Lower Malignant Biliary Obstruction World Journal of Gastroenterology- In Press July 2013 2009 Impact Factor: 2.092 (33/65 Gastroenterology and Hepatology).

Roberts, A.J, M.K. Lukewich, K.A. Sharkey, J.B. Furness, **G.M. Mawe\***, A.E. Lomax\* (2012) The roles of purinergic signalling during gastrointestinal inflammation. Current Opinion in Pharmacology 12:659-666 \* co-corresponding authors

Roberts, A.J, L. Durnan, K.A. Sharkey, V.N. Mutafova-Yambolieva, and **G.M. Mawe** Oxidative Stress Disrupts Purinergic Neuromuscular Transmission in the Inflamed Colon. Journal of Physiology (London) In press

Samsudin, A.A., **A-D.G. Wright** & R. Al Jassim. 2012. Investigation into the cellulolytic bacteria in the foregut of the dromedary camel (*Camelus dromedarius*). *Appl. Environ. Microbiol.* 78: 8836–8839. Impact Factor: 3.83

Simren, M., G. Farrugia, and **G.M. Mawe** (2012) The places to be for neurogastroenterologists. Neurogastroenterology and Motility 24:501-502

St-Pierre, B. & **A-D.G. Wright**. 2013. Metagenomic analysis of methanogen populations in three full-scale mesophilic anaerobic manure digesters operated on dairy farms in Vermont, USA. *Bioresource Technology*. 138: 277–284. Impact Factor: 4.98.

St-Pierre, B. & **A-D.G. Wright**. 2013. Diversity of gut methanogens in herbivorous animals. *Animal*. 7s1: 49-56. Impact Factor: 1.46.

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

St-Pierre, B. & **A-D.G. Wright**. 2012. Molecular analysis of methanogenic archaea in the forestomach of the alpaca (*Vicugna pacos*) reveals differences in population structure between individual hosts. *BMC Microbiology* 12:1. Highly Accessed. Impact Factor: 3.04

Turnbull, K.L, R.P. Smith, B. St-Pierre, & **A.-D.G. Wright**. 2012. Molecular diversity of methanogens in fecal samples from Bactrian camels (*Camelus bactrianus*) at two zoos. *Res. Vet. Sci.* 93: 246-249. Impact Factor: 1.65.

von Keyserlingk, M.A.G., N.P. Martin, E. Kebreab, K.F. Knowlton, R.J. Grant, M. Stephenson, C.J. Sniffen, J.P. Harner, III, **A.D.G. Wright**, & S.I. Smith. 2013. Invited Review: Sustainability of the U.S. Dairy Industry. *J. Dairy Sci.* Impact Factor: 2.56. In Press

Wang Q, Selmi C, Zhou X, Qiu D, Li Z, Miao Q, Chen X, Wang J, Krawitt EL, Gershwin ME, Han Y, Ma X. Epigenetic considerations and the clinical reevaluation of the overlap syndrome between primary biliary cirrhosis and autoimmune hepatitis. *J Autoimmun* 2012 (Epub 2012 May 21)



## **General Internal Medicine Research**

Benjamin Littenberg, MD, Director

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



The division consists of eight faculty, one staff, seven PhD students and seven Masters students in the Clinical and Translational Science Program. Four physician faculty members practice in the Fletcher Allen Primary Care Internal Medicine Group, and one serves as the Medical Director for BlueCross and BlueShield of Vermont. The division is the home of the education programs of the Center for Clinical and Translational Science and includes the Director, two Associate Directors and many of the core faculty from the PhD, Masters, and graduate certificate programs in CTS. Our faculty also contains the Associate Dean for Primary Care and the Associate Director of Ambulatory Education for the Internal Medicine Residency.

The research activities of the division include: investigations into the role of information systems in improving quality of care, patient safety in the use of pharmaceuticals in the outpatient setting, the role of compassion in the medical encounter, the epidemiology of narcotic abuse and the management of chronic pain, the use of the medical record to develop new insights in pathophysiology and epidemiology, and the role of the built environment in determining health, including obesity and incidents of cancer. The division's research is funded by grants from NIH, the State of Vermont, AHRQ, and the US Health Resources and Services Administration.

### **Benjamin Littenberg, MD**

Henry and Carleen Tufo Professor of Medicine and Professor of Nursing  
Director, General Internal Medicine

- Methodologies for Technology Assessment  
Clinical trials; Meta-analysis of diagnostic test assessments; Instruments to assess patients' preferences
- Clinical Technology Assessment  
Common problems in Primary Care; Diagnostic tests; Decision support systems  
Informatics
- Public health surveillance for chronic disease; Value-added laboratory reporting; Patient registries
- Quality Improvement and Patient Safety  
Breast cancer; Diabetes; Cardiovascular Risk; Medical error; Outpatient prescriptions, chronic kidney disease

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

Assistant Professor

Associate Director of Biomedical Informatics, Center for Clinical and Translational Science  
Assistant Professor, Computer Science

- Biomedical Informatics, electronic health records, clinical decision support, clinical data mining, natural language processing

**Amanda G. Kennedy, PharmD**

Associate Professor of Medicine

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

**Charles D. MacLean, MD**

Professor of Medicine

Associate Dean for Primary Care

Research Director, Area Health Education Center

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

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

Associate Professor of Medicine

Co-Director - Internal Medicine Resident Clinic

- Communication Skills
- Health Behavior Change

**Alan S. Rubin, MD**

Research Associate Professor of Medicine and Psychiatry

- Communication Skills
- Health Behavior Change

**Constance van Eeghen, DrPH**

Assistant Professor of Medicine

Doctor of Public Health

- Quality Improvement
- Health Policy

**Robert R. Wheeler, MD**

Clinical Assistant Professor

Chief Medical Officer, Blue Cross and Blue Shield of Vermont

- Health Policy
- Medical Management

**Graduate Students, post-doctoral Fellows, MD/PhD Students**

Marianne Burke

Abigail Crocker

Peter Durda  
Sarah Gillett  
Matthew Gissel  
Scott Hipko  
Kristi Johnson  
Kairn Kelley  
Carole McBride  
Prema Menon  
Renju Raj  
Emily Tarleton  
William Tharp  
Richard Voogt

### **Endowed Professorships**

Benjamin Littenberg, MD  
Henry and Carleen Tufo Professor of Medicine

### **Leadership in Professional Societies**

Elizabeth Chen, PhD  
Member, Education Committee, American Medical Informatics Association (AMIA)  
Member, Publications Committee, American Medical Informatics Association (AMIA)

Amanda Kennedy, Pharm.D.  
Academic Detailing Training Facilitator, National Resource Center for Academic Detailing, Boston, Massachusetts, May 6-8, 2013  
Academic Detailing Training Facilitator, National Resource Center for Academic Detailing, Boston, Massachusetts, October 1-2, 2012  
Management of attention-deficit/hyperactivity disorder (ADHD). Presented at: 23rd Annual Vermont Nurse Practitioners Association (VNPA) Conference; March 2013, Stowe, Vermont.  
Another Look at Pharmacy. Presented at Northeastern Vermont Area Health Education Center MedQuest 2012; July 2012, Lyndonville, VT.

Richard Pinckney, MD  
Narcotics Prescribing Task Force 2012, Fletcher Allen Health Care.

Charles Maclean, MD  
Fellow, American College of Physicians

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

### **Editorships and Editorial Boards**

Elizabeth Chen, PhD

Lead Guest Editor, Special Issue on “Translating Standards into Practice: Experiences and Lessons Learned in Biomedicine and Health Care”, Journal of Biomedical Informatics  
Member, Editorial Board, Methods of Information in Medicine

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

Elizabeth Chen, PhD

- Panel Member, Novel Presentation of Health Related Data (NPHRD) Program, American Institute of Biological Sciences (contracted by the U.S. Army Medical Research and Materiel Command [USAMRMC] and the Telemedicine and Advanced Technology Research Center [TATRC], Joint Program Committee for Medical Training and Health Information Sciences [JPC-1]) [July 9, 2012 – July 11, 2012]
- Study Section Member, NLM Information Resource Grants to Reduce Health Disparities (G08), National Library of Medicine, National Institutes of Health [ZLM1 ZH-G (01); October 11, 2012 – October 11, 2012]
- Study Section Member, Special Emphasis Panel (R21/R01/G13), National Library of Medicine, National Institutes of Health [ZLM1 ZH-C (01); October 26, 2012]
- Study Section Chair, Special Emphasis Panel (K22/K99/R01), National Library of Medicine, National Institutes of Health [ZLM1 ZH-C (01); January 26, 2013]
- Reviewer, Loan Repayment Program, National Institute of General Medical Sciences, National Institutes of Health [ZGM1 TRN-0 (LR); May 8, 2013]
- Study Section Member, Clinical Trials Units for NIAID Networks, National Institute of Allergy and Infectious Disease, National Institutes of Health [ZAI1 SV-A (S1); June 18, 2013]
- Study Section Member, Special Emphasis Panel (K99/R13/R21/R01), National Library of Medicine, National Institutes of Health [ZLM1 ZH-C (01); June 26, 2013]

Amanda Kennedy, PharmD

- Health Care Technology and Decision Science Study Section, Agency for Healthcare Research and Quality, June 20, 2013
- Data Safety Monitoring Board Member. Dan Morrow, PI. NINR: 1R01NR011300-01A1; 04/07/2010 – 02/28/2013: Medtable: An EMR Strategy to Promote Patient Medication Understanding and Use.
- Drug Utilization Review Board Member, Department of Vermont Health Access
- Benefit Design Work Session Member, Department of Vermont Health Access; October 16, 2012; Williston, Vermont; worked to develop an initial draft of guiding principles for benefit design decisions.

Benjamin Littenberg, MD

- Member, GE-AUR Radiology Research Academic Fellowship (GERRAF) Advisory Board, Association of University Radiologists, 1998-present
- Member, A1C Registry Advisory Board, New York City Department of Health and Mental Hygiene, 2006-present
- Grants Reviewer, Sensors and Mobile Devices for Health Monitoring, National Institutes of Health, 2013

## Major Faculty Awards

Richard Pinckney

Osler Award - General Medicine Teacher of the Year

## Grants

### A Curriculum for Clinical Research Training in Vermont

2K30 RR022260 (Benjamin Littenberg) 6/1/05 - 5/30/13

Program Director

National Center for Research Resources (NCRR) \$873,762 total

*This grant supports developing a curriculum in clinical research at the University of Vermont to effectively and efficiently transform clinicians and other young academics into successful independent clinical investigators.*

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

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

Principal Investigator: Elizabeth Chen (25% effort); Co-PI: Genevieve Melton (University of Minnesota)

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

### Medication Management Pilot Study

Vermont Department of Health 1/1/12-12/31/13 \$489,027

Principal Investigator: Amanda Kennedy

*This grant will support the UVM Office of Primary Care to conduct a population-based medication management pilot study in collaboration with selected primary care practices and pharmacists over a two year period. The broad goal of this pilot study is to improve care for Vermonters, specifically around optimizing medication regimens in primary care settings. To support this goal, the pilot will describe and evaluate varying models for pharmacist collaboration with primary care practices. Health information technology, including population-based medication reports from primary care practices' electronic health records, will serve as a tool for the pharmacist collaborations, where available. This pilot study will be collaborative between pharmacists and primary care practices and supported by a broad foundation of stakeholders, utilizing the expertise and opinions of the Vermont Blueprint for Health and Vermont Academic Detailing Program Advisors.*

### Narcotics Quality Improvement Project

Vermont Department of Health 1/1/12-12/31/12 \$104,593

Principal Investigator: Charles Maclean Co-Investigator: Amanda Kennedy

*This Grant will support the UVM Office of Primary Care to develop an approach for improving the process of narcotic prescribing in Vermont primary care practices. A quality improvement approach will be utilized to implement a prescribing system in the participating primary care offices with the collaboration of the Agency for Drug Abuse Programs of the Vermont Department of Health and the Vermont Prescription Monitoring System. The goal is to provide an office systems framework for best practice narcotic prescribing.*

The Vermont Academic Detailing Program

Vermont Department of Health      7/1/12- 6/30/13      \$200,000  
Principal Investigator: Amanda Kennedy      Co-I: Charles Maclean 5%, donated  
Co-Investigator: Charles Maclean 5%, donated

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

A Compassion Training Program for Clinicians

Frymoyer Scholarship      09/01/09 – 08/31/12  
Principal investigator: Richard Pinckney

Narcotic Quality Improvement

Charles Maclean 5%, donated (PI)      1/1/12-12/31/12      \$200,000  
*This program delivers QI support to primary care practices in Vermont.*

Automated Alcohol Screening and Brief Intervention in Primary Care using IVR

NIAAA 1R01AA018658-01A1 (Rose) Charles Maclean 10 % ( Co-I)  
National Institute of Alcohol      7/1/10-6/30/15      \$606,918      annual  
*This grant is a randomized controlled trial of alcohol screening and brief intervention (SBI) administered using a telephone-based Interactive Voice Response (IVR) system.*

The Vermont Student/Resident Experiences and Rotations in Community Health Program (Vermont SEARCH).

HHS 2502009000510 (MacLean)      10% (PI)      10/1/09-8/31/12  
Health Resources and Services Administration      \$730,316  
*This program develops and promotes primary care experiences in federally qualified health centers.*

Model State Supported Area Health Education Centers

U77 HP03624 (MacLean)      10% (PI)      9/1/12-8/31/17  
Health Resources and Services Administration \$1,435,616 total  
*The Vermont AHEC Program is a statewide network of community and academic partners working together through three AHEC centers and a Program Office to improve the health of Vermonters. Through community-based initiatives, Vermont AHEC works to promote rural health educational opportunities and address health care workforce challenges unique to specific areas of the state.*

**Publications**

- Kost R, Littenberg B, Chen ES. Exploring generalized association rule mining for disease co-occurrences. *AMIA Annu Symp Proc* 2012;1284-93.
- MacLean CD, MacCaskey M, Littenberg B. Improving Testing for Proteinuria in Diabetes Using Decision Support: Role of Laboratory Ordering Systems. *Lab Medicine* 2013; (in press).
- Jain R, Narang J, Griffith J, Bagher-Ebadian H, Scarpace L, Mikkelsen T, Littenberg B, Schultz LR. Prognostic vascular imaging biomarkers in high-grade gliomas: Tumor permeability as an adjunct to blood volume estimates. *Acad Radiol* 2013;20: 478-85.
- Morris NM, MacLean CD, Littenberg B. Change in health literacy over 2 years in older adults with diabetes. *The Diabetes Educator* 2013; 39(5) (in press).
- Chen ES, Melton GB, Sarkar IN. Translating standards into practice: experiences and lessons learned in biomedicine and health care. *J Biomed Inform.* 2012 Aug;45(4):609-12.
- Chen ES, Melton GB, Burdick TE, Rosenau PT, Sarkar IN. Characterizing the use and contents of free-text family history comments in the Electronic Health Record. *AMIA Annu Symp Proc.* 2012;2012:85-92.
- Melton GB, Manaktala S, Sarkar IN, Chen ES. Social and behavioral history information in public health datasets. *AMIA Annu Symp Proc.* 2012;2012:625-34.
- Sarkar IN, Chen ES. Determining compound comorbidities for heart failure from hospital discharge data. *AMIA Annu Symp Proc.* 2012;2012:809-18.
- Kennedy AG, Possidente CJ, Pinckney, RG. Awareness and Perceptions of Vermont's Prescribed Product Gift Ban and Disclosure Law by Prescribers and Pharmacists. *J Pharm Pract.* 2012 Aug 10. PMID: 22885841

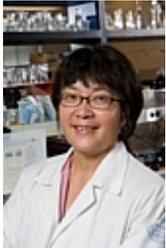


## **Division of Gerontology**

Naomi K. Fukagawa, MD PhD

Acting Director, Gerontology

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



### **Faculty**

#### **Naomi K. Fukagawa, MD PhD**

Professor of Medicine

Acting Director, Gerontology

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

#### **Muyao Li, PhD**

Research Associate

- Human genetic diseases
- Gene structure, Function and Mutation, Gene Expression Profile
- Basic cell and molecular mechanisms in human diseases associated with advanced age and obesity

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

American Society for Clinical Investigation Institutional Representative

American Society for Nutrition Subcommittee on Nutrition Education in Professional Schools

**Editorships and Editorial Boards:** Associate Editor, *The American Journal of Clinical Nutrition*; Editor-in-Chief, *Nutrition Reviews*; Editorial Board, *Journal of Nutritional Biochemistry*

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

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

Member and Chair, External Advisory Committee, Division of Nutritional Sciences, College of Agricultural, Consumer and Environmental Sciences, University of Illinois, Champaign-Urbana, IL

Vice Chair, UVM Transdisciplinary Research Initiative Food Systems Steering Committee

**Major Faculty Awards:**

Vermont Academy of Science and Engineering

Fellow, Center for Rural Studies/Food Systems Research Collaborative, University of Vermont

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

**ACTIVE**

UVM Center on Aging Armin Grams Research Award (Fukagawa and Kolodinsky)

Community-Based Nutrition Intervention in Affordable Housing for Elders

3/1/2013-2/28/2015 \$50,000

The goal is to determine whether nutrition education improves fruit/vegetable intake and stabilizes frailty scores.

1 RC1 ES018053-01 (Fukagawa)

12/1/2009 – 7/31/2013

NIH/AARA/NIEHS

\$330,256

3.6 calendar months

Mechanisms for Cardiovascular Effects of Air Pollutants: Effect of Age and Sex

The goal is to determine the mechanisms responsible for the effects of petrodiesel and biodiesel exhaust emissions on cardiovascular disease.

Ajinomoto Amino Acids Research Program (Fukagawa)

10/01/2009– 12/31/2013

\$50,000

0.6 calendar month

Synergistic Effects of the Branched Chain Amino Acids and Camosine Precursors on Exercise-induced Muscle Damage and Performance in Humans

The goal is to determine the effects of amino acid supplementation on exercise performance.

R01DK082803-01 (Kien)

12/01/2009-11/30/2014

NIH/NIDDK

\$427,731

1.8 calendar months

Palmitate Metabolism and Insulin Resistance

The goal is to determine the mechanisms through which palmitate metabolism influences insulin resistance in human volunteers.

**UVM Transportation Research Center (USDOT) (Fukagawa, PI)**

**TDC \$180,323**

03/01/2012-12/31/2013

Nutritional Supplementation with the Antioxidant, Glutathione, to Reduce the Health Effects of Petro- and Biodiesel Exhaust Particle Emissions

The goal is to determine whether glutathione plays a role in mitigating the effects of exposure to exhaust on airway hyperresponsiveness.

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

Kolodinsky J, Fukagawa NK, Belliveau C, Johnson H. Walking the talk of food systems at a small land grant university. *J Agriculture, Food Systems and Community Development*. 2012. Epub 20 June 2012. <http://dx.doi.org/10/5304/jafscd.2012.023.015>.

Li M, Gunter M, Fukagawa NK. Differential activation of the inflammasome in THP-1 cells exposed to chrysotile asbestos and Libby "Six-Mix" amphiboles and subsequent activation of BEAS-2B Cells. *Cytokine* 2012; 60(3):718-30.  
DOI:10.1016/j.cyto.2012.08.025.

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

Fukagawa NK. Protein and Amino Acid Supplementation in Older Humans. *Amino Acids* 2013 DOI: 10.1007/s00726-013-1480-6.



