

*Dear Colleague,*

*Over the past few years, NewYork-Presbyterian Hospital has made great strides in growing and strengthening its oncology programs. Through the Herbert Irving Comprehensive Cancer Center at NewYork-Presbyterian/Columbia University Medical Center and the Sandra and Edward Meyer Cancer Center at Weill Cornell Medical College/Ronald P. Stanton Clinical Cancer Program at NewYork-Presbyterian/Weill Cornell Medical Center, the Hospital's interdisciplinary patient care and research initiatives will expedite new and innovative therapies for patients.*



**Lewis C. Cantley, PhD**

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**Gary K. Schwartz, MD**

*Chief, Hematology and Oncology*  
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## Faculty News

NewYork-Presbyterian Hospital continues to advance the field of hematological malignancies through the leadership of the following renowned physicians and scientists:

### NewYork-Presbyterian/Columbia

**Joseph G. Jurcic, MD**

Director, Hematologic Malignancies Section  
**Suzanne Lentzsch, MD, PhD**, Clinical Medicine Director,  
Multiple Myeloma and Amyloidosis Service  
**Markus Y. Mapara, MD, PhD**

Director, Blood and Marrow Transplantation

**Owen A. O'Connor, MD, PhD**

Director, Center for Lymphoid Malignancies

**Azra Raza, MD**, Director, Myelodysplastic Syndromes Center

### NewYork-Presbyterian/Weill Cornell

**Eric J. Feldman, MD**, Director, Hematological Malignancies

**John P. Leonard, MD**

Director, Lymphoma Program, and

Associate Dean for Clinical Research

**Ruben Niesvizky, MD**, Director, Multiple Myeloma Service

**Gail J. Roboz, MD**, Director, Leukemia Program

**Koen van Besien, MD, PhD**

Director, Stem Cell Transplant Program

### At NewYork-Presbyterian/Columbia:

**Gary K. Schwartz, MD**, has been named Chief of Hematology/Oncology and the Associate Director of the NCI-designated Herbert Irving Comprehensive Cancer Center. Dr. Schwartz joins us from Memorial Sloan-Kettering Cancer Center, where he served as Chief of the Melanoma and Sarcoma Service. Dr. Schwartz will continue his research on improving ways to treat melanoma and sarcoma.

**Swarnali Acharyya, PhD**, who recently completed her postdoctoral training in Cancer Biology and Genetics at Memorial Sloan-Kettering Cancer Center, has been named to Columbia's Institute for Cancer Genetics, where she is exploring mechanisms of drug resistance and cancer metastasis.

**Alberto Ciccia, PhD**, was recruited from Harvard Medical School to join the Department of Genetics and Development at Columbia where he seeks to define the DNA damage response pathways, which are defective in genetic disorders and cancer.

**Piero D. Dalerba, MD**, a member of the research team at Stanford University School of Medicine that identified cancer stem cells that propagate tumors in colon and rectal cancer, has joined Columbia's Department of Pathology and Cell Biology, where he continues his groundbreaking work on the potential of this discovery for new therapies for colorectal cancer.



*Larisa J. Geskin, MD*, Director of the Department of Dermatology Cutaneous Oncology Center at the University of Pittsburgh, will be joining the Department of Dermatology at Columbia. Dr. Geskin has particular expertise in immunotherapy for melanoma and cutaneous T-cell lymphoma.

*P. Ravi Kiran, MBBS, MS, MSc*, has been named Chief of the Division of Colorectal Surgery. Dr. Kiran joined the Hospital from the Cleveland Clinic Foundation, where he was head of the Research Section of the Department of Colorectal Surgery.

*Siddhartha Mukherjee, MD, PhD*, a hematologist-oncologist with the Herbert Irving Comprehensive Cancer Center, has been awarded the Padma Shri – the fourth highest civilian award in the Republic of India. Dr. Mukherjee, who won a Pulitzer Prize for his book, *The Emperor of All Maladies: A Biography of Cancer*, continues to pursue research to understand the biology of blood development, with a special interest in malignant and pre-malignant blood diseases, with a goal of therapeutically affecting the biology of normal blood-forming stem cells.

