



*Division of*

# HEMATOLOGY/ ONCOLOGY

2019

## ANNUAL REPORT

# TABLE OF CONTENTS

Message from the Chief	1
Faculty Listing	3
Clinical Activities	7
Clinical Quality Improvements	12
Clinical Locations	13
Research and Other Scholarly Activities	15
Teaching Activities	54
Three-Year Bibliography	65
Acknowledgments	131

# Division of HEMATOLOGY/ ONCOLOGY



**Edward Chu, MD**

*Chief, Division of Hematology-Oncology  
Professor of Medicine and Pharmacology & Chemical Biology  
Associate Director, University of Pittsburgh Cancer Institute  
Associate Director, Drug Discovery Institute*



**Chad J. Scott, MPM**

*Executive Administrator, Division of Gastroenterology, Hepatology and Nutrition*

Over the past year, the Division of Hematology-Oncology has continued to focus on the tripartite mission of excellence in patient care, research, and education. The major priorities within the Division remain focused on the recruitment of physician-scientists, the reorganization of the clinical services, and the education and training of hematology-oncology fellows and Internal Medicine housestaff.

Highlights of FY2019 include:

- **Hassane Zarour, MD**, was appointed the James W. and Frances G. McGlothin Chair in Melanoma Immunotherapy Research.
- **Laura M. De Castro, MD, MHSc**, is serving a 4-year term as a member of the American Society of Hematology (ASH) Committee on Practice.
- **Timothy Burns, MD, PhD**, was appointed Associate Program Director for the UPMC Hematology-Oncology Fellowship Program with a focus on research and academic development.
- **Adam M. Brufsky, MD, PhD**, was named Co-Leader of the UPMC Hillman Cancer Center (HCC) Cancer Therapeutics Program. He also successfully renewed the NCI-funded UG1 grant that supports phase 3 clinical trials that are developed by the NCI cooperative groups.
- **Lyn Robertson, DrPH, RN, MSN**, was appointed Associate Director for Community Outreach and Engagement, UPMC Hillman Cancer Center.
- **Lan Coffman, MD, PhD**, received the UPMC Hillman Cancer Center Junior Scholar Award for Basic

Research while **Yana Najjar, MD**, received the UPMC Hillman Cancer Center Junior Scholar Award for Clinical Research.

- **Daniel Lee, MD, PhD**, was accepted into the 2019 AACR-ASCO Workshop in Clinical Research, a highly competitive and prestigious workshop focused on training the next generation of clinical investigators.
- **John Kirkwood, MD**, received the 2019 Dr. G. David Roodman Excellence in Mentoring Award.
- **Robert Ferguson, PhD**, was awarded \$50,000 from MIRO, a technology company based in San Francisco to develop an iPad-based neurocognitive assessment tool using artificial intelligence.

#### *Faculty Recruitment*

During FY2018-2019, the Division continued to concentrate on the recruitment of physician-scientists to meet strategic needs in several key areas. Notable faculty additions are listed below.

- **Leisha Emens, MD, PhD**, joined as Professor of Medicine specializing in breast cancer and cancer immunotherapy. She was appointed Co-Leader of the HCC Cancer Immunology and Immunotherapy Program and is Director of Womens Cancer Research Center (WCRC) Translational Immunotherapy.
- **Daniel Lee, MD, PhD**, joined as Assistant Professor of Medicine specializing in GU cancer and Phase I clinical trials.
- **Jason Luke, MD**, joined as Associate Professor of Medicine specializing in melanoma and early phase drug development of cancer immunotherapy. He was appointed Director of Cancer Immunotherapeutics for the HCC Cancer Immunology and Immunotherapy Program.
- **Antoinette Wozniak, MD**, joined as Professor of Medicine and was appointed Director of the Lung Cancer Disease Unit of the Division of Hematology-Oncology, Co-Director of the UPMC Lung Cancer Center of Excellence, and HCC Associate Director of Clinical Research with oversight over the clinical research operations and clinical research mission for the cancer center.

## HEM/ONC *Fast Facts*



63

academic faculty  
members



#23

among oncology  
programs in the U.S.  
- *U.S. News and World Report*



\$26mil

in research funding

## FACULTY

### **Edward Chu, MD**

Chief, Division of Hematology-Oncology  
Professor of Medicine and Pharmacology &  
Chemical Biology  
Associate Director, University of Pittsburgh Cancer  
Institute  
Associate Director, Drug Discovery Institute

### **Mounzer E. Agha, MD**

Visiting Research Associate Professor of Medicine

### **Leonard J. Appleman, MD, PhD**

Associate Professor of Medicine

### **Nathan Bahary, MD, PhD**

Associate Professor of Medicine and Molecular  
Genetics & Biochemistry  
Medical Director, Pancreatic Cancer Program  
Co-Director, UPMC Pancreatic Cancer Center of  
Excellence

### **Chitrlekha Bhattacharya, PhD**

Research Instructor of Medicine

### **Franklin A. Bontempo, MD**

Associate Professor of Medicine  
Medical Director, Coagulation Laboratory

### **Michael Boyiadzis, MD, MHSc**

Associate Professor of Medicine  
Director, Clinical and Translational Research Program

### **Adam M. Brufsky, MD, PhD**

Professor of Medicine  
Associate Chief, Division of Hematology/Oncology  
Co-Director, Comprehensive Breast Cancer Center  
Associate Director, Clinical Investigation

### **Ronald J. Buckanovich, MD, PhD**

Visiting Professor of Medicine

### **Melissa A. Burgess, MD**

Assistant Professor of Medicine

### **Timothy F. Burns, MD, PhD**

Assistant Professor of Medicine

### **Lisa H. Butterfield, PhD\***

Professor of Medicine

### **Lan G. Coffman, MD, PhD**

Assistant Professor of Medicine

### **Diwakar Davar, MD**

Assistant Professor of Medicine

### **Laura M. De Castro, MD, MHSc**

Visiting Associate Professor of Medicine  
Clinical Chief, Benign Hematology  
Director of Benign Hematology, Vitalant and UPMC  
Cancer Center  
Director of Clinical Translational Research, Sickle  
Cell Center of Excellence

### **Albert D. Donnenberg, PhD**

Professor of Medicine and Infectious Disease &  
Microbiology  
Director, UPMC Hematopoietic Stem Cell  
Laboratories  
Director, UPCI Flow Cytometry Facility

### **Kathleen A. Dorritie, MD**

Assistant Professor of Medicine

**Jan Drappatz, MD**

Associate Professor of Neurology and Medicine  
Associate Director, Adult Neuro-Oncology Program

**Leisha A. Emens, MD**

Visiting Professor of Medicine  
Director of Translational Immunotherapy, Women's  
Cancer Research Center, Magee Women's Hospital

**Rafic J. Farah, MD**

Research Instructor of Medicine

**Robert J. Ferguson, PhD**

Assistant Professor of Medicine

**Julien J. Fourcade, PharmD, PhD\***

Research Assistant Professor of Medicine

**Lanie K. Francis, MD**

Research Instructor of Medicine

**Deborah L. Galson, PhD**

Associate Professor of Medicine and Microbiology &  
Molecular Genetics  
Director, Pittsburgh Center for Bone & Mineral  
Research

**Vikram C. Gorantla, MD**

Clinical Assistant Professor of Medicine

**Jonathan E. Harms, PhD**

Research Instructor of Medicine

**James G. Herman, MD**

Professor of Medicine  
UPMC Endowed Chair for Lung Cancer Research  
Co-Director, Lung Cancer Program  
Associate Director, Hematology/Oncology  
Fellowship Program

**Charles C. Horn, PhD**

Associate Professor of Medicine

**Annie P. Im, MD**

Assistant Professor of Medicine  
Director, Hematology/Oncology Fellowship Program

**Sawa Ito, MD, PhD**

Assistant Professor of Medicine

**Rachel Jankowitz, MD**

Assistant Professor of Medicine

**Muhamuda Kader, PhD\***

Research Instructor of Medicine

**Gregory J. Kato, MD**

Professor of Medicine  
Director, Adult Sickle Cell Center of Excellence  
Principal Investigator, Vascular Medicine Institute

**John M. Kirkwood, MD**

Usher Professor of Medicine, Dermatology and  
Translational Science  
Co-Leader, Melanoma and Skin Cancer Program

**Joseph E. Kiss, MD**

Professor of Medicine  
Medical Director, Hemapheresis and Blood Services,  
CBB/Vitalant

**Anuradha Krishnamurthy, MBBS**

Assistant Professor of Medicine

**Daniel Lee, MD, PhD**

Assistant Professor of Medicine

**James J. Lee, MD, PhD\***

Associate Professor of Medicine

**Frank S. Lieberman, MD**

Professor of Neurology and Medicine  
Chief, Adult Neuro-Oncology Service

**Anna E. Lokshin, PhD**

Professor of Medicine, Pathology, and Obstetrics,  
Gynecology & Reproductive Sciences  
Director, Luminex Core Facility

**Carissa A. Low, PhD**

Assistant Professor of Medicine and Psychology  
Core Faculty, Center for Behavioral Health and  
Smart Technology  
Adjunct Faculty, Human Computer Interaction  
Institute, Carnegie Mellon University

**Jason J. Luke, MD**

Visiting Associate Professor of Medicine  
Director, Cancer Immunotherapeutics Center

**Megan M. Mantica, MD**

Assistant Professor of Neurology and Medicine

**Yana G. Najjar, MD**

Assistant Professor of Medicine

**Enrico M. Novelli, MD, MS**

Associate Professor of Medicine  
Director, UPMC Adult Sickle Cell Disease Program  
Principal Investigator, Vascular Medicine Institute

**Solomon F. Ofori-Acquah, PhD**

Associate Professor of Medicine and Human  
Genetics  
Director, Center for Translational and International  
Hematology  
Principal Investigator, Vascular Medicine Institute

**Ellen M. Ormond, PhD**

Assistant Professor of Medicine

**Amma T. Owusu-Ansah, MD**

Assistant Professor of Medicine  
Clinical Director, Center for Translational and  
International Hematology

**Vida Cecilia A. Passero, MD, MBA**

Clinical Assistant Professor of Medicine  
Associate Director, Hematology/Oncology  
Fellowship Program  
Division Chief, Hematology/Oncology, VA  
Pittsburgh Healthcare System

**Donna M. Posluszny, PhD**

Assistant Professor of Medicine  
Associate Director of Training, Biobehavioral  
Medicine in Oncology Program

**Margaret V. Ragni, MD, MPH**

Professor of Medicine and Clinical Translational  
Science  
Director, Hemophilia Center of Western PA

**Zahra Rahman, DO\***

Clinical Instructor of Medicine

**Priya Rastogi, MD**

Associate Professor of Medicine

**Robert L. Redner, MD**

Professor of Medicine

**Linda B. Robertson, DPH, MSN**

Assistant Professor of Medicine and Nursing  
Associate Director, Health Equity and Community  
Outreach & Engagement



**John C. Schmitz, PhD**

Research Associate Professor of Medicine  
Co-Director, Cancer Pharmacokinetics and  
Pharmacodynamics Facility

**Craig D. Seaman, MD, MS**

Assistant Professor of Medicine  
Associate Director, Hemophilia Center of Western  
Pennsylvania

**Alison R. Sehgal, MD**

Research Instructor of Medicine

**Malabika Sen, PhD**

Research Assistant Professor of Medicine

**Warren D. Shlomchik, MD**

Professor of Medicine and Immunology  
Director, Hematopoietic Stem Cell Transplant and  
Cell Therapy  
Vice-Chief of Hematologic Malignancies,  
Hematopoietic Stem Cell Transplantation and T cell  
Immunotherapy

**Roy E. Smith, MD**

Professor of Medicine

**Ashwin Somasundaram, MD**

Assistant Professor of Medicine

**Richard A. Steinman, MD, PhD**

Associate Professor of Medicine and Pharmacology  
Associate Dean and Director, Medical Scientist  
Training Program  
Director, Physician Scientist Training Program

**Quanhong Sun, PhD**

Research Instructor in Medicine

**Darcy L. Thull, MS**

Instructor in Medicine  
Genetic Counselor, UPMC Cancer Genetics Program

**Gijsberta J. van Londen, MD, MS**

Associate Professor of Medicine

**Liza C. Villaruz, MD**

Associate Professor of Medicine

**Lazar N. Vujanovic, PhD\***

Research Instructor of Medicine

**Donald V. Woytowitz, MD**

Clinical Assistant Professor of Medicine

**Antoinette Wozniak, MD**

Visiting Professor of Medicine  
Associate Director of Clinical Research, UPMC  
Hillman Cancer Center  
Director, Lung Cancer Disease Unit  
Co-Director, UPMC Lung Cancer Center of  
Excellence

**Dan P. Zandberg, MD**

Visiting Associate Professor of Medicine  
Director, Head and Neck and Thyroid Cancer  
Disease Sections  
Co-Director, UPMC Hillman Cancer Center Head  
and Neck Cancer Research Program

**Hassane M. Zarour, MD**

Professor of Medicine, Immunology, and  
Dermatology  
James W. and Frances G. McGlothlin Chair in  
Melanoma Immunotherapy Research  
Co-Leader, Melanoma Program

*\* Faculty who left the division over the course of FY 2019.*



## CLINICAL ACTIVITIES

The Division of Hematology-Oncology is dedicated to excellence in patient care, teaching the next generation of physician-scientists, and conducting innovative cancer-focused basic, clinical, translational, and population research. In addition, there are 77 members of the voluntary faculty, the majority of whom are employed by UPMC Hillman Cancer Center and practice in a UPMC Hillman Cancer Center site in western Pennsylvania and/or eastern Ohio.

In FY19, HCC saw  
**4,716 patients**  
through its three  
inpatient services,  
a **7% increase**  
from FY18

### ***Inpatient Service***

In FY2018-2019, Division faculty continued to focus on clinical care, which includes the inpatient service and the outpatient clinic at the Hillman Cancer Center. The Division realized an 7% increase in inpatient WRVUs and a stable outpatient WRVU total when compared with FY2017-2018. Total WRVUs billed for FY2018-2019 were 89,571 (excluding psycho-oncology faculty and staff). In 2019, the Division saw an overall 2% increase in total WRVUs.

The three inpatient oncology/solid tumor attending services at UPMC Shadyside are shared with our clinical colleagues from the UPMC Hillman Cancer Center. Two of these inpatient services are staffed by Advanced Practice Providers and Hospitalist Nocturnists, while the third service is the housestaff teaching service supported by Fellows, Internal Medicine Interns and Residents, and Hospitalist Nocturnists. A total of 4,716 patient admissions were seen by these three inpatient services. The overall number of admissions represents a 7% increase from FY2017-2018. This number does not include inpatient oncology admissions to Magee-Womens Hospital, where patients with breast cancer are admitted to a dedicated inpatient hospitalist service. These patients are seen by the inpatient oncology consult service, which is staffed by Division faculty members.

There is also an inpatient consult service—initially established in FY15—to care specifically for patients with sickle cell anemia. This service continues to consolidate the comprehensive inpatient care and is provided at UPMC Presbyterian and Magee-Womens Hospital of UPMC. **Drs. Enrico Novelli, Laura DeCastro, and Gregory Kato** are the key faculty members who staff this service, which is also supported by Advance Practice Providers and Hematology/Oncology Fellows.

In addition to the inpatient attending services, there are 10 solid-tumor oncology and hematology consult services:

- Bone Marrow and Stem Cell transplant at UPMC Shadyside
- Hematologic Malignancy consults at UPMC Shadyside

- Hematologic Malignancy consults at UPMC Presbyterian and Magee-Womens Hospital
- Benign Hematology consults at UPMC Presbyterian and Magee-Womens Hospital
- Benign Hematology consults at UPMC Shadyside
- Sickle Cell consults at Presbyterian and Magee-Womens Hospital
- Solid Tumor Oncology consults at UPMC Shadyside
- Solid Tumor Oncology consults at UPMC Presbyterian and Magee-Womens Hospital
- Neuro-Oncology consults at UPMC Shadyside, UPMC Presbyterian, and Magee-Womens Hospital
- Hematology/Oncology consults at the Pittsburgh VA Medical Center

### Outpatient Service

Division faculty continue to have robust outpatient clinical practices at the Hillman Cancer Center and Magee-Womens Hospital. Both are hospital-based clinics and, as of June 1, 2013, both outpatient services are under the umbrella of Magee-Womens Hospital.

Since October 2013, faculty based at the Hillman Cancer Center have used Aria, an electronic medical record (EMR). This system was designed specifically for use by oncologists and allows for the ordering and dispensing of chemotherapeutic agents. At Magee-Womens Hospital, our breast cancer medical oncologists use Epic, which is the EMR used by the rest of the UPMC clinical programs.

### Benign Hematology

The Benign Hematology Section within the Division has more than 10 physician-scientists and research investigators, and this group is now considered to be one of the largest benign hematology programs in the country. Areas of excellence include hemophilia, where **Dr. Margaret Ragni** is one of the world pre-eminent leaders and whose clinical and research activities are housed in the state-of-the-art Hemophilia Center of Western Pennsylvania (HCWP). Another area of excellence is sickle cell disease. The UPMC Adult Sickle Cell Program is staffed by 3 dedicated faculty members (**Drs. DeCastro, Kato, and Novelli**), 3 APPs, and other health care professionals and is one of the largest in the country. As a result of recent growth, grant funding and participation in clinical trials have increased, and a continued positive trajectory over the next few years is expected. In order to effectively manage the increase in hematology research activity, a consolidated effort between our colleagues at HCC and our benign hematologists established a research infrastructure that provides research staff and clinical and budgetary support for grants and clinical trials.

The benign hematology section continues to enjoy an extremely close collaboration with Vitalant (formerly the Institute for Transfusion Medicine) and, together, they continue their efforts to focus on project planning and implementation of the Benign Hematology Center of Excellence, funded by a federal HRSA grant. This Center will provide needed comprehensive outpatient clinical services for the spectrum of thrombosis and hemostasis disorders. It will also conduct state-of-the-art clinical and translational research in this population with an emphasis on hemophilia. In parallel with the Center's planning and development phases, patient-specific treatment plans, protocols, and guidelines of care have been established, updated, individualized and delivered to patients within an outpatient Day Hospital care model, currently housed in the UPMC Hillman Cancer Center. These clinical improvement and quality assurance interventions have been paired with direct patient compliance efforts, specifically in the area of sickle cell disease, hydroxyurea therapy, and chronic blood transfusion. As a main focus of the benign hematology clinical program, protocols have been developed and personnel have been hired to support these efforts.

As of 2019, the longstanding efforts to identify a new location for the Benign Hematology clinics have

resulted in three major developments. First, major progress has been made towards relocating the Benign Hematology outpatient clinics and infusion center to Magee-Womens Hospital, where dedicated space is being identified. This move, if successful, will expand the capacity of the infusion center and reposition the fulcrum of the outpatient Benign Hematology activities into the Oakland campus, where closer collaboration with other Internal Medicine Divisions will be spurred. Second, a parallel effort is being conducted to secure the financial stability of the Section by exploring the feasibility of a 340B program for Benign Hematology. Third, the clinical research team supporting the Benign Hematology research studies has relocated to the Kaufmann building and administratively away from the Hillman Clinical Research Services team and under the umbrella of the Department of Medicine. The clinical research team, named ARCH, includes 5 clinical research staff members and oversees >20 clinical studies, primarily in sickle cell disease, but with a growing number of protocols in other areas of benign hematology such as acquired platelet disorders and autoimmune hemolytic anemias. ARCH members, in collaboration with other staff members from the Department of Medicine, are actively developing a hematology database that will greatly aid research activities and will harness the information contained in various electronic medical records. The physical and administrative move of the ARCH team to Oakland has been seamless, which bodes well for the success of the team.

The Benign Hematology Section has been at the forefront of value-based quality of care and health care economics-based initiatives for many years. **Dr. Roy Smith**, one of the section's senior faculty members, has pioneered telemedicine, transitioned the health care system to an improved laboratory monitoring system for unfractionated heparin anticoagulation, and is now actively spearheading several value-based interventions. Among the most important value-based initiatives, Dr. Smith is currently leading the development of a hematology eConsult service and the optimization of direct oral anticoagulant therapy and thrombophilia testing at UPMC.

The Benign Hematology Section has solidified its role in the trainee's and fellow's education by developing an extensive core-lecture curriculum that is presented primarily during the weekly benign hematology meeting. These conferences include didactic and clinical cases discussions. Enrichment of the two outpatient (hematology clinic and coagulation service) four-week long rotation of residents and fellows—along with active participation of the benign hematology faculty in all aspects of medical student, resident, and fellow training—will enhance the pool of bench-to-bedside clinical researchers as well as the system-based clinical hematologist.

A major priority of the Benign Hematology Section is to actively recruit junior and mid-career academic-oriented hematologists to increase the research and clinical expertise portfolio of the Section. In particular, efforts have been oriented towards hiring experts in the science of hemostasis and thrombosis and in the area of rare hematological disorders. A national search is being conducted via multiple strategies.

### **Psycho-Oncology Program**

The Section of Psycho-Oncology brings together both behavioral health for oncology patients, with faculty who span both clinical and research activities. Under the title "The Center for Counseling and Cancer Support (CCCS)", clinicians added important medical leadership as Robin Valpey, MD assumed the role of medical director, working closely with Jack Cahalane, PhD who serves as Program Director. The clinical staff at CCCS includes 3 psychiatrists and 5 clinical psychologists, as well as one full-time nurse with expertise in oncology. Patients are seen across various sites, including our main site in the Shadyside Medical Building, as well as Magee-Womens Hospital and UPMC Passavant hospital.



The group continues to provide a wide range of clinical services to cancer patients and their families, including management of mood disorders, anxiety, sleep and appetite disturbances, substance use disorders, cognitive impairments, and other neuropsychiatric manifestations of cancer and its treatment. In addition to individualized care, we are expanding services to include group-based interventions, with a 4-session Memory and Attention Adaptation Training class for treatment of cancer-related cognitive impairment and a monthly Caregiver Group. Increasing emphasis has been placed on providing telemedicine services, in hopes of reaching even more of our underserved population in the Western Pennsylvania region and beyond.