## **Hematology/Oncology**

Claire Verschraegen, MD, Director

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



### **Hematology/Oncology Division Annual Report – 2013**

#### **A. Executive Summary**

The Division combines 2 specialties, Hematology and Oncology. There are 2 full time faculty focusing on benign hematology and thrombosis, four faculty treating benign and malignant hematology, 8 medical oncologists, 1 internist (lymphedema\_) and 1 cardiologist (thrombosis and cardiology for cancer patients) in the Division with 2 emeritus faculty, 6 fellows, 5 post-doctoral fellows, 6 midlevel providers, about 65 nurses and staff in the outpatient clinic. The Division also supervises the Apheresis Program and the Hemophilia Center and has worked at obtaining accreditation for stem cell transplant, which should be granted later this year. The site visit which happened in May was successful, with minor comments to address. Our group has embodied the mission of the COM and FAHC with cost effective high quality of care, cutting edge research, and dedication to all aspects of teaching and research.

#### **Clinical work**

Clinical efforts for 2012/13 (pro-rated) include a heavy clinical load with 28,704 outpatient visits (about 1900 new patients) and about 6,000 inpatient visits for a total of 43,813 RVU's. This is a 13% growth from last year. These numbers do not include patients treated in our infusion suite. We are also attending for patients of local private practices when they are hospitalized at FAHC. Services offered include multidisciplinary clinics where at a single visit patients may be seen by a number of oncologic or specialty providers. Established MDC clinics exist for breast, upper GI, ENT, lung cancer, GU, melanoma, sarcoma, leukemia's and lymphomas, brain, and GYN. These multidisciplinary clinics are being integrated within Transdisciplinary Academic Teams (TAT), a group of expert physicians and scientists who focus on all aspect of academic medicine for the specific cancers they treat and research. In 2012/13, more than 600 new patients were seen through the TAT and MDC clinics. Our specialty services also include a federally granted hemophilia center (Dr. Holmes), a thrombosis and hemostasis program (Dr. Cushman), a soon to be accredited stem cell program (Dr. Sprague), an oncology rehabilitation center (Dr. Dittus), a cancer genetics clinic (W. McKinnon), and a high risk breast program (Dr. Wood). FAHC has now integrated the activities of the cancer patient support program to provide nutrition, psychological and social work support to any patient in Vermont in need of these services. We are in the planning stages of a lung cancer screening program for high risk smokers.

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

## **Research**

Research within the Division is done in several ways (clinical trials, basic science research and epidemiology) covering a number of broad themes (new drug development, cancer treatment and prevention, thrombosis, cardiovascular and stroke epidemiology, supportive care of cancer patients, cancer and exercise, and cancer and coagulation). Working within Transdisciplinary Teams, the faculty of the Hematology/Oncology Division are principal investigators for the majority of the over 300 cancer related studies at the University of Vermont, with 25% of these studies being investigator initiated. Approximately 1,000 cancer patients are put on clinical trials annually with about 3/4<sup>th</sup> being accrued to medical oncology studies. Approximately 15% of patients are enrolled on treatment clinical trials at FAHC which is higher than the 6% national average. Available trials include Phase I-III treatment trials, supportive care and translational studies, with the majority of the later (supportive care and translational studies) being investigator initiated. Investigators within the Division receive funding from clinical trials (cooperative group and pharmaceutical trials), NIH (NCI, NHLBI, NINDS) and ACS, and through the VCC some of the LCCRO funds support Division research activities.

Dr. Grunberg is the president of the *Multinational Association of Supportive Care in Cancer*. Dr. Greenblatt is the president of the *Human Genome Variation Society*. Dr. Cushman was appointed to the National Board of Directors of the *American Heart Association* on May 1, 2013. Dr. Wood was appointed to the *American Society of Clinical Oncology (ASCO) CME committee* as the liaison to the *ASCO Prevention Committee*.

## **B. Faculty**

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

Associate Director, Hematology/Oncology Fellowship Program  
Leader, Fletcher Allen Health Care GI Multidisciplinary Clinic  
Research interests include: GI and GU cancers and thrombosis

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

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

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

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

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

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

### **Marc Greenblatt, MD – Associate Professor**

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

**Steven Grunberg, MD – Professor**

Leader, Fletcher Allen Health Care ENT Tumor Multidisciplinary Clinic

Research interests include: Lung cancer, head and neck tumors, antiemetics

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

Director, Vermont Hemophilia Treatment Center

Assistant Director, Thrombosis and Hemostasis Program

Research interests include: Venous thrombosis, post-thrombotic syndrome and platelet function

**Farrah Khan, MD – Assistant Professor**

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

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

Director, Cardiovascular Prevention Program for Cancer Patients

Research Interests: the role of fitness and exercise interventions in health. Venous thrombosis in cancer patients.

**Gurpreet Lamba, MD – Assistant Professor**

Research interests include: Lymphoma and Leukemia

**Emiliano Mugnaini, MD, PhD – Assistant Professor**

Research interests include: Lymphoma and Leukemia

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

Director, Lymphedema Program

**Julie Olin, MD – Assistant Professor**

Attending Physician

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

Director, Hematology/Oncology Fellowship Program

Research interests include: Leukemia and neurotoxicity

**Claire Verschraegen, MD – Professor**

Director, Hematology/Oncology Division

Co-Director, Vermont Cancer Center

Research interests include: Mesothelioma, GYN, Lung, other rare cancers

**Marie Wood, MD – Professor**

Director, Familial Cancer Program

Assistant Director, Hematology/Oncology Division

Research interests include: Molecular markers of breast cancer risk, attitudes of primary care physicians regarding cancer genetics, breast cancer screening and prevention.

**Neil Zakai, MD, MSc – Associate Professor**

Research interests include: Epidemiology and novel risk factors of venous thrombosis and cardiovascular disease. Epidemiology, causes, and consequences of anemia in diverse populations. Venous thrombosis causes and prevention, post thrombotic syndrome.

**C. List all Fellows –**

Julia Moukharskaya, MD – 3<sup>rd</sup> year fellow

John Winters, MD – 3<sup>rd</sup> year fellow  
Joanne Monterroso, MD – 2<sup>nd</sup> year fellow  
Yongli Ji, MD – 2<sup>nd</sup> year fellow  
Samir Ambrale, MD – 1<sup>st</sup> year fellow  
Inder Lal, MD – 1<sup>st</sup> year fellow

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

Penny Gibson, PA  
Janet Ely, NP  
Paul Larson, NP  
Jamie Kelly, PA  
Emily Parenteau, NP

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

Santosh Kumar – Post-Doctoral Associate  
Kristine Alexander – Post-Doctoral Associate

**F. Endowed Professorships**

**G. Leadership in Professional Societies**

Mary Cushman, MD, MSc – Elected member of the national board of directors of the American Heart Association – May 2013

- Chair of Council Operations Committee, American Heart Association – 2012-14
- Chair, Subcommittee on Quality, American Society of Hematology – 2010-13.

Chris Holmes, MD, PhD – named to the Thrombosis Committee of the American Thrombosis and Hemostasis Network in partnership with the Centers of Disease Control (CDC) – April 2012

Marie Wood, MD – ASCO Planning Committee for the 2013 Genetics and Genomics for the Practicing Clinical Seminar – 2013

Marie Wood , MD– serve on the ASCO CME Subcommittee 2013-2016

Steve Grunberg, MD – served as a faculty member at the Chicago Supportive Oncology Conference in Chicago in October 2012 – he was an invited panelist for the European School of Oncology Task Force on Early Recognition of Malnutrition and Cachexia in the Cancer Patient symposium in Geneva, Switzerland in December 2012.

**H. Editorships and Editorial Boards**

Marie Wood – Chair, ASCO IMT Committee Ed Book  
Mary Cushman – Senior Guest Editor, Circulation  
-Associate Editor, Journal of Thrombosis and Haemostasis

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

Mary Cushman – Cardiovascular and Sleep Study Section (CASE), NHLBI,  
2010-13.

**J. Major faculty awards**

Kim Dittus received the Vision Award – in recognition of her work to help create “Steps to Wellness” – May 2013

Marie Wood received the William Smith College Athletic – Hosking Award for outstanding lifetime achievement in chosen field of work – April 2013

Mary Cushman received the Senior Researcher of the Year Award from FAHC – December 2012.

**K. Grants – list all active grants by faculty member, PI:**

|                           |  |
|---------------------------|--|
| NINDS<br>U01 NS041588     | Etiology of Geographic and Racial Differences in Stroke Mortality<br>G Howard, PI, University of Alabama at Birmingham<br>M. Cushman, Subcontract PI<br>Funding: 8/1/2011-11/30/2013                     |
| CALGB                     | Brigham & Women’s Hospital, Inc.<br>CALGB: Cancer and Leukemia Group B Case<br>Study Service<br>S. Grunberg, PI<br>Funding: 4/1/2010-3/31/2999   |
| DiaDexus                  | Lipoprotein-Associated Phospholipase A2 (Lp-PLA <sub>2</sub> ) Activity and the Risk of Stroke, Coronary Heart Disease and Cognitive decline in REGARDS<br>M. Cushman, PI<br>Funding: 9/1/2012-8/31/2014 |
| NHLBI<br>R01HL59367       | Epidemiology of Venous Thrombosis and Pulmonary Embolism<br>A. R. Folsom, PI University of Minnesota<br>M. Cushman, Subcontract PI<br>Funding: 1/1/2013-12/31/2017                                       |
| NIH/NIA<br>R01AG0236290-1 | Exceptional Aging: 12 Year Trajectories to Function<br>A. Newman, PI: University of Pittsburgh<br>M. Cushman, Subcontract PI<br>Funding: 9/1/2012-8/31/2013  |

|   |  |
|---|--|
| UVM   | An Exercise Training and Behavior Weight Loss Program after an Acute Blood Clot: TRAIN ABC” Grant Program<br>S. Lakoski, PI<br>Funding: 6/1/2013-6/30/2014                 |
| NHLBI<br>K08HL096841  | Regional and Racial Differences in Hemostasis and Risk of Stroke and Heart Disease<br>N. Zakai, PI<br>Funding: 9/1/2012-8/31/2014  |
| NCI<br>R01 CA164944   | Classifying DNA Mismatch Repair Gene Variants of Unknown Significance<br>M. Greenblatt, Joint PI<br>Funding: 3/1/2013-11/30/2013   |
| NIH/NIGMS<br>1P20GM103644-01A1                              | Vermont Center on Behavior and Health 9COBRE)<br>K. Dittus, PI<br>Funding: 12/1/2012-11/30/2017  |
| BCRF 9<br>Breast Cancer<br>Research Foundation              | Effect of Adjuvant Chemotherapy for Early Breast Cancer on Brain Imaging and Cognitive Function<br>K. Dittus, PI<br>Funding: 3/09 – Indeterminate – no cost extension      |
| NE Research<br>Consortium Program<br>Grant                  | The Impact of Fatty Acid Acquisition on Diffuse Large B-Cell Lymphoma Signaling and Prognosis<br>E. Mugnaini, Co-PI<br>Funding: 12/1/2012-11/30/2013                       |
| VCC<br>LCCRO Grant  | Predictors of Dyspnea Fatigue Syndrome in Breast Cancer Survivors Before and After an Exercise Intervention<br>K. Dittus/B. Suratt, Co-PIs<br>Funding: 7/1/2012-10/31/2013 |
| NNECOS<br>Northern New England<br>Clinical Oncology Society | DNA Repair Landscape in Individuals with Increased Risk of Breast Cancer<br>M. Wood, PI<br>Funding: 2/15/2013-2/15/2014  |
| LCCRO Grant   | LCCRO Support for the Vermont Cancer Center<br>C. Verschraegen, PI<br>Funding 1/1/2013-12/31/2013  |

**L. Publications** – peer reviewed, chapters, etc. (no abstracts)

Adams NB, Lutsey PL, Folsom AR, Herrington DH, Sibley CT, Zakai NA, Ades S, Burke GL, Cushman M: Statin therapy and levels of hemostatic factors in a healthy population: the Multi-Ethnic Study of Atherosclerosis. *J Thromb Haemost* 2013 Jun;11(6):1078-84. doi: 10.1111/jth. 12223, PMID:2356598, PMCID:PMC37002638

Barlow CE, Defina LF, Radford NB, Berry JD, Cooper KH, Haskell WL, Jones LW, Lakoski SG: Cardiorespiratory fitness and long-term survival in “low-risk” adults. *J Am Heart Assoc* 2012 Aug;1(4):e001354. Doi: 10.1161/JAHA.112.001354. Epub 2012 Aug 24. PMID:23130161, PMCID:PMC3487345

Bryan LJ, Callas P, Criqui MH, Cushman M. Higher soluble P-selection is associated with chronic venous insufficiency: the San Diego Population Study. *Thromb Res* 2012 Nov;130(5):716-19. doi:

10.1016/j.thromres.2012.07.012. Epub 2012 Aug 12. PMID:22892384, PMCID:PMC3474873

Choi EY, Bahrami H, Wu CO, Greenland P, Cushman M, Daniels LB, Almeida ALC, Yoneyama K, Opdahl A, Jain A, Criqui MH, Siscovick D, Darwin C, Maisel A, Bluemke DA, Lima JAC. Plasma N-terminal pro-B-type natriuretic peptide, left ventricular mass and incident heart failure: the Multi-Ethnic Study of Atherosclerosis. *Circ Heart Fail* 2012 Nov; 5(6):727-34. doi: 10.1161/CIRCHEARTFAILURE.112.968601. Epub 2012 Oct 2. PMID:23032197.

Cushman M: Treating acute venous thromboembolism: shift with care. *N Engl J Med* 2013 Jul 1. PMID:23808983

Cushman M, Zakai N: Statin therapy and levels of hemostatic factors in a healthy population: the Multi-Ethnic Study of Atherosclerosis: a reply to a rebuttal. *J Thromb Haemost* 2013 June 27. Doi: 10.1111/jth.12336. PMID23809235

Engbers MJ, Cushman M, Rosendaal F, van Hylckama Vlieg A. The effect of time between venipuncture, processing and freezing on the measurement of coagulation factor levels. *J Thromb Haemost* 2012 Aug 10:1691-3. doi: 10.1111/j.1538-7836.2012.04792.x. PMID:22632130

Glasser SP, Hovater MK, Lackland DT, Cushman M, Howard G, Howard VJ: Primary prophylactic aspirin use and incident stroke: Reasons for geographic and racial differences in stroke study. *J Stroke Cerebrovasc Dis.* 2013 May;22(4):500-7. Doi: 10.1016/j.jstrokecerebrovasdis.2013.03.004. Epub 2013 Apr 6. PMID23571051, PMCID:PMC3656489

Gutiérrez OM, Judd SE, Muntner P, Rizk DV, McClellan WM, Safford MM, Cushman M, Kissela BM, Howard VJ, Warnock DG. Racial differences in albuminuria, kidney function and risk of stroke. *Neurology* 2012 Oct 16;79(16):1686-92. doi: 10.1212/WNL.0b03e31826e9af8. Epub 2012 Sep 19. PMID:22993285, PMCID:PMC3468778

Howard G, Cushman M, Howard VJ, Kissela BM, Kleindorfer DO, Moy CS, Switzer J, Wood D: Risk factors for intracerebral hemorrhage: the Reasons for geographic and racial differences in stroke (REGARDS) study. *Stroke* 2013 May;44(5):1281-7. doi: 10.1161/STROKEAHA.111.000529. Epub 2013 Mar 26. PMID:2353201

Huang J, Sabater-Lleal M, Asselbergs FW, Tregouet D, Shin SY, Ding J et al. Genome-wide association study for circulating levels of plasminogen activator inhibitor-1 (PAI-1) provides novel insights into the regulation of PAI-1. *Blood.* 2012 Dec 6; 120(24):4873-81. doi: 10.1182/blood-2012-06-436188. Epub 2012 Sep 18. PMID:22990020, PMCID: PMC3520624

Jenny NS, French B, Arnold AM, Strotmeyer ES, Cushman M, Chaves PH, Ding J., Fried LP, Kritchevsky SB, Rifkin DE, Sarnak MJ, Newman AB: Long-term assessment of inflammation and healthy aging in late life: The Cardiovascular Health Study All Stars. *J Gerontol A Biol Sci Med Sci* 2012 Sept;67(9):970-6. doi: 10.1093/Gerona/qlr261. Epub 2012 Feb 24. PMID:22367431, PMCID:PMC3436091

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Kulshreshtha A, Vaccarino V, Judd SE, Howard VJ, McClellan WM, Muntner P, Hong Y, Safford MM, Goyal A, Cushman M: Life's simple 7 and risk of incident stroke: The reasons for geographic and racial differences in stroke study. *Stroke* 2013 Jul;44(&):1909-14. Doi: 10.1161/STROKEAHA.111.000352. Epub 2013 Jan 6. PMID:23743971.

Mahmoodi BK, Gansevoort RT, Næss IA, Lutsey PL, Brækkan SK, Veeger NJGM, Brodin EE, Meijer K, Sang Y, Matsushita K, Hallan SI, Hammerstrøm J, Cannegieter SC, Astor BC, Coresh J, Folsom AR, Hansen JB, Cushman M. Association of mild to moderate chronic kidney disease with venous thromboembolism: pooled analysis of five prospective population cohorts. *Circulation* 2012 Oct 16;126(16):1964-71. doi: 10.1161/CIRCULATIONAHA.112.113944. Epub 2012 Sep 13. PMID:22977129, PMCID:PMC3520022

Mann DM, Shimbo D, Cushman M, Lakoski S, Greenland P, Lloyd-Jones D, Blumenthal R, Michos E, Muntner P. C-reactive protein level and the incidence of eligibility for statin therapy: the Multi-Ethnic Study of Atherosclerosis. *Clin Cardiol* 2013 Jan;36(1):15-20. doi 10.1002/clc.22046. Epub 2012 Aug 9. PMID:22886783

Marcussi M, Smith CT, Douketis JD, Tosetto A, Baglin T, Cushman M, Eichinger S, Palareti G, Polli D, Tait RC, Iorio A. Patient-level compared with study-level meta-analyses demonstrate consistency of D-dimer as predictor of venous thromboembolic recurrences. *J Clin Epidemiol* 2013 Apr;66(4):415-25. Doi: 10.1016/j.jclinepi.2012.08.007. Epub 2013 Feb 8. PMID:23395515

Martinez-Rumayor AA, deLemos JA, Rohatgi AK, Ayers CR, Powell-Wiley TM, Lakoski SG, Berry JD, Khera A, Das SR: Addition of highly sensitive troponin T and N-terminal pro-B-type natriuretic peptide to electrocardiography for detection of left ventricular hypertrophy: Results from the Dallas Heart Study. *Hypertension* 2013 Jan;61(1):105-11. Doi: 10.1161/HYPERTENSIONAHA.112.195289. Epub 2012 Nov 12. PMID:23150502, PMCID:PMC3521858.

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Mossman BT, Shukla A, Heintz NH, Verschraegen CF, Thomas A, Hassan R: New insights into understanding the mechanisms, pathogenesis, and management of malignant mesotheliomas. *Am J Pathol* 2013 Apr;182(4):1065-77. doi: 10.1016/j.ajpath.2012.12.028. Epub 2013 Feb 8. PMID:23395095

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Muntner P, Judd SE, Gao L, Gutierrez OM, Rizk DV, McClellan W. Cushman M, Warnock DG: Cardiovascular risk factors in CKD associate with both ESRD and mortality. *J Am Soc Nephrol* 2013 June;24(7):1159-65. Doi: 10.1681/ASN.2012070642. Epub 2013 May 23. PMID:23704285, PMCID:PMC3699822.

