WELCOME FROM THE MEETING HOST

On behalf of the Pearlman School of Medicine at the University of Pennsylvania and the ASFA Regional Meeting Organizing Committee, I warmly welcome you to the 2nd ASFA Regional Meeting.

The Organizing Committee has put together a one day program that we hope will appeal to all apheresis practitioners. We have chosen topics and expert speakers that cover a wide range of medical disciplines in which apheresis medicine is important for patient care. Philadelphia was chosen to provide convenient access and proximity for a large number of centers located along the east coast.

It is our goal that attendees come to Philadelphia to learn from these lectures, and from each other, in the intimate setting of a one day, single session meeting focused on apheresis medicine. I look forward to seeing you during the meeting.

Bruce Sachais, MD, PhD
Conference Host

WELCOME FROM THE ASFA PRESIDENT

On behalf of the Board of Directors and myself, I welcome you to the 2nd Regional Meeting of the American Society for Apheresis at the University of Pennsylvania (Biomedical Research Building).

As you can see from the meeting program and the invitation from Dr. Sachais, you are embarking on an exciting educational and networking opportunity in the world of apheresis. This one day event is designed to appeal to all apheresis practitioners. The city of Philadelphia with its rich history and location close to several major metropolitan areas, provides you and our other delegates the ideal backdrop to have a meaningful experience to exchange ideas, meet other colleagues, and most importantly, learn about apheresis.

If you are not already an ASFA member, I urge you to approach the Regional Meeting Organizing Committee, Dr. Sachais, other ASFA members in attendance, and/or the ASFA Registration Desk to discuss the exciting benefits offered to the ASFA membership. ASFA represents a broad range of healthcare professionals from diverse fields which employ apheresis technology in medical practice. Membership in ASFA is a great way to stay involved and contribute to the field.

I also want to extend our thanks to our exhibitors including QBC Diagnostics, Terumo BCT, Fenwal, and CSL Behring, and our CME sponsor the Perelman School of Medicine at the University of Pennsylvania, who helped make this Regional Meeting possible.

I hope that you will enjoy the 2nd ASFA regional Meeting and look forward to future Regional Meetings!

Nick Bandarenko, MD

CME Blurb Here
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Sincerely,

Nick Bandarenko, MD
ASFA President
Target audience
The target audience for this program is physicians, scientists and allied health professionals working in apheresis, including but not limited to hematology, medical oncology, neurology, rheumatology, nephrology, hematology, and gastroenterology.

Learning objectives
After participating in this CME activity, participants should be able to:

- Describe the general practice of apheresis medicine and its role in the treatment of diseases in a variety of organ systems
- Describe the role of lipid apheresis in the care of hypercholesterolemic patients
- Describe the emerging field of personalized cellular therapy and the importance of good manufacturing practices in the manufacturing of these products

Accreditation and Designation of Credit
Please pick up and complete an evaluation form and Credit Request Form from the ASFA Regional Meeting Registration Desk to obtain your respective credit certificates.

CME
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 Perelman School of Medicine at the University of Pennsylvania and American Society for Apheresis. The Perelman School of Medicine at the University of Pennsylvania is accredited by the ACCME to provide continuing medical education for physicians.

The Perelman School of Medicine at the University of Pennsylvania designates this live activity for a maximum of 8 AMA PRA Category 1 Credits™. Physicians should claim only the credit commensurate with the extent of their participation in the activity.

In order to receive your CME certificate in the mail from the Perelman School of Medicine at the University of Pennsylvania, you must complete the Post-test, Evaluation form and Credit Request Form. Turn in all forms to the registration desk before you leave the conference.

CEU
CEUs have been approved by ASFA along with the California Board of Registered Nursing. A maximum of 8 CEUs can be earned through this educational activity (ASFA Provider Number CEP 14122). Completion of the online evaluation survey is required for all conference delegates which, upon completion, will allow you to receive your CEU credits. This survey must be completed within one month after the meeting in order to receive your credits. Electronic CEU certificates will be e-mailed within 6-8 weeks following the meeting.
CMLE

This continuing medical laboratory education activity is recognized by the American Society for Clinical Pathology (ASCP) as meeting the criteria for a maximum number of 8 CMLE credits. ASCP CMLE credit hours are acceptable to meet the continuing education requirement for the ASCP Board of Registry Certification Maintenance Program. (ASFA Provider Number 261-12-11). Completion of the online evaluation survey is required for all conference delegates which, upon completion, will allow you to receive your CMLE credits. This survey must be completed within one month after the meeting in order to receive your credits. Electronic CMLE certificates will be e-mailed within 6-8 weeks following the meeting.

