

Introduction

December 2014 HeartWeek issue of *Cardiology in the Young*: Highlights of HeartWeek 2014: Diseases of the Cardiac Valves from the Foetus to the Adult

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Abstract This December Issue of *Cardiology in the Young* represents the 12th annual publication generated from the two meetings that compose “HeartWeek in Florida”. “HeartWeek in Florida”, the joint collaborative project sponsored by the Cardiac Center at the Children’s Hospital of Philadelphia, Pennsylvania, together with Johns Hopkins All Children’s Heart Institute of Saint Petersburg, Florida, averages over 1000 attendees every year and is now recognised as one of the major planks of continuing medical and nursing education for those working in the fields of diagnosis and treatment of cardiac disease in the foetus, neonate, infant, child, and adult. “HeartWeek in Florida” combines the International Symposium on Congenital Heart Disease, organised by All Children’s Hospital and Johns Hopkins Medicine and entering its 15th year, with the Annual Postgraduate Course in Pediatric Cardiovascular Disease, organised by The Children’s Hospital of Philadelphia and entering its 18th year. This December, 2014 Issue of *Cardiology in the Young* features highlights of Johns Hopkins All Children’s Heart Institute’s 14th Annual International Symposium on Congenital Heart Disease, which was held at the Renaissance Vinoy Resort & Golf Club, Saint Petersburg, Florida, from 15–18 February, 2014. This Symposium was co-sponsored by The American Association for Thoracic Surgery (AATS) and had as its special focus “*Diseases of the Cardiac Valves from the Fetus to the Adult*”. We acknowledge the tremendous contributions made to paediatric and congenital cardiac care by Duke Cameron and Joel Brenner, and therefore we dedicate this December, 2014 HeartWeek Issue of *Cardiology in the Young* to them. Duke Cameron is Professor of Surgery at Johns Hopkins University and Cardiac Surgeon-in-Charge at The Johns Hopkins Hospital. Joel Brenner is Professor of Pediatrics at Johns Hopkins University and Director of the Taussig Heart Center at Bloomberg Children’s Center, The Johns Hopkins Hospital. Together, Joel and Duke lead the proud paediatric and congenital cardiac programme at The Johns Hopkins Hospital.

Keywords: HeartWeek; tricuspid valve; pulmonary valve; mitral valve; aortic valve

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Background

This Issue of *Cardiology in the Young* represents the 12th annual publication in *Cardiology in the Young*

generated from the two meetings that compose “HeartWeek in Florida”.^{1–11} The first nine previous publications^{1–9} were free-standing Supplements to *Cardiology in the Young*; in December, 2012, however, we transitioned to publishing these proceedings as a regular Issue of *Cardiology in the Young*, as the December Issue.^{10,11} Many of the manuscripts published in the 11 previous HeartWeek Supplements and Issues rank among the most referenced manuscripts in

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Cardiology in the Young. Consequently, we intend to keep the proceedings from HeartWeek as the December Issue of Cardiology in the Young in the future. This December, 2014 Issue of Cardiology in the Young that you are about to read features highlights of Johns Hopkins All Children's Heart Institute's 14th Annual International Symposium on Congenital Heart Disease, which was held at the Renaissance Vinoy Resort & Golf Club, Saint Petersburg, Florida, from 15–18 February, 2014:

- Special Focus: “*Diseases of the Cardiac Valves from the Fetus to the Adult*”
- Co-Sponsor: The American Association for Thoracic Surgery (AATS).

As I have emphasised in previous HeartWeek publications, Florida is the fourth largest state in the United States of America. The programme for care of children with congenital cardiac malformations at Children's Hospital of Philadelphia is one of the largest and most comprehensive in the world. Similarly, Johns Hopkins Children's Heart Surgery is one of the largest and most comprehensive programmes in the world. “HeartWeek in Florida”, the joint collaborative project sponsored by the Cardiac Center at the Children's Hospital of Philadelphia, together with Johns Hopkins All Children's Heart Institute of Saint Petersburg, averages over 1000 attendees every year and is now recognised as one of the major planks of continuing medical and nursing education for those working in the fields of diagnosis and treatment of cardiac disease in the foetus, neonate, infant, child, and adult.

