



# Endowed Chair Report

## THE COLEMAN FOUNDATION CHAIR FOR BLOOD AND BONE MARROW TRANSPLANTATION

### Endowment Summary

The Coleman Foundation Professor of Blood and Bone Marrow Transplantation was established in order to advance the bone marrow transplant research program by paying for portions of professional and technical salaries, purchasing supplies and small equipment, and other related purposes.

### Chair holder

Henry C. Fung, MD  
Director, The Coleman Foundation Blood and Bone Marrow Transplant Center  
Director, Section of Stem Cell Transplantation  
Professor, Department of Internal Medicine  
Rush Medical College

### Activities Supported

The Coleman Foundation Chair for Blood and Bone Marrow Transplantation supports the activities of Henry C. Fung, MD, Director of The Coleman Foundation Blood and Bone Marrow Transplant Center. In the 2008 fiscal year, the Center built on the success of previous years and continued on its path of growth and excellence in patient care and research. This report provides an overview of the main patient care and research activities of the Center from July 1, 2007 to June 30, 2008.

During 2007-2008, both inpatient and outpatient activities at The Coleman Foundation Blood and Bone Marrow Transplant Center grew. A total of 100 bone marrow transplants (BMT) were performed in an inpatient setting over the year; this compares with 76 procedures in 2006-2007 and 53 procedures in 2005-2006. This represented an increase of almost 100 percent in two years. The outpatient activities have also doubled during the same period.

As reported last year, one reason for the increase in BMT procedures was the elimination of a previously established age limit. Last year, we reported on the autologous stem cell transplant for a 79 year-old patient, who would not have been able to receive such treatment under previous age limits. The patient continues to do well today. (An

autologous transplant is when the stem cells come from the patient's own blood or bone marrow.) This past year, the Center performed an unrelated donor (allogenic) stem cell transplant for a 68 year-old leukemia patient through the National Marrow Donor Foundation, an organization that matches bone marrow donors with patients. This case represented one of the oldest patients ever to receive this type of transplant in United States. The transplant was a success and the patient is currently doing very well. Without a transplant, her life expectancy would have been in the range of 6 to 12 weeks, whereas, with the transplant, her leukemia may be cured. The bone marrow transplant option is critical for such patients, as despite the recent advances in treatment, leukemia remains an incurable disease with conventional chemotherapy.

The Coleman Foundation Center also performed its first dual cord stem cell transplant for a patient with leukemia who had previously failed to identify a suitable donor after an extensive search. In a dual cord transplant, the patient receives cord blood from two different donors. These procedures are rarely used because of fears that immune cells from the donors might attack each other and derail the treatment. However, it has been proven to be successful under the right conditions.

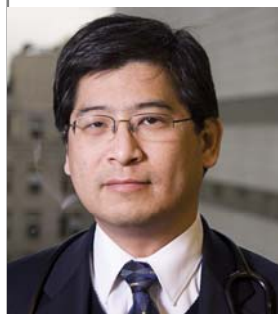
## “The bone marrow transplant is critical for such patients, as despite recent advances in treatment, leukemia remains an incurable disease with conventional chemotherapy.”

In collaboration with Paul Kent, MD, from Rush's Pediatric Hematology/Oncology service, and orthopedic surgeon Steven Gitelis, MD, Dr. Fung and his team have developed a novel transplant protocol for patients with sarcoma — a bone cancer that occurs mainly in adolescents. The team has transplanted four patients within the past few months. This is a unique protocol only available at Rush, and involves the collaboration among many different sub-specialties.

Dr. Fung also continues his effort in developing one of the first BMT survivors' clinics in the greater Chicago area. He has played a leading role in promoting transplant survivors' care in collaboration with BMT Infonet, a patient advocacy organization. To this end, Dr. Fung has developed new evaluation tools for transplant survivors to detect and prevent long-term complications. A key objective for survivors' care is to help patients actively participate in their care to regain control of their lives. New recruit Sunita Nathan, MD, will help Dr. Fung to achieve this goal.

### Research Activities

Dr. Fung also continues his effort in expanding the clinical research program. Dr. Fung participated in an exciting research project sponsored by an industry partner, using a new form of stem cell — mesenchymal stem cells — to treat acute graft-versus-host disease (GVHD). GVHD is the major cause of treatment failure for allogeneic stem cell transplants, occurring when immune cells in the donated cell population attack the recipient cells because the recipient cells are seen as foreign. Organs that are mainly affected are the gastrointestinal system, skin and liver. Dr. Fung and his collaborators observed impressive results with this novel therapy, and view it as having the potential to change the field completely. It would make BMT a safer procedure and also have the benefit of being more readily available to patients of different age groups while eliminating genetic barriers. (Genetic barriers refer to the HLA or human leukocyte antigen tissue-typing that is required to match a donor with a recipient.) Despite the successes transplant brings, there is still the possibility for disease recurrence. To better serve



Henry C. Fung, MD  
The Coleman Foundation Professor of  
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patients, Dr. Fung is working on multiple protocols utilizing novel monoclonal antibodies, which are laboratory produced proteins that destroy cancer cells, and histone deacetylase inhibitors, a type of chemotherapeutic agent, for patients with Hodgkin's disease and non-Hodgkin lymphoma for whom stem cell transplant has failed.

### Staff Recruitment and Updates

In an effort to strengthen the translational research program, Kent W. Christopherson II, PhD, was recruited from University of Texas Health Science Center at Houston in 2006. Dr. Christopherson continues to be a major asset to the program and to Rush. Most recently, Dr.

Christopherson had a manuscript accepted for publication in *Transfusion*, the journal of the American Association of Blood Banks, with two additional manuscripts submissions in 2008 to *Blood* and *Biology of Blood and Marrow Transplantation*. Dr. Christopherson has succeeded in submitting and receiving multiple extramurally funded research grants in addition to newly funded industry-sponsored investigator initiated research projects. In total, he is currently the primary investigator on five externally funded projects that complement the philanthropy and institutional support he currently receives.

Dr. Christopherson received a Leukemia & Lymphoma Society Translational Research grant for initial funding of \$200,000 each year for three years with the potential for an additional two years of funding upon continuing progress review. He has also successfully competed for a National Institutes of Health (NIH) (R21) grant with direct costs of \$150,000 in year one and \$125,000 in year two, plus indirect costs. This brings the total external funding for Dr. Christopherson's grants on which he is the primary investigator to over \$1.2 million including both direct and indirect costs.

### Selected Publications

Phase II trial of a transplantation regimen of yttrium-90 ibritumomab tixetan and high-dose chemotherapy in patients with non-Hodgkin's lymphoma: *J Clin Oncol*. 2008 Jan 1;26(1):90-5

Use of radioimmunotherapy in stem cell transplantation and posttransplantation: focus on yttrium 90 ibritumomab tixetan; *Curr Stem Cell Res Ther*. 2007 Sep; 2(3):239-48

Crypt loss is a marker of clinical severity of acute gastrointestinal graft-versus-host disease: *Am J Hematol*. 2007 Oct; 82(10):881- 886.