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Shea MK, Booth SL, Miller ME, Burke GL, Chen H, Cushman M, Tracy RP, Kritchevsky SB: Association between circulating vitamin K1 and coronary calcium progression in community-dwelling adults: the Multi-Ethnic Study of Atherosclerosis. *Am J Clin Nutr* 2013 Jul;98(1):197-208. Doi: 10.3945/ajcn.112.056101. Epub 2013 May 29. PMID:23719555, PMCID:PMC368381.

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Thielke SM, Whitson H, Diehr P, O'Hare A, Kearney PM, Chaudhry SI, Zakai NA, Kim D, Sekaran N, Sale JE, Arnold AM, Chaves P, Newman A: Persistence and remission of musculoskeletal pain in community-dwelling older adults: Results from the cardiovascular health study. *J Am Geriatr Soc.* 2012 Aug;60(8):1393-400. Doi: 10.1111/j.1532-5415.2012.04082.x.. Epub 2012 Aug 2. PMID:22861385, PMCID: PMC3633775.

Travis LB, Wahnefried WD, Allan JM, Wood ME, Ng AK: Aetiology, genetics and prevention of secondary neoplasms in adult cancer survivors. *Nat Rev Clin Oncol* 2013 May;10(5):289-301. doi: 10.1038/nrclinonc.2014.41. Epub 2013 Mar 26. (PMID23529000)

Verschraegen CF, Czok S, Muller CY, Boyd L, Lee SJ, Rutledge T, Blank S, Pothuri B, Eberhardt S, Muggia F: Phase II study of bevacizumab with liposomal doxorubicin for patients with platinum- and taxane-resistant ovarian cancer. *Ann Oncol* 2012 Dec;23(12):3104-10. doi: 10.1093/annonc/mds172. Epub 2012 Jul 31. PMID:22851407

Wattanakit K, Lutsey PL, Bell EJ, Gornick H, Cushman M, Heckbert SR, Rosamond WD, Folsom AR. Association between cardiovascular disease risk factors and occurrence of venous thromboembolism: a time dependent analysis. *Thromb Haemost* 2012 Sep;108(3):508-15. doi: 10.1160/TH11-10-0726. Epub 2012 Jul 10. PMID22782466, PMCID:PMC3482827

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Zakai NA, Callas PW, Repp AB, Cushman M: Venous thrombosis risk assessment in medical inpatients: the medial inpatients and thrombosis (MITH) study. *J Thromb Haemost* 2013 Apr 11(4):634-41. Doi: 10.1111/jth. 12147. PMID:23336744

## **Division of Immunobiology**

Ralph Budd, MD, Director

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

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



The Immunobiology Program was established in the Department of Medicine in 1995 in recognition of the growing strength in this area of research from various departments. Although established in one department, it was intended from the start that this program should evolve to span several departments to include the various interests in genetic regulation of autoimmune and infectious diseases, basic mechanisms of T cell signaling of cytokine genes and cell death (Medicine), viral immunology (Pathology), transplantation immunology (Surgery), and maternal/fetal immunology (Ob-Gyn). Dr. Ralph Budd has directed this program since its inception. The core of the Immunobiology Program resides with the Department of Medicine and includes 7 faculty whose research interests are detailed below.

In 2006 the Immunobiology faculty partnered with faculty in Infectious Diseases and Microbiology and Molecular Genetics to successfully compete for a Center of Biomedical Research Excellence (COBRE) Award from NIH (NCR). This allowed the formation of the Vermont Center for Immunology and Infectious Diseases (VCIID), which now numbers 21 faculty in 8 departments in 4 colleges and is in close alliance with the Vermont Vaccine Trial Center, headed by Dr. Beth Kirkpatrick, one of the VCIID faculty. The VCIID has a weekly joint Research-in-Progress meeting, seminar series, and a journal club. This provides a weekly forum for students and postdoctoral fellows to present their research progress as well as for faculty to review hypotheses and specific aims of planned grants. During the first 5 years of Phase I COBRE funding, VCIID faculty published 213 articles and received nearly \$48 million in funding, excluding the COBRE funds.

In 2011 the COBRE grant was renewed for a second 5 years. This will provide funds to allow the College of Medicine to build a new BSL3 facility in partnership with the Vermont Department of Health, and to recruit new faculty to the theme of the host response to infection. In addition, we renewed our NIH T32 Training Grant for graduate students.

### **Faculty**

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

Professor of Medicine and Microbiology & Molecular Genetics

Director, Vermont Center of Immunology & Infectious Diseases

- Key Research Interests: Cell death, Regulation of caspases in the immune system, Gamma/delta T cells, Autoimmune mechanisms

**Jason Botten, PhD**

Assistant Professor of Medicine, Adjunct in Microbiology and Molecular Genetics

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

**Sean A. Diehl, PhD (7/12 – 1/13)**

Assistant Professor of Medicine

- Key Research Interests: Molecular immunology, human immunology, allergic disease, autoimmune disease, T cells, B cells

**Oliver Dienz, PhD**

Assistant Professor of Medicine

- Key Research Interests: T cell signaling, memory T cell function, influenza, lung inflammation, cytokines and their transcriptional regulation

**Andreas Koenig, PhD**

Research Associate, Medicine

- Key Research Interests: Immunology: mechanisms of innate antiviral immune response

**Karen Fortner, PhD**

Assistant Professor of Medicine

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

**Mercedes Rincon, PhD**

Professor of Medicine

Director, Transgenic/Knockout Mice Facility

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

**Cory Teuscher, PhD**

Professor of Medicine and Pathology

- Key Research Interests: Immunogenetics / Immunology

**Tina Thornton, PhD**

Research Associate, Medicine

- Key Research Interests: The major focus is on understanding the interactions of signaling pathways that control early thymocyte development and survival, and is currently exploring the interaction of the p38 MAPK pathway and GSK3 in cells from the immune system and central nervous system under normal and pathological conditions.

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

Laure Case, PhD

Rajiv Jumani (graduate student)  
Benjamin King (graduate student)  
Joseph Klaus (graduate student)  
Dimitry Kremmentsov, PhD  
Naresha Saligrama (graduate student)  
Michael Secinaro (graduate student)  
Phan Thai (MD/PhD student)  
Emma Wall, PhD  
Rui Yang (graduate student)  
Christopher Ziegler (graduate student)

**Editorships and Editorial Boards:**

(Budd) Editor for “Textbook of Rheumatology”, Elsevier  
(Rincon) J. Immunology; International Journal of Biological Sciences

**Study Sections and Federal Advisory Boards:**

(Botten) Ad hoc reviewer, Project Grants in Basic and Clinical Sciences, The Wellcome Trust  
(Botten) Ad hoc reviewer, Special Emphasis Panel ZRG1 IDM-B (02), NIH  
(Budd) Member, NIH NIAID T32 grant study section  
(Budd) Member, NIH Special Emphasis Panel  
(Rincon) Charter member, Cellular and Molecular Immunology NIH study section  
(Teuscher) Charter member, Hypersensitivity, Autoimmune, and Immune-mediated diseases  
NIH study section.  
(Teuscher) Permanent member, grant review panel for the National Multiple Sclerosis Society.

**Major Faculty Awards:**

(Botten) Young Investigator Travel Award, Fourth Biennial National IDeA Symposium of  
Biomedical Research Excellence (NISBRE), Washington, DC, 2012.  
(Budd) Membership to Association of American Physicians  
(Koenig) VCIID COBRE Pilot Award (2012) – CVB3-induced oxidative stress regulates innate  
immune response to infection  
(Rincon) University Scholar designation by UVM Graduate College for 2012-2013

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

Grant Awards 07/01/12 – 06/30/13

NIH funding:

4 - R01

2 – R21

1 - R56

1 – P01 through ARRA Funding

3 – ARRA Supplements

1 – T32

1 – COBRE

1 – Sub award through University of Utah

Foundation funding:

1 –Postdoctoral Fellowship

1 –Foundation Pilot

Budd:

Title: Gamma Delta Cells in Lyme Arthritis

Dates of Award: 09/30/2004 – 08/31/2013

Role: PI

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

Source: NIH/NIAMS

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

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

Role: PI

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

Source: NIH/NIAMS

Title: Vermont Immunology / Infectious Diseases Center

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

Role: PI

Current Yr funding: \$2,258,504

Source: NIH/NCRR

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

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

Role: PI

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

Source: NIH/NCRR

Title: Vermont Immunology / Infectious Diseases Center (BSL3 ARRA Supplement)  
Dates of Award: 08/26/09-08/25/12  
Role: PI  
Current Yr funding: \$0 (no cost extension)  
Source: NIH/NCRR

Title: Regulation of Effector CD4 T Cells During Infection  
Dates of Award: 08/01/09-07/31/12  
Role: PI  
Current Yr funding: \$0 (no cost extension)  
Source: NIH/NCRR

Title: Vermont Immunology / Infectious Diseases Training Grant  
Dates of Award: 09/01/05 – 08/31/16  
Role: PI  
Current Yr funding: \$184,363  
Source: NIH/NIAID

Botten:

Title: Identification of Novel Arenavirus Protein-Host Cellular  
Dates of Award: 06/15/10-05/31/13  
Role: PI  
Current Yr funding: \$0 (no cost extension)  
Source: NIH/NIAID

Diehl:

Title: H1R Signaling and Immune Deviation in EAE  
Dates of Award: 01/19/10-12/31/14  
Role: Co-PI (PI, Teuscher)  
Current Yr funding: \$328,114  
Source: NIH/ NINDS

Rincón:

Title: p38 MAP Kinase during Early Thymocyte Development  
Dates of Award: 02/15/2009 – 01/31/2014  
Role: PI  
Current Yr funding: \$368,763  
Source: NIH/NIAID

Title: IL-6: an innate immune regulator of the plasticity of Tfh cells  
Dates of Award: 04/15/2012 – 03/31/2014  
Role: PI  
Current Yr funding: \$441,316 (no cost extension, effective 4/1/13)  
Source: NIH/NIAID

Teuscher:

Title: Molecular Genetics of Arthritis in Murine Lyme Disease

Dates of Award: 08/15/2004 – 05/31/2014

Role: Co-PI

Current Yr funding: \$67,000

Source: University of Utah

Title: Histamine Receptor Signaling in CNS Autoimmune Disease

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

Role: PI

Current Yr funding: \$606,264 (no cost extension, effective 1/1/13)

Source: NIH/NINDS

Title: H1R Signaling and Immune Deviation in EAE

Dates of Award: 01/19/10-12/31/14

Role: PI (Diehl, Co-PI)

Current Yr funding: \$328,114

Source: NIH/ NINDS

Title: p38 MAPK as a Female-Specific Druggable Target in Autoimmune Disease of the CNS

Dates of Award: 07/01/11 – 06/30/14

Role: Mentoring PI

Current Yr funding: \$48,476

Source: National Multiple Sclerosis Society (postdoctoral fellowship)

Title: p38 MAPK as a female-specific druggable target in CNS autoimmune disease

Dates of Award: 07/1/11 – 06/30/14

Role: PI

Current Yr funding: \$190,625

Source: NIH/ NINDS

Title: Gestational exposure to bisphenol A in susceptibility to autoimmune inflammatory disease of the CNS

Dates of Award: 01/01/12 – 12/31/12

Role: PI

Current Yr funding: \$43,779

Source: NMSS

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

Anathy V, Roberson E, Cunniff B, Nolin JD, Hoffman S, Spiess P, Guala AS, Lahue KG, Goldman D, Flemer S, van der Vliet A, Heintz NH, Budd RC, Tew KD, Janssen-Heininger YM. Oxidative processing of latent Fas in the endoplasmic reticulum controls the strength of apoptosis. *Mol Cell Biol.* 2012 Sep;32(17):3464-78. Epub 2012 Jul 2. PMID: 22751926 / PMCID: PMC3422013

Budd RC, Fortner KA. T Lymphocytes. In Kelley's Textbook of Rheumatology, 9<sup>th</sup> Edition, 2013. Firestein GS, Budd, RC, Gabriel SE, McInnes IB, and O'Dell JR, eds. Elsevier Saunders, Philadelphia PA

Buskiewicz IA, Koenig A, Huber SA, Budd RC. Caspase-8 and FLIP regulate RIG-I/MDA5-induced innate immune host responses to picornaviruses. *Future Virol.* 2012 Dec;7(12):1221-1236. PMID: 23503762 / PMCID: PMC3595017

Carbone G, Wilson A, Diehl SA, Bunn J, Cooper SM, Rincon M. Interleukin-6 receptor blockade selectively reduces IL-21 production by CD4 T cells and IgG4 autoantibodies in rheumatoid arthritis. *Int J Biol Sci.* 2013;9(3):279-88. Epub 2013 Mar 7. PMID: 23493630 / PMCID: PMC3596713

Case LK, Huber SA, Teuscher C. Inheritance of coronary artery disease in men. *Lancet.* 2012 Jun 30;379(9835):2424-5; author reply 2425. doi: 10.1016/S0140-6736(12)61060-5. No abstract available. PMID: 22748582

Case LK, Wall EH, Dragon JA, Saligrama N, Kremontsov DN, Moussawi M, Zachary J, Huber SA, Blankenhorn EP, Teuscher C. The Y chromosome as a regulatory element shaping immune cell transcriptomes and susceptibility to autoimmune disease. *Genome Res.* 2013 Jun 25. [Epub ahead of print] PMID: 23800453

del Rio R, McAllister RD, Meeker ND, Wall EH, Bond JP, Kyttaris VC, Tsokos GC, Tung KS, Teuscher C. Identification of Orch3, a locus controlling dominant resistance to autoimmune orchitis, as kinesin family member 1C. *PLoS Genet.* 2012;8(12):e1003140. Epub 2012 Dec 27. PMID: 23300462 / PMCID: PMC3531464

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metabolic alterations. *Mol Cell Biol.* 2013 Jun;33(11):2302-14. Epub 2013 Mar 25. PMID: 23530063 / PMCID: PMC3648061

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Kemball CC, Flynn CT, Hosking MP, Botten J, Whitton JL. Wild-type coxsackievirus infection dramatically alters the abundance, heterogeneity, and immunostimulatory capacity of conventional dendritic cells in vivo. *Virology.* 2012 Jul 20;429(1):74-90. Epub 2012 May 1. PMID: 22551767 / PMCID: PMC3358485

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Martin RA, Ather JL, Lundblad LK, Suratt BT, Boyson JE, Budd RC, Alcorn JF, Flavell RA, Eisenbarth SC, Poynter ME. Interleukin-1 receptor and caspase-1 are required for the Th17 response in nitrogen dioxide-promoted allergic airway disease. *Am J Respir Cell Mol Biol.* 2013 May;48(5):655-64. PMID: 23371061

Palvinskaya T, Antkowiak M, Burg E, Lenox CC, Ubags N, Cramer A, Rincón M, Dixon AE, Fessler MB, Poynter ME, Suratt BT. Effects of acute and chronic low density lipoprotein exposure on neutrophil function. *Pulm Pharmacol Ther.* 2013 Aug;26(4):405-11. Epub 2012 Oct 17. PMID: 23084986 / PMCID: PMC3573240

Rincon M, Irvin CG. Role of IL-6 in asthma and other inflammatory pulmonary diseases. *Int J Biol Sci.* 2012;8(9):1281-90. Epub 2012 Oct 25. PMID: 23136556 / PMCID: PMC3491451  
Rincon M. Interleukin-6: from an inflammatory marker to a target for inflammatory diseases. *Trends Immunol.* 2012 Nov;33(11):571-7. Epub 2012 Aug 8. PMID: 22883707

Rincon M. Special issue on interleukin-6 (IL-6). *Int J Biol Sci.* 2012;8(9):1225-6. Epub 2012 Oct 25. PMID: 23136550 / PMCID: PMC3491445

Rincon MR, Oppenheimer K, Bonney EA. Selective accumulation of Th2-skewing immature erythroid cells in developing neonatal mouse spleen. *Int J Biol Sci.* 2012;8(5):719-30. Epub 2012 May 16. PMID: 22701342 / PMCID: PMC3371569

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Saligrama N, Noubade R, Case LK, Poynter ME, Teuscher C. H(1)R expression by CD11B(+) cells is not required for susceptibility to experimental allergic encephalomyelitis. *Cell Immunol*. 2012 Jul-Aug;278(1-2):27-34. doi: 10.1016/j.cellimm.2012.06.012. Epub 2012 Jul 14. PMID: 23121973 / PMCID: PMC3490133

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Wall EH, Hewitt SC, Liu L, del Rio R, Case LK, Lin CY, Korach KS, Teuscher C. Genetic control of estrogen-regulated transcriptional and cellular responses in mouse uterus. *FASEB J*. 2013 May;27(5):1874-86 Epub 2013 Jan 31. PMID: 23371066 / PMCID: PMC3633824

#### Publications in Progress:

Botten, J., King, B., Klaus, J., and Ziegler, C. Pathogenic Old World Arenaviruses. (2013) In *Viral Hemorrhagic Fevers*, edited by Sunit Singh and Daniel Ruzek. Taylor and Francis Group/CRC Press.

Bramwell K, Ma Y, Weis J, Chen X, Zachary J, Teuscher C, Weis J. (2013) beta-Glucuronidase: A Key Regulator of Lyme and Rheumatoid Arthritis Severity. *Science* (Submitted).

Krementsov DN, Noubade R, Dragon JA, Otsu K, Rincon M, Teuscher C. (2013) p38 MAP kinase: A female-specific therapeutic target in central nervous system autoimmunity. *Annals of Neurology* (Submitted).

Krementsov DN, Thornton TM, Rincon M, Teuscher C. (2013) The emerging role of p38 MAP kinase in multiple sclerosis and its models. *Molecular and Cellular Biology* (Submitted).

Krementsov DN, Wall EH, Martin R, Noubade R, Del Rio R, Mawe GM, Bond JP, Poynter ME, Blankenhorn EP, and Teuscher C. (2013) Histamine H3 Receptor Integrates Peripheral 1 Inflammatory Signals in the Neurogenic Control of Immune Responses and Autoimmune Disease Susceptibility. *PLoS One* (In press).

Saligrama S, Case LK, Kremmentsov DN, and Teuscher C. (2013) Histamine H2 receptor signaling-by-environment interactions determine susceptibility to experimental allergic encephalomyelitis. *J Autoimmunity* (submitted).



## Division of Infectious Diseases

Christopher Grace, MD, FACP, Director

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



The Infectious Diseases (ID) Unit is a group of nine attending physicians dedicated to the diagnosis, management, prevention and investigation of infectious diseases. This past year we provided close to 1,628 new inpatient consultations. In September of 2012 began a new collaboration with Rutland Regional Medical Center with Dr. Sarah Mooney coming on staff both at FAHC and RRMC. The outpatient clinics remain vibrant with about 6000 outpatient visits yearly. This effort includes the care of over 440 active patients with HIV in four federally funded Comprehensive Care Clinics in Vermont. The

Comprehensive Care Clinics recently celebrated 25 years of caring since their opening in 1987. The ID Unit outpatient care includes the international traveler's clinic, refugee screening, home IV antibiotics and care for patients with general infectious disease issues. The ID unit works collaboratively with the Vermont Department of Health for diagnosis and treatment of tuberculosis and biological and pandemic influenza preparedness. The ID staff includes the FAHC Hospital Epidemiologist and infection control officer, the Department of Medicine's Associate Director of Residency Training, UVM's medical student Clerkship Director for the Department of Medicine and the Director of the Vaccine Testing Center at UVM.

