10th International Conference on Pediatric Mechanical Circulatory Support Systems & Pediatric Cardiopulmonary Perfusion

The Hall of Flags, University of Pennsylvania, Philadelphia, PA, USA
May 28-31, 2014

Conference Founder
Akif Úndar, PhD, USA

Local Program Chair
Chitra Ravishankar, MD, USA

Honorary Co-Chairs
Aydın Aytac, MD, Turkey
William S. Pierce, MD, USA

Keynote Lecturers
Thomas L. Spray, MD, USA
Emile A. Bacha, MD, USA

Planning/Scientific Committee
Chitra Ravishankar, MD, USA
Kerem Pekkan, PhD, USA
Tami Rosenthal, CCP, MBA, USA
Shigang Wang, MD, USA
J. Brian Clark, MD, USA
John L. Myers, MD, USA
Akif Úndar, PhD, USA

Conference Coordinators
Heather Stokes
Jennifer Stokes
Erlee Meyers

International & Local Members, Modulators & Wet Lab Instructors
Mehmet Ağrıbaşlı, MD, Turkey
Atif Akçevin, MD, Turkey
Tijen Alkan-Bozkaya, MD, Turkey
Emile A. Bacha, MD, USA
Emre Beli, MD, France
Meghan Burkhardt, MS, OTR, USA
Michael P. Brewer, MS, CCP, USA
Idâgene Cestari, PhD, Brazil
Paul J. Chai, MD, USA
J. Brian Clark, MD, USA
Jack G. Copeland, MD, USA
Haydon Dando, CCP, Australia
Lakshmi P. Dasi, PhD, USA
Yves Durandy, MD, France
Pirooz Eghtesady MD, PhD, USA
Talya Frey, CCP, USA
Stephanie Fuller, MD, USA
Roberta L. Hales MHA, RN, USA
Sertaç Haydin, MD, Turkey
Rebecca Hoffritz, PT, DPT, PCS, USA
Brad Keller, MD, USA
Roxanne Kirsch MD, USA
Javier Lasas, MD, USA
Giovanni Battista Luciani, MD, Italy
Thomas Markmann, MBA, Germany
Christopher Mascio, MD, USA
Meredith McDonough, MS, CCLS, USA
John L. Myers, MD, USA
Vinay M. Nadkarni, MD, USA
Maryam Naim, MD, USA
Aruna Nathan, MD, USA
Matthew O’Connor, MD, USA
Ender Õdemiş, MD, Turkey
Linda Pauliks, MD, MPH, USA
David Palanzo, CCP, USA
Stacie Peddy, MD, USA
Kerem Pekkan, PhD, USA
William S. Pierce, MD, USA
Chitra Ravishankar, MD, USA
Gregg Roach, CCP, USA
Tami Rosenthal, CCP, MBA, USA
Joseph Rossano, MD, USA
Thomas L. Spray, MD, USA
Ravi Thiagarajan, MD, USA
Amy Throckmorton, PhD, USA
Alexis Topjian, MD, USA
Akif Úndar, PhD, USA
Shigang Wang, MD, USA
Wei Wang, MD, PhD, China
Introduction

The 10th International Conference is intended for pediatric heart surgeons, biomedical engineers, cardiologists, intensivists, neonatologists, scientists, anesthesiologists, neurologists, nurses, pediatric perfusionists, respiratory therapists, residents, fellows, and students. All are invited and encouraged to attend.

Purpose and Overview

The purpose of the proposed meeting is to bring together internationally known clinicians, bioengineers, and basic scientists involved in research on pediatric mechanical cardiac support systems and pediatric cardiopulmonary bypass procedures. The primary focus will be to describe explicitly the problems with current pediatric mechanical circulatory support systems, methods, techniques during acute and chronic support and suggest solutions with novel approaches.

Learning Objectives

Upon completion of the 10th Annual conference, participants will be able to:

- Evaluate the impact of unique features and outcomes for pediatric mechanical circulatory support systems.
- Compare the benefits and risks of current and new extracorporeal life support systems (ECLS) systems.
- Determine how and where to implement cutting edge bioengineering approaches in their practice of pediatric cardiovascular medicine.
- Critique new & current devices including pediatric heart pumps, oxygenators, etc., and the cite areas where additional physician training may be required for successful implementation.

