BMT TANDEM MEETINGS

2018 BMT Tandem Meetings Set Record Attendance

More than 3,700 attendees registered for the 2018 BMT Tandem Meetings in Salt Lake City last month, setting a new record. Health professionals with a clinical/scientific interest in blood and marrow transplantation (BMT) and immunotherapies, including investigators, advanced practice professionals, laboratory technicians, clinical research professionals, pharmacists, nurses, data managers and BMT center administrators all gathered at the Salt Palace Convention Center to learn and interact during the February 21-25 conference.

Attendee Jamie M. Truscott, M.D., a pediatric hematology/oncology fellow at University of Iowa Health Care, stopped by the ASBMT booth in the exhibit hall. She said, “As a trainee, the ability to meet with more senior physicians is so important. ASBMT offers a great opportunity for education, networking and clinical resources.”

From the poster presentations, to the exhibits, to the excellent scientific and educational content, attendees praised the meeting for its networking and educational opportunities, and for the passion of its speakers and presenters.

“I love ASBMT because the conference is always great, and I learn so much all in one place,” said Ngaire Elwood B.Sc. (Hons), Ph.D. “Coming from Australia, it is important to be able to get a snapshot view each year of what is happening in BMT and cellular therapy in the U.S.”

CLINICAL RESEARCH

MCL Patients Benefit From TBI or BEAM-Based Chemotherapy

Both total body irradiation (TBI) and BEAM-based chemotherapy are safe and viable conditioning options for patients with mantle cell lymphoma (MCL) undergoing hematopoietic cell transplantation (HCT), according to a study appearing in Biology of Blood and Marrow Transplantation. The study included 75 mantle cell lymphoma patients who received HCT. Of these patients, 43 had TBI-based...
A Word From President John DiPersio, M.D., Ph.D.

This represents my first President’s Message for the ASBMT. Many of you may not know me so let me make a formal introduction. I am Chief of the Division of Oncology and Deputy Director of the Siteman Cancer Center, Washington University School of Medicine. This is currently my 25th year as Chief of the Division of Oncology at Wash U. I helped grow the Wash U Division of Oncology from a division of four faculty to a large (more than 130 faculty), diverse and scientifically excellent division that is a leader in many basic science, translational and clinical research areas. I am most proud of the number of outstanding young physician-scientists we have trained at the bench and in the clinic who are now leaders in their own right here at Wash U and at other top-notch academic medical centers and cancer centers around the world. Oh yea, I have 7-year-old twins (Jack and Izzy), a wife who is a Wash U academic pediatric hematologist-oncologist (Allison King) and a dog, Sully, who is definitely a “bad boy.”

I am not sure how I got here as president of ASBMT, but I am both honored and excited about the opportunity. I have sat in the background watching my peers in ASBMT leadership, the immediate past presidents, Krishna Komanduri and Chris Bredeson, who have masterfully guided the Society forward with firm and visionary hands. I have learned a lot...I hope! I also have had the great pleasure of working with both the administrative staffs of the previous association management company (AMC), EAI and the new AMC chosen to replace EAI (as of April 2, 2018), Smith Bucklin. I am so grateful for their help and support. With a great new AMC, the support and direction of past presidents of ASBMT, a strong and clinically and scientifically diverse ASBMT Executive Committee, Board of Directors and, most importantly, the contribution of the rank and file membership of ASBMT, you would think that it would be difficult for this Society to move anywhere but forward...by leaps and bounds.

Several intangibles will ensure our continued success. First, the infrastructural support of the ASBMT administrative issues will be considerably strengthened by the large increase of manpower and expertise from Smith Bucklin. Our journal, Biology of Blood and Marrow Transplantation, under the stewardship of Bob Korngold has never been in better shape or with a higher impact factor. Bob has been a tireless leader who I hope will continue to enhance the quality and impact of our journal over the next 12 months and beyond. No stepping down for you Bob! The immediate past presidents, Chris Bredeson and Krishna Komanduri, had the vision and insight to bring new and specialized skill sets into ASBMT in the forms of Angie Dahl and Stephanie Farnia, who will remain as our employees and will be incorporated into the enhanced manpower, infrastructure and skill sets of Smith Bucklin. Angie and Stephanie both come from our long-term partner organization, Be The Match/ NMDP, and will provide unique oversight and strengths to our Society in the forms of fund raising and development and governmental affairs and advocacy. Already in their short tenures since leaving the NMDP, they have invigorated this Society and literally reshaped it such that it is far better for patients, ASBMT members, ASBMT leaders, our companion organizations, such as the NMDP and CIBMTR, and the general community of transplant and cellular therapy health care providers.