In addition to daily teaching rounds with medical students, residents and fellows, the physicians are actively involved in the Attacks and Defenses, Neural Sciences, Generations, Connections, Convergence and Doctoring in Vermont, medicine clerkships and acting internships sections of the Vermont Integrated Curriculum. The ID Unit is the home of a two year fellowship training program. The graduating fellows have a 100% board certification pass rate over the past 11 years. This program includes a year of research that has resulted in abstract presentations at the national ID meetings, peer reviewed publications and book chapters.

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

Investigations center on the molecular biology and pathogenesis of *Entamoeba histolytica*, *Salmonella enterica* serovar Typhi, *Campylobacter jejuni*, and *Cryptosporidium* pharmaceutical agent development. The results of Phase I clinical trials developing live attenuated Dengue virus vaccines were recently published as a major article in the Journal of Infectious Diseases. Efforts to start a Cholera vaccine challenge study are well underway. Continuing clinical research efforts include epidemiologic investigations into *Clostridium difficile* infection and risks, HIV service delivery models and outcomes, HIV related biomarkers and exploration of the biologic rationale of oral polio and rotavirus vaccine failure in an international field trial setting.

In addition to clinical revenues, financial support is provided by grants from the NIH, NIAID, Health Services Research Administration (HRSA), Bill and Melinda Gates Foundation, contracts with regional hospitals and FAHC directorships.

## **Faculty**

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

Professor of Medicine

- Director, Infectious Diseases
- Director, ID Fellowship Training Program
- Director at FAHC Part C, HRSA grant for HIV care
- Director at FAHC Part B, HRSA grant for HIV care (Vermont Dept. of Health)
- Consultant: Pandemic Influenza and Bioterrorism, Vermont Department of Health

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

Professor of Medicine

- Chair, Infection Prevention Committee
- Hospital Epidemiologist
- Consultant: Tuberculosis, State of Vermont
- Consultant for Food and Drug Evaluation and Research
- Hospital Infections, Tuberculosis

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

Associate Professor of Medicine

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

### **Beth D. Kirkpatrick, MD**

Associate Professor of Medicine

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

### **Sarah Mooney, MBBCh**

Assistant Professor of Medicine

- Clinical Faculty
- Rutland Regional Medical Center attending

### **Cindy Noyes, MD**

Assistant Professor of Medicine

- Clinical Faculty

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

Assistant Professor of Medicine

- Associate Program Director, ID Fellowship Training Program
- Research Interests: Dengue Fever vaccine development study

**Louis B. Polish, MD**

Associate Professor of Medicine

- Director, Department of Medicine Clerkship Program
- Chair, Infectious Disease Practice Committee
- Director, AIDS Education Training

**Mary B. Ramundo, MD**

Associate Professor of Medicine

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

**Jose Teixeria, PhD**

Research Associate

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

**Fellows**

**Kensley Nichols, MD**

Infectious Disease 2<sup>nd</sup> Year Fellow

- Infectious Disease Fellowship Training Program July 1, 2011 – June 30, 2013
- Research Year: Epidemiology of *Clostridium difficile* infection

**Olha Smolynets, DO**

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

- Infectious Disease Fellowship Training Program July 1, 2012–June 30, 2014

**Nurse Practitioners and Physician Assistants:**

**Deborah Kutzko, FNP**

Nurse Manager, Comprehensive Care clinic

- Travel health
- AIDS Comprehensive Care Clinic

**Hella Douglas, PsychNP**

Comprehensive Care clinic, HIV patient

- HIV Patient Care, mental health

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

**Kelly Fimlaid** – PhD Student, (Kirkpatrick Laboratory)

**Kovi Bessoff** – MD, PhD Student (Huston Laboratory)

**Adam Sateriale** – PhD Student (Huston Laboratory)

**Peter Miller** – PhD Student (Huston Laboratory)  
**Alan Chu** – PhD Student (Huston Laboratory)

**Editorships and Editorial Boards:**

W. Kemper Alston, MD

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

Christopher Huston, MD

- Editorial Board Member – Infection and Immunity
- External reviewer
  - Complexity in biology: molecular aspects of infectious Diseases
  - French-Israel Scientific and Technological Cooperation Agreement
  - Ministry of Science and Technology, Israel
- Ad-Hoc Reviewer
  - National Institutes of Allergy and Infectious diseases
  - ZRG1DM-B(02) Pathogens and Symbiotes
  - ZRG1DM-P(02) Parasites and vectors study section

**Study Sections and Federal Advisory Boards:**

**Major Faculty Awards:**

Beth Kirkpatrick, MD

2012 Bailey K. Ashford Medal recipient, for distinguished work in Tropical Medicine  
The American Society of Tropical Medicine

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

Beth D. Kirkpatrick MD. Co-Principal Investigator

Exploration of the biologic causes for the underperformance of oral polio and rotavirus  
vaccination in Bangladesh and India

\$1,450,000 Bill and Melinda Gates Foundation

Total award \$17,000,000

Beth Kirkpatrick, MD  
The Operation of a Facility for the Study of infectious agents, vaccines and antimicrobials in  
adult and pediatric human subjects  
RFP #NIHAO2008011 Subaward  
04/01/2009 – 03/31/13  
\$4,400,000

Christopher Grace, MD FACP  
Ryan White Part C Grant for HIV Care  
Non- competing grant award  
July 1, 2012 – June 30, 2013  
\$580,506 Federal HRSA

Christopher Grace, MD FACP  
Ryan White Care Act Part B  
July 1, 2012 – June 30, 2013  
\$240,484 Federal

Christopher Grace, MD FACP  
TB Control and Surveillance, Public Health Preparedness & Response for Bioterrorism  
Centers for Disease Control and Prevention Investigations and Technical Assistance  
08/06/2012 - 06/30/2013  
\$25,000.00 Federal

Deborah Kutzko, FNP  
HIV Counseling, Oral testing, and Referral – S.A . F. E.  
Public Awareness / promotion of HIV Testing  
1/1/2012 – 12/31/2013  
\$77,146 Federal

Sarah Mooney, MD  
New England AIDS Education Training  
Subaward from UMASS  
7/1/2012 – 6/30/2013  
Direct Costs \$63,000

Christopher Huston, MD  
NIH COBRE  
Vermont Immunobiology/ Infectious Diseases Center  
Mechanism of *Entamoeba histolytica* phagocytosis  
Annual direct costs \$146,061

Christopher Huston, MD  
NIH/ NIAID  
Molecular Mechanism of *Entamoeba histolytica* phagocytosis

Annual direct costs \$200,000

Christopher Huston, MD  
The Campbell Foundation  
Targeting human proteins for treatment of cryptosporidiosis  
Annual Direct Costs \$63,636

Christopher Huston, MD  
Medicines for Malaria Venture (2012)  
Repurposing anti-malaria drug leads to develop a treatment for cryptosporidiosis  
\$50,000

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

Durbin A, Kirkpatrick BD, Pierce K, Elwood D, Larsson CJ, Lindow J, Tibery C, Sabundayo B, Shaffer D, Talaat K, Hynes N, Wanionek K, Carmolli M, Luke C, Murphy B, Subbarao K, and Whitehead S. A Single Dose of Any of Four Different Live Attenuated Tetravalent Dengue Vaccines is Safe and Immunogenic in Flavivirus-naïve Adults: A Randomized, Double-blind Clinical Trial. *Journal of Infectious Diseases* 2013;207 (March 15):957-965

Lindow J, Durbin A, Whitehead S, Pierce K, Carmolli M, Kirkpatrick B. Vaccination of Volunteers with low-dose, live-attenuated, dengue viruses leads to serotype-specific immunologic and virologic profiles. *Vaccine* 2013 31(33):3347-3352

Sateriale A, Vaithilingam A, Donnelly L, Miller P, and Huston C. Feed-Forward Regulation of Phagocytosis by *Entamoeba histolytic*. *Infection and Immunity* 80(12):4456-4462

Bessoff K, Sateriale A, Lee K, and Huston C. Drug Repurposing Screen Reveals FDA-Approved Inhibitors of Human HMG-CoA Reductase and Isoprenoid Synthesis That Block *Cryptosporidium parvum* Growth. *Antimicrobial Agents and Chemotherapy* 2013, 57(4):1804-1814

Alston WK, Ahern J. A Longitudinal index of Multidrug-resistant organisms at an academic medical center reveals true declines in incidence. *Infection Control and Hospital Epidemiology* 2013 34:107

Entamoeba genetic diversity and virulence.  
Sing U, Huston CD  
Book Chapter in Evolution of Virulence of Eukaryotic Microbes  
Editors: Sibley D, Howlett B, Heitman J  
New York, NY Wiley-Blackwell August 2012  
ISBN 978-1-118-03818-5

Meningitis and Encephalitis  
Noyes C, Huston CD  
Book Chapter in: Critical Care Secrets, 5<sup>th</sup> ed.  
Editors: Parsons PE, Wiener-Kronish JP  
Philadelphia, PA. Elsevier inc. 2012  
ISBN 978-0-323-08500-7



## **Division of Nephrology**

Richard J. Solomon, MD, Director

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



Our division is the primary provider of care for patients with kidney diseases in Vermont and upstate New York. We provide kidney replacement therapies for patients with end-stage kidney disease including in-center hemodialysis and home dialysis, by either peritoneal or short daily hemodialysis and treatment of acute kidney failure using continuous kidney replacement therapies in the intensive care unit. Our experienced staff members are committed to training patients for a variety of home dialysis therapies. In conjunction with the

Department of Surgery, we care for patients undergoing kidney or kidney-pancreas transplantation. In addition to patients with primary kidney diseases, we serve as a referral base for patients with complicated hypertension, electrolyte disorders, kidney stones, and genetic kidney diseases. Faculty provide both inpatient and outpatient consultation, and are nationally recognized for our expertise in the management of acid-base and electrolyte disorders, diabetic nephropathy, hypertension, and acute kidney failure.

Our faculty is involved in the training of medical students, fellows and internal medicine housestaff. We support primary care providers throughout the region by providing educational programs on hypertension treatment, clinical kidney disease prevention, and dialysis and transplantation.

We are engaged in clinical and epidemiologic research supported by a variety of grants (Federal, UVM, industry and foundation). Ongoing trials involve novel therapies for control of hypertension, prevention of acute kidney injury, improving care of patients on dialysis, and innovative educational programs for fellows in Nephrology.

### ***Service:***

#### ***Services Offered***

Our doctors offer specialty expertise in a number of problems, including:

- Acute and chronic kidney failure
- Kidney transplantation
- Kidney stones
- Electrolyte disturbances
- Acid-base balance disorders

We also provide specialty care in acute and chronic hemodialysis on-site and a number of home options, including peritoneal dialysis, home hemodialysis including the NxStage System.

Our hemodialysis clinics are located in multiple locations across the state.

### ***Hypertension***

The Nephrology Clinic provides a program for the comprehensive diagnosis and management services for all forms of difficult to manage hypertension in conjunction with Fletcher Allen Surgery and Radiology.

The Burlington Clinic also provides plasmapheresis services for patients with systemic diseases involving the kidney; and provides support services for kidney and kidney/pancreas transplantation in conjunction with Fletcher Allen Surgery.

### ***Regional Dialysis Services***

The Clinic has an extensive outreach program with dialysis units in Barre, Rutland, St. Albans, South Burlington, and Newport. We visit these units regularly and are available for both on-site inpatient and outpatient consultation in Barre, Rutland, St. Albans, and Newport.

### ***Education***

The fellowship training program accepts two trainees each year for a two-year program. The program includes a first year of hospital consultation service, and a second fellowship year including a rotation on the in-hospital transplant service, and elective time in pathology and radiology. During the second year, fellows are also expected to pursue scholarly activities leading to presentations at national meetings and publication of results.

These projects often involve direct participation in multicenter clinical research trials, investigator initiated research, and collaborative inter-department quality improvement projects. During the two years of fellowship training, the fellows have weekly half day continuity clinics in chronic kidney disease, and a second clinic at our satellite dialysis facility following in-center end stage kidney disease patients. They also have a monthly home dialysis clinic to follow patients on peritoneal dialysis and home dialysis. During the second year, fellows participate in the outpatient transplant follow-up clinic.

### ***Patient Care***

We provide kidney replacement therapies for patients with end-stage kidney disease including in-center hemodialysis and home dialysis, by either peritoneal or short daily hemodialysis and treatment of acute kidney failure using continuous kidney replacement therapies in the intensive care unit. The unit has an experienced staff committed to training patients for a variety of home dialysis therapies. In conjunction with the Department of Surgery, the nephrology Unit cares for patients undergoing kidney or kidney-pancreas transplantation.

## ***Research***

Division of Nephrology faculty conduct investigator initiated research and participates in multicenter clinical trials in areas of dialysis care, chronic kidney disease, hypertension, and acute kidney injury.

## ***Clinical Trials***

Our team is actively recruiting for a number of clinical trials. Ongoing trials involve novel therapies for control of hypertension, prevention of acute kidney injury, improving care of patients on dialysis, and innovative educational programs for fellows in Nephrology.

## **Faculty**

### **Richard J. Solomon, MD**

Professor of Medicine

Director, Nephrology Division

### **Academic Interests**

- Endothelial dysfunction in diabetes and renal disease
- Mechanisms of renal ischemia
- Acute kidney injury Prevention of contrast induced nephropathy (CIN)

### **Research Interests**

- Regulation of electrolyte homeostasis in marine species  
Educational initiative for patients with early renal insufficiency (PEAK program)  
Pharmacology of antihypertensive drugs  
Prevention and treatment of ischemic acute renal failure, including contrast nephropathy  
Treatment of progressive renal failure, including diabetic nephropathy

### **Varun Agrawal, M.D.**

Assistant Professor of Medicine

### **Academic Interests**

- Obesity mediated kidney disease
- Nephrology educational research

**Shirley Chang, M.D.**

Assistant Professor of Medicine

**Academic Interests**

- Kidney/Pancreas Transplantation
- Diabetic Nephropathy
- Pediatric Nephrology

**F. John Gennari, M.D.**

Emeritus Professor of Medicine

**Academic Interests**

- Renal physiology
- Acid-base and electrolyte homeostasis
- Fluid and solute transport in the kidney

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

Professor of Medicine

**Academic Interests**

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

**Dana Negoj, M.D.**

Associate Professor of Medicine

**Academic Interests**

- Home Dialysis
- CKD Education
- Clinical Nephrology Teaching

**Research Interests**

- Peritoneal Dialysis
- Quality improvement in home dialysis
- CKD education
- Nephrology training in home dialysis modalities

Jeffrey Rimmer, M.D.  
**Professor of Medicine**

#### Academic Interests

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

**Alan Segal, M.D.**  
Associate Professor of Medicine  
Fellowship Program Director

#### Academic Interests

- Acute Kidney Injury
- Fluid and Electrolyte Disorders
- Home Dialysis
- Efficient and Comprehensive Care in CKD and ESKD

#### Research Interests

- Cellular and Molecular Physiology of Ion Channels
- Membrane Transport
- Innovations in Medical Education

**Wolfgang Weise, M.D.**  
Associate Professor of Medicine

#### Academic Interests

- Progression of renal disease

- Glomerular Disease
- Renal Vasculitis
- Systemic Diseases and the Kidney

### **Fellows**

M. Adel Abdessamad – Second Year Fellow  
Igor Rojkovskiy – Second Year Fellow

Adam Horeish – First Year Fellow  
Ziad Arabi – First Year Fellow

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

Margaret Butler, ANP

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

none

### **Endowed Professorships:**

Richard J. Solomon, M.D.  
Patrick Professor of Medicine

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

F. John Gennari, M.D.  
Section Chairman - Fluid, electrolyte and acid-base disorders, American Society of Nephrology annual meeting, 2012

Virginia Hood, MBBS, MPH, MACP  
Past President- American College of Physicians

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

Varun Agrawal, M.D.  
Ad-hoc reviewer: Clinical Journal of American Society of Nephrology, Annals of Internal Medicine, BioMed Central Nephrology, International Journal of Hypertension

F. John Gennari, M.D.  
Advisory Board: Acid-base and Electrolyte Teaching Cases, American Journal of Kidney

## Diseases

Alan Segal, M.D.

Editorial Board: American Journal of Physiology, Renal

Richard Solomon, MD

Editorial Board: US Nephrology

Ad hoc reviewer: Clinical Journal of the American Society of Nephrology; Journal of the American Society of Nephrology; Nephrology Dialysis and Transplantation; Critical Care Medicine; Investigative Radiology; Radiology; Circulation; Journal of the American College of Cardiology

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

Alan Segal, M.D.

US Advisory Board, Baxter Healthcare

Richard Solomon, M.D.

Special Reviewer: NIDDK,NIH

Advisory Board, Biomarker Consortium, Foundation for NIH

### **Major Faculty Awards:**

Virginia Hood, M.D. – Best Doctor Award, US News

– Vermont Medical Society Distinguished Service Award 2012

Richard Solomon, M.D. – Best Doctor Award, US News

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

**Varun Agrawal, M.D.**

- Mini-grant for National Kidney Foundation, Maryland

**Dana Negoj, M.D.**

- 2011-2012  
Keryx Biopharmaceuticals “A 3 – Period 58 – Week Safety and Efficacy trial of KRX – 0502 ( ferric citrate ) in Patients with End – Stage Renal Disease (ESRD) on Dialysis” – Principal Investigator
- 2012  
Dialysis Outcomes and Practice Patterns Study DOPPS (Principal Investigator - participant St. Albans Dialysis Clinic)

### **Richard Solomon, M.D.**

- SIMPLICITY HTN-3 Trial: Metronic (renal denervation for refractory hypertension).
- BEACON: REATA Pharm (Bardoxolone for chronic kidney disease and type 2 diabetes).
- ALTITUDE: Novartis Pharm (Aliskiren in Type 2 diabetes with renal insufficiency).
- ALLOCURE: Stem cell therapy for AKI post CABG
- BOSS (Bicarbonate or saline study) in patients undergoing PCI.

### **Wolfgang Weise, M.D.**

- A Randomized Double-blind, Placebo-controlled, Phase 3 Study to Assess the Efficacy and Safety of AMG 416 in the Treatment of Secondary Hyperparathyroidism in Subjects with Chronic Kidney Disease on Hemodialysis
- A Multi-Center Longitudinal, Observational Study of Patients with Autosomal dominant Polycystic Kidney Disease

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

Agrawal V, Jaar BG, Frisby XY, Chen SC, Qiu Y, Li S, Whaley-Connell AT, McCullough PA, Bomback AS; KEEP Investigators. Access to health care among adults evaluated for CKD: findings from the Kidney Early Evaluation Program (KEEP). *Am J Kidney Dis* 59(3 Suppl 2):S5-15, 2012

Agrawal V, Segal A, Jhaveri KD. Nephrology crossword: Dyskalemias. *Kidney Int* Apr;81(8):803-4, 2012

Cassel C, Hood VL, Bauer W. A Physician Charter: The Tenth Anniversary. *Ann Intern Med*, 157:290-92, 2012

Hood VL. ACP Ethics on Parsimonious Care. *AZ Medicine*, 18-19, Summer 2012

Hood VL, Weinberger SW. High value cost-conscious care: An international imperative. *European Journal Internal Medicine*, online March 28, 2012

Li LP, Franklin T, Du H, Papdopolou-Rosenzweig M, Carbray J, Solomon R, Prasad P. Intra-renal oxygenation by BOLD MRI in Contrast Nephropathy Model: Effect of the Viscosity and Dose, *Invest Radiol* (accepted), 2012

Negoi D, Khanna R, Nolph KD. History of Peritoneal Dialysis. In Dialysis: History, Development and Promise. Editors: Ing TS, Rahman M, Kjellstrand CM , 2012



## Primary Care Internal Medicine

Allen Repp, MD, MS, Director

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



Primary Care Internal Medicine (PCIM) specializes in diagnosing, treating, and preventing medical problems in adolescents, adults, and the elderly. We work as a team to provide a medical home for our patients in clinic and around-the-clock care for our patients admitted to the hospital.