Disclosure of Relevant Financial Relationships and Unapproved Uses of Products

Complete faculty disclosure information will be provided to conference participants at registration in the conference materials and syllabi at the beginning of the conference. Faculty members are also expected to disclose to participants any discussions of off-label and/or investigational uses of pharmaceutical products within their presentations.
Educational Credit

- Physicians: 19.5 AMA PRA Category 1 Credit(s)™
- Perfusionists: Category 1 CEU's (pending)
- Nurses: 19.5 Category 1 CEU's

ACCME Accreditation Statement
The Children's Hospital of Philadelphia is accredited by the Accreditation Council for Continuing Medical Education (ACCME) to provide continuing medical education for physicians.

AMA PRA Credit Designation Statement
The Children's Hospital of Philadelphia designates this live activity for a maximum 19.5 AMA PRA Category 1 Credit(s)™. Physicians should claim only the credit commensurate with the extent of their participation in the activity.

Registration

ONLINE REGISTRATION ONLY. Registration is accessible via the conference web site:
http://pennstatehershey.org/web/pedscpb/home

On-site registration can be accepted only if space is available.

Exhibit Opportunities

Companies wishing to exhibit should visit the conference web site.
http://pennstatehershey.org/web/pedscpb/home

Cancellation Policy

Cancelations received before April 1, 2014 will be assessed a $200 processing fee. No refunds will be made for cancellations received after April 1, 2014. Substitutes are accepted at any time.

Americans with Disabilities Act

If you have a disability and require assistance to participate in this conference, please contact Pedsabstracts@hmc.psu.edu as early as possible, but no later than five (5) business days before the meeting.
Important Dates (2013-2014)

<table>
<thead>
<tr>
<th>DATE</th>
<th>EVENTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>December 16, 2013</td>
<td>Conference &amp; Hotel Registration Begins</td>
</tr>
<tr>
<td>December 16, 2013</td>
<td>Abstract Submission Begins – Online Only</td>
</tr>
<tr>
<td>March 1, 2014</td>
<td>Exhibitor Booth Registration Deadline</td>
</tr>
<tr>
<td>March 1, 2014</td>
<td>Final Day for Abstract Submissions</td>
</tr>
<tr>
<td>March 7, 2014</td>
<td>Notification of Accepted Abstracts</td>
</tr>
<tr>
<td>April 1, 2014</td>
<td>Early Registration Ends</td>
</tr>
<tr>
<td>April 18, 2014</td>
<td>Final Day for Manuscript Submissions Being Considered for Conference Awards</td>
</tr>
<tr>
<td>April 1-27, 2014</td>
<td>Late Registration</td>
</tr>
<tr>
<td>May 28-31, 2014</td>
<td>On-site Registration (Only if Space is Available)</td>
</tr>
</tbody>
</table>

Fees

Conference fees include instruction, handout materials, 3 breakfasts, 3 lunches, and 6 coffee breaks.

<table>
<thead>
<tr>
<th>Participants</th>
<th>If registered by April 1, 2014</th>
<th>If registered after April 1, 2014</th>
</tr>
</thead>
<tbody>
<tr>
<td>MD/PhD (Physicians and scientists)</td>
<td>$500</td>
<td>$600 (on-site $700)</td>
</tr>
<tr>
<td>Members of International Society - MD/PhD- Physicians, Scientists</td>
<td>$400</td>
<td>$500 (on-site $600)</td>
</tr>
<tr>
<td>Nurses, Perfusionists, Students &amp; Others</td>
<td>$450</td>
<td>$550 (on-site $650)</td>
</tr>
<tr>
<td>Members of International Society - Nurses, Perfusionists, Students &amp; Others</td>
<td>$350</td>
<td>$450 (on-site $550)</td>
</tr>
</tbody>
</table>