All institutions involved with the organisation of the events of “HeartWeek in Florida” are very grateful to Bob Anderson, Ted Baker, and the team at Cardiology in the Young for their support and for the opportunity to publish the HeartWeek Supplements and Issues of Cardiology in the Young. On a personal note, I would like to again thank Ted Baker for his awesome leadership as Past Editor-in-Chief of Cardiology in the Young. It was a true pleasure for Allen Everett and me to serve as Associate Editors of Cardiology in the Young and collaborate with Ted. Also, on a personal note, I would like to once again congratulate Bob Anderson for his ability to remain massively involved in the academic world of professionals caring for patients with congenitally malformed hearts, even after his official so-called “retirement”. I would again like to thank Bob for his support, friendship, mentorship, professional guidance, and advice over the past 16 years. Bob has played a major role in the development of my own career, and I am appreciative for all that he has done for me. He placed an amazingly high level of trust in me when I was very young, and I appreciate this support. Bob has also been a strong supporter and advocate of our

programme at All Children's Hospital for quite some time. In February of 2015, Bob will be a featured speaker at our annual February meeting at All Children's Hospital for the 14th consecutive year. Every day for the past 13 years, we have started our sessions with an anatomy lesson from Bob. On a daily basis, he sets the stage for the rest of the day and raises the academic level of our meeting.

The Annual Update on Pediatric and Congenital Cardiovascular Disease hosted by the Cardiac Center at the Children's Hospital of Philadelphia returned to Orlando, Florida, in February, 2014. This meeting is typically attended by over 750 professionals and exhibitors gathered from around the globe to hear late-breaking research, to discuss controversial topics, to review current practices, and to enjoy each others' company and insight.¹² Physicians make up approximately half of the attendees and represent all disciplines involved in the care of children with cardiac disease, including surgeons, cardiologists, intensivists, anaesthesiologists, neonatologists, and maternal–foetal specialists. The remaining attendees include advanced practice, operating room, catheterisation lab, and bedside nurses, sonographers, physician assistants, respiratory therapists, perfusionists, and administrators. A highlight of the meeting organised by Children's Hospital of Philadelphia is the featured lectures in Cardiovascular Surgery, Cardiology, Nursing, Anaesthesia and Critical Care, and Basic Sciences (Table 1). In February, 2014, the meeting organised by Children's Hospital of Philadelphia returned to Orlando, Florida. The 17th Annual Update on Pediatric and Congenital Cardiovascular Disease, organised by Children's Hospital of Philadelphia, was held at Disney's Yacht and Beach Club Resorts in Lake Buena Vista, Florida, from 19–23 February, 2014.

In February, 2015, the meeting organised by Children's Hospital of Philadelphia will again return to Arizona. The 18th Annual Update on Pediatric and Congenital Cardiovascular Disease, “*Challenges and Dilemmas*”, organised by Children's Hospital of Philadelphia, will be held at The Hyatt Regency Scottsdale Resort and Spa at Gainey Ranch, Scottsdale, Arizona, from Wednesday, 11 February, to Sunday, 15 February, 2015. To view the entire programme and register for the meeting, please visit the following website: (heart.chop.edu/cardiology2015). For detailed information, please e-mail Tina Mannices at (mannices@email.chop.edu), or call +1 215 590 5263.

In 2014, the component of the HeartWeek in Florida organised by The Johns Hopkins All Children's Heart Institute and representing our own 14th Annual International Symposium on Congenital Heart Disease was held from Friday, 14 February, 2014 to Tuesday, 18 February, 2014, with its focus being on

Table 1. The featured lectures given thus far during the annual postgraduate course in pediatric cardiovascular disease organised by Children's Hospital of Philadelphia.