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

### *Service:*

Our clinical service includes approximately 70 faculty and community physicians, nurse practitioners, physician assistants, and mental health specialists. We have four outpatient sites in Chittenden County and an active hospitalist service. We also see patients at numerous skilled nursing facilities and Fanny Allen Acute Rehabilitation.

Over the past year we welcomed exceptional new faculty: Drs. Alison Landrey, Anne Breña, Amy Lynn Teleron, and Shaden Eldakar-Hein. Dr. Jennifer Borofsky will join us this summer.

In the office setting, patients are seen for a variety of acute and chronic medical problems, preventive care, health maintenance and preoperative exams. Our group has been a national leader in developing innovative models for care delivery. All four outpatient sites have been NCQA recognized as level 2 or 3 Patient Centered Medical Homes. Over the past year, we have been laying the foundation for transforming our care processes to enhance the patient experience and deliver optimal care to our population of patients.

Our physicians care for many geriatric patients in Chittenden County, attending to elderly patients living independently, in assisted living, in local nursing homes, and at hospice. We hold the medical directorships for 3 local skilled nursing facilities and for the VNA Hospice.

In the inpatient setting, our hospitalist service provides 24x7 attending and consultative care at Fletcher Allen. Additionally, we provide physician leadership to the rapid response team

(CATS Team), which responds to inpatients with medical emergencies throughout the hospital. Our hospitalist team has been engaged in numerous institutional quality improvement initiatives. We also offer medical consultation to patients in the inpatient acute rehabilitation program at Fanny Allen Rehabilitation Center.

This year PCIM faculty and providers will conduct approximately 100,000 patient encounters and generate over 150,000 work RVUs.

Our faculty and providers are engaged in service at the state and national levels. Drs. Menzies, Clough and Grant were appointed to the OneCare Vermont Clinical Advisory Board. Dr. Pasanen serves as the Governor for the Vermont Chapter for the American College of Physicians and the UVM Medical Alumni President. Dr. Patricia King chairs the Vermont Board of Medical Practice and sits on Federation of State Medical Boards Advisory Council to USMLE and the National Board of Medical Examiners Standards Setting Committee for USMLE Step 1. Dr. Halle Sobel and Dr. Mark Pasanen participate in the Vermont Medicaid Drug Utilization Board. Dr. Isaura Menzies was appointed to the Green Mountain Care Board Technical Advisory Group. Faculty participation in committees and task forces at the College of Medicine and Fletcher Allen Health Care is extensive.

#### *Education:*

Division faculty members play a pivotal role in teaching and directing courses for a broad audience of clinical learners in the outpatient and inpatient settings. Our educational programs cover a wide spectrum, from primary care to tertiary care, communication skills to statistics, and from pre-medical students to post-graduate continuing medical education.

At the UVM College of Medicine, our faculty members act as preceptors, instructors, and facilitators for courses at all levels of the Vermont Integrated Curriculum. Additionally, we serve as Course Directors for Doctoring in Vermont (Dr. Beatty), Convergence (Dr. King), Outpatient Medicine Clerkship (Dr. O'Brien), Bridge (Dr. Beatty) and the Medicine Acting Internship (Dr. Levine). Administrative leadership positions at the College of Medicine include Associate Dean for Clinical Education (Dr. Bertsch), Associate Dean for Primary Care at the College of Medicine (Dr. Maclean), and Associate Chair for Education in the Department of Medicine (Dr. Levine). As course directors and administrative leaders, these faculty members were deeply involved in the preparations for the successful LCME review in 2013.

We also play key roles in the clinical education of the Internal Medicine residents. The Given Burlington practice houses the Internal Medicine Resident Clinic – where the Internal Medicine residents practice under the supervision of our preceptors and firm leaders in a busy clinic environment. In the inpatient setting, Hospitalists serve as Teaching Attending for the 4 general medicine teaching teams throughout the year – offering clinical supervision, clinical education, lectures, and evaluation to resident physicians and medical students. Additionally, our inpatient faculty physicians lead the Medicine Consult elective for residents and medical students and a Hospital Medicine Acting Internship.

As Director and Associate Director, respectively, Dr. Levine and Dr. Pasanen provide key leadership to the Internal Medicine Residency Program. Our faculty members have been recognized numerous times by the resident physicians for teaching excellence. In June 2013, Dr. Pinckney received the William Osler, M.D. Award for Outstanding Teacher of the Year in General Internal Medicine.

Drs. King and Sandoval continue their work on Frymoyer Scholars projects – “Teaching Professionalism through Lessons from the Board of Medical Practice” (Dr. King) and “Optimal Patient to Provider Communication in the Outpatient Medical Clinic with Electronic Health Record and the Development of Health Care Curriculum/Faculty Development” (Dr. Marie Sandoval).

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

### ***Research***

Many of our clinical faculty conduct research via the General Internal Medicine Research unit and provide mentorship, resources, and a scholarly community that supports faculty from many departments in their investigations. We have a diversity of scholarly interests among our faculty including clinical trials of immunizations, the impact of innovative models for primary care, narcotic-related adverse events in inpatients, narcotic prescribing practices in the outpatient setting, communication practices around inter-hospital transfer, and VTE prevention in acute medically ill patients.

### **Faculty**

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

##### **Jennifer Ayer, MD**

Assistant Professor of Medicine

##### **Dennis Beatty, MD**

Assistant Professor of Medicine

Doctoring in Vermont Course Director, Vermont Integrated Curriculum, UVM College of Medicine

Bridge Course Director, Vermont Integrated Curriculum, UVM College of Medicine

##### **Jennifer Gilwee, MD**

Assistant Professor of Medicine

Associate Health Care Service Leader, PCIM

**Jason Gramling, MD**

Assistant Professor of Medicine

**Jonathan Hayden, MD**

Associate Professor of Medicine

**Alison Landrey, MD**

Assistant Professor of Medicine

**Marie Sandoval, MD** (Site Clinical Leader)

Assistant Professor of Medicine

**David Ziegelman, MD**

Assistant Professor of Medicine

**Given Health Care Center Burlington**

**Claudia Berger, MD** (Site Clinical Leader)

Assistant Professor of Medicine

**Jaina Clough, MD**

Assistant Professor of Medicine

Medical Director of Hospice for Visiting Nurses Association

**Mia Hockett, MD, MPH**

Assistant Professor of Medicine

**Robert Karp, MD**

Associate Professor in Medicine (Emeritus)

Geriatric Medicine

**Benjamin Littenberg, MD** (see Division of GIM-Research)

Professor of Medicine

Director, Division of General Internal Medicine - Research

**Scott Luria, MD**

Associate Professor of Medicine

**Isaura Menzies, MD**

Assistant Professor of Medicine

Medical Director of Starr Farm and Birchwood Terrace Skilled Nursing Facilities

- Geriatric 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**

Assistant Professor of Medicine

Co-Director, Internal Medicine Resident Clinic

**Given Health Care Center Essex**

**Nathan Ayer, MD, MPH**

Assistant Professor of Medicine

**Tania Bertsch, MD**

Associate Professor of Medicine

Associate Dean for Clinical Education

- Medical Education

**Diane Haddock, MD** (Site Clinical Leader)

Assistant Professor of Medicine

**Patricia King, MD, PhD**

Associate Professor of Medicine

Convergence Course Director, Vermont Integrated Curriculum, UVM College of Medicine

- Medical Education

**Mark Levine, MD**

Professor of Medicine

Associate Chair for Education, Department of Medicine

Internal Medicine Residency Program Director

Director, Internal Medicine Acting Internship

**Charles MacLean, MD** (see Division of GIM-Research)

Professor of Medicine

Associate Dean for Primary Care

- Health services research and epidemiology

**Roberta O'Brien, MD**

Associate Professor of Medicine

Director, Internal Medicine Clerkship

**Given Health Care Center Williston**

**Anne Breña, MD**

Assistant Professor of Medicine

**Marvin Klikunas, MD**

Associate Professor of Medicine

Medical Director, The Arbors

- Geriatric Medicine

**Lucy Miller, MD**

Assistant Professor of Medicine

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

Associate Professor of Medicine

**PCIM Hospitalist Service**

**Mireille Anawati, MD**

Assistant Professor of Medicine

**Paul Crainich, MD**

Assistant Professor of Medicine

**Shaden Eldakar-Hein, MD**

Assistant Professor of Medicine

**Florian Foerg, MD**

Assistant Professor of Medicine

Director, Medicine Consult Service

**Zechariah Gardner, MD**

Assistant Professor of Medicine

**Steve Grant, MD**

Assistant Professor of Medicine

Associate Director, Hospitalist Service

HR Physician Liaison, UVM Medical Group

**Mohit Jindal, MD**

Assistant Professor of Medicine

**Erin Kurek, MD, MPH**

Assistant Professor of Medicine

**Carrie Lyon, MD, MPH**

Assistant Professor of Medicine  
Associate Director, Hospitalist Service

**Sadie Mills, MD**

Assistant Professor of Medicine

**Chad Mitchell, MD**

Assistant Professor of Medicine

**Mark Pasanen, MD**

Associate Professor of Medicine  
Associate Program Director, Internal Medicine Residency Program  
Interim Section Head for Hospital Medicine

**Allen Repp, MD, MS**

Associate Professor of Medicine  
Health Care Service Leader and Unit Director, Primary Care Internal Medicine

**Paul Slavik, MD**

Assistant Professor of Medicine

**Jaspinder Sra, MD**

Assistant Professor of Medicine  
Medical Director, CATS Team  
Physician Informaticist, PRISM

**Amy Lynn Teleron, MD**

Assistant Professor of Medicine

**Dennis Woods, MD**

Assistant Professor of Medicine

**Nurse Practitioners, Physician Assistants, and Mental Health Specialists:**

**Aesculapius Medical Center**

Tara Abele, NP  
Tristan Adie, NP  
Diane Bell, NP  
Rachel Brodie, PA

**Given Health Care Center Burlington**

Candis Cousins, PA

Gabrielle Mikula, NP  
Tracey Niquette, NP

**Given Health Care Center Essex**

Sarah Bushweller, PA  
Alison Hall, PA

**Given Health Care Center Williston**

Nancy Berg, NP  
Darla Witmer, NP

**Starr Farm (Skilled Nursing Facility)**

Katharine Murphy PhD, MS, APRN

**Birchwood (Skilled Nursing Facility)**

Kathleen Williams, NP

**Leadership in Professional Societies:**

Mark Pasanen, M.D.

- Governor, Vermont Chapter of the American College of Physicians

Patricia King, MD, PhD

- Chair of the Vermont Board of Medical Practice
- Chair of the Licensing Committee, Vermont Board of Medical Practice
- Liaison to the Vermont Practitioner Health Program

Sarah Bushweller, PA

- Board of Directors for the Physician Assistant Academy of Vermont
- Vermont representative to the House of Delegates, American Academy of Physician Assistants

**Editorships and Editorial Boards:**

Mark Levine, MD

- Reviewer: Annals of Internal Medicine, MKSAP Syllabus, American College of Physicians, Journal of General Internal Medicine

Allen Repp, MD, MS

- Reviewer: Journal of Hospital Medicine

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:**

Patricia King, MD

- Frymoyer Scholar Award in April 2012

Richard Pinckney, MD

- Osler Teacher of the Year Award in June 2013

Marie Sandoval, MD

- Frymoyer Scholar Award in April 2012

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

**Menzies, IB**, Mendelson, DA, Kates SL and Friedman SM (2012) The Impact of Comorbidity on Perioperative Outcomes of Hip Fractures in a Geriatric Fracture Model. *Geriatric Orthop Surg Rehabil* 3(3): 129-34

Zakai NA, Callas PW, **Repp AB**, Cushman M. (2013) Venous thrombosis risk assessment in medical inpatients: the medical inpatients and thrombosis (MITH) study. *J Thromb Haemost.* 11(4):634-41

**Sra J** and **Repp AB** (2012) Hyponatremia. *Hosp Med Clin.*1: e199–e20

Young J, **Gilwee J**, Holman M, Messier R, Kelly M, Kessler R. (2012) Mental health, substance abuse, and health behavior intervention as part of the patient-centered medical home: a case study. *Translational Behavioral Medicine.* 2(3): 345-354



## Division of Pulmonary and Critical Care Medicine

Anne Dixon, MD, Director

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



The Pulmonary Critical Care Division has made major changes in its clinical services over the last 12 months, the faculty has made significant research advances which have garnered national and international recognition, and the division has initiated important new pre- and post-graduate educational programs.

The Division manages critically ill patients in the Medical Intensive Care unit, inpatient pulmonary and critical care consults, and has a number of sub-specialty clinics including those in interstitial lung disease, cystic fibrosis, lung cancer, asthma and cancer survivorship. The Division provides a full range of pulmonary diagnostic services including bronchoscopy, pulmonary function testing and other services; evaluation of sleep disorders; and outpatient pulmonary rehabilitation. The Division continues to expand the range of services provided, and will welcome two new faculty in the next few months: Dr. Menon who has a special interest in critical care outreach and end of life care, and Dr. Kinsey who will start an interventional pulmonary program for our institution.

The Division instituted 24/7 coverage in the medical intensive care unit over the last year. This has significantly increased attending physician coverage for critically ill patients to improve quality of care in the intensive care units, and has been very well received by house-staff, nursing and other specialties. The pulmonary clinic continues to increase the number of patients seen in clinic every year, which likely reflects the increasing burden of lung disease in our community and throughout the United States.

The Division has a national and international reputation in research, especially in the areas of asthma, stem cell research and obesity and lung disease. Members of the Division published over 100 peer reviewed articles during the last year, obtained significant funding from the NIH and foundations. This year the Division will host major conferences welcoming investigators from around the globe for a conference on Stem Cells and Lung disease in July, and a conference on Obesity and Lung Disease in October. The research program continues to expand, and enjoys considerable success and major recognition.

The Division is committed to education and training. Members of the Division have a leadership role in the medical school curriculum, including organizing the respiratory section of the award winning Cardiovascular Respiratory and Renal Foundations Course. Faculty members have a major role in teaching medical students, residents, and the three year Pulmonary and Critical Care Fellowship program continues to produce excellent pulmonary and critical care physicians who have gone on to pursue a variety of career pathways in academic medicine and clinical practice venues. Education of medical students and other trainees is a major mission of the Pulmonary and Critical Care Division.

The last year has been a busy and successful year for the Division as outlined in detail for all members of the Division below.

### **Faculty**

(list all faculty, Director first, then alphabetically with academic rank (note any medical administrative position, i.e. MICU Director), ex:

#### **Anne E. Dixon, MD**

Associate Professor Medicine

Director, Pulmonary Disease and Critical Care Medicine

- Asthma
- Chronic Obstructive Pulmonary Disease

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

Associate Professor of Medicine

MICU Director

- Acute Lung Injury (ALI)

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

Professor of Medicine

Department of Molecular Physiology & Biophysics

Interim Director, School of Engineering

- Monitoring of lung function in patients and animals
- Automatic control of ventilatory support
- Mechanical determinants of bronchial responsiveness

#### **Ryan Clouser, DO**

Assistant Professor of Medicine

- Critical Care Medicine and Pulmonary Disease

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

Professor of Medicine (Emeritus)

- Occupational Lung Disease
- Asthma
- Pulmonary Fibrosis
- Silicosis
- Sarcoidosis
- Bronchoalveolar Lavage

#### **Susan Dunning, MD**

Assistant Professor of Medicine

- Sleep Apnea
- Sleep Disorders
- Chronic Respiratory Failure

**Joshua Farkas, MD**

Assistant Professor of Medicine

- Critical Care Medicine and Pulmonary Disease

**Garth Garrison, MD**

Assistant Professor of Medicine

- Clinical Neurophysiology

**Charles Irvin, PhD**

Professor Pulmonary Sciences and Critical Care Medicine

Professor Department of Molecular Physiology & Biophysics

Director, Vermont Lung Center

- Asthma
- Pulmonary Physiology
- Animal Models of Lung Disease

**David Kaminsky, MD**

Associate Professor of Medicine

Director, Pulmonary Disease Fellowship Program

- Asthma
- Pulmonary Function Testing

**Laurie Whittaker Leclair, MD**

Associate Professor of Medicine

Adult CF Program Director, FAHC CF Center Member

- Adult Cystic Fibrosis (CF)

**Lennart Lundblad, PhD**

Research Assistant Professor

- Lung mechanics in human as well as in laboratory animals
- Asthma
- COPD
- Thoracic gas volume
- Airway pharmacology

**Yolanda Mageto, MD, MPH**

Associate Professor of Medicine

- Epidemiology of Interstitial Lung Diseases
- Pathophysiology, diagnosis and management of Idiopathic pulmonary Fibrosis
- Asthma community outreach and outcomes

**Polly E. Parsons, MD**

E.L. Amidon Professor of Medicine

Chair, Department of Medicine

- Critical Care Medicine

**Matthew Poynter, PhD**

Associate Professor of Medicine

- Airway Biology

**Renee Stapleton, MD, PhD**

Assistant Professor of Medicine

- Nutrition in Critical Care
- Acute Lung Injury
- End of Life Care

**Benjamin Suratt, MD**

Associate Professor of Medicine

- Chemotherapy and hematopoietic stem cell transplantation complications

**Charlotte Teneback, MD**

Assistant Professor of Medicine

- Cystic fibrosis, pulmonary rehabilitation

**Daniel Weiss, MD, PhD**

Professor of Medicine

- Acute Lung Injury
- Gene and cell therapies for lung diseases

**Fellows**

Ali Al-Alwan, MD

Mary Ellen Antkowiak, MD

Jad Harb, MD

Alan Lee, MD

Sanjiva Lutchmedial, MD

Binh Nguyen, MD

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

Katie Bird, NP  
Lily Sender, PA

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

Jennifer Ather (PhD candidate from Maastricht University)  
Rebecca Martin (PhD candidate from UVM's CMB Program, MD candidate from UVM)  
Benjamin Schott (MS candidate from UVM's Experimental Pathology program)  
Niki Ubags, Graduate student, in collaboration with Maastricht University, The Netherlands  
MaryEllen Antkowiak, PCCM Fellow (Fellowship research training)  
Tatsiana Palvinskaya, PCCM Fellow (Fellowship research training)  
Marisa Liu, UVM Medical student (Second year research rotation)  
Alix Lambrecht, Leuven (Belgium) Medical student (Leuven University Research Fellowship)  
Estee Dilli, UVM Undergraduate (summer)  
Maya Sayarath, Mount Holyoke College Undergraduate (Mount Holyoke Summer Research Fellowship Program)  
Clare Martin, UVM Undergraduate (BIOCHEM 381/382)  
Prema Menon, MD, Clinical Instructor (research mentor)  
Ali Al-Alwan, MD, Senior Fellow (research mentor)  
Timothy Leclair, MD, Senior Resident (research mentor)  
Whitney Creed, MS3  
Anees Daud, MS4  
Robert Disantis, MD (PGY2)  
Sanjiva Lutchmedial, MD (PGY5)  
Bradford Smith, PhD: post-doctoral fellow  
Joshua Pothen, BSc: PhD student in bioengineering  
Bryce Benson, BSc: PhD student in bioengineering (co-supervised with Peter Spector, MD)  
Richard Carrick, BSc: PhD student in bioengineering (co-supervised with Peter Spector, MD)  
David Chapman, Ph.D., Post Doc  
Darcy Wagner PhD post-doc  
Melissa Lathrop Phd post-doc  
Charles Parsons post-doc (surgery resident)