Hotel Accommodations

The Inn at Penn, A Hilton Hotel

Address: 3600 Sansom Street, Philadelphia, PA, 19104


Telephone: 215-222-0200 / 1-800-231-4587

Reduced prices for participants: Single/Double Room: $169 (USD) per night
Updated Scientific Program

WEDNESDAY, MAY 28, 2014
1:00 – 5:00pm  ON-SITE REGISTRATION (Only if Space is Available)

THURSDAY, MAY 29, 2014
7:00 – 8:00am  Breakfast / Conference Registration
8:00 – 8:15am  WELCOME
   Akif Ündar, PhD, Penn State Hershey Children’s Hospital & Penn State
   Hershey College of Medicine, Hershey, PA, USA
   Chitra Ravishankar, MD, (Local Chair), Children’s Hospital of
   Philadelphia (CHOP), Philadelphia, PA, USA

8:15 - 10:00am  PLENARY SESSION #1:

   Pediatric MCS and Heart Transplantation: Current and Future
   Trends (20 min Each)
   Moderators: William S. Pierce, MD, Hershey, PA, USA, Joseph Rossano,
   MD, Philadelphia, PA, USA, and J. Brian Clark, MD, Hershey, PA, USA

   IL1. Diagnosis and Management of Myocarditis in Children
      Matthew O’Connor, MD, Philadelphia, PA, USA

   IL2. The Use of VAD Support in Children: the State of the Art
      Christopher Mascio, MD, Philadelphia, PA, USA

   IL3. Myths and Facts of Pulsatile Flow during Acute and Chronic MCS in
      Neonates and Infants
      Akif Ündar, PhD, Hershey, PA, USA

   IL4. Pediatric Cardiac Transplantation for Complex Congenital Heart
      Disease
      Paul Chai, MD, New York, NY, USA

   IL5. VADs and Outcomes Post Transplantation: What We Know and
      What We Don’t Know?
      Pirooz Eghtesady MD, PhD, St. Louis, MO, USA

10:00 - 10:45am  Coffee Break/Exhibits/Posters
10:45 - Noon  Key Note Lecture #1:

   Aortic Valve Surgery in Neonates, Infants, and Children: Has
   Anything Changed during My Career?
   Thomas L. Spray, MD, Chief, Division of Cardiothoracic Surgery, Alice
   Langdon Warner Endowed Chair in Pediatric Cardiothoracic Surgery,
   Professor of Surgery, Perelman School of Medicine at the University of
   Pennsylvania, The Children’s Hospital of Philadelphia, Philadelphia, PA,
   USA

   Introduction: Stephanie Fuller, MD, Philadelphia, PA, USA
11:45am – Noon  Presentation of Young Investigators’ Awards

Noon - 1:00pm  Lunch Break

1:00 - 3:00pm  PLENARY SESSION #2:

**Minimizing Adverse Effects of CPB & ECLS: a Multi-disciplinary Team Approach (20 min Each)**

*Moderators: Paul Chai, MD, New York, NY, USA, Pirooz Eghtesady MD, PhD, St. Louis, MO, USA and Talya Frey, CCP, Philadelphia, PA, USA*

**IL6. Anesthesiologist’s Perspective**
Aruna Nathan, MD, Philadelphia, PA, USA

**IL7. Surgeon’s Perspective**
Emre Belli, MD, Le Plessis Robinson, France

**IL8. Perfusionist’s Perspective**
Haydon Dando, CCP, Sydney, Australia

**IL9. Cardiac Intensivist’s Perspective**
Roxanne Kirsch MD, Philadelphia, PA, USA

**IL10. Apolipoprotein E Levels in Pediatric Patients Undergoing Cardiopulmonary Bypass**
Mehmet Ağırbaşlı, MD, Istanbul, Turkey

**IL11. Alternative Transcatheter Procedures to Surgery in the Treatment of Congenital Heart Disease**
Ender Ödemiş, MD, Istanbul, Turkey

3:00 - 3:45pm  Coffee Break/Exhibits/Posters/Wet-Labs

3:45 - 5:45pm  PLENARY SESSION #3:

**ECPR & ECLS: Utilization, Management, and Outcomes (20 min Each)**

*Moderators: Vinay M. Nadkarni, MD, Philadelphia, PA, USA, Stephanie Fuller, MD, Philadelphia, PA, USA and Ravi Thiagarajan, MD, Boston, MA, USA*

**IL12. The Utilization of ECPR in the Pediatric Population**
Javier Lasa, MD, Philadelphia, PA, USA

**IL13. Outcomes of ECPR for Cardiac Indications**
Maryam Naim, MD, Philadelphia, PA, USA

**IL14. Role of Post Arrest Management and Neuromonitoring in Improving Outcomes**
Alexis Topjian, MD, Philadelphia, PA, USA
IL15. Novel Diagonal ECLS System Improves Outcomes in Pediatric Cardiac Patients
Sertaç Haydin, MD, Istanbul, Turkey

IL16. Long-term Outcome and Quality of Life after ECLS
Ravi Thiagarajan, MD, Boston, MA, USA

Discussion (20 min)
FRIDAY, MAY 30, 2014

7:00 – 8:00 am  Breakfast / Conference registration

8:00 – 10:00 am  PLENARY SESSION #4:

**Engineering Approach to Pediatric Cardiovascular Medicine (20 min Each)**

*Moderators: Kerem Pekkan, PhD, Pittsburgh, PA, USA and Giovanni Battista Luciani, MD, Verona, Italy*

**IL17. An Intravascular Therapeutic Device for Pediatric Patients with Congenital Heart Disease: Mechanical Support of the Fontan Physiology**
*Amy Throckmorton, PhD, Philadelphia, PA, USA*

**IL18. Functionalized Tissue Engineered Patches for Pediatric Surgical Reconstructions**
*Brad Keller, MD, Louisville, KY, USA,

**IL19. Translating Technology into Clinical Practice: a Brazilian Pediatric Ventricular Assist Device Development**
*Idágene Cestari, PhD, Sao Paolo, Brazil*

**IL20. Advances in Heart Valve Bioengineering with Special Emphasis on Scaling**
*Lakshmi P. Dasi, PhD, Denver, CO, USA*

**IL21. Computational Fluid Dynamics in Congenital Aortic Valve Disease**
*Giovanni Battista Luciani, MD, Verona, Italy*

**IL22. Progress in Computational Modeling of Neonatal Cardiopulmonary Bypass Hemodynamics with Detailed Circle of Willis Anatomy**
*Kerem Pekkan, PhD, Pittsburgh, PA, USA*

10:00 – 11:00 am  Coffee Break/Exhibits/Posters

11:00 – Noon  Key Note Lecture #2

**Individualized Strategy for HLHS: Norwood/Sano, Norwood/BT Shunt or Hybrid?**

*Emile Bacha, MD, FACS, Calvin F. Barber Professor of Surgery, Chief, Division of Cardiothoracic Surgery, New York-Presbyterian/Columbia University Medical Center; Director, Pediatric Cardiac Surgery, Morgan Stanley Children’s Hospital, New York, NY, USA*

*Introduction: Paul J. Chai, MD, New York, NY, USA*

Noon – 1:00pm  Lunch Break
<table>
<thead>
<tr>
<th>Time</th>
<th>Session</th>
</tr>
</thead>
<tbody>
<tr>
<td>1:00 – 3:00pm</td>
<td><strong>PARALLEL SESSIONS</strong></td>
</tr>
<tr>
<td>1:00 - 3:00pm</td>
<td><strong>PLENARY SESSION #5:</strong></td>
</tr>
<tr>
<td></td>
<td><strong>VAD &amp; ECLS (20 min Each)</strong></td>
</tr>
<tr>
<td></td>
<td><em>Moderators: Atıf Akçevin, MD, Istanbul, Turkey and Emre Belli, MD, Paris, France</em></td>
</tr>
<tr>
<td>IL23.</td>
<td>Is It Time to Go Back to Pulsatile Flow: Consequences of Non-Pulsatile and Pulsatile Flow in Cardiopulmonary Bypass and Mechanical Circulatory Support Devices?*</td>
</tr>
<tr>
<td></td>
<td><em>Jack G. Copeland, MD, San Diego, CA, USA</em></td>
</tr>
<tr>
<td>IL24.</td>
<td>Rehabilitation after VAD: Role of Ancillary Staff</td>
</tr>
<tr>
<td></td>
<td><em>Rebecca Hoffritz, PT, DPT, Meghan Burkhardt, MS, OTR (L), Meredith McDonough, MS, CCLS IV, Philadelphia, PA, USA</em></td>
</tr>
<tr>
<td>IL25.</td>
<td>Extracorporeal Life Support for Low Flow Applications ECLS Set 2.8 - First Standardized Solution</td>
</tr>
<tr>
<td></td>
<td><em>Thomas Markmann, MBA, Rastatt, Germany</em></td>
</tr>
<tr>
<td>IL26.</td>
<td>Cost Effective Usage of Hollow Fiber Membrane Oxygenators in Extracorporeal Membrane Oxygenation in Infants</td>
</tr>
<tr>
<td></td>
<td><em>Atıf Akçevin, MD, Istanbul, Turkey</em></td>
</tr>
<tr>
<td>IL27.</td>
<td>Extracorporeal Circulation: Ten-year Practices in China</td>
</tr>
<tr>
<td></td>
<td><em>Wei Wang, MD, PhD, Shanghai, China</em></td>
</tr>
<tr>
<td></td>
<td><strong>Slide Presentation (selected from Abstracts)</strong></td>
</tr>
<tr>
<td>S1.</td>
<td>Monitoring Cerebral and Somatic NIRS Values (Renal and Hepatic) during Cardiac Surgery in Neonates and Infants</td>
</tr>
<tr>
<td></td>
<td><em>Tijen Alkan-Bozkaya¹, Tuğrul Örmeci², Cihangir Ersoy¹, Arda Özyüksel¹, Burak Arkan¹, Akif Ündar³, Atıf Akçevin¹, Halil Türkoğlu¹, Istanbul Medipol University, Dept. of Cardiovascular Surgery² and Radiology², Istanbul, TURKEY, and Penn State University, Children’s Hospital, Hershey, PA, USA³</em></td>
</tr>
<tr>
<td>3:00pm – 3:30pm</td>
<td><strong>Coffee Break/Exhibits/Posters/Wet-Labs</strong></td>
</tr>
</tbody>
</table>
3:45 – 6:45pm  WET-LABS

**Moderators:** Talya Frey, CCP, Philadelphia, PA, USA and Akif Ündar, PhD, Hershey, PA, USA

**Hands-On Experience with the Newest Pediatric CPB/ECLS/MCS Systems**

Six wet-labs (30 min each)

1:00 – 5:30pm  PARALLEL SESSIONS

**1:00 - 5:30pm**  
**ECLS Simulation & Cardiac ICU Rounds and Case Presentations:**  
(Advanced Registration is Required)

**Instructors:** Roxanne Kirsch MD, Philadelphia, PA, USA, Stacie B. Peddy, MD, Philadelphia, PA, USA and Roberta L. Hales MHA, RRT-NPS, RN

1:15- 3:00pm  
**Group #1:**  
**CICU Rounds (TBA) (Advanced Registration is Required)**

**Group #2:**  
**ECLS Simulation (TBA) (Advanced Registration is Required)**

3:00 – 3:30pm  
**Coffee Break/Exhibits/Posters/Wet-Labs**

3:30 - 5:30pm  
**Group #3:**  
**CICU Rounds (TBA) (Advanced Registration is Required)**

**Group #4:**  
**ECLS Simulation (TBA) (Advanced Registration is Required)**

**ECLS Simulator Training:**

This session is for ICU physicians, CT surgeons, nurses, perfusionists and respiratory therapists involved in ECMO cannulation and management. The session will use simulation to facilitate ECPR hands on training. In addition, this program focuses on techniques to train residents/fellows and nurses for a successful ECMO program as well as techniques to build a simulation program. This program will run twice in the afternoon, and each session will incorporate a maximum of 20/session.

