

MEMORIAL SLOAN-KETTERING CANCER CENTER

# Hematologic Oncology


2011 ANNUAL REPORT





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ON THE COVER, FROM LEFT: JENNA GOLDBERG, ROBERT JENO,  
NURSE HEATHER VAN DEN BERGH, AND JOHN GERECITANO.





## Welcome to the first annual report of the Division of Hematologic Oncology at Memorial Sloan-Kettering Cancer Center.

In 2011 the Division of Hematologic Oncology saw growth in all major areas of patient care, research, and teaching. As one of the largest programs in the country devoted to the treatment of hematological malignancies, the Division is organized into five services: Adult Bone Marrow Transplantation, Hematology, Leukemia, Lymphoma, and Myeloma. Our faculty currently consists of 53 highly specialized physicians who collaborate with many other care providers and researchers at Memorial Sloan-Kettering Cancer Center to provide state-of-the-art patient care, research, and education.

In this report we would like to present a few highlights from 2011.

Marcel R.M. van den Brink, MD, PhD  
Alan Houghton Chair in Immunology  
Head, Division of Hematologic Oncology



# Hematologic Oncology Team

## ADULT BONE MARROW TRANSPLANTATION



Juliet Barker



Hugo Castro-Malaspina



David Chung



Sergio Giralt



Jenna Goldberg



Alan Hanash\*



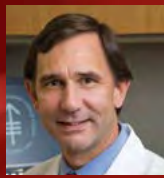
Katharine Hsu



Ann Jakubowski



Robert Jenq



Guenther Koehne



Heather Landau



Esperanza Papadopoulos



Miguel Perales



Doris Ponce

## HEMATOLOGY



Craig Sauter



Marcel van den Brink



James Young



Simon Mantha\*



Rekha Parameswaran



Lilian Reich



Gerald Soff

## LEUKEMIA



Omar Abdel-Wahab



Ellin Berman



Renier Brentjens



Bayard Clarkson



Stephen Chung\*



Marco Davila



Dan Douer



Mark Frattini



Mark Heaney



Joseph Jurcic



Virginia Klimek



Nicole Lamanna



Ross Levine



Peter Maslak



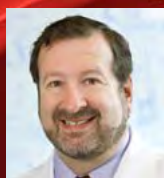
Stephen Nimer\*\*



Jae Park



Todd Rosenblat



David Scheinberg



Martin Tallman

\* Joined faculty in 2012  
 \*\* Left faculty in 2012



## LYMPHOMA



John  
Gerecitano



Paul  
Hamlin



Steven  
Horwitz



Matthew  
Matasar



Alison  
Moskowitz



Craig  
Moskowitz



Ariela  
Noy



Lia  
Palomba



Carol  
Portlock



Jonathan  
Schatz\*\*



David  
Straus



Andrew  
Zelenetz

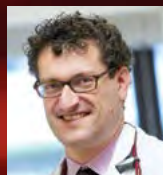
## MYELOMA



Hani  
Hassoun



Nikoletta  
Lendvai



Alexander  
Lesokhin

## COLLABORATING TEAMS

- Cardiology Service
- Case Management
- Colorectal Service
- Critical Care Medicine Service
- Dental Service
- Dermatology Service
- Endocrinology Service
- Gastroenterology and Nutrition Service
- Gastric and Mixed Tumor Service
- General Internal Medicine Service
- Geriatrics Service
- Gynecology Service
- Head and Neck Service
- Hepatopancreatobiliary Service
- Infectious Diseases Service
- Integrative Medicine Service
- Interventional Radiology Service
- Music/Art Therapy
- Neurology Service
- Neurosurgery
- Nursing
- Nutrition
- Occupational Therapy
- Ophthalmic Oncology Service
- Orthopaedic Service
- Pain and Palliative Care Service
- Pathology
  - Diagnostic Molecular Pathology
  - Hematopathology
  - Pathology Diagnostic Services, Cytology
  - Surgical Pathology Diagnostic Services
    - Bone and Soft Tissue Pathology
    - Dermatopathology
    - Gastrointestinal Pathology
- Physical Therapy
- Plastic and Reconstructive Surgical Service
- Psychiatry Service
- Pulmonary Service
- Radiation Oncology
- Radiology
- Rehabilitation Medicine Service
- Renal Service
- Social Work
- Surgery
- Thoracic Service
- Urgent Care Center
- Urology Service

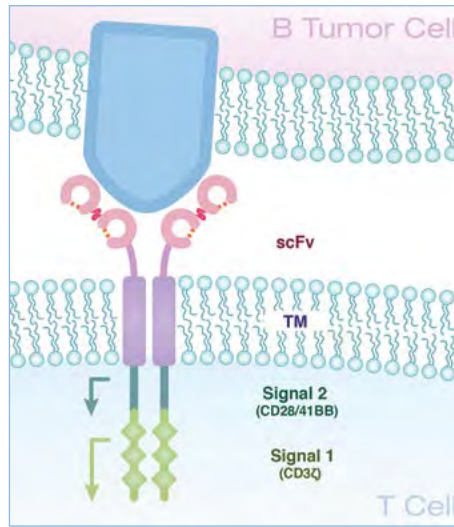




## Cell-Based Therapies Show Promise

When people think of treatments for cancer they likely think first of drugs, both traditional chemotherapy and, more recently, targeted drugs. Increasingly, however, cancer therapies may be vaccines, antibodies, or even whole cells. Cell therapy is a relatively new but rapidly growing area of research, and one where Memorial Sloan-Kettering is taking a lead in initiating new clinical trials and developing innovative treatments for patients.

Memorial Sloan-Kettering's efforts to develop cell-based treatments have been largely initiated by Michel Sadelain, who directs the Gene Transfer and Gene Expression Laboratory and the Center for Cell Engineering (CCE), and Isabelle Rivière, Director of Memorial Sloan-Kettering's newly established Cell Therapy and Cell Engineering Facility.



OPPOSITE PAGE, FROM LEFT: ISABELLE RIVIÈRE, MICHEL SADELAIN, AND RENIER BRENTJENS. ABOVE: ILLUSTRATION OF A CHIMERIC ANTIGEN RECEPTOR.

One type of cell therapy is called targeted immunotherapy, which aims to specifically instruct the immune system to recognize and attack tumor cells. Medical oncologist Renier Brentjens, along with Dr. Sadelain and other colleagues, has designed clinical trials that are currently under way for patients with advanced chronic lymphocytic leukemia and B cell acute lymphoblastic leukemia.

The protocol involves isolating white blood cells called T cells from patients and introducing a new gene into the cells. The gene encodes a receptor that enables the T cells to recognize a protein called CD19, which is present in the leukemia cells. After the gene is transferred and expressed, the T cells are infused back to the patient where they seek out and attack the patient's cancer.

“Over the past ten years we have been

a leading center in developing this novel technology in the laboratory, and we were the first center to bring this CD19-targeted approach to the clinic,” Dr. Brentjens explains. “We have refined the design of the artificial receptors [termed *chimeric antigen receptors*, or CARs] to increase the potency of T cells, relying on extensive studies performed in animal models to assess the effectiveness of the genetically targeted T cells,” he says, noting that much of the early research was supported by Memorial Sloan-Kettering’s Experimental Therapeutics Center.

A report by Drs. Brentjens, Rivière, and Sadelain, along with oncologists from Memorial Sloan-Kettering’s Leukemia Service, published in *Blood* in August 2011 described phase 1 studies in which the therapy effectively killed tumor cells or

controlled tumor growth in four out of nine patients treated, with few side effects.

Stem cells are the other major focus of investigation in the CCE. Dr. Sadelain and his colleagues have been working on a cell-based therapy for beta ( $\beta$ )-thalassemia, an inherited blood disorder characterized by the inability of red blood cells to make a protein called  $\beta$ -globin.

“It’s no accident that Memorial Sloan-Kettering is a leader in this field,” Dr. Sadelain concludes. “The research plays on the strengths of both the Sloan-Kettering Institute and Memorial Hospital, where transplantation and transfusion medicines are solidly implanted. It positions us among a select group of institutions that can truly design, develop, and test novel concepts and methodologies for the new cell therapies and regenerative medicine.”



# Overview of Centers and Programs

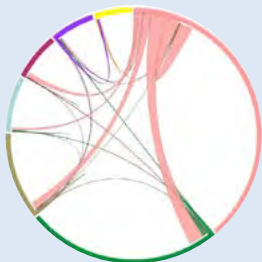
## MICROBIOTA STATE TRANSITIONS INCREASE FOLLOWING ALLO-HSCT

### PRE-TRANSPLANT TRANSITIONS

70% remain in biodiverse state

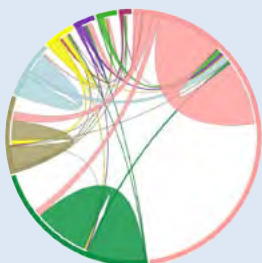


### TRANSITIONS DURING TRANSPLANT

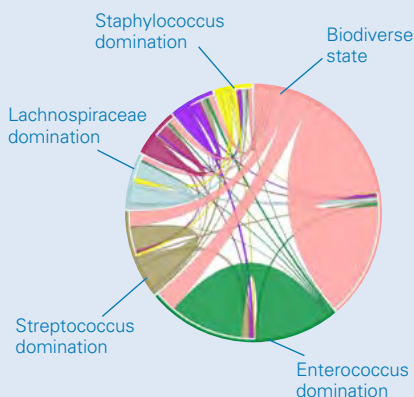


### POST-TRANSPLANT TRANSITIONS

27% remain in biodiverse state



### ALL TRANSITIONS



## LUCILLE CASTORI CENTER FOR MICROBES, INFLAMMATION, AND CANCER

The Lucille Castori Center for Microbes, Inflammation, and Cancer, directed by Eric Pamer, was created to shed light on the role that microbes and the body's inflammatory and immunological responses to them play in the development of cancer. It unites researchers from a range of specialties to develop technologies to examine the causes of infections in patients, characterize infections associated with cancer treatment and hospitalization, study how inflammation can promote the development of cancer, and study the relationships between specific microbes and the development or progression of cancer.

With support from the Castori Center, members of the Division of Hematologic Oncology are studying how bone marrow transplantation can affect the makeup of the intestinal microbiota (the ecosystem of microorganisms that live in the intestine). By studying mouse models in the laboratory as well as patients in clinic, the investigators found strong evidence that graft-versus-host disease can have a significant impact on the composition of intestinal bacteria. They have also found evidence that the risk for developing graft-versus-host disease can be reduced by targeting intestinal bacteria.

## THE PETER SOLOMON GENOMICS PROGRAM

Over the past two years, with the support of the Peter Solomon Fund, Memorial Sloan-Kettering has implemented a state-of-the-art genomics platform to look for genetic mutations in the tumor samples of patients with a variety of blood cancers. This testing platform allows for rapid, cost-effective mutational studies for Memorial Sloan-Kettering patients with acute myeloid leukemia (AML), myelodysplastic syndromes, and myeloproliferative neoplasms.

This program has helped us to perform detailed mutational analysis of the

largest clinical trial group of patients with AML, allowing us to define a mutational signature associated with high risk of relapse. Being able to recognize this signature enables us to identify patients who need more aggressive therapies or who may benefit from clinical trials of investigational agents.

## CENTER FOR STEM CELL BIOLOGY

The Center for Stem Cell Biology was established in 2010 to serve as a hub for existing stem cell efforts at Memorial Sloan-Kettering, support recruitment of stem cell faculty, and provide resources for stem cell research such as core facilities and training programs. Memorial Sloan-Kettering has been at the forefront of various aspects of stem cell research for many years, including realizing the potential of hematopoietic stem cells in the treatment of hematopoietic malignancies, the use of umbilical cord blood as a source of stem cells suitable for transplantation, and the isolation of embryonic and adult stem cells.