### **Endowed Professorships:**

Polly E. Parsons MD  
E.L. Amidon Professor of Medicine

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

Anne Dixon, MD

- American Lung Association Asthma Clinical Research Centers, Executive Steering Committee (member)
- American Thoracic Society Membership Committee (Chair)
- American Thoracic Society Allergy Immunology and Inflammation Program Committee (member)
- American Thoracic Society Minority Trainee Travel Awards Committee (member)

Gilman Allen, MD

- AOA Councilor
- ATS RSF Assembly Web Director
- ATS Website Editorial Board
- ATS RSF Assembly Executive Planning Committee

Jason Bates, PhD

- Member of Nomination Committee, Respiratory Structure & Function Assembly, American Thoracic Society

David Kaminsky, MD

- Continue to serve on the ATS Proficient Standards Committee for Clinical Pulmonary Laboratories
- Continue to serve on the National Board of Respiratory Care

Laurie Whittaker Leclair, MD

- Cystic Fibrosis Foundation  
Therapeutic Development Network Steering Committee

Lennart Lundblad, PhD

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

Yolanda Mageto, MD, MPH

- ATS Chair Minority Trainee Travel Award committee 2013-2014
- ATS Chair Membership Committee \

Polly E. Parsons MD

ATS: Members in Transition and Training Committee: member 2008-present

Publications Policy Committee: member 2011-2012

Finance Committee: member 2011- 2012

Association of Professors of Medicine:

Nominating Committee: 2011- 2012

Alliance for Academic Internal Medicine:

Accreditation Committee: Chair 2011-present

Board of Directors (ex-officio): 2011- present

Multi-society National Task Force to Develop a Critical Care Research Agenda:  
Chair: 2009 – present

Renee Stapleton, MD PhD

- American Thoracic Society  
Committee for Members in Transition and Training  
Member 2006-2013  
Chair-Elect, 2009-2010  
Chair, 2010-2013  
Critical Care Assembly Planning Committee  
Member, 2009-2013  
Chair, 2011-2013  
  
Critical Care Assembly Program Committee, 2009-2012  
  
Behavioral Sciences and Health Services Assembly Program Committee, 2012-present  
  
Scientific Advisory Committee (reviews all ATS grants), 2013-present  
Education Committee, 2013-present
- Canadian Critical Care Nutrition Clinical Practice Guidelines Committee, External Panel Member, 2008-present
- Data Safety Monitoring Board, “Randomized trial of an interdisciplinary communication intervention to improve patient and family outcomes in the ICU,” PI JR Curtis and RA Engelberg, University of Washington, 2009-present.
- Steering Committee, “A Randomized double-Blind Placebo-Controlled Trial of Ganciclovir/Valganciclovir for Prevention of Cytomegalovirus Reactivation in Acute Lung Injury,” PI M Boeckh, University of Washington, 2010-present.

Benjamin Suratt, MD

- AII Nominations Committee, ATS, 2013-14
- AII Planning Committee, ATS, standing

Charlotte Teneback, MD

- Serving on the scientific and research committee, and the Pulmonary Rehab Registry Committee of the American Association of Cardiovascular and Pulmonary Rehabilitation.

Daniel Weiss, MD, PhD

- Chair, Respiratory Tract Committee for International Society for Cell Therapy
- Chair, Stem Cell Working Group for ATS
- Membership in a variety of other committees

**Editorships and Editorial Boards:**

Jason Bates, PhD

- Associate Editor, Journal of Applied Physiology
- Editorial Board Member, Journal of Clinical Monitoring and Computing
- Editorial Board Member, CRC Critical Reviews in Bioengineering

Charles Irvin, PhD

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

Lennart Lundblad, PhD

- Proceedings Editor with the Pulmonary Research Group

Polly E. Parsons MD

Up-to-Date: Editor-in-Chief, Critical Care Section 2004-present

Editorial Board Member:

American Journal of Respiratory and Critical Care  
Medicine 2005-present

CHEST 2005-present

Proceedings of the American Thoracic Society: 2006-2012

Matthew Poynter, PhD

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

Daniel Weiss, MD, PhD

- Editorial Board: Am J Resp Cell Molecular Biology

**Study Sections and Federal Advisory Boards:**

Anne Dixon, MD

- Member NHLBI review panel for Patient-Oriented and Career Enhancement Award for Stem Cell Research (K 23, 24, 25), 2007 – present
- Ad-Hoc Member, VA Merit Review Panel for Pulmonary, 2011 - present
- Ad Hoc Member NIH Dissemination and Implementation Research in Health (DIRH) Study Section Committee, September 2012

- Ad Hoc member “Agence Nationale de la Recherche” (National Research Agency of France), October 2012
- Co-Chair: Special Emphasis Panel, Member Conflicts: Asthma, COPD, Cystic Fibrosis and Lung Host Defense Applications, March 2013

Gilman Allen, MD

- Cystic Fibrosis Canada

Gerald Davis, MD

- Chair, Data and Safety Monitoring Board (DSMB), Idiopathic Pulmonary Fibrosis Clinical Research Network (IPFNet), National Heart, Lung & Blood Institute

Charles Irvin, PhD

- Co-chair working group on mentors NIH NHLBI
- Ad Hoc P01 grants (2), NIAID, National Institutes of Health
- Ad Hoc LRP grants, NIMHD, National Institutes of Health
- Ad Hoc P01 grants, NIAID, National Institutes of Health
- Ad Hoc R01 grants, NIMHD, National Institutes of Health
- Ad Hoc LRP grants, NIMHD, National Institutes of Health (2 panels)
- Ad Hoc R23 grants, NIAID, National Institutes of Health

David Kaminsky, MD

- American Lung Association, Research Grant Review Committee, Study Section C

Lennart Lundblad, PhD

- Guest Editor with the Pulmonary Pharmacology and Therapeutics

Polly E. Parsons MD

NHLBI Next Generation Resuscitation Research Workshop 2013

NHLBI Scientific Advisory Council: member 2011-present

Matthew Poynter, PhD

- NIH LCMI Study Section ad hoc
- NIH Counteract Study Section ad hoc
- NIH NIAID Asthma and Allergic Diseases Corporative Research Centers scientific review panel ad hoc

Renee Stapleton, MD, PhD

- World Health Organization Respiratory Working Group for development of ICD-11, 2010-present
- Asked to serve as a member of the review panel for the NIH NHLBI PETAL (Prevention and Early Treatment of Acute Lung Injury) Network which was to occur in December

2012. Review panel meeting cancelled to administrative change in grant mechanism. New RFA has been posted; intent to participate on review panel in 2013.

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

Daniel Weiss, MD, PhD

- NIH SBIR Study Section
- Study section chief, Connecticut Stem Cell Research Committee
- Reviewer for Italian CF Foundation, Canadian CF Foundation

### **Major Faculty Awards:**

Charles Irvin, PhD

Assistant Dean for Faculty, College of Medicine

David Kaminsky, MD

Department of Medicine, 2013 Resident EL Amidon Award, Outstanding Teacher of the Year, Subspecialty Medicine

Laurie Whittaker Leclair, MD

Frymoyer Scholar July 2012-June 2014

Polly E. Parsons MD

American Thoracic Society Distinguished Achievement Award 2013

Renee Stapleton, MD, PhD

University of Vermont Medical Group Junior Researcher of the Year, 2012

Benjamin Suratt, MD

SPARK-VT, 2013

Charlotte Teneback, MD

Cystic Fibrosis Foundation award, just renewed for Year 2 of "Adult Care Excellence in Cystic Fibrosis"

Daniel Weiss, MD, PhD

Department of Medicine, Distinguished Research Mentor Award

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

Anne Dixon, MD

U01 HL089464 (*originally funded as an RO1*)

9/30/09-6/30/14

Role (PI)

Study of Asthma and Nasal Steroids (STAN): This is a grant for a multicenter study for a randomized placebo controlled trial to determine the efficacy and mechanisms of action of nasal steroids in the treatment of asthma. The plan is to recruit 380 adults and children with poorly controlled asthma and chronic rhinosinusitis at 20 centers (affiliated with the American Lung Association Asthma Clinical Research Center network).

Jason Bates, PhD

R01 HL103405 “A multi-scale approach to airway hyperresponsiveness: from molecule to organ”, Role: Co-PI

P30 RR 031158 “Translational Research in Lung Biology and Disease”, Role: Co-Investigator and Core Leader (PI: Charles G. Irvin)

RC4 HL106625 “Bioengineering New Lungs from Cadaveric Lung Scaffolds”, Role: Co-Investigator (PI: D. Weiss)

Gerald Davis, MD

“A Randomized Double-Blind Placebo-Controlled, Phase 3 Study of the Safety and Efficacy of Pirfenidone in Patients with Idiopathic Pulmonary Fibrosis (PIPF-006 / CAPACITY) & open label extension.

InterMune Inc.

2006 -

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

“A Phase 2, Multicenter, Multinational, Randomized, Double-Blind, Placebo-Controlled, Parallel-group, Dose-ranging Study Evaluating the Efficacy and Safety of CNTO 888 Administered Intravenously in Subjects with Idiopathic Pulmonary Fibrosis”

Centocor R&D, Inc.

2009 -

Yolando Mageto, MD (Co-Principal Investigator for site)

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

“A Phase 2, Multicenter, Multinational, Randomized, Double-Blind, Placebo-Controlled, Parallel-group, Study Evaluating the Safety and Efficacy of Treatment with Ustekinumab or Golimumab in Subjects with Chronic Sarcoidosis”

Centocor R&D, Inc.

2010 -

Yolando Mageto, MD (Co-Principal Investigator for site)

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

“A Phase 2, Sequential, Ascending Dose Study to Characterize the Safety, Tolerability, Pharmacokinetic and Biological Activity Of CC-930 In Idiopathic Pulmonary Fibrosis (IPF) 2011 -

Celgene Cooperation

Yolando Mageto, MD (Principal Investigator for site)

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

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

Fibrogen Inc.

2011 -

Yolando Mageto, MD (Principal Investigator for site)

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

“A Phase 1, Open Label, Multi-Dose Study to Evaluate the Safety, Tolerability, and Biologic Effects of Three Doses of IW001 in Patients with Idiopathic Pulmonary Fibrosis (IPF)

Immuneworks

2011 -

Yolando Mageto, MD (Principal Investigator for site)

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

“PIPF-016 entitled “A Randomized, Double-Blind, Placebo-Controlled, Phase 3 Study of the Efficacy and Safety of Pirfenidone in Patients with Idiopathic Pulmonary Fibrosis”

InterMune Inc.

2011 -

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

Yolando Mageto, MD (Co-Investigator for site)

Charles Irvin, PhD

NIH/NHLBI T32 HL076122-01 (PI: C.G. Irvin)

04/01/09-03/31/14

Title: Multidisciplinary Training in Lung Biology

Role: Principle Investigator

The major goal of this training grant is to produce outstanding, independent biomedical scientists who investigate the mechanisms, manifestations, preventions and cures for lung disorders. This grant supports both pre and post-doctoral fellows.

NIH/NHLBI U13 RR022675-01 (PI: C. G. Irvin)

09/25/05-02/31/15

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

Role: Principal Investigator

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

American Lung Association (PI: C.G. Irvin)

07/01/09-06/30/14

Title: Asthma Clinical Research Center (ACRC)

Role: Principal Investigator of the Northern New England Consortium (NNEC)

ALA-ACRC

Major goal are to investigate the pathogenesis of asthma in the format of a multi-center network. I am the Oi of the NNEC study site and we currently are recruiting applicants for 3 NIH sponsored studies and industry sponsored studies.

NIH P30 RR 03115801-01 (PI: C.G. Irvin) 08/15/10-06/30/15

Title: Translational Research in Lung Biology and Disease

Role: Principal Investigator

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

NIH/NHLBI U01's and industry trials (Glaxo)

Title: Multicenter trials of the ALA: STAN, SOYA and CPAP

Role: NNEC (Northern New England Consortium) Co-investigator

This U01 grant funds the multicenter studies on asthma treatment: CPAP for asthma (CPAP), soy supplements (SOYA, LABA step-down study (LASST) and nasal steroids (STAN). The study of STAN is led by the NNEC (PI: A. Dixon). Our center meets or exceeds all performance and recruiting goals for all studies to date.

NIH U01 HL089464 (PI: Dixon) 09/30/2009-06/30/2014

Title: Study of Asthma and Nasal Steroids (STAN)

Role: Co-investigator

This is a grant for a multicenter study for a randomized placebo controlled trial to determine the efficacy and mechanisms of action of nasal steroids in the treatment of asthma. The plan is to recruit 380 adults and children with poorly controlled asthma and chronic rhinosinusitis at 20 centers (affiliated with the American Lung Association Asthma Clinical Research Center network).

NHLBI R01 HL089495 (PI: P Lehrer/F Wamboldt) 02/01/10 – 01/31/14

Title: "Heart Rate Variability Biofeedback: It's Role in Asthma Therapeutics"

Role: Co-investigator

To test the effect of heart rate variability biofeedback versus a credible placebo biofeedback on airways hyperreactivity and inflammation as well as other asthma indices and outcomes. My role is to over read all lung function results, contribute to the MOP's, study design, data interpretation and manuscript development.

David Kaminsky, MD

R34 HL113290-01, NIH/NHLBI

The Efficacy of Pranayama in COPD

PI: David Kaminsky, MD (10%)

05/01/12-04/30/15

American Lung Association - Asthma Clinical Research Center

PI: Charles G. Irvin, Ph.D.

Role on Project: Co-Investigator (5%)

7/1/04-6/30/14

University of Vermont NIH COBRE Translational Research in Lung Biology  
PI: Irvin  
Pilot Investigational Project: Predictors of Dyspnea/Fatigue Syndrome in Breast Cancer Survivors before and after an Exercise Intervention  
PI: Suratt  
Role on project: Co-PI (5%)  
08/01/12-07/31/13

United Therapeutics, Inc.  
Changes in the Diffusing Capacity of the Lung for Carbon Monoxide (DLCO) in Response to Vasodilator Therapy in Patients with Pulmonary Arterial Hypertension  
PI: David Kaminsky, MD (< 5%)  
5/1/13-4/30/14

University of Vermont NIH COBRE Translational Research in Lung Biology  
PI: Irvin  
Pilot Investigational Project: Non-invasive detection of airway injury associated with airway closure in asthmatic subjects  
PI: Kaminsky (7%)  
11/16/11-11/15/13

Laurie Whittaker Leclair, MD

Therapeutic Development Network (TDN) Award, Cystic Fibrosis Foundation  
01/01/12-12/31/14  
The goal of this award is to maintain clinical research infrastructure to facilitate participation in multicenter clinical trials in CF.  
Role on Grant: co-PI

Frymoyer Scholar's Award, University of Vermont  
07/01/12-6/30/14

“Simulation Training for Multidisciplinary Intensive Care Unit Teams: Active Learning to Promote Best Practice”

The goal of this award is to create a novel interdisciplinary curriculum for providers of the medical intensive care unit team.

Role on Grant: PI

Coulter Foundation Research Grant, Griswold (PI), Coulter Foundation  
07/01/08-07/31/12

The goal of this award is to determine if genetically engineered lysozyme is effective for the treatment of pulmonary infections

Role on Grant: Collaborator

Lennart Lundblad, PhD

Hoffman La-Roche, Inc.  
Title: Bronchoconstriction and the role of mast cells  
Role: Principal Investigator

1R01HL107291-A1 PI: Poynter  
NIH/NHLBI  
Role: Co-investigator  
Serum Amyloid A3 in Allergic Asthma: An Endogenous Mediator of Disease Severity

2R01HL085646-05A1. PI: van der Vliet  
NIH/NHLBI  
Role: Co-investigator  
Title: Dual Oxidase in Airway Epithelial Repair and Inflammation

NKT Therapeutics Inc.  
Role: PI: L.K.A. Lundblad  
To study the effects of selective elimination of iNKT cells on the asthmatic phenotype in experimental asthma.

Yolanda Mageto, MD MPH

Principal Investigator: A phase 2a, Open-Label, Single Arm Study to Evaluate the Safety, Tolerability and Efficacy of FG-3019 in Subjects with Idiopathic Pulmonary Fibrosis.

Principal Investigator: 52 week, double blind, randomized ,placebo-controlled trial evaluating the effect of oral BIBF 1120, 150mg twice daily, on annual Forced Vital Capacity decline, in patients with Idiopathic Pulmonary Fibrosis.

Sub PI: A Randomized, Double –Blind, Placebo-controlled, phase 3 study of the efficacy and safety of Pirfenidone in patients with Idiopathic Pulmonary Fibrosis

Polly Parsons MD

IU01HL102547 – M. Boeckh (PI)

NIH:NHLBI

A Randomized Phase II Trial of CMV Prevention in Acute Lung Injury

UVM Site PI: **P. Parsons**

6/1/10-5/31/13

U01 HL108713-01- M. Matthay (PI)

NIH:NHLBI

"Allogeneic Human Mesenchymal Stem Cells for the Treatment of Acute Lung Injury".

UVM Site PI: **P. Parsons**

9/11-8/14

Matthew Poynter, PhD.

R01 (Poynter)

04/01/2012 – 03/31/2016

3.00 calendar

1R01HL107291-A1

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

Clinical Innovator Award (Poynter)

07/01/2012 – 06/30/2015

1.8

calendar

FAMRI

Airway Epithelial Control of Asthma Severity

Renee Stapleton, MD, PhD

Pharmaconutrients as Therapies for Critical Illness: Zinc in Severe Sepsis

1 K23 HL105654, 10/1/11-9/30/15

NIH/NHLBI

Role: PI

Fletcher Allen Health Care/University of Vermont Medical Group Research Award

“Intravenous Zinc as a Therapy for Severe Sepsis: A Pilot Study”

12/1/10-11/30/12 (currently in no-cost extension)

Role: PI

National Palliative Care Research Center

“Changing the paradigm of CPR: Exploring Informed Assent”

7/1/10-6/30/12 (currently in no-cost extension)

Role: PI

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

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

Per-patient reimbursement

Role: Site-Co-PI and Steering Committee Member

Charlotte Teneback, MD

Program for Adult Care Excellence in Cystic Fibrosis, CF Foundation, \$81,000 over 3 years

Benjamin Suratt, MD

SPARK-VT, Co-PI's Suratt & Stapleton

VLC COBRE, PI Suratt

LCCRO Pilot Award, Co-PI's Suratt & Dittus

COM BPG, PI Suratt

R01, PI Poynter

DOM Bridge, PI Suratt

Daniel Weiss, MD, PhD

NIH ARRA RC4HL106625 (DJ Weiss PI) 9/17/10- 8/30/13

Bioengineering Functional Lung Tissue

The major goals of this project are to determine the optimal conditions of growth factors, oxygen tension, and cyclic mechanical stretch on development of functional lung tissue using de-cellularized mouse lungs as 3-dimensional scaffolds.