The Center is also expanding collaboration with other services both inside and outside of UPMC to provide optimal care. In addition to ongoing direct clinical care of shared patients, we have continued collaborating with Palliative Care outpatient providers through a monthly interdisciplinary team meeting, and with hematologists caring for the sickle cell population in biweekly case collaboration meetings. We also frequently collaborate with our colleagues seeing inpatient consultations through Consult-Liaison Psychiatry services and hope to continue to expand our role for hospitalized cancer patients going forward. We have also had increasing collaboration with community partners that provide support for our cancer patients, both in providing educational lectures and mutual outreach.

Educational opportunities have continued to expand both for medical and psychology trainees. The formal residency elective in psycho-oncology through the Department of Psychiatry has been revamped for the upcoming academic year, and Consult-Liaison Psychiatry fellows continue their 6-month rotation at our main site in Shadyside, with development of more formalized curriculum and structure training in Memory and Attention Adaptation Training.

Graduate psychology trainees are also participating at various clinical sites (both inpatient and outpatient) with our psychologists, and clinical experiences are offered for fellows in palliative care, breast oncology surgery, and other oncology programs, with frequent shadowing of most clinicians in our group.

The Center for Counseling and Cancer Support continues its close partnership with the research arm, the HCC Biobehavioral Oncology Research Program, under the direction of Dana Bovbjerg, PhD. Together, they are working to identify opportunities for clinical and translational research and to develop innovative care approaches. Providers remain active in the local, national, and international communities through research collaborations, speaking invitations, and participation in symposiums, panel discussions, and poster presentations at local and national conferences.

**Dr. Rob Ferguson**, Assistant Professor of Medicine, has continued to work in cognitive-behavioral treatment for cancer-related cognitive impairment, and he has had numerous grant-funded research projects sponsored by NCI, NIH Office of Research on Women's Health, and the Beckwith Foundation. In the latest academic year, he has submitted an R01 proposal for a multisite clinical trial of cognitive-behavioral management of cancer-related cognitive dysfunction for breast cancer survivors with colleagues at Indiana University, Simon



*Hematology/Oncology fellows at this year's ASCO conference in Chicago.*

Cancer Center, with fMRI brain imaging to evaluate post-treatment cortical activation changes. A new grant from the Shadyside Hospital Foundation was received this year in collaboration with Dr. Annette Duensing of the HCC Cancer Therapeutics Program to track neurocognitive function of patients with gastrointestinal stromal tumors. Dr. Ferguson has also received a grant from MiroHealth, a technology company developing an iPad-artificial intelligence based neurocognitive assessment tool for evaluation among breast cancer survivors. In the coming months, he will be working with Oxford University Press on publishing the book entitled, "Memory and Attention Adaptation Training: A Cognitive-Behavioral Treatment Program for Cancer Survivors."

**Dr. Carissa Low**, Assistant Professor of Medicine, has continued to grow the Mobile Sensing + Health Institute with support from the UPMC Hillman Cancer Center and Carnegie Mellon University. Over the past one year, she has hired technical and data science staff and launched a new internship with the University of Pittsburgh School of Computing and Information to provide biobehavioral oncology research training opportunities to computer and data science students. In recognition of her novel research in this field, she was recently awarded a 5-year \$2 million R37 MERIT award from the National Cancer Institute to fund a project that will combine smartphone and wearable sensor data with machine learning to remotely monitor symptoms during chemotherapy and to develop and test within the Gastrointestinal Oncology clinics a system that automatically triggers patient-provider contact when severe symptoms are detected. She also initiated an NCI-funded randomized controlled trial investigating the effects of a perioperative sedentary behavior intervention on postoperative outcomes in surgical oncology patients. Dr. Low was invited to present her research at the International Congress of Behavioral Medicine in Santiago, Chile, as well as at the Association for Psychological Science Convention in Washington, DC, and she serves as an Associate Editor for the International Journal of Behavioral Medicine.

**Dr. Ellen Ormond**, Assistant Professor of Medicine, continues to focus on QI initiatives for the Division. Current projects include: (1) Collaboration with Division medical oncologists and Palliative Care to add an Advanced Care Planning template to ARIA and to improve ACP conversation at UPMC Hillman Cancer Center. (2) Evaluating the use of the RAI (Risk Assessment Index) and PRO's at Magee hospital as predictors of frailty. (3) A survey of Advance Care Planning documents in the inpatient oncology EMR at Shadyside Hospital. An abstract on this project has been accepted for ASCO's Quality Symposium for September 2019. (4) Collaboration with Hematology and Palliative Care at the Hillman Cancer Center to initiate palliative care for all geriatric AML and MDS patients, and all high-risk allogeneic stem cell transplant patients. Dr. Ormond serves on the Shadyside Quality and Safety Committee, and planning committees for the Shadyside Oncology Emergency Department and UPMC's Safenet project. Over the past year, she has worked with the Oncology-Hematology Fellowship Program on ASCO's Resilience Skills Training for first-year oncology fellows, and has lectured on burnout and stress management for HCC physicians and medical teams.

**Dr. Donna Posluszny**, Assistant Professor of Medicine, continues to play an important role in the Division's education and training mission as the Associate Director of Training, Biobehavioral Medicine in Oncology Program. On the research front, she is piloting a behavioral intervention to help allogeneic hematopoietic cell transplantation (HCT) patients and their family caregivers manage each component of the post-HCT regimen together, thus improving psychological and health outcomes, in preparation for a NIH grant submission. She was recently awarded pilot funds from the newly formed University of Pittsburgh Center for Caregiver Research, Education, and Training to conduct a study investigating the family caregiver's role at the hospital, when the patient is admitted for a long period of time (e.g., one month), and the impact on patient and caregiver psychological and health outcomes.

## CLINICAL QUALITY IMPROVEMENT INITIATIVES

Over the past year, significant efforts have been placed on quality improvement activities relating to patient care.

**Admissions process.** The admission process for cancer patients from the ED, clinic, home, etc., was dramatically revamped due to curriculum changes in the fellowship program that caused increased time to admission and frustration. Education of various hospital staff, and primarily the ED, was implemented, including a 3-pager system. These efforts resulted in a significant improvement in the flow of patient admissions from the ED as well as a significantly decreased time to admission for our patients.

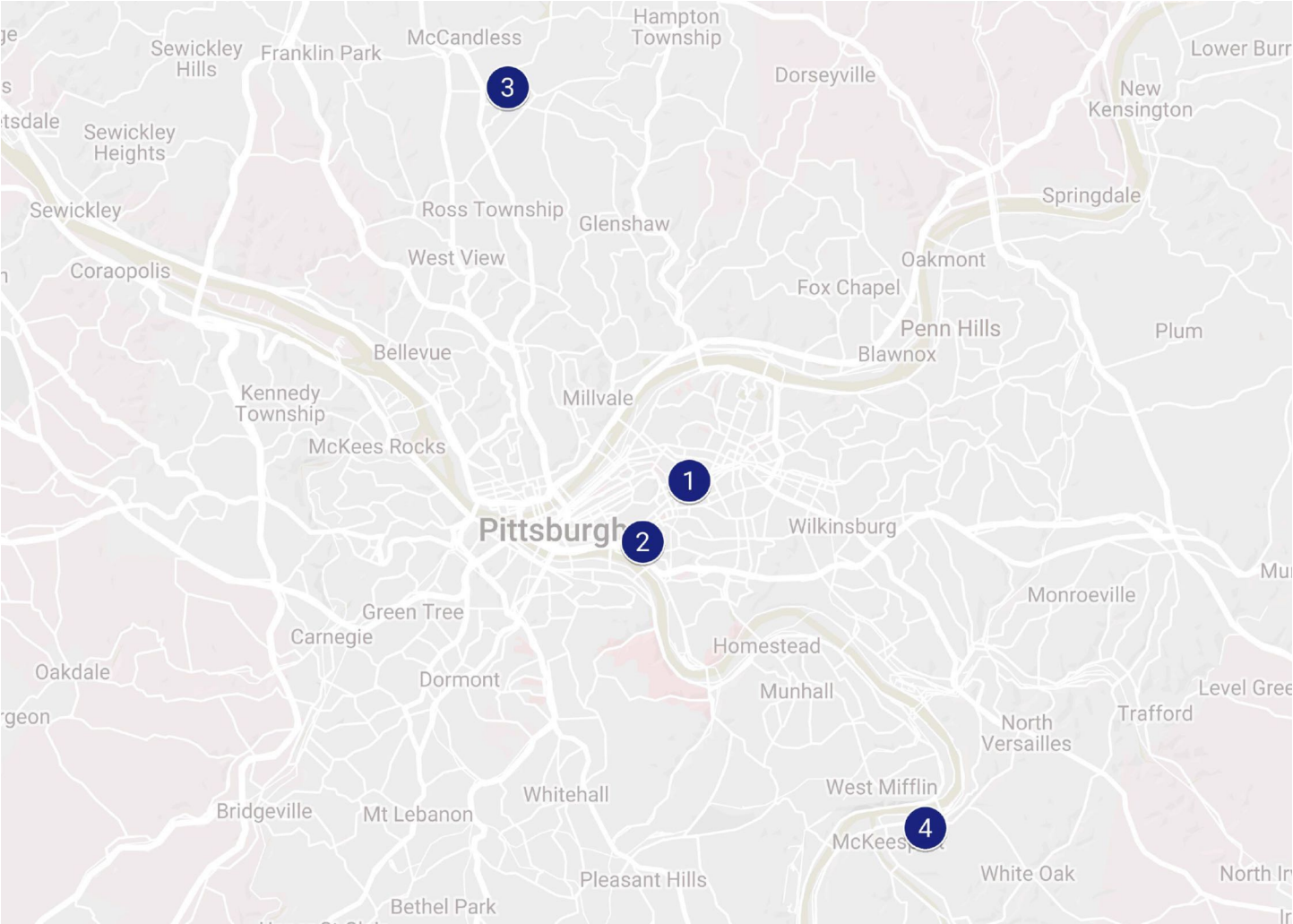
**Patient transfer.** Another area for improvement related to the effective transfer of cancer patients from the ICU to the regular nursing floor. A new paging process was instituted that added "warning" pages to the admitting teams—and direct phone calls were used between the ICU and oncology teams. These two initiatives have resulted in a marked improvement in the number of "missed" patients.

**Standardization of Inpatient CPR Status Discussions and Documentation within the Division of Hematology-Oncology and UPMC-Shadyside.** Medical professionals are trained to provide life-sustaining and cardiac resuscitation measures for admitted hospital patients. However, not all patients desire such aggressive measures. The lack of discussion and/or documentation about resuscitation preferences has led to care incongruous with patient's wishes (as previously documented or reported to providers or family members. In 2016, an average of 45% of patients admitted to the inpatient hematology and oncology services at UPMC Shadyside had a code status discussion documented prior to discharge. The aim of this quality improvement project was to improve the quality and rates of CPR status conversations with our cancer patients admitted to the inpatient service. A working group was formed in January 2017, and it comprised key stakeholders representing oncology physicians and fellows, palliative care faculty, oncology nursing, advance practice providers (APPs), and internal medicine house staff. A quality improvement (QI) proposal was developed and approved by the UPMC Quality Improvement Committee in February 2017. All oncology faculty, fellows, housestaff, and advance practice providers were reminded weekly to complete CPR status conversations and documentation. APPs were formally trained by palliative care specialists to discuss and document CPR/code status with all admitted patients. Hospital leadership received a monthly update of CPR status documentation rates.

Since implementation of this project in January 2017, there has been a significant improvement in the CPR status orders, which rose to >80%. In July 2017, 82% of our patients at UPMC Shadyside had a documented CPR status assessment at discharge, and this high level of >80% has continued over the past one year. Formal system-wide expectations are being developed by the CPR assessment workgroup that all admitted patients should have CPR/Code status discussion and documentation upon admission.

Overall, the Division has found that standardization of CPR status assessment with formal training of clinicians and APPs has resulted in a significant increase in the number of CPR status assessments on the inpatient setting, which has been sustained >80%. This practice has been so successful that a manuscript the reports on the important QI project has recently been accepted to the *Journal of Oncology Practice*, which is a highly respected peer-reviewed journal sponsored by the American Society of Clinical Oncology.

CLINICAL LOCATIONS





1

***Hematology/Oncology at UPMC Hillman Cancer Center***

5115 Centre Avenue  
Pittsburgh (Shadyside), PA, 15232

*Includes Center for Counseling and Cancer Support*

5110 Centre Avenue, Suite A-140  
Pittsburgh (Shadyside), PA 15232

2

***Women's Cancer Center—Magee-Womens Hospital of UPMC***

300 Halket Street, Suite 4628  
Pittsburgh (Oakland), PA 15213

*Includes Center for Counseling and Cancer Support*

300 Halket Street, Suite 0704 (Ground Floor)  
Pittsburgh (Oakland), PA 15213

3

***Center for Counseling and Cancer Support—UPMC Passavant***

9100 Babcock Boulevard, Ground Floor  
Pittsburgh, PA 15237

4

***Center for Counseling and Cancer Support—UPMC McKeesport***

Mansfield Building, D Level  
1500 Fifth Avenue  
McKeesport, PA 15132

## RESEARCH AND OTHER SCHOLARLY ACTIVITIES

The Division has maintained a strong commitment to research as evidenced by both peer-reviewed grant funding and clinical research. In FY 2018-2019, peer-reviewed direct funding totaled \$11.7 million.

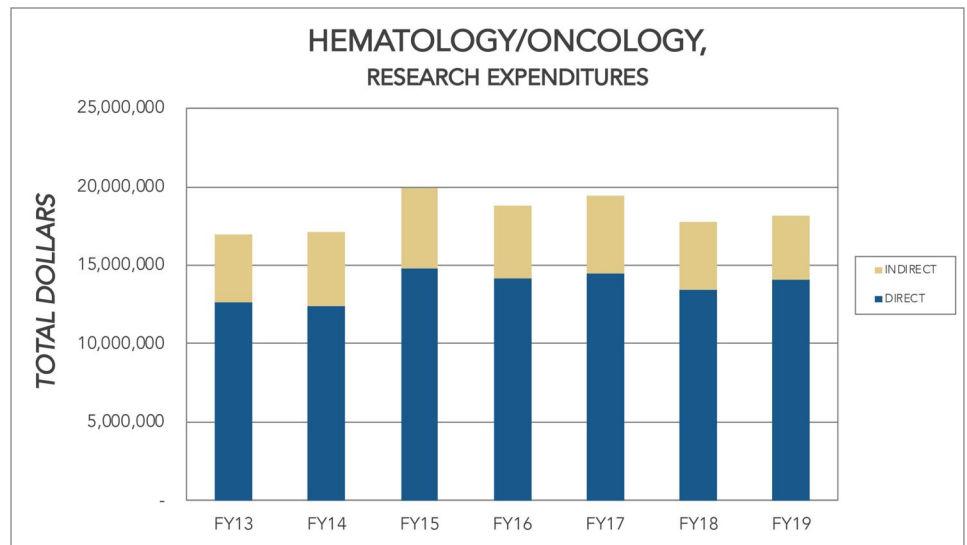
The Division continues to place a high priority on clinical and translational research. Clinical faculty devote considerable time and effort to developing clinical trials that investigate novel agents and/or combination regimens. The Division faculty continue to play important roles in the Phase I, Phase II, and Phase III clinical drug development programs. These are supported by the NCI with **Dr. Chu** serving as the PI of the NCI UM1 grant that funds Phase I and Phase II clinical programs, and **Dr. Brufsky** as the PI of the NCI U10 grant, now renamed the UG1, that supports the Phase III clinical program. In FY2018-2019, Division faculty enrolled 1,231 patients on therapeutic and non-therapeutic clinical trials, a 36% reduction in patient accruals compared to the number of patients enrolled in FY 2017-2018 due primarily to a significant breast cancer screening mammography trial ending in early 2018.

**Hassane Zarour, MD,**  
and **Diwakar Davar, MD,**  
recently implemented  
the **1st in-human**  
**clinical trial** with  
**fecal microbiota**  
**transplant** with  
**anti-PD-1 antibodies**  
**for melanoma patients**

Among the several key faculty members with noteworthy peer-reviewed grants are:

- **Edward Chu, MD**, is PI of the NCI T32 training grant focused on cancer therapeutics.
- **Edward Chu, MD**, is PI of the NCI UM1 grant focused on the development and conduct of Phase 1 and Phase 2 clinical trials. This grant represents a collaborative effort between HCC and the University of Florida Health Cancer Center and is about to bring on board the Albert Einstein Cancer Center as its second consortium partner.
- **Adam Brufsky, MD, PhD**, is PI of the NCI U10UG1 grant titled "NCTN Network Lead Academic Site."
- **Tim Burns, MD, PhD**, is PI of an American Cancer Society grant titled "Targeting the HGF-TWIST1 Pathway to Overcome Met TKI Resistance in NSCLC".
- **Diwakar Davar, MD**, is PI of a grant from the Harry J. Lloyd Charitable Trust Young Investigator Award titled "Assessment of Tumor Microenvironment and Type I IFN Signaling with Pembrolizumab-Pegylated IFN Combination in Advanced Melanoma."
- **Robert Ferguson, PhD**, was awarded \$50,000 from MIRO, a technology company based in San Francisco, to develop an iPad-based neurocognitive assessment tool using artificial intelligence.
- **Jim Herman, MD**, is PI of the NCI-supported U01 grant titled "Ultrasensitive Detection of Tumor Specific DNA Methylation Changes for the Early Detection of Lung Cancer".

- **Charles Horn, PhD**, is PI of a new NIDDK grant titled "Therapeutic Potential of Vagal Neurostimulation to Reduce Food Intake".
- **Greg Kato, MD**, submitted the first benign hematology T32 training grant at UPMC to train the next generation of physician scientists with a focus in benign hematology. This grant leverages the expertise of both the clinical and basic science faculty at the Vascular Medicine Institute and in the Section. This grant received a sufficiently high score that funding is expected.



- **John Kirkwood, MD**, is PI of the NCI-supported P50 Melanoma and Skin Cancer SPORE grant and the PI of a T32 training grant for skin biology and skin cancer.
- **Carissa Low, PhD**, is PI of a new NCI grant titled "A Mobile Sensing System to Monitor Symptoms During Chemotherapy."
- **Yana Najjar, MD**, is PI of the U.S. Department of Defense grant "Metabolic Remodeling of the Tumor Microenvironment to Improve the Efficacy of Immunotherapy."
- **Hassane Zarour, MD**, is PI of 2 NCI R01 grants "Targeting TIGIT and PD-1 in Melanoma" and "Fecal Microbiota Transplant and PD-1 Blockade in Melanoma."

### Research Service

Division of Hematology-Oncology faculty members are deeply committed to advancing this nation's research agenda, and they play important roles on various committees of the National Cancer Institute, the National Institutes of Health, and other federal agencies, as well as major professional cancer-focused organizations. This list highlights some of these noteworthy committees:

- **Len Appleman, MD, PhD**, is a member of the Eastern Cooperative Group Genitourinary Core Committee and a member of the NCI Renal Cancer Task Force.
- **Nathan Bahary, MD, PhD**, is a member of the NCI Pancreatic Task Force of the GI Cancer Steering Committee.
- **Edward Chu, MD**, serves as a member of the following committees: the NCI Investigational Drug Steering Committee, the NCI Experimental Therapeutics Committee, the American Association of Cancer Research Scientific Program Committee, and the NCI Subcommittee F Study Section on Training.
- **Laura M. De Castro, MD, MHSc**, is serving a 4-year term as a member of the American Society of Hematology (ASH) Committee on Practice and Committee on Training and Practice, as well as a member of the Food and Drug Administration Orphan Products Development Committee.
- **Jan Drappatz, MD**, is a member of the Alliance Cooperative Group Neuro-oncology Committee.
- **Leisha Emens, MD, PhD**, is a member of the Board of Directors of the Society for Immunotherapy of Cancer. She is also a member of the Oncology Drugs Advisory Committee (ODAC) for the US food

and Drug Administration.

- **Deborah Galson, PhD**, is a member of both the Scientific Program Committee for the American Society for Bone and Mineral Research and the ASBMR Finance Committee.
- **Gregory Kato, MD**, serves on the NIH Study Section focused on Heart, Lung and Blood Diseases and Sleep Disorders. He is also a member of the NIH Study Section, Discovering New Therapeutic Uses for Existing Molecules.
- **John Kirkwood, MD**, is a member of the ECOG-ACRIN Scientific Planning Committee and the ECOG-ACRIN Principal Investigator Committee, and he chairs the ECOG-ACRIN Melanoma Committee. Among his other memberships are the Society for Immunotherapy of Cancer Fellowship Review Task Force and the American Society of Clinical Oncology Research Policy Immunotherapy Working Group.
- **Frank Lieberman, MD**, is a member of three ECOG-ACRIN panels: the Biomarkers Committee, the Experimental Imaging Committee, and the CNS Tumor Committee. He also serves on the NCI Adult Brain Tumor Consortium.
- **Anna Lokshin, PhD**, is a member of the NCI Cancer Prevention Research Small Grant Program Committee and a member of the NIH SBIR/STTR Cancer Diagnostic and Treatment Committee.
- **Enrico Novelli, MD, MS**, is a member of the American Heart Association Study Section and a member of the NIH SBIR/STTR Study Section.
- **Solomon Ofori-Acquah, PhD**, is a member of the NIH Respiratory Integrative Biology and Translational Science Study Section. He also serves on the ASH Minority Medical Student Award Committee, and he chairs the ASH Minority Graduate Student Abstract Achievement Award Committee.
- **Priya Rastogi, MD**, is a member of the NCI Breast Cancer Steering Committee.
- **Margaret V. Ragni, MD, MPH**, is a member of the FDA Blood Products Advisory Committee, the American Society of Hematology (ASH) Scientific Committee on Hemostasis, and the National Health Foundation Medical and Scientific Advisory Committee.
- **Warren Shlomchik, MD**, is a member of the NCI Cancer Immunology and Immunopathology Study Section.
- **Josie van Londen, MD**, is a member of the ASCO Cancer Survivorship Committee, the ASCO Geriatric Oncology Special Interest Group Committee, and the ASCO Survivorship Guideline Advisory Committee.
- **Antoinette Wozniak, MD**, is a member of the Southwest Oncology Group (SWOG) Lung Committee and a member of the Scientific Committee of the International Association for the Study of Lung Cancer (IASCLC).
- **Hassane Zarour, MD**, is a member of the NCI Experimental Therapeutics SBIR Study Section and has served as a reviewer for the NCI SPORE Program.