The Annual "C. Walton Lillehei" Memorial Lecture in Cardiovascular Surgery	
2000	Thomas R. Karl
2001	Marc deLeval
2002	Aldo R. Castaneda
2003	Thomas L. Spray
2004	William G. Williams
2005	Edward L. Bove
2006	Martin Elliott
2007	Pedro J. del Nido
2008	Frank L. Hanley
2009	Scott M. Bradley
2010	J. William Gaynor
2011	Carl L. Backer
2012	James Tweddell
2014	Emile Bacha
The Annual "William J. Rashkind" Memorial Lecture in Pediatric Cardiology	
2002	Thomas P. Graham
2003	Welton M. Gersony
2004	Jane W. Newburger
2005	Norman H. Silverman
2006	Andrew Redington
2007	Philipp Bonhoeffer
2008	Robert Shaddy
2009	Lynn Mahony
2010	Robert Campbell
2011	Jeffrey A. Towbin
2012	Gil Wernovsky
2014	Daniel Penny
The Annual Featured Lecture in Cardiovascular Nursing: "Thomas Garrett Rauch" Memorial Lecture	
2000	Jane Barnsteiner
2001	Nancy Eckle
2002	Catherine K. Madigan
2003	Patricia A. Hickey
2004	Mary Fran Hazinski
2005	Elisabeth C. Smith
2006	Kathleen Mussatto
2007	Martha A.Q. Curley
2008	Cynda Hylton Rushton
2009	Philip Moons
2010	Afaf I. Meleis
2011	Kathleen Chavanu Gorman
2012	Jean Chatzky
2014	Madeline Bell
The Annual "John J. Downes" Lecture Cardiac Anesthesia and Critical Care	
2008	William J. Greeley
2009	Peter C. Laussen
2010	David L. Wessel
2011	Frank X. McGowan
2012	Allan Goldman
2014	Susan Nicolson
The Annual Featured Lecture in the Cardiovascular Basic Sciences	
2011	Jonathan Epstein
2012	Barry Byrne
2014	Bruce D. Gelb

"Diseases of the Cardiac Valves from the Fetus to the Adult". Our Annual International Symposium on Congenital Heart Disease with Echocardiographic, Anatomic, Surgical, and Pathologic Correlation is held every February and is now entering its 15th year. The

first 11 meetings were sponsored by All Children's Hospital (www.allkids.org), The Congenital Heart Institute of Florida (www.chif.us), and the University of South Florida. Beginning in 2012, our meeting has been presented by All Children's Hospital and

sponsored by Johns Hopkins Medicine. Our meetings in 2009, 2010, 2011, 2012, and 2014 were co-sponsored by The American Association for Thoracic Surgery (<http://www.aats.org/CME/Programs.html>), and our 2015 meeting will also be co-sponsored by The American Association for Thoracic Surgery. Our meeting in 2014 had as its focus “*Diseases of the Cardiac Valves from the Fetus to the Adult*”, with sessions aimed specifically at multi-disciplinary issues related to the following topics:

- anatomy of the cardiac valves;
- echocardiography of the cardiac valves;
- critical care of patients with diseases of the cardiac valves;
- surgery of the cardiac valves; and
- ethics.

We also continued two exciting new symposia that we first held in 2011:

- Nursing Symposium
- Ethics Symposium

Finally, we continued several of our popular features:

- hands-on demonstrations;
- panel discussions;
- Q&A sessions; and
- pathologic heart specimens on exhibit.

A new feature starting in 2014 was that our meeting featured three unique pathways:

- PRIMARY PATHWAY (MAIN CONFERENCE) (Plenary Pathway)
- NURSES PATHWAY
- ADMINISTRATORS PATHWAY

The overall emphasis of the meeting is multi-disciplinary, with involvement of paediatric cardiac surgery, paediatric cardiology, paediatric cardiac critical care, paediatric cardiac anaesthesia, nursing, perfusion, and ultrasonography. Attendance at our meeting is typically between 250 and 350 participants.

- Our meeting held in 2007 had 269 attendees from 30 states of the United States of America and 14 countries. The attendees were 43% physicians, 41% nurses, perfusionists, and ultrasonographers, and 16% allied healthcare professionals. The University of South Florida designated this educational activity for a maximum of 24.25 AMA PRA Category 1 Credits.
- Our meeting held in 2008 had 270 attendees from 32 states of the United States of America and 16 countries. The attendees were 52% physicians, 31% nurses, perfusionists, and ultrasonographers, and 17% allied healthcare

professionals. The University of South Florida College of Medicine designated this educational activity for a maximum of 30.25 AMA PRA Category 1 Credits.

