Executive Summary

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

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

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

The division maintains an active fellowship program comprised of 6 fellows under the direction of Dr. Julian Sprague (Program Director) and Dr. Molly Barry (Associate Program Director). Specialized tracks in thrombosis & haemostasis, familial genetics and breast cancer are available to fellows and promote the academic careers of interested fellows. Fellows maintain an active clinical and research schedule including presentations and posters at relevant regional and national meetings. Hematology and Oncology fellows generated 5 publications this year and Dr. Hibba Rehman (third year fellow) received a Fibrolamellar Cancer Foundation Grant.
Multiple members of the division continue to serve in leading national and international positions. A few highlights include: Dr. Steven Ades was appointed as site PI for the NCI Alliance Network as well as served as the President of the Northern New England Clinical Oncology Society; Dr. Cushman now serves as the inaugural Editor in Chief of RPTH (Research and Practice in Thrombosis and Hemostasis), an international on-line journal dedicated to the dissemination of high quality research and clinical care in thrombosis and hemostasis as well as continued to serve on the Board of Directors for the American Heart Association; Dr. Greenblatt served as the President of the Human Genome Variation Society and member of the International Scientific Advisory Council for the Human Variome Project; Dr. Holmes served as National Chair for the American Society of Hematology Workgroup on Transitions and Member of the Thrombosis Committee for the American Thrombosis and Hemostasis Network; Dr. Nunnink was a member of the Board of Directors for the American Society of Oncology; Dr. Marie Wood served on the Alliance Prevention Committee and is Chair-Elect of the ASCO Continuing Education Committee and Dr. Zakai served as a member of the American Society of Hematology VTE Guidelines Panel and co-chair of the Hemophilia and Thrombosis Research Society, Research Committee.

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

**Faculty**

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

**George F. Atweh, MD-Professor**
Clinical Director, Cancer Clinical Trials Office—Outgoing  
Member, Protocol Review and Monitoring Committee, UVM Medical Center  
Research interests include: Molecular basis of benign and malignant blood disorders, and clinical trials in malignant hematology
Maura Barry, MD-Assistant Professor
Associate Director, Hematology/Oncology Fellowship Program
Member, UVM Medical Center Faculty Development Committee,
Member, UVM Medical Center Hematology/Oncology Fellowship Program Evaluation Committee
Member, UVM Internal Medicine Residency Program Evaluation Committee
Member, UVM Medical Center Hematology/Oncology Fellowship Clinical Competency Committee
Research and clinical interests include: GI and head and neck cancers

Mary Cushman, MD, MSc – Professor, Medicine and Pathology
Director, Thrombosis and Hemostasis Program
Research interests include: Etiology of vascular diseases and other chronic diseases; racial disparities; venous thrombosis and post thrombotic syndrome

Kim Dittus, MD, PhD – Assistant Professor
Medical Director of Oncology Rehabilitation
Chair Clinical Committee, Program in Integrative Health
Chair Research Committee, Program in Integrative Health
Member, Cancer Control Committee, UVM Medical Center
Research interests include: Cancer survivorship, diet/nutrition, exercise

Edmund Folefac, MD – Assistant Professor
Member, Vermont Cancer Center Protocol Review and Monitoring Committee
Research interests include: Lung cancer and melanoma; clinical trials

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

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

Farrah Khan, MD – Assistant Professor
Member: UVMMC Department of Medicine Faculty Development Committee, Faculty Engagement Committee, QA&I Committee
Member, UVMMC Department of Medicine Quality Assurance and Improvement Committee
Research and clinical interests include: Breast cancer, lung cancer, mesothelioma and sarcoma
J. Chris Nunnink, MD, FASCO – Associate Professor
Member, UVM Medical Center Clinical Integration Committee
Member, UVM Medical Center CIC Committee representing Oncology
Co-Chair, UVM Medical Center Head and Neck Multidisciplinary Clinic
Director, UVM Cancer Center Network Development
Clinical interests include: Oropharyngeal Cancer and GU Cancer

Patricia O’Brien, MD – Assistant Professor Clinical Scholar
Director, Lymphedema Program

