Dear Colleague,

We would like to update you on some of the exciting clinical and research endeavors of the past year within the oncology programs at NewYork-Presbyterian Hospital. The Hospital’s affiliations with Columbia University College of Physicians and Surgeons and Weill Cornell Medical College continue to provide our physicians and scientists with important opportunities for the development of precision and personalized medicine for cancer diagnosis and treatment. We are particularly pleased to announce the appointments of Stephen G. Emerson, MD, PhD, as Director of the Herbert Irving Comprehensive Cancer Center at NewYork-Presbyterian/Columbia, and Lewis C. Cantley, PhD, as Director of the recently established Cancer Center at Weill Cornell Medical College and NewYork-Presbyterian. Their leadership will further strengthen the Hospital’s interdisciplinary oncology research and will help expedite the application of discoveries to new and innovative therapies for patients.

Edward P. Gelmann, MD  
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The prevention and treatment of cancer increasingly requires a multidisciplinary approach that spans medical, surgical, and radiation oncology. NewYork-Presbyterian has established a framework that promotes clinical collaborations across disciplines and research partnerships at the basic, experimental, and clinical stages, enabling clinicians to extend the boundaries of treatment options. With expertise in all aspects of solid tumor and hematological cancer domains, the Hospital’s oncology specialists provide patients with access to the most current drug studies and technological advancements.

At NewYork-Presbyterian/Columbia, the National Cancer Institute-designated Herbert Irving Comprehensive Cancer Center — one of only three centers so designated in New York State — brings together internationally recognized researchers and clinicians to develop and implement the latest approaches for prevention, diagnosis, and treatment. Each year, the Center’s clinicians diagnose and treat more than 3,500 new cancer cases. More than 200 clinical trials are ongoing to study therapeutic regimens, and to help understand the incidence and progression of cancer. “To coordinate the considerable clinical and support resources for cancer that exist at NewYork-Presbyterian, we are developing concierge medical care to organize all of a patient’s appointments, help with navigating the process of care, including clinical trials, and obtaining consent for genomic information to benefit the patient’s future care and advance research,” notes Dr. Stephen G. Emerson, Director of the Herbert Irving Comprehensive Cancer Center.

The Division of Hematology and Medical Oncology at NewYork-Presbyterian/Weill Cornell includes some 40 clinical researchers — five of whom are physician-scientists. The Division’s 14 full-time scientists pursue research with major support from the NIH, including R01 and R21 grants. Nearly 450 patients were enrolled in therapeutic clinical trials this past year, many of which were studies of new drugs for patients with hematological cancers. Access to novel agents will increase over the next few years, following the recruitment of Dr. Lewis C. Cantley, who is implementing a vision for the new Cancer Center at Weill Cornell Medical College and NewYork-Presbyterian that grew out of the realization that basic research has yielded targets that are now drugable and is based in the concept of team science.

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“In order to figure out how to use these drugs, you need an infrastructure of basic scientists, surgeons, clinicians, and molecular pathologists all working together as a team to identify the targets to go after and, importantly, to implement them into biomarker-driven clinical trials,” says Dr. Cantley, whose laboratory uncovered PI3-kinase (PI3K) – one of the most frequently mutated genes in cancer – which has led to 20 different PI3K inhibitors that are in Phase I, II, and III clinical trials.

Breast Cancer. NewYork-Presbyterian/Weill Cornell was the first hospital in New York City to offer women with early stage breast cancer INTRABEAM radiotherapy, which is delivered in a single dose at the time of surgery. The treatment is an effective alternative to a six to seven week regimen following surgery because it precisely targets any remaining cancer cells inside the tumor bed, where the tumor is most likely to recur.

At NewYork-Presbyterian/Columbia, Dawn L. Hershman, MD, MS, is working with Columbia University’s bioengineers to develop new imaging techniques that can evaluate blood flow in tumors non-invasively. Using a small probe that is run over the skin, they can detect infrared vibrational spectroscopic emissions from hemoglobin without using radiation or doing another biopsy to obtain early response data.