NHLBI R21HL108689 (DJ Weiss PI) 9/1/11-8/31/13

Submitted in response to RFA-HL-11-026, "New strategies for growing 3D tissues"

De-Cellularized Human Lungs for Ex Vivo Lung Regeneration

The goals of this project are: 1) To determine key differences between de-cellularized lung scaffolds obtained from different donors. 2) To optimize media and growth factor conditions for growth and differentiation of hMSCs, hESCs, and human iPS cells into functional three dimensional lung tissue when inoculated into de-cellularized human lung slices and apply this technology to whole de-cellularized human lungs.3) NIH/NHLBI

NIGMS COBRE P30 GM103532 (Irvin) 8/1/12- 7/31/13

Pilot Proposal DJ Weiss

"Mechanisms of

Stretch-Induced SPC Expression"

Role: Pilot Project PI

The major goals of this project are to assess effects of 2 and 3 dimensional stretch on SPC expression in type 2 alveolar epithelial cells and in distal airway progenitor cells.

NASA EPSCOR Research Grant (Hill) 9/1/09-8/31/13 (NCE)

NASA/EPSCOR (DJ Weiss co-investigator)

The impact of microgravity-grown *Pseudomonas aeruginosa* and *Haemophilus influenzae* on human lung cells: integration of virulence, lung cell immune responses, and the volatile metabolome

Role: Co-Investigator

The major goals of this project are to determine the effects of simulated microgravity on virulence factors expressed by *Pseudomonas aeruginosa* and *Haemophilus influenzae* and of simulated microgravity on the response of airway epithelial cell exposure to *Pseudomonas aeruginosa* and *Haemophilus influenzae*.

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## **Division of Rheumatology**

Edward Leib, MD, Interim Director

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



The members of the Division of Rheumatology and Clinical Immunology provide high quality patient care to residents of Vermont, up-state New York and other contingent areas, contribute to the teaching of residents of Fletcher Allen Health Care and medical students of the UVM College of Medicine, and perform both bench and clinical research. Our faculty consists of eight physicians, all of whom are board certified in Internal Medicine and Rheumatology, as well as a Physician's Assistant. The combined Rheumatology staff and the Osteoporosis Center, a part of our Unit, welcomed nearly 1100 patients monthly, generating 1600 work RVUs monthly. In addition to bone densitometry, we have an on-site infusion center, and provide point of care musculoskeletal ultrasound. In addition to our Rheumatology services, we also offer a metabolic bone clinic, and in collaboration with our colleagues in the Pulmonary Division, we hold an Interstitial Lung Disease Clinic. We have well-established out-patient satellite clinics at Central Vermont Medical Center and Copley Hospital. We cover in-patient consults at FAHC on a 24-7 basis.

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

### **Faculty**

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

Professor of Medicine

Division Chief, Rheumatology and Clinical Immunology

Director, The Osteoporosis Center, FAHC

- Osteoporosis and Metabolic Bone Diseases
- Rheumatoid Arthritis

Dr. Leib has been a leading authority internationally on developing guidelines and positions on the appropriate use of Bone Densitometry. He has also been involved recently in clinical studies utilizing a new technology for ascertaining fracture risk called Trabecular Bone Score (TBS). In the past year, he has co-authored presentations on TBS at the annual meetings of the American College of Rheumatology and the American Society of Bone and Mineral Research as well as at the European Congress of Osteoporosis and Osteoarthritis. He also mentored Dr. YX Teh, a Fellow in Endocrinology, who presented a study on interpretation of bone densitometry of the spine at the annual meeting of the Endocrine Society. He directs the Osteoporosis Center and the

Metabolic Bone Clinic, and is certified to read Bone Densitometry by the International Society for Clinical Densitometry. Dr. Leib is on the Editorial Board of the Journal of Clinical Densitometry.

### **Sheldon Cooper, MD, MACR**

Professor of Medicine

- Rheumatoid Arthritis
- Osteoarthritis
- Regional Rheumatic Syndromes

Dr. Cooper provides care for individuals with arthritis and musculoskeletal problems. He is Principal Investigator for trials that evaluate the effectiveness and mechanism of action of biologic drugs in the treatment of Rheumatoid Arthritis. The focus is on tocilizumab, a monoclonal antibody to the IL-6 receptor. Recent studies have demonstrated that IL-6 blockade reduces the levels of IgG4 antibodies to citrullinated peptides. Current studies are designed to understand how IL-6 blockade alters B-cell function and the role of IgG4 autoantibodies in the pathogenesis of RA.

### **Ralph Budd, MD**

Professor of Medicine, Microbiology & Molecular Genetics

- Inflammatory Arthritis
- Systemic Lupus Erythematosus

Dr. Budd and his team have been working on four projects related to the activity of caspases and c-FLIP in the immune system. The first demonstrated that the reason certain viruses took FLIP into their own genome as a short form was that it has the ability to turn off the anti-viral interferon response, whereas the full-length long form of c-FLIP does the opposite. Second, they have now linked the level of caspase activity in T cells to their state of metabolism. This has significant implications for which T cells survive an immune response to confer immune memory. The third area is a gene expression study of what genes significantly change expression levels during homeostatic proliferation of T cells. This has implications for why it is important to eliminate these T cells, lest they precipitate autoimmune sequelae. The final study is on gamma/delta T cells in Lyme arthritis, showing how the levels of c-FLIP in dendritic cells profoundly alter their ability to activate the gamma/delta T cells.

Dr. Budd is also an editor of the *Textbook of Rheumatology* 9th Edition, is the Director of the Vermont Center for Immunology and Infectious Diseases, has been a member of several NIH study sections, is a member of the NIH NIAID T32 grant study section, a member of the NIH Special Emphasis Panel and is a member of the Association of American Physicians.

Active Grants:

NIH CORBE (Center of Biomedical Research Excellence)

NIH T32 Training Grant

**Bonita Libman, MD**

Professor of Medicine

- Connective Tissue Disorders
- Systemic Lupus
- Rheumatoid Arthritis

Dr. Libman is the Program Director for the Rheumatology Fellowship Training Program. She received a \$25,000 Fellowship Training Award for 2013-2014 from the American College of Rheumatology Research Foundation. This is the fourth year in succession that the Division has received this award through the efforts of Dr. Libman. Dr. Libman is a member of the American College of Physicians MKSAP 17 Rheumatology Committee. She also chairs the University of Vermont College of Medicine Nominating Committee and the Fletcher Allen Health Care Medical Records Committee.

**Chi Chi Lau, MD**

Associate Professor of Medicine

- Systemic Lupus
- Inflammatory arthritis
- Connective tissue disorders

Re-certified in Rheumatology, 2012.

Obtained re-certification of CME for Rheumatology Rounds.

Dr. Lau has a very busy clinical practice providing excellent care to patients with a variety of complex rheumatic diseases. She is responsible for the units CME reporting and accounting.

**Christine Jones, MD**

Assistant Professor of Medicine

- Scleroderma
- Interstitial Lung Disease and Rheumatic Disease
- Myositis

Last year, following a leave of absence to practice medicine at Thames Hospital in New Zealand, Dr. Jones returned to full time clinical practice at FAHC. She is Co-Founder of the Interstitial Lung Disease Clinic at Fletcher Allen, along with Yolanda Mageto, MD, and continues to participate in the Clinic. Dr. Jones is a member of the Faculty Development Committee at FAHC and is a certified Clinical Densitometrist. She received a teaching grant to work with Internal Medicine Residents, and will be teaching joint examination and injection skills later this year.

**Nicole Hynes, MD**

Assistant Professor of Medicine

- Inflammatory arthritis
- Connective tissue disorders
- Regional pain syndromes

Dr. Hynes participates in our clinical program on a half-time basis. For a number of years she has provided care in less well served areas at Copley Hospital and Central Vermont Medical Center.

**James Trice, MD**

Assistant Professor of Medicine

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

Dr. Trice joined the faculty in 2011. He recently re-certified as a Certified Clinical Densitometrist (CCD) and reads bone densities for the Osteoporosis Center.

**Fellows**

**Narandra Bethina, MD**

Completed Fellowship, June, 2013

**Tatiana Keck, MD**

Completes Fellowship, June, 2014

**Nurse Practitioners and Physician Assistants:**

**Jill Stevenson, PA-C**

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

Martin RA, Ather JL, Lundblad LK, Suratt BT, Boyson JE, **Budd RC**, Alcorn JF, Flavell RA, Eisenbarth SC, Poynter ME. Interleuken-1 receptor and caspase-1 are required for the Th17

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

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 FY2013 UVM Research Grants

| Principal Investigator/ Fellow | Unit | Sponsor  | Project Title   | Start Date | End Date   | Direct     | Indirect   | Total Awarded |
|--------------------------------|------|--|---|------------|------------|------------|------------|---------------|
| Dauerman, Harold L.            | CARD | University of Toledo   | Cardiovascular Outcomes in Renal Atherosclerotic Lesions (CORAL)                                  | 6/1/2005   | 1/31/2015  | \$ 2,351   | \$ 924     | \$ 3,275      |
| LeWinter, Martin M             | CARD | Duke University  | Functional Impact of GLP-1 for Heart Failure Treatment  | 5/22/2013  | 12/31/2999 | \$ 3,120   | \$ 880     | \$ 4,000      |
| LeWinter, Martin M             | CARD | Duke University  | Reliable Evaluation of Dyspnea in the Heart Failure Network ROSE Study RED ROSE - AHF             | 3/15/2013  | 12/31/2999 | \$ -       | \$ -       | \$ -          |
| LeWinter, Martin M             | CARD | Duke University  | Renal Optimization Strategies Evaluation in Acute Heart Failure (ROSE- AHF)                       | 4/4/2013   | 12/31/2999 | \$ -       | \$ -       | \$ -          |
| LeWinter, Martin M             | CARD | National Heart, Lung, and Blood Institute/NIH/DHHS               | New England, New York and Quebec Regional Clinical Center   | 1/1/2013   | 12/31/2013 | \$ 268,065 | \$ 29,187  | \$ 297,252    |
| LeWinter, Martin M             | CARD | National Heart, Lung, and Blood Institute/NIH/DHHS               | Post-Doctoral Cardiovascular Research Training Program  | 7/1/2012   | 6/30/2013  | \$ -       | \$ -       | \$ -          |
| LeWinter, Martin M             | CARD | National Heart, Lung, and Blood Institute/NIH/DHHS               | Post-Doctoral Cardiovascular Research Training Program  | 7/1/2013   | 6/30/2014  | \$ 264,194 | \$ 21,136  | \$ 285,330    |
| Lustgarten, Daniel L           | CARD | University of Rochester  | Late Sodium Current Blockade in High Risk ICD Patients  | 4/1/2012   | 3/31/2013  | \$ 453     | \$ 500     | \$ 953        |
| Lustgarten, Daniel L           | CARD | University of Rochester  | Late Sodium Current Blockade in High Risk ICD Patients  | 12/1/2012  | 11/30/2013 | \$ 2,804   | \$ -       | \$ 2,804      |
| Meyer, Markus F.               | CARD | Medtronic, Inc   | Pacing-Mediated LV Remodeling for the Treatment of Heart Failure with Preserved Ejection Fraction | 5/1/2013   | 4/30/2999  | \$ 46,681  | \$ 12,137  | \$ 58,818     |
| Spees, Jeffrey L.              | CARD | National Institute of Neurological Disorders and Stroke/NIH/DHHS | Control of Reactive Astrocytes by Notch1 and Amyloid Precursor Protein                            | 8/1/2012   | 5/31/2013  | \$ 219,082 | \$ 110,975 | \$ 330,057    |
| Spees, Jeffrey L.              | CARD | National Institute of Neurological Disorders and Stroke/NIH/DHHS | Control of Reactive Astrocytes by Notch1 and Amyloid Precursor Protein                            | 6/1/2013   | 5/31/2014  | \$ 211,094 | \$ 110,824 | \$ 321,918    |
| Toth, Michael John             | CARD | National Institute on Aging/NIH/DHHS                             | Muscle Disuse and Contractile Dysfunction in the Elderly  | 7/1/2013   | 6/30/2014  | \$ 234,854 | \$ 123,298 | \$ 358,152    |
| Watkins, Matthew W             | CARD | Renova Therapeutics, Inc.  | AC6 in Clinical Heart Failure   | 7/1/2012   | 12/31/2999 | \$ 101,177 | \$ 39,738  | \$ 140,915    |
| Watkins, Matthew W             | CARD | Renova Therapeutics, Inc.  | AC6 in Clinical Heart Failure   | 7/1/2012   | 12/31/2999 | \$ -       | \$ -       | \$ -          |
| Watkins, Matthew W             | CARD | Veterans Medical Research Foundation                             | AC6 in Clinical Heart Failure   | 4/1/2012   | 6/30/2013  | \$ -       | \$ -       | \$ -          |

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|--------------------------------|-------------------|---|--|------------|------------|--------------|------------|---------------|
|                                | <b>CARD Total</b> |   |  |            |            | \$ 1,353,875 | \$ 449,599 | \$ 1,803,474  |
| Jetton, Thomas L               | ENDO              | Tufts University  | Pancreas Morphometric Studies of BPA-Treated Obese Mice  | 11/14/2012 | 12/31/2012 | \$ 8,340     | \$ 4,378   | \$ 12,718     |
| Kien, Craig Lawrence           | ENDO              | National Institute of Diabetes and Digestive and Kidney Diseases/NIH/DHHS | Palmitate Metabolism and Insulin Resistance  | 4/1/2013   | 3/31/2014  | \$ 319,514   | \$ 161,355 | \$ 480,869    |
| Leahy, John L                  | ENDO              | National Institute of Diabetes and Digestive and Kidney Diseases/NIH/DHHS | Beta-cell Compensation in Partial Pancreatectomy   | 9/1/2012   | 8/31/2013  | \$ 207,405   | \$ 104,740 | \$ 312,145    |
| Marney, Annis Morison          | ENDO              | Medtronic, Inc  | The Utility of Continuous Glucose Monitoring (CGM) in Detecting Cardiac Autonomic Neuropathy (CAN) and its Impact on Glucose Variability and Cardiac Function in | 3/12/2013  | 3/11/2099  | \$ 58,401    | \$ 12,584  | \$ 70,985     |
| Marney, Annis Morison          | ENDO              | Merck and Company, Inc.   | Effect of Sitagliptin on Short-Term Metabolic Dysregulation of Oral Glucocorticoid Therapy   | 7/5/2012   | 6/30/2999  | \$ 161,901   | \$ 40,475  | \$ 202,376    |
| Tracy, Russell P.              | ENDO              | National Institute of Diabetes and Digestive and Kidney Diseases/NIH/DHHS | Adipose Tissue Amyloid Precursor Protein and Beta-Amyloid  | 9/16/2012  | 9/15/2013  | \$ 47,232    | \$ -       | \$ 47,232     |
|                                | <b>ENDO Total</b> |   |  |            |            | \$ 802,793   | \$ 323,532 | \$ 1,126,325  |
| Ganguly, Eric K                | GI                | University of California, San Francisco                                   | PIANO: Pregnancy in Inflammatory Bowel Disease and Neonatal Outcomes   | 1/1/2013   | 12/31/2013 | \$ 539       | \$ 211     | \$ 750        |
|                                | <b>GI Total</b>   |   |  |            |            | \$ 539       | \$ 211     | \$ 750        |
| Chen, Elizabeth S.             | GIMR              | National Library of Medicine/NIH/DHHS                                     | Leveraging the EHR to Collect and Analyze Social, Behavioral and Familial Factors  | 9/1/2012   | 8/31/2013  | \$ 303,831   | \$ 88,925  | \$ 392,756    |
| Kennedy, Amanda G.             | GIMR              | Fletcher Allen Health Care  | Support for Academic Detailing   | 4/16/2012  | 4/15/2013  | \$ 11,152    | \$ 3,848   | \$ 15,000     |
| Kennedy, Amanda G.             | GIMR              | Vermont AHS Department of Health  | Academic Detailing   | 7/1/2012   | 6/30/2013  | \$ 148,699   | \$ 51,301  | \$ 200,000    |
| Kennedy, Amanda G.             | GIMR              | Vermont AHS Department of Health  | Academic Detailing   | 7/1/2013   | 6/30/2014  | \$ 148,700   | \$ 51,301  | \$ 200,001    |
| MacLean, Charles D             | GIMR              | Health Resources and Services Administration/DHHS                         | HRSA AHEC  | 9/1/2012   | 8/31/2013  | \$ 263,951   | \$ 10,330  | \$ 274,281    |
| MacLean, Charles D             | GIMR              | Northeastern Vermont AHEC   | 2011-2012 Vermont Health Careers Opportunities Pipeline Project  | 9/1/2011   | 8/31/2012  | \$ 39,033    | \$ 13,467  | \$ 52,500     |

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|--------------------------------|----------------------|--|---|------------|------------|--------------|------------|---------------|
| MacLean, Charles D             | GIMR                 | Vermont AHS Department of Health                   | Electronic Loan Repayment Program FY13  | 7/1/2012   | 6/30/2013  | \$ 870,000   | \$ -       | \$ 870,000    |
|                                | <b>GIMR Total</b>    |  |   |            |            | \$ 1,785,366 | \$ 219,172 | \$ 2,004,538  |
| Cushman, Mary                  | HEM/ONC              | Diadexus   | Lipoprotein-Associated Phospholipase A2 (Lp-PLA2) Activity and the Risk of Stroke, Coronary Heart Disease and Cognitive Decline | 8/8/2012   | 8/7/2013   | \$ 51,081    | \$ 26,817  | \$ 77,898     |
| Cushman, Mary                  | HEM/ONC              | University of Alabama at Birmingham                | Etiology of Geographic and Racial Differences in Stroke   | 12/1/2011  | 11/30/2012 | \$ 248,442   | \$ 125,463 | \$ 373,905    |
| Cushman, Mary                  | HEM/ONC              | University of Alabama at Birmingham                | Etiology of Geographic and Racial Differences in Stroke Mortality   | 12/1/2012  | 11/30/2013 | \$ 743,061   | \$ 336,347 | \$ 1,079,408  |
| Cushman, Mary                  | HEM/ONC              | University of Minnesota                            | Epidemiology of Venous Thrombosis and Pulmonary Embolism  | 1/1/2013   | 12/31/2013 | \$ 39,543    | \$ 19,969  | \$ 59,512     |
| Cushman, Mary                  | HEM/ONC              | University of Pittsburgh                           | Exceptional Survival: Trajectories to Functional Aging (CHS All Stars)  | 9/1/2012   | 8/31/2013  | \$ 148,538   | \$ 77,982  | \$ 226,520    |
| Greenblatt, Marc Steven        | HEM/ONC              | University of Utah                                 | Classifying DNS Mismatch Repair Gene Variants of Unknown Significance   | 3/1/2013   | 11/30/2013 | \$ 53,533    | \$ 28,105  | \$ 81,638     |
| Grunberg, Steven M.            | HEM/ONC              | Brigham and Women's Hospital, Inc.                 | CALGB: Cancer and Leukemia Group B Case Study Services  | 4/1/2010   | 3/31/2999  | \$ 62,111    | \$ 6,901   | \$ 69,012     |
| Grunberg, Steven M.            | HEM/ONC              | Brigham and Women's Hospital, Inc.                 | CALGB: Cancer and Leukemia Group B Case Study Services  | 4/1/2010   | 3/31/2999  | \$ 34,110    | \$ 3,790   | \$ 37,900     |
| Verschraegen, Claire F         | HEM/ONC              | GlaxoSmithKline                                    | Pazopanib With Gemcitabine and Docetaxel For The Neoadjuvant Chemotherapy Treatment Of High Risk Sarcomas - A Phase IB Study    | 10/9/2012  | 12/31/2999 | \$ -         | \$ -       | \$ -          |
| Verschraegen, Claire F         | HEM/ONC              | Lake Champlain Cancer Research Organization        | Lake Champlain Cancer Research  | 1/1/2013   | 12/31/2013 | \$ 660,000   | \$ -       | \$ 660,000    |
| Zakai, Neil A                  | HEM/ONC              | National Heart, Lung, and Blood Institute/NIH/DHHS | Regional and Racial Differences in Hemostasis and Risk of Stroke and Heart Disease  | 4/1/2013   | 3/31/2014  | \$ 130,599   | \$ 10,448  | \$ 141,047    |
|                                | <b>HEM/ONC Total</b> |  |   |            |            | \$ 2,171,018 | \$ 635,822 | \$ 2,806,840  |
| Huston, Christopher Dwight     | ID                   | Medicines for Malaria Venture                      | Repurposing Anti-Malaria Drug Leads to Develop a Treatment for Cryptosporidiosis  | 5/1/2012   | 4/30/2013  | \$ 50,000    | \$ -       | \$ 50,000     |