Julie Olin, MD – Associate Professor
Attending Physician—retired June 30, 2017

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

Eswar Tipirneni, MD—Clinical Practice Physician
Physician at CVMC

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

Marie Wood, MD – Professor
Director, Familial Cancer Program
Assistant Director, Hematology/Oncology Division
Medical Director of the Cancer Clinic
Research interests include molecular markers of breast cancer risk, attitudes of primary care physicians regarding cancer genetics, breast cancer screening and prevention

Neil Zakai, MD, MSc – Associate Professor of Medicine and Pathology
Chair, Data Safety and Monitoring Board, UVM Cancer Center
Member, UVMMC Pharmacy and Therapeutics Committee
Research interests include: Epidemiology and novel risk factors for venous thrombosis and cardiovascular disease. Epidemiology, causes, and consequences of anemia in diverse populations. Venous thrombosis causes and prevention, post thrombotic syndrome.
Hematology/Oncology Fellows
Hibba Rehman, MD – 3rd year fellow
Jose Ruades, MD – 3rd year fellow
Bhargavi Pulluri, MD – 2nd year fellow
Purva Sharma, MD – 2nd year fellow
Daniel Douce, MD – 1st year fellow
Saranya Kodali, MD – 1st year fellow

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

Graduate students, post-doctoral fellows, MD PHD students
Katharine Cheung, MD, Post-Doctoral Fellow
Kara Landry, MD, Post-Doctoral, mentored by Mary Cushman
Elizabeth Hall, MD, LCCRO Fellow
Daniel Douce, MD, Post-Doctoral Fellow, mentored by Neil Zakai

Leadership in Professional Societies

Steven Ades, MD
Immediate Past President, Northern New England Clinical Oncology Society
Member, Alliance Cooperative Group Symptom Intervention Committee

Mary Cushman, MD, MSc
Member, Scientific Program Planning Committee, World Heart Federation and American
Board Director, American Heart Association
Member of the American Society of Hematology Media Experts Subcommittee.
Board Director, North American Thrombosis and Hemostasis Society
President, Board of Directors Vermont District, American Heart Association
Member, Medical Alumni Executive Committee
Member, Volunteer Oversight Group, American Heart Association
Member, Quality Committee, American Society of Hematology
Member, Media Experts Committee, American Society of Hematology
Member, Statistics Committee, American Heart Association
Member, Corporate Relations Review Committee
Member, ASH Maintenance of Certification Committee
Member, Medical Advisory Committee for the Foundation for Women and Girls with
Blood Disorders

Kim Dittus, MD, PhD
Member, Cancer Control Committee, UVM Medical Center
Member, Champlain Valley Healthy Lifestyle Collaborative

**Marc Greenblatt, MD**
- President, Human Genome Variation Society (HGVS)
- Member, International Scientific Advisory Council, Human Variome Project
- Member, American Association of Cancer Research
- Member, American Society of Clinical Oncology
- Member, American Society of Human Genetics
- Member, Collaborative Group of the Americas on Inherited Colorectal Cancer (CGA-ICC), Co-Chair, Working Group on Assessment of Pathogenicity
- Member, International Society of Gastrointestinal Hereditary Tumors (InSiGHT)
- Core Member, Variant Interpretation Committee
- Member, International Mismatch Repair Consortium (IMRC)
- Member, Cancer and Leukemia Group B-Alliance for Clinical Trials
- Member, Vermont Medical Society

**Chris Holmes, MD, PhD**
- Member, Thrombosis Committee, American Thrombosis and Hemostasis Network, Centers for Disease Control
- National Chair, Hemophilia Transitions, American Society of Hematology Workgroup on Transitions; American College of Physicians Pediatric to Adult Care Transition Initiative
- Executive Board Member, National Network, Health and Human Services New England Comprehensive Hemophilia Diagnostic and Treatment Centers
- Director, Community Counts-Vermont, Centers for Disease Control (CDC) Public Health Monitoring Program, Division of Blood Disorders
- Member, Institutional Review Board, Committee on Human Research in the Medical Sciences (CHRMS), University of Vermont

**J. Chris Nunnink MD, FASCO**
- Member, American Society of Clinical Oncology Board of Directors
- Member, American Society of Clinical Oncology Strategic Planning Committee
- Member, American Society of Clinical Oncology Clinical Guidelines Committee
- Member, Northern New England Clinical Oncology Society Board of Directors