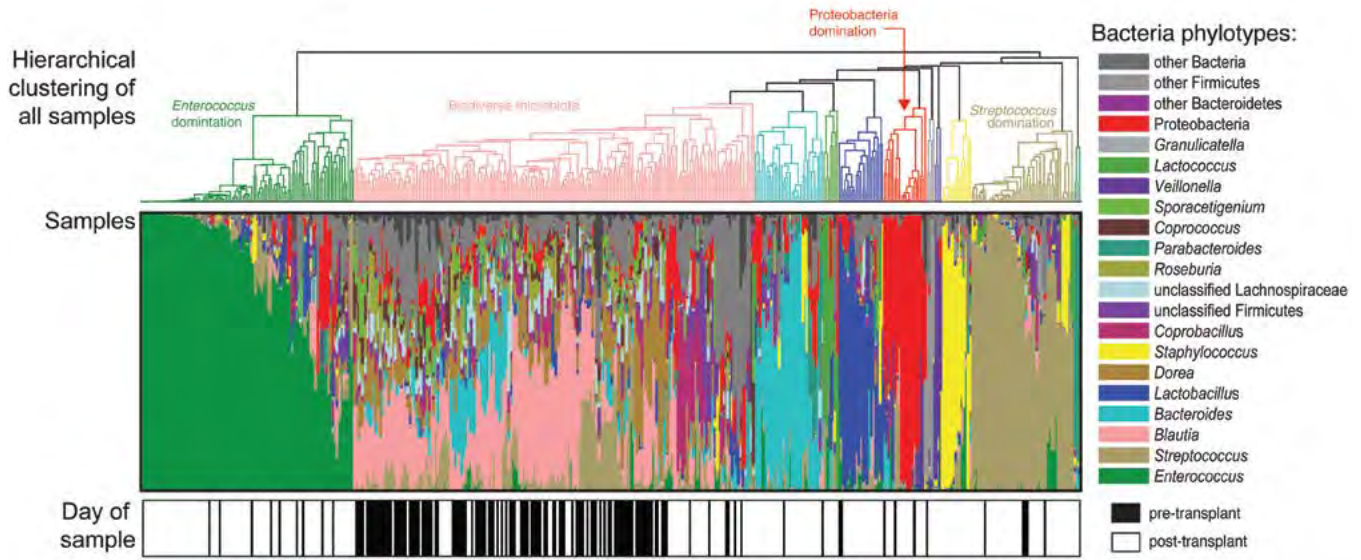
## CORD BLOOD TRANSPLANTATION PROGRAM

Memorial Sloan-Kettering has one of the leading programs for the transplantation of cord blood in patients with hematologic cancers. Cord blood is collected from the umbilical cords and placentas of healthy newborn babies and held in public banks. It contains blood-forming stem cells that have unique properties that are helpful for rebuilding a healthy blood and immune system. These transplants are a growing alternative for people who are unable to find traditional matches, but are still relatively uncommon. Memorial Sloan-Kettering has been a leading research center in establishing new protocols that make use of this technique.

A team led by Juliet N. Barker, head of the Cord Blood Transplantation Program, has proven that cord blood transplantation can extend transplant access to patients from racial and ethnic minorities who lack other



MICROBIOTA OF PATIENTS CAN BE GROUPED INTO DISTINCT STATES OF DOMINATION



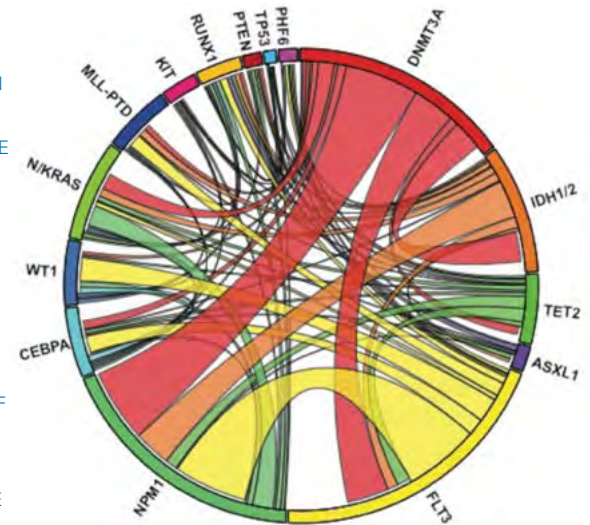
suitable donors. Cord blood transplantation yields survival rates comparable to those of transplantation using adult donors.

**TRI-STATE TRANSPLANT CONSORTIUM**

The Tri-State Transplant Consortium was initiated by Sergio Giralt and includes members of stem cell transplant programs in New York, New Jersey, and Connecticut. The consortium’s mission is to collaborate in the design, implementation, and analysis of clinical trials addressing important issues in hematopoietic stem cell transplantation as it relates to patients and the institutions that deliver these therapies to them. The group has one active clinical trial; other research

activities include correlative research and retrospective study analysis.

TOP: GENETIC ANALYSIS OF THE COMPOSITION OF FECAL SAMPLES FROM BMT PATIENTS; MIDDLE LEFT: A UNIT OF CORD BLOOD; MIDDLE RIGHT: ERIC PAMER AND COMPUTATIONAL BIOLOGIST JOAO XAVIER; BOTTOM: THIS RADIAL DIAGRAM DEPICTS THE RELATIVE FREQUENCY AND PAIRWISE CO-OCCURRENCE OF MUTATIONS FOUND IN PATIENTS WITH NEWLY DIAGNOSED ACUTE MYELOID LEUKEMIA WHO WERE ENROLLED IN A PARTICULAR CLINICAL TRIAL. THE LENGTH OF THE ARC CORRESPONDS TO THE FREQUENCY OF MUTATIONS IN THE FIRST GENE, AND THE WIDTH OF THE RIBBON CORRESPONDS TO THE PERCENTAGE OF PATIENTS WHO ALSO HAD A MUTATION IN THE SECOND GENE.





PATIENTS WITH HEMATOLOGIC MALIGNANCIES MAY BE ABLE TO RECEIVE CARE AT ONE OF MSKCC'S SUBURBAN OUTPATIENT TREATMENT CENTERS IN (CLOCKWISE, FROM TOP LEFT) BASKING RIDGE, NEW JERSEY, OR IN COMMACK, ROCKVILLE CENTRE, OR SLEEPY HOLLOW, NEW YORK.

## A Network of Hematologic Oncology Physicians

In 2011, the Division of Hematologic Oncology forged stronger ties to Memorial Sloan-Kettering's suburban outpatient treatment centers in [Basking Ridge](#), New Jersey; and in [Commack](#), [Rockville Centre](#), and [Sleepy Hollow](#), New York. Each of these sites has a member of the hematologic oncology division on staff. An expanding list of protocol studies is available to patients of the regional sites, and the number of patients who participate in research programs of the doctors at our main campus, in Manhattan, is growing. A biweekly video conference for physicians at the regional sites provides a venue for case presentations, exchange of the latest research data, and protocol development. The conference helps to ensure that patients who are treated for hematologic malignancies at our regional sites benefit from the same expertise as the patients who receive care at our main campus.

## Hematological Oncology Tissue Bank

To support the many different research projects of Memorial Hospital and Sloan-Kettering Institute investigators, the Division of Hematologic Oncology has established the Hematological Oncology Tissue Bank (HOTB). When the bank was created in 2010, about 150 samples were collected each

month. Collections have since increased to nearly 500 per month in 2012.

The HOTB currently has an inventory of more than 11,000 biospecimens, including plasma, serum, granulocyte pellets and buccal swabs for DNA, peripheral blood and bone marrow mononuclear

cells, skin, and lymphoid tissue. The bank is an invaluable resource for biospecimens linked to annotated clinical data, containing samples collected both before and after treatment from patients with lymphoid and hematologic malignancies.

## Clinical Database

In 2008, the Division of Hematologic Oncology embarked on an effort to create a multifunctional Disease Management Team (DMT) portal integrated into the clinical information system. This tool is fulfilling a number of roles integral to clinical research and clinical patient care. Through the DMT portal, we are creating a point-of-entry database that includes all patients seen by physicians within the division. We are integrating this information with the Clinical Research Database and centralizing and capturing essential disease characteristics including treatments

and outcomes. The DMT portal is also facilitating consenting for the hematologic oncology tissue bank and ultimately will assist in tracking stored tissue samples.

Furthermore, the portal allows for the integration of much of the mandatory reporting data for the Bone Marrow Transplant Service, improving compliance and facilitating the data-maintenance process. An important part of this effort is the goal of increasing participation in current clinical trials and identifying areas where new clinical trial development is needed. Through the DMT portal, the

mechanism is in place to search more easily for appropriate trials, to identify which patients have gone on studies, and — importantly — to identify which patient populations are not addressed by our current portfolio of studies.

As of October 2012, the programmers have completed all 22 specific disease pages covering roughly 97 percent of intended division entities. There have been 7,000 individual point-of-entry patient records completed to date, and a number of new clinical trials and publications have occurred as a direct consequence of the DMT efforts.



# Nancie Simonet

At age 42, when she was seven months pregnant with her first child, Nancie Simonet got a phone call from her obstetrician, who had received alarming results from a standard prenatal blood test. Nancie had extremely low levels of platelets, a type of blood cell that is essential for coagulation. She would be at risk of bleeding to death if she were to injure herself.



NANCIE WITH HER HUSBAND, DARREN.

At a hospital near her home in Pennsylvania, Nancie had new donated platelets infused into her blood and underwent a series of exams. In the course of the following months, she was misdiagnosed with one blood disease after another. Her doctors put her on several different treatments, but none seemed to work. Several times a week, Nancie needed to have donated platelets infused into her bloodstream. She was eventually transferred to a hospital in New Jersey, where her daughter, Sophia, was born strong and healthy.

However, Nancie's condition began to worsen soon after the delivery. Her bone marrow ceased to produce red and white blood cells as well as platelets, causing extreme fatigue, as well as various inflammations and infections. A local oncologist referred her to a specialist at Memorial Sloan-Kettering Cancer Center.

Nancie went to see James Young, of Memorial Sloan-Kettering's Adult Bone Marrow Transplant Service, who diagnosed her with myelodysplastic syndrome (MDS), a group of diseases that affect blood stem cells in the bone marrow. Today, most cancer experts classify MDS as a form of cancer because it produces a large population of abnormal cells from a single abnormal cell. In approximately one-third of patients, the disease will progress to acute myeloid leukemia, a type of blood cancer.

To get well, Nancie would need to undergo allogeneic (donor-derived) stem cell transplantation. None of her three siblings matched her tissue type, nor did any of her other relatives. So her doctors began searching national registries for a volunteer donor, a search that lasted for more than two years. Meanwhile, she needed constant transfusions.

Finally, Dr. Young identified a suitable donor who was registered with the National

Marrow Donor Program. But one problem remained: the donor was a US Army Special Forces Green Beret stationed in Iraq. The first time he returned to the United States she was unable to undergo the procedure because of complications, but when he returned again Nancie was finally able to have her transplant.

During the first part of the procedure, Nancie received three chemotherapy drugs over nine days. These drugs not only targeted her MDS but also destroyed her immune cells, which otherwise could react against her donor's stem cells and reject them. After one day of rest, she received the stem cells that had been harvested from her donor's blood and that would build her new bone marrow.

Nancie had to stay in the hospital eight weeks after the transplant while her immune system developed. "That wasn't nearly as bad as I had thought," Nancie says. "All the physicians on my treatment team were taking such good care of me, and the nurses were just wonderful. Someone was always there to check on me or sit by my bed if I were having a bad night. When it was time for me to move home, I was even reluctant to leave my nurses, in whose care I had felt so safe and at ease."

Nancie has now made a full recovery and is busy running the restaurant and music venue that she founded. Looking back, she recalls that a strong determination to sustain her life and her family was what most helped her pull through the difficult years of disease and treatment. She also has developed a long distance friendship with her donor, Joshua, who lives with his family in Las Vegas.

"Nancie's long-term prognosis is excellent now that she's made it this far out. We are very pleased and happy to have cured her," Dr. Young says.

*One problem remained: the donor was a US Army Special Forces Green Beret stationed in Iraq.*

# Clinical Trials/Protocols

At the time this report was published, 130 clinical trials for patients with hematological malignancies were open at MSKCC. We have listed a few of these trials here. A complete listing can be found at [www.mskcc.org/cancer-care/clinical-trials/clinical-trial](http://www.mskcc.org/cancer-care/clinical-trials/clinical-trial).