With the Mailman School of Public Health at Columbia, Dr. Hershman and her colleagues followed women who were prescribed hormonal estrogen inhibitors and found that survival long-term was a direct function of whether or not they took their medicines. Additionally, they identified co-payment as the single largest inhibitor for taking the medicines. “This finding is a major public health contribution that was uncovered because of the Hospital’s affiliation with Columbia University and its School of Public Health,” says Dr. Emerson. Clinicians have since developed a texting system to remind women to take their medications and will provide guidance with payment issues.

Gastrointestinal Oncology. At NewYork-Presbyterian/Weill Cornell, Manish A. Shah, MD, is spearheading a growing program for GI cancers. Most recently, the program has opened a multicenter clinical trial of a new drug for stomach cancer in the second or third line setting. “Historically, we thought of gastric cancer as one disease,” says Dr. Shah. “But as we’ve learned more about molecular biology and the phenotypes, we now have evidence that gastric cancer is probably not one disease, but at least three.” The clinical trial will be evaluating cabazitaxel – a next generation taxane approved for prostate cancer. “While taxanes are already approved for gastric cancer, it is unknown if they work better in certain subtypes,” says Dr. Shah. “With new targeted drugs, the pathways that could be exploited might be different between the subtypes.”

Jeffrey W. Milsom, MD, Chief of Colon and Rectal Surgery at NewYork-Presbyterian/Weill Cornell, and his surgical colleagues, continue to develop technologies, devices, and tools to advance the field of minimally invasive surgery for colon and rectal cancers, including transanal endoscopic microsurgery. A seven-year prospective study conducted by the faculty determined that the results obtained with laparoscopic or hand-assisted laparoscopic rectal resections compared favorably with open surgery. The study has expanded to multiple sites in collaboration with the American College of Surgeons Oncology Group.

The Pancreas Center at NewYork-Presbyterian/Columbia is one of a few sites nationwide using the NanoKnife® for certain forms of pancreatic cancer. The procedure is an option for patients whose cancer is confined to the pancreas, but who have not responded adequately to other treatment. “During the procedure, which is performed simultaneously by a GI surgeon and an interventional radiologist,” says John A. Chabot, MD, Director of the Pancreas Center, “several thin probes are inserted into the cancerous tissue to deliver short pulses of electricity that create tiny holes in the cancerous area. Other structures that make traditional surgery impossible, such as major blood vessels, survive the treatment. New cells grow into the holes, replacing the cancer cells.”

Hematological Malignancies. NewYork-Presbyterian/Columbia recently recruited five hematology/oncology specialists who were previously with Memorial Sloan-Kettering Cancer Center. Joseph G. Jurcic, MD, whose research focuses on using antibodies to harness the body’s immune system to kill leukemia cells and to...
deliver radiation treatment directly to leukemia cells; Mark G. Frattini, MD, who specializes in acute and chronic leukemias, myeloproliferative disorders, and myelodysplastic syndrome, with laboratory research that seeks to define more precise targets for the development of novel anti-cancer therapies; Nicole Lamanna, MD, who conducts research to find more effective and less toxic therapies for chronic lymphocytic leukemia; Mark L. Heaney, MD, PhD, who specializes in myeloproliferative diseases, including myelofibrosis, polycythemia vera, essential thrombocytopenia, and chronic myelogenous leukemia; and Todd L. Rosenblat, MD, whose clinical research focuses on developing treatments for acute myelogenous leukemia. These physicians, together with Azra Raza, MD, Director of the Myelodysplastic Syndromes Center, and Markus Y. Mapara, MD, PhD, Director of the Blood and Marrow Transplantation Program, will further advance the pioneering research and clinical innovations that distinguish the hematology/oncology programs at NewYork-Presbyterian/Columbia.

In 2012, John P. Leonard, MD, Associate Dean for Clinical Research at Weill Cornell Medical College and Clinical Director of the Weill Cornell Center for Lymphoma and Myeloma, was elected Chair of the Scientific Advisory Board of the Lymphoma Research Foundation. Dr. Leonard and his research team have established one of the leading centers for monoclonal antibody-based therapies and other novel therapeutics for lymphoma.