## Faculty Research Interests and Activities

### Edward Chu, MD *Division Chief*

Dr. Chu conducts basic, clinical, and translational cancer research. His basic research interests have focused on characterizing the molecular mechanisms underlying the development of cellular drug resistance, especially as it relates to the fluoropyrimidine class of anticancer agents. His research group was the first to identify translational autoregulation as a novel regulatory mechanism in eukaryotes for controlling the expression of the folate-dependent enzymes, thymidylate synthase, and dihydrofolate reductase. His clinical translational research efforts have focused on identifying novel drugs and treatment strategies for colorectal cancer and other GI cancers and in developing early-phase I/II clinical trials. Dr. Chu has a strong interest in integrating Chinese herbal medicine with standard cancer chemotherapy with the goal of enhancing clinical activity and reducing the toxicity associated with chemotherapy. The Chu lab has been investigating the potential role of antisense and siRNAs as novel therapeutic molecules for the treatment of colorectal cancer. The goal of these studies is to identify novel molecules to prevent and/or overcome the development of cellular drug resistance to inhibitor compounds that target thymidylate synthase, a well-established target for cancer chemotherapy. The Chu lab observed that siRNAs were significantly more potent and specific in their ability to repress TS mRNA translation, resulting in potent inhibition of TS synthesis. Moreover, they were able to completely restore chemosensitivity to anticancer agents that target TS, including the fluoropyrimidines and TS antifolate inhibitors.

#### *Study Sections*

- Member/Reviewer, International Grant Review Committee, National Health Research Council of Italy, 2005-present
- Member/Reviewer, University Grants Committee, University of Hong Kong, 2005-present
- Member/Reviewer, Grants Committee, Singapore National Medical Research Council, 2008-present

#### *Advisory Committee Memberships and Leadership Positions*

- Member, Taiwan Cooperative Oncology Group, National Health Research Institutes of Taiwan, 1998-present
- Member, Scientific Advisory Board, Division of Clinical Research, NHRI, Taiwan, 1999-present
- Chair, Clinical Research Committee, Consortium for Globalization of Chinese Herbal Medicine, 2003-present
- Member, Scientific Advisory Board, Celator, Vancouver, BC, 2005-present
- Member, Scientific Advisory Board, Albert Einstein Cancer Center, 2006-present
- Member, Scientific Advisory Board, Principles and Practice of Oncology: The Cancer Journal, 2006-present
- Member, Scientific Advisory Board, Dartmouth-Hitchcock Norris Cotton Cancer Center, 2007-present
- Member, Investigational Drug Steering Committee, NCI, 2010-present
- Member, Scientific Advisory Board, Saladex, Bethlehem, PA, 2010-present
- Member, Scientific Advisory Board, Salzborg Therapeutics, Winston-Salem, NC, 2011-present
- Chair, Scientific Advisory Board, University of Vermont Cancer Center, 2012-present
- Member, Experimental Therapeutics Committee (NeXT), NCI, 2012-present
- Member, Scientific Advisory Board, USC Norris Cancer Center, 2012-present
- Member, Exhibits Committee, AACR, 2012-present



- Member, Basic Cancer Research Fellowships Scientific Review Committee, AACR, 2013-present
- Member, Scientific Advisory Board, Case Western Seidman Cancer Center, 2013-present
- Member, Scientific Advisory Board, Medical University of South Carolina Hollings Cancer Center, NCI Cancer Centers, 2013-present
- Member, Scientific Advisory Board, Indiana University Simon Cancer Center, 2014-present
- Member, Colon Cancer Research Fellowships Scientific Review Committee, AACR, 2014-present
- Member, Oncology Scientific Committee, International Association of Therapeutic Drug Monitoring and Clinical Toxicology, 2015-present
- Chair, Scientific Advisory Board, Herbert Irving Columbia Cancer Center, 2015-present
- Member, Executive Council, Global Consortium for Chinese Herbal Medicine, 2015-present
- Member, Colon Cancer Alliance, Washington DC, 2016-present
- Chair, Scientific Advisory Board, University of Arizona Cancer Center, 2016-present
- Full Member, Subcommittee F, NCI, 2016-present
- Member, NextGen Grants for Transformative Cancer Research Committee, AACR, 2016-2018
- Member, Scientific Advisory Board, Duke Cancer Institute, 2017-present
- Scientific Advisory Board, Karmanos Cancer Institute, NCI Cancer Centers, 2017-present
- Member, Scientific Advisory Board, University of Michigan Cancer Center, NCI Cancer Centers, 2017-present
- Scientific Advisory Board, Hope Biosciences, Irvine, CA, 2017-present
- Scientific Advisory Board, University of Kentucky Markey Cancer Center, NCI Cancer Centers, 2018-present
- Faculty Mentor, AACR-ASCO Vail Workshop in Clinical Cancer Research, Vail, CO, 2018
- Scientific Advisory Board, St. Jude's Cancer Center, NCI Cancer Centers, 2019-present

#### *Professional Affiliations and Society Memberships*

- Member, American Federation for Medical Research, 1985-present
- Member, American Association for Cancer Research, 1985-present
- Member, International Colorectal Cancer Club, 1995-present
- Member, American Society of Clinical Oncology, 1990-present
- Member, European Society for Medical Oncology, 2000-present

#### *Editorships*

- Reviewer, Multiple journals, 1985-present
- Editorial Board, *International Journal of Oncology*, 1997-present
- Founding Editor-in-Chief, *Clinical Colorectal Cancer*, 2000-present
- Editorial Board, *Oncology Special Edition*, 2003-present
- Editorial Board, *Current Reviews in Hematology and Oncology*, 2004-present
- Editorial Board, *Journal of Chemotherapy*, 2004-present
- Editorial Board, *Oncology*, 2006-present
- Editorial Board, *Oncology News International*, 2006-present
- Editorial Board, *Clinical Oncology News*, 2008-present
- Editorial Board, *Journal of Clinical Oncology*, 2008-present
- Co-Editor-in-Chief, *Oncology Research*, 2008-present
- Editorial Board, *Journal of Experimental and Clinical Medicine*, 2009-present

#### *Major Lectureships and Seminars*

- Lecturer, Medical Oncology Board Review Course, George Washington University, Alexandria VA,

1987-present

- Lecturer, Medical Oncology Board Review Course, MD Anderson Cancer Center, Houston, TX, 2008-2018
- Invited Lecturer, Montefiore-Albert Einstein Cancer Center Seminar Series, New York, NY, September 2018
- Invited Lecturer, University of Florida Health Cancer Center Grand Rounds, Gainesville, FL, January 2019
- Invited Lecturer, PHY906 as a Model for the Development of Chinese Herbal Medicine in the Treatment of Metastatic Colorectal Cancer, NCI-NSCF International Workshop, Beijing, China, April 2019
- Invited Lecturer, Phase 2 Clinical Trial Designs for Chinese Herbal Medicine, NCI-NSCF International Workshop, Beijing, China, April 2019

#### *Honors and Awards*

- Fellow, American College of Physicians, 1985-present
- Fellow, American Association for the Advancement of Science, 2005-present
- Recipient, Castle Connolly America's Top Doctor for Cancer Award, 2005-present
- Named, Top Doctor, *U.S. News and World Report*, 2011-present

### **Leonard J. Appleman, MD, PhD**

Dr. Appleman's current research efforts in the field of tumor immunology include collaborating with Dr. Pawel Kalinski on conducting clinical trial of an autologous dendritic cell vaccine in patients with biochemical recurrence of prostate cancer (UPCI 06-070). Dr. Appleman is also working with Dr. Michael Lotze on another investigator-initiated phase I study of high dose interleukin-2 plus hydroxychloroquine (UPCI 11-080), and he has co-authored a review on inhibiting autophagy in renal cell carcinoma with his collaborators (Lotze, Maranchie, and Appleman 2013, *Cancer J.*). He is site Principal Investigator for the NCI-funded Cancer Immunotherapy Trials Network (CITN) study of interleukin-7 and sipuleucel-T for men with castration-refractory prostate cancer and was the site P.I. for the Cytokine Working Group IL-2 Select study (McDermott et al. 2014, *Clin. Cancer Res.*). Dr. Appleman also serves as site PI for several industry-sponsored studies that are investigating cancer immunotherapy. One of these studies was presented at ASCO in 2014 (Choueiri et al.).

#### *Advisory Committee Memberships and Leadership Positions*

- Member, Cytokine Working Group, Society for the Immunotherapy of Cancer, 2015-present
- Co-Leader, GU Disease Team, Pennsylvania Cancer Consortium, 2015-present
- Member, NCI Renal Cancer Task Force, 2016-present

#### *Professional Affiliations and Society Memberships*

- Member, American Society of Clinical Oncology, 2007-present

#### *Editorships*

- Reviewer, Multiple journals, 2004-present
- Associate Editor, *Clinical Genitourinary Oncology*, 2016-present

### **Nathan Bahary, MD, PhD**

Dr. Bahary's principal research interest is to combine the power and insight of vertebrate development to elucidate basic molecular processes and the treatment of cancer. One of the methods used to characterize the discrete steps involved in normal vertebrate development and initiation and progression of tumors is the



generation of mutants and alteration of specific gene expression. In this regard, the zebrafish (*Danio rerio*) is an especially robust vertebrate system for isolating and defining the novel factors affecting these processes. The developing embryos are transparent, facilitating visualization, and have functioning organ systems by 24 hours post-fertilization. Transgenic zebrafish, made by fusing the promoter elements of genes with a fluorescent marker (GFP), are being used to help elucidate the key steps in cancer development. This work will help provide the basis for designing rational, molecularly based disease directed therapies.

#### *Study Sections*

- Standing Member, Special Emphasis Review Panel, Postdoctoral Fellowship applications for Digestive Diseases and Nutrition, NIDDK, 2011-present

#### *Advisory Committee Memberships and Leadership Positions*

- Member, GI Steering Committee, ECOG, 2004-present
- Rotation Site Director, Complex General Surgical Oncology Fellowship, 2013-present
- Member, National Surgical Adjuvant Breast and Bowel Project, 2015-present
- Member, Pancreatic Cancer Research Team, 2015-present
- ECOG-ACRIN Representative, Pancreas Task Force, NCI Gastrointestinal Steering Committee, 2017-present
- Course Director, PancreasFest 2018, Pittsburgh, PA, July 2018

#### *Professional Affiliations and Society Memberships*

- Member, American Society of Clinical Oncology, 2015-present
- Member, Society for Clinical and Translational Science, 2015-present
- Member, American Association for Cancer Research, 2015-present
- Member, North American Neuroendocrine Tumor Society, 2015-present

#### *Editorships*

- Editorial Advisory Board, *Oncology Research*, 2015-present
- Editorial Advisory Board, *Clinical Colorectal Cancer*, 2015-present
- Reviewer, Multiple journals, 2015-present

#### *Major Lectureships and Seminars*

- Invited Speaker, The Banbury Center, Lloyd Harbor, NY, October 2018
- Invited Speaker, Medicine Grand Rounds, Pittsburgh, PA, October 2018
- Invited Speaker, Shadyside Medicine Grand Rounds, Pittsburgh, PA, November 2018

### **Franklin A. Bontempo, MD**

Dr. Bontempo is a hematologist and attending physician at several UPMC facilities, providing on-call services for hospital consultations and also seeing patients at the Hillman Cancer Center. Additionally, he serves as the Medical Director of the coagulation laboratory at The Institute For Transfusion Medicine, the Associate Director of the Hemophilia Center of Western Pennsylvania, and on the advisory board of the Hemostasis and Vascular Biology Institute. In these roles, he sees patients for consultation of coagulation issues at the outpatient clinic of The Institute for Transfusion Medicine, provides coagulation interpretations of blood samples that are processed through the coagulation laboratory from across the tri-state region in assisting other physicians with test result interpretations, diagnoses, and treatment plans. He specializes in the treatment of myeloproliferative disease, a bone marrow disorder that can evolve into leukemia. A prominent speaker in local, regional, and national forums, Dr. Bontempo is an educator and mentor to the many medical students, residents, and fellows that participate in the Coagulation Rotation which has become a standard course offering of the School of Medicine at the University of Pittsburgh.

- Member, Board of Trustees, Hemophilia Center of Western Pennsylvania, 1998-present
- Member, Board of Trustees, Leukemia and Lymphoma Society, 1999-present
- Board Member, American Cancer Society, 1999-present

*Professional Affiliations and Society Memberships*

- Member, American Society of Hematology, 1990-present
- Member, International Liver Transplant Society, 2014-present
- Faculty Member, Alpha Omega Alpha Honor Medical Society, 2014-present

*Editorships*

- Reviewer, Multiple journals, 2018-present

**Michael Boyiadzis, MD, MHSc**

Dr. Boyiadzis's research focuses on natural killer-cell biology, immunotherapy, and hematopoietic stem cell transplantation.

*Advisory Committee Memberships and Leadership Positions*

- Chair, Immunotherapy Guidelines for Acute Leukemia, Society for Immunotherapy of Cancer, 2014-present

*Professional Affiliations and Society Memberships*

- Member, American Society of Clinical Oncology, 2001-present
- Member, American Society of Hematology, 2002-present
- Member, American College of Physicians, 2003-present
- Member, Society for Immunotherapy of Cancer (SITC), 2018-present

*Editorships*

- Editorial Board, *Oncology Research*, 2015-present

**Adam M. Brufsky, MD, PhD**

Dr. Brufsky's research interests include novel clinical therapeutics for breast cancer, bone-breast cancer interactions and therapeutics, molecular biology of metastatic breast cancer, and novel management strategies for metastatic breast cancer.

*Study Sections*

- Leader, Susan G. Komen Postdoctoral Fellowship Study Section, 2010-present

*Advisory Committee Memberships and Leadership Positions*

- Member, Breast Committee, National Surgical Adjuvant Breast and Bowel Project, 2006-present
- Leader, Experimental Therapeutics 2 Study Section, Department of Defense Congressionally Mandated Breast Cancer Research Program, 2009-present

*Editorships*

- Reviewer, Multiple journals, 1998-present
- Editorial Board, *Journal of Clinical Oncology*, 2010-present
- Editorial Board, *World Journal of Orthopaedics*, 2010-present
- Editorial Board, *Journal of Bone Oncology*, 2012-present

*Major Lectureships and Seminars*

- Invited Lecturer, Oncology Rounds, Watson Clinic, Lakeland, FL, July 2018
- Invited Lecturer, Oncology Rounds, Chulalongkorn Hospital, Bangkok, Thailand, August 2018
- Invited Lecturer, Oncology Rounds, Ramathibodi Hospital, Bangkok, Thailand, August 2018
- Invited Lecturer, Thai Oncology Cancer Society Best of ASCO Symposium, Bangkok, Thailand,

#### August 2018

- Invited Lecturer, Grand Rounds, Beckley Memorial Hospital, Beckley, WV, August 2018
- Invited Lecturer, Best of ASCO Symposium, Portland, OR, August 2018
- Invited Lecturer, Best of ASCO Symposium, UPMC Cancer Center, Pittsburgh, PA, September 2018
- Invited Lecturer, Association of Oncology Hospital Pharmacists, Chicago, IL, September 2018
- Invited Lecturer, Grand Rounds, Cancer Treatment Centers of America, Philadelphia, PA, September 2018
- Invited Lecturer, Grand Rounds, University of Vermont Medical Center, Burlington, VT, September 2018
- Invited Lecturer, Grand Rounds, Meadville General Hospital, Meadville, PA, September 2018
- Invited Lecturer, Phillipines Society of Medical Oncology Best of ASCO Symposium, Manila, Phillipines, October 2018
- Invited Lecturer, 16th Women's Cancer Initiative Breast Conference, Goa, India, October 2018
- Invited Lecturer, Indian Society of Medical Oncology Metastatic Breast Cancer Symposium, Delhi, India, October 2018
- Invited Lecturer, State of the Science Summit: Breast Cancer, Pittsburgh, PA, October 2018
- Invited Lecturer, Cancer Chemotherapy Foundation, Symposium, New York, NY, November 2018
- Invited Lecturer, Oncology Grand Rounds, Novant Health Forsyth Medical Center, Winston-Salem, NC, February 2019
- Invited Lecturer, 5th Biennial Meeting of the Society of Israeli Breast Surgery, Zichron Yaakov, Israel, February 2019

### Ronald J. Buckanovich, MD, PhD

Dr. Buckanovich's research interests are ovarian cancer stem cells, mesenchymal stem cells, tumor vascular niche, ovarian cancer therapeutics, and ovarian cancer clinical trials.

#### Study Sections

- Ad hoc Reviewer, NIH/NCI Special Emphasis Study Section, 2018
- Ad hoc Reviewer, NIH/NCI Tumor microenvironment study section, 2018
- Standing member, NIH/NCI Tumor microenvironment study section, 2019-2025

#### Advisory Committee Memberships and Leadership Positions

- Member, Scientific Advisory Committee, Ovarian Cancer Research Fund, 2013-present
- Member, Department of Defense Ovarian Cancer Academy, 2013-present
- Member, Education Committee, American Society of Clinical Oncology, 2016-2018
- Member, Research Executive Advisory Committee, UPMC Hillman Cancer Center, 2017-present
- Member, Scientific Advisory Committee, Immune Transplant and Therapy Center (ITTC), UPMC, 2017-present
- Member, PI Faculty Search Committee, UPMC Magee-Womens Research Institute, 2017-2018
- Chair, Education Funds Committee, Womens Cancer Research Center, 2018-present

#### Editorships

- Reviewer, *Cancer Biology and Therapy*, 2006-present
- Reviewer, *Cancer Research*, 2006-present
- Reviewer, *Clinical Cancer Research*, 2006-present
- Reviewer, *Gynecologic Oncology*, 2006-present

- Reviewer, *Journal of Clinical Oncology*, 2008-present
- Reviewer, *Journal of Laboratory Investigation*, 2008-present
- Reviewer, *Cancer Epidemiology and Biomarkers*, 2009-present
- Reviewer, *Translational Research Medicine*, 2009-present
- Editorial Board, *The Journal of Translational Research*, 2009-present
- Reviewer, *Cell Cycle*, 2010-present
- Reviewer, *Journal of Clinical Investigation*, 2011-present
- Reviewer, *Journal of Experimental Medicine*, 2011-present
- Editorial Board, *Gynecologic Oncology*, 2017-present
- Reviewer, *JAMA-Onc*, 2019-present

#### *Honors and Awards*

- Member, American Society of Clinical Investigation, 2012-present

### **Melissa A. Burgess, MD**

Dr. Burgess is a clinical and translational investigator in sarcoma with active involvement in current clinical trials. Her research efforts include a collaboration with Dr. Lisa Butterfield, former director of the Immune Monitoring and Cellular Products Laboratory (IMCPL) at the University of Pittsburgh Cancer Institute (UPCI), and a focus on analyzing peripheral blood samples from SARC 028: A Phase II Study of the Anti-PD1 Antibody Pembrolizumab (MK-3475) in Patients with Advanced Sarcomas. Planned analyses include the assessment of T-cell populations and other immune markers in the circulation with correlation to tumor response to pembrolizumab. Results will be combined with the other correlative studies from SARC 028, including correlation of response with PD-L1 status and immune monitoring within the tumor. These transitional studies should offer unique insights into the biology of PD-1 blockade in sarcoma. Dr. Burgess serves as local Principal Investigator for SARC 028, a clinical trial through Sarcoma Alliance for Research through Collaboration (SARC), of which the University of Pittsburgh is a participating institution. Results of soluble checkpoints and cytokines and other serum inflammatory markers were presented as a poster at ASCO-SITC in February 2017. Updated efficacy results and tumor PD-L1 analyses were presented at the ASCO Annual Meeting in June 2017 by Dr. Burgess during the Sarcoma Oral Abstract Session. Efficacy results and biomarker analyses were submitted for publication to *Lancet Oncology* in May 2017 with Dr. Burgess as the second author.

#### *Advisory Committee Memberships and Leadership Positions*

- Advisor, Immune Design, 2017-present
- Advisor, EMD-Serono/Pfizer, 2018

#### *Professional Affiliations and Society Memberships*

- Member, Pittsburgh Cure Sarcoma, 2015-present
- Member, Sarcoma Alliance for Research through Collaboration, 2015-present
- Member, Connective Tissue Oncology Society, 2015-present
- Member, American Society of Clinical Oncology, 2015-present
- Member, American Association for Cancer Research (AACR), 2017-present

#### *Editorships*

- Reviewer, Multiple journals, 2016-present

### **Timothy F. Burns, MD, PhD**

Dr. Burns's research interests include the development of targeted therapies for KRAS-mutant NSCLC as well

as novel strategies to overcome resistance to targeted therapies for EGFR-mutant and MET-altered NSCLC. The first line of research in his laboratory is the role of the epithelial-mesenchymal transition transcription factor TWIST1 in oncogene-driven NSCLC. They have demonstrated that TWIST1 is essential for lung tumorigenesis for KRAS- mutant, EGFR-mutant and MET-mutant, and that amplified NSCLC and TWIST1 overexpression leads to resistance to EGFR- and MET- targeted therapies. They are examining the mechanism(s) through which this occurs and developing therapeutic combinations to overcome this resistance. Dr. Burns's lab is also exploring whether targeting the HGF-MET-TWIST1 pathway can be an effective strategy for preventing or treating lung brain metastases. Importantly, researchers have developed a novel TWIST1 inhibitor that serves as a tool compound for their therapeutic studies and serves as the basis for the current drug screening efforts in order to develop a clinical TWIST1 inhibitor. His lab's second line of research is the study of mechanisms of resistance to the Hsp90 inhibitor, ganetespib, in KRAS-mutant NSCLC and to use this data to develop a rationally designed Hsp90 inhibitor combination for the clinic that can prevent or overcome resistance. They have recently demonstrated that the ERK-p90RSK-CDC25C pathway plays a key role in resistance to Hsp90 inhibitors through bypass of a G2/M checkpoint. They have found several Hsp90 inhibitor drug combinations that may be effective in KRAS-mutant NSCLC, and that they hope to test in early phase trials soon. Finally, they are actively engaged in exploring the role of ERK inhibitor combinations in targeting KRAS- and EGFR-mutant NSCLCs both in the de novo and acquired-resistance setting.