- Our meeting held in 2009 had 270 attendees from 32 states of the United States of America and 16 countries. The attendees were (40%) physicians, (49%) nurses and physicians assistants, and (11%) perfusionists, ultrasonographers, and allied healthcare professionals. The University of South Florida College of Medicine designated this educational activity for a maximum of 29.5 AMA PRA Category 1 Credits – Programme #BD2009399/1170.
- Our meeting held in 2010 had 230 attendees from 29 states of the United States of America and 18 countries. The attendees were from the following categories: physicians (115), physicians assistants (7), nurse practitioners (17), registered nurses (35), sonographers (16), perfusionists (4), and others (36).
- Our meeting held in 2011 had 263 attendees, including 116 physicians and 147 non-physicians. The highlight of the 2011 conference was the George R. Daicoff Dinner Presentation, which was presented by Edward L. Bove, MD, titled “*Innovation and Regulation: Can They Both Exist in Today’s Medical Environment?*” – Dr Bove is the Helen and Marvin Kirsch Professor and Head of the Section of Cardiac Surgery, which includes Divisions of Pediatric and Adult Cardiac Surgery, at the University of Michigan C.S. Mott Children’s Hospital. The Division of Paediatric Cardiac Surgery is one of the busiest congenital cardiac programmes in the United States, performing over 900 procedures annually. Ed Bove, MD is a Past President of The Congenital Heart Surgeons’ Society (CHSS). Additional featured speakers included William I. Norwood, Leonard L. Bailey, Robert Anderson, Tom Spray, and Constantine Mavroudis.
- Our meeting held in 2012 had 309 attendees, including 112 physicians and 187 non-physicians from 27 countries including the United States of America. The highlight of the 2012 conference was the George R. Daicoff Dinner Presentation, which was presented by Richard A. Jonas, MD, and titled “*A View of Shanghai from Washington, DC: 25 Years of Change.*” –Dr Jonas is Chief of Cardiac Surgery, Co-Director of the Children’s National Heart Institute, and Cohen Fungar Professor of Cardiac Surgery at Children’s National Medical Center in Washington, DC. He is a world-renowned paediatric cardiac surgeon specialising in optimising the developmental and cognitive outcomes of patients after surgery for congenital

cardiac disease. Dr Jonas also has helped in the development of a number of international cardiac surgical programmes around the world and is a coveted international speaker and guest surgeon. At the time of his George R. Daicoff Visiting Professorship, Richard Jonas, MD, was the current President of The Congenital Heart Surgeons' Society (CHSS). Additional featured speakers included Robert Anderson, Tom Spray, and Constantine Mavroudis.

- Our meeting in 2013 was held at the 6th World Congress of Paediatric Cardiology and Cardiac Surgery in Cape Town, South Africa, where The Johns Hopkins All Children's Heart Institute hosted the following Symposium: *The Birth of Heart Surgery: Lessons Learned from Tetralogy – A Dinner Conversation*. Videos from this Symposium can be viewed at the following hyperlink: (<http://www.allkids.org/wcpccs>). This Symposium was also featured in the December, 2013 Issue of Cardiology in the Young.¹¹
- Our meeting held in 2014 had 345 attendees representing 28 states and 22 countries – including the United States of America. Attendees included 152 physicians, 79 Registered Nurses, 19 Nurse Practitioners, 14 Physician Assistants, 10 Sonographers, 9 Trainees, 2 Perfusionists, and 55 vendor representatives. The highlight of the 2014 conference was the George R. Daicoff Dinner Presentation, which was presented by John William Brown and was titled "*Pediatric Cardiac Surgery – It's a Wonderful Life*". This truly awesome and inspiring lecture is published in this December, 2014 HeartWeek Issue of Cardiology in the Young¹³. At the time of his George R. Daicoff Visiting Professorship, John Brown, MD, was the Harris B Shumacker Emeritus Professor of Surgery at Indiana University School of Medicine and the current President of The Congenital Heart Surgeons' Society (CHSS). Additional featured speakers included Robert Anderson, Tom Spray, and Constantine Mavroudis.

Table 2 highlights the featured topics and speakers from the meeting held in Saint Petersburg. The true summit of this meeting is the George Daicoff Lecture, given by the featured speaker to honour the founder of our surgical programme in Saint Petersburg – George R. Daicoff, MD. Previous and future Daicoff Lectures are presented below:

- (2003) Leonard L. Bailey and his wife Nancy from Loma Linda University Medical Center, California.
- (2004) Martin J. Elliott from The Great Ormond Street Hospital for Children, London, United Kingdom.
- (2005) Marc deLeval from The Great Ormond Street Hospital for Children, London, United Kingdom.
- (2006) Ross M. Ungerleider and his wife Jamie Dickey from Oregon Health Sciences University, Oregon.
- (2007) Constantine Mavroudis and Carl Backer from Children's Memorial Hospital, Chicago.
- (2008) Tom Spray from Children's Hospital of Philadelphia, Philadelphia.
- (2009) Marshall Lewis Jacobs from Drexel University College of Medicine, Philadelphia, Pennsylvania.
- (2010) Roberto Canessa from Montevideo, Uruguay.
- (2011) Edward L. Bove from the University of Michigan, Ann Arbor, Michigan.
- (2012) Richard A. Jonas from Children's National Medical Center, Washington, DC.
- (2013) 6th World Congress of Paediatric Cardiology and Cardiac Surgery in Cape Town, South Africa, under the leadership of Christopher Hugo-Hamman (<http://www.pccs2013.co.za/>).
- (2014) John Brown from Indiana University School of Medicine, Indianapolis, Indiana.
- (2015) Duke Cameron, MD, Cardiac Surgeon-in-Charge, The Johns Hopkins Hospital
- (2016) James A. Quintessenza, MD, Medical Director, Johns Hopkins All Children's Heart Institute.
- (2017) Professor Christo Ivanov Tchervenkov from The Montreal Children' Hospital, Canada: Executive Director & Founding President, The World Society for Pediatric and Congenital Heart Surgery.

In 2015, our 15th annual meeting will take place from Friday, 6 February, 2015, to Monday, 9 February, 2015, presented by All Children's Hospital, Sponsored by Johns Hopkins Medicine, and co-sponsored by The American Association of Thoracic Surgery. The focus will be "*Congenital Abnormalities of the Coronary Arteries*". The George Daicoff Lecture for 2014 will be given by Duke Cameron, MD, Professor of Surgery at Johns Hopkins University and Cardiac Surgeon-in-Charge at The Johns Hopkins Hospital and Treasurer of The American Association for Thoracic Surgery (AATS). To view the entire programme for our 2015 meeting and to register for the meeting, please visit the following web sites: (www.allkids.org/conferences) and (<http://www.cvent.com/events/15th-annual-international-symposium-on-congenital-heart-disease/event-summary-9dfdf0a92529414a84598f2fea609ca0.aspx>). For detailed information, please e-mail Melodye Farrar at (Melodye.Farrar@jhmi.edu), or contact us at +1 727 767 8584.

We have now reached the situation whereby the proceedings of the meetings held in 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013, and 2014 have been published as HeartWeek

Table 2. Featured topics and speakers during the symposiums organised by the Congenital Heart Institute of Florida and All Children's Hospital.

2002	Second Annual Symposium
Focus	Abnormalities of the Ventricular Inlets and Atrioventricular Valves
Day 1	Echocardiography
Day 2	Tricuspid valve
Day 3	Mitral valve
Day 4	Common atrioventricular valve
Featured Guest Speaker:	Bob Anderson, Great Ormond Street, London, United Kingdom
2003	Third Annual Symposium
Focus	Hypoplastic Left Heart Syndrome
Day 1	Echocardiography
Day 2	Staged palliation and the Norwood Operation
Day 3	Replacement therapy and Cardiac Transplantation
Day 4	Biventricular Repair
Featured Guest Speakers:	Leonard L. Bailey and his wife Nancy Loma Linda University Medical Center, Loma Linda, California
2004	Fourth Annual Symposium
Focus	Controversies concerning the Ventriculo-arterial Junctions
Day 1	Echocardiography
Day 2	Pulmonary Valve and Reconstructions of the Right Ventricular Outflow Tract
Day 3	The Aortic Valve and the Ross Procedure
Day 4	The Arterial Switch Procedure
Featured Guest Speaker:	Martin J. Elliott, Great Ormond Street, London, United Kingdom
2005	Fifth Annual Symposium
Focus	The Functionally Univentricular Heart
Day 1	Echocardiography
Day 2	Shunts and Bands
Day 3	Glenn and Fontan Procedures
Day 4	Cardiac Transplantation
Featured Guest Speaker:	Marc deLeval, Great Ormond Street, London, United Kingdom
2006	Sixth Annual Symposium
Focus	Ventricular inlets and atrioventricular valves
Day 1	Echocardiography
Day 2	Tricuspid valve
Day 3	Mitral valve
Day 4	Common atrioventricular valve
Day 5	Discordant Atrioventricular connections
Featured Guest Speakers:	Ross M. Ungerleider, and his wife Jamie Dickey, Doernbecher Children's Hospital, Oregon Health Sciences University, Portland, Oregon
2007	Seventh Annual Symposium
Focus	Hypoplastic Left Heart Syndrome
Day 1	Echocardiography
Day 2	Staged palliation and the Norwood Operation
Day 3	Replacement therapy with Cardiac Transplantation, Biventricular Repair, and Hybrid Procedures
Day 4	Adults with Congenital Heart Disease
Featured Guest Speakers:	Constantine Mavroudis and Carl Backer Children's Memorial Hospital, Chicago, Illinois
2008	Eighth Annual Symposium
Focus	Tetralogy of Fallot
Day 1	Echocardiography
Day 2	Tetralogy of Fallot with pulmonary stenosis
Day 3	Complex Tetralogy of Fallot
Day 4	Adults with Congenital Heart Disease – Late problems with TOF Pediatric Cardiac Critical Care
Featured Guest Speaker:	Tom Spray, Children's Hospital of Philadelphia, Philadelphia, Pennsylvania
2009	Ninth Annual Symposium
Focus	Cardiac Septal Defects
Day 1	Critical Care Symposium
Day 2	Echocardiography
Day 3	Atrial Septal Defects