## **Pilot Trial of Telemedicine Evaluation for Stem Cell Transplant Patients**

Many of Memorial Sloan-Kettering's bone marrow transplantation (BMT) patients travel great distances from their primary residence for evaluation and treatment. Under the direction of Sergio Giralt, Chief of the Adult BMT Service, we have created a clinical trial examining the use of video conferencing technology. This technology is being used by BMT physicians to medically evaluate patients who are in geographically distant places. The purpose of the pilot trial is to study the acceptance of telemedicine evaluations from the perspectives of both the BMT patients and healthcare providers as a valid alternative to face-to-face visits.

## **A Phase II Trial of Transplants from HLA-Compatible Related or Unrelated Donors with CD34+ Enriched, T Cell-Depleted Peripheral Blood Stem Cells Isolated by the CliniMACS System in the Treatment of Patients with Hematologic Malignancies and Other Lethal Hematologic Disorders**

The purpose of this trial is testing three disease-specific myeloablative conditioning regimens for preparing patients to receive allogeneic HLA-compatible related or unrelated transplants of peripheral blood stem cells with their T cells removed. The trial is examining the success of engraftment of stem cells that have their T cells depleted using the CliniMACS system; the rate of acute graft-versus-host disease, chronic graft-versus-host disease; and transplant-related mortality in patients with leukemia, myelodysplastic syndrome, and high-risk forms of multiple myeloma.

## **Fractionated Stem Cell Infusions in Myeloma Patients Undergoing Autologous Stem Cell Transplant (Fractionated Stem Cell Infusions)**

High-dose chemotherapy is an integral part of the treatment of patients with multiple myeloma and requires stem cell transplants in order to ensure timely bone marrow recovery. Although advances in supportive measures including antibiotics and growth factors that stimulate stem cell recovery have improved the safety of this approach, infectious complications remain the leading cause of death in patients undergoing transplant. The incidence of infections is strongly correlated with the degree of bone marrow suppression, which results in lower blood cell counts and a longer time for the bone marrow to recover normal cell counts. We hypothesize that multiple stem cell infusions will incrementally increase blood counts, reducing the total duration of bone marrow suppression during transplant and subsequently lowering risk of infection.

## **A Trial of Busulfan, Melphalan, Fludarabine, and T Cell-Depleted Allogeneic Hematopoietic Stem Cell Transplantation Followed by Post-Transplantation Donor Lymphocyte Infusions for Patients with Relapsed or High-Risk Multiple Myeloma**

Patients with high-risk multiple myeloma or with relapsed disease within 15 months following an autologous stem cell transplantation have a particularly poor outcome with currently available therapies. These patients are therefore candidates for our clinical trial of allogeneic stem cell transplantation, a therapy that has been known to be curative for patients with multiple myeloma. Allogeneic stem cell transplantation can also lead to the development of graft-versus-host disease (GvHD), which is caused by donor T lymphocytes, a component of the transplant product. Donor T cells have the capacity to recognize recipients' cancer and normal



cells as foreign. Recognition of normal cells can result in symptoms of GvHD such as rash, diarrhea, nausea and vomiting, and others. At Memorial Sloan-Kettering, we are removing the T cells from the donor's stem cell product (T cell depletion) before we administer the transplant product to the recipient. Allogeneic T cell–depleted stem cell transplantations lower the risk of GvHD and do not require the administration of the immunosuppressive drugs that are required after conventional transplants. These drugs have side effects and complications on their own. Following the transplantation, patients will receive calculated low doses of donor lymphocyte infusions to enhance the graft-versus-myeloma effect while limiting GvHD.

To be eligible for this study, patients must have multiple myeloma that has recurred or is at high risk of relapse. Patients must be at least age 21 and no older than 69 years and may not have had prior allogeneic stem cell transplantation.

### **Brentuximab Vedotin (SGN-35) in Transplant Eligible Patients with Relapsed or Refractory Hodgkin Lymphoma**

Brentuximab vedotin (SGN-35) was recently approved by the Food and Drug Administration for the treatment of relapsed and refractory Hodgkin lymphoma and anaplastic large-cell lymphoma in certain settings. The drug is novel in that it links a chemotherapy drug to an antibody that targets cells expressing the protein CD30. This allows most of the chemotherapy to go directly to the cancer cells, increasing the chance the drug will work and somewhat reducing the risk of side effects. In this trial brentuximab vedotin will be given to outpatients with relapsed or refractory Hodgkin lymphoma as second-line therapy in place of the more toxic standard chemotherapy. Patients with no lymphoma after treatment will forgo additional chemotherapy and go straight to an autologous stem cell transplant.

### **Ofatumumab Versus Rituximab Salvage Chemoimmunotherapy Followed by ASCT in Relapsed or Refractory DLBCL**

The standard treatment for diffuse large B cell lymphoma (DLBCL) or grade 3b follicular lymphoma that has relapsed after first treatment is rituximab combined with chemotherapy. Patients who respond well have their own stem cells collected and then re-infused after additional high-dose chemotherapy, a process also called autologous stem cell transplant. However, rituximab improves the effectiveness of chemotherapy in only a small percentage of patients when they have been treated with rituximab with their first chemotherapy. The purpose of this study is to see if ofatumumab is more effective than rituximab in this treatment regimen. Patients will randomly receive either ofatumumab or rituximab, combined with standard chemotherapy. Patients in whom treatment works to control their lymphoma will go onto standard high-dose chemotherapy with transplantation of their own stem cells. Ofatumumab is approved for treating chronic lymphocytic leukemia and has been assessed in non-Hodgkin lymphoma, but its use in this study is considered investigational.

### **A Phase III, Multicenter, Open-Label Randomized Trial Comparing the Efficacy of GA101 (RO5072759) in Combination with CHOP (G-CHOP) Versus Rituximab and CHOP (R-CHOP) in Previously Untreated Patients with CD20-Positive Diffuse Large B Cell Lymphoma**

GA-101 is an investigational anti-B cell antibody targeting the CD20 molecule on the surface of most B cells. Although it is similar to the drug rituximab, the newer protein has properties that might make it more powerful. Memorial Sloan-Kettering is leading a multicenter trial comparing rituximab and CHOP to GA101 and CHOP for first-line therapy of diffuse large B cell lymphoma, a common type of aggressive but curable lymphoma.

### **A Randomized, Double-Blind, Placebo-Controlled Phase 3 Study of SGN-35 (Brentuximab Vedotin) and Best Supportive Care (BSC) Versus Placebo and BSC in the Treatment of Patients at High Risk of Residual Hodgkin Lymphoma (HL) following Autologous Stem Cell Transplant**

The purpose of this study is to determine the effectiveness of the new drug brentuximab vedotin (SGN-35) in patients who have had an autologous stem cell transplant (a transplant of their own bone marrow stem cells) as treatment for Hodgkin lymphoma and are at risk of their cancer returning. Patients in this multicenter international study will receive brentuximab vedotin or a placebo for one year after the transplant.

### **Phase I Trial to Assess Safety and Immunogenicity of Xenogeneic CD20 DNA Vaccination with Patients with B Cell Lymphoma**

Memorial Sloan-Kettering has a long history of vaccine studies in cancer. Building upon successful results of vaccines in melanoma patients, the goal of this research study is to assess the safety of vaccinating patients with B cell lymphoma against a B cell protein called CD20. Most lymphoma cells, just like normal B cells, have CD20 on their surfaces. One way to vaccinate against CD20 is to inject patients with a fragment of DNA that contains the gene for the CD20 protein. The goal is to stimulate the body to react against CD20. The DNA that is being given contains a short part of the mouse CD20 gene and makes a short altered form of CD20. In this way, the body will not recognize the altered CD20 as its own and will try to reject it. This process is known as an immune response. This trial is looking at the safety of the vaccine, whether patients develop immunity (becoming capable of attacking CD20), and whether this vaccination eliminates cancer cells.



## Sergio Giralt

An internationally recognized bone marrow transplantation expert, [Sergio A. Giralt joined Memorial Sloan-Kettering in 2010 as Chief of the Adult Bone Marrow Transplant Service, following a 20-year career at the MD Anderson Cancer Center.](#)

### How have things changed for transplant patients since you began your career?

In the early 1990s, a transplant was rarely an option for people older than 60, because the treatment was inevitably very intense. In a traditional transplant, patients are first given ten times the dose of conventional chemotherapy or radiation to kill cancer cells that have become resistant to normal doses. Then, to rescue the patient from the toxic side effects, new bone marrow cells are transplanted — either the patient's own cells or cells from a matched donor.

When I first told my colleagues I wanted to investigate whether patients could be given less-intensive doses of chemotherapy

and still benefit from a donor-derived transplant, they didn't think such reduced-intensity transplants would be effective. But we found these transplants did work, and our discovery established that we could now offer a lifesaving treatment to a large group of patients for whom no treatment options previously existed.

### What makes Memorial Sloan-Kettering a good place to study transplantation?

The Center's transplant program is exceptional, with a wonderful history. The first successful transplant between a patient and an unrelated donor was performed here, in 1973. And Memorial Sloan-Kettering physicians have pioneered many widely used transplant approaches, including one called T cell depletion therapy.

A recent study conducted by the US National Marrow Donor Program found that MSKCC exceeded its predicted rate of one-year survival for patients undergoing an allogeneic [donor] bone marrow transplant.

### What do these findings mean?

The first year after a transplant is critically important because it's the period when complications are most likely to happen.

The study predicted that 62 percent of our patients would survive the first year after a transplant. In our actual results, 75 percent of patients survived that critical period, and now they're working toward recovery and becoming long-term transplant survivors.

This is great news for our patients. If you were to receive a transplant at a typical center, your chances of being alive at one year would be 60 percent. When you receive a transplant at Memorial Sloan-Kettering, your chance of success is much better than average.

### What does Memorial Sloan-Kettering do that has led to this improvement in survival after a transplant?

Because patients are at such a high risk of infection, we use very sensitive tests to detect viral infections early.

T cell depletion therapy also has made a difference. By removing those T cells from

the donor's cells before a patient receives the transplant, we can significantly reduce the occurrence of graft-versus-host disease [an acute immune complication that may occur following a donor-derived transplant].

### How does the staff at Memorial Sloan-Kettering support patients through the challenges of that first year?

What many patients notice when they receive a transplant at Memorial Sloan-Kettering is our team approach. Everyone here cares for patients undergoing transplantation in the same way, so it doesn't matter who your attending physician is or who your nurse practitioner is — you will receive the same expert care.

Our doctors and nurses are also committed to managing patients' symptoms. We want patients to feel as healthy as possible throughout the procedure, both physically and psychologically. Our social workers, psychologists, and psychiatrists are available to make this as easy as possible, both for our patients and their family members.

In everything we do, we are focused on our patients, and we are relentless in our dedication to getting them back to health.

### What is the future of transplantation?

Going forward, our goal is to increase access to and improve outcomes of stem cell transplantation. We are developing trials looking at more-effective ways to prevent complications — and making transplants available to more people who could benefit.

Transplant is an intricate team game. On our team are many of the nation's most experienced transplant doctors; scientists working at the leading edge of stem cell and immunology research; nurses who are experts in their field and passionate about caring for their patients; and skillful ancillary staff, including therapists, social workers, and administrators. It is a great privilege to be leading such an incredible group of professionals, who all do their utmost each day to return our patients to a life free of cancer and the aftermath of treatment.



## APPOINTMENTS



**MARCO DAVILA**  
Department of Medicine

Marco Davila is a medical oncologist who specializes in the treatment of patients with leukemia.

In the clinic, he has a particular interest in treating patients

with lymphoid malignancies such as chronic lymphocytic leukemia (CLL) and B cell acute lymphoblastic leukemia (B-ALL). As a translational physician-scientist, he is engaged in both clinical and laboratory research involving these

lymphoid malignancies.

Dr. Davila earned his MD degree from Duke University School of Medicine and completed a residency at NewYork-Presbyterian Hospital/Weill Cornell Medical Center and a fellowship at MSKCC.



**DAN DOUER**  
Department of Medicine

Dan Douer joined Memorial Sloan-Kettering as the leader for the Acute Lymphoblastic Leukemia Program.

Dr. Douer's expertise is in treating patients with acute leukemia, as well as those with chronic leukemias and myelodysplastic syndromes. His main

research interest is in developing new treatments for acute leukemia, recognizing that acute leukemia is not one disease; using new drugs that target unique molecular genetic abnormalities specific to the leukemia with fewer side effects; applying old drugs in new and improved ways; and approaching leukemia in older adults

with effective but less-toxic treatments.

He earned his MD degree from Hadassah Medical Faculty of the Hebrew University and completed residencies at Rambam Maimonides Medical Center and Beilinson Medical Center, all in Israel. He completed a fellowship at the University of California, Los Angeles.



**JAE PARK**  
Department of Medicine

Jae Park is a hematologist-oncologist specializing in the care of patients with leukemia.

As an active translational investigator, he has spent time both

in the laboratory and in clinics to bring new and innovative treatments to patients with leukemia. He is particularly interested in developing more-effective and personalized therapies for patients with acute and chronic lymphoid leukemia.

Dr. Park earned his MD degree from Johns Hopkins School of Medicine and completed a residency at Massachusetts General Hospital and a fellowship at MSKCC.



**ELLINOR I. PEERSCHKE**  
Department of Laboratory Medicine

New faculty member Ellinor I. Peerschke was named Vice Chair for Education, Research, and Development for the Department of Laboratory Medicine and Head of the Hematol-

ogy Laboratory.

Dr. Peerschke's clinical specialty is laboratory hematology and coagulation, with a particular interest in evaluating bleeding and thrombotic problems, especially those arising from defects in platelet function. Her research focuses on biomarkers that

predict arterial and venous thrombosis, and the interface between cancer and the coagulations system.

Dr. Peerschke holds a PhD degree in basic medical sciences/pathology from New York University.

## PROMOTIONS

NAME	SERVICE	MSKCC RANK
<a href="#">Omar Abdel-Wahab</a>	Leukemia	Assistant Attending Physician
<a href="#">Juliet Barker</a>	BMT	Associate Attending Physician
<a href="#">Renier Brentjens</a>	Leukemia	Associate Attending Physician
<a href="#">Hugo Castro-Malaspina</a>	BMT	Attending Physician
<a href="#">David J. Chung</a>	BMT	Assistant Attending Physician
<a href="#">John Gerecitano</a>	Lymphoma	Assistant Attending Physician
<a href="#">Katharine Hsu</a>	BMT	Associate Attending Physician
<a href="#">Ann Jakubowski</a>	BMT	Attending Physician
<a href="#">Joseph Jurcic</a>	Leukemia	Attending Physician
<a href="#">Heather Landau</a>	Hematology	Assistant Attending Physician
<a href="#">Alexander Lesokhin</a>	Lymphoma	Assistant Attending Physician
<a href="#">Ross Levine</a>	Leukemia	Associate Attending Physician
<a href="#">Craig Moskowitz</a>	Lymphoma	Attending Physician
<a href="#">Esperanza Papadopoulos</a>	BMT	Attending Physician



## American Society of Hematology

At the 2011 American Society of Hematology Meeting, held in December in San Diego, California, Memorial Sloan-Kettering physicians participated in a daily series of video blogs. The videos discussed a variety of research initiatives presented by members of the Division of Hematologic Oncology at the meeting. The videos were posted at the end of each day on [www.MSKatASH.com](http://www.MSKatASH.com). That site was visited more than 1,000 times during the four-day conference.

### Among the highlights of the studies presented at the meeting:

#### Patterns of Disease Relapse and Progression in Multiple Myeloma — Hani Hassoun

Autologous stem cell transplantation (ASCT) is a widely used therapeutic option in the first-line treatment of multiple myeloma. However, many patients eventually relapse. The purpose of this study was to examine the patterns of post-ASCT relapse and develop evidence-based recommendations for optimal surveillance of patients. Based on the findings, the investigators concluded that for the vast majority of patients, relapse and progression of multiple myeloma are asymptomatic. Evidence of relapse is first found in blood tests, but some patients with relapses have evidence of skeletal lesions. However, in the absence of positive blood tests, routine surveillance screening with yearly skeletal surveys was not recommended. For the majority of patients, monitoring with blood tests post-transplant is sufficient for detecting relapse or progression.





OPPOSITE PAGE: MARTIN TALLMAN (IN GLASSES) SPEAKS WITH COLLEAGUES DURING THE ASH CONFERENCE; LEFT: SUSAN PROCKOP (LEFT) AND FARID BOULAD OF THE DEPARTMENT OF PEDIATRICS POSE FOR A PHOTO WITH A COLLEAGUE DURING ASH.

### Phase I Trial of the Targeted Alpha-Particle Nano-Generator Actinium-225 (225Ac)-Lintuzumab (Anti-CD33; HuM195) in Acute Myeloid Leukemia — Joseph G. Jurcic

Lintuzumab, a humanized anti-CD33 antibody, targets myeloid leukemia cells and has modest activity against acute myeloid leukemia (AML). Memorial Sloan-Kettering investigators are conducting a first-in-human phase I dose escalation trial to determine the safety, pharmacology, and biological activity of 225Ac-lintuzumab in AML. This is the first study to show that therapy with a targeted  $\alpha$ -particle generator is feasible in humans. 225Ac-lintuzumab was found to have antileukemic activity across all dose levels.

### ASXL1 Mutations Promote Myeloid Transformation Through Inhibition of PRC2-Mediated Gene Repression — Omar Abdel-Wahab

Somatic mutations in the gene *ASXL1* have been identified in patients with myeloid malignancies and are associated with worsened overall survival in acute myeloid leukemia (AML) and myelodysplastic syndrome (MDS) patients. However the mechanisms of myeloid transformation of *ASXL1* mutations had not been delineated. Memorial Sloan-Kettering investigators performed extensive *in vitro* and *in vivo* studies to assess the functional implications of *ASXL1* mutations in the hematopoietic compartment. The research revealed that *ASXL1* mutations result in a loss of function and suggested a specific role for *ASXL1* in

epigenetic regulation of gene expression by facilitating PRC2-mediated transcriptional repression of known leukemic oncogenes. Moreover, the team's *in vivo* data validated the importance of *ASXL1* mutations in the pathogenesis of myeloid malignancies and provided insight into how mutations that inhibit PRC2 function contribute to myeloid transformation through epigenetic dysregulation of specific target genes.

### A Phase II Study of Ofatumumab in Combination with ICE or DHAP Chemotherapy in Relapsed or Refractory Aggressive B Cell Lymphoma prior to Autologous Stem Cell Transplantation — Matthew J. Matasar

In patients with early relapse or refractory B cell non-Hodgkin lymphoma following first-line treatment, the efficacy of second-line rituximab combined with salvage chemotherapy is lower in patients previously treated with rituximab combined with chemotherapy compared to patients treated with chemotherapy alone. Ofatumumab (OFA), a fully human monoclonal antibody against CD20, uses an alternate binding site from that of rituximab, and demonstrates more potent complement-dependent cytotoxicity *in vitro* than does rituximab. The investigators hypothesized that the inclusion of OFA in second-line therapy could improve response rates for aggressive B cell non-Hodgkin lymphoma, relapsing after, or refractory to, rituximab-containing initial therapy.

## Stem Cell Transplant Survivors Celebration

In October of 2011, more than 200 people who have been treated for cancer or blood disorders with a hematopoietic stem cell transplantation gathered with family, friends, and Memorial Sloan-Kettering staff for the Center's 16th annual Stem Cell Transplant Survivors Celebration. The event drew a total of more than 600 guests and allowed Memorial Sloan-Kettering transplant patients to meet one another and reunite with doctors, nurses, and other staff.

Sergio A. Giralt, Chief of the Adult Bone Marrow Transplant Service, commended the survivors for their resilience. "This is a celebration about your journey to return to the life you want to have," he said. Two patients and a caregiver also made brief remarks, all recounting the distressing moment of diagnosis, praising the care received at Memorial Sloan-Kettering during treatment and recovery, and reflecting on how the experience had transformed their lives.

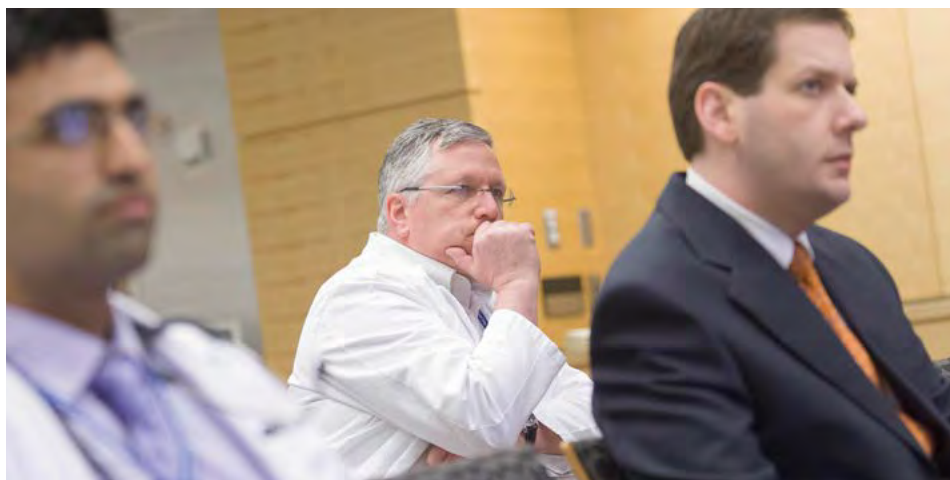
# The Mortimer J. Lacher Fellows Conference

On May 20, 2011, the Division of Hematologic Oncology hosted the Mortimer J. Lacher Fellows Conference.

The fellows received their funding from the Lymphoma Foundation, which was founded by Dr. Lacher in 1981. Dr. Lacher is currently a consultant in the Department of Medicine at MSKCC and president of the Lymphoma Foundation. After serving as one of the first-ever Fellows on the Lymphoma Hematology Service of Memorial Sloan-Kettering, he became a pioneer in the development of chemotherapy regimens for the treatment of Hodgkin's disease and other lymphomas.

The Lacher fellows for 2011 were Brian Betts, who was mentored by James Young; Marcela Maus, who was mentored by Michel Sadelain; Jae Park, who was mentored by Renier Brentjens; Alan Hanash, who was mentored by Marcel van den Brink; and Christopher Barker, who was mentored by Joachim Yahalom of MSKCC's Department of Radiation Oncology. Craig Moskowitz introduced the fellows and, following their presentations, Dr. Lacher gave some concluding remarks.

The conference ended with the second annual Mortimer J. Lacher lecture, which was given by Kenneth Kaushansky, Dean of the School of Medicine and Senior Vice President of Health Sciences at Stony Brook University on Long Island.



TOP: MORTIMER LACHER; MIDDLE, FROM LEFT: SPEAKER KENNEDY KAUSHANSKY AND LACHER FELLOW ALAN HANASH; BOTTOM, IN CENTER: HEMATOLOGY SERVICE CHIEF GERALD SOFF.



# Symposium in Honor of Bayard Clarkson

On June 23, 2011, the Division of Hematologic Oncology hosted a special symposium in honor of Bayard D. Clarkson.

Dr. Clarkson began his medical career before earning his MD, serving as an American Field Service volunteer ambulance driver with the British Eighth Army in 1944 and Montgomery's 21st Army group in 1945. He also volunteered as a stretcher-bearer during the liberation of Bergen-Belsen in May of 1945. After completing his service, Dr. Clarkson earned an MD from the Columbia University College of Physicians and Surgeons in 1952, and joined the faculty of Memorial Hospital and the Sloan-Kettering Institute in 1959. He has since treated patients and conducted research at Memorial Sloan-Kettering for more than five decades, and has authored

over 400 scientific papers. He served as Chief of the Hematology and Lymphoma Service from 1970 to 1989, Director of the Hematology and Medical Oncology Fellowship Training Program from 1976 to 1986, and Associate Chairman of Medicine from 1977 to 1986, and has held the Enid A. Haupt Chair of Therapeutic Research since 1980.

Guest speakers at the Symposium were John M. Goldman, Emeritus Professor at Imperial College London; Janet D. Rowley, Blum-Riese Distinguished Service Professor at the University of Chicago; and Nobel laureate James D. Watson, Chancellor Emeritus of Cold Spring Harbor Laboratory.



BAYARD CLARKSON (RIGHT) WITH JAMES WATSON. BOTTOM: BAYARD CLARKSON AT AGE 18 POSES WITH HIS AMBULANCE IN SAN PIERO IN BAGNO, ITALY. THIS PHOTO WAS TAKEN WHILE HE WAS SERVING AS A MEMBER OF THE AMERICAN FIELD SERVICE WITH ONE OF THE TWO POLISH DIVISIONS IN THE BRITISH 8TH ARMY IN THE EARLY FALL OF 1944.



# Celebrating the Career of Bo Dupont



On June 14, 2011, the MSKCC Division of Hematologic Oncology celebrated the esteemed career and accomplishments of Bo Dupont upon his retirement. Dr. Dupont was a Member of the Immunology Program in the Sloan-Kettering Institute and a Professor of Immunology at Weill Cornell Graduate School of Medical Sciences.

He joined Memorial Sloan-Kettering in 1973 as an Associate Member. Prior to that, he obtained his MD degree from University of Aarhus and clinical and laboratory training at the University Hospital, Rigshospitalet, and the University of Copenhagen, all in Denmark.

Dr. Dupont was an early investigator in characterizing how human leukocyte antigen (HLA) region genes control lymphocyte responses. In the course of this work, he reasoned that HLA phenotypically identical unrelated donor-recipient pairs for hematopoietic stem cell transplantation could be identified in spite of the considerable genetic diversity of HLA alleles.

He and his colleagues in Denmark and later at Memorial Sloan-Kettering then provided the proof of principle. The first identification of granzyme B as an effector molecule in human cytolytic lymphocytes was also made in his laboratory. Most recently, Dr. Dupont has focused his research on determining the role of human natural killer cells and their contribution

to post-transplantation outcome following stem cell transplantation.

In 1994, Dr. Dupont was awarded the Rose Payne Distinguished Scientist Award from the American Society for Histocompatibility and Immunogenetics and in 2002 he received the Lifetime Achievement Award from the American Society for Blood and Marrow Transplantation.

The celebration of his life's work featured seminars by internationally recognized leaders in natural killer cell biology including Lewis Lanier of the University of California, San Francisco; and MSKCC's Katharine Hsu. Additionally, renowned bone marrow transplantation experts John Hansen from the Fred Hutchinson Cancer Research Center and MSKCC Department of Pediatric Chair Richard O'Reilly gave seminars.

His longtime colleague Lloyd Old, who died in November 2011, had the following words to say about Dr. Dupont:

*I am so sorry that I can't join you in honoring Bo Dupont and his outstanding career. Bo joined the Institute during a remarkable period in the history of immunology, a transitional period marked by great insights and discoveries that formed the basis for contemporary immunological research. One of the most enduring legacies of Bob Good as Director of SKI was to bring Bo Dupont to New York to establish a program focused on the MHC locus. Bo rapidly became one of the central figures in the global effort to understand this key genetic system, and because of Bo, and the many students and colleagues he taught and influenced, SKI became a major center for MHC research, and Bo's pivotal role*



# One-Year Anniversary of the Adult Bone Marrow Transplant Service

*in the international effort to organize and standardize MHC typing won him wide respect.*

*Bo's stature, of course, comes from his remarkable productivity, with one important discovery following another in an unbroken continuum over his long career. But Bo's broad influence in the scientific world comes also from personal traits that are so evident and admired by his colleagues — his impeccable scholarship, his deep respect for clarity in experimental design and interpretation, his uncompromising honesty, and the joy he has in sharing his knowledge with his colleagues and students. As a collaborator, he has few peers — his collaborations with many of us at MSKCC and other institutions around the world have resulted in key advances in immunogenetics, transplantation biology, bone marrow transplantation, tumor immunology and MHC association with a variety of disease states.*

*Bo's openness to collaboration is a precious asset, especially prized at this time when so many questions in the clinical arena require the interactions of investigators from many different disciplines. The collaborative network that Bo established here represents an admirable model for the future of translational research at MSKCC, and the mighty influence of Bo's SKI program on therapeutic developments at Memorial Hospital serves as an inspiration to others who aspire to bridge the gap between the laboratory and clinic.*

*Bo, you leave a strong record of scholarship and achievement. I thank you for being such an exciting and fine colleague, collaborator and friend. You have served the Institute and the scientific community with great distinction.*



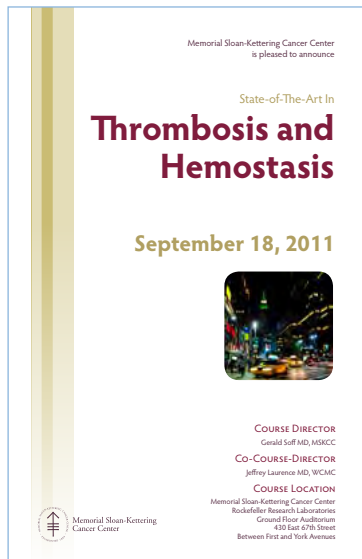
On July 14, 2011, the Memorial Sloan-Kettering Division of Hematologic Oncology celebrated the one-year anniversary of the newly formed Adult Bone Marrow Transplant Service under the leadership of Sergio Giralt with a symposium followed by celebratory festivities.

Introductions were provided by both Dr. Giralt and MSKCC President Craig Thompson, followed by a lecture from Richard O'Reilly, Chair of the Department of Pediatrics and an international leader in the field of bone marrow transplantation for the past four decades.

The Spirit of Transplant Award was given to the members of the intake office including: Sarah Crump, Eda Cheng, Jessica Magnoli, Natasha Galasso and Sarah Keller. Patient Service Coordinator Patricia Walka was appropriately recognized as the Spirit of Transplant Lifetime Dedication Award recipient for her many years of dedicated service to the bone marrow transplantation patients at MSKCC.



CLOCKWISE, FROM TOP LEFT: AWARD WINNER PATRICIA WALKA; SERGIO GIRALT WITH INTAKE OFFICE STAFF (FROM LEFT): SARAH KELLER, SARAH CRUMP, JESSICA MAGNOLI, NATASHA GALASSO, AND EDA CHENG; JULIET BARKER (LEFT) WITH CLINICAL NURSE PAMELA GRANT NAVARRO AND JAMES YOUNG; HEATHER LANDAU (CENTER) WITH FELLOWS PARASTOO DAHI (LEFT) AND RONI TAMARI; KATHARINE HSU AND FELLOW MICHAEL ROSENZWEIG.



## State of the Art in Thrombosis and Hemostasis Symposium

The first annual State of the Art in Thrombosis and Hemostasis Symposium was held on September 18, 2011.

The symposium was jointly chaired by Gerald Soff, Chief of Memorial Sloan-Kettering's Hematology Service, and Jeffrey Lawrence, Professor of Medicine in the Division of Hematology-Oncology at Weill Cornell Medical College.

This annual course is designed to provide an important educational forum for hematology/oncology physicians and fellows in training in the New York area.

The first symposium was attended by 100 physicians.

A wide variety of topics were discussed including the latest updates in the management of antiphospholipid antibody syndrome, immune thrombocytopenic purpura, hemophilia, and the new generation of oral anticoagulants. A particular highlight of this symposium was research presentations by hematology fellows.

Speakers included Doruk Erkan, an Associate Professor from the Hospital for Special Surgery-Weill Cornell, and Nigel Mackman, Professor of Hematology from the University of North Carolina School of Medicine.

## Lymphoma Service Moves to 64th Street

On April 11th, 2011, Memorial Sloan-Kettering opened the doors to a newly renovated outpatient center at 205 East 64th Street.

The new facility is home to the Lymphoma and Myeloma Service and the Head and Neck Service, and also has expanded offices for Dermatology, Endocrinology, and Pain and Palliative Care.

As of this report's publication, the new site has accommodated more than

30,000 clinic visits and more than 12,000 patients have been treated there. The facility has allowed us to expand access for chemotherapy administration and to test new strategies for increasing patient satisfaction and decreasing wait times.

The new 64th Street site will also be home to the MSKCC Innovation Center, a space dedicated to integrating new healthcare technology and new ways to deliver patient care in a model environment. In parallel, a "clinic room of the future" will be located in the lower concourse space.

Other notable improvements at the facility include integration of digital pathology to provide real-time review of pathology slides from outside institutions, the opening of an on-site experimental therapeutics unit to support clinical research, and the debut of a Cutaneous Lymphoma Clinic with combined Dermatology and Lymphoma presence, which will facilitate a team approach to care for patients with this complex disease.



ALEXANDER LESOKHIN AT THE NURSES' STATION OF 64TH STREET.



# Paul Honmyhr



Paul Honmyhr has been a nurse on the 12th floor of Memorial Hospital since August 2007. In 2011, he received the Daisy Award for Extraordinary Nurses from the Daisy Foundation, an honor that recognizes both clinical skill and compassionate care.

## What kinds of patients do you care for on the 12th floor?

I help care for adult leukemia, lymphoma, and multiple myeloma patients who require inpatient care.

When patients are diagnosed with leukemia they are usually very sick. Their initial chemotherapy treatments are given on an inpatient basis and can last between two and three months. Patients with lymphoma and multiple myeloma receive chemotherapy as outpatients, but sometimes they are hospitalized with complications.

## What is the best part of your job?

One of the best things is that you develop a great camaraderie with the staff – both the other nurses and the doctors. With hematologic cancers, the nurses and attending physicians work together very closely and develop amazing relationships.

You also get to know patients really well, because they are with you for so long. You get to know their families, too, and you get to hear all their stories. It's very different from working on a surgical floor, where

most patients are there for only a few days. Unfortunately that comes with a high price: When patients don't do well, it's very difficult. But nothing is better than when a former patient comes back to visit and they are healthy.

## What's special about working at Memorial Sloan-Kettering?

This is not a 9:00 to 5:00, Monday through Friday kind of job. It requires a different level of dedication. But that dedication is contagious: Everyone who works here is fully committed to taking care of these patients and has chosen to work in this kind of environment.

We have a different standard here. What other places would consider “above and beyond” is just how things are done here. Every day, I try to find one thing I can do for my patients that they didn't expect and can make their stay a little better.

Patients and families tell us all the time that everyone who works here is so friendly and helpful, and when you hear that you are proud to be a part of it.

# Clinical Training and Education



## TRAINING THE NEXT GENERATION OF CANCER SPECIALISTS

Each year, Memorial Sloan-Kettering's [Medical Oncology/Hematology Fellowship Training Program](#) in the Department of Medicine, the largest program of its kind in the United States, selects from approximately 450 applicants a group of 15 fellows with interests directed either toward clinical research or laboratory investigation. In 2011, six fellows had mentors from the Division of Hematologic Oncology.

In addition to being outstanding physicians, prospective fellows must demonstrate that they are scientifically curious and highly motivated. "We're training future leaders in oncology, so when our faculty interviews a candidate they are looking to see whether this person will make a meaningful impact in the field," says Dean F. Bajorin, director of the program since 1994.

During the first year all oncology/hematology fellows concentrate on patient

*"We're training future leaders in oncology, so when our faculty interviews a candidate they are looking to see whether this person will make a meaningful impact in the field."*

— DEAN F. BAJORIN



care, treating inpatients and outpatients while rotating through a range of other cancer subspecialties. In the second and third years of the program, clinic-based fellows initiate and conduct clinical trials at Memorial Sloan-Kettering, while laboratory-based fellows work as postdoctoral members of their mentor's laboratory.

"We ensure they acquire the skills they need to move immediately into a productive career," Dr. Bajorin explains, "learning how to devise their own protocols, write research grant proposals, and design clinical trials."

Dr. Bajorin says the Center's exclusive focus on cancer creates a fertile, multidisciplinary environment conducive to cultivating top physician-scientists. "It's become clear that many of the inroads we're making in cancer are the result of team-based research," he says. "A big advantage of this institution is that everyone is rowing in the same direction to understand cancer and improve therapy. There are no fiefdoms,

no fences or walls between different departments focusing on very diverse diseases. Here, cancer is king."



## BONE MARROW TRANSPLANTATION FELLOWSHIP

<http://www.mskcc.org/education/fellowships/transplantation-faculty>

The Adult Hematopoietic Stem Cell Transplantation Fellowship Program at Memorial Sloan-Kettering is an independent, one-year program designed to prepare physicians for academic careers in bone marrow and hematopoietic stem cell transplantation, including experience with clinical research.

The fellowship provides training in inpatient and outpatient allogeneic and autologous transplants, with specific focus on the different subspecialties within the field of transplantation, as well as exposure to related disciplines such as radiation oncology and clinical laboratory rotations.

Mentors are assigned to ensure that the fellows meet their training objectives. The fellows have opportunities to participate in ongoing research projects or initiate an



OPPOSITE PAGE: (TOP) HANI HASSOUN; (BOTTOM) DEAN BAJORIN CONSULTS WITH A FELLOW. ABOVE: MARCEL VAN DEN BRINK; BOTTOM: LIA PALOMBA WITH FELLOWS.



LEFT: TODD ROSENBLAT; RIGHT: ESPERANZA PAPAPOPOULOS .



independent project. The program also includes a wide variety of conferences to complement the clinical aspects, including meetings to discuss patient cases and a weekly research meeting.

On July 8, 2011, the Department of Medicine held a graduation ceremony. Several members of the Division of Hematologic Oncology were recognized, including fellows and staff.

The Memorial Sloan-Kettering Fellowship Hematology Attending Teaching Award for 2010–2011 was awarded to Rekha Parameswaran in recognition of her devotion and commitment to teaching.

The Teaching Excellence Award for 2010–2011 was awarded to the Leukemia Service and its Chief, Martin Tallman, in recognition of their devotion and commitment to teaching.

The Memorial Sloan-Kettering Cancer Center Paul Sherlock Housestaff Teaching Award for 2010–2011 was awarded to Gerald Soff, in recognition of the attending physician who demonstrates devotion and commitment to housestaff teaching.

## EDUCATION IN BENIGN HEMATOLOGY

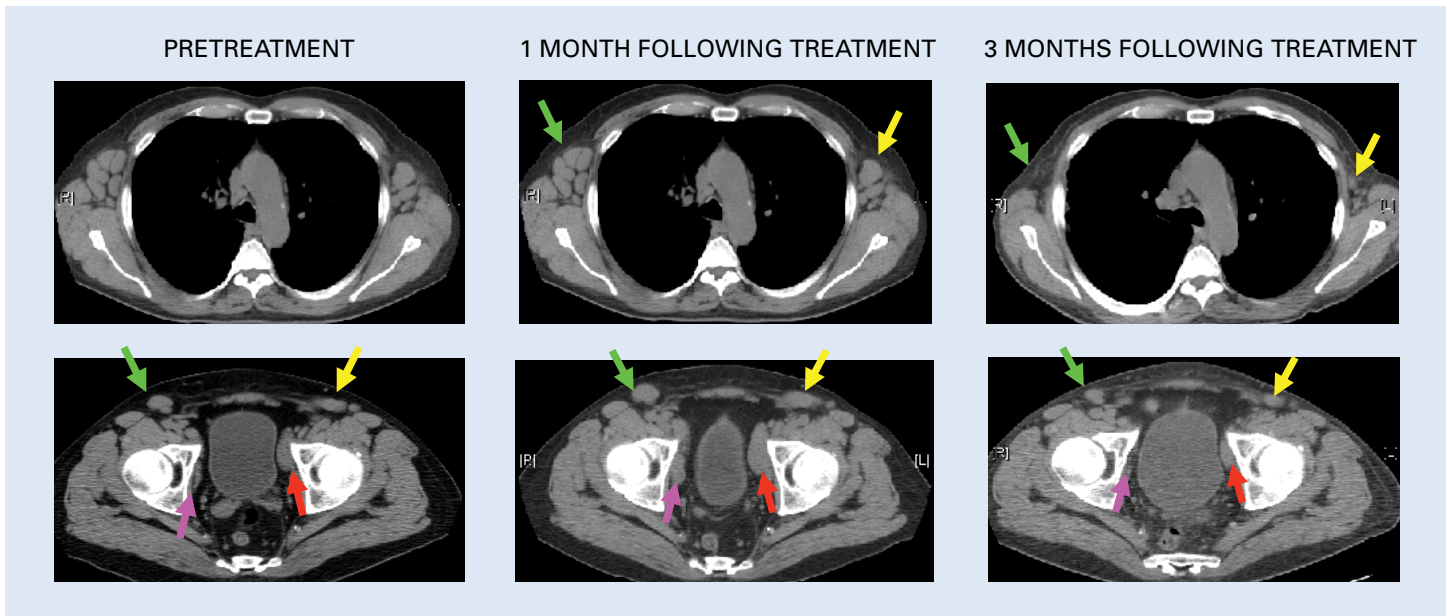
Training hematology fellows and residents is a key mission of the Hematology Service. International medical students, internal medicine residents, and hematology/oncology fellows rotate through the clinics and the inpatient consult service.

The physicians of the hematology service give regular lectures to the medicine residents, both categorical and transitional residents.

The service runs two weekly conferences. The benign hematology weekly lecture series, which comprises didactic lectures by faculty and journal club presentations by the fellows, is attended jointly by fellows from MSKCC and Weill Cornell Medical College. The Coagulation Case Management Conference is attended by the hematopathology fellows.



# Noteworthy Publications



CT SCAN IMAGES FROM A PATIENT WITH CHRONIC LYMPHOCYTIC LEUKEMIA SHOW A DECREASE IN ENLARGED LYMPH NODES IN THE ARMPITS (TOP) AND PELVIS (BOTTOM) AFTER 14 WEEKS OF THERAPY WITH MODIFIED T CELLS. THIS IMAGE WAS TAKEN FROM BLOOD 2011; 118 (18): 4817-28.

In 2011 our faculty published 122 articles in peer-reviewed journals. In this section we highlight a few of these publications. A complete listing can be found at [libguides.mskcc.org/hem-onc](http://libguides.mskcc.org/hem-onc).

## HEMATOLOGY SERVICE

**High Incidence of Thromboembolic Events in Patients Treated with Cisplatin-Based Chemotherapy: A Large Retrospective Analysis.** *Journal of Clinical Oncology* 2011;29(25):3466-73.

*Moore RA, Adel N, Riedel E, Bhutani M, Feldman DR, Tabbara NE, Soff G, Parameswaran R, Hassoun H.*

This study was designed to determine the incidence of venous and arterial thromboembolic events in patients treated with cisplatin-based chemotherapy and to analyze the prognostic value of patients' baseline and treatment characteristics in predicting thromboembolic event occurrence. This large retrospective analysis confirms the unacceptable incidence of thromboembolic events in patients receiving cisplatin-based chemotherapy. In view of the controversy associated with prophylactic anticoagulation in patients with cancer treated with chemotherapy, randomized studies are urgently needed in this specific cancer population treated with cisplatin-based regimens.

## LEUKEMIA SERVICE

**Tet2 Loss Leads to Increased Hematopoietic Stem Cell Self-Renewal and Myeloid Transformation.** *Cancer Cell* 2011;20(1):11-24.

*Moran-Crusio K, Reavie L, Abdel-Wahab A, Ndiaye-Lobry D, Lobry C, Figueroa M, Vasanthakumar A, Patel J, Zhao X, Perna F, Pandey S, Madzo J, Song C, Dai Q, He C, Ibrahim S, Beran M, Zavadil J, Nimer S, Melnick A, Godley L, Aifantis I, Levine R.*

In this study, the role of TET2 in normal and malignant hematopoiesis was investigated through the development of a novel mouse model of TET2 loss, the first of its kind developed. The investigators showed that loss of TET2 in hematopoietic cells leads to increased stem cell function and to the development of chronic myelomonocytic leukemias. This paper firmly established the role of TET2 in blood stem cell function and in leukemia pathogenesis. See the box on page 27 for more information.

**Safety and Persistence of Adoptively Transferred Autologous CD19-Targeted T Cells in Patients with Relapsed or Chemotherapy Refractory B Cell Leukemias. *Blood* 2011;118(18):4817-28.**

*Brentjens RJ, Rivière I, Park JH, Davila ML, Wang X, Stefanski J, Taylor C, Yeh R, Bartido S, Borquez-Ojeda O, Olszewska M, Bernal Y, Pegram H, Przybylowski M, Hollyman D, Usachenko Y, Pirraglia D, Hosey J, Santos E, Halton E, Maslak P, Scheinberg D, Jurcic J, Heaney M, Heller G, Frattini M, Sadelain M.*

In this study the authors present the initial clinical outcomes of patients treated with autologous T cells genetically modified to target the CD19 antigen expressed on the surface of most B cell cancers. Patients treated in the study had chronic lymphocytic leukemia (CLL) or B cell acute lymphoblastic leukemia (B-ALL) and experienced promising antitumor responses. This paper represents the success of almost ten years of preclinical studies, as well as the collective efforts of these investigators to obtain institutional and regulatory approval in moving the work into the clinical setting.

## LYMPHOMA SERVICE

**Normalization of Pre-ASCT, FDG-PET Imaging with Second-Line, Non-Cross-Resistant, Chemotherapy Programs Improves Event-Free Survival in Patients with Hodgkin Lymphoma. *Blood* 2012;119(7):1665-70. Epub 2011 Dec 19.**

*Moskowitz CH, Matasar MJ, Zelenetz AD, Nimer SD, Gerecitano J, Hamlin P, Horwitz S, Moskowitz AJ, Noy A, Palomba L, Perales MA, Portlock C, Straus D, Maragulia JC, Schoder H, Yahalom J.*

This phase II study of patients with relapsed or refractory Hodgkin lymphoma modified chemotherapy based both on pre-treatment factors to standard or augmented dose of ICE and treated patients who had an abnormal PET scan after ICE therapy, with gemcitabine, vinorelbine, and liposomal doxorubicin. Patients who had a negative PET scan before receiving their autologous stem cell transplants had an event-free survival of greater than 80 percent,

compared with 29 percent for patients who had a positive scan. This prospective study provides evidence that the goal of salvage chemotherapy in patients with Hodgkin lymphoma should be a negative PET scan before stem cell transplantation.

**The Eph-Receptor A7 Is a Soluble Tumor Suppressor for Follicular Lymphoma. *Cell* 2011;147(3):554-64.**

*Oricchio E, Nanjangud G, Wolfe AL, Schatz JH, Mavrakis KJ, Jiang M, Liu X, Bruno J, Heguy A, Olshen AB, Socci ND, Teruya-Feldstein J, Weis-Garcia F, Tam W, Shakhnovich R, Melnick A, Himanen JP, Chaganti RS, Wendel HG.*

In this study, the laboratory of cancer biologist Hans-Guido Wendel identified the ephrin receptor A7 (EPHA7) as a tumor suppressor in follicular lymphoma by cross-referencing chromosomal changes with an unbiased genetic screen. EPHA7 is inactivated in 72 percent of follicular lymphoma cases, which supports this finding. Furthermore, the researchers showed that removing EPHA7 drives lymphoma development in mouse models and replacing it has antitumor effects against xenografted human lymphomas, suggesting that the protein has therapeutic potential.

## BONE MARROW TRANSPLANT SERVICE

**T Cell-Depleted Unrelated Donor Stem Cell Transplantation Provides Favorable Disease-Free Survival for Adults with Hematologic Malignancies. *Biology of Blood and Marrow Transplantation* 2011;17(9):1335-42.**

*Jakubowski AA, Small TN, Kernan NA, Castro-Malaspina H, Collins N, Koehne G, Hsu KC, Perales MA, Papanicolaou G, van den Brink MRM, O'Reilly RJ, Young JW, Papadopoulos EB.*

This study was a prospective phase II clinical trial in 35 adult patients with hematologic malignancies who received T cell-depleted, hematopoietic stem cell transplants from HLA-compatible, unrelated donors. The estimated disease-free survival at four years

was 56.8 percent for the entire group and 75 percent in patients with standard-risk disease. The study demonstrates durable engraftment with a low overall incidence of graft-versus-host disease. The curative potential of this treatment is reflected in the remarkably low relapse rate at four years.

**Low Risk of Chronic Graft-versus-Host Disease and Relapse Associated with T Cell-Depleted Peripheral Blood Stem Cell Transplantation for Acute Myelogenous Leukemia in First Remission: Results of the blood and marrow transplant clinical trials network protocol 0303. *Biology of Blood and Marrow Transplantation* 2011;17(9):1343-51.**

*Devine SM, Carter S, Soiffer RJ, Pasquini MC, Hari PN, Stein A, Lazarus HM, Linker C, Stadtmauer EA, Alyea EP, Keever-Taylor CA, O'Reilly RJ.*

Graft-versus-host disease is most effectively prevented by depleting the blood stem cells of T cells before transplantation, but the role of this procedure in the treatment of patients undergoing allogeneic transplantation for acute myelogenous leukemia has been unclear. Results of this phase II study found that stem cell transplantation after myeloablative chemoradiotherapy can be performed in a multicenter setting using a uniform method of T cell depletion, resulting in only a 7 percent risk of extensive chronic graft-versus-host disease at 24 months and 17 percent relapse risk at 36 months for patients with AML in complete remission. Moreover, this multi-center study confirmed our single center data regarding disease-free survival (72.8 percent at one year and 58 percent at three years for patients in first remission).

**Reduced Late Mortality Risk Contributes to Similar Survival After Double-Unit Cord Blood Transplantation Compared with Related and Unrelated Conor Hematopoietic Stem Cell Transplantation. *Biology of Blood and Marrow Transplantation* 2011;17(9):1316-26.**



Ponce DM, Zheng J, Gonzales AM, Lubin M, Heller G, Castro-Malaspina H, Giralt S, Hsu K, Jakubowski AA, Jenq RR, Koehne G, Papadopoulos EB, Perales MA, van den Brink MR, Young JW, Boulad F, Kernan NA, Kobos R, Prockop S, Scaradavou A, Small T, O'Reilly RJ, Barker JN.

Allogeneic transplantation using blood-forming stem cells may be curative for cancers of the blood and bone marrow. However, many patients, especially those from racial and ethnic minorities, do not have a suitably matched adult donor. In this publication, our investigators demonstrated that not only can we extend access by

performing transplantation with unrelated cord blood, but we can achieve comparable disease-free survival. This is an important finding in our mission to be able to offer potentially curative therapy to all eligible patients with cancers of the blood and bone marrow.

## GENE MUTATION CONTRIBUTES TO LEUKEMIA BY ENHANCING FUNCTION OF BLOOD STEM CELLS

Researchers at Memorial Sloan-Kettering Cancer Center and New York University discovered how a mutation in the gene known as TET2 contributes to the development of some leukemias. When a mutation in TET2 occurs, it enhances the function of blood stem cells in the bone marrow, causing them to renew themselves more efficiently than normal blood stem cells. This results in a greater number of mutant cells than normal blood stem cells, a condition that leads to leukemia.

The discovery, published in the July 2011 issue of *Cancer Cell*, provides a key insight into what first goes wrong in the development of many leukemias. The finding was made by a research group led by Ross L. Levine, a member of the Human Oncology Pathogenesis Program and the Leukemia Service at Memorial Sloan-Kettering, and Iannis Aifantis, a member of the NYU Cancer Institute.

Central to the discovery was the development of a mouse model lacking TET2 function, which will serve as a valuable research tool. "We now have a model that will allow us to look for therapeutic targets that might be effective against leukemias caused by the TET2 mutation," said Dr. Levine. "After proving that TET2 loss confers a new capacity on these stem cells, we can start investigating whether existing or novel therapies might block that effect."

Researchers have known that mutations in the TET2 gene are common in many blood cancers, but other gene mutations

are associated with leukemias as well, so the role of TET2 in leukemia development was unclear. Drs. Levine and Aifantis created the first TET2-deficient mouse model to answer this question.

"This study is a chapter in a story that is evolving very rapidly. Many other research groups are studying the basic biology of epigenetic regulators like TET2 in parallel to us, so what we and others learn about the mechanism is laying the groundwork for the development of novel therapies for leukemia patients."

Because TET2 appeared to be relevant to blood cancers, the mice were engineered to carry a TET2 mutation in blood cells only. The loss of TET2 had two dramatic effects: 1) it increased the function of blood stem cells, which in turn allowed these mutant cells to accumulate in the bone marrow and outnumber normal stem cells, and 2) it caused the mice to develop myeloid leukemia over the next six months.

"For the first time, we have definitive proof for what a TET2 mutation by itself does to the blood cells," said Dr. Levine, noting that while this mutation alone may not always lead to leukemia — unknown mutations in other genes may need to occur as well — the results of the experiment prove that TET2 plays a critical role.

The study also provides a glimpse into how mutations in genes known as epigenetic regulators contribute to leukemia development. These types of

genes, which include TET2, function by modifying how other genes are expressed without altering their DNA sequence. Instead, epigenetic regulators modify the structure of molecules that surround DNA. Dr. Levine and his colleagues are now trying to further define exactly how TET2 deficiency changes gene expression in the mutant stem cells, spurring them to outperform the normal stem cells.

Although the mice in the study specifically developed myeloid leukemia, the researchers say it is likely that TET2 deficiency plays a role in many blood cancers and may contribute to other types of cancer as well. Because mutations in TET2 frequently occur with mutations in other genes that are linked to cancer, Dr. Levine is working on creating mouse models that carry multiple mutations.

"This study is a chapter in a story that is evolving very rapidly," Dr. Levine said. "Many other research groups are studying the basic biology of epigenetic regulators like TET2 in parallel to us, so what we and others learn about the mechanism is laying the groundwork for the development of novel therapies for leukemia patients."

Researchers from Weill Cornell Medical College, the University of Chicago, and the MD Anderson Cancer Center also contributed to this work. The research was supported by the National Institutes of Health, the Starr Cancer Consortium, and the Howard Hughes Medical Institute.

# Patient Care



## Memorial Sloan-Kettering Care Closer to Home

**SEE YOUR PHYSICIAN IN  
MANHATTAN, RECEIVE  
TREATMENT IN BROOKLYN.**

The MSKCC Brooklyn Infusion Center provides chemotherapy treatment to our patients in a convenient location at 557-1 Atlantic Avenue between Third and Fourth Avenues.

The facility is easily accessible by train,

bus, and car and features private treatment rooms to accommodate family, friends, and caregivers. Operating hours are Monday–Saturday, 8:00 am – 6:00 pm. Services provided include infusion, blood work, injections, and central line access.

## Music Therapy: Hitting the Right Notes for Patients

The *Early Show* on CBS aired the segment “Music Therapy Hitting the Right Notes for Patients” on October 10, 2011. It shows the use of live music to promote relaxation, improve mood, and support coping strategies for people hospitalized during bone marrow transplant. Included in the story is footage of two of our own music therapists and three hematology patients discussing the benefits of music therapy for cancer patients.





# Fundraising

Investigators from the Division of Hematologic Oncology were among the recipients of funds raised by the Amyloidosis Fundraiser Gala as well as several major efforts led by Memorial Sloan-Kettering.

## AMYLOIDOSIS FUNDRAISER GALA

On February 10, 2011, Howard S. Weitzman, a Memorial Sloan-Kettering patient, chaired the largest ever fundraiser for light chain (AL) amyloidosis. The event, held in Great Neck, Long Island, was attended by more than 300 people and raised \$170,000, resulting in grants of \$50,000 each to support amyloidosis research at Memorial Sloan-Kettering and Boston University School of Medicine, as well as smaller grants to NewYork-Presbyterian Hospital; Tufts University Medical Center; the Mayo Clinic in Rochester, Minnesota; and the Amyloidosis Support Group, Inc.

Mr. Weitzman, the former Nassau County Comptroller, and his treating physician, Memorial Sloan-Kettering medical oncologist Heather Landau, both spoke at the event about the difficulty in diagnosing and treating this disease. They highlighted the importance of diagnosing patients early in the course of their disease, prior to the onset of advanced organ involvement, particularly cardiac disease. In addition, patients were encouraged to seek treatment at an amyloidosis center of excellence where physicians and support staff are skilled at treating patients with often-complex pathophysiology. David Seldin, a professor from Boston University, spoke about new developments in the treatment for amyloidosis that include an expanding



HEATHER LANDAU AND HOWARD WEITZMAN.

armamentarium of novel drugs that are being studied as well as other immune- and molecular-based strategies.

Amyloidosis is an extremely rare condition in which proteins produced by plasma cells in the bone marrow are abnormally deposited in the body's organs or tissues. Left untreated it is usually fatal. Although there is currently no cure for this

disease, it can be controlled with high-dose chemotherapy and stem cell transplantation and/or other less-intense chemotherapy treatments. The money raised by Mr. Weitzman will support research efforts to identify safer, more-effective therapies and will also be spent on promoting awareness of this disorder.

## The Society of MSKCC Spring Ball

In 2011, the Society of MSKCC's annual Spring Ball Initiative elected to raise money for Memorial Sloan-Kettering's Cord Blood Transplant Program. The theme of the event was "Increasing Access — Improving Outcomes."

Donations to the Spring Ball Initiative had a direct impact on groundbreaking research that is aimed at both increasing the number of cord blood transplants performed and improving the outcomes of these transplants. The donations allowed MSKCC investigators to accelerate progress in this field, enabling discoveries that can help the patients of today and tomorrow.

Jennifer Jones Austin is one of the many patients to already benefit from Memorial Sloan-Kettering's investment into cord blood transplantation research.

### JENNIFER'S STORY

When Jennifer Jones Austin, a married mother of two who has had a two-decade career in community service, was diagnosed with an aggressive acute leukemia, she was told she would need a bone marrow transplant. Her siblings were tested to determine whether one of them would be a good donor match. Doctors determined that her three siblings matched each other, but none of them matched Jennifer.

Only about 25 percent of patients who need donor transplants have a suitable sibling donor. Three-quarters of patients must turn to public registries of adult volunteer donors. However, patients with non-European ancestry frequently will not have a match in these either.

There was no match for Jennifer, and her transplant became urgent. She and her husband organized drives to find a donor.



JENNIFER JONES AUSTIN AND DR. JULIET BARKER.

About 100 drives were held in a period of 13 weeks, and 13,000 new potential donors were added to the registry, but Jennifer still did not have a match.

Jennifer was then referred to Juliet Barker, Director of Memorial Sloan-Kettering's Cord Blood Transplantation Program, for a possible transplant using blood from the umbilical cords of healthy newborn babies. Cord blood contains blood-forming stem cells with unique properties that are helpful for rebuilding a healthy bone marrow and immune system.

Cord blood transplants are a growing alternative for people who need a donor transplant but don't have any suitable adult donors. This is especially true for patients

### CYCLE FOR SURVIVAL

Cycle for Survival was founded in 2007 by the late Jennifer Goodman Linn and her husband, Dave. Cycle for Survival raises money for research on rare cancers at Memorial Sloan-Kettering by holding indoor cycling events. Official events are held in New York, Chicago, Los Angeles, San Francisco, and Washington, DC, with more than 50 satellite teams participating from locations around the world.

In 2011, more than 4,500 indoor cyclers participated in the group's fifth annual event, boosting the fundraising total to a record-breaking \$4.65 million. Many members of the Division of Hematologic Oncology were participants in the event including Miguel Perales, Lia Palomba, Steven Horwitz, Heather van den Bergh, Nicole Ventura, Gloria Wasilewski, Natasha Galasso, Barbara Morcerf, Jessica Magnoli, and Nadine Manosalva.

Cycle for Survival funds are quickly allocated to the most promising research and clinical trials, dramatically reducing the time it takes for donations to lead to research discoveries—and then to better treatments for cancer patients. This acceleration can make a crucial difference for patients battling rare cancers.

with diverse racial and ethnic backgrounds. Memorial Sloan-Kettering is a leader in the practice of cord blood transplantation and in research to make these transplants even more successful.

"Transplantation is a very challenging process for both patients and their families," Dr. Barker says, "but Jennifer would not be alive if not for our ability to do cord blood transplants."

Jennifer had a grueling recovery following her transplant and spent months in the hospital. Her condition stabilized, and she has made a steady recovery. Now she's been cancer-free for more than two and a half years and her doctors say the chance of relapse is extremely low. "I now live life with an appreciation for the moment," Jennifer says, "but now I'm also planning for the future."





TOP, FROM LEFT: NATASHA GALASSO, BARBARA MORCERF, KATELYN STITT, NADINE MANOSALVA, ERIC FAMA; BOTTOM: JESSICA LEONE, AND JESSICA MAGNOLI.

“This is the first year members of the BMT Service at MSKCC came together to raise money for Cycle for Survival,” says Dr. Perales. “The team of 12 included physicians, nurses, session assistants, and office assistants as well as friends and family, and raised just over \$7,000. As always, this was a high-energy event that celebrated patients and survivors as well their caregivers and supporters. It is hard to translate into words the atmosphere of a room where more than a hundred people are spinning together,

all for a single cause to raise funds for cancer research. For many of those present, including members of the BMT team, this is both a happy event but also one that reminds us of the work that is yet to be done. When the Cycle ended, we left planning our 2012 event and vowing to increase the number of team members and our fundraising goal.”

Cycle for Survival has generously supported clinical research initiatives in the Division of Hematologic Oncology.

## 2011 CYCLE FOR SURVIVAL PARTICIPANTS (HEM ONC)

### Cycling 2Beat Cancer (Cycle 2011)

1. Eric Fama
2. **Natasha Galasso**
3. Zayda Galasso
4. **Jessica Leone**
5. **Jessica Magnoli**
6. **Nadine Manosalva (captain)**
7. **Barbara Morcerf**
8. **Katelyn Stitt**

### Team BMT (Cycle 2011)

1. **Amanda Bernard**
2. **Arnab Ghosh**
3. **Mary Griffin**
4. **Sarah Keller**
5. **Mark Liu**
6. **Lia Palomba**
7. **Naomi Paul**
8. **Miguel Perales (captain)**
9. **Heather van den Bergh**
10. **Nicole Ventura**
11. **Gloria Wasilewski**
12. **Lauren Young**

### Team Ride On (Mission Cleveland – A 2011 Featured Satellite event)

1. **Steve Horwitz**
2. Nicole Marshall
3. Ed Schwartz
4. Jill Schwartz (captain)

\*MSKCC employees in bold

## FRED’S TEAM

Fred’s Team is a fundraising program with a lifesaving mission: to bring us one step closer to a world without cancer. Each year, hundreds of athletes of all abilities join Fred’s Team to compete in marathons, half-marathons, triathlons, bike races, and other endurance events all over the world to raise funds for pioneering research at Memorial Sloan-Kettering.

Since 1995, thousands of Fred’s Team members have experienced the personal reward of training, competing, and raising funds for crucial research that has changed and saved lives. More than \$46 million has been raised to date and some of the funds support clinical research in the Division of Hematologic Oncology.

Here’s what some participants have said about Fred’s Team:



*“I was inspired by the orange T-shirt with the words: ‘Imagine a World Without Cancer.’ ... I’d love to help create that world in any small way I can.”*

— JESSICA M.

*“For me, the most significant moment is when I walk straight from the finish area to Memorial Sloan-Kettering Cancer Center and present my medal to a little pediatric cancer patient in our hospital. To put the marathon medal around the neck of a little boy who is fighting for his life is one of these moments in life you won’t forget.”*

— MARCEL VAN DEN BRINK

*“With each mile I logged and each dollar I collected, my heart slowly began to heal. No longer did I feel powerless against the disease. ... By raising funds to support researchers working hard to find a cure, I felt like I could finally face cancer.”*

— BECKY GREEN AARONSON



FRONT ROW: ALLISON TUCKER, DONNA ESTORES, JENNIFER AYALA, AND MORGAN KURPIEL; BACK ROW: SHEILA KENNY, MARY SHANNON MCGINNIS, CHRISTINE GRASSO, HEATHER VAN DEN BERGH, GLORIA COFFEY, AND MICHELLE ABBOD.



FROM LEFT: JOAN REYES, JENNIFER BENNETT, JIMMY NIEVES, MELANIE BUSHNELL, AND NICOLE VENTURA.

## Grants

In 2011 our faculty received \$21.2 million in grants and contracts to support their laboratory and clinical research.

In June the Leukemia & Lymphoma Society announced a partnership with medical oncologist Mark Frattini and his team. The investigators will receive support for preclinical research and a phase I clinical trial testing a novel kinase inhibitor in patients with acute leukemia. This novel drug, which Dr. Frattini hopes to move from his laboratory into the clinic, inhibits the activity of the CDC7 protein, a key regulator of DNA replication.

Memorial Sloan-Kettering is also a core site for the AIDS Malignancy Consortium (AMC), an NIH-sponsored cooperative group whose mission it is to perform clinical trials and further the understanding of HIV and cancer. People with HIV infection have a greatly increased risk of certain cancers, including lymphoma, and the lifetime risk is increasing as people taking HIV medication can have normal life spans.

MSKCC has received a grant to work with AIDS service organizations to promote awareness and recruitment to AMC trials among women living with HIV/AIDS. This

is a part of a larger-scale initiative across the AMC with each site submitting its own proposal to increase awareness of AMC studies. We have several AMC studies open and led largely by hematologist and medical oncologist Ariela Noy.

Among these trials are those looking at an upfront therapy for diffuse large B cell lymphoma, a study of a second-line therapy for lymphomas that express viruses such as Epstein-Barr, a study in conjunction with the Blood and Marrow Transplant Clinical Trials Network examining autologous stem cell transplant for relapsed or refractory lymphoma in at least partial remission after second- or third-line therapy, a study of stage III/IV Hodgkin lymphoma using different treatments based on the results of PET scans, and the first multicenter study to look at allogeneic transplant from matched unrelated donors in people living with HIV in a variety of hematologic cancers including leukemia and lymphoma.

Jonathan Schatz, a senior lab member of the Hans-Guido Wendel lab, recently received a three-year grant to study T cell lymphomas in conjunction with medical oncologists Lia Palomba and Steven Horwitz. Separately, Drs. Wendel and Schatz are also recipients of from the AIDS Malignancy Consortium to study in vivo models of therapeutics.

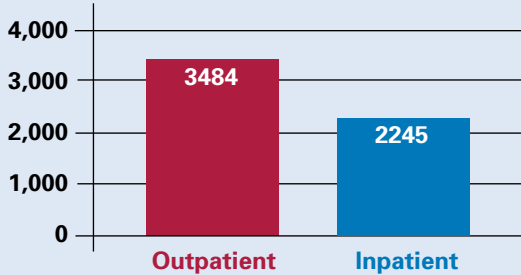


MEDICAL ONCOLOGIST ARIELA NOY (SEATED) AND NURSE ELISA MALEK CHECK LAB RESULTS FOR A PATIENT WITH AIDS-RELATED LYMPHOMA.



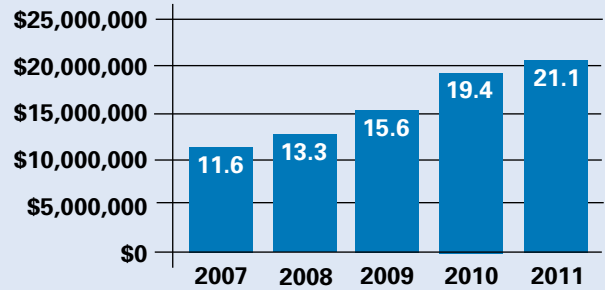
# 2011 Hematologic Oncology Facts and Figures

**New Visits (Outpatient)  
Initial Encounters (Inpatient)**

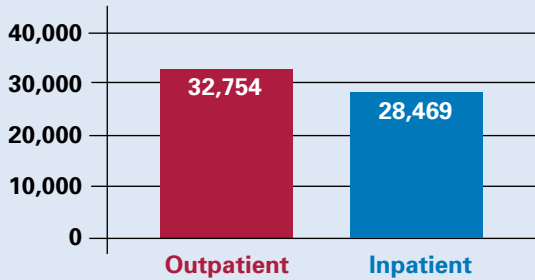


**122 Original Research Publications  
for the Division**

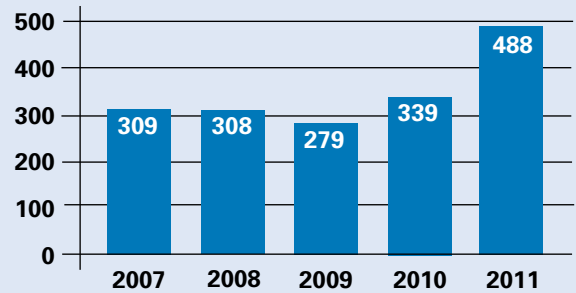
**Research Budgets**



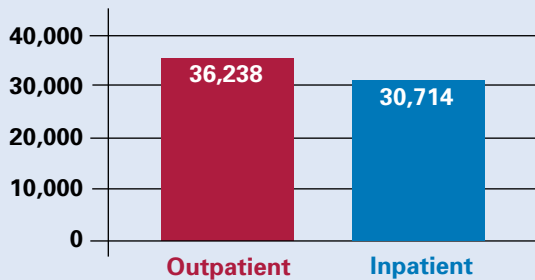
**Follow-Ups (Outpatient)  
Follow-Up Encounters (Inpatient)**



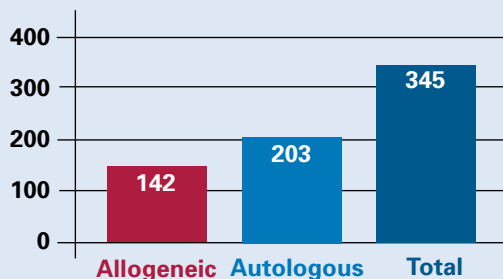
**Clinical Trial Accruals**



**Total (Outpatient)  
Total (Inpatient Encounters)**



**Adult Bone Marrow Transplants**



# Philanthropic Donors Over \$50,000

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WHEN EVERYONE SURVIVES



# You Can Help

## PHILANTHROPY

The Campaign for Memorial Sloan-Kettering is ambitious fundraising initiative designed to support every area of the Center's mission. Contributions to the Campaign can take a variety of forms including gifts of cash paid outright in a single installment or as a pledge to be fulfilled over a period of several years.

Other ways of giving include:

- Gifts of securities
- Planned gifts (life income plans or a bequest)
- Gifts of real estate and personal property
- Gifts from qualified plans such as a 401 (k) or 503 (b)

For additional information or to make a gift, please call 646-227-3529.

## DONATING BLOOD

Blood donations can be designated for a particular patient or for our general blood inventory. For more information or an appointment, call 212-639-8177.

## DONATING TO FRED'S TEAM

For information on donating, visit Fred's Team at: [www.fredsteam.org](http://www.fredsteam.org).

## DONATING TO CYCLE FOR SURVIVAL

For information on donating, visit Cycle for Survival at: [www.cycleforsurvival.org](http://www.cycleforsurvival.org).

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ON THE BACK COVER: ARCHITECTURAL RENDERING OF THE PROPOSED NEW BUILDING ON MANHATTAN'S UPPER EAST SIDE, TO BE JOINTLY DEVELOPED WITH THE CITY UNIVERSITY OF NEW YORK. CURRENT PLANS FOR MSKCC'S PORTION OF THE SITE INCLUDE TO PROVIDE CARE FOR PATIENTS WITH HEMATOLOGIC CANCERS. THE FACILITY WILL OFFER A STATE-OF-THE-ART OUTPATIENT BONE MARROW TRANSPLANTATION PROGRAM AND OTHER SERVICES.



## Memorial Sloan-Kettering Cancer Center

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