#### *Study Sections*

- Reviewer, Study Section Member, CMRF, 2014-present
- Study Section Member, American Lung Association, 2015-present
- Study Section Member, NCI, Tumor Progression and Metastasis Section, October 2018

#### *Professional Affiliations and Society Memberships*

- Member, American Medical Association, 1998-present
- Member, American Association for Cancer Research, 1998-present
- Member, American Association of Clinical Oncology, 2008-present
- Member, International Association for the Study of Lung Cancer, 2010-present
- Member, Eastern Cooperative Oncology Group, 2012-present
- Member, Alliance for Clinical Trials in Oncology, 2013-present

#### *Editorships*

- Reviewer, Multiple journals, 2013-present
- Reviewer, Thoracic Oncology section, *Frontiers in Oncology*, 2015-present
- Associate Editor, *Cancer Biology & Therapy*, 2015-present
- Breaking Insights Editor, *Cancer Research*, 2017-present

#### *Major Lectureships and Seminars*

- Invited Speaker, Memorial Sloan Kettering Cancer Center-Druckenmiller Center for Lung Cancer research, 2018
- Invited Speaker, Annual Expert Forum on Thoracic Malignancies, Dallas, TX, 2018
- Invited Speaker, Aging & Cancer Workshop, UPMC HCC, 2019

#### *Honors and Awards*

- Recipient, American Cancer Society Research Scholar Grant, 2019

### **Lan G. Coffman, MD, PhD**

Dr. Coffman's research focuses on understanding and targeting the cancer supporting stromal tissues that are

critical to the survival, growth, and spread of ovarian cancer. Specifically, Dr. Coffman's lab studies a critical non-malignant component of the ovarian cancer microenvironment, the carcinoma-associated mesenchymal stem cell (CA-MSC). CA-MSCs are stromal progenitor cells, which significantly increase cancer growth, enrich the cancer stem cell pool and increase chemotherapy resistance.

The lab studies how CA-MSCs are formed and develop tumor supporting properties. The lab also focuses on identifying important tumor cell:CA-MSC interactions which mediate CA-MSC's pro-tumorigenic functions and have potential for translation into new therapeutic targets. Additionally, the lab studies how CA-MSCs impact the development of ovarian cancer metastasis and the metastatic microenvironment.

The ultimate goal of this research is to translate novel laboratory findings into powerful therapeutic approaches for the prevention and treatment of ovarian cancer.

#### *Study Sections*

- Reviewer, Developmental Funding Program, UPMC Hillman Cancer Center, 2018-2019
- Ad hoc Reviewer, The Netherlands Organisation for Health Research and Development (ZonMw), April 2019
- Early Career Panel Member, NIH/CSR Cancer Diagnostics and Treatments (CDT) study section, NIH, June 2019
- Member, ASCO grant review committee, 2019-present

#### *Advisory Committee Memberships and Leadership Positions*

- Panel Member, Global Online Gyne Tumor Board, Global Cancer Institute, 2018-present

#### *Editorships*

- Reviewer, *Oncotarget*, 2018-present
- Reviewer, *Journal of Clinical Investigation*, 2018-present
- Reviewer, *Cytometry*, 2018-present

#### *Major Lectureships and Seminars*

- Invited Oral Presenter, Science 2019, University of Pittsburgh, October 2018

### **Diwakar Davar, MD**

Dr. Davar's initial work evaluated survival among patients with stage IV melanoma in various countries. It was noted that despite similar access to treatment, overall survival in stage IV patients differed by country. These results, presented at Perspectives in Melanoma XV, provided the first hint that melanoma biology differed by geography. Other authors have since demonstrated that this is secondary to geographic variations in molecular epidemiology (BRAF, NRAS, CKIT mutational incidence). A retrospective single-institution analysis of melanoma patients treated with HD IL-2 was subsequently performed. This experience was initially presented at ASCO 2013 and suggested that administration of HD IL-2 in a non-ICU setting without pressor and/or ventilator support to maximize dose intensity did not compromise outcomes. Updated analyses with 1-/2-/3- year survival data and mutational information have been published. Another area of research has been in translational cancer immunotherapy and early-phase clinical trials. He is working with Drs. Zarour and Kirkwood to coordinate the clinical care and translational research of a novel trial combining PD-1 inhibitor Pembrolizumab with immunomodulatory PEG-IFN. Preliminary results were presented at ASCO 2015. Final results have been collated along with correlative analyses and are pending publication. More recently, in collaboration with Bristol-Myers Squibb and based on published findings by Dr. Zarour's laboratory, Dr. Davar contributed to the development and implementation of a first-in-human study of TIGIT mAb (BMS-986207) singly and in combination with Nivolumab that is presently in active accrual and for which he is the



institutional Principle Investigator. He is also the institutional Principle Investigator for first-in-human studies of G1TR mAb (TRX-518), pegylated arginase (AEB1102), and IDO inhibitor (BMS-986205).

Based on emerging data implicating intestinal dysbiosis in mediating non-response to PD-1 blockade, Dr. Davar developed, collaboratively with Dr. Zarour, a protocol evaluating fecal microbiota transplant in combination with PD-1 blockade to treat PD-1 non-responders. This first-in-human study was selected for funding by Merck to support the clinical costs and is IRB approved. In the context of this trial, Dr. Davar is working in close collaboration with Dr. Zarour and co-investigators Drs. Methé and Benos, for the performance of the correlative studies in the context of the new clinical trial with fecal transplant microbiota and pembrolizumab in PD-1 refractory melanoma patients.

#### *Honors and Awards*

- Recipient, The Harry J. Lloyd Charitable Trust Career Development Award, 2017-2019
- Recipient, Hem Onc Today Next Gen Innovators Award, June 2019

#### **Laura M. De Castro, MD, MHSc**

Dr. De Castro's research interests include sickle cell-related psychosocial issues, pulmonary hypertension, drug development, and pregnancy and obstetric outcomes. She has developed research hypotheses, designed studies, and applied for extramural support as well as managed data collection and research-related clinical trials. Dr. De Castro has also implemented the planning and development of phase II and III and translational research clinical trials.

#### *Advisory Committee Memberships and Leadership Positions*

- Member, Steering Committee, STRIDE Study, 2012-present
- Member, Committee on Practice, ASH, 2016-present
- Member, Guideline Panel on Sickle Cell Disease, ASH, 2016-present
- Project Director, Sickle Cell Disease Nurse Champion, 2016-present
- Member, SCD Work Group on Health Care Professional Education and Training, ASH, 2016-present
- Liaison Representative, Hospital Medicine Society, ASH, 2016-present
- Member, Recruitment and Retention Subcommittee, ASH, 2017-present

#### *Professional Affiliations and Society Memberships*

- Member, American Society of Hematology, 1996-present
- Member, European Hematology Association, 2017-present
- Member, Hospital Medicine Society, 2018-present

#### *Editorships*

- Editor, FDA Office of Orphan Products Development, 2012-present

#### **Albert D. Donnenberg, PhD**

Dr. Donnenberg's research interests focus on cancer stem cells and their role in tumorigenesis, invasion, and metastasis. He views stemness in epithelial cancers as a state rather than the property of a unique cell type, with individual tumor cells transiting in and out of the cancer stem cell state. According to this interpretation, the more aggressive the tumor, the more cells exist in the stem-like state at any given time. In xenograft models, tumorigenicity is dependent on this state, which can be recognized by the expression of a number of markers that are associated with normal mesenchymal stem cells. In epithelial cancers, mesenchymal markers are associated with invasion, immune suppression and drug resistance. Taken together, the cancer stem cell



paradigm has converged with the bidirectional epithelial to mesenchymal/mesenchymal to epithelial transitions (EMT/MET). The Donnenbergs's working hypothesis is that neoplastic transformation and conferral of invasiveness are often independent processes, the later on wound-healing signals present in the tumor microenvironment. Thus, a carcinoma in situ and an invasive carcinoma may share a common mutational profile but exist in very different microenvironments. Since the environment is controlled to a large part by tissue macrophages and stromal cells, which interact at close distances with tumor cells, their research efforts are currently aimed at understanding how polarization toward wound healing influences tumor cell behavior, and how tumor cells influence polarization.

#### *Advisory Committee Memberships and Leadership Positions*

- Organizing Committee, Eurasian Hematology Oncology Congress, 2018-2019
- Executive Committee, Michigan/Pittsburgh/Wyss Regenerative Medicine, 2018-present
- Inspector/Team Leader, College of American Pathology, 2018-present
- Writing Committee, Center for International Blood and Marrow Transplant Research, 2018-present
- Consultant, Salvator Mundi International Hospital (UPMC), 2018-present
- Program Committee, CYTO 2019 (ISAC Annual Meeting), May 2019

#### *Major Lectureships and Seminars*

- Invited Speaker, Great Lakes International Flow Cytometry Association, September 2018
- Invited Speaker, Eurasian Hematology Oncology Congress, October 2018

### **Kathleen Dorritie, MD**

Dr. Dorritie's research centers on the development of early phase clinical trials in hematologic malignancies, in particular lymphoid malignancies. Previously, she had conducted laboratory research focused on the development of novel therapeutic agents for acute myeloid leukemia. A member of the HCC Cancer Therapeutics Team, she has played a key role in the development of the chimeric antigen receptor (CAR) T-cell program and serves as lead or co-investigator on several clinical studies of CAR T-cell therapy at UPMC. Dr. Dorritie has also been playing a key role in the development of a stem cell transplant program for patients with hemoglobinopathies, including sickle cell disease. Dr. Dorritie teaches a number of didactic lectures for both medical students and fellows and serves as a block director for the MS2 Hematology course. And, she teaches clinically on the leukemia, stem cell transplant, and malignant hematology services.

#### *Advisory Committee Memberships and Leadership Positions*

- HCC Committee Member, Foundation for the Accreditation of Cellular Therapies, 2015-present

#### *Professional Affiliations and Society Memberships*

- Member, American Society of Hematology, 2011-present
- Member, American Society of Clinical Oncology, 2011-present
- Member, American Association for Cancer Research, 2011-present
- Member, American Society for Blood and Marrow Transplantation, 2012-present

#### *Editorships*

- Reviewer, Multiple journals, 2015-present

#### *Major Lectureships and Seminars*

- Lecturer, Leukemia & Lymphoma Society Blood Cancer Conference, October 2018
- Lecturer, Update in Internal Medicine, October 2018
- Lecturer, CART T Therapy: Overview, UPMC Children's Hospital Oncology Grand Rounds, October 2018
- Lecturer, 2018 Advances in Cancer Immunity and Immunotherapy, June 2018

- Lecturer, CAR T Therapy: Future, BMT RN Conference, April 2019

### Jan Drappatz, MD

Dr. Drappatz's primary areas of research involve the development of novel agents for the treatment of glioblastoma, central nervous system lymphoma, and other primary and metastatic brain tumors. He has served as the principal investigator of numerous clinical trials to identify effective therapies for patients with brain tumors and other neurological ailments associated with cancer. He is currently leading several clinical trials involving immune therapy and new targeted therapies as well as treatments targeting tumor vasculature. His work has been presented nationally and internationally and has resulted in well over 150 manuscripts, book chapters, and abstracts. He serves as a peer reviewer for multiple journals.

#### *Advisory Committee Memberships and Leadership Positions*

- Member, Neuro-Oncology Committee, Alliance for Clinical Trials in Oncology, 2012-present

#### *Professional Affiliations and Society Memberships*

- Member, American Association for Cancer Research, 2005-present
- Member, American Society for Clinical Oncology, 2005-present
- Member, American Academy of Neurology, 2005-present
- Member, Society for Neuro-Oncology, 2005-present

#### *Editorships*

- Reviewer, Multiple journals, 2007-present

#### *Honors and Awards*

- Honoree, Best Doctors, Pittsburgh Magazine, 2009-present
- Recipient, Top Doctors, Castle Connolly, 2012-present

### Leisha A. Emens, MD

Dr. Emens was recruited to the UPMC Hillman Cancer Center as Director of Translational Immunotherapy for the Women's Cancer Research Center at Magee Women's Hospital, and as Co-Leader of the Cancer Immunology and Immunotherapy Research Program. In these leadership roles, she will promote interdisciplinary translational and clinical cancer immunotherapy research and oversee the strategic expansion, integration, and operations of early phase immunotherapy trials at HCC and Magee Women's Hospital. Dr. Emens will work with investigators in the HCC research programs, including Cancer Therapeutics, Cancer Immunology and Immunotherapy, Cancer Biology, Genome Instability, and Cancer Epidemiology and Prevention to develop novel clinical and translational immune-based investigations for the detection, screening, prevention, and treatment of breast and gynecologic cancers. She will work closely with members of the Breast Disease Team to develop strong multi- and inter-disciplinary treatment approaches to breast cancer care. She will be co-PI of the UPMC Hillman Cancer Center Breast SPORE, planned for submission in the next 12 months. She will also participate in other team science grants in the Women's Cancer Research Center and the Cancer Immunology and Immunotherapy Program. She will actively participate as a member of the NSABP Foundation, and will serve as UPMC Hillman PI for the Translational Breast Cancer Research Consortium (TBCRC), both of which are clinical translational research groups that test innovative, scientifically-driven therapeutic strategies with deeply rooted biomarker studies through cross-institutional collaborations. She will also work with the Breast and Gynecologic Disease Teams to develop investigator-initiated trials that collaboratively evaluate novel therapies that target common elements of disease biology in women's cancers.

#### *Study Sections*

- Review Committee, AACR Basic Cancer Research Grants, 2018-2019
- Judge, Young Investigator's Award Committee, 5th International Conference for Immunotherapy of Cancer (ITOC5), 2018-present
- Judge, President's Award, Society for Immunotherapy of Cancer, 2018-present

*Advisory Committee Memberships and Leadership Positions*

- Scientific Advisory Board, Molecuvax, 2016-present
- Scientific Advisory Board, eTHERNA, 2017-present
- Scientific Advisory Board, Bayer Pharmaceuticals, 2017-present
- Margetuxmab Advisory Council, MacroGenics, 2017-present
- External Advisory Board, Vanderbilt-Ingram Cancer Center Breast SPORE (submitted), 2017-present
- TiMIOS Scientific Advisory Board, Society for Immunotherapy of Cancer, 2017-present
- Member, Research Executive Advisory Committee, UPMC Hillman Cancer Center, University of Pittsburgh, 2018-present
- Member, Executive Committee Cancer Immunology Training Program, University of Pittsburgh, 2018-present
- Member, Academic Incentive Plan Committee, UPMC Hillman Cancer Center, University of Pittsburgh, 2018-present
- Advisory Board, Genentech Scientific Advisory Board, 2018-present
- Chair, AAI Annual Meeting Symposium: Therapeutic Monoclonal Antibodies and Immunomodulators, 2018-present
- Chair, SITC Pre-ASCO Annual Meeting Educational Symposium: Cancer Immunotherapy Today: Maximizing Patient Outcomes, 2018-present
- Scientific Advisory Board, Replimune, 2018-present
- Advisory Board, Bristol-Meyers Squibb Advisory Board: Genomic Biomarkers and Molecular Diagnostics in Immuno/Oncology, 2018-present
- Advisory Board, Roche Scientific Advisory Board, 2018-present
- External Advisory Board, Fred Hutchinson Cancer Research Center Andy Hill Cancer Research, 2018-present
- Co-Leader, UPMC Hillman Cancer Center Cancer Immunology and Immunotherapy Program, University of Pittsburgh, 2018-present
- Member, Stakeholder's Council, Society for Immunotherapy of Cancer, 2018-present
- Co-Chair, Organizing Committee, Society for Immunotherapy of Cancer Winter School for Cancer Immunotherapy, 2018-present
- Co-Chair, Publications Committee, Society for Immunotherapy of Cancer, 2018-present
- Member, Review Committee, Young Investigator's Award, Society for Immunotherapy of Cancer, 2018-present
- Co-Chair, Consensus Panelist, Immuno-oncology Recommendation Session. Breast, Gynecological, and Immuno-Oncology International Cancer Conference (SITC/ASCO/BGICC collaboration), 2018-present
- Chair, SITC Symposium at AAI: Combination Cancer Immunotherapy: Expanding Clinical Success, 2018-present
- Member, SITC Certification Task Force, 2018-present
- Member, Selection Committee, Outstanding Investigator Award for Breast Cancer Research,

American Association for Cancer Research, 2018-present

- Member, Education and Training Committee, Society for Immunotherapy of Cancer, 2018-present
- Chair, Organizer, ASCO Educational Session: "Cancer Immunotherapy Today: Maximizing Patient Outcomes," 2019

#### *Editorships*

- Reviewer, Multiple journals, 2002-present
- Editorial Board, *Annals of Translational Medicine*, 2012-present
- Editorial Board, *Journal for the Immunotherapy of Cancer*, 2013-present
- Editorial Board, *Cancer Research*, 2013-present
- Editorial Board, *Breast Journal*, 2015-present
- Section Editor, Clinical Trials Monitor, *Journal for Immunotherapy of Cancer*, 2015-present

#### *Major Lectureships and Seminars*

- Invited Speaker, 2nd AACR International Conference on Translational Cancer Medicine, Sao Paulo, Brazil, September 2018
- Invited Speaker, 10th International Breast Cancer Conference, Jeddah, Saudi Arabia (electronically), October 2018
- Invited Speaker, Immunotherapy Bridge Meeting, Naples, Italy, November 2018
- Invited Speaker, Annual SITC Primer on Immunotherapy, SITC Annual Meeting, Washington DC, November 2018
- Invited Speaker, 5th Annual Metastatic Breast Cancer Conference, Baltimore, MD, November 2018
- Panelist, "Immunotherapy for Metastatic Breast Cancer." 5th Annual Metastatic Breast Cancer Conference, Baltimore, MD, November 2018
- Invited Speaker, UPMC Hillman Cancer Center Grand Rounds, Pittsburgh, PA, December 2018
- Invited Speaker, Triple Negative Breast Cancer Symposium and Think Tank: DNA Damage Repair, Tumor Immunology, and Therapeutics, 41st Annual San Antonio Breast Cancer Symposium, San Antonio, TX, December 2018
- Speaker, Oral Presenter, General Session, 41st Annual San Antonio Breast Cancer Symposium, San Antonio, TX, December 2018
- Poster Presenter, Panelist, Spotlight on Immuno-Oncology Poster Discussion Session, 41st Annual San Antonio Breast Cancer Symposium, San Antonio, TX, December 2018
- Invited Speaker, UPMC Hillman Cancer Center Workshop on Aging and Cancer, Pittsburgh, PA, January 2019
- Keynote Speaker, UPMC Hillman Cancer Center San Antonio Breast Cancer Symposium Update, Pittsburgh, PA, February 2019
- Invited Speaker, NSABP Foundation Meeting, Phoenix, AZ, February 2019
- Invited Speaker, Society for the Immunotherapy of Cancer Winter School, Mesa, AZ, February 2019
- Invited Speaker, International Society for Breast Pathology Satellite Symposium at USCAP, National Harbor, Washington DC, March 2019
- Invited Speaker, College of American Pathologists CAP Today Webinar, March 2019
- Invited Speaker, Drug Discovery Institute University of Pittsburgh Seminar Series, Pittsburgh, PA, April 2019
- Keynote Speaker, San Antonio Breast Cancer Symposium Update, UPMC Hillman Cancer Center,

Pittsburgh, PA, 2019

*Honors and Awards*

- Hillman Scholar for Innovative Cancer Research, UPMC Hillman Cancer Center, Pittsburgh, PA, 2018-2019

**Robert J. Ferguson, PhD**

Dr. Ferguson's research interests include the cognitive-behavioral treatment of late cognitive effects of cancer, cancer survivorship, and palliative care. He focuses on the development of cognitive-behavioral therapies for cancer-related cognitive impairment (CRCI) and designing and carrying out randomized clinical trials to evaluate treatments. Funding for this work includes grants from the National Cancer Institute, NIH Office of Research on Women's Health, and the Lance Armstrong Foundation.