Faculty

ASFA REGIONAL MEETING 2013 SPEAKERS
Unless indicated otherwise, speakers are from the University of Pennsylvania

Nicole Aqui, MD, Assistant Professor, Department of Pathology and Laboratory Medicine, University of Pennsylvania Health System & Director of Apheresis Services, Division of Transfusion Medicine & Therapeutic Pathology

Vishesh Chhibber, MD, Associate Medical Director, Transfusion Medicine, UMass Memorial Medical Center & Assistant Professor of Medicine & Pathology, University of Massachusetts Medical School, Boston, MA

Lee R. Goldberg, MD, MPH, FACC, Associate Professor of Medicine, University of Pennsylvania & Medical Director of Heart Failure and Cardiac Transplant Program, Perelman Center for Advanced Medicine

Leah L. Irwin, RN, MSN, CRNP, Nurse Manager, Apheresis, Infusion and Donor Services, Hospital of the University of Pennsylvania

Lita Jamensky, RN, BSN, Apheresis Specialist, Hospital of the University of Pennsylvania

Haewon Kim, MD, Medical Director of Apheresis Services, Children’s Hospital of Philadelphia & Associate Professor of Pediatrics, Perelman School of Medicine at the University of Pennsylvania

Doug Krampel, RPh, BSPharm, Chief Operations Officer, Krampel and Associates, LLC

Bruce Levine, PhD, Professor in Cancer Gene Therapy, Hospital of the University of Pennsylvania

Melissa Murter, RN, Apheresis Nurse, Hospital of the University of Pennsylvania

Alain H. Rook, MD, Professor of Dermatology, Hospital of the University of Pennsylvania

Bruce Sachais, MD, PhD, Associate Professor of Pathology and Laboratory Medicine, Hospital of the University of Pennsylvania

Mark E. Williams, MD, FACP, FASN, Associate Professor of Medicine, Harvard Medical School & Co-Director of Dialysis, Beth Israel Deaconess Medical Center
ASFA 2011 REGIONAL MEETING ORGANIZING COMMITTEE

Bruce Sachais, MD, PhD, Associate Professor, Department of Pathology and Laboratory Medicine, University of Pennsylvania

Jill Adamski, MD, PhD, Assistant Professor, Department of Pathology, University of Alabama at Birmingham

Nicole Aqui, MD, Assistant Professor, Department of Pathology and Laboratory Medicine, University of Pennsylvania & Director of Apheresis Services, Division of Transfusion Medicine & Therapeutic Pathology

Nicholas Bandarenko, MD, Director, Transfusion Services, Duke University

Leah L. Irwin, RN, MSN, CRNP, Nurse Manager, Apheresis, Infusion and Donor Services, Hospital of the University of Pennsylvania

Eileen Galvin-Karr, RN, BSN, HP(ASCP), Supervisor, Blood Donor Center, University of Massachusetts

Joseph Schwartz, MD, Director, Transfusion Medicine & Cellular Therapy, Columbia University Medical Center, New York Presbyterian Hospital

Disclosures

It is the policy at the Perelman School of Medicine at the University of Pennsylvania for individuals who are in a position to control the content of an educational activity to disclose to the learners all relevant financial relationships that they have with any commercial interest that provides products or services that may be relevant to the content of this continuing medical education activity. For this purpose we consider relationships of the person involved in the CME activity to include financial relationships of a spouse or partner.

The intent of this policy is not to prevent expert faculty with relevant relationship(s) with commercial interest(s) from involvement in the CME but rather to ensure that Penn CME-certified activities promote quality and safety, are effective in improving medical practice, are based on valid content, and are independent of control from commercial interests and free of commercial bias. Peer review of all content was conducted for all faculty presentations whose disclosure information provided to the Penn Office of CME was found to contain relationships that created a conflict of interest relative to the topic of their presentation. In addition, all faculty were instructed to provide balanced, scientifically rigorous and evidence-based presentation.

The staff in the Office of CME at the Perelman School of Medicine at the University of Pennsylvania (Mila Kostic, FACHEP and Belinda Rose), the listed planning committee members (Jill Adamski, MD, PhD; Nick Bandarenko, MD; CRNP; Eileen Karr, RN, BSN, HP[ASCP]; Joseph Schwartz, MD) and the peer reviewer, Zalman Agus, MD, Associate Dean for Continuing Medical Education, have reported that they have no relevant financial relationships with any commercial interests related to the content of this educational activity.

The following individuals have disclosed that they have no relevant financial relationships with any commercial interests related to the content of this educational activity.

Nicole Aqui, MD, PhD
Vishesh Chhibber, MD
Leah L. Irwin, RN, MSN
Lita Jamensky, RN

Haewon Kim, MD
Melissa Murter, RN
Alain Rook, MD
Mark Williams, MD
The following faculty has reported the listed relevant financial relationships with commercial interests related to the content of this educational activity.

<table>
<thead>
<tr>
<th>FACULTY NAME</th>
<th>NAME OF COMMERCIAL INTEREST</th>
<th>RELATIONSHIP</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lee Goldberg, MD, MPH</td>
<td>Thoratec Corp, Medtronic</td>
<td>Consultant</td>
</tr>
<tr>
<td>Doug Krampel, RPh</td>
<td>Abbott</td>
<td>Previously employed by Abbott</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(ended April 1, 2013)</td>
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<tr>
<td>Bruce Levine, PhD</td>
<td>Novartis, Adaptimmune</td>
<td>Grants/research support</td>
</tr>
<tr>
<td>Bruce Sachais, MD, PhD</td>
<td>Kaneka Pharma America</td>
<td>Speaker's Bureau licensing</td>
</tr>
<tr>
<td></td>
<td>Sangamo</td>
<td>Grants/research support</td>
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Relevant Financial Relationships: Financial relationships are those relationships in which the individual benefits by receiving a salary, royalty, intellectual property rights, consulting fee, honoraria, ownership interest (e.g. stocks, stock options or other ownership interest, excluding diversified mutual funds), or other financial benefit. Financial benefits are usually associated with roles such as employment, management position, independent contractor (including contracted research), consulting, speaking and teaching, membership on advisory committees or review panels, board membership and other activities from which remuneration is received or expected.

INVESTIGATIONAL AND/OR OFF-LABEL USE OF COMMERCIAL PRODUCTS AND DEVICES
The Perelman School of Medicine at the University of Pennsylvania requires all faculty to disclose any planned discussion of an investigational and/or off-label use of a pharmaceutical product of device within their presentation. Participants should note that the use of products outside FDA-approved labeling should be considered experimental and are advised to consult current prescribing information for approved indications.

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<thead>
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<tbody>
<tr>
<td>Lee Goldberg, MD, MPH</td>
<td>Plasmapheresis</td>
<td>Desensitization and rejection treatment of solid organ transplant recipients</td>
</tr>
<tr>
<td>Bruce Levine, PhD</td>
<td>Activated T cells, Gene Redirected T cells</td>
<td>Investigational use in infection and malignancy</td>
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# Final Program

**Friday November 15, 2013**

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
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<tbody>
<tr>
<td>8:00 AM – 8:30 AM</td>
<td>Registration and Continental Breakfast</td>
</tr>
<tr>
<td>8:30 AM – 8:45 AM</td>
<td>Welcome to the University of Pennsylvania</td>
</tr>
</tbody>
</table>
| Bruce Sachais, MD, PhD  
David B. Roth, MD, PhD |
| 8:45 AM – 9:15 AM | Primer on Apheresis Medicine                                                                |
| Nicole Aqui, MD, PhD |
| 9:15 AM – 10:15 AM| The Role of Therapeutic Apheresis in Neurological Disorders                                  |
| Vishesh Chhibber, MD |
| 10:15 AM – 10:45 AM| BREAK WITH EXHIBITS                                                                        |
| 10:45 AM – 11:45 AM| Solid Organ Transplant                                                                     |
| Lee R. Goldberg, MD, MPH, FACC  
Plasmapheresis has been used in three scenarios in solid organ transplant: As desensitizing tool to allow for timely transplant, expansion of the donor pool and reduce wait list mortality, peri-transplant to avoid hyperacute rejection and for the treatment of antibody mediated rejection following transplant. In each application, plasmapheresis is coupled with other immune modulating therapies to prevent antibody rebound and to allow for a durable result. Unfortunately, there has not been much standardization around the intensity, frequency and adjuvant immune modulating therapies and therefore definitive recommendations are lacking. New multicenter trials are underway but larger, more comprehensive studies are necessary to understand the critical role of plasmapheresis in solid organ transplant. |
Friday November 15, 2013 Continued...

<table>
<thead>
<tr>
<th>Time</th>
<th>Session Description</th>
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| 11:45 AM – 12:45 PM | **Erythrocytapheresis in Hematologic Diseases**  
Haewon Kim, MD  

RBC transfusion is the first-line adjunct therapy in acute and chronic complications of SCD. In severe anemia, simple transfusion is the best transfusion method to improve the oxygen-carrying capacity of blood. In acute ischemic stroke, acute chest syndrome, acute hepatic crisis, or other life- or organ-threatening complications, erythrocytapheresis is preferred, as the HbS concentration is rapidly reduced by replacing RBCs containing HbS with normal RBC without causing hyperviscosity or volume overload. However, the advantages of erythrocytapheresis over simple transfusion have not been documented through randomized controlled clinical trials. Long-term erythrocytapheresis has the distinctive advantage of preventing or markedly reducing transfusional iron accumulation.

In this presentation, current guidelines on the use of erythrocytapheresis in various complications of SCD will be discussed using the evidence-based ASFA categories. The pros and cons of erythrocytapheresis as well as simple transfusion vs. erythrocytapheresis will also be discussed. Finally, the technical challenges in performing erythrocytapheresis and modifications of the standard exchange procedure in small children will be addressed. |
| 12:45 PM – 1:30 PM | **LUNCH WITH EXHIBITS**                                                                 |
| 1:30 PM – 2:30 PM  | **Lipoprotein Apheresis Panel Discussion**  
Melissa Murter, RN, Leah L. Irwin, RN, MSN, CRNP, Lita Jamensky, RN, BSN. Bruce Sachais, MD, PhD, Nicole Aqui, MD, PhD, Doug Krampel, RPh, BPharm  

Lipoprotein apheresis refers to the selective removal of atherogenic lipoproteins (i.e. LDL, Lp(a)) from the plasma or blood of patients. Patients who undergo lipoprotein apheresis typically have genetic disorders that significantly elevate these lipoproteins and place them at increased risk for cardiovascular disease.

This panel discussion will begin with an introduction to lipoprotein apheresis including indications and basics of methodologies available in the US. One of our longstanding lipoprotein apheresis patients will then share his story and discuss lipoprotein apheresis from the patient perspective. We will then open up an interactive discussion with audience members, who can ask questions of our panel of nurses, physicians and patient. |
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| 2:30 PM – 3:30 PM | **Use of Photopheresis in a multimodality approach to therapy of Sezary syndrome**  
Alain Rook, MD  
Sezary syndrome, characterized by erythoderma and circulating malignant T-cells is a lymphoproliferative disorder of skin trafficking central memory T-cells. This condition is highly responsive to immune modulatory therapies. The use of a highly effective multimodality approach involving immune potentiation along with photopheresis and skin directed therapies will be reviewed. |
| 3:30 PM – 4:00 PM | **BREAK WITH EXHIBITS**                                               |
| 4:00 PM – 5:00 PM | **Tumor Immunity by Design– Ex-vivo Modification of Apheresis Derived T Cells for Therapy of Leukemia**  
Bruce Levine, PhD  
T lymphocytes collected by leukapheresis can be activated, cultured, and endowed with novel functions ex vivo. We reported the use of gene transfer therapy to create “serial killer” T cells aimed at cancerous tumors. T cells were modified with a lentivirus to express a chimeric receptor expressing an anti-CD19 antibody to redirect T cells against CD19+ (B cell) leukemia cells in three CLL patients. Ex vivo modified cells can engraft, significantly expand in vivo by >1000 fold. More than two years later, two of those patients are in complete molecular remission. Additional adult chronic lymphocytic leukemia and pediatric acute lymphoblastic leukemia patients have recently been successfully treated. |
| 5:00 PM – 6:00 PM | **Renal Apheresis 2013: Indications and Therapeutic Targets**  
Mark Williams, MD  
The most recent American Society for Apheresis (ASFA) guidelines include a growing list of category I indications for Therapeutic Plasma Exchange (TPE), with nine for renal diseases. These indications involve a diverse group of molecular targets. Examples of pathogenic target molecules for enlisting TPE in kidney disease range from auto- and allo-antibodies to endogenously produced complement components to immune complexes, permeability factors, and light chains. In this presentation, the clinical evidence supporting TPE for several key renal diseases will be reviewed. The principles of separation by TPE technology will be presented and applied to molecular targets which have been identified. Key controversies and gaps in knowledge regarding TPE for renal disease will be identified. Finally, a brief summary of the state of the science for renal apheresis will be presented. |
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<tr>
<td>6:00 PM – 6:10 PM</td>
<td><strong>Activities of the American Society for Apheresis</strong></td>
<td>Bruce Sachais, MD, PhD</td>
</tr>
<tr>
<td>6:10 PM – 6:15 PM</td>
<td><strong>Closing Remarks and Post-test</strong></td>
<td>Bruce Sachais, MD, PhD</td>
</tr>
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</table>

ASFA is an organization of physicians, scientists, and allied health professionals whose mission is to lead the field of apheresis through patient and donor care, research, education, and advocacy. ASFA represents a broad range of professionals involved in: donor apheresis, apheresis in transplantation, therapeutic apheresis, hematology, medical Oncology, neurology, rheumatology, nephrology, hepatology, gastroenterology, cardiology, and ophthalmology. The vision of ASFA is to be the pre-eminent forum for the dissemination of evidenced-based knowledge, introduction of new information, and the exchange of new ideas in the field of apheresis medicine. We will serve as the voice of investigators and practitioners to advance the development and delivery of programs and services in the field of apheresis medicine, benefiting patients, donors, and the general public. This presentation will discuss how you can become more involved with ASFA.
15th WAA Congress at the ASFA 2014 Annual Meeting

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APRIL 2-5, 2014

an international educational and networking forum for professionals in the field of apheresis medicine

www.apheresis.org