#### **At NewYork-Presbyterian/Weill Cornell:**

*Pinkal Desai, MD, MPH*, has joined the leukemia program following fellowship training in hematology/oncology at Providence Hospital Medical Center and Karmanos Cancer Center. Dr. Desai, who focuses her practice on leukemia, myelodysplastic syndrome, and myeloproliferative neoplasms, also will be developing clinical and translational research projects in these areas. She is the lead author and co-author on numerous Women's Health Initiative paper proposals, including most recently, an analysis of the effect of statins on the risk of non-Hodgkin's lymphoma.

*Giorgio Inghirami, MD*, a hematopathologist and leading expert in performing explants, has joined Weill Cornell's Department of Pathology and Laboratory Medicine. Previously, Dr. Inghirami was Director of Anatomic Pathology at the University of Turin, Italy, and served as Scientific Director of the Center of Experimental Research and Medical Science in Torino.

*Sangmin Lee, MD*, joins the Division's Leukemia Program from NewYork-Presbyterian/Columbia, where he recently completed his fellowship in hematology and oncology, with a concentration on epigenetics of myelodysplastic syndromes (MDS). As an Edward P. Evans Fellow in the multi-institutional MDS Clinical Research Consortium, Dr. Lee will focus on the development of clinical and translational research programs in MDS, as well as other hematologic malignancies.

*Tracy-Ann Moo, MD*, a specialist in advanced, minimally invasive treatment of breast cancer and melanoma, has joined the Breast Center in the Department of Surgery. Dr. Moo completed a breast surgical oncology fellowship at Memorial Sloan-Kettering Cancer Center, followed by training in videoscopic techniques in melanoma surgery at the Melanoma Institute in Sydney, Australia and Emory University Hospital. In 2013, she was awarded the American Association of Breast Surgeons scientific presentation award for her research in post-mastectomy radiation.

*Adriana Rossi, MD*, a trained bench researcher who has worked with several top-rated laboratories prior to pursuing her degree in medicine, has joined the Division of Hematology/Oncology's Myeloma Center. Dr. Rossi works with Ruben Niesvizky, MD, Tomer Mark, MD, Roger N. Pearse, PhD, MD, and other faculty members in hematological malignancies to develop sponsored clinical and translational research, including projects pertaining to residual disease and relapsed and refractory myeloma. Dr. Rossi has a special interest in the development of treatment options for elderly patients with multiple myeloma. She also supports the myeloma autologous stem cell transplant program under the guidance of Dr. Mark and Koen van Besien, MD, PhD.

*Lewis C. Cantley, PhD*, Director of the Sandra and Edward Meyer Cancer Center at Weill Cornell Medical College/Ronald P. Stanton Clinical Cancer Program at NewYork-Presbyterian/Weill Cornell Medical Center, was one of 11 winners of the inaugural Breakthrough Prize in Life Sciences. Dr. Cantley was recognized for his landmark discovery of PI3K, a signaling pathway key to cell growth – certain mutations of which play a major role in the development of cancer. He was further honored with the 2013 Jacobæus Prize, awarded annually by the Novo Nordisk Foundation to an internationally recognized researcher for extraordinary achievements within medical research.

*John P. Leonard, MD*, Clinical Director of the Center for Lymphoma and Myeloma and a pioneer in novel lymphoma therapeutics, was named Chair of the Lymphoma Committee for the prestigious National Cancer Institute-sponsored group, the Alliance for Clinical Trials in Oncology.