*Advisory Committee Memberships and Leadership Positions*

- Member, Rehab Steering Committee, UPMC Hillman Cancer Center, 2017-present
- Consultant and Presenter, Advisory Board, Blueprint Medicines, Cambridge, MA, 2018

*Professional Affiliations and Society Memberships*

- Member, American Psychological Association, 1994-present
- Member, Society of Behavioral Medicine, 1994-present
- Member, American Psychosocial Oncology Society, 2016-present
- Member, Pennsylvania Psychological Association, 2016-present

*Editorships*

- Reviewer, Multiple journals, 2006-present

*Major Lectureships and Seminars*

- Invited Presenter, Blueprint Medicines, Boston, MA, September 2018
- Invited Presenter, Ohiohealth Rehabilitation Services CME program, Columbus, OH, August 2018
- Grand Rounds Presenter, Department of Behavioral Medicine and West Virginia University, Morgantown, WV, January 2019
- Chair and Speaker, Symposium for the Annual Conference of the American Psychosocial Oncology Society, Atlanta, GA, February 2019
- Invited Presenter, Videoconference, Department of Psychology, University of Maine, Presque Isle, April 2019
- Invited Presenter, Cancer Rehabilitation Conference, UPMC Hillman Cancer Center, May 2019
- Invited Speaker, Miro Health, San Francisco, CA, 2019

**Deborah L. Galson, PhD**

Dr. Galson investigates signal transduction pathways and gene regulation in osteoclasts (OCL) and osteoblasts (OB,) both during normal differentiation and in pathological states. The goal is to better understand pathological changes in the bone microenvironment, particularly OCL and OB, in Paget's disease of bone and Multiple Myeloma (MM) bone disease. Her current studies focus on four main areas: (1) Determine the mechanism by which Measles virus nucleocapsid protein (MVNP) alters expression of cellular genes and increases osteoclast differentiation in Paget's disease of bone. Dr. Galson has shown that MVNP signals through interaction with the IKK family members TBK1 and optineurin to generate pagetic OCL. Additional studies aim to determine the mechanism of cooperation between MVNP and p62 (SQSTM1) with pagetic mutations (eg. p62P392L) to generate Paget's lesions. (2) Determine the mechanism by which MM cells suppress the differentiation capacity of osteoblast progenitor cells, which persists even after removal of

the MM cells. These MM-altered bone marrow stromal cells also enhance osteoclastogenesis and microenvironmental support of myeloma growth. The focus is on understanding signaling mechanisms and the epigenetic changes induced in BMSC by MM cells. (3) Determine the roles of Gfi1 and EZH2 in osteoclasts. These studies derive from finding a key role for these proteins in MM-induced epigenetic changes in BMSC. (4) Determine if inhibition of TBK1/IKKe signaling is a useful therapeutic strategy to inhibit MM bone disease. Inhibition of TBK1/IKKe signaling blocks OCL formation and slows MM growth in vitro. These studies are being extended to in vivo MM models. Dr. Galson is also involved in additional studies involving other cancers that invade the bone, such as breast cancer.

#### *Study Sections*

- Member/Abstract Reviewer, ASBMR Scientific Program Committee, 2016-2018
- Ad Hoc Member, NIH Director's New Innovator Award MOSS-R Study Section, December 2018
- Reviewer, Bloodwise, UK (grants), December 2018
- Reviewer, Netherlands Organisation for Scientific Research (NWO, the Dutch Research Council), grants, January 2019

#### *Advisory Committee Memberships and Leadership Positions*

- Vice Chair, Research Safety/Biosafety Subcommittee, VAPHS, 2005-present
- Director and Founder, Pittsburgh Center for Bone & Mineral Research, 2012-present
- Member, Luminex Core Advisory Committee, 2015-present
- Member, UPMC HCC Annual Retreat Program Committee, 2016-present
- Finance Committee, ASBMR, 2016-2019
- Member, Department of Medicine PhD Faculty Task Force, 2018-present
- Member, UPMC HCC In Vivo Imaging Facility Advisory Committee, 2018-present
- Member, UPMC HCC Women's Task Force, 2018-present

#### *Professional Affiliations and Society Memberships*

- Member, American Society for Bone and Mineral Research, 1996-present
- Member, Federation of American Societies for Experimental Biology, 1996-present
- Member, American Society for Biochemistry and Molecular Biology, 1996-present
- Member, Association for Women in Science, 2008-present
- Member, American Society of Hematology, 2014-present
- Member, American Association for Cancer Research, 2015-present
- Member, Cancer and Bone Society, 2016-present

#### *Editorships*

- Reviewer, Multiple journals, 1995-present

#### *Honors and Awards*

- Recipient, Best of AACR Journals Award for most-cited research articles published in 2017, March 2019

### **James G. Herman, MD**

A member of The Cancer Genome Atlas, Dr. Herman has characterized genome-wide epigenetic changes in cancer in multiple forms of cancer. Dr. Herman's research explores changes in DNA methylation in cancer, and his lab is the first to demonstrate that tumor suppressor genes are silenced by promoter region methylation. They have characterized changes in methylation associated with the development and progression of cancer, including the demonstration of changes in DNA methylation in premalignant lesions. Current research is aimed at utilizing these findings to improve the management of patients through the



development of prognostic, predictive, and early detection epigenetic biomarkers, and in studies of epigenetic therapy. They have developed new methods for study of DNA methylation (methylation specific PCR, in Situ MSP, ERMA, and, more recently, nanotechnology-based detection methods, included MS-QFRET and MOB, DREAMing). These sensitive methods have been used for the early detection of cancer and for developing predictive biomarkers.

#### *Editorships*

- Editor, *Clinical Cancer Research*, 2003-present
- Senior Editor, *Epigenomics*, 2009-present
- Editorial Board, *Cancer Prevention Research*, 2010-present
- Editor, *Cancer Research*, 2016-present

### **Charles C. Horn, PhD**

Dr. Horn's primary research is the neurobiology of vagus nerve signaling. This research uses neuromodulation devices to control nerve-organ communication for the treatment of cancer, inflammation, gastrointestinal motility, and side effects of cancer therapies.

#### *Advisory Committee Memberships and Leadership Positions*

- Primary Core Member, Medical Advisory Board, Cyclic Vomiting Syndrome Association, 2014-present
- Co-Chair, Steering Committee, NIH Stimulating Peripheral Activity to Relieve Conditions (SPARC) Program, (NIH Common Fund), 2015-present
- Chair, NIH SPARC Cross-Team Communication Committee, 2017-present
- Chair, Data Portal Committee, NIH SPARC Blue Team, 2019-present

#### *Professional Affiliations and Society Memberships*

- Member, Society for Neuroscience, 1992-present
- Member, American Physiological Society, 2007-present

#### *Honors and Awards*

- Recipient, First Prize, NIH SPARC Hackathon, Bethesda, MD, December 2018

### **Annie P. Im, MD**

Dr. Im's research involves clinical trials in elderly AML and in GVHD, as well as late complications after stem cell transplant. She also conducts educational research on interactive learning in oncology fellowships.

#### *Advisory Committee Memberships and Leadership Positions*

- Fundraising Member, Team in Training, Leukemia & Lymphoma Society of the Western Pennsylvania and West Virginia Chapter, 2011-present
- Member, Leukemia/BMT Core Committee, ECOG-ACRIN, 2012-present
- Member, Advisory Board, PA/WV Chapter of the Leukemia & Lymphoma Society, 2015-present
- Member, GVHD Symposium Planning Committee, Meredith Cowden Foundation, 2015-present
- Member, GVHD Global Advisory Board, Incytec, 2016-present
- Member, Center for International Blood and Marrow Transplant Research Later Effects Working Committee, 2018-present

#### *Editorships*

- Editorial Board, *Frontiers in Oncology*, 2014-present
- Reviewer, Multiple Journals, 2016-present

#### *Major Lectureships and Seminars*



- Lecturer, Leukemia & Lymphoma Society Patient Education Seminar, Our Clubhouse, Pittsburgh PA, 2018
- Lecturer, American Society for Hematology Annual Meeting Program Directors Workshop, San Diego CA, 2018
- Lecturer, HIV lymphomas, Pittsburgh AIDS Center for Treatment Conference, Pittsburgh, PA, 2019

### Sawa Ito, MD, PhD

For many, bone marrow stem cell transplantation is the only curative treatment for leukemia and lymphoma-blood cancers. This technique has shown that immune cells of the donor which are transferred in the transplant can eradicate blood cancer, a process known as the graft-versus-leukemia (GVL) effect. Dr. Ito's research work is directed at finding ways to harness this GVL immune effect to cure leukemia and lymphoma. She is particularly interested in preventing and treating post-transplant relapse, which remains the major cause of transplant failure. This involves two approaches: The first is to improve the results of transplants for people with leukemia by increasing the GVL effect and decreasing the hazards of the transplant through biomarker-directed personalized medicine and adoptive cellular immunotherapy. The second is to find ways to create a GVL effect to boost the patient's own immune system and thus avoid the complication of transplantation altogether.

#### Study Sections

- Member, Study section, American Society of Hematology, Hematology Opportunities for the Next Generation of Research Scientists (HONORS) Award, 2019
- Member, Study section, American Society of Hematology, Research Training Award for Fellows (RTAF), 2019

#### Editorships

- Reviewer, *Cytotherapy*, 2012-present
- Reviewer, *Bone Marrow Research*, 2012-present
- Reviewer, *Bone Marrow Transplantation*, 2013-present
- Review and Editor, *Frontiers in Hematology and Oncology*, 2014-present
- Reviewer, Multiple journals (*Journal of Leukocyte Biology*, *Blood*, *Haematologica*, *Biology of Blood and Marrow Transplantation*, *Ebiomedicine*, *Journal of Translational Medicine*, *Oncotarget and Therapy*, *Journal of Immunological Methods*, *Seminars in Hematology*, *Clinical Epigenetic*, *Stem Cell Research*, *Blood Advances*), 2014-present

### Gregory J. Kato, MD

Dr. Kato's research specialties comprise blood flow physiology studies, clinical trials, and proteomic analysis of plasma to unravel new mechanisms contributing to pulmonary hypertension and other complications of sickle cell disease. He has formulated a model to suggest that pulmonary hypertension, stroke, leg ulcers and priapism share features of vasculopathy and more severe hemolytic anemia, and that pain crisis, acute chest syndrome, and avascular necrosis share evidence of poor blood circulation due to viscosity. These two groups overlap and are not completely distinct.

#### Advisory Committee Memberships and Leadership Positions

- Member, Steering Committee, Evaluation of Purified Poloxamer 188 in Vaso-Occlusive Crisis of Sickle Cell Disease (EPIC), 2014-present
- Medical Director, Children's Sickle Cell Foundation, Pittsburgh, PA, 2014-present
- Consultant, CSL Behring, King of Prussia, PA, 2015-present

- Chair, Africa Clinical Trials Data and Safety Monitoring Board, National Heart, Blood and Lung Institute: Sickle Cell, 2017-2021

#### *Professional Affiliations and Society Memberships*

- Member, American Society of Hematology, 1993-present
- Member, American Society of Pediatric Hematology-Oncology, 2001-present
- Member, Society for Free Radical Biology and Medicine, 2006-present

#### *Editorships*

- Reviewer, *Acta Haematologica*, 1991-present
- Reviewer, Sickle Cell Trait Literature, Social and Behavioral Research Branch, National Human Genome Research Institute, 2011-present
- Editorial Board, *Heliyon*, 2015-present

#### *Honors and Awards*

- Recipient, American Society for Hematology Research Training Award for Fellows Study Section, 2018

### **John M. Kirkwood, MD**

Dr. Kirkwood's research focuses on melanoma immunobiology, therapy, and prevention. His translational laboratory studies have shown the immunological basis of IFN adjuvant benefits in the first neoadjuvant immunotherapy trial for melanoma. His research is now expanding these studies at Hillman and through ECOG-ACRIN, probing the role of molecularly targeted agents (BRAF, MEK, and PI3K $\delta/\gamma$  inhibitors) that may improve upon the efficacy of anti-PD1 immunotherapy for adjuvant therapy of operable high-risk melanoma and treatment of advanced melanoma. His studies of monoclonal antibodies to the gangliosides of melanoma—and peptide differentiation antigens of melanoma alone and in combination with cytokine and growth factor immunomodulators—paved the way for the recent progress with immunotherapies in multiple other cancers. He has advanced the multimodal therapy of melanoma with surgery, stereotactic radiotherapy, and molecular antitumor agents. He is now pioneering novel clinical trials to assess the multiple potential combinations of recently-approved molecular and immunological therapies that are the focus of translational clinical research trials in melanoma for the foreseeable future.

Dr. Kirkwood's laboratory is also engaged in the molecular and immunohistological analysis of melanoma and its non-obligate risk marker and potential precursor known as the dysplastic/atypical nevus. His studies of tissues obtained from institutional, regional, national, and international trials of therapy are resources for investigators working upon melanoma in the NCTN, and the international melanoma research community. Tumor tissues from patients participating in new combination therapies, neoadjuvant trials, and prevention interventions probed using current immunopathological and molecular approaches seek biomarkers that will more accurately predict response and toxicity of these interventions.

#### *Study Sections*

- Member, Research Proposal Review Section, Harry J. Lloyd Trust, 2003-present
- Member, Grant Review Study Section, Cancer Research Institute Clinic and Laboratory Integration Program, 2014-present
- Member, Scientific Grant Review Committee, Ocular Melanoma Foundation Fellowship, American Association for Cancer Research, 2014-present

#### *Advisory Committee Memberships and Leadership Positions*

- Member, ECOG-ACRIN, 1978-present
- Member, Principal Investigator Committee, ECOG-ACRIN, 1982-present

- Member, Scientific Advisory Committee, National Cancer Center, New York, NY, 1984-present
- Member, Scientific Advisory Committee, Cancer Research Institute, 1988-present
- Chair, Melanoma Committee, ECOG-ACRIN, 1989-present
- Member, Scientific Advisory Committee, Melanoma Research Foundation, 2000-present
- Chair, Medical Resource Council, Our Clubhouse, 2004-present
- Chair, International Melanoma Working Group, 2005-present
- Member, Compendium Editorial Board Subcommittee, ASCO Cancer Education Committee, 2005-present
- Member, Melanoma Advisory Board, Harry J. Lloyd Trust, 2008-present
- Member, Professional Advisory Panel, Joanna Nicolay Melanoma Foundation, 2009-present
- Co-Chair, Melanoma Pathways Committee, Elsevier, 2010-present
- Member, Scientific Planning Committee, ECOG-ACRIN, 2012-present
- Member, Advisory Board, Association of Community Cancer Center, 2012-present
- Honorary Chair, 321Ride, The Woiner Foundation, 2013-present
- Member, Advisory Committee, Physicians' Education Resource, LLC, 2014-present
- Member, External Advisory Board, i-SAbR SPORE UT Southwestern, 2016-present
- Member, External Steering Committee, Oregon Health & Science University, 2016-present
- Member, Scientific Program Committee, American Association of Cancer Research, 2016-present
- Member, External Advisory Board, Columbia Skin SPORE, 2017-present

#### *Professional Affiliations and Society Memberships*

- Member, American Federation for Medical Research, 1973-present
- Member, New York Academy of Sciences, 1974-present
- Member, American Society for Clinical Oncology, 1975-present
- Member, American Association for Cancer Research, 1975-present
- Member, National Cancer Foundation, 1981-present
- Member, International Society for Interferon and Cytokine Research, 1986-present
- Member, Society for Immunotherapy of Cancer, 1986-present
- Member, Clinical Immunology Society, 1990-present
- Member, Society for Investigative Dermatology, 1991-present
- Member, American Board of Internal Medicine, 2004-present
- Member, AIM at Melanoma, 2004-present
- Member, Society of Melanoma Research, 2007-present
- Member, ECOG Research and Education Foundation, 2011-present
- Member, American Medical Association, 2014-present
- Member, The Italian Association of Medical Oncology, 2016-present
- Member, Melanoma World Society, 2016-present
- Member, European Academy for Tumor Immunology, 2016-present

#### *Editorships*

- Associate Editor, *Clinical Cancer Research*, 1995-present
- Editorial Board, *Melanoma Research*, 1998-present
- Editorial Board, *Hem-Onc Today*, 1998-present
- Member, *American Journal of Clinical Oncology*, 1998-present
- Editorial Board, *Clinical Advances in Hematology & Oncology*, 2002-present
- Reviewer, Multiple Journals, 2010-present

- Editorial Board, *Oncolimmunology*, 2012-present
- Editorial Board, *Melanoma Management*, 2013-present

#### *Honors and Awards*

- Member, Association of American Physicians, 2015-present

### **Joseph E. Kiss, MD**

As a clinical investigator, Dr. Kiss has received federal funding for 13 years while part of several NHLBI-sponsored research programs, including the Transfusion Medicine Hemostasis/Thrombosis Clinical Trials Network (TMH-CTN), REDS-II and III programs [the Retrovirus (REDS-II) or Recipient (REDS-III) Epidemiology in Donors Study], and through the R01 award mechanism (STRIDE-Strategies to Reduce Iron Deficiency). His research interests include studies in thrombotic microangiopathies, particularly thrombotic thrombocytopenic purpura (TTP). He served as protocol lead/PI on the multicenter Study of TTP and Rituximab (STAR) trial in 2009. Although the trial was closed early, the study was innovative in its design to utilize immunotherapy (rituximab) up front in a randomized controlled trial in acquired (autoimmune) TTP that has served as a template for other non-randomized studies performed successfully in Europe. He continues his research work in TTP as a site PI for caplacizumab, a novel heavy chain monoclonal antibody that blocks VonWillebrand A1 domain-platelet receptor 1b binding. He is also pursuing therapies for other thrombotic microangiopathies, such as Thrombocytopenia-associated Multiorgan Failure (TAMOF), and has plans for designing a randomized pilot trial utilizing plasma exchange.

#### *Advisory Committee Memberships and Leadership Positions*

- Invited Member, Joint Commission eQIM Blood Management Technical Advisory Panel, 2014-present
- Member, TTP Advisory Board, Ablynx NV, Belgium, 2015-present
- Member, AABB Donor Health and Safety Committee, 2015-present
- Co-Chair, TTP/TMA Subcommittee, American Society for Apheresis, 2016-present

#### *Editorships*

- Reviewer, Multiple journals, 2008-present

### **Anuradha Krishnamurthy, MBBS**

Dr. Krishnamurthy strongly believes that drug development and translational research should be an integral part of cancer care. To that end, during a two-year drug development fellowship at the University of Colorado, she participated in writing early phase clinical trial protocols, reviewing industry written protocols, attending safety meetings and enrolling patients on clinical trials. She also attended the ASCO/AACR Methods in Clinical Cancer Research Workshop in 2017.

While at Colorado, Dr. Krishnamurthy was involved in a phase I clinical trial that combined selumetinib, a MEK inhibitor with Cyclosporin A, a Wnt inhibitor. Wnt pathway dysregulation is commonly seen in colorectal cancer, and this study looked at the toxicities and potential anti-tumor effects of the combination of Wnt and MEK inhibition. Results of this study have been promising. She has also been involved in the development of an early phase clinical trial combining a PD-1 inhibitor (Pembrolizumab) with a MEK inhibitor (Binimetinib) and a VEGF inhibitor (Bevacizumab) which examines the effectiveness of combining an immune checkpoint inhibitor with the immune modulatory effects of MEK AND VEGF inhibition.

#### *Professional Affiliations and Society Memberships*

- Member, American Association for Cancer Research, 2018-present
- Member, American Society of Clinical Oncology, 2018-present

*Major Lectureships and Seminars*

- Invited Speaker, Updates in Gastrointestinal Cancer, Arnold Palmer Cancer Center, 2018-2019

**Daniel Lee, MD, PhD**

Dr. Lee's research focuses on a mechanistic understanding of conditions and the development of novel therapies.

*Professional Affiliations and Society Memberships*

- Member, American Society of Clinical Oncology, 2014-present

**Frank S. Lieberman, MD**

Dr. Lieberman is director of the adult neuro-oncology program in the UPMC Hillman Cancer Center, and he oversees the design and conduct of clinical trials for patients with primary and metastatic brain tumors. He has more than 30 years of experience in the design and conduct of translational therapeutic trials for brain tumor patients and currently serves as HCC's Principal Investigator for participation in the Adult Brain Tumor Consortium, NRG Consortium, and ECOG-ACRIN and the Brain Tumor Treatment Consortium, having previously served as our institutional Principal Investigator for participation in the Collaborative Ependymoma Research Network. Dr. Lieberman also serves on the CNS Tumor Committee, Experimental Imaging, and Biomarker Committees for ECOG-ACRIN. He has a developed expertise and interest in immunotherapeutic and molecularly targeted approaches to high and low grade gliomas and is currently serving as principal investigator and co-investigator in glioma vaccine trials as well immune checkpoint inhibitor trials and in trials evaluating molecularly targeted therapeutic drugs. Additionally, Dr. Lieberman is a co-investigator on institutional imaging projects assessing novel PET tracers, high field strength MRI spectroscopy, and dynamic contrast imaging as early biomarkers of response in immunotherapeutic and molecularly targeted clinical trials for newly diagnosed and recurrent anaplastic glioblastomas. Dr. Lieberman has chaired the working group for Clinical Trials Design and Development for the NCI Quantitative Imaging Network. In collaboration with Marina Nikaforovna and Ronald Hamilton in the Department of Pathology, he has also participated in the development of one of the nation's largest clinically annotated molecular genomic databases for high- and low-grade gliomas.

*Advisory Committee Memberships and Leadership Positions*

- Member, Adult Brain Tumor Consortium, 2004-present
- Member, ACNS Neurooncology Board Examination Committee, 2009-present
- Member, ECOG-ACRIN Biomarkers Committee, 2012-present
- Member, ECOG-ACRIN CNS Tumor Committee, 2012-present
- Member, ECOG-ACRIN Experimental Imaging Committee, 2013-present

*Professional Affiliations and Society Memberships*

- Member, Neurooncology Section, American Academy of Neurology, 1990-present
- Member, Society for Neurooncology, 1996-present
- Member, American Society of Clinical Oncology, 1996-present

**Anna E. Lokshin, PhD**

Dr. Lokshin's research centers on the discovery and characterization of biomarkers for screening, diagnosis, and prognosis of cancer, particularly ovarian and pancreatic cancers. Her group has identified biomarker



combinations that recognize ovarian cancer 1-4 years earlier than current methods (CA125 and transvaginal ultrasound) and pancreatic cancer 2-6 years earlier. Her lab is currently working on discovering biomarkers in several bodily fluids, including serum/plasma and urine and in exosomes obtained from these fluids. In addition, they are investigating the role of glycolysis and coagulation pathways in the early preneoplastic events of high-grade serous ovarian carcinoma and the role of exosomes in these events.

#### *Study Sections*

- Member, Oncology 2-Translational Clinical, NIH Study Section, 2017-present

#### *Professional Affiliations and Society Memberships*

- Member, American Association for Cancer Research, 1989-present
- Member, Early Detection Research Network, 2003-present
- Member, American Society of Clinical Oncology, 2009-present

#### *Editorships*

- Associate Editor, *Cancer Biomarkers Journal*, 2004-present
- Reviewer, Multiple journals, 2006-present

### **Carissa A. Low, PhD**

Dr. Low's research focuses on interactions between behavior, biology, and patient-centered outcomes in the context of cancer. She is particularly interested in the use of mobile and online technology to monitor and change health behaviors, psychological stress, and symptoms during cancer treatment. Current projects include a randomized controlled trial testing a smartphone- and smartwatch-delivered sedentary behavior intervention before and after cancer surgery and a project that combines smartphone and wearable sensor data with machine learning to remotely monitor symptoms during chemotherapy.