Table 2. *Continued*

Day 4	Ventricular Septal Defects
Day 5	Atrioventricular Septal Defects
Featured Guest Speaker:	Marshall Lewis Jacobs, Drexel University College of Medicine, Philadelphia, Pennsylvania
2010	Tenth Annual Symposium
Focus	Rare and Challenging Lesions
Day 1	Echocardiography
Day 2	Pulmonary atresia-intact ventricular septum with coronary fistulas or sinusoids present, and Hypoplastic left heart syndrome with coronary artery fistulas or sinusoids present
Day 3	Anomalous pulmonary origin of coronary artery, and Anomalous aortic origin of coronary artery
Day 4	Aortopulmonary window, Aortico-left ventricular tunnel, and Congenital cardiac disease associated with tracheal stenosis
Featured Guest Speaker:	Roberto Canessa, Montevideo, Uruguay
2011	Eleventh Annual Symposium
Focus	Hypoplastic Left Heart Syndrome
Day 1	Echocardiography and Transesophageal (TEE) Symposium: Hypoplastic Left Heart Syndrome (HLHS)
Day 2	The Hybrid Approach
Day 3	The Norwood Operation
Day 4	The Role of Cardiac Transplantation & Ethics of Caring for Patients with HLHS
Featured Guest Speaker:	Edward L. Bove, The University Of Michigan, Ann Arbor, Michigan
2012	Twelfth Annual Symposium
Focus	“Truncus and Transpo”
Day 1	Echocardiography and Transesophageal (TEE) Symposium: Truncus and Transposition
Day 2	Common Arterial Trunk (Truncus Arteriosus)
Day 3	Transposition of the Great Arteries
Day 4	Adults with Truncus and Transposition & Ethics of Caring for Patients with Truncus and Transposition
Featured Guest Speaker:	Richard A. Jonas, Children’s National Medical Center, Washington, DC
2013	Thirteenth Annual Symposium
Focus	“The Birth of Heart Surgery – Lessons Learned from Tetralogy: Past, Present and Future”
	Dinner symposium on Thursday, 21 February, 2013 during the 6th World Congress of Paediatric Cardiology and Cardiac Surgery in Cape Town, South Africa at the Cape Town International Convention Centre
Moderators:	Duke Cameron, Susan Collins, Jeff Jacobs
2014	Fourteenth Annual Symposium
Focus	“Diseases of the Cardiac Valves from the Fetus to the Adult”
Day 1	Echocardiography and Transesophageal (TEE) Symposium: Cardiac Valves
Day 2	The Mitral Valve
Day 3	The Aortic Valve
Day 4	Tricuspid and Pulmonary Valve & Ethics Symposium
Featured Guest Speaker:	John Brown, Indiana University School of Medicine, Indianapolis, Indiana
2015	Fifteenth Annual Symposium
Focus	“Congenital Coronary Anomalies”
Day 1	Overview of Normal Coronary Anatomy and Congenital Abnormalities of the Coronary Arteries
Day 2	Anomalous Pulmonary Origin of the Coronary Artery (APOCA)
Day 3	Anomalous Aortic Origin of the Coronary Artery (AAOCA)
Day 4	Coronary Abnormalities Associated with other forms of congenital cardiac disease including sinusoids and fistulas & Ethics of Caring for Patients with Congenital Coronary Anomalies
Featured Guest Speaker:	Duke Cameron, MD, Cardiac Surgeon-in-Charge, The Johns Hopkins Hospital