**Cardiac ICU Rounds and Case Presentations:**

These sessions will be held in the CICU at The Children’s Hospital of Philadelphia and lead by CICU staff. Each session will be interactive during which active discussion from attendees is invited regarding all aspects of management and outcomes. There will be 2 sessions, each of 90 minutes duration, and space is restricted to 25 participants for each session. The session will be suitable for all staff involved in the management of critically ill children with heart disease and will include a tour of the unit and discussion regarding resources and staffing requirements.
SATURDAY, MAY 31, 2014

8:00 – 10:00am  PLENARY SESSION #6:

**Pediatric Perfusion: 2014 Update (20 min Each)**

*Moderators: Haydon Dando, CCP, Sydney, Australia, Talya Frey, CCP, Philadelphia, PA, USA, and Wei Wang, MD, PhD, Shanghai, China*

Haydon Dando, CCP, Sydney, Australia

IL29. Ex Vivo Lung Perfusion
Gregg Roach, CCP, Philadelphia, PA, USA

IL30. Use of Blood Products in Pediatric Cardiac Surgery
Yves Durandy, MD, Le Plessis Robinson, France

IL31. Bloodless Unifocalization Repair on 3.5 kilo Jehovah's Witness Patient
Michael P. Brewer, MS, CCP, New York, NY

IL32. Evaluation of Different Diameter Arterial Tubing and Arterial Cannulae in Simulated Pediatric CPB Circuits
Shigang Wang, MD, Hershey, PA, USA

IL33. Developing a Culture of Safety
Talya Frey, CCP, Philadelphia, PA, USA

10:00 – 10:45am  Coffee Break/Exhibits/Posters/Wet-Labs

10:45 – 1:00pm  REGULAR SLIDE PRESENTATIONS:

**Pediatric MCS, ECLS and CPB (Selected from Abstracts)**

*Moderators: Yves Durandy, MD, Le Plessis Robinson, France, Wei Wang, MD, PhD, Shanghai, China and Linda Pauliks, MD, MPH, USA*

S2. Total Artificial Heart Bridge to Transplantation in Pediatric Patients, a 10 Year Follow-up in 3 Patients
Hannah Copeland, Richard G Smith, Francisco Arabia, Jack G Copeland, Loma Linda University, Loma Linda, CA USA

S3. Pediatric Centrifugal Assist Devices in a Developing Country: An Efficient and Economical Option to Treatment the Postcardiotomy Heart Failure - Institutional Experience
*‡James Parada, MD, ‡Antonio Beníta, MD, ‡Jorge Cervantes, MD and ‡Samuel Ramírez, MD, ‡Department of Pediatric Cardiac Surgery and Congenital Heart Malformations. National Institute of Cardiology Ignacio Chavez, Mexico City*

S4. Interhospital Transport with Extracorporeal Life Support in Pediatric Patients
Jeng-Wei Chen, Yih-Sharng Chen, Nai-Hsin Chi, Chih-Hsien Wang, Shu-Chien Huang. Cardiac Surgical Division, Surgical Department, National Taiwan University Hospital, Taipei, Taiwan

S5. Determination of a New Mutation in MT-ND1 gene of a Patient with Dextrocardia, Ventriculoarterial Discordance and Tricuspid Atresia
Ali Can Hatemi$^{1,2}$, Aris Çakiris$^3$, Aybala Tongur$^7$, Hakan Ceyran$^2$, Duran Üstek$^3$. $^1$Istanbul University, Institute of Cardiology, Department of Cardiovascular Surgery, $^2$Kartal Kosuyolu Education and Research Hospital, Department of Cardiovascular Surgery, $^3$Istanbul University, Institute for Experimental Medical Research, Department of Molecular Genetics, Istanbul, Turkey

S6. Cardiopulmonary Bypass Priming Using Autologous Cord Blood in Neonates with Congenital Heart Disease
Eun Seok Choi, MD, Woong-Han Kim, MD, Sungkyu Cho, MD, Woo Sung Jang, MD. Department of Thoracic and Cardiovascular Surgery, Seoul National University Children’s Hospital, Seoul National University College of Medicine, Seoul, Korea

