Educational Program

May 23-26, 2010

16th ISCT Annual Meeting

Educational Program

Jointly sponsored by the Medical College of Wisconsin and the International Society for Cellular Therapy

International Society for Cellular Therapy

ISCT
WELCOME FROM THE CHAIRS

ISCT and Philadelphia: A Tradition of Innovation

We are delighted to welcome you to Philadelphia for the 16th annual meeting of the International Society for Cell Therapy. The 2010 program is an exciting and diverse array of scientific, technical, regulatory compliance and policy sessions and workshops. Preconference sessions on Sunday May 23 include workshops on Flow Cytometry, Global Regulatory Perspectives, and FACT inspection and accreditation. The formal program beginning Monday will again highlight workshops and presentations in the science, translational, and clinical areas of cellular therapy. In 2010 by popular demand, the Technical Applications track returns and a new “Strategies for Commercialization” track makes its debut. Plenary sessions feature international experts on immune regulatory cells, mesenchymal stem cells, antigen specific and engineered t cells, and tissue engineering and regenerative medicine, cardiovascular cell therapy and umbilical cord blood stem cells. A significant issue for the field, the ethical implications of medical tourism for cellular therapy, will be discussed in the Monday evening Public Session chaired by Dr Arthur Caplan, a recognized leader in the field of medical ethics.

We are particularly proud to host this year’s annual meeting in Philadelphia; this area supports one of the most vibrant academic and scientific traditions in the world nurtured first by Benjamin Franklin. Explore the many incredible museums and attractions at Independence Mall, visit the Constitution Center and Liberty Bell plaza, or simply wander through Old City. For a taste of Philadelphia, be sure to sample the famous and ubiquitous Philly Cheesesteak or a soft pretzel, visit Reading Terminal market considered “America’s oldest Farmer’s market”, or wander through the famous Italian market, a South Philadelphia staple since the 19th century.

Enjoy your visit and thank you for participating in the ISCT Annual Meeting!

Bruce Levine David Porter
ISCT 16th Annual Meeting Co-Chairs
# Table of Contents

Welcome from the Meeting Co-Chairs ........................................................... 2  
General Conference Information .............................................................. 4  
Continuing Medical Education ............................................................... 5  
 Listing of Invited Speakers and Chairs .................................................. 7  
Speakers Disclosure ................................................................................ 10  
Program ................................................................................................... 11  
Listing of Oral Abstract Presenters ......................................................... 20  
Oral Abstract Presentation Listing ......................................................... 21  
Plenary Session Summaries .................................................................... 25  
Hotel Floor Plan ..................................................................................... 34
GENERAL CONFERENCE INFORMATION

Registration

The conference registration desk is located in the Liberty Foyer.

Registration hours are as follows:

<table>
<thead>
<tr>
<th>Date</th>
<th>Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Saturday May 22</td>
<td>3:00pm – 5:00pm</td>
</tr>
<tr>
<td>Sunday May 23</td>
<td>7:30am – 7:00pm</td>
</tr>
<tr>
<td>Monday May 24</td>
<td>7:00am – 4:00pm</td>
</tr>
<tr>
<td>Tuesday May 25</td>
<td>7:00am – 4:00pm</td>
</tr>
<tr>
<td>Wednesday May 26</td>
<td>7:00am – 2:00pm</td>
</tr>
</tbody>
</table>

Included in your Annual Meeting registration fee:

- Access to the Welcome Reception
- Access to all Technical Breakfasts, Technical Applications Track Sessions*, Strategies for Commercialization Track Sessions, Workshops, Plenary Sessions, Poster Sessions, Oral Abstract Sessions, Exhibit and Poster Hall, Public Session
- Conference Meals (Breakfast and Lunch from May 24-26)
- Educational Program
- Corporate Conference guide
- 2010 Abstract issue of Cytotherapy, the official journal of ISCT
- Delegate List (for download online)
- Delegate Bag

*Pre-registration is required for Technical Applications Track 12. Limited seats available.

Exhibit-only attendees receive:

- Access to the Exhibit and Poster Hall
- Conference meals served in the exhibit hall
- Corporate Conference Guide

Additional registration fees required for:

Please visit the registration desk to purchase registrations or tickets

- Pre-Conference Events on Sunday May 23rd: FACT Cellular Therapy Inspection and Accreditation Workshop, Global Regulatory Perspectives Workshop, Flow Cytometry Workshop
- Gala Event at the Franklin Institute on Tuesday May 25th at 7:00pm
CONTINUING MEDICAL EDUCATION

Target Audience
This activity is designed for MD and PhD clinicians, scientists, researchers, technologists, regulatory professionals and industry experts.

Meeting Learning Objectives:
• Understand how current basic cell research will translate into patient care of the future.
• Understand the regulatory requirements of cell based research/therapy.
• Understand how experience from more mature cellular research areas such as hematopoietic stem cell transplantation can apply to emerging areas of research in non-hematopoietic areas such as mesenchymal stem cell and islet cell transplantation.

ACCME
This activity has been planned and implemented in accordance with the Essential Areas and policies of the Accreditation Council for Continuing Medical Education (ACCME) through the joint sponsorship of the Medical College of Wisconsin and The International Society for Cellular Therapy. The Medical College of Wisconsin (MCW) is accredited by the ACCME to provide continuing medical education for physicians.

The Medical College of Wisconsin designates this educational activity for a maximum of 9 AMA PRA Category 1 Credit(s)™. Physicians should only claim credit commensurate with the extent of their participation in the activity.

CMLE
This continuing medical laboratory education activity is recognized by the American Society for Clinical Pathology as meeting the criteria for 20.25 hours of CMLE credit. ASCP CMLE credit hours are acceptable to meet the continuing education requirement for the ASCP Board of Registry Certification Maintenance Program. California CMLE credits are also available for 20.25 hours.
Instructions for Credit

CME credits are offered for plenary sessions only.

CMLE credits are offered for all Technical Breakasts, Workshops, Technical Applications Track Sessions, Strategies for Commercialization Track Sessions and Oral Presentation Sessions from May 24-26 of the program.

In order to receive credit for this activity, participants must complete the evaluations for the sessions that they attend. The evaluation booklet for CME and CMLE are available at the Registration Desk. Please ensure that you complete the application on the first page of the booklet first, so that in the event your booklet is found, we can return it to you. At the end of the meeting, you must return the evaluation booklet to the registration desk.

CME certificates will be mailed within 6-8 weeks of the program by the Medical College of Wisconsin if all the paper work is completed. For questions regarding CME, please contact the Medical College of Wisconsin at 414-456-4896.

CMLE certificates will be mailed within 4-6 weeks of the program by the ISCT Head Office.

Commercial Support Information

This activity is supported by an educational donation provided by Amgen.
INVITED SPEAKERS & CHAIRS

Reza Abdi, MD  
*Brigham and Women’s Hospital, USA*

Athony Atala, MD  
*Wakeforest University School of Medicine, USA*

J. Wade Atkins, MS, MT(ASCP)SBB  
*NIH, USA*

David Avigan, MD  
*Beth Israel Deaconess Medical Center, USA*

Stephen F. Badyak, DVM, MD, PhD  
*University of Pittsburg, USA*

Juliet Barker, M.B.B.S  
*Memorial Sloan-Kettering Cancer Center, USA*

Marc Barthold, PhD  
*Miltenyi Biotec GmbH*

Shirley Bartido, PhD  
*Memorial Sloan-Kettering Cancer Center, USA*

Michael Betts, PhD  
*University of Pennsylvania School of Medicine, USA*

Mark Bonyhadi, PhD  
*Life Technologies, USA*

Liz Bui, MD, PhD  
*ViaCyte, USA*

Scott Burger, MD  
*Advanced Cell and Gene Therapy, USA*

Katherine Bushnell, MT(ASCP)  
*MD Anderson Cancer Center, USA*

Lizette Caballero, BSc,MT  
*Florida Hospital Cancer Institute, USA*

Arthur Caplan, PhD  
*University of Pennsylvania, USA*

Robert Chow, MD  
*Stemcyte, USA*

Tara Clark, BSc  
*Miltenyi Biotec, Inc., USA*

Nancy Collins, PhD  
*University of Toledo Health Science Campus, USA*

Laurence Cooper, MD, PhD  
*The University of Texas MD Anderson Cancer Center, USA*