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|--|---------------------|--|--|------------|------------|--------------|------------|---------------|
| Huston, Christopher Dwight             | ID                  | National Institute of Allergy and Infectious Diseases/NIH/DHHS   | Molecular Mechanism of Entamoeba Histolytica Phagocytosis  | 9/1/2012   | 8/31/2013  | \$ 196,020   | \$ 98,990  | \$ 295,010    |
| Huston, Christopher Dwight             | ID                  | National Institute of Allergy and Infectious Diseases/NIH/DHHS   | Novel Approaches to Develop a Treatment for Cryptosporidiosis  | 1/18/2013  | 12/31/2013 | \$ 125,000   | \$ 65,625  | \$ 190,625    |
| Kirkpatrick, Beth D.                   | ID                  | Johns Hopkins University   | Operation of a Facility for the Study of Infectious Agents, Vaccines and Antimicrobials in Adult and Pediatric Human Subjects  | 9/17/2012  | 4/5/2014   | \$ 1,108,640 | \$ 549,191 | \$ 1,657,831  |
| Kirkpatrick, Beth D.                   | ID                  | PaxVax   | A Phase II Randomized, Double-Blind, Placebo-Controlled, Efficacy Trial of a Single Dose of Live Oral Cholera Vaccine Candidate, <i>Vaxchora</i> (CVD 016) in Bangladesh | 6/2/2013   | 6/2/2016   | \$ 1,652,341 | \$ 242,786 | \$ 1,895,127  |
| Kirkpatrick, Beth D.                   | ID                  | University of Virginia   | Exploration of the Biologic Basis for Underperformance of OPV and Rotavirus Vaccines in Bangladesh   | 12/1/2012  | 11/30/2013 | \$ 371,007   | \$ 37,101  | \$ 408,108    |
|  | <b>ID Total</b>     |  |  |            |            | \$ 3,503,008 | \$ 993,693 | \$ 4,496,701  |
| Budd, Ralph C                          | IMMUNO              | National Institute of General Medical Sciences/NIH/DHHS          | Vermont Immunobiology/Infectious Disease Center  | 7/1/2012   | 6/30/2013  | \$ 1,480,987 | \$ 777,518 | \$ 2,258,505  |
| Rincon, Mercedes                       | IMMUNO              | National Institute of Allergy and Infectious Diseases/NIH/DHHS   | p38 MAP Kinase in Early Thymocyte Development  | 2/1/2013   | 1/31/2014  | \$ 230,324   | \$ 116,314 | \$ 346,638    |
| Teuscher, Cory                         | IMMUNO              | National Institute of Neurological Disorders and Stroke/NIH/DHHS | H1R Signaling and Immune Deviation in EAE  | 1/1/2013   | 12/31/2013 | \$ 236,966   | \$ 79,699  | \$ 316,665    |
| Teuscher, Cory                         | IMMUNO              | University of Utah   | Molecular Genetics of Lyme Arthritis   | 6/1/2012   | 5/31/2013  | \$ 44,518    | \$ 22,482  | \$ 67,000     |
| Teuscher, Cory / Kremontsov, Dimitry N | IMMUNO              | National Multiple Sclerosis Society                              | p38 MAPK as a Female-Specific Druggable Target in Autoimmune Disease of the CNS  | 7/1/2012   | 6/30/2013  | \$ 50,271    | \$ -       | \$ 50,271     |
|  | <b>IMMUNO Total</b> |  |  |            |            | \$ 2,043,066 | \$ 996,013 | \$ 3,039,079  |
| Negoi, Dana G                          | NEPH                | Arbor Research Collaborative for Health                          | Dialysis Outcomes and Practice Patterns Study (DOPPS 4)  | 1/1/2013   | 12/31/2013 | \$ 2,771     | \$ 1,089   | \$ 3,860      |
|  | <b>NEPH Total</b>   |  |  |            |            | \$ 2,771     | \$ 1,089   | \$ 3,860      |
| Bates, Jason H.                        | PULM                | University of Massachusetts                                      | A Multi-Scale Approach to Airway Hyperresponsiveness: from Molecule to Organ   | 7/1/2012   | 6/30/2013  | \$ 166,583   | \$ 84,125  | \$ 250,708    |
| Dixon, Anne Elizabeth                  | PULM                | National Heart, Lung, and Blood Institute/NIH/DHHS               | Study of Asthma and Nasal Steroids   | 7/1/2012   | 6/30/2013  | \$ 250,000   | \$ 65,000  | \$ 315,000    |

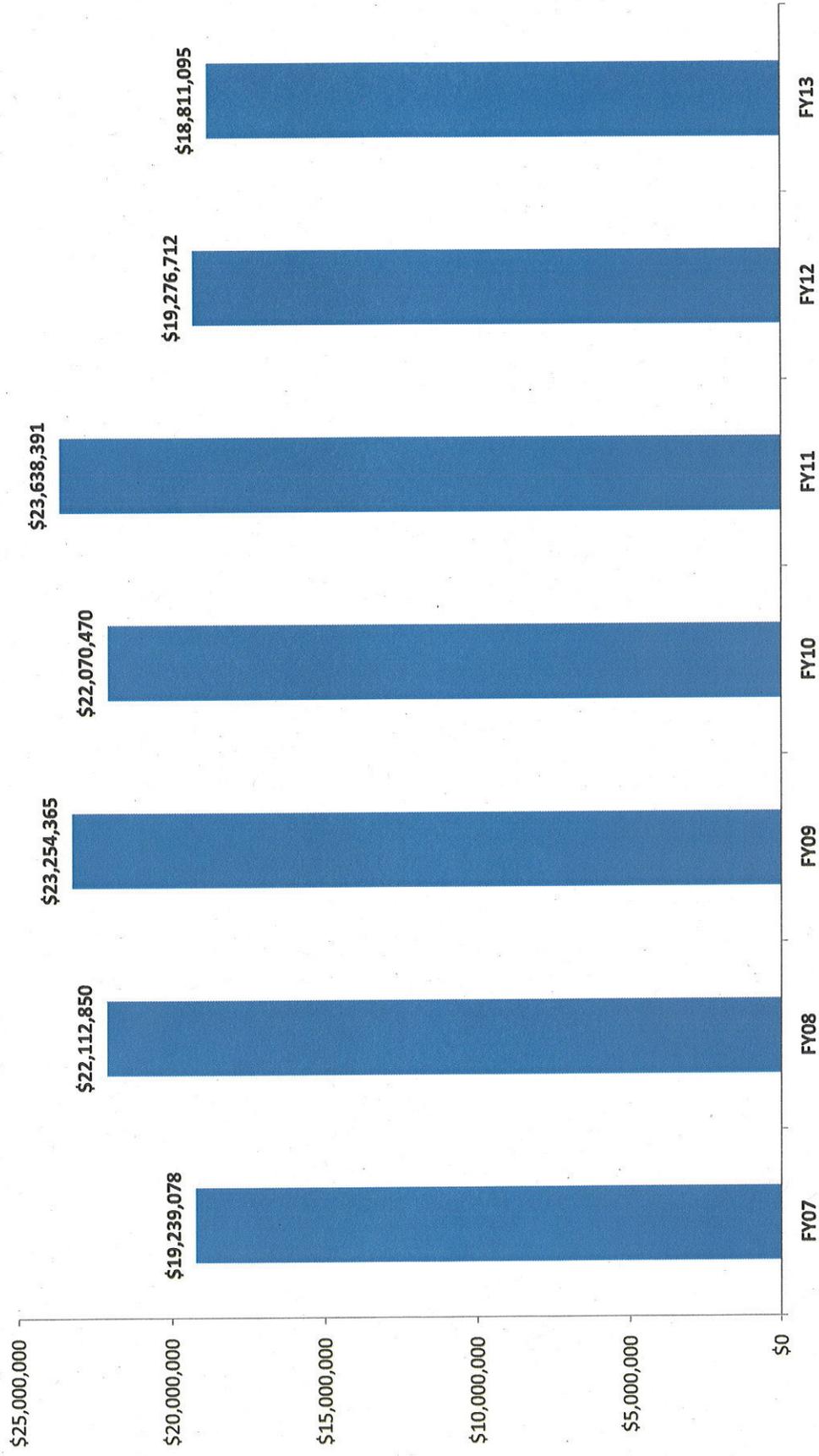
Department of Medicine  
FY2013 UVM Research Grants

| Principal Investigator/ Fellow | Unit | Sponsor   | Project Title   | Start Date | End Date   | Direct     | Indirect   | Total Awarded |
|--------------------------------|------|---|---|------------|------------|------------|------------|---------------|
| Irvin, Charles G               | PULM | American Lung Association                               | ALA-Asthma Clinical Research Center CORE Award  | 7/1/2012   | 6/30/2013  | \$ 20,465  | \$ 2,749   | \$ 23,214     |
| Irvin, Charles G               | PULM | American Lung Association                               | ALA-Asthma Clinical Research Center CORE Award  | 7/1/2012   | 6/30/2013  | \$ 75,000  | \$ -       | \$ 75,000     |
| Irvin, Charles G               | PULM | American Lung Association                               | ALA-Asthma Clinical Research Center CORE Award  | 7/18/2012  | 6/30/2999  | \$ 54,572  | \$ -       | \$ 54,572     |
| Irvin, Charles G               | PULM | National Heart, Lung, and Blood Institute/NIH/DHHS      | Multidisciplinary Training in Lung Biology  | 4/1/2013   | 3/31/2014  | \$ 345,108 | \$ 22,489  | \$ 367,597    |
| Irvin, Charles G               | PULM | National Institute of General Medical Sciences/NIH/DHHS | National IDeA Symposium of Biomedical Research Excellence (NISBRE)  | 1/1/2013   | 12/31/2015 | \$ 45,391  | \$ -       | \$ 45,391     |
| Irvin, Charles G               | PULM | National Institute of General Medical Sciences/NIH/DHHS | Translation Research in Lung Biology and Disease  | 8/1/2012   | 7/31/2013  | \$ 741,670 | \$ 389,377 | \$ 1,131,047  |
| Kaminsky, David A              | PULM | National Heart, Lung, and Blood Institute/NIH/DHHS      | The Efficacy of Pranayama in COPD   | 5/1/2013   | 4/30/2014  | \$ 176,138 | \$ 20,738  | \$ 196,876    |
| Kaminsky, David A              | PULM | United Therapeutics Corporation                         | Changes in Diffusing Capacity of the Lung for Carbon Monoxide (DLCO) in Response to Vasodilator Therapy in Patients with Idiopathic Pulmonary Arteriovenous Malformations | 4/30/2013  | 12/31/2999 | \$ 8,131   | \$ 2,114   | \$ 10,245     |
| Leclair, Laurie W.             | PULM | Cystic Fibrosis Foundation Therapeutics, Inc.           | Vermont CF Center Application to Join the Therapeutics and Development Network  | 1/1/2013   | 12/31/2013 | \$ 78,269  | \$ 6,262   | \$ 84,531     |
| Parsons, Polly E               | PULM | Fred Hutchinson Cancer Center                           | A Randomized Phase II Trial of CMV Prevention in Acute Lung Injury  | 9/1/2012   | 8/31/2013  | \$ 73,749  | \$ 20,797  | \$ 94,546     |
| Poynter, Matthew Edward        | PULM | Flight Attendant Medical Research Institute             | Airway Epithelial Control of Asthma Severity  | 7/1/2012   | 6/30/2013  | \$ 100,000 | \$ 8,500   | \$ 108,500    |
| Poynter, Matthew Edward        | PULM | National Heart, Lung, and Blood Institute/NIH/DHHS      | Serum Amyloid A3 in Allergic Asthma: An Endogenous Mediator of Disease Severity   | 3/1/2013   | 2/28/2014  | \$ 238,000 | \$ 124,950 | \$ 362,950    |
| Stapleton, Renee D.            | PULM | National Heart, Lung, and Blood Institute/NIH/DHHS      | Pharmaco-nutrients as Therapies for Critical Illness: Zinc in Severe Sepsis   | 7/1/2012   | 6/30/2013  | \$ 144,875 | \$ 11,590  | \$ 156,465    |
| Suratt, Benjamin T             | PULM | Astra-Zeneca  | Obesity and Lung Disease  | 9/1/2013   | 10/31/2013 | \$ 5,000   | \$ -       | \$ 5,000      |
| Teneback, Charlotte C          | PULM | Cystic Fibrosis Foundation                              | Pathway to Clinical Excellence in Adult CF Care   | 12/1/2012  | 11/30/2013 | \$ 25,000  | \$ 2,000   | \$ 27,000     |
| Weiss, Daniel J                | PULM | Alpha-1 Foundation                                      | 2013 Stem Cells and Cell Therapies in Lung Biology and Diseases   | 7/1/2013   | 6/30/2014  | \$ 5,000   | \$ -       | \$ 5,000      |

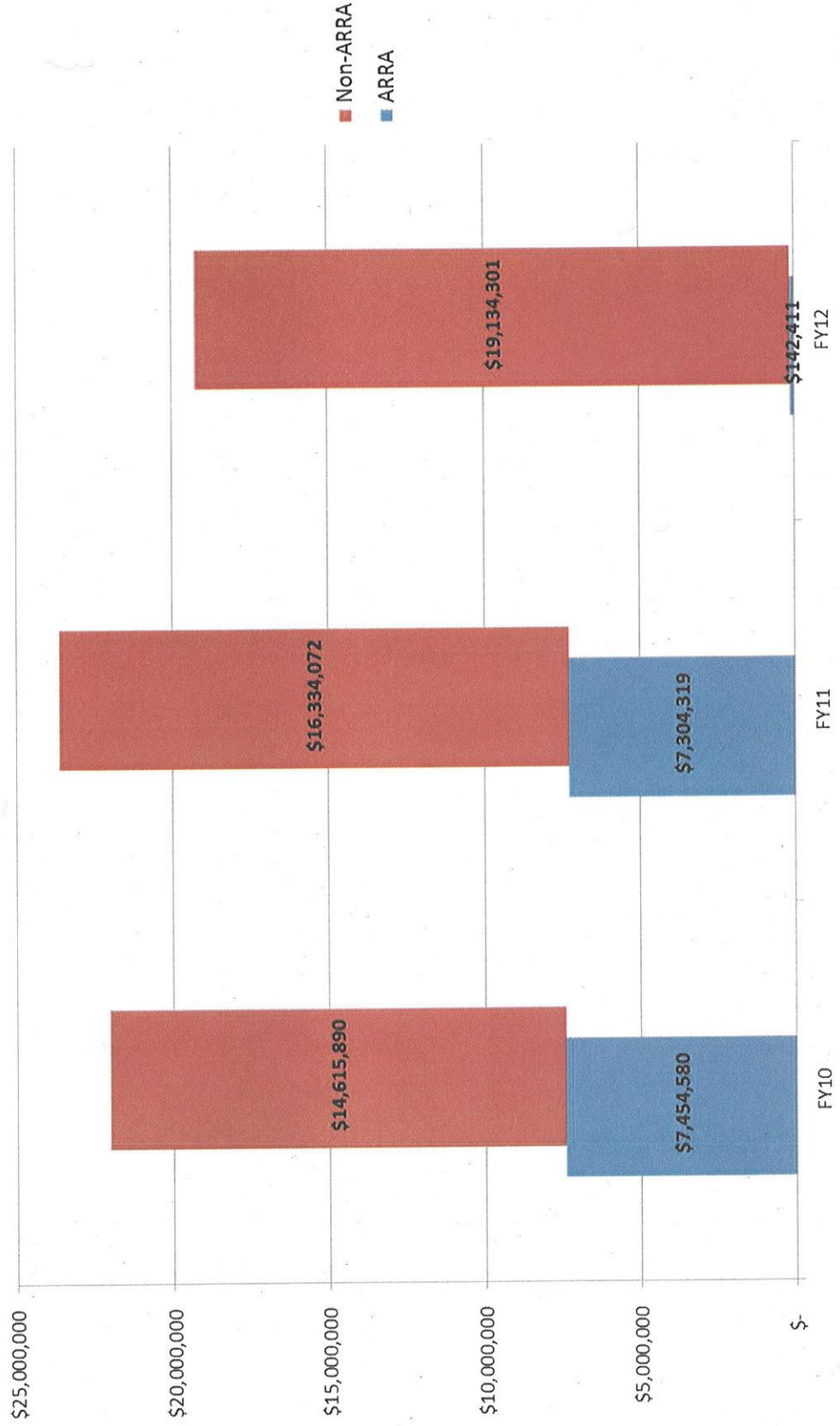
**Department of Medicine**  
**FY2013 UVM Research Grants**

| Principal Investigator/ Follow | Unit | Sponsor  | Project Title   | Start Date | End Date  | Direct        | Indirect     | Total Awarded |
|--------------------------------|------|--|---|------------|-----------|---------------|--------------|---------------|
| Weiss, Daniel J                | PULM | National Heart, Lung, and Blood Institute/NIH/DHHS | De-Cellularized Human Lungs for Ex Vivo Lung Regeneration | 8/1/2012   | 7/31/2014 | \$ 141,565    | \$ 74,321    | \$ 215,886    |
| <b>PULM Total</b>              |      |  |   |            |           | \$ 2,694,516  | \$ 835,012   | \$ 3,529,528  |
| <b>Grand Total</b>             |      |  |   |            |           | \$ 14,356,952 | \$ 4,454,143 | \$ 18,811,095 |

**Department of Medicine UVM Research Funding Details, FY07-FY13**



**Department of Medicine UVM Research Funding Details**  
**UVM Research Funding (Direct & Indirect) with ARRA & Non-ARRA Funding Delineation, FY10-FY12**



## Department of Medicine UVM Research Funding Details

### Funding by Unit by Fiscal Year, FY09-FY13

