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Outcomes of the Sixth International Conference on Pediatric Mechanical Circulatory Support Systems and Pediatric Cardiopulmonary Perfusion and First Annual Meeting of the International Society for Pediatric Mechanical Cardiopulmonary Support

Akif Ündar, PhD

Conference Founder, Professor of Pediatrics, Surgery, and Bioengineering, Founder and Director, Penn State Hershey Pediatric, Cardiovascular Research Center, Founder and President, International Society for Pediatric Mechanical Cardiopulmonary Support, Department of Pediatrics, Penn State Hershey College of Medicine, H085, 500 University Drive, P.O. Box 850, Hershey, PA 17033-0850, USA

Akif Ündar: aundar@psu.edu

The Sixth International Conference on Pediatric Mechanical Circulatory Support Systems and Pediatric Cardiopulmonary Perfusion was held at the Joseph B. Martin Conference Center at Harvard Medical School in Boston, MA, USA, May 6–8, 2010 (1). The scientific coauthors of the pediatric event were Elizabeth D. Blume, MD, Boston, MA, USA; Pedro del Nido, MD, Boston, MA, USA; Giovanni Battista Luciani, MD, Verona, Italy; John L. Myers, MD, Hershey, PA, USA; Ulrich Steinseifer, PhD, Aachen, Germany; and Akif Ündar, PhD, Hershey, PA, USA. Elizabeth D. Blume, MD, Medical Director, Heart Failure/Transplant Program of the Children's Hospital Boston, was the local conference chair.

Over 275 participants from 20 countries have enjoyed over 100 presentations, including invited lectures, slides, and posters presented at the Sixth Event. The conference Website has all the details including all past conference proceedings with presented abstracts as well as more information about the future events (<http://www.hmc.psu.edu/childrens/pedscpb>). Social and scientific evaluations of the conference were also outstanding for each category.

CONFERENCE AWARDS

This event continues to recognize young investigators, residents, and students for their contributions to the advancement of cardiopulmonary bypass and mechanical circulatory support systems for pediatric patients. Based on full manuscripts, 10 Young Investigator Awards were awarded this year; Table 1 has the details regarding these awards. We were also pleased to see several previous young investigator awardees from the earlier events who have become faculty members around the globe and who brought their students to this event. Sung Yang, PhD, Assistant Professor, Department of Nanobio Materials and Electronics, Gwangju Institute of Science and Technology, Korea; Amy L. Throckmorton, PhD, Qimonda Assistant Professor, Mechanical Engineering, Virginia Commonwealth University; and Kerem Pekkan, PhD, Assistant Professor, Biomedical Engineering Department, Carnegie Mellon University, are only a few examples of these young scientists.

ARTIFICIAL ORGANS

Once again, we have the opportunity to publish all of the conference abstracts in the April 2010 issue of *Artificial Organs*. In addition, this particular issue (November 2010) of the

Artificial Organs is also dedicated to manuscripts collected and peer-reviewed by experts in the field. Our special thanks go to Angela T. Hadsell, Executive Editor; Carol Malchesky; and Paul S. Malchesky, DEng, Editor-in-Chief, for making this possible. We also appreciate very much the reviewers for their time and knowledge. Without their input, it could not be possible to select the best manuscripts for this special issue.

FINANCIAL SUPPORT

During the past 6 years, we were able to organize this event using significant funds from the Penn State Hershey Children's Hospital and Pediatric Cardiovascular Research Center. This year, we are proud to say that we have received additional educational support from the Children's Hospital Boston, and funds from the National Heart, Lung and Blood Institute and the International Society for Pediatric Mechanical Cardiopulmonary Support.

In addition, major financial support was received from companies, including:

Platinum level supporters:

- Berlin Heart GmbH
- MAQUET Cardiovascular

Gold level supporter:

- Somanetics Corporation

Bronze level supporters:

- Abiomed, Inc.
- CircuLite, Inc.
- Impulse Monitoring, Inc.
- MEDOS Medizintechnik AG
- Sorin Group USA
- St. Jude's Medical
- SynCardia Systems, Inc.
- Terumo Cardiovascular Systems
- Wiley-Blackwell

FIRST ANNUAL MEETING OF THE INTERNATIONAL SOCIETY FOR PEDIATRIC MECHANICAL CARDIOPULMONARY SUPPORT

With the encouragement of dozens of our past participants and the outstanding scientific outcomes of the international event year after year, we have established a new nonprofit organization called the "International Society for Pediatric Mechanical Cardiopulmonary Support" (2). This society has the identical mission with our annual international event: "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 the current problems and suggest solutions with novel approaches. Our *long-term* aspirations are to (i) establish our society as the leading forum for further development of novel treatments and devices for cardiovascular health in pediatric populations at pediatric heart centers around the world; (ii) educate more bioengineers,

medical students, residents, postdoctoral fellows, and junior faculty members in pediatric cardiovascular research; and (iii) ensure that our pediatric international conference (International Conference for Pediatric Mechanical Circulatory Support Systems and Pediatric Cardiopulmonary Perfusion—<http://www.hmc.psu.edu/childrens/pedscpb/>) continues to be the leading conference for defining the problems of current mechanical circulatory support systems in pediatric patients and suggesting appropriate solutions for underserved pediatric cardiac patients around the globe” (2).