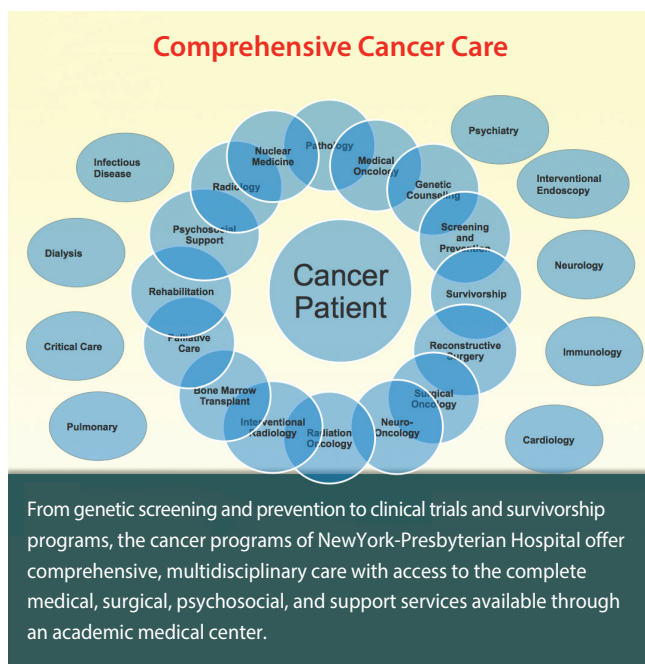
## **Program Highlights**

#### **At NewYork-Presbyterian/Columbia:**

The new 12,500-square-foot *Irving Radiation Oncology Center*, part of the Herbert Irving Comprehensive Cancer Center, provides leading-edge precision radiation therapies for children and adults with cancer. The Center is equipped with the Siemens ARTISTE™, which allows for in-room real-time imaging that can see the tumor response and biological behavior as the patient is being treated, and the TrueBeam™ system from Varian Medical Systems, which offers high-precision image-guided radiotherapy and radiosurgery. The system is also now available at Weill Cornell.



*The new Irving Radiation Oncology Center provides leading-edge precision radiation therapies.*



Faculty in the *Breast Cancer Program* of the Herbert Irving Comprehensive Cancer Center at Columbia have been studying diffuse optical tomography, a new imaging system that uses light waves to explore changes in breast tissue. The technology provides functional imaging markers that can identify which newly diagnosed breast cancer patients are likely to respond to chemotherapy before surgery.

Emily Chen, PhD, a pioneer in proteomics – a new branch of science that explores the role protein networks play in the development of cancer – is the Director of the new *Proteomics Shared Resource Lab* in the Herbert Irving Comprehensive Cancer Center. An expert in mass spectrometry analysis, Dr. Chen and Columbia colleagues will use mass spectrometry to study the relationship between changes in proteins and the development of cancer and enable scientists to understand the pathways by which many different cancers progress. Dr. Chen's own research centers on breast cancer metastasis, seeking a better understanding through protein analysis of how these cancer cells adapt and survive in new environments. Projects are also addressing the identification of markers indicative of benign, pre-malignant lesions and invasive cervical squamous carcinoma and the determinants of breast cancer brain metastasis.

The *Pediatric Cancer Foundation Developmental Therapeutics Program*, under the direction of Julia Glade-Bender, MD, recently received one of six new Phase I/II Infrastructure Grants awarded across the country by Alex's Lemonade Stand Foundation to develop a phase I/II infrastructure in an effort to accelerate early phase research efforts and expedite completion of studies. The Developmental Therapeutics Program is the only National Cancer Institute-sponsored Children's Oncology Group Phase I center serving the tri-state region. The new grant from Alex's Lemonade Stand Foundation will enable a substantially increased developmental therapeutics trial portfolio and accrual volume;

translation of basic and preclinical research into evidence-driven investigator-initiated trials with strong correlative biology; and the integration of Precision in Pediatric (PIPseq) comprehensive tumor profiling into standard practice for patient selection and recruitment to biologically targeted early phase trials.

#### At NewYork-Presbyterian/Weill Cornell:

A landmark gift by Sandra and Edward Meyer is expanding and enhancing Weill Cornell's distinguished cancer research and patient care programs. The *Sandra and Edward Meyer Cancer Center*, led by Lewis C. Cantley, PhD, incorporates precision medicine and other cutting-edge biomedical approaches to expedite research breakthroughs into the most advanced therapies for patients. The Meyer Cancer Center is unifying cancer research activities with a focus on three core areas – a centralized biobank, cancer genomics, and computational biology – which are crucial to physicians who base each patient's treatment plan or enrollment in clinical trials on his or her genetic profile. The Meyer Cancer Center's research hub occupies two dedicated floors in the new Belfer Research Center of Weill Cornell Medical College. The 480,000-square-foot building is devoted to translational bench-to-bedside research targeting some of the most formidable health challenges of the 21st century.