Weill Cornell’s Hematologic Malignancy Program is among the best in the country, and its Myelodysplastic Syndrome Center is one of only five nationwide. This past summer, three research grants were awarded from the Leukemia & Lymphoma Society to support critically needed translational research. Studies focus on novel targeted therapies to eliminate leukemia stem cells from patients in remission; genomic diversity in acute myeloid leukemia stem cells; and stem cell alterations in multiple myeloma patients treated with the drug lenalidomide.

In 2012, Koen van Besien, MD, joined Weill Cornell Medical College from the University of Chicago to direct the bone marrow transplant program, which performed over 160 bone marrow and stem cell transplants in the past year. Dr. van Besien has also initiated an outpatient transplant program that allows patients to be discharged from the hospital and be followed seven days a week in the recently renovated outpatient unit.

Lung Cancer. Nasser K. Altorki, MB, MCh, Director of Thoracic Surgery at NewYork-Presbyterian/Weill Cornell, and his surgical colleagues are using minimally invasive techniques, including video-assisted thoracoscopic lobectomy and robotics, in nearly 90 percent of lung cancer cases with mortality rates of less than 1 percent. Weill Cornell is now leading a Phase III trial of lobectomy versus sublobar resection for small peripheral non-small cell lung cancer to determine if wedge resection can preserve lung tissue. Research is also underway by Dr. Altorki and Vivek Mittal, PhD, who seek to understand the tumor microenvironment and its effect on tumor growth and metastasis, uncover novel blood and tissue based biomarkers of clinopathological and prognostic significance in lung cancer, and develop treatments that target the genes within the tumor in patients with advanced lung cancer.

Urologic Oncology. The new Center for Prostate Cancer at NewYork-Presbyterian/Weill Cornell, directed by Ashutosh K. Tewari, MD, MCh, uses a detailed approach for diagnosis and risk stratification with MRI imaging, ultrasound-guided biopsies, and genomics data generated from Mark A. Rubin, MD, a world expert on prostate cancer genomics. One of the world’s leaders in prostate cancer and robotics, Dr. Tewari, who also serves as Director of the LeFrak Center for Robotic Surgery, helped pioneer robotic prostatectomy, which offers one of the best outcomes in cancer control.

Researchers at Weill Cornell, in collaboration with Brian J. Kirby, PhD, at Cornell University, have developed a microfluidic device that captures circulating tumor cells from men with prostate cancer. Led by Scott T. Tagawa, MD, a randomized Phase II multi-institutional trial examining an early switch from first-line docetaxel to cabazitaxel chemotherapy in men with metastatic castration-resistant prostate cancer recently opened.
In this study, circulating tumor cells will be examined prospectively by Paraskevi Giannakakou, PhD, for molecular markers of chemotherapy sensitivity and mechanisms of taxane resistance.

Researchers at NewYork-Presbyterian/Columbia have confirmed that the first assistant sparing technique (F.A.S.T) to streamline robotic partial nephrectomy significantly reduces the critical time the kidney is without blood flow by nearly 25 percent. The procedure achieves the same results as standard robotic partial nephrectomy surgery and is as efficient at completely excising a tumor with no positive surgical margins despite tumor size, location, or other complicating factors. “By incorporating F.A.S.T into our robotic approach, for the first time we were able to cut W.I.T down to an average of 15 minutes and 18 minutes for more complicated tumors,” says Ketan K. Badani, MD, Chief of Robotic and Minimally Invasive Surgery. “As a result, we’re able to offer a minimally invasive partial nephrectomy to almost anyone with a renal tumor, regardless of size or complexity.”

Dr. Edward P. Gelmann is an accomplished researcher whose laboratory at NewYork-Presbyterian/ Columbia has made major contributions to the understanding of the genetic steps that transform a normal prostate cell to a cancer cell.

The work of scientists Cory Abate-Shen, PhD, and Michael M. Shen, PhD, at NewYork-Presbyterian/ Columbia, is closely integrated with the research and clinical care of Mitchell C. Benson, MD, Chief of Urology, and Edward P. Gelmann, MD, Chief of Hematology/Oncology, in prostate cancer. The Abate-Shen laboratory has generated genetically engineered mouse models that recapitulate the entire spectrum of prostate cancer and are driving forward novel approaches to prevention and treatment.