The first annual meeting of the society was held at the Sixth International Conference on Pediatric Mechanical Circulatory Support Systems and Pediatric Cardiopulmonary Perfusion at the Joseph B. Martin Conference Center at Harvard Medical School in Boston, MA, on May 7, 2010. To achieve the goals of the society, several committees have been established and current cochair and members of these committees have been finalized. For the society’s educational goal, we have already set up several 1-day pediatric extracorporeal life support hands-on training using the latest technology at the Penn State Hershey for the members of the society. Table 2 includes the founding board members of the society.

SUMMARY

We have concluded another fantastic event in 2010, and research findings reported during the past six conferences have already made a significant impact on the treatment of pediatric cardiac patients worldwide. More than 1600 leading international scholars from over 30 countries have participated in the past six events. To date, over 265 manuscripts, including original articles, editorials, special reports, and case reports have been peer-reviewed and published in *Artificial Organs*. These publications have become the largest resource for investigators in their research projects related to pediatric CPB and MCS. I personally thank all invited speakers and participants for participating at the past six events and for making this conference a leading forum to exchange ideas and learn more from each other’s experiences every year.

SEVENTH INTERNATIONAL EVENT

The seventh event will be held at the University of Pennsylvania, Hall of Flags of the Houston Hall, May 5–7, 2011. Houston Hall is the oldest student union (built in 1896) in the USA. J. William Gaynor, MD; Chitra Ravishankar, MD; and Gil Wernovsky, MD, from the Children’s Hospital of Philadelphia will be the scientific cochair of this unique event.

As I conclude this editorial, I would write again as I have many times before. “If the course of just one child’s life is improved as a result of this event, then we have surely reached our goal.” We hope to see all of you again at the seventh event in Philadelphia, May 5–7, 2011.

Acknowledgments

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I sincerely appreciate all the organizational support we received from the Penn State team including Heather Stokes and Erlee Meyers, along with several pediatric research nurses (Sarah A. Sturgis, Jennifer L. Stokes, Heidi Watts, Amyee McMonagle, Julie Vallati, and Jessica Beiler) from the Pediatric Clinical Research Office at Penn State, and Dr. Feng Qiu, who helped to organize this event from A to Z (Fig. 1). I also want to thank Christian Panasuak and her staff at the conference center to manage this unique event.

As always, without the continued support of my wife, Pinar and my children, Damla and Akifcan, it was not possible to have an additional two more non-biological members (international conference and society) to our family (Figs. 2 and 3).

References

1. Ündar A. Sixth international conference on pediatric mechanical circulatory support systems and pediatric cardiopulmonary perfusion. *Artif Organs*. 2010; 34:277–8. [PubMed: 20420607]
2. Ündar A. International Society for Pediatric Mechanical Cardiopulmonary Support. *Artif Organs*. 2010; 34:279. [PubMed: 20420608]

FIG. 1.
Penn State Hershey pediatric cardiovascular research team (in part).

FIG. 2.
Pinar and Akif Ündar.

FIG. 3.
Flying Akifcan, Akif, and Damla Ündar.

TABLE 1

Sixth International Conference awards

Award	Awardee	Title of manuscript
John A. Waldhausen, MD, Young Investigator Award	Hannah Zimmerman, MD	Mechanical support and medical therapy reverse heart failure in infants and children
William S. Pierce, MD, Young Investigator Award	Shu-Chien Huang, MD	Extracorporeal cardiopulmonary resuscitation for pediatric patients with in-hospital cardiac arrest
William Williams, MD, Young Investigator Award	Takashi Sasaki, MD	Cerebral oxygen metabolism during total body flow and antegrade cerebral perfusion at deep and moderate hypothermia
Penn State Children's Hospital, Young Investigator Award	Jan D. Schmitto, MD	A novel, innovative ovine model of chronic ischemic cardiomyopathy induced by multiple coronary ligations
Helmut Reul, PhD, Young Investigator Award	Feng Qiu, MD	Evaluation of neonatal membrane oxygenators with respect to gaseous microemboli capture and transmembrane pressure gradients
Aydin Aytac, MD, Young Investigator Award	Xiaowei W. Su, MD/PhD candidate	Improved cerebral oxygen saturation and blood flow pulsatility with pulsatile perfusion during pediatric cardiopulmonary bypass
Biomedical Engineering Graduate Student Award	Kiana Aran, PhD candidate	A two-compartment microfiltration microdevice for continuous protein extraction from whole blood during cardiac surgery
Biomedical Engineering Graduate Student Award	Onur Dur, PhD candidate	In vitro evaluation of right ventricular outflow tract reconstruction with bicuspid valved polytetrafluoroethylene conduit
Biomedical Engineering Graduate Student Award	Steven G. Chopski, BS	Particle image velocimetry measurements of an idealized total cavopulmonary connection with mechanical circulatory assistance in the inferior vena cava
Biomedical Engineering Graduate Student Award	Yang Jun Kang, MS	A high accurate and consistent microfluidic viscometer for continuous blood viscosity measurement

TABLE 2

Founding board members of the international society

Founding board members 2010
Erle H. Austin III, MD, USA
J. William Gaynor, MD, USA
Giovanni Battista Luciani, MD, Italy
John L. Myers, MD, USA
David Palanzo, CCP, USA
Chitra Ravishankar, MD, USA
Shunji Sano, MD, PhD, Japan
Jeffrey Towbin, MD, USA
Akif Ündar, PhD, USA
Bonnie L. Weaver, RN, MSN, CCRN, USA
Gil Wernovsky, MD, USA