Supplements or in Issues of Cardiology in the Young.^{1–11} This December, 2014 HeartWeek Issue of Cardiology in the Young is therefore the 12th Supplement or Issue of Cardiology in the Young that we have produced from the annual meeting held in Saint Petersburg; we have produced 9 of these 12 Issues or Supplements jointly with Children's Hospital of Philadelphia (2004, 2006, 2007, 2008, 2009, 2010, 2011, 2012, and 2013^{2,4–11}):

- 2003 Meeting: Controversies Relating To The Hypoplastic Left Heart Syndrome.
- 2004 Meetings: Controversies of the Ventriculo-Arterial Junctions and Other Topics.
- 2005 Meeting: Controversies and Challenges in the Management of the Functionally Univentricular Heart.
- 2006 Meetings: Controversies and Challenges of the Atrioventricular Junctions and Other Challenges Facing Paediatric Cardiovascular Practitioners and their Patients.
- 2007 Meetings: Controversies and Challenges Facing Paediatric Cardiovascular Practitioners and their Patients.
- 2008 Meetings: Controversies and Challenges of Tetralogy Of Fallot and Other Challenges Facing Paediatric Cardiovascular Practitioners and Their Patients.
- 2009 Meetings: Innovation Associated with the Treatment of Patients with Congenital and Paediatric Cardiac Disease.
- 2010 Meetings: Rare and Challenging Congenital Cardiac Lesions: An Interdisciplinary Approach.
- 2011 Meetings: A Holistic Approach to Hypoplastic Left Heart Syndrome and Other Evolving Challenges in Paediatric and Congenital Cardiac Disease.
- 2012 Meetings: A Lifelong Interdisciplinary Approach to Common Arterial Trunk, Transposition of the Great Arteries, and Other Evolving Challenges in Paediatric and Congenital Cardiac Disease.
- 2013 Meetings: Highlights of HeartWeek 2013 at The 6th World Congress of Paediatric Cardiology and Cardiac Surgery in Cape Town South Africa.
- 2014 Meetings: Highlights of HeartWeek 2014: Diseases of the Cardiac Valves from the Foetus to the Adult.

The part of the joint programme of HeartWeek organised by Johns Hopkins All Children's Heart Institute and Sponsored by Johns Hopkins Medicine will continue to take place in Saint Petersburg, even in the years when the part designed by the Children's Hospital of Philadelphia will be held outside of Florida, as occurred in 2009 in the Bahamas, and in 2011, when

the meeting organised by the team from the Children's Hospital of Philadelphia returned to Arizona. Even during the years when the meeting organised by Children's Hospital of Philadelphia is held outside of Florida, "HeartWeek" will continue to be a collaborative project as manifest by the collaborative publication of HeartWeek Issues of Cardiology in the Young, as well the various shared members of our international faculties. As has been stated on the website for the programme coordinated by the Children's Hospital of Philadelphia, "Providing optimal care for neonates, children and young adults with heart disease requires a multidisciplinary team approach, including physicians (from cardiology, cardiac surgery, cardiothoracic anesthesia, neonatal and paediatric critical care medicine, and multiple consulting services), nurses, perfusionists, respiratory therapists, social workers and many others. All of these various practitioners must be experts in their own area, but should also be knowledgeable in what the other members of the team provide to the overall care of the patient". This statement presents the rationale not only for the annual part of the meeting emanating from the Children's Hospital of Philadelphia, but also for "HeartWeek in Florida". Both meetings are proud to emphasise collaboration that spans traditional geographic, subspeciality, and professional boundaries.

In recent years, we have dedicated this "HeartWeek Supplement or Issue" to leaders in the field of caring for patients with paediatric and congenital cardiac disease:

- The Supplement from the 2007 HeartWeek was dedicated to Professor Robert Anderson.
- The Supplement from the 2008 HeartWeek was dedicated to Hiromi Kurosawa of The Heart Institute of Japan and Tokyo Women's Medical University, Tokyo, Japan, and Norman Silverman of Stanford University and Lucile Packard Children's Hospital, Palo Alto, California, United States of America.
- The Supplement from the 2009 HeartWeek was dedicated to Marshall Lewis Jacobs and Charles S. Kleinman.
- The Supplement from the 2010 HeartWeek was dedicated to Constantine Mavroudis and Gerald Marx.
- The Supplement from the 2011 HeartWeek was dedicated to Martin Elliott and Gil Wernovsky.
- The December, 2012 HeartWeek Issue of Cardiology in the Young was dedicated to Richard A. