ASFA
American Society for Apheresis

WAA
World Apheresis Association

15th WAA Congress at the ASFA 2014 Annual Meeting

ACADEMIC PROGRAM

SAN FRANCISCO

HYATT REGENCY SAN FRANCISCO APRIL 2-5, 2014

ASFA & WAA JOINT *Conference*

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

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WELCOME FROM THE PRESIDENTS

On behalf of the American Society for Apheresis (ASFA) & World Apheresis Association (WAA) Board of Directors and members of the Organizing Committee, we would like to welcome you to the ASFA & WAA Joint Conference in San Francisco, California at the beautiful Hyatt Regency at Embarcadero Center. This conference is situated in the perfect location for our delegates to enjoy all of San Francisco's attractions, including Fisherman's Wharf, Alcatraz, and Union Square shopping.

The ASFA & WAA Organizing Committee has produced an outstanding program this year, with a comprehensive and diverse range of apheresis topics that showcase how apheresis is viewed around the globe. This year's program will give our members and non-members an international perspective on donor and therapeutic apheresis.

During the meeting, please take advantage of all the networking opportunities to meet with your colleagues, old and new, to strengthen bonds, and exchange thoughts and ideas. We encourage you to chat with the ASFA & WAA Board of Directors, Committee Chairs and ASFA Head Office Staff.

Finally, thank you for taking time out of your busy schedules to attend and enhance your knowledge of apheresis medicine at the ASFA & WAA Joint Conference. ASFA, the premier professional apheresis organization in this country and WAA, an umbrella organization for national and international apheresis societies, are dedicated to enhancing care in apheresis medicine through education and service.

Please accept our warmest welcome to the ASFA & WAA Joint Conference!

Nicholas Bandarenko III, MD
President 2013-2014
American Society for Apheresis (ASFA)

Hiroshi Tsuda, MD
President 2012-2014
World Apheresis Association (WAA)

WELCOME FROM THE CONFERENCE CHAIRS

On behalf of the ASFA & WAA Organizing Committee, ASFA Board of Directors, and WAA Board of Directors, we would like to extend a warm welcome to all delegates. This year's 15th WAA Congress is held at the ASFA 35th Annual Meeting in charming San Francisco at the Hyatt Regency Hotel. The hotel boasts beautiful architecture, panoramic views of the Embarcadero Waterfront, and a central location within walking distance to many famous attractions.

The Joint ASFA & WAA Organizing Committee has prepared a comprehensive scientific and educational program that includes speakers from all over the world. Their talks will discuss a broad range of apheresis topics. The program was designed to showcase the most current apheresis practices and to give our delegates a glance into how apheresis is performed across the globe. This year's meeting will provide you with an international perspective and networking platform to connect with colleagues.

Similar to past ASFA meetings, there will be three scientific and eight educational sessions. The Opening Combined Symposium on Thursday morning will highlight donor and therapeutic apheresis in Africa, Asia and South America. The Scientific Symposium on Friday morning will focus on apheresis research in North America, Europe and Asia. The Closing Combined Symposium on Saturday will give you a glance at the future of apheresis and will display some of the new applications of apheresis across the globe.

In addition to the scientific symposiums, we offer eight Education Sessions covering topics from apheresis training around the world, pediatric apheresis, research methods in apheresis, and regulatory challenges. The program also includes a Review Session to help you freshen up on basic apheresis topics, as well as a Graduate Medical Education Forum on Apheresis Medicine Training Around the World.

Every morning, from Thursday to Saturday, attendees can have Breakfast with the Experts to discuss cases and learn from each other. Similarly, the Networking Lunch allows delegates to exchange ideas with colleagues in the field of apheresis on Thursday. Throughout the meeting, please make an effort to visit and interact with our corporate sponsors and exhibitors who have come prepared to share their most current platforms, information, and tools. You should also visit the poster exhibit and talk directly to the more than 100 authors who will be excited to tell you of their research during the poster session on Thursday evening.

Please note that we welcome your thoughts, feedback and suggestions, in order to enhance the quality of our Society and our future meetings. Start planning to attend the 2015 ASFA Annual Meeting in early May in historic San Antonio, Texas!

Thank you for attending the ASFA & WAA Joint Conference this year! On behalf of the Organizing Committee, welcome to San Francisco!

We sincerely hope that you will enjoy this opportunity to learn, have fun and meet new colleagues!

Marisa B. Marques, MD
President-Elect, American Society for Apheresis (ASFA)
Co-Chair, ASFA & WAA Joint Meeting Organizing Committee

Hans Vrielink, MD
World Apheresis Association (WAA)
Co-Chair, ASFA & WAA Joint Meeting Organizing Committee

GENERAL INFORMATION

MEETING LOCATION

The ASFA & WAA Joint Conference events will take place at the Hyatt Regency Hotel in San Francisco, California. Please consult this program to determine the exact room or location of each event.

INCLUDED IN YOUR REGISTRATION FEE

Full-conference registered attendees receive:

- Access to the Welcome Reception
- Access to all Scientific and Education Sessions
- Access to all Abstract Sessions
- Access to Posters and Exhibits
- Access to the Abstract Poster Networking Event
- Conference Meals
- Annual Meeting Materials
- Final Program
- Abstract Issue of the Journal of Clinical Apheresis
- Delegate Bag

Exhibit-only attendees receive:

- Access to the Exhibit Hall
- Conference Meals Served in the Exhibit Hall

Registered Guests receive:

- Access to the Welcome Reception
- Access to the Abstract Poster Networking Event

REGISTRATION

The Registration Desk is located in the **Grand Foyer.**

Registration hours are as follows:

- Tuesday, April 1, 2014 – 3:00pm – 6:00pm
- Wednesday, April 2, 2014 – 7:00am – 6:00pm
- Thursday, April 3, 2014 – 7:00am – 6:00pm
- Friday, April 4, 2014 – 7:00am – 5:30pm
- Saturday, April 5, 2014 – 7:00am – 12:30pm

SPEAKER SERVICES CENTER

The Speaker Services Center, located in **Plaza**, is equipped with laptop PC computers, for all faculty members to review their presentations before their sessions. To better serve you, your presentation should be uploaded at least 24 hours prior to your session, and can be previewed up to 3 hours prior to your session.

The Speaker Services Center hours are as follows:

- Tuesday, April 1, 2014 - 3:00pm – 6:00pm
- Wednesday, April 2, 2014- 7:00am – 3:00pm
- Thursday, April 3, 2014 - 8:00am – 4:00pm
- Friday, April 4, 2014 - 8:00am – 4:00pm
- Saturday, April 5, 2014 - 7:00am – 11:00am

Endorsed by the American Society of Nephrology (ASN)

CONTINUING EDUCATION CREDIT INFORMATION

ACCREDITATION AND CREDIT DESIGNATION

Target Audience

This activity has been designed to meet the educational needs of physicians, allied health professionals and medical students involved with donor and therapeutic apheresis. The specialties involved include, but are not exclusive of pathology, hematology, immunology, nephrology, pediatrics, and rheumatology.

Statement of Need/Program Overview

ASFA is thrilled to be partnering with the World Apheresis Association (WAA) for the ASFA & WAA Joint Conference. WAA is an umbrella organization for national and international professional societies devoted to apheresis. This partnership promises to bring an exciting international representation to the conference! The ASFA & WAA Joint Conference is the only one of its kind that offers a focus on apheresis medicine in both the donor and patient settings. It is a key educational and networking event for physicians, scientists, and allied health professionals in the field of apheresis.

The ASFA & WAA Joint Conference will be ASFA's 35th conference. Each year, ASFA takes the feedback it receives from attendees to build a relevant program for the next year. The need for this meeting was determined through an analysis of the evaluation forms from the ASFA 2013 Annual Meeting as well as through ongoing feedback from the Society's over 700 members. The results of these evaluations clearly illustrate that attendees find the program useful and necessary for their professional development. The ASFA & WAA Organizing Committee used these results, as well as new developments in research, technology, and clinical experience, to plan the program for the 2014 ASFA & WAA Joint Conference.

ASFA & WAA expect to attract over 500 apheresis professionals to the 2014 ASFA & WAA Joint Conference, including MD and/or PhD clinicians and scientists, as well as allied health professionals who are involved in the field of apheresis medicine.

Educational Objectives

After completing this activity, the participant should be better able to:

- Explain the principles of evidence-based knowledge as they apply to donor and therapeutic apheresis
- Describe the latest scientific, clinical, and technological advances in donor and therapeutic apheresis
- Describe the general practice of apheresis medicine and its role in the donor and patient setting

CME

Physicians

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 AABB and the American Society for Apheresis (ASFA). AABB is accredited by the ACCME to provide continuing medical education for physicians (Provider number 0000381). AABB designates this educational activity for a maximum of 28.5 hours of Category 1 credit toward the AMA Physicians Recognition Award. Each physician should claim those credits that he/she actually spent in the activity.

ACADEMIC PROGRAM

Live Learning Center

After the conference, attendees will receive an email from AABB regarding the CME/CE certificates for this event. The e-mail will include instructions on how to print your CME/CE certificates. To access the Live Learning Center, visit www.aabb.org>Professional Development>Live Learning Center. Please note that attendees completing the CME evaluation form is AABB's way of verifying attendance at the event.

Faculty Disclosure

Current guidelines state that participants in CME activities should be made aware of any affiliation or financial interest that may affect a speaker's presentation and/or discussion of off-label therapies. Each speaker was asked to complete a Faculty Disclosure form. Written faculty disclosures will be provided to participants in the program. Please report any undisclosed information on your evaluation form.

CEU

ASFA is approved by the California Board of Registered Nursing, Provider Number 14122, as a provider of continuing nursing education programs. ASFA designates this event for a maximum of 28.5 contact hours.

CMLE

This continuing medical laboratory education activity is recognized by the American Society for Clinical Pathology (ASCP) as meeting the criteria for 28.5 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.

ACKNOWLEDGEMENT

This activity was made possible by unrestricted educational grants from Amgen, Alexion Pharmaceuticals, Fresenius Kabi, Octapharma, Sanofi Oncology, Terumo BCT and Therakos Inc.

INSTRUCTIONS FOR CREDIT

Continuing education credits are offered for the Apheresis Review Session, Scientific Symposia, Education Sessions, the Francis S. Morrison, MD Memorial Lecture, the Cohn de Laval Award Lectureship and Plenary Abstract Session. We regret that it is not possible to provide credit for any other abstract sessions and the Networking Lunch.

In order to receive credit, participants must attend at least one session and fill out the record of attendance and evaluation forms. Certificates will be emailed or mailed within 6-8 weeks of the program.

DISCLOSURE OF CONFLICTS OF INTEREST

Faculty Name	Name of Commercial Interest	Relationship
Bruce Sachais	Kaneka Pharma	Honoraria
Anand Padmanabhan	Terumo BCT	Grants or Research Support
William F. Pendergraft III	Alexion Pharmaceuticals	Grants or Research Support
Edwin Burgstaler	Fenwal Inc. & Terumo BCT	Consultant
Fevzi Altuntas	Sanofi (Turkey)	Consulting or Travel Support

AWARDS

Francis S. Morrison Lecture Award

The Francis S. Morrison Lecture is an annual keynote lecture at the American Society for Apheresis Annual Meeting. The lecture has been created to keep alive and honor the memory of Francis S. Morrison, MD, a true pioneer in apheresis medicine and a leading apheresis professional. The lecture and award was created by Dr. Robert Weinstein during the 21st Annual Meeting in Las Vegas, NV, in 2000, and the first lecture was held at the ASFA Meeting in 2002.

The Francis S. Morrison Lecture Award is bestowed upon a member of the Society who has made major contributions to the field of apheresis medicine and an apheresis professional who has made a lasting difference in the field, preferably at the national level.

Dennis Goldfinger, MD
David Geffen School of Medicine at UCLA, USA

Cohn de Laval Award Lectureship

The Cohn de Laval Award is the WAA's most prestigious award, designed to recognize individuals who have made major contributions to the discipline of apheresis. The award, a bronze-cast engraved medal, is presented at the WAA Congress by the WAA President. Individuals who have made significant scientific contributions to the discipline of apheresis or who have given outstanding service to the WAA or the discipline, are eligible for the award.

Jeane P. Hester, MD
M.D. Anderson Cancer Center, Houston, USA
To be accepted on behalf of Dr. Hester by April G. Durett, MSc

SOCIETY AWARDS

Lecturer Award

The Lecturer Award of the American Society for Apheresis is bestowed upon a member of the Society who has consistently contributed to the Society as a speaker, teacher, or mentor.

Edward Snyder, MD
Yale New Haven Hospital, USA

Presidential Award

The Presidential Award of the American Society for Apheresis is bestowed upon a member of the Society who has consistently made major contributions to, and performed outstanding service for the Society over a number of years.

Jeffrey L. Winters, MD
Mayo Clinic, USA

SHS Award

The Society for Hemapheresis Specialists was the first national organization in the USA which provided a forum for the professional development of technical specialists in the field of apheresis. In the ensuing decades since the founding of SHS, its members contributed to the maturation of apheresis as a medical specialty and to the growth of the American Society for Apheresis into the principal platform for organized apheresis activities in North America. This award commemorates the pioneering efforts of SHS which have culminated in the high standards and sophistication which characterize the field of American apheresis. Its recipient is a hemapheresis specialist who has demonstrated sincere commitment to apheresis and who has emerged as a leader and role model in the field.

Lee Clough, BSN, RN, HP(ASCP)
NeoStem, USA

ACADEMIC PROGRAM

BEST ABSTRACT AWARDS

Allied Health Award

This award is given to the primary author of an outstanding abstract submitted by an allied health professional who is a member of ASFA. This year's recipient abstract is *"The Effects of Adjusting the Mononuclear Cell Sense Level to Improve Automation of Fenwal Amicus Hematopoietic Progenitor Cell Collections".*

Edwin Burgstaler, MT, HP(ASCP)
Mayo Clinic, USA

Donor Apheresis Abstract Award

This award is given to the primary author of an outstanding Donor Apheresis-related abstract. This year's recipient abstract is *"Use of the Spectra Optia Apheresis Device for Granulocyte Collection Results in a Higher Collection Efficiency than the Cobe Spectra in a Comparative, Prospective, Randomized, Crossover, Three-Center Trial"*.

Anand Padmanabhan, MD, PhD
Blood Center of Wisconsin, USA

Junior Investigator Award

This award is given to the primary author of an outstanding abstract submitted by a junior investigator who is a member of ASFA. This year's recipient abstract is *"Rapid ADAMTS13 Availability Impacts Treatment for Microangiopathic Hemolytic Anemia and Thrombocytopenia"*.

Matthew Katus, MD
Dartmouth-Hitchcock Medical Center, USA

Therapeutic Apheresis Best Abstract Award

This award is given to the primary author of an outstanding Therapeutic Apheresis-related abstract. This year's recipient abstract is *"Impact of Therapeutic Plasma Exchange on Long-Term Health Outcomes of Patients with Severe ANCA Vasculitis"*.

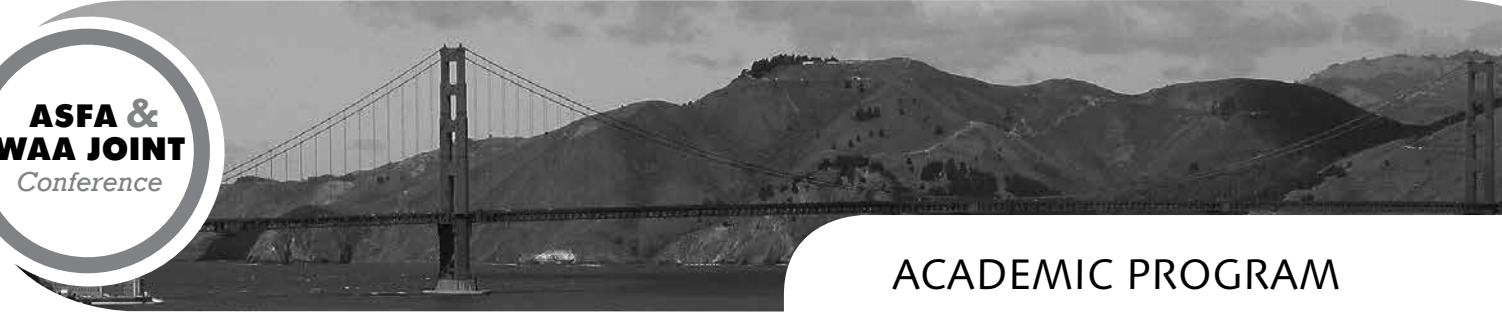
William Pendergraft, MD, PhD
Massachusetts General Hospital, USA

Best Donor Poster Abstract Award

Fifteen poster abstracts are identified each year to participate in this award. A sub-group of the Abstract Committee will judge the posters for quality and content and a winner will be identified based on the highest score. The winner will be announced during the Conference.

Best Therapeutic Poster Abstract Award

Fifteen poster abstracts are identified each year to participate in this award. A sub-group of the Abstract Committee will judge the posters for quality and content and a winner will be identified based on the highest score. The winner will be announced during the Conference.



PROGRAM ASFA AND WAA 2014 JOINT CONFERENCE

TUESDAY, APRIL 1, 2014

10:00AM – 5:00PM	**ASFA BOARD OF DIRECTORS MEETING** (by invitation only)	*Regency A*
3:00PM – 6:00PM	Meeting Registration	*Grand Foyer*
5:00PM – 6:00PM	**ASFA BOARD OF DIRECTORS AND SPONSORS MEETING** (by invitation only)	*Regency A*
7:00PM – 10.00PM	**ASFA BOARD OF DIRECTORS AND WAA LEADERSHIP DINNER** (by invitation only)	*Offsite*

WEDNESDAY, APRIL 2, 2014

7:00AM – 6:00PM	Meeting Registration		*Grand Foyer*
7:30AM – 5:00PM	**APHERESIS REVIEW SESSION** (Pre-registration with ASFA required) The Apheresis Review Session will provide a basic overview of the theory and applications of apheresis medicine. Experts in the field will provide a broad overview of each of the topics and participants will have an opportunity to work with case studies. Morning Chairs: **Betty Kong,** *MT, HP(ASCP)* **(USA)** & **Christine Fernandez-Roig,** *RN, MSN, OCN* **(USA)** Afternoon Chairs: **Zoe Morelli,** *RN* **(USA)** & **Jenny Hansen,** *RN* **(USA)**		*Grand A*
	7:30AM – 7:45AM	Welcome	**Betty Kong,** *MT, HP(ASCP)* **(USA)** & **Christine Fernandez-Roig,** *RN,MSN, OCN* **(USA)**
	7:45AM – 8:45AM	Apheresis Instrumentation & Trouble-Shooting	**Ed Burgstaler,** *MT, HP(ASCP)* **(USA)**
	8:45AM – 9:45AM	Achieving Best Outcomes: Optimizing Care for Pediatric Apheresis Patients – Pediatric Case Studies	**Christine Gallagher,** *RN, BSN* **(USA)**, **Alicia Garcia,** *RN, HP(ASCP)* **(USA)** & **Emily McLain,** *RN, BSN* **(USA)**
	9:45AM – 10:15AM	Break	*Grand A*
	10:15AM – 11:00AM	Clinical Decision Making for ASFA Category I, II, III, IV, and Uncategorized Indications	**Jeffrey Winters,** *MD* **(USA)**
	11:00AM – 11:15AM	Therapeutic Applications of Apheresis: A Nurse's Perspective	**Christina Anderson,** *RN, BSN, HP(ASCP)* **(USA)**
	11:15AM – 12:15PM	Therapeutics 101	**Zoe Morelli,** *RN* **(USA)**
	12:15PM – 1:30PM	Apheresis Equipment Fair and Lunch	*Grand A*

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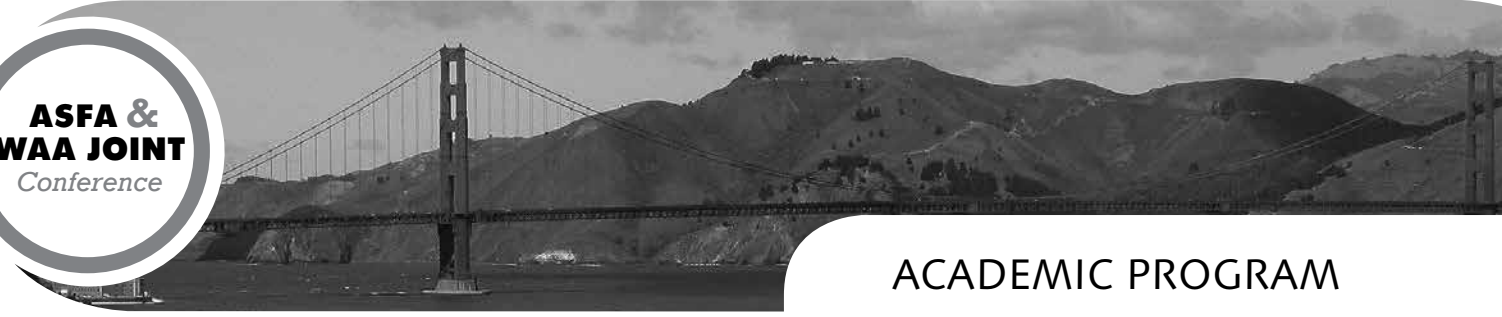
WEDNESDAY, APRIL 2, 2014

7:30AM – 5:00PM	1:30PM – 2:00PM	Calculations for Apheresis	Marleen Marianne Neyrinck, *RN* **(Belgium)**
	2:00PM – 2:30PM	Complications of Apheresis	Jill Adamski, *MD, PhD* **(USA)**
	2:30PM – 3:30PM	Donor Eligibility/Case Studies	Margaret Hannan, *LPN, AT(ASCP)* **(USA)**
	3:30PM – 3:45PM	Break	*Grand A*
	3:45PM – 4:45PM	IV Access – Standard and Guidelines Across the Care Continuum	Carol Evans, *RN, BSN, HP(ASCP)* **(USA)**
	4:45PM – 5:00PM	Wrap Up	Zoe Morelli, *RN* **(USA)** & Alicia Garcia, *RN, HP(ASCP)* **(USA)**
8:00AM – 11:00AM	**CORPORATE BREAKFAST SYMPOSIUM**		*Bayview A & B*
8:00AM – 7:00PM	**FACT CELLULAR THERAPY COLLECTION WORKSHOP** (Pre-registration with FACT required)		*Seacliff D*
12:00PM – 3:00PM	**CORPORATE LUNCH SYMPOSIUM**		*Bayview A & B*
12:00PM – 2:00PM	**JOURNAL OF CLINICAL APHERESIS EDITORIAL BOARD MEETING** (by invitation only)		*Regency A*
2:00PM – 4:00PM	**WAA BOARD OF DIRECTORS MEETING** (by invitation only)		*Regency A*
3:00PM – 6:00PM	**TOUR OF CHILDREN'S HOSPITAL AND RESEARCH CENTER OAKLAND FOR INTERNATIONAL DELEGATES** (Pre-registration with ASFA Required)		*Offsite*
4:00PM – 6:00PM	**TRANSFUSION AND APHERESIS SCIENCE EDITORIAL BOARD MEETING** (by invitation only)		*Regency A*
6:00PM – 8:00PM	Exhibit Hall Open		*Grand B & C*
6:00PM – 8:00PM	**WELCOME RECEPTION IN EXHIBIT HALL** Please join us for a cocktail, hors d'oeuvres, and to network with your colleagues!		*Grand B & C*
7:30PM – 10:30PM	**CORPORATE DINNER SYMPOSIUM**		*Bayview A & B*
8:00PM – 10.00PM	**ASFA PAST PRESIDENTS DINNER** (by invitation only)		*Offsite*
8:00PM – 10:00PM	**GRADUATE MEDICAL EDUCATION FORUM: SUNSET SEMESTER – APHERESIS MEDICINE TRAINING AROUND THE WORLD** Join us for a session on graduate medical education for physicians. Light snacks will be provided. Chairs: **Chester Andrzejewski,** *MD* **(USA)** & **Nicole Zantek,** *MD* **(USA)**		*Grand A*
	8:00PM – 8:05PM	Welcome	
	8:05PM – 8:20PM	Apheresis Medicine Physician Training Around the World – South Africa	Robert Leonard Crookes, *MD* **(South Africa)**



ACADEMIC PROGRAM

WEDNESDAY, APRIL 2, 2014

8:00PM – 10:00PM	8:20PM – 8:35PM	Apheresis Medicine Physician Training Around the World – Canada	Katerina Pavenski, *MD, FRCPC* **(Canada)**
	8:35PM – 8:50PM	Apheresis Medicine Physician Training Around the World – Turkey	Fevzi Altuntas, *MD* **(Turkey)**
	8:50PM – 9:05PM	Apheresis Medicine Physician Training Around the World – Brazil	José Francisco Comenalli Marques Junior, *MD, PhD* **(Brazil)**
	9:05PM – 9:30PM	Milestones for Apheresis Education	Carol Marshall, *MD* **(USA)**
	9:30PM – 10:00PM	Open Forum for Group Discussion	

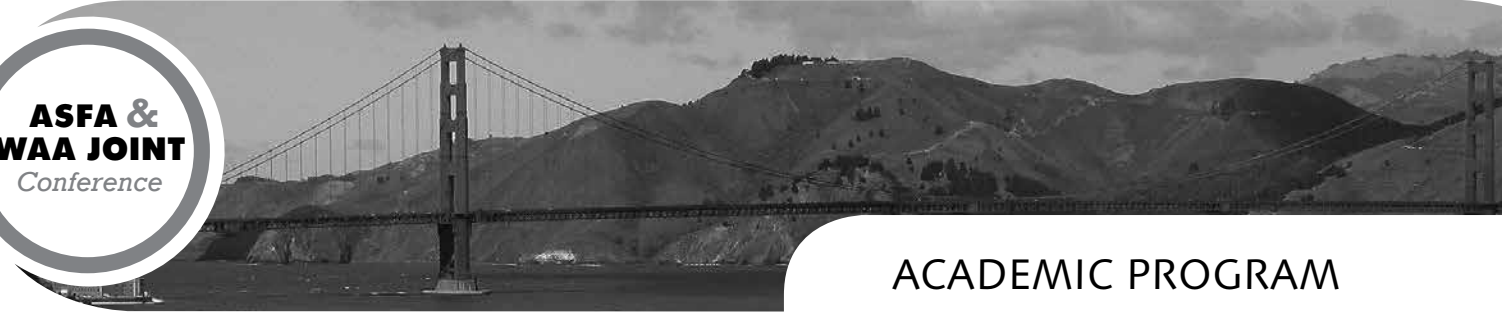
THURSDAY, APRIL 3, 2014

7:00AM – 6:00PM	Meeting Registration		*Grand Foyer*
7:00AM – 8:30AM	Continental Breakfast		*Grand Foyer*
7:00AM – 8:15AM	**BREAKFAST WITH THE EXPERT I** (Pre-registration with ASFA required) Join us for roundtable discussions with experts in the field on the topics below. Chairs: **Debbie Ferrell,** *RN, MSN, HP(ASCP)* **(USA)** and **Emily McLain,** *RN* **(USA)**		*Bayview A & B*
	Red Cell Exchange in Sickle Cell Disease		Birol Guvenc, *MD* **(Turkey)**
	Education for Apheresis Nurses		Hans Vrielink, *MD* **(Netherlands)**
	ASFA Categories		Jeffrey Winters, *MD* **(USA)**
	Challenges in Peripheral Blood Stem Cell Collections in Adults		Joseph Schwartz, *MD, MPH* **(USA)**
	Pediatric Apheresis		Alicia Garcia, *RN, HP(ASCP)* **(USA)**
	Apheresis in Neurologic Diseases		Robert Weinstein, *MD* **(USA)**
	Mobile Therapeutic Apheresis		Jenny Hansen, *RN* **(USA)**
	Dendritic Cell Vaccine Collections		Carol Evans, *RN* **(USA)**
	TTP		Gail Rock, *MD* **(Canada)**
	Donor Issues (Mobile, Staffing, Computer Systems etc.)		Eileen Galvin Karr, *RN* **(USA)**
	Credentialing & Proficiency Challenges of Apheresis Personnel		Christopher Edmond, *RN, BSN* **(USA)**
	Validation Plans & Other Quality Management Essentials		Wanda Koetz, *RN, HP(ASCP)* **(USA)**
	Pediatric Apheresis: Challenges of Infants and Children Under 20Kg		Daniel Noland, *MD* **(USA)**
8:30AM – 12:15PM	**OPENING COMBINED SYMPOSIUM: APHERESIS AROUND THE WORLD** Chairs: **Quentin Eichbaum,** *MD, PhD, MPH* **(USA)** & **W. Martin Smid,** *MD, PhD* **(Netherlands)**		*Grand A*
	8:30AM – 8:45AM	Opening Remarks	

ACADEMIC PROGRAM

THURSDAY, APRIL 3, 2014

8:30AM – 12:15PM	8:45AM – 9:15AM	Donor Apheresis in Malaysia	Norris Naim, *MBBCh, MPath* **(Malaysia)**
	9:15AM – 9:45AM	Therapeutic Apheresis in Asia	Teguh Triyono, *MD* **(Indonesia)**
	9:45AM – 10:15AM	Donor Apheresis in Africa	Robert Leonard Crookes, *MD* **(South Africa)**
	10:15AM – 10:45AM	Break in Exhibit Hall	*Grand B & C*
	10:45AM – 11:15AM	Therapeutic Apheresis in Africa	Fatiu A. Arogundade, *MBBS, FMCP, FMACP* **(Nigeria)**
	11:15AM – 11:45AM	Donor Apheresis in South America	José Francisco Comenalli Marques Junior, *MD, PhD* **(Brazil)**
	11:45AM – 12:15PM	Therapeutic Apheresis in South America	Alfredo Mendrone Junior, *MD, PhD* **(Brazil)**
10:00AM – 8:00PM	Exhibit Hall Open		*Grand B & C*
12:15PM – 1:30PM	Lunch in Exhibit Hall		*Grand B & C*
12:15PM – 1:15PM	Lunch Discussion for International Delegates		*Marina*
12:15PM – 1:15PM	**JOURNAL OF CLINICAL APHERESIS SPECIAL ISSUE COMMITTEE – INFORMATIONAL SESSION** Interested in the potential to be an author for a future JCA Special Issue? Join us for more information!		*Regency A*
12:30PM – 1:15PM	**NETWORKING LUNCH** (Pre-registration with ASFA required) Come have lunch with your peers and participate in an interesting networking opportunity.		*Bayview A & B*
1:30PM – 2:15PM	**FRANCIS S. MORRISON, MD MEMORIAL LECTURE** Chair: **Ravindra Sarode,** *MD* **(USA)**		*Grand A*
	Therapeutic Apheresis: So Lucky To Have Gotten In At The Ground Level		Dennis Goldfinger, *MD* **(USA)**
2:30PM – 5:00PM –Concurrent Session	**PLENARY ABSTRACT SESSION** Chairs: **Christine Fernandez-Roig,** *RN, MSN, OCN* **(USA)** & **Volker Witt,** *MD* **(Austria)**		*Grand A*
	2:30PM – 2:45PM	1. The Effects Of Adjusting The Mononuclear Cell Sense Level To Improve Automation Of Fenwal Amicus Hematopoietic Progenitor Cell Collections	Edwin Burgstaler, *MT, HP (ASCP)* **(USA)**
	2:45PM – 3:00PM	2. Donor Vein Assessment For Hematopoietic Progenitor Cell Collection: An International Survey By The ASFA HPC Donor Subcommittee	Mandy O'Leary, *MD, MPH* **(USA)**
	3:00PM – 3:15PM	3. Rapid ADAMTS13 Availability Impacts Treatment For Microangiopathic Hemolytic Anemia And Thrombocytopenia	Matthew Katus, *MD* **(USA)**



THURSDAY, APRIL 3, 2014

2:30PM – 5:00PM –Concurrent Session	3:15PM – 3:30PM	4. TA Gap Analysis Of Research In Apheresis – Knowledge Gained From Systematic Review Of Clinicaltrials.Gov		Pruthul Patel, *BS* **(USA)**
	3:30PM – 4:00PM	Break in Exhibit Hall		*Grand B & C*
	4:00PM – 4:15PM	5. Use Of The Spectra Optia Apheresis Device For Granulocyte Collection Results In A Higher Collection Efficiency Than The Cobe Spectra In A Comparative, Prospective, Randomized, Crossover, Three-Center Trial		Anand Padmanabhan, *MD, PhD* **(USA)**
	4:15PM – 4:30PM	6. Iron Deficiency As A Risk For Apheresis Donors		Walter Nussbaumer, *MD* **(Austria)**
	4:30PM – 4:45PM	7. Impact Of Therapeutic Plasma Exchange On Long-Term Health Outcomes Of Patients With Severe ANCA Vasculitis		William F. Pendergraft III, *MD, PhD* **(USA)**
	4:45PM – 5:00PM	8. Hepatitis E Seroconversion Following Plasma Exchange		Gail Rock, *MD, PhD*, FRCP **(Canada)**
2:30PM – 3:30PM – Concurrent Session	**EDUCATION SESSION I: APHERESIS TRAINING AROUND THE WORLD – CASE STUDIES** Chairs: **Lee Clough,** *BSN, RN, HP(ASCP)* **(USA)** & **Hans Vrielink,** *MD* **(Netherlands)**			*Seacliff A & B*
	2:30PM – 3:00PM	Apheresis Training Around the World		Marleen Marianne Neyrinck, *RN* **(Belgium)**
	3:00PM – 3:30PM	Report Of The First Certification Course for Apheresis Nurses/ Operators Indonesia		Pupu Puspita **(Indonesia)**
3:30PM – 4:00PM	Break in Exhibit Hall			*Grand B & C*
4:00PM – 5:00PM – Concurrent Session	**EDUCATION SESSION II: REGULATORY CHALLENGES IN APHERESIS MEDICINE - A GLOBAL PERSPECTIVE** Chairs: **Theresa Stec,** *BA, MT(ASCP)* **(USA)** & **Cathy Hulitt,** *RN, BSN, HP(ASCP)* **(USA)**			*Seacliff A & B*
	4:00PM – 4:30PM	Cell Therapy Regulations		Joseph Schwartz, *MD, MPH* **(USA)**
	4:30PM – 5:00PM	Donor Apheresis Regulations		Anne Eder, *MD, PhD* **(USA)**
5:15PM – 6:00PM	Committee Meetings • *New members welcome!*			
	Applications Committee	*Regency A*	Public Affairs Committee	*Golden Gate*
	Allied Health Committee	*Regency B*	International Affairs Committee	*Marina*

ACADEMIC PROGRAM

THURSDAY, APRIL 3, 2014

6:00PM – 8:00PM	**POSTER NETWORKING EVENING IN EXHIBIT HALL** Please join us for a cocktail, hors d'oeuvres, and to visit the posters.	*Grand Foyer*
7:30PM – 10:30PM	**CORPORATE DINNER SYMPOSIUM**	*Bayview A & B*

FRIDAY, APRIL 4, 2014

7:00AM – 5:30PM	Meeting Registration		*Grand Foyer*
7:00AM – 8:30AM	Continental Breakfast in Exhibit Hall		*Grand B & C*
7:00AM – 8:30AM – Concurrent Session	**BREAKFAST WITH THE EXPERT II** (Pre-registration with ASFA required) Join us for roundtable discussions with experts in the field on the topics below. Chair: **Marisa Marques,** *MD* **(USA)** & **Alicia Garcia,** *RN, HP(ASCP)* **(USA)**		*Bayview A & B*
	Pediatric Apheresis – IV Access Issues		Cathy Hulitt, *BSN, RN, HP(ASCP)* **(USA)**
	Red Cell Exchange		Ferda Tekin Turhan, *RN* **(Turkey)**
	Organization in a National Blood Supply		W. Martin Smid, *MD, PhD* **(Netherlands)**
	Mobilization Failure for Stem Cell Collections		Ali Unal, *MD* **(Turkey)**
	Staff Training and Competency Assessment/ Online Documentation		Laura Collins, *RN* **(USA)**
	Donor Apheresis		Tanya Ferber, *BSN, RN, MBA* **(USA)**
	Regulations, Quality, & AABB Assessments		Theresa Stec, *BA, MT(ASCP)* **(USA)**
	Photopheresis		Darlene Rahn, *BS, MT, HP(ASCP)* **(USA)**
	Lipoprotein Apheresis		Bruce Sachais, *MD, PhD* **(USA)**
	Indications for Off-Hour Apheresis		Yan Yun Wu, *MD, PhD* **(USA)**
	ABC's of Tandem TPE with ECMO & CVVH		Christina Anderson, *BSN, RN, HP(ASCP)* **(USA)**
	Unstimulated MNC Collections: Maximizing Results		Maria Cencerrado, *RN* **(USA)**
	Improving Peripheral Venous Access in Cellular Therapy Donors		Patricia Kellen-Wales, *RN, BSN* **(USA)**
7:00AM – 10:45AM	Exhibit Hall Open		*Grand B & C*
8:45AM – 12:15PM – Concurrent Session	**SCIENTIFIC SYMPOSIUM: APHERESIS RESEARCH AROUND THE WORLD** Chairs: **Hans Vrielink,** *MD* **(Netherlands)** & **Teguh Triyono,** *MD* **(Indonesia)**		*Grand A*
	8:45AM – 9:15AM	Update: NHLBI State of the Science Symposium in Therapeutic Apheresis	Phyllis Mitchell, *MSc* **(USA)**
	9:15AM – 9:45AM	The Critical Gap Analysis in Apheresis Research	Steven Spitalnik, *MD* **(USA)**
	9:45AM – 10:15AM	(Western) Europe - Research Needs/ Gaps – Italy	Paolo Perseghin, *MD* **(Italy)**

ACADEMIC PROGRAM

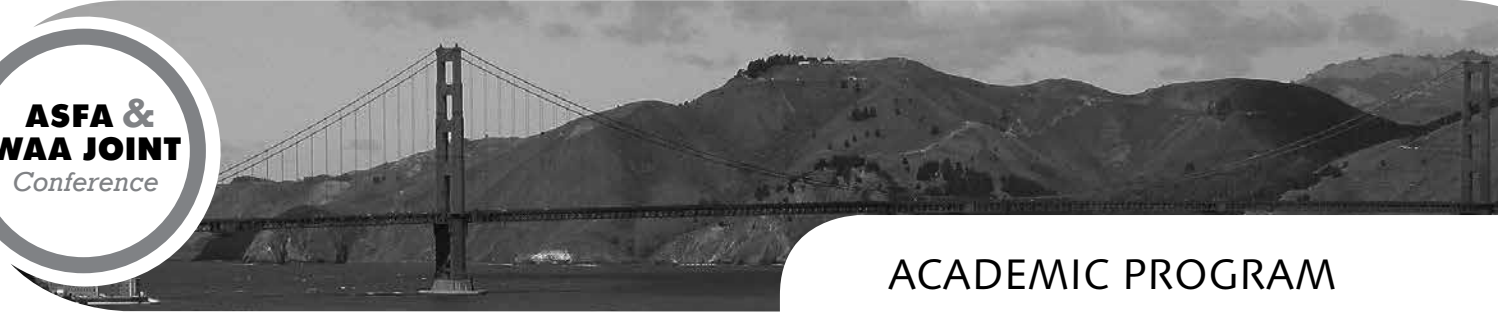
FRIDAY, APRIL 4, 2014

8:45AM – 12:15PM – Concurrent Session	10:15AM – 10:45AM	Break in Exhibit Hall	*Grand B & C*
	10:45AM – 11:15AM	Plasmapheresis in A Wide Range of Diseases	Valery Aleksandrovic Voinov, *MD, PhD* **(Russia)**
	11:15AM – 11:45AM	Apheresis Research Needs in Asia	Teguh Triyono, *MD* **(Indonesia)**
	11:45AM – 12:15PM	Asia – Research Needs/Gaps - Japan	Hidenori Matsuo, *MD* **(Japan)**
9:15AM – 10:15AM – Concurrent Session	**EDUCATION SESSION III: BASIC THERAPEUTIC APHERESIS** Chairs: **Betty Kong,** *MT(ASCP), HP* **(USA)** & **Robin Willis,** *RN, BSN, HP* **(USA)**		*Seacliff A & B*
	9:15AM – 9:45AM	When Our Patients Die – Care and Support for the Apheresis Team	Christine Fernandez-Roig, *RN, MSN, OCN* **(USA)**
	9:45AM – 10:15AM	Apheresis Labs	Christopher Chun, *MT(ASCP), HP* **(USA)**
10:15AM – 10:45AM	Break in Exhibit Hall		*Grand B & C*
10:45AM – 12:15PM – Concurrent Session	**EDUCATION SESSION IV: PEDIATRIC SHOWCASE (PANEL DISCUSSION)** Join colleagues who are involved in pediatric apheresis for a showcase of pediatric practice throughout the world! Chairs: **Christine Fernandez-Roig,** *RN,MSN, OCN* **(USA)** & **Christina Anderson,** *BSN, RN, HP(ASCP)* **(USA)**		*Seacliff A & B*
	10:45AM – 10:50AM	Introduction	Christine Fernandez-Roig, *RN,MSN, OCN* **(USA)** & Christina Anderson, *BSN, RN, HP(ASCP)* **(USA)**
	10:50AM – 11:40PM	Pediatric Center Profile Presentations	Pediatric Center Representatives
	11:40PM – 12:00PM	Panel Discussion	
	12:00PM – 12:15PM	Wrap Up	Christine Fernandez-Roig, *RN,MSN, OCN* **(USA)** & Christina Anderson, *BSN, RN, HP(ASCP)* **(USA)**
12:30PM – 1:30PM	**ASFA ANNUAL BUSINESS MEETING LUNCHEON** (Pre-registration with ASFA required; ASFA members only) Members – please join us to learn more about ASFA's activities, financials and leadership.		*Bayview A & B*
1:45PM – 2:30PM	**COHN DE LAVAL AWARD LECTURESHIP** Award Description and Ceremony to be presented by **Christina Anderson,** *BSN, RN, HP(ASCP)* **and Hiroshi Tsuda,** *MD*		*Grand A*
	The Science Behind the Success: Development of a Continuous Flow Blood Cell Separator		Jeane P. Hester, *MD* **(USA)** **To be presented on behalf of Dr. Hester by April G. Durett, MSc**
2:45PM – 5:15PM – Concurrent Session	**ABSTRACT SESSION I: THERAPEUTIC APHERESIS** Chairs: **Christina Anderson,** *RN, BSN, HP(ASCP)* **(USA)** & **Volker Witt,** *MD* **(Austria)**		*Grand A*
	2:45PM – 3:00PM	9. Single-Center Evaluation Of Changes In Indications Of Apheresis Procedures Performed In Response To Publication Of Updated Guidelines For The Use Of Therapeutic Apheresis	Briana Gibson, *MD* **(USA)**

ACADEMIC PROGRAM

FRIDAY, APRIL 4, 2014

2:45PM – 5:15PM – Concurrent Session	3:00PM – 3:15PM	10. Report Of The ASFA Apheresis Registry	Yan Yun Wu, *MD, PhD* **(USA)**
	3:15PM – 3:30PM	11. Report Of The ASFA Apheresis Registry Study On Wilson Disease	Yan Yun Wu, *MD, PhD* **(USA)**
	3:30PM – 3:45PM	12. Greater Than Ninety-Percent Of Patients With Acute Leukemia And Hyperleukocytosis Who Receive Leukocytapheresis Treatment Successfully Undergo Induction Chemotherapy: Follow-Up Analysis Of Data From 2006-2013	Jan Hofmann, *MD, MPH* **(USA)**
	3:45PM – 4:15PM	Break in Grand Foyer	*Grand Foyer*
	4:15PM – 4:30PM	13. Cost-Effectiveness Analysis Of Extracorporeal Photopheresis For Chronic Graft-Versus-Host Disease	Stefano Capri, *MSc* **(Italy)**
	4:30PM – 4:45PM	14. Comparison Of Fenwal Amicus And Terumo BCT Optia Cell Separators For Therapeutic Plasma Exchanges	Rebecca Dill, *RN* **(USA)**
	4:45PM – 5:00PM	15. Do We Really Need Calcium Supplementation In Therapeutic Plasma Exchange?	Sarah E. Barnhard, *MD* **(USA)**
	5:00PM – 5:15PM	16. Puncture Of Deep Veins Under Ultrasound Guidance: An Alternative Route For Vascular Access Of Apheresis Therapies	Norio Hanafusa, *MD, PhD* **(Japan)**
2:45PM – 5:00PM – Concurrent Session	**ABSTRACT SESSION II: DONOR AND THERAPEUTIC APHERESIS** Chairs: **Julie Guest (UK)** & **Zbigniew Szczepiorkowski** *MD, PhD, FCAP* **(USA)**		*Seacliff C & D*
	2:45PM – 3:00PM	17. Procedure-Related Complications In Pediatric Autologous Peripheral Blood Stem Cell Collection	Laura Cooling, *MD, MSc* **(USA)**
	3:00PM – 3:15PM	18. Effects Of Using Historic Average To Estimate Pre-Donation Platelet Count	Debra L. Smith, *MD, PhD* **(USA)**
	3:15PM – 3:30PM	19. Comparison Of Venous Access In Two Different Donor Groups Undergoing Mononuclear Cell (MNC) Collection Using Apheresis	Maria Cencerrado, *RN* **(USA)**



FRIDAY, APRIL 4, 2014

2:45PM – 5:00PM – Concurrent Session	3:30PM – 3:45PM	20. ABO Incompatible Granulocyte Transfusions: Experience At A Large Hospital Based Blood Center	Komal Arora, *MD* **(USA)**
	3:45PM – 4:15PM	Break in Grand Foyer	*Grand Foyer*
	4:15PM – 4:30PM	21. Membrane Filtration Plasma Exchange Without Anticoagulation. Single Center Experience Of 500 Sessions in Bogota Colombia	Juan P. Cordoba, *MD* **(Colombia)**
	4:30PM – 4:45PM	22. Extracorporeal Photopheresis For Graft vs Host Disease Following Hematopoietic Stem Cell Transplantation For Primary Immunodeficiency - A Single Centre Experience	Andrew Gennery, *MD* **(UK)**
	4:45PM – 5:00PM	23. The Future Of Research And Practice Of Extracorporeal Photopheresis - Heterogeneity In Expert Panel Opinions	Zbigniew Szczepiorkowski, *MD, PhD, FCAP* **(USA)**
	5:00PM – 5:15PM	24. An Opportunity For Standardization And Collaboration Among Apheresis International Community. The Report of the ASFA International Affairs Committee	Yan Yun Wu, *MD, PhD* **(USA)**
2:45PM – 3:45PM – Concurrent Session	**EDUCATION SESSION V: BASIC DONOR APHERESIS & CELLULAR COLLECTIONS** Chairs: **Jenny Hansen,** *RN* **(USA)** & **Christopher Edmond,** *RN, BSN* **(USA)**		*Seacliff A & B*
	2:45PM – 3:15PM	The Increasing Role of Leukapheresis Collections	Christina Anderson, *RN, BSN, HP(ASCP)* **(USA)**
	3:15PM – 3:45PM	What's in the Bag?	Theresa Stec, *BA, MT(ASCP)* **(USA)**
3:45PM – 4:15PM	Break in Grand Foyer		*Grand Foyer*
4:00PM – 5:15PM – Concurrent Session	**EDUCATION SESSION VI: ADVANCED DONOR APHERESIS - DONOR ELIGIBILITY ISSUES AROUND THE WORLD** Chairs: **Tanya Ferber,** *BSN, RN, MBA* **(USA)** & **Eileen Galvin Karr,** *RN* **(USA)**		*Seacliff A & B*
	4:00PM – 4:45PM	Transfusion Medicine in Africa	James Kelley, *MD, PhD* **(USA)**
	4:45PM – 5:30PM	Changing Eligibility Criteria for MSM: The Canadian Perspective	Mindy Goldman, *MD* **(Canada)**

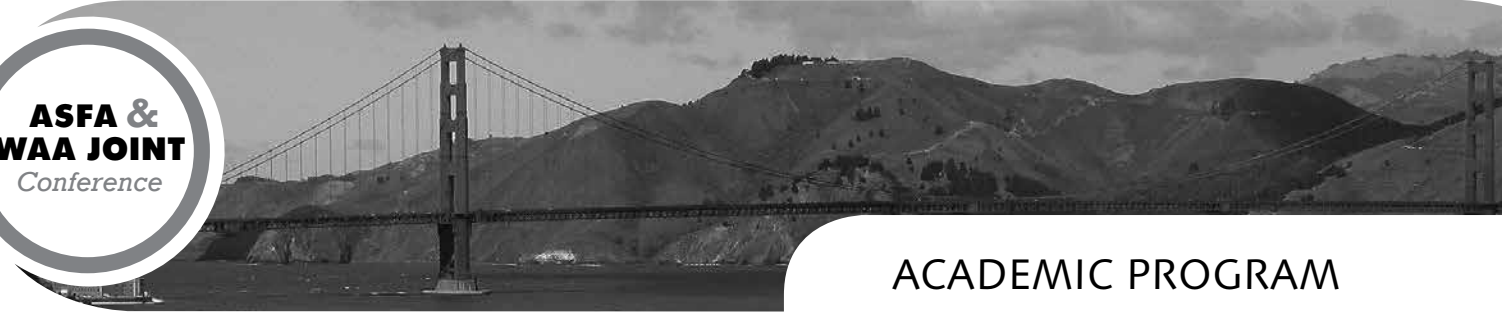
ACADEMIC PROGRAM

FRIDAY, APRIL 4, 2014

5:15PM – 6:00PM	Committee Meetings • *New members welcome!*			
	Communications Committee	*Marina*	Physicians Committee	*Seacliff A & B*
	Membership Committee	*Regency A*	Education Committee	*Golden Gate*
6:00PM – 9:00PM	**CORPORATE DINNER SYMPOSIUM**			*Bayview A & B*

SATURDAY, APRIL 5, 2014

7:00AM – 12:30PM	Meeting Registration	*Grand Foyer*
7:00AM – 8:30AM	Continental Breakfast	*Grand Foyer*
7:00AM – 8:30AM – Concurrent Session	**BREAKFAST WITH THE EXPERT III** (Pre-registration with ASFA required) Join us for roundtable discussions with experts in the field on the topics below. Chair: **Laura Collins,** *RN* **(USA)** & **Hans Vrielink**, *MD* **(Netherlands)**	*Bayview A & B*
	Complications During Therapeutic Apheresis: Prevention, Identification, & Management	Rasheed Balogun, *MD* **(USA)**
	Advancing Apheresis Practice through Research, Case Studies, & Publications	Zoe Morelli, *RN* **(USA)**
	Multiple Sclerosis/NMO	Matthew Strunk, *PA* **(USA)**
	Apheresis Math	Marleen Marianne Neyrinck, *RN* **(Belgium)**
	Clinical Aspects of Photopheresis	Marisa Marques, *MD* **(USA)**
	Donor Related Apheresis (Donor Conversion and Donor Optimization)	Antonia Hagen-Coonradt **(USA)**
	Accreditation Considerations in Therapeutic Apheresis	Walter Linz, *MD* **(USA)**
	Pediatric Apheresis	Edward Wong, *MD* **(USA)**
	Pediatric Apheresis	Meghan Delaney, *DO* **(USA)**
	Apheresis Instrumentation	Edwin Burgstaler, *MT, HP(ASCP)* **(USA)**
	Flow Cytometry Basics for Cellular Therapy Products: What's in the Bag?	April Durett, *MSc* **(USA)**
	Developing Apheresis Education Programs for Nurses	Regina Rohe, *RN, HP(ASCP)* **(USA)**
	Isovolemic Hemodilution Red Blood Cell Exchange	Todd Nishimoto, *MD* **(USA)**
8:45AM – 12:15PM – Concurrent Session	**CLOSING COMBINED SYMPOSIUM: NEW APPLICATIONS OF APHERESIS** Chairs: **Osman İlhan,** *MD* **(Turkey)** & **Yan Yun Wu,** *MD, PhD* **(USA)**	*Grand A*
	8:45AM – 9:15AM — Cracking ECP's Mechanistic Code: Immunotherapeutic Potential of Tunable Dendritic Cells	Richard Edelson, *MD* **(USA)**



ACADEMIC PROGRAM

SATURDAY, APRIL 5, 2014

8:45AM – 12:15PM – Concurrent Session	9:15AM – 9:45AM	Apheresis Registries	Bernd Stegmayr, *MD, PhD* **(Sweden)**
	9:45AM – 10:15AM	NMO and Other Antibody-Mediated Neurological Diseases	Angela Carmen Vincent, *MBBS, MSc, PhD (Hon) FRCPath, FRCP, FMedSci, FRS* **(UK)**
	10:15AM – 10:45AM	Break in Grand Foyer	*Grand Foyer*
	10:45AM – 11:15AM	TTP, Sickle Cell Disease, and the Role of von Willebrand Factor	Jose Lopez, *MD* **(USA)**
	11:15AM – 11:45PM	Stem Cell Collection in Mobilization Failure	Fevzi Altuntas, *MD* **(Turkey)**
	11:45AM – 12:15PM	Engineering Apheresis-Derived T Cells to Treat Cancer	Don Siegel, *MD, PhD* **(USA)**
8:45AM – 10:15AM – Concurrent Session	**EDUCATION SESSION VII: ADVANCED THERAPEUTIC APHERESIS** Chairs: **Matthew Strunk,** *PA* **(USA)** & **Debbie Ferrell,** *RN, MSN, HP(ASCP)* **(USA)**		*Seacliff A & B*
	8:45AM – 9:30AM	Plasma Exchange and Immunoadsorption, One Disease Two Strategies? Which to Choose?	Volker Witt, *MD* **(Austria)**
	9:30AM – 10:15AM	Therapeutic Apheresis	Susan Pinkard, *RN* **(USA)**
10:15AM – 10:45AM	Break in Grand Foyer		*Grand Foyer*
10:45AM – 12:15PM – Concurrent Session	**EDUCATION SESSION VIII: APHERESIS RESEARCH WORKSHOP – HOW TO DESIGN/CRITIQUE RESEARCH APPROACHES** Review important issues in apheresis research design, considerations in methodologies common in apheresis research, and provide participants with the ability to critique research presented in abstract form in the context of quality/comparative apheresis research. Chairs: **Latronya Jackson,** *RN* **(USA)** & **Antonia Hagen-Coonradt (USA)**		*Seacliff A & B*
	10:45AM – 10:50AM	Introduction	Edward Wong, *MD* **(USA)**
	10:50AM – 11:15AM	Research Design and Methods Used to Evaluate Apheresis Instrumentation and Techniques	Edwin Burgstaler, *MT, HP (ASCP)* **(USA)**
	11:15AM – 11:40AM	Role of Nursing & Allied Health Professionals in Research	Zoe Morelli, *RN* **(USA)**
	11:40AM – 12:05PM	Identifying Best Practices in Clinical Research Design	Edward Wong, *MD* **(USA)**
	12:05PM – 12:15PM	Panel Discussion & Questions	Edward Wong, *MD* **(USA)**, Edwin Burgstaler, *MT, HP (ASCP)* **(USA)**, Zoe Morelli, *RN* **(USA)**
12:15PM – 1:30PM	**POST-CONFERENCE ASFA BOARD OF DIRECTORS MEETING** (by invitation only)		*Regency A*
12:15PM – 1:30PM	**POST-CONFERENCE WAA BOARD OF DIRECTORS MEETING** (by invitation only)		*Golden Gate*

SPEAKERS

APHERESIS REVIEW SESSION SPEAKERS

Edwin Burgstaler, *MT, HP(ASCP),* **Mayo Clinic, USA**
Christine Gallagher, *RN, BSN,* **Nationwide Children's Hospital, USA**
Alicia Garcia, *RN, HP(ASCP),* **Children's Hospital Oakland, USA**
Emily McLain, *RN, BSN,* **Nationwide Children's Hospital, USA**
Jeffrey L. Winters, *MD,* **Mayo Clinic, USA**
Christina Anderson, *RN, BSN, HP(ASCP),* **Carter BloodCare, USA**
Zoe Morelli, *RN,* **UT Southwestern Medical Center, USA**
Marleen Marianne Neyrinck, *RN,* **AZ Delta Hospital, Belgium**
Jill Adamski, *MD, PhD,* **Mayo Clinic, US**
Margaret Hannan, *LPN, AT(ASCP),* **Blood Bank of Delmarva, USA**
Carol Evans, *RN, BSN, HP(ASCP),* **Mayo Clinic, USA**

GRADUATE APHERESIS MEDICAL EDUCATION FORUM SPEAKERS

Robert Leonard Crookes, *MD,* **Independent Transfusion Medicine Consultant, South Africa**
Katerina Pavenski, *MD, FRCPC,* **St. Michael's Hospital, Canada**
Fevzi Altuntas, *MD,* **Yildirim Bryant Medical Faculty, Ankara Oncology Hospital, Turkey**
José Francisco Comenalli Marques Junior, *MD, PhD,* **Hemocentro, UNICAMP, Brazil**
Carol Marshall, *MD,* **University of California Davis Medical Center, USA**

OPENING COMBINED SYMPOSIUM SPEAKERS

Norris Naim, *MBBCh, MPath,* **National Blood Centre, Malaysia**
Teguh Triyono, *MD,* **Sardjito Hospital/ Faculty of Medicine Gadjah Mada University, Indonesia**
Robert Leonard Crookes, *MD,* **Independent Transfusion Medicine Consultant, South Africa**
Fatiu A. Arogundade, *MBBS, FMCP, FMACP,* **Obafemi Awolowo University, Nigeria**
José Francisco Comenalli Marques Junior, *MD, PhD,* **Hemocentro, UNICAMP, Brazil**
Alfredo Mendrone Junior, *MD, PhD,* **University of São Paulo, Brazil**

FRANCIS S. MORRISON, MD MEMORIAL LECTURE SPEAKER

Dennis Goldfinger, *MD,* **David Geffen School of Medicine at UCLA, USA**

SCIENTIFIC SYMPOSIUM SPEAKERS

Phyllis Mitchell, *MSc,* **National Institutes of Health, National Heart, Lung, and Blood Institute, USA**
Steven Spitalnik, *MD,* **Columbia University Medical Center, USA**
Paolo Perseghin, *MD,* **Azienda Ospedaliera San Gerardo de' Tintori, Italy**
Valery Aleksandrovic Voinov, *MD, PhD,* **Pulmonology Clinic of I.P.Pavlov First State Medical University of Saint-Petersburg, Russia**
Teguh Triyono, *MD,* **Sardjito Hospital/ Faculty Of Medicine Gadjah Mada University, Indonesia**
Hidenori Matsuo, *MD,* **National Hospital Organization, Nagasaki Kawatana Medical Center, Japan**

CLOSING COMBINED SYMPOSIUM SPEAKERS

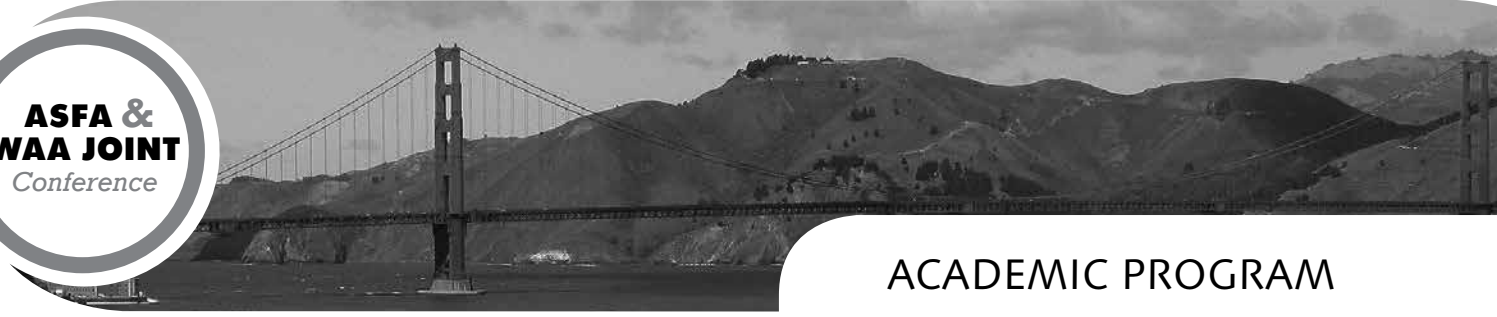
Richard Edelson, *MD,* **Yale University School of Medicine, USA**
Bernd Stegmayr, *MD, PhD,* **Department of Public Health and Clinical Medicine, Umea University, Sweden**
Angela Carmen Vincent, *MBBS, MSc, PhD (Hon) FRCPath, FRCP, FMedSci, FRS,* **Weatherall Institute of Molecular Medicine, John Radcliffe Hospital, UK**
Jose Lopez, *MD,* **Puget Sound Blood Center, University of Washington, USA**
Fevzi Altuntas, *MD,* **Yildirim Bryant Medical Faculty, Ankara Oncology Hospital, Turkey**
Don Siegel, *MD, PhD,* **University of Pennsylvania, USA**

COHN DE LAVAL SPEAKER

Jeane P. Hester, *MD,* **M.D. Anderson Cancer Center, Houston, USA**
To be presented on behalf of Dr. Hester by April G. Durett, MSc

EDUCATION SESSION SPEAKERS

Marleen Marianne Neyrinck, *RN,* **AZ Delta Hospital, Belgium**
Pupu Puspita, *RN,* **Bandung Blood Transfusion Service/ Indonesian Red Cross, Indonesia**
Joseph Schwartz, *MD, MPH,* **New York Presbyterian Hospital, USA**
Anne Eder, *MD, PhD,* **American Red Cross, USA**
Christine Fernandez-Roig, *RN, MSN, OCN,* **Dendreon-Northeast, USA**
Christopher Chun, *BS, MT(ASCP), HP,* **Intermountain Healthcare Blood & Marrow Transplant Program, USA**
Christina Anderson, *RN, BSN, HP(ASCP),* **Carter BloodCare, USA**



ACADEMIC PROGRAM

Theresa Stec, *BA MT(ASCP),* **Baystate Medical Center, USA**
James Kelley, *MD, PhD,* **Harvard Medicine School, USA**
Mindy Goldman, *MD, FRCP(C),* **Canadian Blood Services, Canada**
Volker Witt, *MD,* **St. Anna Kinderspital Medical University, Austria**
Susan Pinkard, *RN,* **Hoxworth Blood Center, USA**
Edward Wong, *MD,* **Children's National Health System, USA**
Zoe Morelli, *RN,* **UT Southwestern Medical Center, USA**
Edwin Burgstaler, *MT, HP(ASCP),* **Mayo Clinic, USA**

BREAKFAST WITH THE EXPERTS

Birol Guvenc, *MD,* **Cukurova University, Turkey**
Hans Vrielink, *MD,* **Sanquin Blood Supply, Netherlands**
Jeffrey L. Winters, *MD,* **Mayo Clinic, USA**
Joseph Schwartz, *MD, MPH,* **New York Presbyterian Hospital, USA**
Alicia K. Garcia, *RN, HP(ASCP),* **Children's Hospital and Research Center in Oakland, USA**
Robert Weinstein, *MD,* **UMass Memorial Medical Center, USA**
Jenny Hansen, *RN, HP,* **United Blood Services, USA**
Carol Evans, *RN, BSN, HP(ASCP),* **Mayo Clinic, USA**
Gail Rock, *MD, PhD, FRCP,* **Canadian Apheresis Group, Canada**
Eileen Galvin Karr, *RN, BSN, HP(ASCP),* **Baystate Medical Center, USA**
Christopher Edmond, *RN, BSN,* **Carter BloodCare, USA**
Wanda Koetz, *RN, HP,* **Memorial Blood Center, USA**
Daniel Noland, *MD, FCAP,* **Children's Medical Center, USA**
Catherine Hulitt, *BSN, RN, HP(ASCP)*, **The Children's Hospital of Philadelphia, USA**
Ferda Tekin Turhan, *MSc, HP,* **Cukurova University Balcali Hospital, Turkey**
W. Martin Smid, *MD, PhD, MBA,* **Sanquin Blood Bank, Netherlands**
Ali Ünal, *MD* **Erciyes University Hospitals, Turkey**
Laura Collins, *BSN, HP(ASCP)* **University of Iowa Hospitals and Clinics, USA**
Tanya Ferber, *RN, BSN, MBA,* **United Blood Services, USA**
Theresa C. Stec, *BA, MT(ASCP),* **Baystate Medical Center, USA**
Darlene Rahn, *BS, MT, HP(ASCP)*, **H. Lee Moffitt Cancer Center & Research Institute, USA**
Bruce Sachais, *MD, PhD,* **University of Pennsylvania, USA**
Yan Yun Wu, *MD, PhD,* **Puget Sound Blood Center, USA**
Christina Anderson, *RN, BSN, HP(ASCP),* **Carter BloodCare, USA**
Maria Cencerrado, *RN,* **Carter BloodCare, USA**
Patricia Kellen-Wales, *RN, BSN,* **Carter BloodCare, USA**
Rasheed Balogun, *MD, FCAP, FASN, HP(ASCP)*, **University of Virginia, USA**
Zoe Morelli, *RN,* **University of Texas Southwestern Medical Center, USA**
Matthew Strunk, *PA-C,* **University of Texas Southwestern Medical Center, USA**
Marleen Marianne Neyrinck, *RN,* **AZ Delta Hospital, Belgium**
Marisa B. Marques, *MD,* **University of Alabama at Birmingham Hospital, USA**
Antonia Hagen-Coonradt, **United Blood Services, USA**
Walter J. Linz, *MD, MBA,* **Scott and White Healthcare, USA**
Edward Wong, *MD,* **Children's National Medical Center, USA**
Meghan Delaney, *DO, MPH,* **Puget Sound Blood Center, USA**
Edwin Burgstaler, *MT, HP(ASCP),* **Mayo Clinic, USA**
April Durett, *MSc,* **Baylor College of Medicine, USA**
Regina Rohe, *RN, BS, HP,* **Fresenius Medical Care, USA**
Todd Nishimoto, *MD*, **Carter BloodCare, USA**

PLENARY SPEAKERS

Edwin Burgstaler, *MT, HP(ASCP)*, **Mayo Clinic, USA**
Mandy O'Leary, *MD, MPH,* **Texas Children's Hospital, USA**
Matthew Katus, *MD,* **Dartmouth-Hitchcock Medical Center, USA**
Pruthul Patel, *BS,* **Children's Hospital of Los Angeles, USA**
Anand Padmanabhan, *MD, PhD,* **BloodCenter of Wisconsin, USA**
Walter Nussbaumer, *MD,* **Dept. Transfusion Medicine, Austria**
William F. Pendergraft III, *MD, PhD,* **Massachusetts General Hospital, USA**
Gail Rock, *MD, PhD, FCAP,* **Canadian Apheresis Group, Canada**

ORAL ABSTRACT PRESENTERS

Briana Gibson, *MD,* **University of Alabama at Birmingham, USA**
Yan Yun Wu, *MD, PhD,* **Puget Sound Blood Center, USA**
Jan Hofmann, *MD, MPH,* **California Pacific Medical Center, USA**
Stefano Capri, *MSc,* **Università Cattolica del Sacro Cuore, Italy**
Nikki Cole, *BSN, CCRN,* **UT Southwestern, USA**
Sarah E. Barnhard, *MD,* **UCDMC, USA**
Norio Hanafusa, *MD, PhD,* **The University of Tokyo Hospital, Japan**
Laura Cooling, *MD, MSc,* **University of Michigan, USA**
Debra L. Smith, *MD, PhD,* **UT Southwestern, USA**
Maria Cencerrado, *RN,* **Carter BloodCare, USA**
Komal Arora, *MD,* **University of Texas Health Science Center, USA**
Juan P. Cordoba, *MD,* **Hospital universitario San Ignacio, Columbia**
Andrew Gennery, *MD,* **Newcastle University, UK**
Zbigniew Szczepiorkowski, *MD, PhD, FCAP,* **Dartmouth-Hitchcock, USA**

SPEAKER PRESENTATION SUMMARIES

APHERESIS REVIEW SESSION

Apheresis Instrumentation & Trouble-Shooting

Edwin Burgstaler, MT, HP(ASCP), Mayo Clinic, USA

The instruments utilized for apheresis use centrifugation to separate blood components by weight (specific gravity), filtration to separate blood components by size, or a combination of both. The instruments can be used to collect blood components such as plasma, platelets, granulocytes, and red blood cells (RBC) from donors. They can also be used for therapeutic applications such as therapeutic plasma exchange (TPE), plasma perfusion, RBC exchange, therapeutic cytoreduction of platelets or WBC, MNC and hematopoietic progenitor cell collections, lipid reduction, and photopheresis. Modern instruments are equipped with microprocessors, sensors, pumps, valves, centrifuges, and optical detectors to perform procedures safely and efficiently. Even with all these features, a competent operator is still the key element of an apheresis procedure. The operator needs to be able to detect problems, troubleshoot the equipment, and monitor the patient/donor. This presentation will provide an overview of the apheresis instruments used in the USA. A description of the instruments, how they work, and the procedures they can perform will be presented. A brief overview of troubleshooting for common problems will also be presented.

Achieving Best Outcomes: Optimizing Care for Pediatric Apheresis Patients – Pediatric Case Studies

Christine Gallagher, *RN,* **Nationwide Children's Hospital, USA & Alicia Garcia,** *RN, HP(ASCP),* **Children's Hospital Oakland, USA & Emily McLain,** *RN,* **Nationwide Children's Hospital, USA**

The goals of this session are to summarize the types of apheresis procedures commonly performed in the pediatric setting while highlighting some of the unique situations and challenges faced within the <25kg population. Topics will include types of access, the consultation and assent process, education of these young children keeping in mind their current growth and development stages, and fluid balance. Case studies for each of the procedures commonly performed will be presented and the patient's journey through apheresis will be explained utilizing a Journey to Best Outcome paradigm. These cases will present common situations in pediatrics as well as the approach used to achieve the best outcome possible.

Clinical Decision Making for ASFA Category I, II, III, IV, and Uncategorized Indications

Jeffrey L. Winters, *MD,* **Mayo Clinic, USA**

This session will focus on how to utilize the 2013 American Society for Apheresis guidelines in daily practice. The ASFA categories and recommendation grades will be reviewed. Examples of diseases treated with apheresis from each of the ASFA categories will be given and the speaker will review how the guidelines can be used to determine not only the appropriateness of an apheresis therapy in these diseases but also the course of therapy including replacement fluids, number of treatments, frequency of treatments, and when the treatments should be discontinued. The speaker will also discuss an approach to determining how to provide plasma exchange therapy for a disorder which is not covered in the ASFA guidelines. The goal of the presentation is to provide a useful and practical approach that can be used by physicians and allied health when requests are received to treat patients with therapeutic apheresis procedures.

Therapeutic Applications of Apheresis: A Nurse's Perspective

Christina Anderson, *RN, BSN, HP(ASCP),* **Carter BloodCare, USA**

Explore many different ways the JCA Special Issue of ASFA's Apheresis Indications can be applied as a valuable resource in your apheresis practice from a nurse's perspective. As a critical tool in qualifying therapeutic apheresis referrals for apheresis intervention, the Special Issue can standardize, simplify, and expedite the referral process. As an educational resource for new apheresis practitioners and other members of the health care team, the Special Issue is a quick, easy reference for apheresis diseases and their corresponding apheresis procedures.

Therapeutics 101

Zoe Morelli, *RN,* **UT Southwestern, USA**

"Therapeutics 101" will provide an overview of Apheresis Best Practices & Evidenced Based Practice. This is a topic that reaches across a vast range of experiences and backgrounds. No matter how long or brief your practice has been we have all been touched by, participated in and contributed to best practices and evidenced based practices. The presentation will include several ideas for implementing uniform "Best Practices" based on "Evidenced Based Practice" into apheresis programs. Discussions will include, "Standardized Apheresis Order Sets", "Research & Publications", "Professional Journal Clubs" and "Best Practices for Apheresis Access".

Calculations for Apheresis

Marleen Marianne Neyrinck, *RN,* **AZ Delta Hospital, Belgium**
Being an apheresis nurse it is not only important to work smoothly with your apheresis equipment. You should also pay attention to your donor/patient and the product you're collecting. It gives a surplus value to your work, when you are able to calculate the efficiency of your procedures. You must be capable to obtain an optimal product without putting your donor/patient at risk.

Not every patient/donor should be addressed in the same way. Not only the height and weight of the donor/patient plays an important role, but also specific blood values influence the course of your procedure. Many issues determine your procedure time. By knowing the collection efficiency of your apheresis machine, you can also calculate how many blood volumes you need to process to obtain a specific result. Prior to the procedure, you can calculate whether you need 1 day for a procedure or more. Also, you will also see that it is not always needed to process 3x the total blood volume to achieve a specific result. In this way, it can be avoided that the donor/patient is needless long connected to the apheresis device.

By calculating the collection efficiency of each specific device you have, for quality control reasons you can also compare the various devices you have, but also nurses/operators together.

What is the total blood volume and what is the percentage of the total blood volume might be extracorporeal to work safely. How do you calculate the extracorporeal volume? And what if you get to request from your physician to exchange 1.5 times the plasma volume of a TTP patient?

Not every center uses the same units in the laboratory results. It is good for a nurse to be able to convert to the unit that is applied to ward you the value.

In the presentation regarding calculations in apheresis practice, I try to bring more lucidity.

Complications of Apheresis

Jill Adamski, *MD, PhD,* **Mayo Clinic, USA**
In general, apheresis procedures are very safe and the vast majority of complications that are reported are of minor clinical significance. Although it is not possible to predict who will have an adverse reaction during an apheresis procedure, there are several donor and patient specific factors that are known to be associated with apheresis complications. The objectives of this presentation include a review of common and uncommon adverse events associated with apheresis, a discussion of the physiologic mechanisms of select adverse reactions, and consideration of various interventions that can be utilized to minimize complications during apheresis.

Donor Eligibility/Case Studies

Margaret Hannan, *RN,* **Blood Bank of Delmarva, USA**
Changes to donor criteria often result in higher deferral rates, which can have a negative impact on blood product inventory. Strategic planning and creative program management tactics can help improve donor and staff efficiency. Join us for this session in which you will learn ways to increase donor loyalty and staff productivity, maximize your donor base, and improve your center's overall collection efficiency!

IV Access – Standard and Guidelines Across the Care Continuum

Carol Evans, *RN,* **Mayo Clinic, USA**
Venous access is probably the most important factor in the completion, efficiency and success of any apheresis procedure. While types of access can vary from institution to institution, donor to therapeutic, standards of practice have been established to ensure success in the delivery of apheresis.

As apheresis practitioners, we strive to meet the needs of the patients in various health-care settings. The objective of this presentation is to help serve as a guide for decision-making, donor/patient safety and care based on the latest available research and strengths of the body of evidence.

GRADUATE MEDICAL EDUCATION FORUM

Apheresis Medicine Physician Training Around the World – South Africa

Robert Leonard Crookes, *MD,* **Independent Transfusion Medicine Consultant, South Africa**
The use of apheresis technology for the collection of platelets and hyperimmune plasma from voluntary donors, and for performing therapeutic plasma exchange procedures and peripheral blood stem cell collections has, since its introduction in the mid 1970's, been established in multiple centers throughout South Africa. Presently, approximately 26,000 donor apheresis procedures, 3000 therapeutic plasma exchanges and 400 peripheral blood stem cells collections are undertaken annually. There is no training program for Medical Graduates which leads to certification specific for Apheresis Medicine. With the exponential increase in the number of procedures being performed, there is undoubtedly scope to develop such a program.

The University of the Free State (a Province of South Africa) offers a two-year accredited Transfusion Medicine Course and awards a post-graduate Diploma in Transfusion Medicine. Education on the principles of apheresis, the collection of blood components by apheresis, peripheral blood stem cell collection and therapeutic plasma exchange are an integral

part of this curriculum. Thirty six candidates, including candidates from other African countries, have successfully completed this Course.

Apheresis topics are included in Continuing Professional Development presentations to Medical Residents and Physician Specialists in Academic and Private Hospitals, particularly to those in the disciplines of Hematology, Neurology and Nephrology. Physicians within the National Blood Service and Suppliers of cell separator devices initiate and participate in regular Regional Donor and Therapeutic Apheresis Workshops and contribute to apheresis education at national scientific meetings such as the annual conferences of the Neurological Association of South Africa and the South African Stem Cell Transplantation Society. ASFA Guidelines for the Use of Apheresis in Clinical Practice are an invaluable adjunct to therapeutic apheresis training programs and to medical specialists managing patients for whom plasma exchange is a therapeutic option.

Apheresis Medicine Physician Training Around the World – Canada

Katerina Pavenski, *MD, FRCPC,* **St. Michael's Hospital, Canada**

In Canada, there are approximately 40 centres that provide therapeutic apheresis. Every year, the number of procedures is growing; in 2012 close to 14,000 therapeutic procedures were performed. The majority of medical directors of the apheresis units have a subspecialty in hematology (67%) or nephrology (28%). The core training objectives for these subspecialties include little or no apheresis content. It is likely that most apheresis physicians currently receive training on the job. A survey to assess how apheresis physicians are currently trained and how they maintain their competency was recently launched. The results are pending but hopefully they will be able to highlight the gaps and guide development of the future educational programs for apheresis physicians in Canada.

Apheresis Medicine Physician Training Around the World – Turkey

Fevzi Altuntas, *MD,* **Turkish Society of Apheresis, Turkey**

"Turkish Society of Apheresis" (TSA) was established in October 2000 as a non-profit organization. Currently the association has more than 100 members from different professions related to apheresis. Main purpose of the TSA to support and promote scientific research within this field and to ensure and encourage communication between the different scientific fields that are related to apheresis. Furthermore, we inform our members of the most recent developments in apheresis. We also aim to advance knowledge and inspire continued professional development in this discipline collaboration with "Turkish Ministry of Health" (TMH). The scientific and educational activities of TSA include translation of the apheresis textbook into Turkish, scholarships for hematology fellows, financial support for both clinical trials and theses for hematology fellows, and apheresis certification courses. Therapeutic Apheresis Regulations were published by the Ministry of Health in 2010. By this regulation, standardization of centers is maintained. Additionally, apheresis training centers are being established within the coverage of the regulation. Certification courses are carried out in these training centers. Those who complete the training course successfully receive certification and thus have the right to work in apheresis centers. Over 300 technical personnel and physicians have completed this certification program. Furthermore, therapeutic apheresis and science commission of TMH has prepared "National Therapeutic Apheresis Guide". This guide serves as a referral guide and maintains clinical standardization in terms of therapeutic apheresis applications. Today, there are 61 apheresis units in Turkey TMH. Approximately 29,000 therapeutic apheresis procedures were performed in 2012. Leukapheresis and erythrocyte apheresis were the most common therapeutic cytapheresis procedures. While approximately 2500 peripheral blood stem cell (PBSC) apheresis procedures were performed in the autologous setting, over 1000 PBSC apheresis procedures were performed in the allogeneic setting. Peripheral blood stem cell apheresis procedures increase year by year. Apheresis medicine physician training requires the cooperation of universities, non-governmental associations, training hospitals, higher education institutions and health authorities.

Apheresis Medicine Physician Training Around the World – South America

Jose Francisco Comenalli Marques, *MD,* **Hematology and Hemotherapy Blood Center – UNICAMP, Brazil**

Brazil has 201,032,714 inhabitants and a continental dimension (8,515,767.049 km²) with many geographical, economical and logistical contrasts, whereas most complex medical care is concentrated in few areas.

Under Brazilian jurisdiction, the management, clinical indication and timing of procedures of apheresis are responsibility of the hematologist. (http://bvsms.saude.gov.br/bvs/saudelegis/gm/2013/prt2712_12_11_2013.html). Those procedures are performed by nurses, pharmacists, biomedics and physicians.

According to a survey by the Brazilian Medical Association (AMB – 2011), there are 1,420 hematologists heterogenically distributed. Taking this in consideration, and adding the little workload of hematology in medical education, the little contact of the students with apheresis and the lack of a scoring system for license or professional qualification , training apheresis in Brazil comes down to: (a) the insertion of topics in the Annual National Congress of Hematology, with at least two round

tables, one course period in education program and invitation of at least two renowned international experts each year; (b) frequent symposia containing apheresis classes in different Brazilian regions; (c) Presentation of lectures and participation of hematology residents in the practice of apheresis procedures (d) availability of the (few) professionals for guidance by phone, email or in person.

In conclusion, the apheresis medical physician training in Brazil is inadequate. The proposals to overcome the situation are to stimulate the interest by increasing procedure demands as well as the workload in residency, in addition to continuous efforts of professionals already engaged and the help from organizations such as ABHH, AABB, ASFA, WAA, etc.

Milestones for Apheresis Education

Carol Marshall, *MD,* **University of California, USA**

What are Milestones? Which ACGME Milestones are important for Apheresis training? How can we use them to improve resident and fellow education? How will Milestones be used to evaluate training programs? What is the timeline for implementing Milestones? These are the questions we will attempt to answer in this session.

OPENING COMBINED SYMPOSIUM: APHERESIS AROUND THE WORLD

Donor Apheresis in Malaysia

Norris Naim, *MD,* **National Blood Centre, Malaysia**

Malaysia is a developing country with a population of almost 30 million, most of which are living in the Peninsular Malaysia. The Blood Transfusion Service is under the purview of the Ministry of Health Malaysia with the National Blood Centre, Kuala Lumpur acting as the referral centre. Apheresis donation in Malaysia began in 1990 with the aim of minimizing donor exposure in the wake of the HIV epidemic, as well as to support the newly started National Fractionation Program. The program involved toll fractionation with CSL Behring, Australia to produce four types of blood products – Factor VIII and Factor IX concentrates, Human Albumin and Immunoglobulin.

Apheresis only contributes up to 4.60% of the total annual donation in Malaysia, compared to Singapore where in 2012, apheresis donation made up approximately 8.4% of its total annual collection. Cost of running an apheresis donation is the main obstacle in expanding the program despite its better end products. In most collection centres, apheresis collection is only performed when there is a clinical need as to avoid wastage from expiry of unused component.

Except for a few criteria, basic qualification for apheresis donation is similar to that of a whole blood donation – age between 18 and 60 years old, haemoglobin level of not less than 12.5 g/dL for both male and female donors, in good health and at low risk of carrying transfusion transmissible infections. To donate by apheresis for the first time, one has to have donated whole blood at least twice within a year, with a minimum weight of 55 kg and has good, firm veins. Unlike whole blood donation, apheresis donation can be performed every 2 weeks with maximum donation volume of 15 litre per year. And despite the risk of TRALI, Malaysia is yet to defer multiparous female donor from plateletpheresis donation.

Therapeutic Apheresis in Asia

Teguh Triyono, *MD,* **Sardjito Hospital/ Faculty of Medicine Gadjah Mada University, Indonesia**

Apheresis may be performed to collect a therapeutic dose of a particular component, therapeutically reduce the circulating amount of a particularly harmful component, or collect a particular blood cell/ precursor from a patient for re-infusion. Many therapeutic apheresis procedures can be applied i.e. Leukocytapheresis, Thrombocytapheresis, Erythrocytapheresis, RBC exchange, LDL apheresis, Adsorptive cytapheresis, Lymphocytapheresis, ECP, and Rheopheresis.

During five years (2009-2013), 204 procedures (137 patients) of leukocytapheresis, 72 procedures (17 patients) of therapeutic plasma exchange (TPE), and 14 procedures of thrombocytapheresis were done in Sardjito Hospital Yogyakarta Indonesia.

The diagnosis of patient treated by leukocytapheresis were CML 130(94.9%), AML 5(3.6%), and ALL 2(1.5%) with median of ages 40 (17-84) years. The Median of pre-procedure leukocyte count was 262(51-632) x103/uL, and the decrease of post-procedure leukocyte count was 26%-46%.

Therapeutic plasma exchange were performed to the patients of Guillain-Barre Syndrome (15), Myasthenia Gravis (1), and Devic's Syndrome (1) varied 1-6 procedures per-patient. For the economy reason, we used a combination of normal saline, gelafusal, and 5% albumin as the replacement fluid.

In conclusion, as a new procedure, therapeutic apheresis i.e. leukocytapheresis, TPE, and thrombocytapheresis were already performed in our country. Technical aspects of the procedure, socialization, and economical coverage should be considered to improve implementation of therapeutic apheresis.

Donor Apheresis in Africa

Robert Leonard Crookes, *MD,* **Independent Transfusion Medicine Consultant, South Africa**

'Ex Africa semper aliquid novi'. Apheresis donors play a key role in the provision of both cellular components and plasma derivatives to patients in tertiary medical facilities in a limited

number of African countries. Approximately 60,000 apheresis donations are made annually, predominantly across Northern and Southern Africa. Where the availability of blood components from whole blood donors is inadequate and in regions of high prevalence of transfusion transmissible infections (such as HIV, HBV and malaria), apheresis technology enables the transfusion needs of patients to be met by safe, quality blood products donated by relatively small panels of apheresis donors. In some centers, up to 60% of apheresis donations are split into multiple therapeutic doses. The proportion of apheresis versus whole blood derived platelet products may be impacted by the introduction of pathogen reduction technologies. In many regions, establishing voluntary, non-remunerated whole blood programs remains a priority and lack of financial resources and inadequate infrastructure remain significant challenges to the expansion of apheresis programs.

Apheresis donors participate in programs to procure hyperimmune plasma for the preparation of anti-D and anti-rabies immunoglobulin, provide HLA and HPA matched platelets in cases of platelet refractoriness and NAITP, and provide platelets and plasma for the preparation of PDGF products. The feasibility of double red cell collection programs, for donors who reside in more remote areas, is being evaluated.

Acceptance and deferral criteria and donation testing procedures are generally well established and, in some regions, Donor Vigilance programs have been initiated. Focus Group interviews have been conducted which give insight into motivators and barriers to blood donation in African donors. Africa presents unique challenges but vast possibilities. Apheresis Programs need to be extended in cost-effective ways to help meet the transfusion needs of patients who require platelets and/or plasma derivatives as part of their medical management.

Therapeutic Apheresis in Africa

Fatiu A. Arogundade, *MD,* **Obafemi Awolowo University/Teaching Hospitals Complex, Nigeria**

Africa is the second biggest continent with population of 1.033 Billion individuals which makes it the second most populous continent in the world. It homes 54 sovereign states which happen to be among the poorest with low GDP per capita. The socio-economic characteristics of different countries significantly influence availability and accessibility of health care services including Therapeutic Plasma Exchange (TPE).

This explains the wide disparity seen in the practice pattern for TPE in Africa with countries in Northern Africa and South Africa having some established services while majority of countries in west, central and east Africa have very limited (if any TPE programmes).

This review focuses on the knowledge, practice pattern and interest of physicians in different countries in Africa in TPE and proffer solutions to identified challenges.

Republic of South Africa has the best established TPE program with several additional applications in place, Egypt and Morocco have some TPE programmes in both government and private facilities while in Nigeria, TPE is just being developed.

TPE is not available in Ethiopia, Zambia and Malawi. There were no responses from Ghana, Senegal, Cameroon, Tanzania, Tunisia and Sudan.

In general, the practice of TPE is still significantly limited in Africa, its knowledge is poor and the treatment is unavailable in many African Countries. There is need to encourage training sessions and teaching seminars for interested physicians in different countries in Africa to be able to increase the knowledge and awareness of the procedure.

Improvement in knowledge, funding, manpower and materials will improve accessibility, availability and practice of TPE in Africa.

Donor Apheresis in South America

Jose Francisco Comenalli Marques, *MD,* **Hematology and Hemotherapy Blood Center – UNICAMP, Brazil**

South America gathers 12 countries (Argentina, Bolivia, Brazil, Chile, Colombia, Ecuador, Guyana, Paraguay, Peru, Suriname, Uruguay and Venezuela), with an area of 17,800,000,00 km² (12% of Earth's surface) and an estimated population of 398,094,617 inhabitants as for 2012 (6% of world population). Out of these, 8 have Hematologists Association: Argentina, Brazil, Chile, Colombia, Paraguay, Peru, Uruguay and Venezuela.

The population, blood donations, apheresis, blood centers, funding, equipment and other data shown in the presentation were based on a literature review, a survey sent to the associations of hematologists (email), the contact with companies and professionals in the field and a research on the internet (official websites, educational, pubmed, etc).

The survey, containing 9 questions, was sent to the Associations on the 12.11.2013 and on the 01.10.2014. The few responses consisted on a notice of receipt and on the promise to contact another professional to answer it, but there was rare.

Contact with companies and professionals (doctors, technicians, distributors, etc), provided relevant information from 7 countries: Argentina, Chile, Colombia, Ecuador, Peru, Uruguay and Venezuela.

In the websites (PAHO, WHO, Pubmed, government and Google) it was noticed a concern towards donation and blood transfusion, fractionation, serology, quality, safety, etc, but almost nothing about apheresis. A rare information

is available about the annual apheresis platelet transfusions in Brazil, which accounted for 24,454 (0.68%) in 2009.

Terumo, Haemonetics and Fresenius are present in varying proportions throughout South America. Funding source is also variable, predominantly public.

With no limit search in pubmed, only 100 publications were found: Brazil (59), Argentina (20), Chile (10), Colombia, Uruguay and Venezuela (3 each) and Bolivia and Peru (1 each).

Despite the difficulties, such as lack of official information, 3 different languages (Portuguese, English and Spanish), among others, the challenge was accepted, due to the importance of organizing and encouraging the inclusion of apheresis surveys in official institutions and associations (WHO, PAHO, AABB, ASFA, WAA, ABHH, etc).

Therapeutic Apheresis in South America

Alfredo Mendrone Junior, *MD,* **University of São Paulo, Brazil**

Brazil is located in the South America and has around 200.000.000 inhabitants. It has 26 autonomous states and 01 federal district, divided into 5 regions: North, North East, South East, South and Central East. Each state has, at least, one public regional coordinator blood bank, which are responsible for most of transfusion medicine in the country.

Therapeutic apheresis in Brazil began in late 80's in some blood banks linked to universities. In early 90's, observing that therapeutic apheresis procedures were being done in increasing numbers in the world to treat different disorders, others apheresis units were being created in blood banks along the country, particularly in southeast region of the country. Educational programs and discussions with physicians, government and public administration in the last 20 years could increase and overspread the specialty in Brazil. Currently, we have a specific apheresis legislation which determines that the indication of the procedures as well as the planning of therapeutic program for the patient must be discussed with the hematologist of the blood bank.

Unfortunately, we still don't have regular and formal reports of activities in apheresis medicine. Recently, we conducted the first nationwide survey in Brazil to get information about apheresis activities. At the same time, we also sent questionnaires to the other countries in South America with the same purpose. The data collected and reported confirm that therapeutic apheresis is performed in all countries in South America. Plasma exchange is the most frequent procedure performed followed by stem cell collection. However, efforts are necessary to improve regular registrations of apheresis activities in South America and to establish discussions about common difficulties and challenges.

FRANCIS S. MORRISON, MD MEMORIAL LECTURE

Therapeutic Apheresis: So Lucky To Have Gotten In At The Ground Level

Dennis Goldfinger, *MD,* **David Geffen School of Medicine at UCLA, USA**

Therapeutic Apheresis was first developed as a therapeutic modality in the early 1970s. The field evolved into a true discipline with the creation of the American Society for Apheresis and the Journal of Clinical Apheresis. I had the good fortune to have been starting my own career at about the same time, so that I published my experiences of the use of therapeutic apheresis in a number of original applications. I will discuss the exciting history of therapeutic apheresis in the treatment of a variety of disorders, and the evolution of the science and history of this field from a personal perspective.

COHN DE LAVAL AWARD LECTURE

The Science Behind the Success: Development of a Continuous Flow Blood Cell Separator

Jeane P. Hester, *MD,* **M.D. Anderson Cancer Center, Houston, USA**
To be presented on behalf of Dr. Hester by April G. Durett, MS

The first blood cell separator grew out of need for supportive care for a young leukaemia patient. The patient was the son of an engineer at the IBM Corporation who was being treated at the NIH. Out of this early collaboration of business and medicine came the IBM 2990 and 2991, which paved the way for supportive care as we know it today. The early blood cell separators were ceramic bowls which needed to be carefully cleaned and sterilized following each procedure. Then each nut and bolt had to be meticulously reassembled by hand, while maintaining sterility. The idea of a disposable channel came about and another collaboration of business and science was born. This produced the IBM2997, which is currently marketed as the Spectra. During the development, the science behind the blood cell separator produced many advances to the field of supportive care which are still the corner stones used for the innovation of newer equipment and procedures.

EDUCATION SESSION I: APHERESIS TRAINING AROUND THE WORLD – CASE STUDIES

Apheresis Training Around The World

Marleen Marianne Neyrinck, *RN,* **AZ Delta Hospital, Belgium**

On behalf of the Joint Task for Apheresis Education and Certification.

In many countries, workers in medical health care need to be qualified and competent for their job. Therefore, at the end of 2012, a group of experienced apheresis nurses and physicians from Europe and the USA, named the Joint Task Force for Apheresis Education and Certification, met to develop a training program for apheresis nurses. Based on learning objectives composed by the group, a modular educational course for apheresis nurses with theoretical and practical information and knowledge was developed.

Also Indonesia was interested in this course. At the end of 2013, a certification course was given in Jakarta for apheresis nurses/operators, based on the learning objectives made by the group mentioned before.

Not only nurses, but physicians working in the field of apheresis participated. Presentations and slides were all in English.

Because it was a certification course, the course had to be completed with an exam. This test was obligatory for the nurses/operators, but on a voluntary basis for the physicians. The test could be made in English, but also in their own language, Bahasa Indonesia.

Since we would like to have information regarding the basic knowledge of the participants prior to the course, and a deeper understanding about the subjects and the clearness of the course, the participants made also a test prior to the start of the presentations. By comparing pre- and post-test results, we could analyze the topics within the module and also whether there was an effect on the knowledge of the participants.

In this presentation, I will tell you more how we did make the course, but also regarding my experiences in Malaysia and Indonesia.

There will also be an overview of the results scored in the pre and post test of the certification course in Jakarta. Not only the results of the nurses, but also about the physicians who took the test voluntarily.

Indonesian Apheresis Education: Report of the First Apheresis Nursing Certification in Indonesia

Pupu Puspita, Bandung Blood Transfusion Service/Indonesian Red Cross, Indonesia

Indonesia is a developing country, one of the largest island nations in the world, with over two hundred forty million inhabitants.

The first apheresis procedures in Indonesia were performed in 1994. Since than more and more hospitals and blood transfusion services followed, First the hospitals started with apheresis in therapeutic procedures, mainly to reduce leukocytes and platelets in hemato-oncologic patients the procedures, Beside the use of apheresis technologies in hematology, there is also a use in neurology.

Approximately eight thousand five-hundred apheresis procedures are performed per year in Indonesia, as said mainly at Java and Sumatra. The Indonesian government plays an important role in apheresis and has regulated this by law.

In Indonesia we didn't have a formal training program for apheresis nurses and operators,otherwise than training and instructions from the manufacturing industry at the place of employment, Already in two 2010 nurses and physicians in the field of apheresis had a meeting on initiative of Dr Djumhana who is chair of the Indonesian society of Hematology and blood transfusion, in September 2012 we start to prepare for apheresis certification program with support by National and International organization, the certification program following a module by ESFH

This certification course is organized for the first time in Indonesia, providing a positive impact to the development of apheresis in Indonesia, We could realize a good network among fellow apheresis nurses / operators in Indonesia, thus simplifying communication, sharing experiences or asking opinions about apheresis procedures to be performed. Good networking will improve our ability to help our self and help each other.

EDUCATION SESSION II: REGULATORY CHALLENGES IN APHERESIS MEDICINE – A GLOBAL PERSPECTIVE

Cell Therapy Regulations

Joseph Schwartz, *MD, MPH,* **New York Presbyterian Hospital, USA**

Cell Therapy standards & regulations cover wide variety of steps to include collection, processing and transplantation of cell therapy products with a common goal of ensuring the safety and quality of cell therapy products as well as of the donors. Cell therapy regulations include variety of voluntary accreditation standards as well as National regulations. An additional layers of complexity, which need to be taken into account within those regulations, arise from the fact that cell therapy products are designated for specific recipient and frequently 'travel' around the globe. This session takes a global look at the different existing cell therapy regulations and the efforts to harmonize them. Case scenarios relevant to collection facilities with emphasis on cell therapy donors' safety will be presented and will reveal more similarities than differences.

Donor Apheresis Regulations

Anne Eder, *MD, PhD,* **American Red Cross, USA**

National regulations and voluntary accreditation standards that govern collection of allogeneic blood components by automated, apheresis methods strive to minimize risk to the blood donor and ensure the safety and quality of blood components for transfusion. A survey of donor apheresis regulations reveals many similarities but also considerable variability in practice in different countries. Such disparity in the regulations suggests uncertainty about appropriate measures to protect donors, technical or operational challenges to maintain a sufficient supply of needed blood components, or possible alternative approaches to achieve comparable outcomes. Recent studies provide insight into the relationship between the selection criteria for apheresis donors and the risk of iron deficiency, procedure-related complications or possible long-term effects of frequent blood donation. This session compares donor apheresis regulations in the European Union, Australia, Canada, Japan, United Kingdom, USA and other countries, to explore the effectiveness of various measures to protect the donors' health and ensure the quality of blood components for transfusion.

SCIENTIFIC SYMPOSIUM: APHERESIS RESEARCH AROUND THE WORLD

Update: NHLBI State of the Science Symposium in Therapeutic Apheresis & NHLBI Programs

Phyllis Mitchell, *PhD,* **Transfusion Medicine & Cellular Therapeutics Branch, National Heart, Lung and Blood Institute, USA**

The National Heart Lung and Blood Institute (NHLBI) has funded research investigations in the fields of transfusion medicine and cellular therapies for several decades. This presentation will provide an overview of current NHLBI sponsored programs in these fields and discuss an update on the activities of the Working Group, NHLBI State of the Science Symposium in Therapeutic Apheresis.

1) Describe the current activities of the Working Group, NHLBI State of the Science Symposium in Therapeutic Apheresis which includes review of the process, manuscripts & publications
2) Describe the research programs in transfusion medicine and cellular therapies that are currently supported by NHLBI, National Institutes of Health (NIH).
3) Provide an overview of funding opportunities offered by the NHLBI and how Institute-supported research programs in transfusion medicine and cellular therapies are developed and implemented.
4) Describe the NHLBI resources available to the transfusion medicine and cellular therapy community which includes access to biospecimen collections and clinical/epidemiological data, infrastructure support, and manufacture of cellular therapeutics.

The Critical Gap Analysis in Apheresis Research

Steven Spitalnik, *MD,* **Columbia University, USA**

The famous immunologist, Sir Peter Medawar, claimed that "Science is the art of the soluble," which is a very apt statement. However, for the purposes of research in apheresis, or in biomedical science in general, it might be more appropriate to modify this statement to the following: "Science is the art of the fundable." This lecture will provide some insights into how judgments and decisions are made regarding the scientific quality of grant proposals that are submitted to the National Institutes of Health. These initial scientific reviews are handled by volunteer peer reviewers, who are permanent or ad hoc members of various Initial Review Groups (i.e., "Study Sections"), which meet in person or electronically 2-3 times per year. Each grant proposal is assigned to an appropriate Initial Review Group for evaluation. The National Institutes of Health mandates that the scientific ideas described in grant proposals be evaluated by the primary reviewers with reference to five critically-important criteria: Significance, Investigators, Innovation, Approach, and Environment. The opinions regarding each of these criteria are then summarized into an Overall Impact statement and a final score. The approaches to how grant proposals are evaluated with regard to these individual criteria and Overall Impact will be discussed. Based on scores provided by the primary reviewers for each proposal, a composite score for that proposal is provided by a secret vote of all participating members of that Initial Review Group who do not have a conflict of interest. The scores of all proposals reviewed during that session, and their rank, are then used by intramural administrators at the National Institutes of Health to make funding decisions. It is anticipated that this lecture will provide more insight and understanding into the grant review process, which will assist members of the apheresis community in submitting highly competitive proposals.

(Western) Europe – Research Needs/Gaps – Italy

Paolo Perseghin, *MD, PhD,* **Azienda Ospedaliera San Gerardo, Italy**

High quality bio-medical research needs appropriate funding. A study published in 2010 (De Nicolao) stated that, compared to expenditure, Italy's scientific impact is good: R&D absolute expenditure ranks #9 and scientific papers citation ranks #8. Unfortunately, thanks to the unfavourable economic outcome which occurred in these last years, Italy's research funding in 2013 decreased by 300 million Euros. Thus, we expect that this could have a negative impact on the scientific output.

Funding sources in Italy are mainly represented by the Ministry of University and Research (MIUR), National Research Council (CNR), European Union grants, private foundations/charities. Moreover, companies/industries operating in the field may support specific studies. Finally, cooperation among scientific societies may allow for independent research, mainly focused on appropriateness and medical guidelines. Academic funding has a limited impact on apheresis research, since only two apheresis institutions (Rome and Naples) are leaded by academics, even if in many cases they operates within teaching hospitals. EU grants, that account for 582 million of Euro for the period 2014-2015, privilege multicenter and international studies, which should include countries both from Western and Eastern Europe. The last call had no specific apheresis-dedicated grants. Thus, apheresis units willing to participate should design multicenter international studies, possibly in partnership with academic institutions. Needles to say, industries sponsorship is welcome, but we should be aware that sometimes possible interference with data and results interpretation and further publication (a company-sponsored study has a 4-fold higher probability to be published when compared to non-sponsered ones) may occur. Finally, in Italy we had a very positive experience in these last years thanks to the cooperation with GITMO (BM transplantation society), which resulted in the publication of 4 papers on specific apheresis and BM transplantation-related issues. Three more papers are expected to be published in the next future.

Plasmapheresis in a Wide Range of Diseases

Valery Aleksandrovic Voinov, *MD, PhD,* **Pulmonology Clinic of I.P. Pavlov First State Medical University of Saint-Petersburg, Russia**

Many human diseases are accompanied by disturbances of structure of the internal environment. Such problems arise during acute inflammatory diseases of thoracic and abdominal cavity organs, serious traumas and burns injuries, poisonings and infectious diseases, septis and eclampsy, when the syndrome of endogenous intoxications with suppression of system of immune protection starts to develop. In this situation detoxication allows to stop crisis in the course of the illness**.** The leading role belongs to plasma exchange procedure performance, what allows not only to remove endotoxins, but also to restore level of immune protection at compensation by fresh frozen donor plasma, with more faster and full recovery.

However during the different chronic human illnesses are also accompanied by disturbances of its internal environment. It is possible to remove autoantibodies during autoimmune diseases with the help of plasmapheresis. Introduction of plasmapheresis in the scheme of complex therapy of autoimmune disseminated lung diseases has allowed to achieving more sustained response at 40% of volume reduction of hormonal therapy, to double practically life time.

Elimination of products of lipid metabolism disturbance allows to control atherosclerosis course and its complications. Plasmapheresis eliminates serious toxic effects caused by radio- and chemotherapy in oncology. Its high efficiency shown during chronic intoxication, including drug addiction and alcoholism. With the help of plasmapheresis it is possible to remove autoantibodies and pathological metabolites to prevent of the progression of liver injury at viral hepatitis, especially HCV. It is possible to reduce considerably the potential risk of serious complication of diabetes.

Big perspectives are opened for plasmapheresis during the treatment of pregnancy toxemia, the Rhesus incompatibility, urogenital infections, antiphospholipid syndrome with recurrent pregnancy loss and reliably help to prevent the disturbances of fetal development, to reduce the perinatal lethal level.

There is a long list of human diseases in which the efferent therapy can considerably raise the treatment efficiency, and really find more and more wide application in Russian clinical practice.

Apheresis Research Needs in Asia

Teguh Triyono, *MD* **Sardjito Hospital/ Faculty of Medicine Gadjah Mada University, Indonesia**

Apheresis in general, can be performed for particular component blood donations, therapeutical, and for special medical treatment. Improvement of apheresis services should be supported by proper research which can be basic, clinical, or translational. Apheresis research need in Asia may includes education for physicians, nurses, & medical students, management of apheresis service for hospital & blood center, education for apheresis donor, short and longterm side effects to the apheresis donor.

Concerning the trend of disease, these fields of research are needed also i.e. comparison between single and random donor platelet, HLA/ HPA matching, platelet bio-properties from apheresis product and its influence in patients, therapeutic apheresis modalities and inline plasma processing. For the special medical treatment, research such as PBSC collections: procedure, the rationale use for revascularization in diabetes & cardiac patients, stemcell transplantation, and Granulocyte Monocyte Adsorption are needed.

In conclusion, as a quite new procedure for donor, doctor and patients, the usage of apheresis procedure varies between countries in Asia. Apheresis research need includes procedures, clinical applications and education.

Asia – Research Needs/Gaps - Japan

Hidenori Matsuo, *MD,* **Kawatana Hospital, Japan**

Therapeutic apheresis has been applied for various autoimmune disorders and others in Japan. Most of such diseases

are often resistant against usual treatment, and the pathomechanism has not been fully elucidated. Plasmapheresis (PP) has contributed to elucidate the pathomechanism as well as being established as an effective treatment. In Japan, National Health Insurance covers apheresis therapy in the limited diseases and conditions. To obtain the approval, recently there are strong needs to demonstrate the evidence of the efficacy of treatment. Although several uncontrolled trials convincingly showed that PP can provide rapid but relatively short-term improvement, the rarity of these diseases has often prevented us from carrying out the randomized controlled trials. Immature registry system and poor strategy for clinical trials in Japan are also obstacles to RCTs. Furthermore, in apheresis therapy, it is also difficult to do sham-treatment and to keep the blindness.

Nevertheless, there have been several clinical studies to demonstrate the efficacy of apheresis therapy, which includes RCTs of cytapheresis for inflammatory bowel diseases and of lymphocytapheresis for rheumatoid arthritis. There should be many needs of clinical studies in other diseases or conditions as well as needs of the development of new devices. Now Japanese government is setting to reform the medical service for patients with intractable disorders. This should improve registry systems of each disease and may contribute to the entry of clinical trials.

EDUCATION SESSION III: BASIC THERAPEUTIC APHERESIS

When Our Patients Die – Care and Support for the Apheresis Team

Christine Fernandez-Roig, *RN, MSN, OCN,* **Dendreon- Northeast, USA**

As a crucial part of the patient care continuum the Apheresis staff develop strong relationships and bonds with their patients. When patients die the care team can experience cognitive, physical, spiritual, behavioral, and emotional responses. Understanding these responses, and effective ways of assisting the staff in coping with a patient death is essential to providing appropriate support, reducing burnout, and caregiver distress. There are several theories on grief that can provide insight, and support for the Apheresis staff. This session will focus on evidenced based interventions to assist the care team to cope with grief upon the death of a patient.

Review of the Basic Sciences Associated with Apheresis

Christopher Chun, *BS, MT(ASCP), HP,* **American Red Cross Blood Services, USA**

This presentation will provide the attendee with a broad overview of the "basic sciences" that impact the everyday life of the apheresis healthcare professional. The frontline apheresis professional is, often, called upon to assist in the clinical decision-making process toward the course of treatment undertaken. Thus, the goal of this presentation is to provide the attendee a basic understanding of the areas of Hematology, Hemostasis, Immunology, Immunohematology, and the laboratory testing associated with these areas science which will, ultimately, assist the allied healthcare provider in his/her thought process in the patient care setting.

EDUCATION SESSION IV: PEDIATRIC SHOWCASE (PANEL DISCUSSION)

Christina Anderson, *RN, BSN, HP(ASCP),* **Carter BloodCare, USA and Christine Fernandez-Roig,** *RN, MSN, OCN,* **Dendreon-Northeast, USA**

This year's Education Session IV will focus on pediatric apheresis practice around the world. We asked physicians, nurses, and allied health professionals who work with pediatric patients to complete a survey of 50 questions about their pediatric apheresis practice prior to the meeting. The survey results will be summarized during the opening of the session in a formal presentation by the chairs. The survey was completed by a total of over 50 pediatric apheresis centers representing six countries!

The second part of the session will be the Pediatric Showcase, the central part of the session in which six centers who have been specially selected will give a short presentation on their pediatric apheresis programs. The Pediatric Showcase will highlight special aspects of pediatric apheresis including centers that perform specialized apheresis procedures such as RBCX, photopheresis, cytodepletions, & HPC collections on the newer blood cell separators; centers that perform TPE in tandem with other extracorporeal procedures such as ECMO and CVVHD concurrently; centers that treat pediatric patients less than or equal to 25kg; centers that successfully a variety of types of venous access including the use of peripheral veins, peripheral inserted central catheters, and implanted ports.

After the Showcase is completed, we will conclude with an "Ask the Experts" open forum question and answer session in which the audience can ask questions from an elite panel of pediatric experts who were prequalified for the panel based on their experience.

Join us for this informative, interactive, exchange of information as we come together to promote bridging the gap to increase the outreach of pediatric apheresis throughout the world.

EDUCATION SESSION V: BASIC DONOR APHERESIS & CELLULAR COLLECTIONS

The Increasing Role of Leukapheresis Collections

Christina Anderson, *RN, BSN, HP(ASCP),* **Carter BloodCare, USA**

Leukocyte indications for apheresis have always played a role in our apheresis programs. However that role fluctuates in importance depending upon numerous factors and as new evidence is obtained supporting its use changes. Leukocytes played an important part of our past, in development of blood cell separators for granulocyte collections. Today, there are many different indications for leukocytes within apheresis. On the collection side, we collect immature and mature leukocytes for medical purposes. On the therapeutic side, we remove leukocytes in patients with leukemia in blast crisis, and through photopheresis, we collect and then reinfuse photochemo activated leukocytes in patients with several different diseases to promote immune tolerance.

Some of the indications for leukopheresis include hematopoietic progenitor cell collections (HPC), lymphocyte collections (DLI), granulocyte collections, bone marrow processing, monocyte collections (MNC) for dendritic vaccines, and other types of research collections involving leukocytes.

Traditionally speaking, therapeutic applications represent approximately 70- 80% of all apheresis, including TPE, RBCX, and photopheresis primarily. Cellular therapy represents the additional 20-30%. However, in the past 3-5 years, we have seen shifting of cellular therapy to a larger percentage in our program as more collections are being done in MNC collections for both stimulated and unstimulated donors and patients. Depending on where you place Photopheresis, as a therapeutic application or under cellular therapy, these percentages will shift dramatically, as photopheresis increases in activity nationwide. Unlike the therapeutic applications, which are fairly straightforward from a clinical and technical perspective, the leukopheresis applications require significantly more resources to maintain and support. These include additional regulatory requirements, additional eligibility requirements for the donors/patients, and additional technical challenges associated with the blood cell separators.

What's in the Bag?

Theresa Stec, *BA MT(ASCP),* **Baystate Medical Center, USA**

The objectives of this presentation is to provide an overview of blood, blood components and how apheresis separates blood into components. Quality assurance measures for donor apheresis collections and calculations will be discussed as well as a basic review of cellular collections and CD markers.

EDUCATION SESSION VI: ADVANCED DONOR APHERESIS – DONOR ELIGIBILITY ISSUES AROUND THE WORLD

Transfusion Medicine in Africa

James Kelley, *MD,* **Partners Healthcare, USA**

Transfusion medicine services vary greatly across Africa. Given the lack of infrastructure, funding, and education, many nations cannot recruit sufficient voluntary donors to meet demand for blood products and cannot deliver consistent quality controlled laboratory testing for infectious disease. Such variety in quality accounts for increased prevalence of transfusion transmissible infections such as HIV, HBV, and HCV compared to the developed world. Differences also exist in indication for transfusion, with most transfusions needed in the obstetric and pediatric settings in Africa while transfusion is primarily used for elderly surgical or oncologic patients in regions with higher gross national incomes. This presentation will highlight the challenges of delivering transfusion services in Africa including blood donor services and clinical/therapeutic use of transfusion/apheresis, demonstrate recent improvements in quality in transfusion medicine practices due to WHO/PEPFAR initiatives, compare national blood services ranging from well established (South Africa) to very limited (Mozambique), and encourage involvement in global health initiatives.

Changing Eligibility Criteria For MSM: The Canadian Perspective

Mindy Goldman, *MD, FRCP(C),* **Canadian Blood Services, Canada**

Few eligibility criteria have generated as much controversy as the deferral for men who have sex with men (MSM). In this presentation, we go back to the 1980's to review the historical context when this question was introduced, and travel around the world summarizing current practice. We then examine the importance of criteria for MSM on safety in 2014, both in terms of HIV transmission and risks related to emerging pathogens. Focusing on Canada, we detail the work done prior to making a request to our regulator, Health Canada, in support of a change to a 5 year deferral period. This involved extensive stakeholder consultations, including an on-line survey and consultation workshops with high interest patient, community, and gay rights groups. After a successful submission, a 5 year deferral period was implemented in July 2013, with a post-implementation monitoring plan to assess any impact on safety or compliance.

CLOSING COMBINED SYMPOSIUM: NEW APPLICATIONS OF APHERESIS

Cracking ECP's Mechanistic Code: Immunotherapeutic, Tunable Dendritic Cells

Richard Edelson, *MD,* **Yale New-Haven Hospital, USA**

Extracorporeal Photochemotherapy (ECP) is an established, widely used cellular immunotherapy that remarkably both immunizes against personalized tumor antigens in T cell lymphoma and selectively suppresses organ transplant rejection and graft-versus-host disease. It has been administered more than one million times in more than 500 university medical centers in the USA and Europe, ECP is one proof of the principle of the potency of dendritic cell (DC) personalized therapy. Its highly favorable safety profile has suggested that its underlying mechanism likely reflects its physiologic production of immunoregulatory DCs, although the manner ECP induces processed monocytes to enter the DC pathway has been challenging to decipher. This presentation will elucidate the mechanism of how ECP-activated platelets, through their expression of p-selectin, signal ECP-processed monocytes to differentiate into functional DCs. ECP's differential exposure of these incipient DCs to photoactivated 8-methoxypsoralen, a DNA-crosslinking drug, directs the physiologically induced DCs to become either mature immunostimulatory or immature immunosuppressive of antigen-specific T cell function. With clarification of ECP's mechanism, it became possible to reconfigure ECP to more efficiently skew the induced DCs into either immunizing or immuno-tolerizing agents. A new tunable device has been developed that enables personalized tuning of the function of the DCs, not previously possible. The potential for this new device to treat a much broader range of malignancies and autoreactive immune disorders will be discussed, through a revised therapeutic procedure now labeled "Transimmunization", in recognition of its transformation of monocytes into therapeutically potent immunizing or tolerizing dendritic cells. The scalability of this new device from mouse to man enables laboratory testing not previously possible with conventional ECP. This presentation will highlight how ECP's very substantial worldwide clinical track record may now be a springboard for logical evolution to personalized immunotherapy for a broader spectrum of cancers and T cell mediated disorders.

Apheresis Registries

Bernd Stegmayr, *MD, PhD,* **Professor of Nephrology and Internal Medicine, Department of Public Health and Clinical Medicine, Umea University, Umea, Sweden**

Objectives: National and international apheresis registries have been developed since mid 1980, starting with the French and Canadian national registry. Cross sectional registries based on international questionnaires have increased insight of various continental preferences of apheresis activities. Based on the knowledge from those and some other experiences an internet based international registry was developed and launched through the World Apheresis Association (HYPERLINK "http://www.WAA-registry.org" www.WAA-registry.org). Any centre may be part of the registry without any costs. The WAA registry has been updated in several steps. The aim of the latest update has been to enable each centre to download and analyse their own data whenever they want (i.e., for own local or national reports).

Methods & Materials: The software has been updated by the ICT Services and System Development (ITS) by economical support by the Swedish Association of Local Authorities and Regions. The registry is part of the Swedish quality assessment system. It allows entry of outcome criteria for numerous disease to evaluate the efficacy of treatment. This can be easily updated.

Results: The latest update enables each participating centre to download their own data as an excel file that can be adopted into statistical programs for specific analysis. In addition comparative data with the own country and data from the whole registry can be made at any time. The data can be used for statistical analyses and presentations. In addition the registry now allows each centre to perform reports using a dynamic system that allows analyses of data in a cross sectional way but also aggregating longitudinal data.

Conclusions: This session will report of data from established registries including information and invitation to the WAA apheresis registry. The use of these quality assessment systems including outcome data will help to reduce extent of side effect by apheresis and increase efficacy of treatments.

NMO and Other Antibody-Mediated Neurological Diseases

Angela Carmen Vincent, *MBBS, MSc, PhD (Hon) FRCPath, FRCP, FMedSci, FRS* **Nuffield Department of Clinical Neurosciences, UK**

Autoantibodies that bind to specific ion channels, receptors and related proteins, that are expressed on the surface of neurons or glial cells in the central nervous system, are proving to be important in the diagnosis and management of patients with a range of neurological conditions. Because it is very important that the autoantibodies to be pathogenic must bind to the extracellular domains of the membrane-expressed proteins, most laboratories now use cell-based assays in which the protein antigen is expressed either transiently or permanently on the cell-surface, and the antibodies detected by indirect immunofluorescence.

One of the most common antibodies is to the water channel, aquaporin-4 (AQP4). These are present in a high proportion of patients with neuromyelitis optica. They present usually with

either optic neuritis or transverse myelitis and although to meet criteria for "Devic's disease" they should have histories of both conditions, the concept of a range of AQP4-antibody associated NMO spectrum disorders (NMOSD) is now well established. AQP4 is expressed strongly on astrocytes and complement-mediated damage to astrocytes is thought to be the key pathogenic mechanism. Because the disability in NMO occurs in a step-wise fashion, increasing with each relapse, it is important to treat aggressively and maintain the patients on immunosuppression. Plasma exchange, steroids and intravenous immunoglobulins can be used to reduce antibody levels and help to prevent the relapses that are associated with step-wise progression of disability. If the response is poor, second line therapies such as rituximab and/or cylclophosphamide are tried. Some require longer term immunosuppression with azathioprine or mycophenolate.

Another antibody that can be helpful is to myelin-oligodendrocyte glycoprotein (MOG). MOG is expressed on the outer surface of the myelin sheath. MOG antibodies have recently been found mainly in children with a range of CNS inflammatory diseases (ON, ADEM, NMO, MS) and also in some adults with a typical NMO history. This is still an emerging field, but it appears that patients with MOG-antibodies have a more favourable prognosis and may not require long-term immunosuppression.

Other antibodies have now been discovered, each one directed at a specific receptor or ion-channel related associated protein, although so far the associated diseases are fairly rare. Examples are different forms of encephalitis associated with antibodies to VGKC-complex proteins, NMDA and glycine receptors. Each of the diseases shows a very good respond to immunotherapies such as steroids, plasma exchange, intravenous immunoglobulins.

Altogether there is a growing field of immunotherapy-responsive neurological diseases which need to be recognised by the clinicians and treated appropriately. There are now many neurological presentations in which the possibility of an autoimmune disease needs to be considered.

TTP Sickle Cell and the Role of VWF

Jose Lopez, *MD,* **Puget Sound Blood Center, University of Washington, USA**

Many microangiopathic diseases result from persistence of strands of very high molecular multimers of von Willebrand factor (VWF) on the surface of the microvascular endothelium. Individual multimers associate with one another to form thicker strands that can span the lumens of the small blood vessels, where they are capable of binding blood cells, especially platelets, and also of mechanically shearing erythrocytes to produce microangiopathic hemolytic anemia. In this talk, I will discuss the biochemical and geometric parameters that favor the accumulation of vWF strands on the microvascular surface, evidence that these mechanisms operate in the pathogenesis of TTP and sickle cell disease, and ways that this accumulation may be modulated in the treatment of these disorders, including through apheresis.

Stem Cell Collection in Mobilization Failure

Fevzi Altuntas, *MD,* **Turkish Society of Apheresis, Turkey**

Interactions between hematopoietic stem/progenitor cells and bone marrow microenvironment has to be disrupted for successful mobilization. Mobilization failure remains to be one of the major obstacles for patients to proceed with autologous stem cell transplantation. Factors like age, disease status, chemo/radiotherapy, platelet count before mobilization and peripheral CD34+ cell count before apheresis have been briefly defined in previous studies. Steady state mobilization with cytokines alone has still been widely accepted as the initial attempt for stem cell mobilization. Chemotherapy based mobilization can be preferred as first choice in high-risk patients or for remobilization. Although chemotherapy based mobilization has advantages of disease control besides mobilization, failure has been reported up to 30%. Salvage mobilization strategies have been composed to give one more chance to 'poor mobilizers'. Synergistic effect of a reversible inhibitor of CXCR4, plerixafor, with G-CSF has opened a new era for these patients. Preemptive approach in predicted poor mobilizers, immediate salvage approach for patients with suboptimal mobilization or remobilization approach of plerixafor in failed mobilizers have all been demonstrated convincing results in various studies. Alternative CXCR4 inhibitors, VLA4 inhibitors, bortezomib, parathormone have also been emerged as novel agents for mobilization failure. We also summarized recommendations and algorithms of current guidelines in the era of these agents.

Engineering Apheresis-Derived T Cells to Treat Cancer

Don Siegel, *MD, PhD* **University of Pennsylvania Medical Center, USA**

Our basic understanding of how the human immune system operates combined with novel genetic methods have led to exciting strategies for enhancing natural cell functions in order to create personalized cell-based therapies for cancer. In particular, the ability to turn a patient's T lymphocytes into chimeric antigen receptor-expressing T cells (CARTs) has led to the creation of "serial killer cells" that can be engineered to destroy that patient's malignancy in a rapid, decisive, and long-lasting manner. For these new approaches for cancer therapy to be at all possible, apheresis and its practitioners are required in the first critical step that provides the patient's "raw materials". This talk will review the current state of the field and the important role apheresis plays in the manufacture of these life-saving tools.

EDUCATION SESSION VII: ADVANCED THERAPEUTIC APHERESIS

Plasma Exchange and Immunoadsorption, One Disease Two Strategies? Which To Choose?

Volker Witt, *MD,* **St. Anna Kinderspital Medical University, Austria**
Total plasma exchange is an old therapeutic approach in many disease statuses. "Ill" plasma is exchanged against "healthy" plasma or exchange fluid. Whenever a meaningful pathological agent like antibodies is the main pathophysiological step in the pathomechanism of a disease, it makes sense to eliminate this pathogen by such a therapeutic approach. The advantage of total plasma exchange is the possibility to perform it in a standardized manner, making it calculable and measurable to eliminate the pathogen. The disadvantage is the exchange of the whole plasma, the whole homeostatic environment including the reduction of the plasma levels of therapeutic drugs, making it more or less counterproductive (f.e. Tensilon™ in Myasthenia gravis patients).

The Immunadsorption technique is characterized by the separation of plasma and in second step the elimination of a specific agent by immunadsorption. The pathogen is reversible linked to an antibody, which is fixated in a column. Due to the regenerability of these columns the therapeutic apheresis could be performed for many times (up to 6x) the plasma volume, having more removal of pathogen in one session than compared to total plasma exchange, where normally 1 to 2 times the plasma volume is treated. There are no side effects due to exchange fluids, no loss of "normal" proteins and drugs enabling a stable concomitant drug therapy.

In Europe systems are used where apheresis systems are combined with a control unit which regenerates the columns or systems where apheresis unit and control unit are manufactured in one single system. Different columns are available for different pathogens (antibodies, specific antibodies, Fibrinogen, Lipids a.s.o.).

Clinical trials are mainly performed in ABO incompatible renal transplantations, glomerulonephritis, connective tissue disease, neurodermatitis, rheumatic vascular diseases, Myasthenia gravis, Psoriais and many other diseases. In summery immunadsorption technique are less invasive for the patient, restricted to the meaningful pathogen and therefore in case of clear knowledge about the pathomechanism of a disease more constructive to achieve a restitution ad integrum in the patients.

Photopheresis: The Good, The Bad and The Ugly

Susan Pinkard, *RN,* **Hoxworth Blood Center, USA**
The presentation will share our experience with Photopheresis in all age groups and all conditions. The GOOD – What indications are we using to initiate photopheresis, our patient treatment schedule and outcomes. When Blood Priming is used – indications in small children and in patients with lack of ability to tolerate fluid shifts. The BAD - Managing the instrument when patients have abnormal plasma: high bilirubin, high triglycerides or receiving TPN. And the UGLY – system pressure and red cell pump alarms – what do you do?

EDUCATION SESSION VIII: APHERESIS RESEARCH WORKSHOP – HOW TO DESIGN/ CRITIQUE RESEARCH APPROACHES

Research Design and Methods Used to Evaluate Apheresis Instrumentation and Techniques

Edwin Burgstaler, *MT, HP (ASCP),* **Mayo Clinic, USA**
There is a dire need for apheresis allied health professionals to engage in apheresis research. Participation in apheresis research has many benefits to the participant such as better understanding of apheresis procedures, techniques, equipment, blood components, and patient diagnosis. ASFA benefits from their participation with the submission of abstracts, manuscripts, as well as networking sessions and lectures. This presentation gives some of the considerations for getting involved in research, examples of research projects performed by an allied health professional, definition of the scientific method, and considerations on research techniques. An actual research project is dissected into its components as an example. In addition, two award winning abstracts are dissected and presented. The purpose of this presentation is to show that there are possibilities for participation in apheresis research by allied health professionals.

Role of Nursing & Allied Health Professionals in Research

Zoe Morelli, *RN,* **University of Texas Southwestern Medical Center, USA**
"The Role of Allied Health Professionals in Research" will review the Allied Health Professionals important and evolving role in apheresis research including the IRB process, research design, and multidisciplinary collaboration. This session will focus on the significance of allied health professionals when translating research into clinical practice. A Nursing Driven Research Publication will be critiqued using abstract examples.

Identifying Best Practices in Clinical Research Design

Edward Wong, *MD,* **Children's National Medical Center, USA**
This session will identify weaknesses and strengths of a variety of clinical research designs. In addition, common misuse of statistics in clinical research will be discussed. Participants will have the opportunity to analyze a variety of abstracts in a group setting and identify best practices in clinical research design.

POSTER ABSTRACT LISTINGS

Abstract Number	Abstract Title	Author	Country
25	CYTOREDUCTIVE THERAPY FOR CELLULAR HYPERVISCOSITY: EFFICACY OF CYTAPHERESIS TREATMENT FOR CHRONIC MYELOGENOUS LEUKEMIA AND ESSENTIAL THROMBOCYTHEMIA.	Jan Hofmann	**USA**
26	FREQUENCY OF UNEXPECTED COMPLICATIONS IN A HIGH-VOLUME APHERESIS SERVICE	Lawrence Williams	**USA**
27	PROSPECTIVE STUDY OF EFFICACY OF 4% TRISODIUM CITRATE AS A CATHETER LOCKING SOLUTION FOR THERAPEUTIC APHERESIS USES	Anna Koo	**USA**
28	RITUXIMAB AND INTERMEDIATE-PURITY PLASMA-DERIVED FACTOR VIII CONCENTRATE AS ADJUNCTS TO THERAPEUTIC PLASMA EXCHANGE FOR THROMBOTIC THROMBOCYTOPENIC PURPURA (TTP)	Soumya Pandey	**USA**
29	DECREASING CENTRAL VENOUS CATHETER UTILIZATION IN APHERESIS WITH BARD SITE-RITE PREVUE ULTRASOUND SYSTEM AND BARD POWERGLIDE MIDLINE	Zoe Morelli	**USA**
30	SAFETY OF EXTRACORPOREAL PHOTOCHEMOTHERAPY (ECP): THE UNIVERSITY OF MICHIGAN EXPERIENCE	Susan Masten	**USA**
31	A NURSING EDUCATIONAL TOOL TO IMPROVE QUALITY OF CARE IN PATIENTS RECEIVING EXTRACORPOREAL PHOTOPHERESIS	Teresa Didehbani	**USA**
33	ECP PROCEDURE FAILURES: IS THERE AN ACCEPTABLE FREQUENCY?	Christi-Lynn Martin	**USA**
34	PROSPECTIVE STUDY OF CATHFLO® ACTIVASE® (ALTEPLASE) TO RESTORE FUNCTION OF CATHETERS AND SUBCUTANEOUS PORTS IN THERAPEUTIC APHERESIS	Anna Koo	**USA**
35	RED BLOOD CELL DEPLETION/EXCHANGEPROCEDURE IN PATIENTS WITH SICKLE CELL DISEASE: COMPARISON BETWEEN SPECTRAOPTIA AND COBE SPECTRA SEPARATORS	Pascale Poullin	**France**
36	MULTIMODAL APHERESIS THERAPY FOR LIFE- THREATENING RASBURICASE-INDUCED METHEMOGLOBINEMIA	Radhika Dasararaju	**USA**
37	A RETROSPECTIVE COMPARATIVE REVIEW OF LOW COLLECTION EFFICIENCY HAEMOPOIETIC PROGENITOR CELL COLLECTIONS PRE AND POST INTRODUCTION OF PLERIXAFOR	Susan Price	**Australia**
38	CHANGES IN THE FIBRINOGEN LEVELS IN PATIENTS UNDERGOING THERAPEUTIC PLASMA EXCHANGE WITH ALBUMIN REPLACEMENT. IS THERE A RELATIONSHIP TO THE DIAGNOSIS? REVIEW OF 225 PROCEDURES IN 45 PATIENTS WITH FOUR DIFFERENT DIAGNOSES	Ramakrishna Reddy	**USA**
39	COLLECTING APHERESIS PLATETS WITH PLATELET ADDITIVE SOLUTION USING THE TERUMO TRIMA	Joanne Becker	**USA**
40	RED BLOOD CELL EXCHANGE PREVENTS FULMINANT LIVER FAILURE FROM ACUTE SEVERE SICKLE CELL HEPATOPATHY: CASE SERIES	Theresa Kinard	**USA**
41	DOES TOTAL PLASMA EXCHANGE FOR THROMBOTIC MICROANGIOPATHIES AFFECT OVERALL PLASMA USAGE IN THE SETTING OF PATIENT BLOOD MANAGEMENT?	Jessica Tracht	**USA**
42	REPORTING MULTI-CENTRE EXPERIENCES ON SPECTRA OPTIA COLLECTIONS FROM A TRANSPLANT LABORATORY PERSPECTIVE	Vicki Antonenas	**Australia**

Abstract Number	Abstract Title	Author	Country
43	THERAPEUTIC PLASMA EXCHANGE (TPE) AND PEDIATRICS: A DIALYSIS PROGRAM'S STORY OF IMPROVING QUALITY PATIENT EXPERIENCE AND STAFF ENGAGEMENT THROUGH INNOVATION AND COLLABORATION	Dan Hansgen	**USA**
44	APHERESIS COLLECTION OF HEMATOPOIETIC PROGENITOR CELLS UTILIZING HEPARIN AND CITRATE ANTICOAGULATION IN A CONTINUOUS FLOW CENTRIFUGATION SYSTEM AUGMENTED BY OPTICAL DETECTION	Walter Kelley	**USA**
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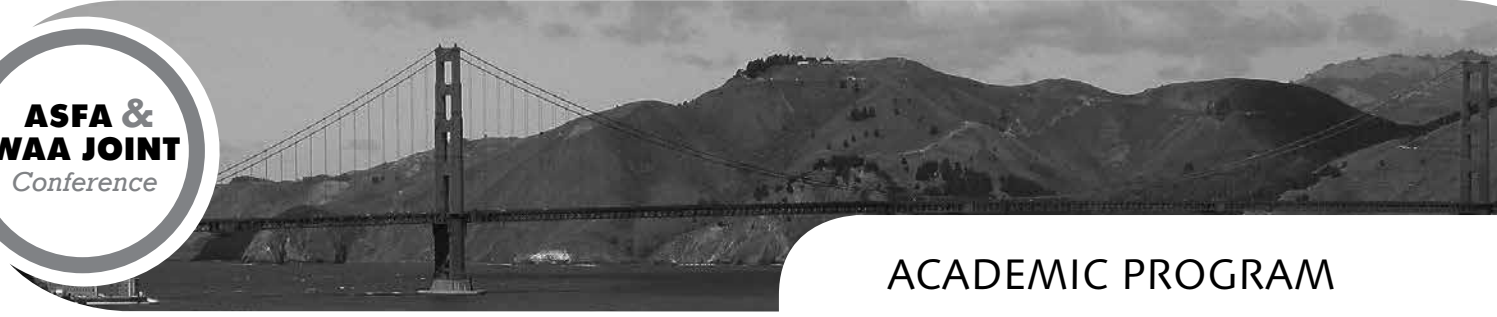

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Yan Yun Wu, *MD, PhD*
Ileana Lopez-Plaza, *MD*
Kendall Crookston, *MD, PhD*
Yvette Co Tanhehco, *MD*
Gay Wehrli, *MD*, *MSEd*
Mark Williams, *MD, FACP, FASN*
Edward Wong, *MD*
Abba Zubair, *MD*
Christopher Leveque, *MD*
Jason Chiang, *MD*
Mohammed Al Sammak, *MD*
Ara Metjian, *MD*
Gampala Reddy, *MD*
Yanhua Li, *MD*
Wendy Paul, *MD*
Sara M. Shunkwiler, *MD*
Nicole Aqui, *MD*

PAST ASFA AWARDS RECIPIENTS

Past Recipients of the ASFA Lecturer Award

Alvaro Pineda, *MD* **(1993)**
Harvey Klein, *MD* **(1994)**
Thomas Price, *MD* **(1995)**
Ronald Strauss, *MD* **(1996)**
Samuel Pepkowitz, *MD* **(1999)**
Anna Koo, *MD* **(2000)**
Dennis Goldfinger, *MD* **(2001)**
Robert Weinstein, *MD* **(2003)**
Ronald Gilcher, *MD* **(2004)**
Haewon Kim, *MD* **(2005)**
Antonio S. Torloni, *MD* **(2006)**
Nicholas Bandarenko, *MD* **(2007)**
Marisa Marques, *MD* **(2008)**
Christine Fernandez-Roig, *RN*, *BSN* **(2009)**
Mark Brecher, *MD* **(2010)**
Dobri Kiprov, *MD* **(2011)**
Chester Andrzekerski, *MD* **(2012)**
Jeffrey L. Winters, *MD* **(2013)**

Past Recipients of the ASFA Presidential Award

Irene Zielinski, *RN*, *HP(ASCP)* **(1997)**
Pat Golden, *RN*, *HP(ASCP)* **(1998)**
Bonnie Sink, *RN*, *HP(ASCP)* **(1999)**
Dobri Kiprov, *MD* **(2000)**
Ronald Strauss, *MD* **(2001)**
Joleen Pavelka, *RN*, BSN **(2002)**
James Smith, *MD* **(2003)**
Wanda Koetz, *RN*, *HP(ASCP)* **(2004)**
Robert Weinstein, *MD* **(2005)**
Thomas Price, *MD* **(2006)**
Gail Rock, *PhD*, *MD* **(2007)**
Edwin Taft, *MD* **(2008)**
Edwin A. Burgstaler, *MT, HP(ASCP)* **(2009)**
Bruce McLeod, *MD* **(2010)**
Mark Brecher, *MD* **(2011)**
Zbigniew Szczepiorkowski, *MD* **(2012)**
Christina Anderson, *RN* **(2013)**

Past Recipients of the SHS Award

Helen Owen-Jones, *RN*, *HP(ASCP)* **(1999)**
Diane Gulden, *RN*, *HP(ASCP)* **(2000)**
Nancy McCombie, *RN* **(2001)**
Edwin A. Burgstaler, *MT, HP(ASCP* **(2002)**
D. Gladden, *RN* **(2003)**
Christine Fernandez, *RN*, *BSN* **(2004)**
Betty Kong, *MT(ASCP), HP* **(2005)**
Martha Wieland, *BSN, RN*, *HP(ASCP* **(2006)**
Theresa Stec, *BA, MT(ASCP)* **(2008)**
Sandra Sabin, *RN*, *BSN, HP(ASCP)* **(2009)**
Judy Levitt, *MT(ASCP), SBB* **(2010)**
Christina Anderson, *RN*, *BSN, HP(ASCP)* **(2011)**
Gina Dargo, *RN* **(2012)**
Deanna Duvall, *RN, BSN, HP(ASCP)* **(2013)**

Past Recipients of the ASFA Allied Health Abstract Award

Doug Padley, *MT(ASCP)* **(1990)**
Maureen Northway, *RN* **(1991)**
Sandy Maresh **(1992)**
Donald Humphreys, *RN* **(1993)**
Jocelyn Guillermo, *RN* **(1994)**
Joleen Pavelka, *RN*, *BSN* **(1995)**
Gerald Ludwig, *MS* **(1996)**
Carolann Brown, *RN* **(1997)**
Edwin A. Burgstaler, *MT, HP(ASCP)***(1998)**
Grace Chan, *RN* **(1999)**
Marilyn Blumenstein, *RN*, *MSN, HP* **(2000)**
Edwin A. Burgstaler, *MT, HP(ASCP)* **(2001)**
Christina Anderson, *RN*, *BSN, HP(ASCP)* **(2002)**
Ernestine Moore, *RN*, *HP* **(2005)**
Rose Shaw, *RN* **(2006)**
Edwin A. Burgstaler, *MT, HP(ASCP)* **(2007)**
Sharon Farrell, *RN*, *BSN, HP(ASCP)* **(2008)**
Jessie Alex, *RN* **(2009)**
Edwin A. Burgstaler, *MT, HP* **(2010)**
Jennifer Anderson, *RN*, *HP(ASCP)* **(2011)**
Edwin Burgstaler, *MT, HP(ASCP)* **(2012)**
Ferda Tekin Turhan **(2013)**

Past Recipients of the ASFA Junior Investigator Abstract Award

Shadan Mansoor, *MD* **(1998)**
Norman D. Means, *MD* and Geraldine Goss **(1999)**
Basilio Pertine, *MD* **(2000)**
Gregory Pomper, *MD* **(2001)**
Jeffrey L. Winters, *MD* **(2002)**
Wilmore Webley, *MS, BA, MT* **(2003)**
Sudha Sinha, *MD* **(2005)**
Haifeng M. Wu, *MD* **(2006)**
Anand Padmanabhan, *MD, PhD* **(2007)**
Yasuko Erickson, *MD* **(2008)**
Elie Richa, *MD* **(2009)**
Katherine Radwanski, *MS* **(2010)**
Neil Shah, *MD* **(2011)**
Neil Shah, *MD* **(2012)**
Jay S. Raval, *MD* **(2013)**

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