#### *Editorships*

- Associate Editor, *International Journal of Behavioral Medicine*, 2018-present

### **Yana G. Najjar, MD**

Dr. Najjar seeks to advance the treatment of melanoma by complementing clinical care with the principles of translational science. Specifically, her research focuses on immunotherapy in advanced melanoma and its impact on the tumor microenvironment and the peripheral immune system. Dr. Najjar's goal is to develop rational combinations of immunotherapy, targeted therapy, and other agents that may potentially remodel the tumor microenvironment in order to render it less hostile to the host immune system. Current, ongoing projects include the impact of metabolism on immunotherapy in patients with advanced melanoma; uveal melanoma; targeted therapy plus immunotherapy in the first and second line setting; and neoadjuvant treatment approaches in melanoma.

#### *Advisory Committee Memberships and Leadership Positions*

- Awardee and Project Leader, SITC Sparkathon, 2017-present
- Advisory Board, Array Biopharma, 2018
- Director, UPMC Hillman Cancer seminar series, 2018-present
- Member, Hillman Cancer Center Women's Task Force, 2018-present
- Vice-Chair, Protocol Review Committee A, 2019

#### *Professional Affiliations and Society Memberships*

- Associate Member, American Association for Cancer Research, 2010-present
- Member in Training, American Society of Clinical Oncology, 2012-present
- Member, Society for Immunotherapy of Cancer, 2014-present

### *Editorships*

- Reviewer, Multiple journals, 2018-2019

### *Major Lectureships and Seminars*

- Presenter, Regional Melanoma Translational Research Consortium, 2017-present
- Invited Speaker, Society for Melanoma Research: Immunotherapy in Uveal Melanoma, October 2018
- Invited Speaker, P.O.W.E.R. Women in Bio Series, November 2018
- Lecturer, Adjuvant Treatment of Melanoma, May 2019
- Lecturer, Basic Principles of Immunotherapy, June 2019
- Invited Speaker, 31st Annual UPMC Hillman Cancer Center Scientific Retreat, June 2019

## **Enrico M. Novelli, MD, MS**

The Novelli Lab focuses on elucidating the fundamental mechanisms underlying vascular dysfunction in sickle cell disease (SCD). Dr. Novelli's initial research sought to clarify the mechanisms underlying pulmonary hypertension in sickle cell disease. Most recently, his research has focused on the risk factors and mechanisms of cognitive impairment in sickle cell disease. Dr. Novelli is conducting an R01-funded longitudinal study of cognitive impairment and its neuroradiological correlates in adult patients with SCD. The study's goal is to explore small vessel disease biomarkers by MRI and how they predict the trajectory of cognitive impairment. A parallel study in sickle mice is also being conducted in Dr. Novelli's lab to explore the mechanistic pathways that lead to cognitive impairments in patients with SCD.

### *Study Sections*

- Member, AHA Study Section, 2013-present
- Member, SBIR/STTR Study Section, NIH, 2015-present

### *Advisory Committee Memberships and Leadership Positions*

- Member, Scientific Committee on Thrombosis and Vascular Biology, American Society of Hematology, 2016-2020

### *Professional Affiliations and Society Memberships*

- Member, American Society of Tropical Medicine and Hygiene, 2008-present
- Member, American Society of Hematology, 2005-present

### *Editorships*

- Reviewer, Multiple journals, 2011-present
- Editorial Advisory Board, *American Journal of Hematology*, 2015-present
- Peer Reviewer, *UpToDate*, 2016-present

## **Solomon F. Ofori-Acquah, PhD**

Dr. Ofori-Acquah has a research interest in molecular hematology, endothelial barrier function, sickle cell disease (SCD), and global health. His basic science research is on the mechanisms of neutralizing erythroid danger associated molecular pattern (eDAMP) molecules. This work encompasses studies of developmental, genetic, and epigenetic regulation of hemopexin and heme oxygenase-1—the key neutralizing molecules of extracellular heme the prototypical eDAMP. His basic research is translated to understanding the role and mechanism of extracellular heme in the pathobiology of vascular complications in SCD. A major translational focus is acute chest syndrome, the leading cause of premature death in SCD. The Ofori-Acquah lab developed the first mouse model of acute chest syndrome. This preclinical model is currently being used to find targeted therapies for this syndrome. His global health research centers on a longitudinal observational

study of a large newborn cohort in Ghana to define markers of end-organ damage in SCD. Additional global health work focused also on SCD is performed under the auspices of the H3Africa consortium with a multi-disciplinary team of collaborators in Cameroon, Tanzania, and South Africa. Dr. Ofori-Acquah directs a research education NIH-funded R25 program aimed at catalyzing the training of graduates, postdocs, and junior faculty in blood science research. He is Visiting Professor and Director of a Human Genetics graduate course in a Wellcome Trust-funded DELTAS (Developing Excellence in Leadership, Training and Science) program at the University of Ghana in collaboration with the Pitt Graduate School of Public Health.

#### *Study Sections*

- Member, Respiratory Integrative Biology and Translational (RIBT) Science Study Section, NIH, 2013-2019
- Member, Ad Hoc Grant Review Committee, Minority Medical Student Award, American Society of Hematology, 2010-present

#### *Advisory Committee Memberships and Leadership Positions*

- Member, Medical Advisory Board, Parent's Guide to Cord Blood Foundation, 2009-present
- Member, Medical Research Advisory Committee, Sickle Cell Disease Association of America, 2009-present
- Member, Executive Planning Committee, Sickle Cell National Annual Symposium, 2009-present
- Consultant, Newborn Screening Quality Assurance Program, Centers for Disease Control and Prevention, 2010-present
- Chair, Minority Graduate Student Abstract Achievement Award Committee, American Society of Hematology, 2011-present

#### *Professional Affiliations and Society Memberships*

- Member, American Thoracic Society, 2004-present
- Member, American Association for Cancer Research, 2005-present
- Member, American Society of Hematology, 2004-present
- Member, Ghana Biomedical Convention, 2008-present

### **Ellen M. Ormond, PhD**

Dr. Ormond's research is focused on quality improvement initiatives in advance care planning, assessment of frailty, patient-reported outcomes, and end of life care.

### **Amma T. Owusu-Ansah, MD**

Dr. Owusu-Ansah's primary research interest is in translating novel or repurposed therapeutics into clinical settings to prevent or halt the progression of complications of sickle cell disease. Her other interests are in global health and implementation research, specifically identifying strategies to improve access to state-of-the-art medical care for individuals with benign hematologic disorders in different demographic regions of the world.

#### *Professional Affiliations and Society Memberships*

- Member, Global Sickle Cell Disease Network, 2010-present
- Member, American Society of Hematology, 2011-present
- Member, American Society of Pediatric Hematology and Oncology, 2011-present

### **Vida Cecilia A. Passero, MD, MBA**

Dr. Passero's research interests include the development of collaborative, innovative cancer care models

using telemedicine.

### **Donna M. Posluszny, PhD**

Dr. Posluszny has conducted psychosocial and behavioral research in a variety of cancer populations, including breast, gynecologic, head and neck, and hematological malignancies. She recently completed an NIH-funded prospective, longitudinal study examining adherence to the medical regimen for hematological cancer patients who are post allogeneic hematopoietic cell transplantation (HCT) and their family caregivers. To enhance outcomes and minimize risks associated with HCT, patients and their caregivers must work together as a team to carefully adhere to the multi-component post-HCT medical regimen, consisting of multiple daily medications, frequent clinic visits, strict catheter care, health monitoring, and dietary and lifestyle restrictions. Dr. Posluszny is currently examining psychosocial and behavioral strategies to help HCT patients and family caregivers manage each component of the post-HCT regimen together, and thus improving psychological and health outcomes. She is also interested in family caregiver well-being, health, burden, and impact on patient outcomes.

#### *Professional Affiliations and Society Memberships*

- Member, American Psychological Association, 1994-present
- Member, Division of Clinical Psychology, APA, 2002-present
- Member, Psychologists in Academic Health Centers, APA, 2003-present
- Member, Pennsylvania Psychological Association, 2003-present
- Member, Division of Health Psychology, 2008-present
- Member, Society of Behavioral Medicine, 2009-present
- Member, American Society of Clinical Oncology, 2014-present
- Member, American Psycho-social Oncology Society, 2015-present

#### *Editorships*

- Ad hoc reviewer, Multiple journals, 2014-present

### **Margaret V. Ragni, MD, MPH**

Dr. Ragni has actively initiated and participated in clinical translational research in congenital hemostasis and thrombosis disorders. She has served as chair of clinical trials, prospective epidemiologic, observational, case-control studies, cost-effectiveness analyses, and investigator-initiated new drug trials in hemophilia and VWD. Dr. Ragni's research studies were among the first multi-center NIH-funded investigator-initiated studies in hemophilia malignancy (NCI), hemophilia inhibitor formation (NHLBI), hemophilia HIV/HCV infection (NHLBI), hemophilia AIDS therapy (NIAID), and hemophilia adult prophylaxis (NHLBI). She co-chaired the State of the Science NHLBI Working Group to Prevent and Eradicate Inhibitor in hemophilia; and co-chaired the State of the NHLBI Science SOS Hemophilia & VWD Subcommittee to design future trials, with one U01 NHLBI trial in VWD, one X01 NHLBI grant to design rare trials, a T35 Training Grant, and two past U34NHLBI trials and one past R34 NHLBI trial in hemophilia and VWD. She has collaborated on multi-center organ transplant HIV trials (NIAID), hemophilia gene therapy trials (NHLBI), VWD genotype-phenotype studies (NHLBI), novel therapeutics (siRNA-AT3 and extended half-life protein trials (VIIa, VIII, IX) for hemophilia, and rhIL-11 and recombinant VWF for VWD. Dr. Ragni is planning to serve as PI of a UG3UH3 multicenter clinical trial to prevent and eradicate inhibitors, and as Co-Director of a T32 Clinical Translational Hematology Grant.

#### *Study Sections*

- Member, Scientific Proposal Review Committee, Vascular Medicine Institute, 2009-present

#### *Advisory Committee Memberships and Leadership Positions*

- Board Member, Hemostasis & Thrombosis Research Society, 1990-present
- Invited Member, NHF Medical and Scientific Advisory Committee, 1990-present
- Advisor and Author, Health Resources and Services Administration, 2008-present
- Member, Author, Hemophilia Research Funding Proposal and Grant Guidance Committee, Health Resources and Services Administration, 2008-present
- Mentor, eMentoring Initiative (NHLBI), 2008-present
- Chair, ASH Public Health Task Force, 2010-present
- Chair, ISTH SSC Working Group: Extended Half-Life Proteins and Pharmacokinetics, 2014-present
- Member, Scientific Committee on Hemostasis, American Society of Hematology, 2014-present
- Member, Media Experts Subcommittee, ASH, 2014-present
- Member, Scientific Subcommittee on FVIII, Factor IX, International Society of Hemostasis and Thrombosis, 2014-present
- Member, Foundation for Women & Girls with Blood Disorders, 2016-present
- Member, Treatment Guidelines Working Group, World Federation of Hemophilia, 2016-present
- Member, Advisory Board, Alnylam, 2016-present
- Member, Hemophilia Pipeline Advisory Board, Bayer Healthcare, 2016-present
- Member, Physician Leadership Council, Shire Pharmaceuticals, 2016-present
- Member, Von Willebrand Disease Working Group, National Hemophilia Foundation, 2016-present
- Subcommittee Chair, NHF Inhibitor Prevention/Eradication Working Group, 2017-present
- Member, Pre-Con Planning Committee, Hemostasis & Thrombosis Research Society, 2017-present
- Member, FWGBD Research Proposal Review Group: Women with Blood Disorders; Women with Bleeding Disorders, 2017-present
- Member, NHLBI State of the Science (SoS) Symposium 2018, Co-Chair Inhibitor Prevention and Eradication: Clinical Trials Working Group-1, 2018
- Board Member, North American Society on Thrombosis & Hemostasis, 2018-2020
- Chair, World Federation of Hemophilia Hemophilia Guidelines: Chair Inhibitor Guidelines Section, 2019
- Co-Chair, HTRS/NASTH2020 Research Colloquium, Planning, Speaking, 2019-present

#### *Professional Affiliations and Society Memberships*

- Member, American Society of Hematology, 1983-present
- Member, World Federation of Hemophilia, 1984-present
- Member, National Hemophilia Foundation, 1987-present
- Member, National Heart Lung Blood Institute, 2002-present
- Member, International Society of Hemostasis and Thrombosis, 2007-present

#### *Editorships*

- Editorial Board, *Hemophilia*, 2000-present

#### *Major Lectureships and Seminars*

- Presenter, AHN Pathology Conference, Allegheny General Hospital, 2017-present
- Lecturer, Hemophilia Case Conference, Allegheny General Hospital Residency Lecture Series, 2017-present
- Invited Speaker, Bench to Bedside Grand Rounds, University of Pittsburgh Department of Medicine, 2017-present

#### *Honors and Awards*

- Honoree, Best Doctors in America, *Pittsburgh Magazine*, 2016-present



- Recipient, Leadership in Research Award, National Hemophilia Foundation, NHF Annual Meeting, New York, NY, 2018
- Recipient, Top 10 Clinical research Papers of the Year, Clinical Research Forum, Philadelphia, PA, 2019

### Priya Rastogi, MD

Dr. Rastogi is involved with the development and implementation of Phase II and Phase III clinical trials, and she serves as the protocol officer for Phase II and Phase III adjuvant and neoadjuvant breast cancer clinical trials. Her research has been published in several medical journals, including *Journal of Clinical Oncology*, *Clinical Breast Cancer*, *New England Journal of Medicine*, *Oncology*, *Oncology Nurse Forum*, *Onkologie*, *Menopause*, and *Breast Cancer Research Treatment*.

#### *Advisory Committee Memberships and Leadership Positions*

- Member, Steering Committee, NSABP FRP, 2005-present
- Member, Working Group, NSABP Breast Committee, 2005-present
- Vice Chair, Medical Affairs, NSABP, 2006-present
- Senior Associate Medical Director, NSABP, 2011-present
- Member, Steering Committee, CALOR, 2012-present
- Member, Kathrine Trial Operations Committee, 2012-present
- Member, Steering and Executive Committees, Olympia Trial, 2013-present
- Member, Breast, Working Group, and Publications Committees, NRG Oncology, 2013-present
- Member, Steering Committee, NCI MBC Endpoints Working Group, 2016-present

#### *Major Lectureships and Seminars*

- Lecturer, PA Breast Cancer Coalition Conference, Harrisburg, PA, 2017-present
- Presenter, PA Breast Cancer Coalition Webinar, 2017-present
- Invited Lecturer, OncLive State of the Science Summit, Pittsburgh, PA, October 2018
- Invited Lecturer, NRG Oncology Meeting, Phoenix, AZ, February 2019

### Robert L. Redner, MD

A member of the Cancer Therapeutics Program of the University of Pittsburgh Cancer Institute, Dr. Redner researches the molecular biology of leukemic transformation and myeloid differentiation. A major focus of his laboratory has been the mechanism underlying differentiation arrest in myeloid leukemia, investigating acute promyelocytic leukemia (APL) as a model system. His group first cloned the NPM-RAR translocation that characterizes the t(5;17) variant of APL, and his lab has had an active program studying the mechanism by which NPM-RAR generates the leukemic phenotype.

#### *Advisory Committee Memberships and Leadership Positions*

- Director, HCC Clinical Oncology and Hematology Grand Rounds, 2006-present
- Member, Test Material Development Committee, American Society of Hematology, 2006-present

#### *Editorships*

- Editorial Board, *Clinical Medicine: Blood Disorders*, 2008-present
- Editorial Board, *Leukemia and Lymphoma*, 2009-present
- Reviewer, Multiple journals, 2018-2019

### Linda B. Robertson, DPH, MSN

Dr. Robertson has multiple research interests, including decision-making, particularly as it relates to cancer

prevention and early detection, including preventative vaccines. She continues to explore the growing problem of HPV infection in our community. In particular, she is interested in the assessment of individuals of lower SES and their knowledge of HPV infection, specifically methods of transmission, the potential for illness/disease, and prevention of HPV through behavior and vaccination. In addition, Dr. Robertson studies issues related to health equity and cancer care as the site PI for the RCT for “Accountability for Cancer Care through Undoing Racism and Equity (ACCURE).” Finally, Dr. Robertson, working with a multidisciplinary team, recently completed a pilot study using a mixed qualitative and geostatistical approach to characterize psychosocial stressors—and their spatial relationships with air pollution—across the city of Pittsburgh and to explore possible relationships with other exposures and cancer incidence.

#### *Advisory Committee Memberships and Leadership Positions*

- Member, Shadyside Center for Integrative Medicine Council, 2005-present
- Member, Coalition for Quality at the End of Life, 2006-present
- Member, Institute to Enhance Palliative Care Governing Board, 2006-present
- Member, Scientific Advisory Committee, Women for a Healthy Environment, 2010-present
- Member, American Public Health Association Annual Meeting, 2011-present
- Member, PA Cancer Stakeholder Leadership Team, 2012-present
- Member, Team to rewrite PA Cancer Control Plan, 2012-present
- Member, Allegheny County Breast Cancer Task Force, 2014-present
- Member, Committee for Cancer Research in Western PA, 2014-present
- Member, PA Cancer Plan Evaluator, 2014-present
- Co-Chair, PA Immunization Coalition, 2015-present

#### *Professional Affiliations and Society Memberships*

- Member, Oncology Nursing Society, 1984-present
- Member, Nurses for Laughter, 1984-present
- Member, National Association for Executive Women, 1988-present
- Member, Oncology Nursing Association, 1994-present
- Member, Association for Community Health Improvement, 2011-present

#### *Editorships*

- Reviewer, *International Journal of Prevention Practice and Research*, 2009-present
- Reviewer, *Journal of Qualitative Research*, 2013-present

#### *Honors and Awards*

- Member, Sigma Theta Tau National Honor Society and Nursing, 1984-present

### **John C. Schmitz, PhD**

As Co-Director of the Cancer Pharmacokinetics and Pharmacodynamics Facility, Dr. Schmitz provides integrated pharmacodynamic (PD) services in support of translational and clinical HCC research programs. This includes (a) facilitating patient sample acquisition, processing, and storage; (b) analysis of serum-based biomarkers; (c) implementing existing NCI/CTEP PD assays; and (d) developing assays for measurement of novel PD endpoints. Our PD lab has developed and validated a quantitative multiplexed immunoblot assay for detection of phosphorylation of ATM in patients treated with DNA-damaging radiotherapy and chemotherapy. Dr. Schmitz's basic research focuses on development of novel chemotherapeutic targets and agents for the treatment of human colorectal cancer (CRC). Other research interests include identification and validation of traditional Chinese herbal medicines and/or natural compounds with anticancer activity by themselves and in combination with current therapies. Dr. Schmitz's lab has identified a 5-herb formulation

that can enhance the cytotoxicity of 5-fluorouracil in animal models through inhibition of the RB/E2F1/TS pathway. Lab researchers are investigating the role of each herb in this interaction. His lab has also demonstrated that the quassinoid bruceantinol has potent antiproliferative activity against colorectal cancer cells and tumors. The lab revealed that the mechanism of action of bruceantinol was through inhibition of the STAT3 signaling pathway resulting in cancer cell growth inhibition.

*Study Sections*

- Abstract Reviewer, Department of Medicine Research Day, University of Pittsburgh, 2019

*Advisory Committee Memberships and Leadership Positions*

- Member, UPMC HCC Protocol Review Committee, 2015-present

*Professional Affiliations and Society Memberships*

- Member, AACR, 1991-present

*Editorships*

- Editorial Board, *Oncology Research*, 2015-present
- Reviewer, Multiple Journals, 2016-present

**Craig D. Seaman, MD, MS**

Dr. Seaman's primary research focus is the role of aging and aging-related conditions in hereditary bleeding disorders, specifically von Willebrand disease and hemophilia. His current research interests include the role of cardiovascular disease and related disorders in von Willebrand disease and hemophilia; the effects of aging on von Willebrand factor levels and bleeding phenotype in von Willebrand disease; and the use of alternative descriptors of body weight for clotting factor concentrate dosing in overweight and obese patients with hemophilia.

*Advisory Committee Memberships and Leadership Positions*

- Member, Presentation and Publication Committee, Community Counts: CDC Public Health Surveillance Project for Bleeding Disorders, 2018-present

*Professional Affiliations and Society Memberships*

- Member, American Society of Hematology, 2011-present
- Member, Hemostasis and Thrombosis Research Society, 2013-present
- Member, International Society on Thrombosis and Hemostasis, 2015-present

*Editorships*

- Reviewer, *Journal of Thrombosis and Hemostasis*, 2017-present

*Major Lectureships and Seminars*

- Presenter, Western Pennsylvania Chapter of the National Hemophilia Foundation Education Weekend, 2019

**Malabika Sen, PhD**

Dr. Sen's research focusses on understanding and characterizing epigenetic changes in lung tumor and the tumor microenvironment and development of therapeutic strategies based upon epigenetic alterations. In addition, her work includes studying the alterations in DNA methylation for use as predictive biomarkers for early detection of lung cancer. Her research seeks to elucidate epigenetic alterations contributing to increased oncogenic signaling and investigate mechanisms including the role of the tumor microenvironment in a series of preclinical models and use therapeutic strategies to predict sensitivity in NSCLC.