The new Belfer Research Building, which serves as the research hub for the Sandra and Edward Meyer Cancer Center, features 13 floors of laboratories equipped with the most advanced research technology.

The *Institute for Precision Medicine* at Weill Cornell, directed by Mark A. Rubin, MD, continues to pursue work on mutational and other molecular events in human cancers, which is becoming increasingly important in the move towards personalized cancer treatment. The Institute is establishing a precision medicine tumor board to facilitate the evaluation of large data sets now available and clinical decision-making based on mutational events. The Institute is leading the way in hematological malignancies and prostate cancer, and is expanding the approach into colon cancer.

NewYork-Presbyterian/Weill Cornell celebrated the launch of the *Ronald P. Stanton Clinical Cancer Program*, featuring an expanded infusion center, an enhanced radiation oncology suite, and renovated pharmacy space with improved patient safety features and medical staff workflow. The *Stanton Clinical Adult Infusion Center* – a major component of the new Cancer Program – is a 25,000-square-foot facility with state-of-the-art



private treatment bays, spacious phlebotomy areas and laboratory space that improve patient flow and decrease waiting time, and a dedicated research pharmacy designed specifically for the administration of investigational anti-tumor agents. Designed with a patient-centered focus to ensure patients feel the warmth and compassion of a small intimate treatment area, the Infusion Center is staffed by oncology trained and certified nurses, patient navigators, social workers, and other staff to ensure a smooth patient experience.

In 2013, the *Leukemia Program* marked the 15-year anniversary of its founding by Eric J. Feldman, MD. In that time, the program has grown to include nine leukemia specialists and has become one of the largest and most productive clinical and translational research programs in the country. Most recently, Dr. Feldman was named Editor-in-Chief of *Leukemia Research*.

Under the direction of Ok-Kyong Chaekal, MD, *NewYork-Presbyterian/Lower Manhattan Hospital* – the newest campus of NewYork-Presbyterian Hospital – provides diagnostic and therapeutic services for patients with a wide range of cancers, including breast cancer, lung cancer, stomach cancer, liver cancer, colon cancer, and lymphoma. As part of a major academic medical center, all oncology specialists at NewYork-Presbyterian/Lower Manhattan Hospital are on the faculty of Weill Cornell Medical College, offering residents of lower Manhattan access to advances in cancer care, including clinical trials, and other resources for patients and their families.

## Research Initiatives

### At NewYork-Presbyterian/Columbia:

*Why Leukemia Returns in Some Children.* With sophisticated new DNA techniques, a team led by Adolfo A. Ferrando, MD, PhD, has found, for the first time, why many children with a type of leukemia suffer a relapse. The researchers found that about 20 percent of children with T-cell acute lymphoblastic leukemia who experience a relapse harbor mutations that activate NT5C2, an enzyme that inactivates an important chemotherapy drug, 6-mercaptopurine.

*Acute Myeloid Leukemia May Originate from a Mutation in Bone Cells.* Researchers have found that a mutation in osteoblasts causes acute myeloid leukemia (AML) in mice. The mutation was found in nearly 40 percent of patients with AML or myelodysplastic syndrome (MDS) who were part of the study. The researchers were able to stop production of leukemic blood cells in the mice with a drug that blocked the effects of the osteoblast mutation, suggesting that a similar drug may benefit a large portion of AML and MDS patients.

*Gene-Based Therapeutic Strategies for Breast Cancer.* Jose M. Silva, PhD, in the Institute for Cancer Genetics, and Matthew A. Maurer, MD, MS, a member of the Breast Cancer Program, are looking at the role of individual tumor assessment in breast cancer using genetic analysis to develop an individually tailored approach for systemic therapy.