You have probably heard that, in collaboration with our friends and partners at CIBMTR, we have decided to rename the 2019 Tandem meetings in Houston, Texas to the 2019 Transplant and Cellular Therapy Meeting or TCT meeting (#TCTM19). This change was

Continues on page 3
A WORD FROM PRESIDENT JOHN DIPERSIO, M.D., PH.D. (CONTINUED FROM PAGE 2)
carefully conceived after several years of thoughtful consideration and watching trends in our field, which is MORE than a field of stem cell transplantation. Our field now encompasses other cellular therapies such as stem cell gene therapy; T-cell gene therapy; bispecific therapies; novel stem cell niche disrupting agents for stem cell mobilization and chemosensitization; clinical stem cell and T-cell gene editing using CRISPR/Cas9 and other platforms; off-the-shelf third party cytotoxic T-cell therapy for PTLDs and resistant viral infections; and neo-antigen and embryonic antigen CART- and TCR-based targeting for treatment of solid and liquid hematologic malignancies. The ASBMT will play a major and leading role in the field of cellular therapies in the future, which will encompass breakthrough science, education, clinical guideline generation and consensus for management of toxicities that will enhance the dissemination of these technologies widely and ensure their safety.

Finally, I am committed to the ASBMT continuing to work closely with industry partners to enhance our unbiased and unconflicted missions to provide education, training and cutting-edge transplant and cellular therapies for our patients. I am also dedicated to working with the NIH (NHLBI and NCI, in particular) and other private foundations to enhance the available funding for the mentoring and training of the next generation of transplant and cellular therapy scientists, physician-scientists, clinical investigators and allied health care providers moving into the future.

On a personal note, I want to be interactive and available to all corners of the ASBMT. I want to hear from those of you who want to engage, who want to learn, who have a good idea, who have identified problems and especially from those of you who are not yet in our Society but will consider this move as we become the one great Society in the world focused on transplant and cellular therapies…that means you!

John F. DiPersio, M.D., Ph.D.
President of ASBMT

BMT TANDEM MEETINGS (CONTINUED FROM PAGE 1)

Save the Date for the 2019 Meeting
February 20-24 | Hilton Americas | Houston, Texas

We have some very exciting news to share. After 23 years of BMT Tandem Meetings, it was time to change our name to better reflect our range of interests and activities. The new name and identity of the 2019 meeting and all future meetings is:

Join the Conversation at #TCTM19.
Audio and Slide Recordings

Professional recordings will soon be available for most plenary and concurrent scientific sessions, as well as peripheral conferences. Each recording will be available in either MP3 audio file format or MP4 audio with synchronized PowerPoint visuals and accessible through the online agenda. All available recordings will be made accessible to registered attendees for a $15 flat rate. Nonmembers can purchase the recordings at a cost of $25 for each MP3 and MP4 file download.

CME Credit Claim Information Now Available

The 2018 BMT Tandem Meetings online Evaluation Program is now available through the online agenda and mobile app through March 27. If you wish to claim continuing education credit, please visit the 2018 BMT Tandem Meetings website or mobile app to access and complete the overall meeting and individual sessions evaluations. Credit will not be issued without completion of the online evaluation forms. Please be sure to download your certificates from the evaluation program once both the overall meeting and sessions evaluations have been submitted.

Request for certificates after March 27 will incur a $60 processing charge. An electronic copy of the certificate will be filed with the Medical College of Wisconsin. Certificates will not be mailed.

See Amazing Coverage from the Meeting

Visit Twitter to see minute-by-minute posts from ASBMT and CIBMTR as well as photos and quotes from attendees who were clearly enthusiastic about the meetings. Just search for the hashtag #BMTTandem18 to see the highlights. To see all the posts, be sure to click the “latest” tab at the top of the page.

The room was packed for the 7 a.m. symposium, “Realizing the Promise of CAR T Cell Therapy for Leukemia and Lymphoma.”
Over the course of the meeting, more than 700 abstracts were available during the oral abstract sessions, peripheral conferences and poster sessions, highlighting the best new research in the field.

Members of the Memorial Sloan Kettering Adult BMT Clinical Research team are all smiles in the Exhibit Hall.

New ASBMT President John DiPersio, M.D., Ph.D. (left), honored Immediate Past-President Krishna Komanduri, M.D., for his outstanding service.

Congratulations to Dragos Plesca, Pharm.D., Ph.D., B.C.O.P., (center) winner of the ASBMT/Takeda Oncology Pharmacy SIG New Investigator Award.

Left: Rosy Dabas, B.Sc., M.Sc. (left) and Kim Hummel, B.S.N., R.N., pose in front of the five Choosing Wisely banners on display at the BMT Tandem Meetings.

Right: Timothy J. Ley, M.D., presented the plenary session, “Genomics and Clonal Evolution of AML”
RFI Forms Now Available on the ASBMT Website

The 2018 version of the standardized Request for Information (RFI) forms have been posted to the Practice Resource section of the ASBMT website and are accessible here. For those using the current paper form and pulling the data themselves, all items are the same for 2018.

You may be aware that there is now the availability to electronically transfer patient numbers and pre-calculated 100-day and one-year survival data from the data that you submit to the Center for International Blood and Marrow Transplant Research (CIBMTR). This can be accessed directly from the CIBMTR Portal website with a username and password that users in your center have registered with CIBMTR. New users or existing users needing help can contact the CIBMTR portal help desk by email at cibmtr-portalhelp@mcw.edu. Once in the CIBMTR portal, users can access their data by first selecting eDBtC (enhanced Data Back to Center) and then by selecting the Data for RFI button. Your data will be updated monthly and will populate several of the RFI tables, reducing your workload.

However, there are several issues that are being addressed for the 2019 RFI that are not in place yet for 2018, requiring that you carefully review the transferred data from the CIBMTR. This is particularly important for two disease states: multiple myeloma and CML. For myeloma, none of the data will transfer due to changes in the TED forms that do not permit automatic calculation of risk category — so for 2018 you will need to do these by hand, both for the myeloma subgroup and the total patient population that includes these. We expect this will be fixed for next year, but you may still need to do this analysis of risk and put them into the correct boxes by hand in 2019 as 2018 data will still be incomplete.

For CML we need to harmonize the newer groups identified by the CIBMTR with the older RFI groups. So, this may be inaccurate if you are performing these transplants at your center. This is also underway. The data transfer otherwise seems to be quite accurate but again you should cross check with your own center's data. CIBMTR is providing as much data as possible to facilitate completion of the standard RFI.

Finally, the data you get back from the CIBMTR is only as good as the data you report. If you are behind in sending in data, the accuracy needed to complete the RFI will of course just not be there. Additional information, instructions and tip sheets are available at: www.cibmtr.org/DataManagement/AdminResources/DBtC/pages/index.aspx, www.cibmtr.org/Data/Request/pages/index.aspx or www.cibmtr.org/DataManagement/DataCollectionForms/Pages/index.aspx.
March ASBMT Self-Directed Learning Quiz

On behalf of the ASBMT Committee on Education, we are pleased to continue our monthly self-directed learning quiz "Basic Principles and Practices of Hematopoietic Cell Transplantation and Cell Therapy – Question and Answer Approach" for fellows in training, highlighting hematopoietic cell transplantation and cell therapy topics. Answers to each question appear with evidence-based “non-exhaustive” peer-review commentary. Our aim is to provide you with a credible and freely available educational resource. Questions generated and reviewed by Syed Abutalib, M.D., Mark R. Litzow, M.D., and William A. Wood, M.D. To take this month’s quiz, click [here](#).

1st International Symposium on HCT-Related Toxicities

More than 10,000 hematopoietic cell transplantations (HCT) are performed annually in the United States as a potentially curative treatment for over 70 life-threatening illnesses including hematologic cancers, genetic disorders, and other diseases. Despite significant advances in supportive care and improvements in HCT outcomes, one in every three patients may succumb to HCT-related toxicities, half of which are not related to graft-versus-host disease (GVHD). Following the successful examples of the international symposia focusing on GVHD and relapse after HCT, ASBMT leaders Sergio Giralt, M.D., and Miguel-Angel Perales, M.D., are holding the First International Symposium on Hematopoietic Cell Transplantation-Related Toxicities.

This symposium will bring together experts and thought leaders from around the world in the fields of HCT and related medical subspecialties. Speakers will discuss mechanisms of toxicities and symptom burden after HCT in order to identify best practices to both prevent and treat HCT-related toxicities. Over the two-day symposium, speakers and attendees will also convene in dedicated sessions that will facilitate collaborative efforts in planning future research aimed at mitigating serious toxicities, reducing symptom burden, and improving patients’ outcomes.

The symposium will be held April 27-28, 2018 at Memorial Sloan Kettering Cancer Center in New York, New York. Additional information and registration can be found online [here](#).
LEGISLATION & REGULATION

Policy Perspective
By Stephanie Farnia, ASBMT Director of Health Policy and Strategic Relations

Every year, it’s the same cycle: a month of exceptional franticness leading up to Tandem; a fantastic time seeing colleagues for a week of brainstorming, planning and learning; enjoying the 12 hours of relief on the day I travel home; and then recognizing the rising feeling of panic the next day when I look at the notes I took regarding projects we need to begin or complete in the next year. But I have to say – despite the exhaustion of Tandem week for ASBMT staff, it is the highlight of my year to see all of you “IRL” (as the kids say) and get the chance to catch up on work and family. And if a little dancing happens as well, all the better!

Volunteers Sought
- American Society of Hematology (ASH)/American Society of Clinical Oncology (ASCO) Carrier Advisory Committee Representatives: ASH and ASCO have a joint committee called the Carrier Advisory Committee, meaning that the individual members advise the local Medicare Administrative Contractor (MAC) on hematology/oncology issues. These volunteers are assigned at the state level and may have several brief interactions with their MAC medical director a year. Additionally, in July, CAC representatives are invited into ASCO headquarters for an in-person meeting with the MAC medical directors on relevant hematology/oncology issues. Last year, Dr. Komanduri presented to this group about CAR-T and the need for coverage of lymphoma as a hematopoietic cellular transplantation (HCT) indication. This is a great opportunity to build or strengthen your local relationship with the MAC in your area and is a low time commitment.

ASH and ASCO are attempting to involve more transplant and cell therapy physicians in the committee and have reached out to ASBMT to fill representative slots for the following states:

- Arizona
- Arkansas
- Idaho
- Indiana
- Maine
- Minnesota
- Missouri
- Montana
- New Hampshire
- New York
- North Carolina
- Puerto Rico
- Tennessee
- Texas
- Virginia
- West Virginia

Please email me – StephanieFarnia@asbmt.org – if you are interested. Administrators: please share with your M.D. team as well. (If your state is not currently on this list as open, email me anyway – I will share with ASH and ASCO that you are interested if the slot opens up.)

HCT
- We had a great session at Tandem regarding all things transplant and Medicare. If you missed it, we have our extensive slide deck posted as part of the Administrative Directors’ Special Interest Group (SIG) page. Share with colleagues!
- There are several projects underway to create and update position papers on indications for transplantation that are meant to be shared with payers. Keep an eye out for information on AutoHCT and scleroderma this spring and a broader update to the Standard Indications paper in the Fall.
- The ASBMT Request for Information (RFI) used by payers and transplant programs will be available in early April. Please note that the Center for Blood and Continues on page 8
LEGISLATION & REGULATION (CONTINUED FROM PAGE 8)

Policy Perspective (continued from page 7)

Marrow Transplant Research electronic data pull option does not match exactly for the 2018 RFI process — more information can be found on the RFI page. For those pulling the data internally, the RFI categories have not changed from other years.

CAR-T

- ASBMT is leading a meeting with the Centers for Medicare & Medicaid (CMS) on March 6 that includes ASH, ASCO and the College of American Pathologists to discuss the CAR-T coding situation, in the hope of securing HCPCS Level II G codes while we wait for new current procedural terminology (CPT) codes to come online in 2020. G codes track the physician and facility services and are separate from the coding of the drug — they are accepted by CMS and most other payers and can provide data on the service utilization before the CPT codes are available. I am hoping to know more on this request by the June or July newsletter.

- There has been an overwhelming number of questions for personalized support at the center level as your programs begin administering commercially approved CAR-T products. We will try to build out more resources for you to utilize and share with your teams, including another town hall session on CAR-T coding and reimbursement in early April. Watch for more for more information and how to sign up via email and the Administrative Directors SIG listserv – please sign up for the listserv if you are not currently taking part.

- By the time you read this, the Institute for Clinical and Economic Review process will have wrapped up with a daylong meeting with the California Technology Assessment Forum. Dr. Komanduri presented a view from the ASBMT perspective and we anticipate a recording of the session to be available on the website:

- At Tandem, I presented an overview of current coding and reimbursement “quirks” to be aware of for CAR-T. The presentation is available on the Administrative Directors’ SIG page.

CMS Inpatient Prospective Payment System

The annual proposed rule will be issued in late March/early April and will likely contain some unexpected issues to sort through. We have asked for new CAR-T MS-DRGs and for CMS to address the acquisition reimbursement issue for HCT. Please keep an eye out for a brief analysis and call to action in mid-April.

Value and Health Economics SIG

There were several standing-room-only presentations in the Value and Health Economics SIG track (within the Administrative Directors track) at Tandem. We are hoping to repeat a few of these via webinar later this year, along with launching other initiatives. Stay tuned!
**ASSOCIATION NEWS** *(CONTINUED FROM PAGE 7)*

**EBMT Annual Patient, Family & Donor Day Will Be Held March 17**

The 12th Annual European Society for Blood and Marrow Transplantation (EBMT) Patient, Family and Donor Day will be held Saturday, March 17 in Lisbon, Portugal. It is dedicated to people who have had, or are going to have, a bone marrow or stem cell transplantation, and anyone affected by blood cancer or a blood disorder, as well as their relatives, caregivers and donors.

The objective of this special program is to allow the patients involved in a transplant process, and the family members and donors, to exchange experiences, learn from each other and also learn more about the latest research outcomes in the field from a panel of specialists. For details, visit [here](#).

Attending EBMT? Visit ASBMT at Booth #59 and say hello to some of our leaders!

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**FACT UPDATE**

**Now Available – Version 1.1 of FACT Standards for Immune Effector Cells**

To promote consistency with the new edition of the FACT-JACIE Standards for Hematopoietic Cell Therapy, Version 1.1 of the *FACT Standards for Immune Effector Cells* is now available. These requirements will become effective on May 30. The major objective of these Standards is to promote quality practice in immune effector cell (IEC) administration. The requirements are for programs that administer IECs on a unit that does not also perform HPC transplantation. When IECs are administered on a FACT-accredited hematopoietic progenitor cell transplant unit, the program must fully comply with the FACT-JACIE Hematopoietic Cell Therapy Standards.

- [FACT Standards for Immune Effector Cells, First Edition 1.1](#)
- [FACT Immune Effector Cell Accreditation Manual, First Edition 1.1](#)
- [Changes to First Edition FACT Immune Effector Cell Standards](#)
- [Purchase IEC Standards Printed Copies](#)
- [Purchase IEC Manual Printed Copies](#)
FACT and JACIE Publish Seventh Edition of Hematopoietic Cell Therapy Standards

The seventh edition of the FACT-JACIE Standards for Hematopoietic Cellular Therapy Product Collection, Processing, and Administration has been published. FACT-accredited hematopoietic progenitor cell (HPC) transplantation programs must be in compliance with these Standards by May 30. The updated Standards, accompanying Accreditation Manual and summary of changes are available on the FACT website for reference. Printed copies of the Standards and Accreditation Manual may be purchased from the FACT store.

The major objective of these Standards is to promote quality medical and laboratory practice in HPC transplantation and related therapies using hematopoietic-derived cellular products. These Standards apply to:

- HPCs, and nucleated cells or mononuclear cells from any hematopoietic tissue source collected for therapeutic use other than as HPCs.
  - For HPCs or mononuclear cells derived from umbilical cord or placental blood, these Standards apply only to the administration of the cellular therapy product.

FACT Events at 2018 BMT Tandem Meetings Were a Success!

FACT hosted several popular events at the 2018 BMT Tandem Meetings in Salt Lake City, Utah. Over 100 people joined FACT on Feb. 20 for the Cellular Therapy Inspection and Accreditation Workshop, which included major topics such as center-reported causes of low one-year survival, the new FACT and CIBMTR joint data evaluation process, the accreditation of immune effector cellular therapy programs, and the new seventh edition of the FACT-JACIE Standards. Also on Feb. 20, FACT hosted two cellular therapy leadership courses open to anyone who has, or aspires to, a leadership position in cell therapy.

On Feb. 21, FACT teamed up with ASBMT again to host the popular Quality Boot Camp. Over 120 people participated in the boot camp. This year’s agenda focused on topics identified to be challenging by transplant programs complying with FACT requirements. Quality experts presented important concepts and led roundtables that allowed participants to ask questions and help each other reach their quality management goals.

Training sessions for the new FACT Accreditation Portal took place on Thursday, Feb. 22. FACT’s IT Business Analyst, Alisa Forsythe, conducted training sessions for both inspectors and applicants, and demonstrated the overall workflow of the new portal. FACT is
FACT EVENTS (continued from page 10)

excited to launch the new portal in the upcoming months and will provide many tools to help users get acclimated to the new system. Special invitations were extended to all international delegates attending the BMT Tandem Meetings for a wine and cheese reception on Feb. 22. Members of the FACT Global Affairs Committee were available to provide attendees with information about the new International Accreditation program. This program assists transplant centers in developing economies who may require additional assistance and education in developing quality systems and adhering to global accreditation requirements.

On Feb. 23, in a session titled, *Making Data your Friend - Tips and Tools for Using CIBMTR Data for BMT Program Quality Improvement*, Dennis Gastineau, M.D., FACT president and member of the FACT Clinical Outcomes Improvement Committee, shared guidelines for corrective action plans and trends noted in the plans reviewed, including causes of death, challenges in root cause analysis, and ideas for improving one-year survival.

In addition to these events, FACT welcomed visitors to its exhibit booth and conducted a dozen more meetings with its active committees.

All events were successful and FACT looks forward to the 2019 Transplantation and Cellular Therapy Meetings in Houston, Texas!

CLINICAL RESEARCH (continued from page 1)

MCL Patients Benefit From TBI or BEAM-Based Chemotherapy (continued from page 1)

and 32 had carmustine, etoposide, cytarabine, melphalan (BEAM) high-dose conditioning. Progression-free survival and overall survival outcomes were similar between the two groups. Five-year progression-free survival was 66% for the TBI recipients vs. 52% in the BEAM group. In addition, five-year overall survival was 82% for the TBI patients compared to 68% for the BEAM recipients. However, TBI-based conditioning was not significantly associated with progression-free survival after controlling for age, disease status at transplantation and post-transplant rituximab maintenance. More...

Why Some Systemic Sclerosis Patients Respond to Autologous HCT

Systemic sclerosis patients who respond to autologous hematopoietic cell transplantation are more likely to have higher regulatory T (Treg) and B (Breg) cell counts and lower T-cell receptor (TCR) repertoire overlap than patients who do not respond to transplantation. This clinical improvement is attributable to thymic and bone marrow rebounds, reports a study appearing in *Blood Advances*. For the study, researchers performed clinical and immunological evaluations on 31 systemic sclerosis patients for the first three years after transplant. Of the patients, 25 were categorized as responders and six were classified as nonresponders. Researchers discovered that post-transplant thymic rebound led to renewal of the immune system, which resulted in higher TCR diversity, positive correlation between

Continues on page 13
**Clinical Research (continued from page 12)**

Why Some Systemic Sclerosis Patients Respond to Autologous HCT (continued from page 11)

recent thymic emigrant and Treg counts, and higher expression of CTLA-4 and GITR on Tregs. In addition, increased bone marrow output of newly generated naïve B-cells renovated the B-cell populations in peripheral blood. At six and 12 months after transplant, Bregs increased and produced higher interleukin-10 levels than before transplant. However, when nonresponders were evaluated separately, researchers discovered that they did not have increased Treg and Breg counts like the responders. In addition, TCR repertoire overlap between pre- and post-transplant periods was high. These results led researchers to conclude that clinical improvement in systemic sclerosis patients is related to increased counts of newly generated Tregs and Bregs after transplantation as a result of coordinated thymic and bone marrow rebound. More...

**Thalassemia Major Outcome After Busulphan/Cyclophosphamide HCT**

A new study published in *Bone Marrow Transplantation* looks at the association between rejection and mixed chimerism after hematopoietic cell transplantation for thalassemia major. The study included 132 thalassemia major patients who underwent busulphan/cyclophosphamide conditioning. Engraftment occurred in all of the patients who were assessed for at least one year after transplant. The researchers discovered that 46 patients had mixed chimerism in the first year: 32 had it at day 28 and 14 had it between day 28 and one year post-transplant. If rejection was suspected during the evaluation period, immunosuppression was stopped. Donor-lymphocyte infusion was administered if patients did not respond to the stopped treatment. While immunosuppression was being discontinued, 15 patients developed acute graft-versus-host disease (GVHD) and eight had chronic GVHD with reversal to complete chimerism. Of the 46 patients with mixed chimerism, 20 patients had complete chimerism at a median follow-up of five years, 18 had persistent mixed chimerism with hemoglobin of 11.5 g/dL and eight rejected the transplant. The researchers concluded that close monitoring and early intervention is needed with increasing recipient chimerism. More...

**Translational Science Studies**

Reconstitution of Mucosal-Associated Invariant T Cells

A new study published in *Biology of Blood and Marrow Transplantation* describes the effects of inflammation and altered gastrointestinal microbiota after allogeneic hematopoietic cell transplantation (HCT) on the reconstitution of mucosal-associated invariant T (MAIT) cells. The study included 41 myeloablative and 66 nonmyeloablative HCT recipients. Researchers discovered that the number of MAIT cells increased during the first 30 days post-transplantation, they did not return to normal for at least one year after transplantation. Recipients of cord blood transplantation and post-HCT cyclophosphamide for graft-versus-host disease (GVHD) prophylaxis were the most impacted by impaired MAIT cell reconstitution. Continues on page 14
According to the study, semi-invariant Vα7.2\(^+\) T cell receptor (TCR) MAIT cell proliferation required inflammatory cytokines. This suggests that bacterial Vα7.2\(^+\) T cell ligands might promote MAIT cell reconstitution after HCT. Robust MAIT cell reconstitution was linked to an increased abundance of Blautia spp. in the stool. MAIT cells suppress T cell proliferation and may influence the risk of acute GVHD, concluded the researchers.

In Vitro and In Vivo Study of Tyrosine Kinase Inhibitor Effects

A study from *Biology of Blood and Marrow Transplantation* evaluates the in vitro and in vivo impacts of various tyrosine kinase inhibitors (TKIs) on lymphocyte phenotype and function. Researchers compared peripheral blood mononuclear cells (PBMC) from healthy donors that were cultured in the presence of increasing concentrations of nilotinib, imatinib, dasatinib and ponatinib to 44 PBMC samples from 15 patients included in a phase I/II trial. These patients were treated with nilotinib for steroid-dependent/refractory chronic graft-versus-host disease (GVHD). The researchers discovered that main T lymphocyte subpopulations were not significantly affected by therapeutic concentration of TKIs in vitro, but proinflammatory cytokine and IL-17 production decreased. Frequency of T regulatory (Treg), B and natural killer (NK) cells decreased from therapeutic concentrations of all TKIs tested in vitro, except for nilotinib. Results obtained in vivo from the nilotinib-treated patients were comparable, both on lymphocyte subset kinetics and cytokine production by CD3-positive cells. This study confirms the anti-inflammatory and immunomodulatory effects of TKIs and supports their potential usefulness as treatment for patients with steroid-dependent/refractory chronic GVHD. In addition, both the in vivo and in vitro data point out that compared with other TKIs, nilotinib was able to better preserve the integrity of some regulatory subsets, including Treg and NK cells.

New Gene Therapy Prevents Severe Mycobacterial Infection

Researchers have developed a new hematopoietic cell gene therapy method for IFNγR1 deficiency to prevent severe mycobacterial infection, reports a study published in *Blood*. The approach was developed using lentiviral vectors that express IFNγR1 either constitutively or myeloid specifically. Transduction of mouse IFNγR1\(^-/-\) hematopoietic cells led to stable IFNγR1 expression on macrophages, which rescued cellular responses to IFN-γ. As a result, genetically corrected hematopoietic cell-derived macrophages were able to suppress T-cell activation and showed restored antimycobacterial activity against *Mycobacterium avium* and *Mycobacterium bovis Bacille Calmette-Guerin* (BCG) in vitro. Transplantation of genetically corrected hematopoietic cells into mice before BCG infection prevented manifestations of severe BCG disease and maintained lung and spleen organ integrity, which was accompanied by a reduced mycobacterial burden in lung and spleen and a prolonged overall survival in the mice that received transplantation.
## Calendar of Events

### MARCH
- **Association of Community Cancer Centers**
  - 44th Annual Meeting
  - March 14-16
  - Washington, D.C.
- **European Society for Blood and Marrow Transplantation**
  - 44th Annual Meeting
  - March 18-21
  - Lisbon, Portugal
- **Regenerative Medicine Workshop**
  - March 21-24
  - Isle of Palms, South Carolina
- **National Comprehensive Cancer Network**
  - 23rd Annual Conference
  - March 22-24
  - Orlando, Florida
- **ASBMT/NMDP**
  - Fundamentals of HCT Training Course
  - March 24-25
  - Denver, Colorado
- **American Association for Cancer Research**
  - Annual Meeting
  - April 14-18
  - Chicago, Illinois
- **European School of Haematology**
  - 6th International Conference on Myelodysplastic Syndromes
  - April 26-28
  - Mandelieu, France

### APRIL
- **Memorial Sloan Kettering Cancer Center**
  - 1st International Symposium on Hematopoietic Cell Transplantation-Related Toxicities
  - April 27-28
  - New York, New York

### MAY
- **International Society for Cellular Therapy**
  - Annual Meeting
  - May 2-5
  - Montreal, Canada
- **European School of Haematology**
  - Clinical Updates on Acute Leukemias
  - May 4-6
  - Budapest, Hungary
- **American Association of Immunologists**
  - Annual Meeting
  - May 4-8
  - Austin, Texas
- **American Society of Gene and Cell Therapy**
  - Annual Meeting
  - May 16-19
  - Chicago, Illinois
- **Oncology Nursing Society**
  - 43rd Annual Congress
  - May 17-20
  - Washington, D.C.
- **International Society for Biological and Environmental Repositories**
  - Annual Meeting
  - May 20-24
  - Dallas, Texas
- **American Society of Clinical Oncology**
  - Annual Meeting
  - June 1-5
  - Chicago, Illinois
- **American Society of Transplant Surgeons**
  - American Transplant Congress
  - June 2-6
  - Seattle, Washington
- **Canadian Blood and Marrow Transplant Group**
  - Annual Conference
  - June 7-9
  - Ottawa, Canada
- **Federation of Clinical Immunology Societies**
  - Annual Meeting
  - June 14-17
  - Chicago, Illinois
- **European Hematology Association**
  - 23rd Congress
  - June 14-17
  - Stockholm, Sweden
- **International Society for Stem Cell Research**
  - Annual Meeting
  - June 20-23
  - Melbourne, Australia

### JUNE
- **Society for Cryobiology**
  - CRYO 2018
  - July 10-13
  - Madrid, Spain
- **Association of Physician Assistants in Oncology**
  - 21st Annual Conference
  - August 9-12
  - Chicago, Illinois
- **International Society for Experimental Hematology**
  - 47th Annual Scientific Meeting
  - August 23-26
  - Los Angeles, California

### JULY
- **ASBMT/NMDP**
  - Fundamentals of HCT Training Course
  - March 24-25
  - Denver, Colorado
- **American Association for Cancer Research**
  - Annual Meeting
  - April 14-18
  - Chicago, Illinois
- **European School of Haematology**
  - Clinical Updates on Acute Leukemias
  - May 4-6
  - Budapest, Hungary
- **American Society of Gene and Cell Therapy**
  - Annual Meeting
  - May 16-19
  - Chicago, Illinois
- **Oncology Nursing Society**
  - 43rd Annual Congress
  - May 17-20
  - Washington, D.C.
- **International Society for Biological and Environmental Repositories**
  - Annual Meeting
  - May 20-24
  - Dallas, Texas
- **American Society of Clinical Oncology**
  - Annual Meeting
  - June 1-5
  - Chicago, Illinois
- **American Society of Transplant Surgeons**
  - American Transplant Congress
  - June 2-6
  - Seattle, Washington
- **Canadian Blood and Marrow Transplant Group**
  - Annual Conference
  - June 7-9
  - Ottawa, Canada
- **Society for Cryobiology**
  - CRYO 2018
  - July 10-13
  - Madrid, Spain
- **Association of Physician Assistants in Oncology**
  - 21st Annual Conference
  - August 9-12
  - Chicago, Illinois
- **International Society for Experimental Hematology**
  - 47th Annual Scientific Meeting
  - August 23-26
  - Los Angeles, California
- **ASBMT/NMDP**
  - Fundamentals of HCT Training Course
  - March 24-25
  - Denver, Colorado
- **American Association for Cancer Research**
  - Annual Meeting
  - April 14-18
  - Chicago, Illinois
- **European School of Haematology**
  - Clinical Updates on Acute Leukemias
  - May 4-6
  - Budapest, Hungary
- **American Society of Gene and Cell Therapy**
  - Annual Meeting
  - May 16-19
  - Chicago, Illinois
- **Oncology Nursing Society**
  - 43rd Annual Congress
  - May 17-20
  - Washington, D.C.
- **International Society for Biological and Environmental Repositories**
  - Annual Meeting
  - May 20-24
  - Dallas, Texas
- **American Society of Clinical Oncology**
  - Annual Meeting
  - June 1-5
  - Chicago, Illinois
- **American Society of Transplant Surgeons**
  - American Transplant Congress
  - June 2-6
  - Seattle, Washington
- **Canadian Blood and Marrow Transplant Group**
  - Annual Conference
  - June 7-9
  - Ottawa, Canada
- **Federation of Clinical Immunology Societies**
  - Annual Meeting
  - June 14-17
  - Chicago, Illinois
- **European Hematology Association**
  - 23rd Congress
  - June 14-17
  - Stockholm, Sweden
- **International Society for Stem Cell Research**
  - Annual Meeting
  - June 20-23
  - Melbourne, Australia

### AUGUST
- **Association of Physician Assistants in Oncology**
  - 21st Annual Conference
  - August 9-12
  - Chicago, Illinois
- **International Society for Experimental Hematology**
  - 47th Annual Scientific Meeting
  - August 23-26
  - Los Angeles, California
- **ASBMT/NMDP**
  - Fundamentals of HCT Training Course
  - March 24-25
  - Denver, Colorado
- **American Association for Cancer Research**
  - Annual Meeting
  - April 14-18
  - Chicago, Illinois
- **European School of Haematology**
  - Clinical Updates on Acute Leukemias
  - May 4-6
  - Budapest, Hungary
- **American Society of Gene and Cell Therapy**
  - Annual Meeting
  - May 16-19
  - Chicago, Illinois
- **Oncology Nursing Society**
  - 43rd Annual Congress
  - May 17-20
  - Washington, D.C.
- **International Society for Biological and Environmental Repositories**
  - Annual Meeting
  - May 20-24
  - Dallas, Texas
- **American Society of Clinical Oncology**
  - Annual Meeting
  - June 1-5
  - Chicago, Illinois
- **American Society of Transplant Surgeons**
  - American Transplant Congress
  - June 2-6
  - Seattle, Washington
- **Canadian Blood and Marrow Transplant Group**
  - Annual Conference
  - June 7-9
  - Ottawa, Canada
- **Society for Cryobiology**
  - CRYO 2018
  - July 10-13
  - Madrid, Spain
- **Association of Physician Assistants in Oncology**
  - 21st Annual Conference
  - August 9-12
  - Chicago, Illinois
- **International Society for Experimental Hematology**
  - 47th Annual Scientific Meeting
  - August 23-26
  - Los Angeles, California
- **September**
- **ASBMT**
  - 5th Annual Fall Clinical Education Conference for NPs, PAs and Fellows
  - September 20-22
  - Nashville, Tennessee
- **Canadian Blood and Marrow Transplant Group**
  - Annual Conference
  - June 7-9
  - Ottawa, Canada
- **ASBMT/CIBMTR**
  - Transplantation and Cellular Therapy Meetings
  - February 20-24
  - Houston, Texas