*Study Sections*

- Judge, Department of Medicine Research Day, University of Pittsburgh, 2019

### Editorships

- Reviewer, *Molecular Carcinogenesis*, 2019

### Warren D. Shlomchik, MD

Dr. Shlomchik's research program is dedicated to understanding the complex immunology of allogeneic hematopoietic stem cell transplantation. At the bench, Dr. Shlomchik's research has primarily taken genetic approaches with mouse models to test fundamental hypotheses regarding alloSCT immunology, in particular mechanisms of graft-vs-host disease (GVHD), graft-vs-leukemia (GVL) and GVL-resistance. A goal of these studies is to make discoveries that can be translated in the clinic. One such discovery resulted in co-developing a reagent to deplete naïve T cells (TN) from stem cell products, thereby allowing the transfer of only memory phenotype T cells. The results of the first-in-human trial of this approach in patients with acute leukemia suggest that the depletion of naïve T cells results in a remarkably low rate of chronic GVHD without an increase in relapse or infections. This approach is now being examined in a 4-arm clinical trial that includes high or lower intensity conditioning and grafts that are from HLA-matched related HLA-matched unrelated donors.

Recently, Dr. Shlomchik published his research that for effective GVL, myeloblastic leukemias must be stimulated by IFN- whereas chronic phase CML does not require any IFN stimulation as demonstrated by GVL sensitivity of chronic phase CML genetically lacking the IFN-R and IFNAR1 or lacking STAT1 and STAT2 (JCI, 2017). He is now trying to understand how IFN- sensitizes myeloblasts and is in the planning stages of a clinical trial of IFN- therapy in collaboration with the Royal Brisbane Hospital. Dr. Shlomchik has also established a system wherein GVHD-inducing T cells can be clonally tracked, and using this system he has strong preliminary data that GVHD is locally maintained in tissues, rather than alloreactive T cells in different tissues and secondary lymphoid tissues being in equilibrium. Additionally, Dr. Shlomchik has been using a tractable GVL system to understand GVL failure, determining that GVL-inducing T cells fail due to the progressive loss of antigen stimulation and due to T cell exhaustion. Antigen presentation can be augmented by an agonist antibody to CD40 whereas exhaustion can also be diminished by anti-CD40 and even more so by PD-1 blockade. He has found no evidence for selection of GVL-resistant leukemias, though this can happen clinically. Lastly, current research has also suggested that use of minor H antigen (miHA)-specific memory T cells can dramatically improve allogeneic bone marrow engraftment without GVHD and that this is also augmented by anti-CD40. Future work will test this approach in autoimmunity models and to create tolerance to solid organ transplants.

### Advisory Committee Memberships and Leadership Positions

- Member, NIH Peer Review Committee, Cancer Immunology and Immunopathology, 2011-present
- Member, Advisory Committee, Cancer Center IMCPL, 2016-present
- Member, Starzl Executive Committee, 2016-present
- Member, Advisory Board, Immune Transplant Therapy Center, 2016-present
- Chair, Scientific Subcommittee on Transplantation Biology and Cell Therapy, American Society of Hematology, 2017-present
- Presenter, Office of Research Faculty Speaker Series, 2018-2019
- Presenter, Immunology Faculty Research in Progress Seminar Series, 2018-2019
- Member, Advisory Board, Immune Therapy and Transplant Center ITTC DASH, 2018-present
- Member, Advisory Committee, Discovery Acceleration and Support Hub (DASH), 2018-present
- Member, Steering Committee, Oncology and Immunotherapy, 2018-present

- Member, Organizing Committee, 4th International Workshop on Clinical Tolerance, 2018-present

#### *Professional Affiliations and Society Memberships*

- Member, American Society for Hematology, 2017-present
- Member, American Society for Blood and Marrow Transplantation, 2017-present
- Member, American Association of Immunology, 2017-present

#### *Editorships*

- Reviewer, Multiple Journals, 1999-present

#### *Honors and Awards*

- Fellow, American Society for Clinical Investigation, 2017-present
- Member, Association of American Physicians, 2019-present

### **Roy E. Smith, MD**

Dr. Smith served as the Director of Medical Affairs for the NABP. He has had an interest in breast and colorectal clinical trials for many years. Dr. Smith is a former chairman of the Central Investigational Review Board for Cancer Therapy Evaluation Program of the National Cancer Institute and has played a key role in revising its role in the conduct of Cooperative Group Program trials. He is interested in immune thrombocytopenic purpura and porphyria.

#### *Advisory Committee Memberships and Leadership Positions*

- Member, Coagulation Committee, The American Society for Pheresis, 2014-present
- Inaugural Director, ASH Medical Educators Institute, 2014-present
- Member, Governance Committee, National Pulmonary Embolus Response Team Consortium, 2014-present

#### *Professional Affiliations and Society Memberships*

- Member, American Medical Association, 1978-present
- Member, American Society of Clinical Oncology, 1979-present
- Member, American Society of Hematology, 1980-present
- Member, American Society for Apheresis, 1996-present
- Member, Internal Society of Thrombosis and Haemostasis, 2014-present
- Member, North American Society of Thrombosis and Hemostasis, 2014-present

#### *Editorships*

- Editorial Board, *Journal of Hematology & Thrombosis*, 2014-present
- Editorial Board, *Journal of Blood Disorders and Medicine*, 2015-present
- Editorial Board, *General Medicine Journal* of OMICS Publishing Group, 2016-present

#### *Honors and Awards*

- Fellow, American College of Physicians, 1980-present

### **Richard A. Steinman, MD, PhD**

Dr. Steinman's laboratory studies the cancer microenvironment with a focus on the molecular and functional interactions between cancer cells, fibroblasts, and platelets in work supported over the past year by a Pennsylvania CURE grant. Platelets have been shown to support the growth and spread of cancer cells in multiple pre-clinical models. Dr. Steinman's laboratory has identified an unexpected pathway that appears to be necessary for platelets to aggregate in response to agonists, to secrete pro-tumorigenic molecules, and to interact with cancer cells. This pathway is a target of both clinically used drugs and of other agents in clinical trials. He is studying platelet function as a predictive biomarker for these clinical agents and studying



how the pathway controls platelet functions.

*Advisory Committee Memberships and Leadership Positions*

- Member, External Advisory Board, MARC Program, Hampton University, 2014-present
- Member, External Advisory Board, Medical Scientist Training Program, UCLA-Caltech, 2016-present

*Professional Affiliations and Society Memberships*

- Member, American Society of Hematology, 2000-present
- Member, American Association for Cancer Research, 2014-present

## **Quanhong Sun, PhD**

Dr. Sun's research focus is determining the mechanism by which Measles virus nucleocapsid protein (MVNP) results in aberrant osteoclast differentiation. MVNP has been shown to be able to induce a Pagetic phenotype when transduced into osteoclast precursors—with increasing evidence that it can play a role in the development of Paget's disease. Dr. Sun's lab has reported that MVNP signals through the IKK family member TBK1 to increase IL-6, a key player in creating the pagetic microenvironment. Current studies seek to determine the mechanism by which MVNP regulates the competitive balance between TBK1 activity and levels of OPTN (a negative regulator) in osteoclasts. Dr. Sun's group is also using transgenic mouse models to determine whether increased TBK1 expression in OCL precursors will phenocopy MVNP or cooperate with p62P394L to generate the pagetic phenotype in mice. Further, the lab is testing whether TBK1 is required for the formation of pagetic lesions in vivo by crossing TBK1 conditional knockout mice with MVNP/P62KI mice. Dr. Sun is also interested in determining the role and mechanisms of TBK1 and its homolog IKK in other inflammatory bone diseases, such as multiple myeloma (MM) bone disease.

*Professional Affiliations and Society Memberships*

- Member, American Society for Bone and Mineral Research, 2011-present

## **Darcy L. Thull, MS**

Dr. Thull's primary research interest is the use of hereditary cancer registries to facilitate research in cancer prevention, screening, and personalized care for families with hereditary cancer predisposition.

## **Gijsberta J. van Londen, MD, MS**

Dr. van Londen performs her own research, but also collaborates on research that is highly relevant to (older) cancer survivors. Her main focus points are the assessment and management of adverse effects of and adherence to self-administered cancer therapies as well as the needs of post-treatment cancer survivors.

*Advisory Committee Memberships and Leadership Positions*

- Peer Mentor, NIH-KL2 Program, 2012-present
- Presenter, Our Clubhouse, 2014-present
- Affiliate Investigator, SWAN Study, 2014-present
- Member, Special Interest Group, ASCO Geriatric Oncology, 2015-present
- Member, Advisory Committee, ASCO Survivorship Guidelines, 2016-2020
- Adjudicator, ASPREE Study, 2016-present
- Chair and Presenter, Magee Womens Hospital Survivorship Workshop, 2017-present
- Member, University of Pittsburgh Honors Convocation, 2017-present

*Professional Affiliations and Society Memberships*

- Member, Cancer and Aging Research Group, 2014-present

- Member, American Society for Clinical Oncology, 2015-present

### **Liza C. Villaruz, MD**

Dr. Villaruz is a clinical and translational investigator in lung cancer who is actively involved in current clinical trials and who has a strong track record of successful development of institutional clinical trials through NCI-CTEP and industry. Dr. Villaruz actively develops clinical trials in both the HCC Lung Cancer Program (LCP) and the UM1 NCI ET-CTN with Phase I Emphasis at the HCC. She facilitates the interactions between the LCP and the Phase I Program. Among the institutional clinical trials developed by Dr. Villaruz is the NCI-CTEP UM1 sponsored multi-center phase I clinical trial of the ATR inhibitor VX-970 in combination with irinotecan in patients with solid organ tumors (UPCI 15-164/NCI P9938), which was developed in close collaboration with the translational and basic scientists at the UPCI. Dr. Villaruz is the HCC Principal Investigator for the Academic Thoracic Oncology Medical Investigators Consortium (ATOMIC), a national consortium of academic institutions that designs and conducts clinical trials in thoracic oncology.

#### *Advisory Committee Memberships and Leadership Positions*

- Member, Protocol Review Committee B, UPMC HCC, 2009-present
- Clinical Scientist, VX-970 Project Team, NCI/CTEP/IDB, 2014-present
- Principal Investigator, The Academic Thoracic Oncology Medical Investigators Consortium, 2014-present
- Study Chair, NCI-CTEP, Phase I trial of VX-970 and irinotecan, 2015-present
- Principal Investigator, Lung Cancer Mutation Consortium, 2016-present
- Co-Leader, Phase 2 Consortium, NCI-ETCTN, 2016-present

#### *Professional Affiliations and Society Memberships*

- Member, American Society of Clinical Oncology, 2010-present
- Member, International Association for the Study of Lung Cancer, 2014-present

#### *Editorships*

- Reviewer, Multiple journals, 2012-present
- Editorial Board, *Oncology Research*, 2016-present

#### *Major Lectureships and Seminars*

- Invited Speaker, IASLC Annual Targeted Therapies of the Treatment of Lung Cancer, 2017-present
- Invited Speaker, 16th Annual Winter Lung Cancer Conference, 2019

### **Donald V. Woytowitz, MD**

Dr. Woytowitz's research interests are autoimmune hemolytic anemia, ITP, and Lupus anticoagulant.

#### *Advisory Committee Memberships and Leadership Positions*

- Member, Quality Collaborative, Pre-surgical Anemia Correction, 2015-present
- Member, Protocol Review Committee, University of Pittsburgh, 2016-present

#### *Professional Affiliations and Society Memberships*

- Member, American Society of Hematology, 1995-present

#### *Editorships*

- Editor, *Journal of Family Practice*, 2018-present
- Reviewer, Multiple journals, 2018-present

### **Antoinette Wozniak, MD**

Dr. Wozniak's research focuses on lung cancer, including small cell, non-small cell, and mesothelioma, as well

as thymus gland cancer.

*Advisory Committee Memberships and Leadership Positions*

- Member, Senior Leadership Team, UPMC Hillman Cancer Center, 2018-present
- Member, Research Executive Advisory Committee, UPMC Hillman Cancer Center, 2018-present
- Medical Director, Clinical Research Services (CRS), UPMC Hillman Cancer Center, 2018-present
- Member, Clinical Research Oversight Committee (CROC), UPMC Hillman Cancer Center, 2018-present

*Professional Affiliations and Society Memberships*

- Member, American Association for Cancer Research (AACR), 1985-present
- Member, International Association for the Study of Lung Cancer, 2000-present

*Honors and Awards*

- Fellow, American College of Physicians, 1992-present
- Fellow, American Society of Clinical Oncology, 2018-present
- Honoree, Best Doctors, *Pittsburgh Magazine*, 2019

**Dan P. Zandberg, MD**

Dr. Zandberg is a translational and clinical researcher whose primary interest is the development of novel immunotherapy trials to improve outcomes in recurrent/metastatic squamous cell carcinoma of the head and neck.

*Advisory Committee Memberships and Leadership Positions*

- Member, Alliance Experimental Therapeutics and Rare Tumor Committee, 2016-present
- Member, NRG Developmental Therapeutics Committee, 2016-present
- Member, NRG Head and Neck Committee, 2016-present
- Member, Previously Untreated Locally Advanced Task Force of the NCI Head and Neck Steering Committee, 2017-present
- Member, UPMC Hillman Research Executive Advisory Committee (REAC), 2018-present
- Member, UPMC Hillman Program Leaders / Research Executive Advisory Committee (PL-REAC), 2018-present
- Member, UPMC Hillman Pharmacy and Therapeutics Committee, 2018-present
- Member, Head and Neck Cancer Clinical Disease Pathway Committee, 2018-present
- Member, Clinical Research Services Head and Neck Cancer Clinical Trials Team, 2018-present
- Member, Head and Neck Cancer Multidisciplinary Tumor Board, 2018-present
- Member, UPMC Hillman Translational and Clinical Research Strategic Vision Team, 2018-present
- Member, SITC Cancer Immunotherapy Guidelines-Head and Neck Subcommittee, 2018-present
- Member, SITC Advances in Cancer Immunotherapy Committee, 2018-present
- Member, ECOG-ACRIN Head and Neck Cancer Committee, 2018-present

*Professional Affiliations and Society Memberships*

- Member, American Society of Clinical Oncology (ASCO), 2011-present
- Member, American Association for Cancer Research (AACR), 2017-present
- Member, Society for Immunotherapy in Cancer (SITC), 2018-present

*Editorships*

- Reviewer, Multiple journals, 2016-present
- Editorial Advisory Board, *Oncology Research*, 2018-present

*Major Lectureships and Seminars*

- Lecturer, 36th Annual CFS, New York, NY, November 2018
- Lecturer, SITC Advances in Cancer Immunotherapy, Pittsburgh, PA, December 2018

### Hassane M. Zarour, MD

Dr. Zarour's research interests include the identification of novel MHC class II epitopes derived from tumor antigens expressed by melanoma. His laboratory has successfully developed the approach to identify T-helper epitopes derived from a number of human tumor antigens and capable of stimulation antigen-specific CD4+ T cells in patients with advanced cancer. A second interest is the development of novel melanoma vaccines trial with T-helper epitopes and adjuvants. His lab has performed clinical trials with MHC class I and MHC class II epitopes derived from the cancer/testis antigen NY-ESO-1 in combination with CPG in patients with advanced melanoma. The lab has also demonstrated the capability of CPG to stimulate potent and ex vivo detectable CD8+ T cell responses to NY-ESO-1. A third research focus is the study of the mechanisms of melanoma-induced T cell dysfunction, including the role of the PD-1, Tim-3, BTLA and TIGIT pathways. These studies serve as rationale for ongoing clinical trials with dual PD1/Tim-3 and PD-1/TIGIT blockade in cancer patients, including melanoma. Finally, Dr. Zarour studies the role of the gut microbiome in modulating clinical and immune responses to immune checkpoint blockade in the context of a novel clinical trial with fecal microbiota transplant and anti-PD-1 antibodies in patients with PD1 refractory melanoma.

#### Study Sections

- Member, Study Section, Cancer Diagnostics and Treatments, 2005-present
- Reviewer, Institut National du Cancer (INCA, French NCI), 2011-present
- Member, Study Section, ZRG1 OTCX 14, Experimental Therapeutics SBIR, 2012-present
- Reviewer, Fond de la Recherche Scientifique (FNRS), Belgium, 2013-present
- Reviewer, Melanoma Research Foundation, 2013-present
- Member, Study Section, NCI Special Emphasis Panel/Scientific Review Group, 2014-present

#### Advisory Committee Memberships and Leadership Positions

- Member, Cancer Vaccine Collaborative Group, Cancer Research Institute, New York, NY, 2002-present
- Co-Director, Cancer Immunotherapy Trial Network, University of Pittsburgh site, 2011-present
- Member, Internal Advisory Board, NIBIB Biomedical Technology Resource Center P41, 2015-present

#### Professional Affiliations and Society Memberships

- Member, Société Française de Dermatologie, 1996-present
- Member, American Association of Immunology, 2000-present
- Member, American Association for Cancer Research, 2000-present
- Member, Eastern Cooperative Oncology Group, 2000-present
- Member, American Society of Clinical Oncology, 2004-present
- Member, International Society for Biological Therapy of Cancer, 2005-present
- Member, Society of Immunotherapy of Cancer, 2010-present

#### Editorships

- Reviewer, Multiple Journals, 2002-present

## TEACHING ACTIVITIES

The Division of Hematology/Oncology supports training at all levels, from medical school to fellowship to continuing medical education.

### *Medical School*

Several faculty teach within the School of Medicine, inspiring medical students to pursue careers in hematology and oncology alike. **Michael Boyiadzis, MD**, directs the MED 5715 Neoplasia and Neoplastic Diseases course, which is a 4-week elective offered to 4th-year medical students. The overall goal of this course is to expose students to the multidisciplinary approach to cancer diagnosis, patient management, and follow up. It involves didactic lectures as well as practical clinic, pathology, and radiology experiences. In addition to didactic lectures, there is a series of journal club sessions and one "Great Debate" involving a controversial topic in Medical Oncology. The course also includes an introduction to clinical research by exposing students to the different phases of clinical trials including lectures on biostatistical designs, study endpoints, and outcomes. Finally, working in groups with an assigned biostatistician and a mentor (Dr. Boyiadzis), students are required to develop their own design for a research project that could be a clinical trial or a laboratory experiment to be presented on their final day of the course.

**Roy Smith, MD**, continued to serve as Director of the second-year Hematology Module. A combined effort involving faculty members from the Division of Hematology-Oncology, pediatric hematology, hemato-pathology, palliative care medicine, and administrative staff from the School of Medicine, this two-week course for second-year medical students comprises lectures, workshops, virtual case presentations, interactive quizzes, and case conferences. After implementing significant improvements in the course last year, Dr. Smith has revised the course again by further modifying the online, recorded lectures. The team-based learning exercises have been eliminated and will be replaced by team-based teaching exercises during which students will be offered interactive multi-disciplinary seminars on anemia, coagulation, and hematologic malignancies. The live team-based teaching seminars and audience-response exercises will be presented using TurningPoint software, which encourages student interaction and ensures participation of most, if not all, of the class. The course syllabus was also significantly improved with the addition of new information and format. Dr. Smith has created a question bank of approximately 600 questions, possible answers, and explanations that will be used for future online quizzes and final examinations in a rolling fashion. The online quizzes have been revised to assess student progress in the course, encourage collaborative interactions among the students, and beguile the students away from "studying for the test" to learning to think clinically. A special effort was made to emphasize new developments and the importance of translational research in clinical medicine. The completion of these described course revisions is planned over

First-year fellows  
in the Division  
are part of a  
**Resilience Skills  
Training Pilot Program**  
through **ASCO**  
focused on enhancing  
community spirit  
and morale



a one-year period.

### **Hematology/Oncology Fellowship**

The Hematology/Oncology Fellowship program also made significant changes and improvements over the past year, re-affirming our ongoing commitment to the success of this program and its trainees. Since July 2017, **Dr. Annie Im** has served as Director of the Hematology/Oncology Fellowship Program. **Dr. Vida Passero** continues in her role as Associate Program Director, with responsibilities including oversight of the VA and assisting with clinical operations while Dr. Melissa Burgess and Dr. James Herman recently have stepped down in their roles as Associate Program Directors. In July 2019, **Dr. Tim Burns** was appointed as a new Associate Program Director, with a specific focus on research and academic development.

The major changes and other updates for our program that have taken place over the past academic year 2018-2019 are as follows:

#### **Curriculum**

Fellows now manage CAR T-cell patients on the BMT service, which is a therapy that is only available at limited institutions. Through this rotation, fellows now obtain experience with chimeric antigen receptor T-cell (CAR T-cell) patients and receive specific education on management of toxicities. Additionally, the Division has initiated a fellow-run board review series, which takes place after the fellows' didactic conferences with questions based on the topic of the conference. Moreover, to assist with board preparation, the Division provided all fellows supplemental funds to purchase board review materials. This is in addition to the In-service Training Exam (ITE) action plan, which was started last year as a self-assessment and detailed plan for preparing for the boards based on areas for improvement.

#### **Research Mentoring**

Additionally, the fellowship has made significant changes in regards to research mentoring. For instance, the **First-year Fellows Research Day**, now in its second year, was modified in regards to speakers and length of the day based on feedback. Additionally, Incoming Research Pathway residents were invited to this program to hear research faculty present on the aims of their research programs and potential opportunities for fellows. The fellowship has also developed an **advisor program**, in which first-year fellows are assigned a faculty advisor when they start fellowship with the goal of having someone help the fellows in finding research mentors and projects, guide career development, and give general fellowship advice. Fellows and advisors attend an annual dinner at the start of the academic year where goals and expectations of advisors and fellows are discussed. The Division also participated in the annual **Vascular Medicine Institute (VMI) Retreat** again this year, exposing faculty and fellows to research opportunities in benign hematology and vascular biology.

#### **Didactics/Conferences**

Based on feedback, the Fellowship Program added lectures to the **fellows' didactic conferences** on Radiation Oncology, Wellness and Resilience Skills, Chimeric antigen receptor T-cell therapy, and Tumor infiltrating lymphocyte (TIL) therapy. The Division also created a **Career Development Series**, an ongoing bi-annual series of talks on various career development topics. This year's topics included: academic careers, private practice careers, a financial counselor session, Division Chief talk, a lawyer session, an administrator session, CV and interview tips, and a Fellow Career Development talk. Other conference changes included adding fellows as regularly scheduled presenters to the biweekly **Malignant Hematology conference** and continuing to hold the **journal club** quarterly at an off-site location, nurturing a collegial atmosphere for

fellows and faculty. Moreover, several new faculty members, ranging from junior faculty to full professors and program leaders, started this year: Leisha Emens (breast cancer), Sawa Ito (hematologic malignancies), Anuradha Krishnamurthy (GI cancers), Daniel Lee (GU cancers). Megan Mantica (NeuroOncology), Roby Thomas (GU cancers), Antoinette Wozniak (lung cancer), Jason Luke (melanoma). These new faculty will further advance the education fellows receive in both clinical and scholarly endeavors during their fellowship.

### Continuing Education

The Division of Hematology-Oncology is deeply committed to continuing education of physicians and other oncology professionals.

On September 14, 2018, the Division hosted the 8th annual post-American Society of Clinical Oncology (ASCO) conference at the Herberman Conference Center for over 90 oncology physicians, nurses, pharmacists, and APPs throughout the tri-state region. This conference is designed for healthcare providers unable to attend the ASCO meeting held each year in Chicago—and to provide summaries of the most noteworthy presentations. **Dr. Edward Chu** continued in his role as course director, and several members of the Division, including **Drs. Adam Brufsky, Len Appleman, Diwakar Davar, Liza Villaruz, and Nathan Bahary**, provided important and timely reviews.

On February 1, 2019, the Division hosted a review of the most important and clinically relevant presentations from the 2018 San Antonio Breast Cancer Symposium for nearly 200 oncology professionals. This conference is specifically designed for providers involved in the clinical care of patients with breast cancer. **Drs. Adam Brufsky, Shannon Puhalla, and Dhaval Mehta** served as course directors.

Division faculty were also involved in chairing other CME educational events held in Pittsburgh. **Robert Redner, MD**, continued to serve as Director of the HCC Clinical Grand Rounds Series held each Wednesday throughout the year from Sept. 2018-June 2019. And, **Franklin Bontempo, MD**, served as Course Director and faculty of the Cascade 2019, Advances In Hemostasis & Thrombosis Conference, held on May 4, 2019.

### Additional Education Initiatives

#### Well-being

Our program was selected by ASCO to pilot a **Resilience Skills Training** for first year fellows program. One of our Behavioral Medicine faculty was trained by ASCO and facilitated this course, which consisted of 8 biweekly sessions in the fall. The Wellness Chairs are peer-selected fellows who organize events throughout the academic year, funded by the division. The PD hosted a fellows dinner for fellows and their families to enhance community spirit and morale.

#### Fellowship Newsletter

We restarted a quarterly fellowship newsletter to disseminate news about the fellowship, fellows accomplishments, and faculty interviews.

#### Fellows Scholarly Activity

Over the past year, 2 fellows had poster presentations at the American Society of Hematology Annual Meeting, 1 fellow had a poster presentation at the San Antonio Breast Cancer Symposium, 1 fellow had a poster presentation at the American Society for Clinical Oncology Quality Care Symposium, and 1 fellow had a poster presentation at the American Society for Clinical Oncology Annual Meeting. In addition to these research presentations, our fellows accomplished the following: participation in the ASCO/AACR Methods in Clinical Research Methods Training Workshop, AACR Drug Development Workshop, and FDA Fellows Workshop, 2 fellows were placed on T32 training grants, one fellow received 1st place in the Department of

Medicine Fellows Teaching Competition 2019, 1 fellow is enrolled in a PhD program sponsored by the Clinical and Translational Science Institute, and 1 fellow enrolled in an MBA program.

### **Teaching Awards and Honors**

Several faculty were recognized this year for their commitment to education:

- **John Kirkwood, MD**, received the 2019 Dr. G. David Roodman Excellence in Mentoring Award
- **Ronald J. Buckanovich, MD**, received the Postdoc Mentor Award, in April 2019.
- **Richard A. Steinman, MD, PhD**, was awarded the Chancellor's Distinguished Teaching Award in March 2019.

### **Clinical Fellows, FY2019**

#### *Current Fellows*

#### **Zahra Kelly, DO**

Medical School: Philadelphia College of Osteopathic Medicine

Residency: UPMC

#### **Charlie Kuang, MD, PhD**

Medical School: University of Michigan Medical School

Residency: UPMC

#### **Konstantinos Lontos, MD**

Medical School: University of Athens School of Health Sciences

Residency: UPMC

#### **Nicoletta Machin, DO**

Medical School: University of New England College of Osteopathic Medicine

Residency: UPMC

#### **William Maguire, MD, PhD**

Medical School: Weill Cornell Medical College

Residency: UPMC

#### **Monica Malhotra, MD**

Medical School: All India Institute of Medical Science, Ansari Nagar

Residency: Cleveland Clinic

#### **Azadeh Nasrazadani, MD, PhD**

Medical School: Texas Tech University

Residency: UPMC

#### **Kevin Quann, MD, PhD**

Medical School: Sidney Kimmel Medical College, Thomas Jefferson University

Residency: UPMC

#### **Asha Ricciuti, MD**

Medical School: University of Central Florida, College of Medicine

*Residency:* University of South Florida, Morsani College of Medicine

**Anjali Rohatgi, MD, PhD**

*Medical School:* Washington University in St. Louis School of Medicine

*Residency:* Weill Cornell Medical Center and Barnes Jewish Hospital

**Neal Spada, MD**

*Medical School:* University of Pittsburgh School of Medicine

*Residency:* UPMC

*Departing Fellows*

**Tala Achkar, MD**

*Medical School:* American University of Beirut Faculty of Medicine Lebanon

*Residency:* UPMC

*Current Position:* UPMC Hillman Cancer Center - St. Clair

**Christine Garcia, MD, MPH**

*Medical School:* St. George's University School of Medicine Grenada

*Residency:* Stony Brook University Hospital

*Current Position:* UPMC Hillman Cancer Center - Passavant



*Hematology/Oncology Fellowship, Class of 2019*

**Ryan Massa, MD**

*Medical School:* University of Maryland School of Medicine

*Residency:* UPMC

*Current Position:* Clinical Assistant Professor, Department of Medicine, University of Pennsylvania

**Kathan Mehta, MD**

*Medical School:* B. J. Medical College, Ahmedabad India

*Residency:* UPMC

*Current Position:* University of Kansas Medical Center, Kansas City, KS

**Apurva Pandey, MD**

*Medical School:* American University of Antigua College of Medicine

*Residency:* UPMC Mercy

*Current Position:* Assistant Professor, Department of Hematology/Oncology, Oregon Health and Sciences University

**Arisha Patel, MD, MBA**

*Medical School:* Chicago Medical School at Rosalind Franklin University of Medicine and Science

*Residency:* UPMC

*Current Position:* Medical Director, Personalized Health and BioOncology, Genentech, San Francisco, CA

**Richard Wu, MD, PhD**

*Medical School:* University of Texas Medical School at Houston

Residency: University of Texas Southwestern Medical Center

Current Position: UPMC Shadyside

### *Fellow Activities*

#### **Tala Achkar, MD**

##### *Publications*

- **Achkar T**, Ali SM, Welsh A, Dhir R, Gollin SM, Parikh RA. A prolonged response to platinum-based therapy in a patient with metastatic urothelial carcinoma harboring a single rearranged and truncated NF2 gene. *Genes Chromosomes Cancer*. 2018 Aug;57(8):430-433.

#### **Christine Garcia, MD, MPH**

##### *Publications*

- **Garcia CA**, Bhatnagar M, Rodenbach R, Chu E, Marks S, Graham-Pardus A, Kriner J, Winfield M, Minnier C, Leahy J, Hanchett S, Baird E, Arnold RM, Levenson JE. Standardization of Inpatient CPR Status Discussions and Documentation Within the Division of Hematology-Oncology at UPMC Shadyside: Results From PDSA Cycles 1 and 2. *J Oncol Pract*. 2019 Aug;15(8):e746-e754.
- Goolsarran N, Martinez J, **Garcia C**. Using near-miss events to improve MRI safety in a large academic centre. *BMJ Open Qual*. 2019 Apr 15;8(2):e000593.
- Mato AR, Thompson M, Allan JN, Brander DM, Pagel JM, Ujjani CS, Hill BT, Lamanna N, Lansigan F, Jacobs R, Shadman M, Skarbnik AP, Pu JJ, Barr PM, Sehgal AR, Cheson BD, Zent CS, Tuncer HH, Schuster SJ, Pickens PV, Shah NN, Goy A, Winter AM, **Garcia C**, Kennard K, Isaac K, Dorsey C, Gashonia LM, Singavi AK, Roeker LE, Zelenetz A, Williams A, Howlett C, Weissbrot H, Ali N, Khajavian S, Sitlinger A, Tranchito E, Rhodes J, Felsenfeld J, Bailey N, Patel B, Burns TF, Yacur M, Malhotra M, Svoboda J, Furman RR, Nabhan C. Real-world outcomes and management strategies for venetoclax-treated chronic lymphocytic leukemia patients in the United States. *Haematologica*. 2018 Sep;103(9):1511-1517.
- **Garcia CA**, El-Ali A, Rath TJ, Contis LC, Gorantla V, Drappatz J, Davar D. Neurologic immune-related adverse events associated with adjuvant ipilimumab: report of two cases. *J Immunother Cancer*. 2018 Aug 31;6(1):83.
- **Garcia CA**, Dacic S, Villaruz LC. Disease Response with the Addition of Platinum-Based Chemotherapy to Pembrolizumab after Progression on Pembrolizumab Monotherapy in PD-L1-Expressing Non-Small Cell Lung Cancer. *J Thorac Oncol*. 2018 Aug;13(8):e135-e136.

##### *Presentations and Abstracts*

- Poster presentation, ASCO Quality Care Symposium, Phoenix, AZ, September 2018.

#### **Konstantinos Lontos, MD**

##### *Publications*

- **Lontos K**, Tsagianni A, Yuan JM, Normolle DP, Boyiadzis M, Hou JZ, Swerdlow SH, Dorritie KA. Location matters in early stage nodal diffuse large B-cell lymphoma. *Leuk Lymphoma*. 2019 Jan; 60(1):250-253.
- Nasioudis D, **Lontos K**, Tsagianni A, Boyiadzis M, Ko EM. Acute Myeloid Leukemia Following Gynecologic Cancer in the Era of Platinum-Based Chemotherapy. *Int J Gynecol Cancer*. 2018 Oct; 28(8):1639-1642.

##### *Presentations and Abstracts*



- Sun Q, Zhang P, Adamik J, **Lontos K**, Marchica V, Giuliani N, Silbermann RW, Roodman GD, Galson DL, "TBK1/Ikkε Inhibitor Amlx Blocks Multiple Myeloma Cell Growth in Vitro and In Vivo," American Society of Hematology Annual Meeting, San Diego, CA, December 2018.
- Sun Q, Zhang P, Adamik J, **Lontos K**, Marchica V, Giuliani N, Silbermann RW, Roodman GD, Galson DL, "TBK1/Ikkε Inhibitor Amlx Blocks Multiple Myeloma Cell Growth in Vitro and In Vivo," Department of Medicine Research Day, University of Pittsburgh, Pittsburgh, PA, April 2019.

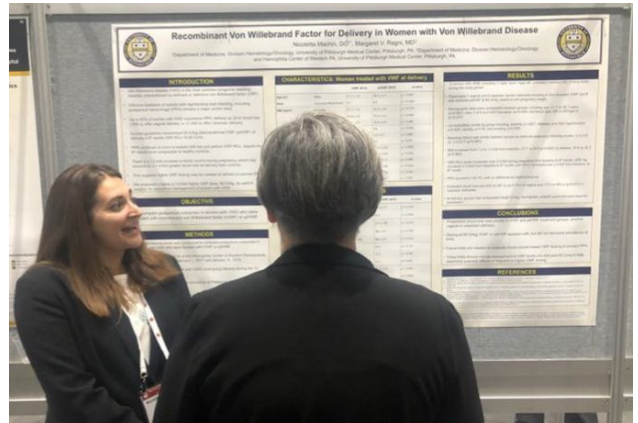
#### Awards

- Participant, PhD program, Clinical and Translational Science Institute, University of Pittsburgh, Pittsburgh, PA

### Nicoletta Machin, DO

#### Publications

- **Machin N**, Ragni MV, Comer DM, Yabes JG. Prevalence and correlates of thrombosis in adults with immune thrombocytopenia: An NIS study. *Thromb Res*. 2018 Dec;172:80-85. Epub 2018 Oct 24.
- **Machin N**, Ragni MV. An investigational RNAi therapeutic targeting antithrombin for the treatment of hemophilia A and B. *J Blood Med*. 2018 Aug 22;9:135-140.
- **Machin N**, Ragni MV, Smith KJ. Gene therapy in hemophilia A: a cost-effectiveness analysis. *Blood Adv*. 2018 Jul 24;2(14):1792-1798.



*Dr. Machin presenting at this year's ASH conference in San Diego.*

#### Presentations and Abstracts

- **Machin N**, Ragni, MV, "Recombinant VWF for Delivery in Women with Von Willebrand Disease," American Society of Hematology Annual Meeting, San Diego, CA, December 2018.

### Monica Malhotra, MD

#### Awards

- Fellows Teaching Award, "Immunotherapy made ridiculously simple," Department of Medicine, University of Pittsburgh, Pittsburgh, PA, April 2019.

### Ryan Massa, MD

#### Awards

- Participant, Accelerating Anticancer Drug Development and Validation Workshop, FDA, Bethesda, MD, July 2018

### Kathan Mehta, MD

#### Publications

- **Mehta KD**, Siddappa Malleshappa SK, Patel S, Giri S, Wang H, Smith R, Parikh RA. Trends of Inpatient Venous Thromboembolism in United States Before and After the Surgeon General's Call to Action. *Am J Cardiol*. 2019 Sep 15;124(6):960-965. Epub 2019 Jun 26.
- Mehta T, Patel S, Male S, Parikh R, **Mehta K**, Lakshminarayan K, Tummala R, Ezzeddine M. Unplanned 30-Day Hospital Readmissions of Symptomatic Carotid and Vertebral Artery Dissection. *J Stroke*. 2018 Sep;20(3):407-410.



*Presentations and Abstracts*

- Desai A, Desai D, Khandwala P, Giri S, Appleman LJ, Parikh RA, **Mehta K**, "Utilization and outcomes of high-dose chemotherapy and stem-cell rescue in patient with testicular cancer from 2005 to 2014 in United States," ASCO Annual Meeting, Chicago, IL, May 2019.

**Azadeh Nasrazadani, MD, PhD**

*Publications*

- Nasrazadani A**, Li Y, Tseng G, Xavier J, Hugar S, Lee AV, Lucas PC, Jankowitz RC, Oesterreich S, McAuliffe PF, "Mixed invasive ductal-lobular carcinoma: Clinicopathological characterization and clinical outcomes," ASCO Annual Meeting, Chicago, IL, May 2019.

**Apurva Pandey, MD**

*Publications*

- Pandey A**, Brufsky AM. Metastatic Breast Cancer Patient with Activating HER2 Exon 20 Insertion Mutation With Response to Pozitotinib: Case Report of Compassionate Drug Use. Clin Breast Cancer. 2019 Feb;19(1):e7-e11. Epub 2018 Oct 4.

*Presentations and Abstracts*

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*Awards*

- Selected Participant, ASCO/AACR Methods in Clinical Cancer Research Workshop, Vail, CO, July 2018.

**Arisha Patel, MD, MBA**

*Awards*

- Master of Business Administration Degree, Tepper Business School, Carnegie Mellon University, Pittsburgh, PA, May 2019
- Participant, ASCO Fellows Workshop, FDA, Bethesda, MD, July 2018

**Asha Ricciuti, MD**

*Presentations and Abstracts*

- Ricciuti A**, Agha M, Raptis A, Hou JZ, Farah R, Redner RL, Sehgal AR, Dorritie KA, Rossetti JM, Shuai Y, Normolle D, Remtulla R, Tahata S, Boyiadzis M, Im A, "Higher Number of Cycles of Cytarabine Consolidation Improves Outcomes in Elderly AML Patients," American Society of Hematology Annual Meeting, San Diego, CA, December 2018.
- Ricciuti A**, Remtulla R, Tahata S, Agha M, Raptis A, Hou JZ, Farah R, Redner R, Sehgal A, Dorritie K, Rossetti J, Shuai Y, Normolle, Boyiadzis M, Im A, "Post-remission Cytarabine in Elderly Patients with Acute Myeloid Leukemia," Department of Medicine Research Day, University of Pittsburgh, Pittsburgh, PA, April 2019.

**Neal Spada, MD**

*Presentations and Abstracts*

- Spada N**, Geramita E, van Londen GJ, Sun Z, Sabik L, "Changes in Breast cancer Diagnosis and

Treatment after Medicaid Expansion in Pennsylvania,” San Antonio Breast Cancer Symposium, San Antonio, TX, December 2018.

- **Spada N**, Geramita E, van Londen GJ, Sun Z, Sabik L, “Changes in Breast cancer Diagnosis and Treatment after Medicaid Expansion in Pennsylvania,” Department of Medicine Research Day, University of Pittsburgh, Pittsburgh, PA, April 2019.

## Richard Wu, MD, PhD

### *Publications*

- Ruffo E, **Wu RC**, Bruno TC, Workman CJ, Vignali DAA. Lymphocyte-activation gene 3 (LAG3): The next immune checkpoint receptor. *Semin Immunol.* 2019 Apr;42:101305.

### *Presentations and Abstracts*

- **Wu R**, Shan F, Somasundaram A, Chuckran C, Cillo A, Dhupar R, Onkar S, Kunning S, Moskovitz J, Bruno T, Vignali D, “PD-1+ T-regulatory cells in metastatic cancers’ pleural effusions exhibit attenuated suppressive function,” Department of Medicine Research Day, University of Pittsburgh, Pittsburgh, PA, April 2019.

### *Awards*

- Selected Participant, ASCO/AACR Methods in Clinical Cancer Research Workshop, Vail, CO, July 2018.

## Postdoctoral Fellows, FY2019

### Juraj Adamik, PhD

*Mentor: Deborah L. Galson, PhD*

Dr. Adamik’s research studies epigenetic regulation in bone cells, specifically the interactions between bone marrow cellular compartments. He is developing a 3D myeloma-osteoprogenitor microenvironment model for various pharmacokinetic studies.

### Huda Atiya, PhD

*Mentor: Lan G. Coffman, MD, PhD*

Dr. Atiya is Investigating the role of direct interaction between mesenchymal stem cells and tumor cells in enhancing ovarian cancer metastasis.

### Joe-Marc Raphael A. Chauvin, PhD

*Mentors: John Kirkwood, MD, and Hassane Zarour, MD*

Dr. Chauvin's research evaluates the effects of immune checkpoint blockade combinations on the phenotype and tumor response capacity of circulating and tumor infiltrating immune cells to help develop new immunotherapies and find predictive markers.

### Quanquan Ding, PhD

*Mentor: Hassane Zarour, MD*

Dr. Ding is studying the role of CXCL13 releasing CD8+ T cells in melanoma patients.

### Mignane Biram Ka, PhD

*Mentor: Hassane Zarour, MD*

Dr. Ka's research focuses on gamma delta T cells and inhibitory molecules in melanoma.

### **Chaoyuan Kuang, MD**

Dr. Kuang is studying epigenetic modifiers and immunotherapy combinations for the treatment of colorectal cancer.

### **Vinod Kumar, PhD**

Dr. Kumar focuses on the development of targeted therapeutic strategies for KRAS and EGFR mutant NSCLC.

### **Haizhou Liu, PhD**

*Mentors: Edward Chu, MD, and John Schmitz, PhD*

Dr. Liu's research mainly focuses on the discovery of novel anti-colorectal cancer agents from herbal medicine and the investigation of the potential biological mechanisms of its antitumor activity. He currently has three projects underway.

### **Itay Raphael, PhD**

Dr. Raphael's work is focused on understanding the mechanisms by which immune-checkpoint blockade drugs promotes development of autoimmune diseases in patient with melanoma.

### **Faruk Sacirbegovic, PhD**

*Mentor: Warren D. Shlomchik, MD*

Dr. Sacirbegovic is currently working on understanding the maintenance of GVHD.

### **Ning Wei, PhD**

*Mentors: Edward Chu, MD, and John Schmitz, PhD*

Dr. Wei is examining how bruceantinol (BOL), a novel STAT3 inhibitor demonstrating potent antitumor activity in in vitro and in vivo human colorectal cancer (CRC) models, can be used either alone or in combination with MEK inhibitors for the treatment of human CRC.

### **Richard C. Wu, PhD**

*Mentor: Dario Vignali, PhD*

Dr. Wu is investigating the role of inhibitory receptor(s) expression on the function of T regulatory cells in metastatic cancer patients.

### **Liena Zhao, PhD**

*Mentor: Warren D. Shlomchik, MD*

Dr. Zhou is using two photon intravital microscopy and other approaches to understand how T cells are recruited into the marrow and whether chemokines direct them to leukemia cells after IFN- $\gamma$  stimulation.

### **Meng Zhou, PhD**

*Mentor: Warren D. Shlomchik, MD*

Dr. Zhou is examining how the graft-vs-leukemia effect in allogeneic stem cell transplantation fails due to insufficient alloantigen presentation and due to alloreactive T cells developing exhaustion, both of which can be overcome by targeted interventions.

### **Jieqing Zhu, PhD**

*Mentor: Warren D. Shlomchik, MD*

Dr. Zhu used two-photon intravital microscopy to visualize the motility of CD8 and CD4 T cells within the

colon of GVHD mice.

**Bochra Zidi, PhD**

Dr. Zidi is evaluating tumor antigen-specific immune responses in melanoma patients undergoing novel immunotherapies with 3rd generation immune checkpoint blockade.

## THREE-YEAR BIBLIOGRAPHY

**Edward Chu, MD** *Division Chief*

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## Mounzer E. Agha, MD

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### Leonard J. Appleman, MD, PhD

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### **Nathan Bahary, MD, PhD**

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