*$^1$Ryan Halter, PhD, $^2$Karen Moodie, DVM, $^3$Joseph DeSimone, MD, and $^4$Mark Farrell. $^*$Thayer School of Engineering, $^2$Geisel School of Medicine, Dartmouth College, Hanover, NH, USA; and $^4$Dartmouth-Hitchcock Medical Center, Lebanon, NH, USA

S8. Myocardial Histology of Neonatal Piglets after Cardioplegic Protected Cardiac Arrest on Cardiopulmonary Bypass
Tirilomis T, Bensch M, Waldmann-Beushausen R, Schoendube FA. Dept. for Thoracic, Cardiac, and Vascular Surgery, University of Goettingen, Goettingen, Germany

S9. Blood-Surface Interaction and Aggregation of Serum Proteins during Extracorporeal Circulation with Phosphorylcholine-Coated Tubing Lines: S100A8/A9 is it the Trigger for Inflammation?
Ali Can Hatemi$^1$, Aris Çakiris$^2$, Kadir Çeviker$^1$, Neslihan Abacı$^2$, Fulya Coşan$^2$, Özgün Aşlar$^2$, Hülya Azaklı$^2$, Zeliha Ökten$^2$, Erhan Kansız$^1$, Duran Üstek$^2$. $^1$Istanbul University, Institute of Cardiology, Department of Cardiovascular Surgery, $^2$Istanbul University, Institute for Experimental Medical Research, Department of Molecular Genetics, Istanbul, Turkey

S10. Danger of Pre-Pump Clamping and Negative Pressure-Associated Gaseous Microemboli during ECLS – In-Vitro Study
Brian J Chin$^1$, Frank Gentile$^1$, Shigang Wang, MD$^1$, Allen R. Kanselman, MD$^2$, Akif Ündar, PhD$^{1,3}$. Penn State Hershey Pediatric Cardiovascular Research Center, Department of Pediatrics$^1$, Public Health and Sciences$^2$, Surgery and Bioengineering$^3$. Penn State Milton S. Hershey Medical Center, Penn State Hershey College of Medicine, Penn State Hershey Children’s Hospital, Hershey, PA, USA
THURSDAY 8:00am - SATURDAY 1:00pm

REGULAR POSTER PRESENTATIONS:

**Moderators: Tijen Alkan-Bozkaya, MD, Istanbul, Turkey and Shigang Wang, MD, Hershey, PA, USA**

**P1. Use of a Novel Diagonal Pump in an In Vitro Neonatal Pulsatile Extracorporeal Life Support Circuit**
*Alissa Evenson, Shigang Wang, Allen R. Kunselman, and Akif Ündar.*
*Pediatric Cardiovascular Research Center, Department of Pediatrics, Public Health Sciences, Surgery, Penn State Milton S. Hershey Medical Center, Penn State Hershey College of Medicine, Hershey, PA; and Bioengineering, College of Engineering, Pennsylvania State University, University Park, PA, USA*

**P2. Weaning Strategy in Pediatric Extracorporeal Support for Lung Disease**
Jeng-Wei Chen, Yih-Sharng Chen, Nai-Hsin Chi, Chih-Hsien Wang, Shu-Chien Huang. Cardiac Surgical Division, Surgical Department, National Taiwan University Hospital, Taipei, Taiwan

**P3. Surgical Approach to Aorticopulmonary Window Accompanied by Interrupted Aortic Arch in Newborns**
Cihangir Ersoy, Tijen Alkan-Bozkaya, Arda Özyüksel, Atıf Akçevin, Halil Türkoğlu, Vedat Bayer, Tuğan Paker. Istanbul Medipol University, Dept. of Cardiovascular Surgery and VKV, American Hospital, Dept. of Cardiovascular Surgery, Istanbul, TURKEY

**P4. Evaluation of Four Pediatric Cardiopulmonary Bypass Circuits in Terms of Perfusion Quality and Capturing Gaseous Microemboli**
Ryan K. Mathis, Judith Lin, Natalie M. Dogal, Feng Qiu, Allen R. Kunselman, Shigang Wang and Akif Ündar. Pediatric Cardiovascular Research Center, Departments of Pediatrics, Public Health and Sciences, Surgery and Bioengineering, Penn State College of Medicine, Penn State Children’s Hospital, Hershey, Pennsylvania, USA

**P5. Is It Important the Cerebral NIRS Monitoring during Pediatric Aortic Coarctation and/or Arch Repair?**
Tijen Alkan-Bozkaya, Atıf Akçevin, Halil Türkoğlu, Cihangir Ersoy. Istanbul Medipol University, Dept. of Cardiovascular Surgery, Istanbul, TURKEY

**P6. Is There a Difference Between Pulsatile and Nonpulsatile Perfusion Mode According to Cyanotic or Not as Perioperative Parameters in Pediatric Cardiac Surgery with CPB?**
Yeşil Koçoğlu, Atl Gürsöy, Tijen Alkan-Bozkaya, Halil Türkoğlu, Atıf Akçevin. Istanbul Medipol University, Graduate School of Health Sciences, Dept. of Cardiovascular Surgery, Istanbul, TURKEY, Marmara University, Pendik Education and Research Hospital, Dept. of
P7. Novel Pulsatile ECLS System with Superior Hemodynamic Energy
Shigang Wang¹, Sunil Patel², Allen R. Kunselman³, and Akif Ündar¹,⁴
¹Pediatric Cardiovascular Research Center, ²Pediatric Cardiology Division, Department of Pediatrics, ³Surgery, Penn State Milton S. Hershey Medical Center, Penn State Hershey College of Medicine, Hershey, PA; and ⁴Bioengineering, College of Engineering, Pennsylvania State University, University Park, PA, USA

P8. Hemodynamic Evaluation of Novel i-cor Pulsatile ECLS System during Various Cardiac Arrhythmias: In Vitro Study
*Sunil Patel, £Dennis Chang, *Shigang Wang, †Allen R. Kunselman, and *Akif Ündar. *Pediatric Cardiovascular Research Center, †Pediatric Cardiology Division, Department of Pediatrics, £Public Health Sciences, †Surgery, Penn State Milton S. Hershey Medical Center, Penn State Hershey College of Medicine, Hershey, PA; and §Bioengineering, College of Engineering, Pennsylvania State University, University Park, PA, USA

P9. Perioperative Cerebral and Renal Perfusion Monitoring with NIRS in Pediatric Patients Undergoing Cardiac Surgery
Arda Özyüksel¹, Tijen Alkan-Bozkaya¹, Pelin Karaaslan², Cihangir Ersoy¹, Tuğrul Örmeci³, Burak Arkan¹, Atıf Akçevin¹, Halil Türkoğlu¹. Istanbul Medipol University, Dept. of Cardiovascular Surgery¹, Anestesiology² and Radiology³, Istanbul, TURKEY

P10. Comparative Effects of Pulsatile and Nonpulsatile Flow on Plasma Fibrinolytic Balance in Pediatric Patients Undergoing Cardiopulmonary Bypass
Mehmet A. Ağırbaşlı¹, Jianxun Song², Fengyang Lei², Shigang Wang³, Allen R. Kunselman⁴, Joseph B. Clark³,⁵, John L. Myers³,⁵, and Akif Ündar³,⁵,⁶. ¹Department of Cardiology, College of Medicine, Istanbul, Turkey; ²Department of Microbiology and Immunology; ³Pediatric Cardiovascular Research Center, Department of Pediatrics, ⁴Public Health Sciences, ⁵Surgery, and ⁶Bioengineering, Penn State College of Medicine, Penn State Children’s Hospital, Hershey, Pennsylvania, USA

1:00pm CLOSING REMARKS
Mission

The mission of this society is to focus on the current problems associated with pediatric cardiac patients during and after acute or chronic cardiac support. The society will bring together as many distinguished clinicians, bioengineers, and basic scientists as possible to precisely define current problems and suggest novel approaches and solutions.

International Conference Web Site:  http://pennstatehershey.org/web/pedscpb/home

International Society Web Site:  http://www.cvent.com/d/7cqc1m