**Julian Sprague, MD**
- Member, American Society of Hematology
- Member, American Society of Clinical Oncology
- Member, American College of Physicians
- Member, Committee on Training, American Society of Hematology
- Liaison, Committee on Quality from the Committee on Training, American Society of Hematology

**Marie Wood, MD**
- Member, Alliance, Prevention Committee
- Member, Alliance Foundation, Board of Trustees
Member, American Society of Clinical Oncology, CME Committee
Member, Northern New England Clinical Oncology Society Board of Directors
Member, American College of Physicians
Member, National Surgical Adjuvant Breast and Bowel Project
Chair-Elect, ASCO Continuing Education Committee

Neil Zakai, MD
Member, American Heart Association, Disparities Research Network Peer Review Committee
Member, American Society of Hematology VTE Guideline Panel: Prevention of VTE in Medical Patients
Co-Chair, Hemophilia and Thrombosis Research Society, Research Committee
Vice Chair, American Heart Association Council on Epidemiology and Prevention, Publications Committee
Member, American Society of Hematology “Consult a Colleague” program-content expert “Hemostasis/Thrombosis”
Member, American Heart Association Representative to the American Association of Blood Banks: Blood Banks and Transfusion Services Standards Program Unit
Member, American Heart Association POP 2 Peer Review Committee
Member, Hemophilia and Thrombosis Research Society Membership Committee
Coordinator, Hematology/Oncology Fellowship Quality Project Committee
Member, UVM Medical Center Hematology/Oncology Fellowship Research Committee
Member, UVM Medical Center Internal Medicine Residency Research Committee
Chair, Malignant Hematologist Faculty Search Committee
Chair, Medication Safety Subcommittee for the Pharmacy & Therapeutics Committee
Guest Editor, Circulation

Editorships and Editorial Boards

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

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

Study Sections and Federal Advisory Boards

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

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

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

George Atweh
NIH U01 HL117709 Punam, Malik (PI) 08/15/13-05/31/18
Cincinnati Center Excellence in Hemoglobinopathies Research
Role: Co-Investigator

Maura Barry
University of Vermont Medical Center Foundation 12/1/15-12/1/17
Victoria Buffum Endowment
Quality of Life Assessment for Head and Neck Cancer Patients Undergoing Treatment in The First Year of Survivorship
Role: PI

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

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

NHLBI R01 HL59367 01/01/98-03/31/20
Epidemiology of Venous Thrombosis and Pulmonary Embolism
AR Folsom, PI, University of Minnesota
ADC (current Vermont Contract: $33,723)
Role: Subcontract PI, 10%

NHLBI HHSN2682015000031 08/15/00-08/14/21
Multiethnic Study of Atherosclerosis
R. McClelland, PI, University of Washington
ADC (current Vermont Subcontract): $92,375 (current cycle)
Role: Subcontract PI, 5%
NIH 07/01/14-06/30/19
P01HD03192116A1
The National Longitudinal Study of Adolescent Health - Wave V
ADC: (Vermont Subcontract): $478,373
K Harris, PI; University of North Carolina, Chapel Hill
ADC: (Vermont Subcontract): $478,373
Role: Subcontract PI, 10%

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

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

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

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

ACS-IRG Gell (PI) 04/01/17-03/31/18
BeMobile: A Randomized Control Trial of a Novel, Technology-Based Intervention to Support Physical Activity in Cancer Survivors
Role: Mentor

Marc Greenblatt
NIH-NHGRI Berg, Jonathan (PI) 11/1/13-10/31/17
U01 HG007437-01
A Knowledge Base for Clinically Relevant Genes and Variants
Role: Co-Investigator

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

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

ATHN2011001-1-1 Brettler (PI) 09/30/11-09/29/18
Centers for Disease Control and Prevention
American Thrombosis and Hemostasis Network
Public Health Surveillance for the Prevention of Complications of Bleeding and Clotting Disorders
Role: Sub-Investigator

ATHN Dream Award 09/16-01/18
Evolving Real-world use of Standard and EHL Products in Moderate and Severe Hemophilia Patients: A Practical Application of the ATHN dataset
Role: Site PI

Marie Wood
Alliance #A211601 Wood (PI) 02/24-02/23/18
Role: PI

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

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

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


Houghton DE, Key NS, Zakai NA, Laux JP, Shea TC, Moll S. Analysis of anticoagulation strategies for venous thromboembolism during severe thrombocytopenia