Melissa Croskell, MT(ASCP)  
*The Children’s Hospital, Denver, USA*

Brian Czerniecki, MD, PhD  
*Hospital of the University of Pennsylvania, USA*

Janice Davis-Sproul, MAS, MT(ASCP)SBB  
*Johns Hopkins Medicine, USA*

Dennis Discher, PhD  
*University of Pennsylvania, USA*

Massimo Dominici, MD  
*University of Modena, Italy*

Ronna Dornsife, MS  
*Duke University Medical Center, USA*

Pam Dyson, BSc (Hons)  
*SA Pathology, RAH, Australia*

Matthias Edinger, MD, PhD  
*Klinikum der Universitett Regensburg, Germany*

Karen Edward, BSc, MT(ASCP)  
*Advanced Cell and Gene Therapy, Affiliate, USA*

Cindy Elliott, BMT, HP(ASCP), CQA(A)  
*CT Auditing & Compliance Services, LLC, USA*

Ed Field, MBA  
*Aldagen, USA*

Ian Fitzpatrick, MSc  
*Invetech Pty Ltd, USA*

Maralee Frazier-Cross, MLS, HP(ASCP)  
*St. Luke’s Health Systems, USA*

David Gancberg, PhD  
*European Commission, Belgium*

Dennis Gastineau, MD  
*Mayo Clinic Transplant Center, USA*

Kerry Grems, MSc  
*WHYY, Inc., USA*

Matt Grisham, PhD  
*LSU Health Sciences Center, USA*

Stephan Grupp, MD, PhD  
*Children’s Hospital of Philadelphia, USA*

Kurt Gunter, MD  
*Hospira Inc, USA*

Sarah Haecker, PhD  
*Orasi Medical, USA*
Derek Hart, MD  
University of Sydney, Australia

Richard Haspel, MD, PhD  
Beth Israel Deaconess Medical Center, USA

Shelly Heimfeld, PhD  
Fred Hutchinson Cancer Research Center, USA

Alan Herosian, MBA  
Duke University Medical Center, USA

Dennis Hickstein, MD  
NCI, USA

Martin Hoogduijn, PhD  
Erasmus University Medical Center, Netherlands

Edwin Horwitz, MD, PhD  
Children's Hospital of Philadelphia, USA

Asiya Imam, PhD, CQA  
BD, USA

Pam Jacobson, BS  
Cell Therapy Facility - University of Utah, USA

Carl June, MD  
University of Pennsylvania, USA

Richard Junghans, MD  
Boston University, USA

Diane Kadidlo, MT(ASCP), SBB  
University of Minnesota Medical Center, Fairview, USA

Michael Kalos, PhD  
University of Pennsylvania, USA

Hans-Peter Kiem, MD  
Fred Hutchinson Cancer Research Center, USA

Ken Kleinhenn, MBA  
Cytogen Therapeutics, Inc., USA

Peter Knudson, PhD  
Woodcock Washburn, USA

Liz Konecki, MS, MT(ASCP), SBB  
Wilford Hall Medical Center, USA

Joanne Kurtzberg, MD  
Director, Carolinas Cord Blood Bank, USA

Vince La Russa, PhD  
Memorial Sloan-Kettering Memorial Cancer Center, USA

Cor Lamers, PhD  
Erasmus MC - Daniel Den Hoed Cancer Center, Netherlands

Deborah Lamontagne, MT(ASCP)  
Harvard University, USA

Francesco Lanza, MD  
University Hospital, St Anna Hospital, Italy

Mary Laughlin, MD  
Case Western Reserve University, USA

Ellen Lazarus, MD  
FDA/CBER/OCTGT, USA

Bruce Levine, PhD  
University of Pennsylvania, USA

Alan Lewis, PhD  
Juvenile Diabetes Research Foundation, USA

Elina Linetsky, MSc, PhD, MT  
University of Miami Miller School of Medicine, USA

Tracie Lodie, PhD  
Genzyme, USA

Paolo Macchiarini, MD, PhD  
Hospital Clinic of Barcelona, Spain

Geoff MacKay, BA  
Organogenesis Inc., USA

Bernard Mahon, PhD  
National University of Ireland, Maynooth, Ireland

Gemini Majkowski, MQM, BSMT, SSB(ASCP)  
G2MQ Consulting Corp., USA

Myles Marcus  
Dendreon, USA

Massimo F. Martelli, MD  
University of Perugia, Italy

Chris Mason, MBBS, PhD, FRCS, FRCSCI  
University College London, UK

Nicola Mason, DACVIM, PhD  
University of Pennsylvania, USA

Robert McGrath, PhD  
Drexel University, USA

John McMannis, PhD  
MD Anderson Cancer Center, USA

Ian McNiece, PhD  
University of Miami, USA

Richard Meagher, PhD  
Northwestern University School of Medicine, USA
Richard Nash, MD  
University of Washington, USA

Robert Nezgin, MD  
Stanford University Hospital, USA

Robert M. Nerem, PhD  
Georgia Institute of Technology, USA

Knut Niss, PhD  
Pfizer Inc., USA

Colleen O’Connor, PhD  
The University of Texas MD Anderson Cancer Center, USA

Kristin Page, MD  
Duke University Medical Center, USA

Amit N. Patel, MD, MS  
University of Utah, USA

Andrew Pecora, MD  
Northern New Jersey Cancer Associates, USA

Marc S. Penn, MD, PhD  
Cleveland Clinic, USA

Lisa Phillips-Johnson, MT(ASCP)  
National Marrow Donor Program, USA

Kai Pinkernell, MD  
Cytori Therapeutics, Inc., USA

David Porter, MD  
University of Pennsylvania Medical Center, USA

Daniel Powell, PhD  
University of Pennsylvania, USA

Bob Preti, PhD  
Progenitor Cell Therapy, L.L.P., USA

Fran Rabe, BA  
University of Minnesota - Twin Cities, USA

John Rasko, MBBS, PhD, FRCPA, FRACP  
Cell and Molecular Therapies, RPA Hospital & Centenary Institute, Australia

Mariusz Ratajczak, MD, PhD, d.hc  
James Graham Brown Cancer Center, University of Louisville, USA

Vanderson Rocha, MD  
Eurocord Registry-Hospital Saint-Louis, France

Federico Rodriguez, MT, (ASCP), SBB  
Yuma Regional Medical Center, USA

Jeff Rosedale, PhD, JD  
Woodcock-Washburn, USA

Jon Rowley, PhD  
Lonza Walkersville, USA

Michel Sadelain, MD, PhD  
Memorial Sloan-Kettering Cancer Center, USA

Rachel Salzman, PhD  
StopALD Foundation, USA

Bruce Schneider, MD  
FDA/CBER, USA

Khalid Shah, PhD  
Harvard Medical School, Massachusetts General Hospital, USA

Warren Sherman, MD, FACC, FSCAI  
Center for Interventional Vascular Therapy, Columbia University, USA

Kevin Shoulars, PhD  
Duke University Medical Center, USA

Leigh Sims Poston, Bsc  
USA

Renee Smilee, MT(ASCP)  
H. Lee Moffitt Cancer Center & USA

Olive Sturtevant, MSc  
Dana-Farber Cancer Institute, USA

Michele Sugrue, M.S., MT(ASCP)SBB  
University of Florida Shands Cancer Center, USA

Garry Takle, PhD  
WuXi AppTec, USA

Sharon Tindle, MS  
St. Vincent’s Comprehensive Cancer Center, USA

Annette Trickett, PhD  
BMT Network NSW, Australia

Dorothee von Laer, MD  
Leitung Angewandte Virologie und Genterapie, Germany

Edus Warren, MD, PhD  
Fred Hutchinson Cancer Research Center, USA

Dan Weiss, MD  
University of Vermont & St. Agric College, USA

John Wolfe, VMD, PhD  
University of Pennsylvania, USA

Mai-Brit Zocca, PhD  
DanDrit Biotech, Denmark
## SPEAKER DISCLOSURES

<table>
<thead>
<tr>
<th>Name</th>
<th>Designation</th>
<th>Disclosures</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reza Abdi</td>
<td>MD</td>
<td>None to Disclose</td>
</tr>
<tr>
<td>Juliet Barker</td>
<td>M.B.B.S</td>
<td>None to Disclose</td>
</tr>
<tr>
<td>Matthias Edinger</td>
<td>MD, PhD</td>
<td>None to Disclose</td>
</tr>
<tr>
<td>Edwin Horwitz</td>
<td>MD, PhD</td>
<td>Pluristem Therapeutics, Inc. Honorarium Scientific Advisory Board</td>
</tr>
<tr>
<td>Carl June</td>
<td>MD</td>
<td>Cerulean Consulting Fee Member, Medical Advisory Board; CellDex Stock Options and consulting fee Member, Medical Advisory Board; Globeimmune Stock Options; and consulting fee Member, Medical Advisory Board</td>
</tr>
<tr>
<td>Mary Laughlin</td>
<td>MD</td>
<td>None to Disclose</td>
</tr>
<tr>
<td>Paolo Macchiarini</td>
<td>MD, PhD</td>
<td>None to Disclose</td>
</tr>
<tr>
<td>Massimo F. Martelli</td>
<td>MD</td>
<td>None to Disclose</td>
</tr>
<tr>
<td>Chris Mason</td>
<td>MBBS, PhD, FRCS, FRCSI</td>
<td>Stem Cell Translation Ltd. Expenses and Shareholder Director; London Regenerative Medicine Network (Ltd. By guarantee) Director</td>
</tr>
<tr>
<td>Robert Negrin</td>
<td>MD</td>
<td>Baxter Honorarium Consultant; UpToDate Honorarium Consultant</td>
</tr>
<tr>
<td>Robert M. Nerem</td>
<td>PhD</td>
<td>None to Disclose</td>
</tr>
<tr>
<td>Amit N. Patel</td>
<td>MD, MS</td>
<td>Aastrom Biosciences, PI, Clinical Trials</td>
</tr>
<tr>
<td>Marc S. Penn</td>
<td>MD, PhD</td>
<td>Juventas Therapeutics Equity, consulting fee Founder, CSO; Athersys, Inc. Research Grant Sponsored Research; Baxter, Inc. Honorarium SAB member</td>
</tr>
<tr>
<td>Mariusz Ratajczak</td>
<td>MD, PhD, d.hc</td>
<td>None to Disclose</td>
</tr>
<tr>
<td>Vanderson Rocha</td>
<td>MD</td>
<td>None to Disclose</td>
</tr>
<tr>
<td>Michel Sadelain</td>
<td>MD, PhD</td>
<td>None to Disclose</td>
</tr>
<tr>
<td>Khalid Shah</td>
<td>PhD</td>
<td>None to Disclose</td>
</tr>
<tr>
<td>Warren Sherman</td>
<td>MD, FACC, FSCAI</td>
<td>Juventas Honorarium Scientific Advisory Board; Aastom Consulting fee DSMB; Geron Honorarium Advisory Board</td>
</tr>
<tr>
<td>Dorothee von Laer</td>
<td>MD</td>
<td>None to Disclose</td>
</tr>
</tbody>
</table>
### SUNDAY, MAY 23, 2010

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>7:30am – 7:00pm</td>
<td>Registration Open</td>
<td>Liberty Foyer</td>
</tr>
<tr>
<td>8:00am – 5:00pm</td>
<td>Global Regulatory Perspectives Workshop</td>
<td>Horizons Rooftop Ballroom</td>
</tr>
<tr>
<td>8:00am – 5:00pm</td>
<td>FACT Cellular Therapy Inspection &amp; Accreditation Workshop</td>
<td>Philadelphia Ballroom North</td>
</tr>
<tr>
<td></td>
<td>FACT Cellular Therapy Inspection &amp; Accreditation Workshop Breakout</td>
<td>Philadelphia Ballroom South</td>
</tr>
<tr>
<td>10:00am – 3:00pm</td>
<td>Flow Cytometry Workshop</td>
<td>Liberty Ballroom B</td>
</tr>
<tr>
<td>5:00pm – 7:00pm</td>
<td>Corporate Symposium</td>
<td>Liberty Ballroom B</td>
</tr>
<tr>
<td>6:30pm – 10:00pm</td>
<td>FACT Board of Directors Meeting</td>
<td>Salon 3/4</td>
</tr>
<tr>
<td>7:00pm – 9:00pm</td>
<td>Welcome Reception</td>
<td>Freedom &amp; Independence Ballroom</td>
</tr>
</tbody>
</table>

### MONDAY, MAY 24, 2010

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>7:00am – 4:00pm</td>
<td>Registration Open</td>
<td>Liberty Foyer</td>
</tr>
<tr>
<td>7:00am – 8:00am</td>
<td>Continental Breakfast</td>
<td>Liberty Foyer</td>
</tr>
<tr>
<td>7:30am – 8:30am</td>
<td>Technical Breakfast 1 – K562 Universal APCs</td>
<td>Philadelphia Ballroom North</td>
</tr>
<tr>
<td></td>
<td><strong>Chair:</strong> Lawrence Cooper  <strong>Speakers:</strong> Bruce Levine</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Technical Breakfast 2 – Cord Blood Licensure</td>
<td>Philadelphia Ballroom South</td>
</tr>
<tr>
<td></td>
<td><strong>Chair:</strong> Wade Atkins  <strong>Speakers:</strong> Fran Rabe, Lisa Phillips-Johnson</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Technical Applications Track 1 – Adverse Reaction in CT Products</td>
<td>Liberty Ballroom D</td>
</tr>
<tr>
<td></td>
<td><strong>Co-Chairs:</strong> Shirley Bartido and Deborah Lamontagne</td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Speaker:</strong> Richard Haspel</td>
<td></td>
</tr>
<tr>
<td>Time</td>
<td>Event</td>
<td>Location</td>
</tr>
<tr>
<td>------------------</td>
<td>----------------------------------------------------------------------</td>
<td>--------------------</td>
</tr>
</tbody>
</table>
| 8:45am – 9:00am  | Welcome to Philadelphia Ceremony  
President, American Philosophical Society  
*Liberty Ballroom AB* |                    |
| 9:00am – 10:30am | Plenary Session 1 – Immune Regulatory Cells  
Chair: Robert Negrin  
Speakers: Matthias Edinger, Massimo Martelli  
*Liberty Ballroom AB* |                    |
| 10:00am – 6:00pm | Exhibit and Poster Hall Open  
*Freedom & Independence Ballroom* |                    |
| 10:30am –11:00am| Coffee Break with Exhibits  
*Freedom & Independence Ballroom* |                    |
| 11:00am –12:15pm| Oral Abstracts Session 1 – Regenerative Medicine  
Co-Chairs: John Rasko and Francesco Lanza  
Speakers: Deepak Jain, Rusty Kelley, Ian McNiece, Jukka Partanen  
*Liberty Ballroom A* |                    |
| 11:00am –12:15pm| Oral Abstracts Session 2 – Immunotherapy & Dendritic Cells  
Chair: Derek Hart  
Speakers: Nicole Aqui, Zwi Berneman, Jan Melenhorst, Daniel Powell  
*Liberty Ballroom B* |                    |
| 12:15pm – 2:00pm| Lunch  
Please pick up your lunch in the Freedom & Independence Ballroom before heading to the corporate tutorials.  
*Freedom & Independence Ballroom* |                    |
### Members Only Networking Session: Designing and Right-Sizing Your Processing Facility - Keeping Up With (and Learning From) the Joneses

**Moderator:** Lynn O’Donnell  
**Salon:** 5/6

<table>
<thead>
<tr>
<th>Time</th>
<th>Event Details</th>
</tr>
</thead>
</table>
| 12:15pm – 2:00pm | **Corporate Tutorial**  
  *please refer to the corporate conference guide*  
  Liberty Ballroom A |
| 12:30pm – 1:45pm | **Corporate Tutorial**  
  *please refer to the corporate conference guide*  
  Liberty Ballroom B |
| 2:00pm – 3:30pm | **Plenary Session 2 – Mesenchymal Stem Cells**  
  **Chair:** Edwin Horwitz  
  **Speakers:** Reza Abdi, Khalid Shah  
  Liberty Ballroom AB |
| 3:30pm – 3:45pm | **Technical Applications Track 4 – Deviation Management: From Discovery to Reporting**  
  **Chair:** Liz Konecki  
  **Speakers:** Nancy Collins, Gemini Majkowski  
  Liberty Ballroom D |
| 3:45pm – 5:15pm | **Workshop 1 – Treatment related toxicity in Adoptive Cellular Therapy: Strategies for prescreening and resolution**  
  **Chair:** Daniel Powell  
  **Speaker:** Cor Lamers, Richard Junghans  
  Liberty Ballroom A  
  **Workshop 2 - Monitoring and Biomarkers for Product Bioactivity in Cell Therapy Trials**  
  **Chair:** Michael Kalos  
  **Speakers:** Michael Betts, Bruce Schneider  
  Liberty Ballroom B  
  **Workshop 3 - Large Animal Models of Gene Therapy and Transplantation**  
  **Chair:** Nicola Mason  
  **Speakers:** Dennis Hickstein, Hans-Peter Kiem, John Wolfe  
  Philadelphia Ballroom North & South |
### MONDAY, MAY 24, 2010 continued

<table>
<thead>
<tr>
<th>Time</th>
<th>Session</th>
<th>Location</th>
</tr>
</thead>
</table>
| 3:45pm – 5:15pm **Continued** | **Technical Applications Track 5 – Ask the Quality/Regulatory Experts**  
Chair: Kurt Gunter  
Speakers: Dennis Gastineau, Diane Kadidlo, Ellen Lazarus  
Liberty Ballroom D |                           |
| 5:15pm – 6:15pm | **Strategies for Commercialization Track 3 – Patents and Their Implications in Commercializing Cellular Therapies**  
Chair: Jeff Rosedale  
Speaker: Shelly Heimfeld, Peter Knudson  
Liberty Ballroom C |                           |
| 6:30pm – 8:00pm | **Poster Session 1 with Exhibits**  
*Freedom & Independence Ballroom* |                           |
| 6:30pm – 8:00pm | **Public Session – Ethical Implications of Medical Tourism in Cell Therapy**  
Chair: Arthur Caplan  
Speakers: Kurt Gunter, Kerry Grens, Alan Lewis, Rachel Salzman  
Liberty Ballroom AB |                           |

### TUESDAY, MAY 25, 2010

<table>
<thead>
<tr>
<th>Time</th>
<th>Session</th>
<th>Location</th>
</tr>
</thead>
</table>
| 7:00am – 4:00pm | **Registration Open**  
Liberty Foyer |                           |
| 7:00am – 8:00am | **Continental Breakfast**  
Liberty Foyer |                           |
| 7:30am – 8:30am | **Technical Breakfast 3 – Update and perspectives on EU cell therapy research**  
Chair: David Gancberg  
Philadelphia Ballroom North |                           |
| 7:30am – 8:30am | **Technical Breakfast 4 – Large Animal Models of Cell Based Therapies**  
Chair: Nicola Mason  
Speaker: Richard Nash, Colleen O’Connor  
Philadelphia Ballroom South |                           |
| 7:30am – 8:30am | **Technical Applications Track 6 – Manufacturing Contracts and QA Agreements**  
Chair: Karen Edward  
Speaker: Richard Meagher  
Liberty Ballroom D |                           |
<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
</tr>
</thead>
</table>
| 7:30am – 8:30am | **Strategies for Commercialization Track 4 – Phase II and Beyond**  
**Manufacturing Strategies that Enable Commercialization**  
**Chair:** Jon Rowley  
**Speaker:** Scott Burger  
**Location:** Liberty Ballroom C |
| 8:45am – 10:15am | **Plenary Session 3 – Antigen-Specific and Engineered T Cells**  
**Chair:** Carl June  
**Speakers:** Dorothee von Laer, Michel Sadelain  
**Location:** Liberty Ballroom AB |
| 10:00am – 6:00pm | **Exhibit and Poster Hall Open**  
**Location:** Freedom & Independence Ballroom |
| 10:15am – 10:45am | **Coffee Break with Exhibits**  
**Location:** Freedom & Independence Ballroom |
| 10:45am – 12:15pm | **Oral Abstracts Session 4 – Mesenchymal Stem Cells**  
**Chair:** Massimo Dominici  
**Speakers:** Elisabetta Cervio, Frida Grynspan, Satoru Otsuru, Nancy Porterfield  
**Location:** Liberty Ballroom A |
| 10:45am – 12:15pm | **Oral Abstracts Session 5 – Hematopoietic Stem Cells**  
**Chair:** Ian McNiece  
**Speakers:** Mai Chen, Hilal Gul-Uludag, William Janssen, Carolyn Keever-Taylor, Luke Wu  
**Location:** Liberty Ballroom B |
| 10:45am – 12:15pm | **Technical Applications Track 8 – ISBT for CT Products**  
**Chair:** Leigh Sims Poston  
**Speakers:** Katherine Bushnell, Lisa Phillips-Johnson  
**Location:** Liberty Ballroom D |
| 12:15pm – 2:00pm | **Lunch**  
**Location:** Freedom & Independence Ballroom  
*Please pick up your lunch in the Freedom & Independence Ballroom before heading to the corporate tutorials.*
<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
<th>Location</th>
</tr>
</thead>
</table>
| 12:30pm – 1:45pm | Corporate Tutorial  
– please refer to the corporate conference guide  
Liberty Ballroom A |
|                  | Corporate Tutorial  
– please refer to the corporate conference guide  
Liberty Ballroom B |
|                  | Corporate Tutorial  
– please refer to the corporate conference guide  
Liberty Ballroom C |
| 12:30pm – 1:45pm | Annual General Meeting  
Philadelphia Ballroom North and South |
| 2:00pm – 3:30pm  | Plenary Session 4 – Tissue Engineering and Regenerative Medicine  
Chair: Chris Mason  
Speakers: Paolo Macchiarini, Robert Nerem  
Liberty Ballroom AB |
|                  | Technical Applications Track 9 – Cellular Products Processing and Thawing Techniques  
Chair: Michele Sugrue  
Speakers: Melissa Croskell, Pam Dyson  
Liberty Ballroom D |
| 3:30pm – 3:45pm  | Break with Exhibits  
Freedom and Independence Ballroom |
|                  | Workshop 4 – MSC and Therapeutic Models  
Chair: Bob Deans  
Speakers: Tracey Lodie, Martin Hoogduijn, Dan Weiss  
Liberty Ballroom A |
|                  | Workshop 5 – Cellular Therapy for Leukemia  
Chair: David Porter  
Speaker: Edus Warren, Stephan Grupp  
Liberty Ballroom B |
| 3:45pm – 5:15pm  | Technical Applications Track 10 – Risk Management Strategies for QA  
Chair: Asiya Imam  
Speaker: Olive Sturtevant  
Liberty Ballroom D |
|                  | Strategies for Commercialization Track 6 – CMC Challenges: Manufacture and Packaging of Cellular Therapy Products  
Chair: Scott Burger  
Speakers: Ian Fitzpatrick, Myles Marcus, Marc Barthold  
Liberty Ballroom C |
**TUESDAY, MAY 25, 2010 continued**

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>5:15pm – 6:15pm</td>
<td><strong>Poster Session 2 with Exhibits</strong> Freedom and Independence Ballroom</td>
</tr>
<tr>
<td>7:00pm – Midnight</td>
<td><strong>Gala Event</strong> Franklin Institute <em>(Tickets available at the registration desk.)</em></td>
</tr>
</tbody>
</table>

**WEDNESDAY MAY 26, 2010**

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>7:00am – 2:00pm</td>
<td><strong>Registration Open</strong> Liberty Foyer</td>
</tr>
<tr>
<td>7:15am – 8:15am</td>
<td><strong>Continental Breakfast</strong> Liberty Foyer</td>
</tr>
</tbody>
</table>
| 7:45am – 8:45am     | **Technical Breakfast 5** Immunogenicity of retroviral vectors and transgenes used for gene transfer in adaptive cell therapy  
Chair and Speaker: Cor Lamers  
*Philadelphia Ballroom North* |
|                     | **Technical Breakfast 6** Cord blood thawing and reinfusion from NMDP and clinical perspective  
Chair: Joanne Kurtzberg  
Speakers: Robert Chow, Ronna Dornsife, Kristin Page, Kevin Shoulars  
*Philadelphia Ballroom South* |
| 9:00am – 10:30am    | **Plenary Session 5** Cardiovascular Cell Therapy  
Chair: Warren Sherman  
Speakers: Amit Patel, Marc Penn  
*Liberty Ballroom AB* |
|                     | **Technical Applications Track 12** (Round-Table Format) Validation, Verification and Qualification: What to do When  
Pre-Registration Required, limited seats available  
Chair: Wade Atkins  
Speakers: Cindy Elliott, Gemini Majkowski  
*Liberty Ballroom D* |
WEDNESDAY, MAY 26, 2010 continued

10:00am – 1:00pm
Exhibit Hall Open  Freedom & Independence Ballroom

10:30am – 11:00am
Coffee Break with Exhibits  Freedom & Independence Ballroom

11:00am – 12:00pm
Oral Abstracts Session 6 – Cell and Gene Therapy / Cellular Gene Transfer
Chair: Bruce Levine  Speakers: Marc Penn, John Scholler, Pablo Tebas  Liberty Ballroom A

Oral Abstracts Session 7 – Translational Process Development
Co-Chairs: Mary Bonyhadi and Jon Rowley  Speakers: Yann Godfrin, Kristin Page, Shay Wallace  Liberty Ballroom B

Technical Applications Track 13 – Change Control AABB/ISCT Session
Chair: Janice Davis-Sproul  Speakers: John McMannis, Bob Preti  Liberty Ballroom D

Strategies for Commercialization Track 8 – Regenerative Medicine: Cellular Therapies in the Clinic Today
Chair: Warren Sherman  Speaker: Anthony Atala  Liberty Ballroom C

12:00pm – 1:00pm
Lunch  Freedom & Independence Ballroom

1:00pm – 2:30pm
Workshop 6 – MSC, Treg and Immunomodulation
Chair: Bob Deans  Speakers: Matt Grisham, Bernard Mahon  Liberty Ballroom A

Workshop 7 – DC Clinical Trials
Chair: Derek Hart  Speakers: David Avigan, Brian Czerniecki, Mai-Brit Zocca  Liberty Ballroom B
Technical Applications Track 14 – Product Quality Characterization: Release Criteria, Post Thaw Assessment and Stability Testing
Chair: Federico Rodriguez  Speakers: Elina Linetsky, Annette Trickett
Liberty Ballroom D

Strategies for Commercialization Track 9 – The Commercialization of Regenerative Therapies - An Industry Perspective
Chair: Dennis Discher
Speakers: Geoff McKay, Knut Niss, Robert Deans
Liberty Ballroom C

Including the launch of ISCT’s Industry Task Force White Paper

Presidential Plenary Session – Umbilical Cord Blood Stem Cell Translational Science
Chair: Mary Laughlin  Speakers: Juliet Barker, Mariusz Ratajczak, Vanderson Rocha
Liberty Ballroom A
ORAL ABSTRACT PRESENTERS

Nicole Aqui, MD  
Abramson Cancer Center, USA

Zwi Berneman, MD, PhD  
Antwerp University, Belgium

Elisabetta Cervio, PhD  
Università degli Studi di Pavia, Italy

Mai Chen, MD  
Thomas Jefferson University, USA

Yann Godfrin, PhD  
ERYtech Pharma, USA

Frida Grynspan, PhD  
Pluristem Therapeutics, Israel

Hilal Gul-Uludag, PhD  
University of Alberta, Canada

Deepak Jain, PhD  
Tengion Inc., USA

William Janssen, PhD  
H. Lee Moffitt Cancer Center, USA

Kevin Johnson, PhD, MBA  
Wake Forest Institute for Regenerative Medicine, USA

Carolyn Keever-Taylor, PhD  
Medical College of Wisconsin, USA

Linda Kelley, PhD  
University of Utah, USA

Rusty Kelley, PhD  
Tengion Inc, USA

Chaya Mazouz, RN, MA  
Pluristem Therapeutics, Israel

Ian McNiece, PhD  
University of Miami, USA

Jan Melenhorst, PhD  
NIH, USA

Satoru Otsuru, MD, PhD  
The Children’s Hospital of Philadelphia, USA

Kristin Page, MD  
Duke University Medical Center, USA

Jukka Partanen, PhD  
Finnish Red Cross Blood Service, Finland

Marc Penn, MD, PhD  
Cleveland Clinic, USA

Nancy Porterfield, BS  
Naval Medical Research Center, USA

Daniel Powell, PhD  
University of Pennsylvania, USA

John Scholler, BSc  
University of Pennsylvania, USA

Pablo Tebas, MD  
University of Pennsylvania, USA

Annette Trickett, PhD  
BMT Network NSW, Australia

Shay Wallace, BA  
Tengion Inc, USA

Luke Wu, BSc  
Ottawa Hospital Research Institute, Canada
## Oral Abstract Sessions

**Monday May 24 from 11:00am – 12:15pm**

**Oral Abstracts Session 1: Regenerative Medicine**  
**Co-Chairs:** Francesco Lanza and John Rasko  
**Liberty Ballroom A**

<table>
<thead>
<tr>
<th>Abstract #</th>
<th>Title</th>
<th>Presenter</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>Expression of miR-29a in Cardiac Stromal Cells</td>
<td>Ian McNiece</td>
</tr>
<tr>
<td>4</td>
<td>VP102, a Novel Single Molecule Matrix Supports Undifferentiated Growth of Human ES and iPSCs</td>
<td>Jukka Partanen</td>
</tr>
<tr>
<td>2</td>
<td>Bioactive Renal Cells Augment Kidney Function in a Rodent Model of Chronic Kidney Disease</td>
<td>Rusty Kelley</td>
</tr>
<tr>
<td>1</td>
<td>Smooth Muscle Cells Derived from Human Adipose Tissue for Use in Urologic Tissue Engineering</td>
<td>Deepak Jain</td>
</tr>
</tbody>
</table>

**Oral Abstracts Session 2: Immunotherapy and Dendritic Cells**  
**Chair:** Derek Hart  
**Liberty Ballroom B**

<table>
<thead>
<tr>
<th>Abstract #</th>
<th>Title</th>
<th>Presenter</th>
</tr>
</thead>
<tbody>
<tr>
<td>5</td>
<td>Early Adoptive Transfers of Anti-CD3/Anti-CD28 Costimulated Autologous T Cells After Autotransplant for Myeloma: Significantly Enhanced Post-Transplant Humoral and Cellular Immune Reconstitution</td>
<td>Nicole Aqui</td>
</tr>
<tr>
<td>7</td>
<td>Both Naïve and Memory T Cells Exert Alloreactivity Across HLA Barriers</td>
<td>Jan Melenhorst</td>
</tr>
<tr>
<td>6</td>
<td>Induction of Complete and Molecular Remissions in Acute Myeloid Leukemia by Wilms’ Tumor 1 Antigen-Targeted Dendritic Cell Vaccination</td>
<td>Zwi Berneman</td>
</tr>
<tr>
<td>8</td>
<td>Autologous Whole-Tumor Antigen Combinatorial Immunotherapy for Recurrent Ovarian Cancer</td>
<td>Daniel Powell</td>
</tr>
</tbody>
</table>
Monday May 24 from 11:00am – 12:15pm continued

**Oral Abstracts Session 3: Legal & Regulatory Affairs/Laboratory Practices**

**Co-Chairs:** Leigh Sims Poston and Kurt Gunter

*Liberty Ballroom D*

| REGULATORY STUDY DESIGN CONSIDERATIONS FOR PLX-PAD, AN ALLOGENEIC CELL PRODUCT FOR THE TREATMENT OF CRITICAL LIMB ISCHEMIA (CLI) (abstract #11) | Presenter: Chaya Mazouz |
| REGENERATIVE MEDICINE CASE STUDY: MAKING THE TRANSITION FROM RESEARCH INSTITUTE TO TRANSLATIONAL RESEARCH AND DEVELOPMENT ORGANIZATION (abstract #9) | Presenter: Kevin Johnson |
| REDUCTION OF INCOMING BIOBURDEN IN TISSUE PRODUCTS INTENDED FOR CELL ISOLATION AND CULTURE EXPANSION (abstract #10) | Presenter: Linda Kelley |
| FACTORS AFFECTING THE MICROBIAL CONTAMINATION RATE OF CORD BLOOD COLLECTED FOR TRANSPLANTATION AT THE SYDNEY CORD BLOOD BANK (SCBB) (abstract #12) | Presenter: Annette Trickett |

Tuesday May 25 from 10:45am – 12:15pm

**Oral Abstracts Session 4: Mesenchymal Stem Cells**

**Chair:** Massimo Dominici

*Liberty Ballroom A*

| TRANSPLANTATION OF MESENCHYMAL STROMAL CELLS (MSCs) INDUCES LINEAR BONE GROWTH BY STIMULATING GROWTH PLATE CHONDROCYTE PROLIFERATION (abstract #16) | Presenter: Satoru Otsuru |
| SOLUBLE FACTORS RELEASED BY HUMAN MESENCHYMAL STEM CELLS OF FETAL ORIGIN LEAD TO CARDIOMYOCYTE PROTECTION THROUGH THE INHIBITION OF PRO-APOPTOTIC SIGNALING (abstract #13) | Presenter: Elisabetta Cervio |
| IMMUNOLOGICAL PROFILE OF CRITICAL LIMB ISCHEMIA PATIENTS FOLLOWING INTRAMUSCULAR ADMINISTRATION OF PLACENTA ADHERENT STROMAL CELLS (abstract #15) | Presenter: Frida Grynspan |
| THE CARDIOPROTECTIVE PARACRINE EFFECTS EXERTED BY HUMAN MESENCHYMAL STEM CELLS ARE NEGATIVELY INFLUENCED BY DONOR AGE (abstract #14) | Presenter: Elisabetta Cervio |
| MICROENVIRONMENT OF WAR WOUNDS: CONCERNS FOR REGENERATIVE MEDICINE APPLICATIONS (abstract #17) | Presenter: Nancy Porterfield |
### Oral Abstracts Session 5: Hematopoietic Stem Cells
**Chair:** Ian McNiece  
**Location:** Liberty Ballroom B

<table>
<thead>
<tr>
<th>Title</th>
<th>Presenter</th>
<th>Abstract ID</th>
</tr>
</thead>
<tbody>
<tr>
<td>LACK OF BETA-ARRESTIN-1 IN BONE MARROW STEM CELLS LEADS TO IMPAIRED OUTCOME AFTER MYOCARDIAL INJURY DUE TO DEFECTIVE PROLIFERATIVE ACTIVITY</td>
<td>Mai Chen</td>
<td>#18</td>
</tr>
<tr>
<td>VIABILITY OF COLLECTED CD34+ CELLS FOLLOWING FREEZING AND THAWING DIMINISHES WITH INCREASING PERIOD OF G-CSF MOBILIZATION</td>
<td>William Janssen</td>
<td>#20</td>
</tr>
<tr>
<td>CHARACTERISTICS OF CD34-ENRICHED PRODUCTS PROCESSED AT MULTIPLE CENTERS USING THE CLINIMACS SYSTEM - BMT CTN 0303</td>
<td>Carolyn Keever-Taylor</td>
<td>#21</td>
</tr>
<tr>
<td>APOPTOSIS IN CRYOPRESERVED AUTOLOGOUS PBSCS AND DELAYED ENGRAFTMENT AFTER TRANSPLANTATION DESPITE SUFFICIENT CD34(++) CELLS</td>
<td>Luke Wu</td>
<td>#22</td>
</tr>
<tr>
<td>HIGHLY EFFICIENT LABELLING OF HEMATOPOIETIC STEM/PROGENITOR CELLS USING MAGNETIC CARBON NANOTUBES: IMPLICATIONS FOR STEM CELL TRACKING</td>
<td>Hilal Gul-Uludag</td>
<td>#19</td>
</tr>
</tbody>
</table>

### Oral Abstracts Session 6: Cell and Gene Therapy/Cellular Gene Transfer
**Chair:** Bruce Levine  
**Location:** Liberty Ballroom A

<table>
<thead>
<tr>
<th>Title</th>
<th>Presenter</th>
<th>Abstract ID</th>
</tr>
</thead>
<tbody>
<tr>
<td>PROLONGED CONTROL OF VIREMIA AFTER TRANSFER OF AUTOLOGOUS CD4 T CELLS GENETICALLY MODIFIED WITH A LENTIVIRAL VECTOR EXPRESSING LONG ANTISENSE TO HIV ENV (VRX496)</td>
<td>Pablo Tebas</td>
<td>#25</td>
</tr>
<tr>
<td>DECADE-LONG PERSISTENCE OF ADOPTIVELY TRANSFERRED AUTOLOGOUS REDIRECTED CD4-ζ; CHIMERIC RECEPTOR T CELLS IN HIV+ STUDY SUBJECTS</td>
<td>John Scholler</td>
<td>#24</td>
</tr>
<tr>
<td>INTRAMYOCARDIAL DELIVERY OF ACRX-100 ENHANCES CARDIAC FUNCTION AND INCREASES VASCULGENESIS IN A PORCINE MODEL OF CHRONIC HEART FAILURE</td>
<td>Marc Penn</td>
<td>#23</td>
</tr>
</tbody>
</table>
Wednesday May 26 from 11:00am-12:00pm continued

**Oral Abstracts Session 7: Translational Process Development**

**Co-Chairs:** Mark Bonyhadi and John Rowley

*Liberty Ballroom B*

---

**QUANTITATIVE EX VIVO CHARACTERIZATION OF HUMAN RENAL CELL POPULATION DYNAMICS VIA HIGH-CONTENT IMAGE-BASED ANALYSIS (HCA) (abstract # 28)**

**Presenter:** Shay Wallace

**A NOVEL SCORING SYSTEM, THE CORD BLOOD APGAR, PREDICTS ENGRAFTMENT AFTER CORD BLOOD TRANSPLANTATION: OPTIMIZATION OF SELECTION OF CBUS FOR TRANSPLANTATION (abstract #27)**

**Presenter:** Kristin Page

**L-ASPARAGINASE LOADED INSIDE RED BLOOD CELLS AS A NEW CELL BASED MEDICINAL PRODUCT (abstract #26)**

**Presenter:** Yann Godfrin
Regulatory T cells for the prevention of GVHD in murine models

Robert S. Negrin, MD

Immune regulation is critically important in health and disease. Nowhere is this clearer than following allogeneic hematopoietic cell transplantation where the graft-versus-tumor (GVT) effect reduces disease relapse following transplantation whereas graft-versus-host disease (GVHD) is the major limitation. Therefore, strategies to limit GVHD while maintaining GVT effects could improve clinical outcomes. Control of immune function is multi-factorial involving compartmentalization of immune responses, different cytokines and immune effector cell populations which regulate immune responses. The best characterized immune effector cell population is the CD4+CD25+FoxP3+ regulatory T (Treg) cells which in both murine models and humans have been shown to suppress immune reactions for example, the mixed lymphocyte reaction. In murine models, the infusion of highly purified populations of Treg result in control of GVHD while maintaining GVT responses. The basis of this apparent separation of GVHD from GVT is related to the ability of Treg to suppress the proliferation of alloreactive T cells critical for GVHD pathology. Interestingly, Treg do not appear to interfere with T cell function and in settings where there is a high T cell precursor frequency for target cells, for example across major histocompatibility barriers, tumor cells can be recognized and destroyed. Importantly the infusion of Treg are also associated with improved immune reconstitution in these murine models due to the decrease in the destructive effects of graft-versus-host reactions on immunological environments such as lymph nodes and the thymus. Further, a variety of immunosuppressive drugs have differential effects on regulatory T cells where rapamycin appears to be most protective. These studies in murine models have provided insights into the biology and potential beneficial effects of Treg in controlling GVHD, maintaining GVT responses, and improving immune reconstitution that will be detailed in the presentation and set the stage for clinical translation.
Plenary Session 2 – Mesenchymal Stem Cells

MONDAY, MAY 24, 2010
2:00pm Liberty Ballroom AB

Chair: Edwin Horwitz, MD, PhD  Speakers: Reza Abdi, MD and Khalid Shah, PhD

Mesenchymal stromal cells are spindle shaped, plastic adherent cells isolated from a wide array of tissues including bone marrow, fat, umbilical cord blood, and placenta. These cells, when isolated by adherence, are a highly heterogeneous population with variety of biologic activities. Due to the remarkable in vitro differentiation capacity, early research focused on employing MSCs as progenitor cells to regenerate tissues. More recently, we have recognized that MSCs can secrete a variety of soluble mediators including both immunomodulatory agents and growth factors. Indeed, the most striking potential clinical applications are founded in the secretory activity of MSCs in contrast to the differentiation capacity. In this session, our speakers who will present their most recent data focused on three novel applications of mesenchymal cell therapy. Dr. Horwitz will present his recent clinical trial of marrow cell boosts in children with osteogenesis imperfecta as well as murine data demonstrating the molecular and cellular mechanism of action for this cell therapy. Dr. Abdi will present the use of MSCs as immunomodulatory agents to suppress autoimmune diabetes. Finally, Dr. Shah will present the use of MSCs to target tumors delivering anti-cancer molecules directly to the local tumor environment. These presentations represent some of the most innovative recent mesenchymal research and likely foretell the direction of our field over the next few years.

Plenary Session 3 – Antigen-Specific and Engineered T Cells

TUESDAY, MAY 25, 2010
8:45am Liberty Ballroom AB

Chair: Carl June, MD  Speakers: Dorothee von Laer, MD and Michel Sadelain, MD, PhD

Cell-based therapies with various lymphocyte subsets is a promising approach for cancer and chronic infections. The transfusion of T lymphocytes, also called adoptive cell therapy (ACT), is a form of personalized medicine that is an effective treatment for viral infections.
and opportunistic infections, and has induced regression of cancer in various early stage clinical trials. Cell culture technology now permits the efficient expansion and genetic modification of effector and regulatory T cell subsets. The ability to genetically engineer lymphocyte subsets has the potential to improve the natural immune response and to correct impaired immunity. This session focuses on various applications of ACT for cancer immunotherapy and HIV therapy. The speakers will discuss some of the latest progress and hurdles in translating these technologies to the clinic.

**Plenary Session 4 – Tissue Engineering and Regenerative Medicine**

**TUESDAY, MAY 25, 2010**

1:30pm Liberty Ballroom AB

**Chair:** Chris Mason, MBBS, PhD, FRCS, FRCSI  **Speakers:** Paolo Macchiarini, MD, PhD and Robert Nerem, PhD

Regenerative medicine replaces or regenerates human cells, tissue or organs, to restore or establish normal function’ (Mason & Dunnill 2008). Therefore by definition, regenerative medicine is a major opportunity for all the different therapeutic approaches; medical devices, small molecule drugs, biopharmaceuticals as well as cell-based therapeutics. All have a role to play either alone or in combination. However, there is no doubt that under the umbrella of ‘regenerative medicine’, the exciting disruptive technology is cell-based therapies. This is the step-change platform technology that is enabling a brand new major pillar of healthcare – a sustainable international sector deploying living cells as therapies. It is important to note that whilst cell therapies are only one of the four modalities supplying regenerative medicines, the converse is also true, regenerative medicine is just one medical application for the cells as therapies industry.

Unfortunately today there are a great many misconceptions with respect to the achievements of our fledgling regenerative medicine cell-based sector. The spectrum of opinions ranges from inability to deliver regulatory approved clinical products to billion dollar estimates of annual sales. The reason for this confusion is a combination of an historical lack of an industry specific voice combined with third-party commercially-produced market reports that ‘conveniently’ interchange the terms ‘stem cell-based therapies’ and ‘tissue engineering’ with the all-encompassing term ‘regenerative medicine’. This session will have two international acknowledged experts recognized to be at the forefront of the field. They will be presenting the history and hard facts including
genuine clinical achievements in regenerative medicine cell-based therapies, not hype and hope, but the true state of play in 2010.

The real opportunity for the more biologic approach represented by cell-based therapies is to move from the goal of replacement to include a focus on repair and regeneration. Whatever the strategy, a critical issue is that of cell source. It is here where the use of stem cells offers enormous potential and in the last decade there have been enormous advances in the understanding of the biology of stem cells. This has included studies on the influence on cell fate of soluble molecules, cell-cell contact, substrate, and the physical environment. It is the last of these that does not always get the attention it deserves. To move beyond benchtop research, however, i.e. to translate our basic knowledge of stem cells into cell-based applications, will require addressing some major challenges. One of these is the need for the concurrent engineering of stem cell processing systems, ones that will not only produce a defined cell population, but are scaled up so as to provide the large number of cells required for human applications. Such cell processing systems should be automated and have the quality control that will be required for regulatory approval. This will mean developing innovative techniques for use in the proliferation and differentiation of stem cells and for use in monitoring cells as they are being processed. To do this will require an approach that integrates our understanding of the biology with engineering advances including those in robotics and biosensors. This thus will need to be a broad, multi-disciplinary effort.

**PLENARY SESSION 5 – CARDIOVASCULAR CELL THERAPY**

**WEDNESDAY, MAY 26, 2010**

9:00 am Liberty Ballroom AB

**Chair:** Warren Sherman, MD, FACC, FSCAI  **Speakers:** Marc S. Penn, MD, PhD and Amit N. Patel, MD, MS

This Plenary Session will cover both broad-stroke concepts of cell-based approaches to cardiovascular diseases, as well as focused presentations of data that exists, or is soon to exist in the clinical trial setting. Among the topics to be covered are: disease-specific cell preparations, specific product applications, cell delivery methods, angiogenesis for cardiac and non-cardiac applications, and the status of embryonic and iPS derived cells. Advances in imaging and other innovations from both biotechnology industries and academia will also be touched upon.
In particular, Dr. Penn will provide a comprehensive overview of the biologic underpinnings of cardiovascular repair. More specifically, work from his laboratory as to certain cellular control mechanisms and their potential targeting for therapeutic purposes will be highlighted. Dr. Patel will present data pertaining to surgical application of adult stem cell products. This will include results of studies in patients undergoing coronary bypass or other procedures for heart failure, and in patients with chronic myocardial ischemia or critical limb ischemia. Dr. Sherman will review non-surgical cell delivery techniques and describe the status of clinical trials in patients with acute and chronic coronary syndromes. Additionally, forward looking strategies to overcome obstacles facing the field will be discussed.

After attending of this session, participants should be able to: identify the scientific basis for cardiovascular cell-based therapies; describe data regarding the capacity of specific cell lineages and regulating factors for cardiac repair; be familiar with the results of clinical studies and the statuses of large-scale efficacy trials; and, understand the developmental strategies of next-generation cell products, and their expected first-in-human use. Other topics that may be addressed during the question and answer/discussion section will shed light on the status of cardiovascular stem cell science at the global level, resources issues, industry activities, strategies for collaboration and current applicable policies.

**ISCT 2010 Presidential Plenary – Umbilical Cord Blood Stem Cell Translational Science**

**WEDNESDAY MAY 26, 2010**

*2:30pm Liberty Ballroom A*

**Chair:** Mary J. Laughlin, MD  
*Case Western Reserve University*

**Speakers:**

*2:30-3:00PM* Juliet Barker, MBBS  
*Memorial Sloan-Kettering Cancer Center*

“The Biology of Double Unit Cord Blood Transplantation”

*3:00-3:30PM* Mariusz Z. Ratajczak, MD, PhD  
*University of Louisville*
“Umbilical Cord Blood-Derived Very Small Embryonic/Epiblast Like Stem Cells (VSELs) - Potential Clinical Applications”

3:30-4:00PM  Vanderson Rocha, MD
Eurocord/ European Blood and Marrow Transplant

“Improving Outcomes after Unrelated Cord Blood Transplantation: Impact of Genetic, Cell Dose and Other Graft Factors”

Objectives

1. To understand the contributions of progenitor cell viability and unit-versus-unit interactions in unit dominance after double unit UCB transplantation.
2. To understand UCB very small embryonic-like stem cells’ proliferative and developmental potential in hematology and regenerative medicine.
3. To understand the influence of HLA & KIR-mismatch on engraftment, GVHD, and GVL responses after unrelated donor allogeneic UCB transplant, and to identify the factors that influence transplant outcome in order to assist in unit selection.

Summary

UCB has rapidly emerged as an alternative allogeneic hematopoietic stem cell source in the unrelated setting, and now comprises 28% of procedures performed in the US annually. The UCB graft has unique biology from the standpoint of progenitor cells as well as the naïve neonatal immune system, and how these dictate transplant outcomes are not fully understood but are the subject of active investigation.

Double unit cord blood transplantation has been widely adopted as a strategy to augment graft cell dose. Retrospective clinical studies have suggested that this approach is associated with both improved engraftment and less malignant relapse than the transplantation of single unit grafts. However, despite the promising clinical results, the biology of double unit transplantation is poorly understood. Memorial Sloan-Kettering Cancer Center has embarked on multiple correlative laboratory studies of double unit transplants in order to better understand this biology. To date, MSKCC investigators have found that unit engraftment is dictated by the percentage of viable CD34+ progenitors, with units with poor viability very unlikely to engraft. However, if each unit has engraftment potential, unit dominance appears to be mediated by immune interactions between the units. A murine model of double unit transplantation has been developed that correlates with patient outcome. Analysis of the high-resolution HLA-match of each unit further supports an immune-mediated basis for unit dominance. These studies should
improve the understanding of double unit biology which in turn should improve transplant outcomes in the future.

Studies recently conducted by EuroCord/EBMT have focused on analyzing prognostic factors related to patients, disease, donor and transplantation. Modifiable factors have been identified, such as factors related to donor choice (KIR ligand incompatibility, HLA, cell dose, and others) and transplantation (conditioning and GVHD prophylaxis regimens). Dr. Rocha and his colleagues have noted donor-versus-recipient natural killer (NK) cell alloreactivity which has been shown to be a possible beneficial effector in cord blood transplant for AML. Patients and donors were categorized according to their degree of KIR-ligand compatibility in the graft-versus-host direction by determining whether or not they expressed HLA-C group 1 or 2, HLA-Bw4 or HLA-A3/-A11. Donor killer cell immunoglobulin-like receptor (KIR)-ligand incompatibility is associated with decreased relapse incidence (RI) and improved leukemia-free survival (LFS) after single-unit unrelated UCBT from a KIR-ligand-compatible or -incompatible donor.

Investigators at University of Louisville identified a population of CXCR4(+), Oct-4(+), SSEA-1(+), Sca-1(+) lin(-) CD45(-) very small embryonic-like (VSEL) stem cells present in human cord blood (CB). These CB-isolated VSELS (CB-VSEL) are very small (3-5 microm) and highly enriched in a population of CXCR4(+)AC133(+)CD34(+)lin(-) CD45(-) CB mononuclear cells, possess large nuclei containing unorganized euchromatin and express nuclear embryonic transcription factors Oct-4 and Nanog and surface embryonic antigen SSEA-4. VSELS are quiescence and lack of teratoma formation, due to a unique DNA methylation pattern at some developmentally crucial imprinted genes, showing hypomethylation/erasure of imprints in paternally methylated and hypermethylation of imprints in maternally methylated ones. Therefore, we suggest that the proliferative / developmental potential of Oct4(+) VSELS is epigenetically regulated by expression of Oct4 and some imprinted genes, and postulate that restoring the proper methylation pattern of imprinted genes will be a crucial step for using these cells in regenerative medicine.

Faculty Background

Juliet Barker, MBBS (Hons), FRACP, is an Assistant Professor of Medicine in the Allogeneic Bone Marrow Transplantation Program at Memorial Sloan-Kettering Cancer Center in New York. Dr. Barker’s expertise is in donor-derived hematopoietic stem-cell transplantation, with a particular emphasis on the use of umbilical cord blood. Dr. Barker has studied the transplantation of two cord blood units from different donors (known as double-unit
transplantation) after either high-dose or non-myeloablative conditioning. This has served to extend transplant access to many older children and adult patients. Dr. Barker is now studying double unit biology with laboratory colleagues at MSKCC. These studies should ultimately lead to improved understanding of double unit transplantation.

Mariusz Z. Ratajczak, M.D., Ph.D, D.Sci d.hc is the Henry and Stella Hoenig Endowed Chair in Cancer Biology and the Director of the Developmental Biology Research Program at the University of Louisville’s James Graham Brown Cancer Center. He is an internationally known investigator in the field of adult stem cell biology. His 2005 discovery of embryonic-like stem cells in adult tissues has the potential to revolutionize the field of regenerative medicine. This discovery provides an avenue to guide the development of new treatments for cancer, heart disease, eye disease, diabetes and neurodegenerative disorders.

Among Dr. Ratajczak’s prestigious awards are the 2008 President’s Award for Outstanding Scholarship, Research and Creativity from the University of Louisville, the 2008 distinguished recipient of the 2008 Cancer Researcher of the Year, the 2007 Mosaic Award from Jewish Family and Vocational Service, the 2006 Award in Medicine and Biology from the Foundation for Polish Sciences (highest scientific award in Poland), the 2004 Individual Award from the Polish Ministry of Health for Scientific Achievements and the 2002 Chad Kopple Spirit Award from the Leukemia and Lymphoma Society. He is editor-in-chief of the Central European Journal of Biology, associate editor of the Experimental Hematology, section editor for the journal Leukemia and consulting editor in the Journal of Clinical Investigation. He is also a member of the Editorial Boards of other distinguished journals including Journal of Cellular and Molecular Medicine, Stem Cells, and Journal of Applied Genetics. He has published numerous books peer reviewed publications and is a frequent speaker at conferences worldwide. Dr. Ratajczak has been elected as a foreign member of the Polish Academy of Art and Sciences and is also a member of the International Society of Experimental Hematology, American Society for Cancer Research and American Society of Hematology. Most recently, Dr. Ratajczak was honored with the degree, doctoris honoris causa, from the Medical University of Silesia, Katowice, Poland.

Vanderson Rocha, MD, graduated in medicine in Brazil and in 1994, with a fellowship from the “Colleges de Medecine des Hopitaux de Paris” went to the Hôpital St. Louis (Paris) to train in the clinical aspects of stem cell transplantation under the direction of Prof. E. Gluckman. There, Dr. Rocha became involved with the Cord Blood Transplant Group
(Eurocord) and, since 1996, he has been the clinical coordinator of this successful project supported by the European Blood and Marrow Transplant Group (EBMT) and by the grants of the European Union.

Concurrently, Dr. Rocha carried-out basic research related to the biology of hematopoietic cells and biotechnological therapeutics. He obtained his PhD from the University of Paris in 2001. In 2004 he was elected by European transplant centers as a chairman of the Acute Leukemia Working Party of the EBMT. Dr. Rocha was an invited professor of the Medical College of Wisconsin, USA, conducting collaborative studies between Eurocord and CIBMTR, from 2007 to 2008. His current field of interest is the clinical research on the aspects of hematopoietic stem cell transplantation (cord blood, acute leukemia, gene polymorphisms). He has published more than 150 papers in journals such as the New England Journal of Medicine, Lancet, Blood, JCO, Leukemia, British Journal of Hematology, Bone Marrow Transplantation, Hematologica, Experimental Hematology and Biology Blood and Marrow Transplantation.

Mary J. Laughlin, MD, is an Associate Professor of Medicine and Pathology in the Division of Hematology / Oncology at Case Western Reserve University and her clinical practice is focused on unrelated umbilical cord blood transplantation in adult hematmy patients. Dr. Laughlin’s investigational and clinical trial work with innovative therapeutic strategies for the treatment of hematologic diseases using cord blood in adult transplant has resulted in multiple peer-reviewed publications including: the Journal of Clinical Oncology, Experimental Hematology, Blood, British Journal of Haematology, and the New England Journal of Medicine. Over the past 2 years, Dr. Laughlin has served as President of ISCT and will now assume the role of ISCT Chairman of the Board.
HOTEL FLOORPLAN

Room 1: Salon 1
Room 2: Salon 2
Room 3: Salon 3
Room 4: Salon 4
Room 5: Salon 5
Room 6: Salon 6
Room 7: Salon 7
Room 8: Salon 8
Room 9: Salon 9
Room 10: Salon 10
Room 11: Franklin Room
Room 12: Philadelphia Ballroom
Room 13: Independence Ballroom
Room 14: Freedom Ballroom
Room 15: Liberty Ballroom
Room 16: Liberty Ballroom Foyer
Room 17: Horizons Rooftop Ballroom
17th ISCT ANNUAL MEETING

MAY 18 – 21, 2011
De Doelen Congress Center
ROTTERDAM, THE NETHERLANDS

Submit an Abstract • Propose a Session •
Recommend a Speaker • Reserve your Exhibit
Space • Plan your Marketing and Advertising •
Book your Corporate Symposium or Tutorial

International Society for Cellular Therapy
ISCT

www.celltherapysociety.org