Dr. Silva's laboratory has identified a novel target for HER2-positive tumors that have stopped responding to chemotherapy and anti-HER2 therapy and have started a second phase of preclinical studies to identify small molecule inhibitors that can be effectively used with patients. Additional studies for other breast cancer alterations are also in development.

*Innovative Technique Seeks to Prevent Lymphedema in Breast Cancer Patients.* A team of surgeons and members of the breast cancer program of the Herbert Irving Comprehensive Cancer Center, led by Sheldon M. Feldman, MD, Chief of the Division of Breast Surgery, is conducting a two-year pilot study of an innovative microsurgery technique coupled with imaging technology to not only prevent lymphedema, but also potentially detect and treat it early. The lymphatic microsurgical preventive healing approach (LYMPHA) is the first to be conducted outside of the University of Genoa in Italy, where it was developed. The LYMPHA technique creates a bypass to restore lymphatic flow by connecting lymph vessels to a branch of the axillary vein, a pathway normally severed by node removal or blocked by tissue fibrosis resulting from radiation.

*Moderate Irradiation of Unaffected Breast May Prevent Second Cancers.* A study conducted in mice suggests that survivors can dramatically reduce that risk through treatment with moderate doses of radiation to the unaffected breast at the same time that they receive radiation therapy to their affected breast. The treatment, if it works as well in humans as in mice, could prevent tens of thousands of second breast cancers.

*Clinical Trials for Cancer, One Patient at a Time.* Researchers in the Department of Systems Biology, directed by Andrea Califano, PhD, are developing a new approach to cancer clinical trials in which therapies are designed and tested one patient at a time. The patient's tumor is "reverse engineered" to determine its unique genetic characteristics and to identify existing drugs approved by the Food and Drug Administration that may target them. Dr. Califano and his colleagues are currently testing this individualized approach to cancer in patients with gastric and neuroendocrine tumors.

*Predicting Progress of Low-Risk Prostate Cancer.* The level of expression of three genes associated with aging can be used to predict whether seemingly low-risk prostate cancer will remain slow-growing, according to researchers Andrea Califano, PhD, Cory Abate-Shen, PhD, Mitchell C. Benson, MD, and Michael M. Shen, PhD. Use of this three-gene biomarker, in conjunction with existing cancer-staging tests, could help physicians better determine which men with early prostate cancer can be safely followed with "active surveillance" and spared the risks of prostate removal or other invasive treatment.

*Study Reveals Genes That Drive Brain Cancer.* A team of researchers at the Herbert Irving Comprehensive Cancer Center at Columbia University Medical Center has identified

18 new genes responsible for driving glioblastoma multiforme, providing the potential for about 15 percent of glioblastoma patients to receive personalized treatment with FDA-approved drugs currently used in other cancers.

#### **At NewYork-Presbyterian/Weill Cornell:**

##### ***Landmark Trial Establishes Alternate Treatment for CLL.***

Findings of a multinational research team led by hematologist/oncologist Richard R. Furman, MD, reported in the January 22 issue of *The New England Journal of Medicine*, suggest that patients with chronic lymphocytic leukemia (CLL) may be able to avoid having to take debilitating chemotherapy. The researchers compared rituximab and idelalisib against rituximab and a placebo pill in 220 CLL patients who could not receive chemotherapy. Six months into the study, cancers in 93 percent of participants in the combination therapy group had not worsened, compared to 46 percent of those in the rituximab plus placebo group. Additionally, just 13 percent of patients treated with rituximab alone responded to the therapy, compared to 81 percent of the participants in the idelalisib treatment group. The contrast was so significant that an independent data-monitoring committee halted the study early, in October 2013, so that all of the study participants could receive idelalisib.

***Novel Mechanisms in Malignant Lymphomas.*** A project abstract by Wendy Béguelin, PhD, a postdoctoral fellow in the laboratory of Ari Melnick, MD, was one of six papers selected from 6,000 to be presented at the plenary session of the 55th Annual Meeting of the American Society of Hematology. Dr. Béguelin presented her recent discoveries outlining the mechanism of action of a protein called EZH2, which, when combined with another master regulatory factor, BCL6, activates cancer-causing gene silencing in malignant lymphomas. This new research shows that combinations of BCL6 and EZH2 inhibitors are highly synergistic in destroying lymphomas and represent an exciting rational epigenetic-based and molecular targeted therapeutic approach with the potential to eradicate lymphomas without harming normal tissues.

***First-time Use of AQD Drug for Myelodysplastic Syndrome in a Clinical Trial.*** Gail J. Roboz, MD, Director of the Leukemia Program, has been named lead investigator for an industry-funded clinical trial for the treatment of myelodysplastic syndrome (MDS). The phase I/II trial will enroll approximately 40 patients with MDS who previously experienced failed treatment using hypomethylating agent-based therapy. Using an AQD (anti-cancer quinolone derivative) drug for the first time to treat MDS in a clinical trial, the study will seek to establish the maximum tolerated dose and then reach research endpoints that include rate of complete remission, partial remission, hematologic improvement, and blood transfusion requirements.

***New Therapy for Solid Tumors Enters Clinical Trial.*** A first-of-its-kind phase Ib clinical trial has begun to enroll patients to study the investigational compound, BPM 31510 (IV continuous

infusion), as a new cancer therapy for solid tumors. This is the first program to focus on the metabolism of cancer rather than a specific mutation or target. Manish A. Shah, MD, Director, Gastrointestinal Oncology, serves as principal investigator at the Weill Cornell site. This unprecedented evaluation of clinical data, molecular profiles, and patient characteristics seeks to facilitate the rapid development of safer, more effective drugs.

##### ***Clinical Trial Opens for Metastatic Prostate Cancer.***

Himisha Beltran, MD, in the Urological Oncology Program, serves as principal investigator for a new clinical trial evaluating the experimental drug, cabozantinib, for men with metastatic castrate resistant prostate cancer (CRPC) as compared to prednisone in prolonging survival. In an ongoing study, cabozantinib treatment has resulted in high rates of pain relief and has shown substantial anti-tumor activity. Cabozantinib could provide a valuable new treatment option for men with CRPC who experience disease progression.

##### ***Protein in Prostate Biopsies Signals Increased Cancer Risk.***

Researchers have shown that the presence of a particular protein, ERG, in biopsied prostate tissue substantially increases the likelihood that cancer will develop in that organ. The discovery will likely help physicians decide how closely to monitor men potentially at risk for the cancer.

##### ***Newly Discovered Protein May Target Metastasis.***

Investigators in the laboratory of Samie Jaffrey, MD, PhD, have identified an important new pathway responsible for metastasis. The protein plays a critical role in the life cycle of cells, regulating their growth and controlling their ability to migrate through tissue. The finding provides opportunities to prevent cancer metastasis and helps explain how one drug that is already in development works to stop the disease's spread.

***New Drug Targets Aggressive Lymphoma.*** Researchers have developed a drug to treat the most chemotherapy-resistant form of diffuse large B-cell lymphoma. The small molecule agent, known as MI-2, targets a key protein responsible for driving the growth and survival of lymphoma cells. The international research team, led by Ari Melnick, MD, Chair of the Sandra and Edward Meyer Cancer Center Hematologic Malignancies Program, is now working to pinpoint the right combination of drugs to optimize the therapy.

##### ***A Drug that Might Shut Down a Variety of Cancers.***

A multi-institutional research team, led by Lewis C. Cantley, PhD, Director of the Sandra and Edward Meyer Cancer Center at Weill Cornell Medical College/Ronald P. Stanton Clinical Cancer Program at NewYork-Presbyterian/Weill Cornell Medical Center, has identified a family of enzymes crucial for the growth of cancers that have genetic aberrations in p53. Targeting these enzymes with novel agents might prevent the growth of p53 mutant cancers, thereby benefiting a broad spectrum of cancer patients, including those with breast, ovarian, lung, colorectal, and brain tumors.



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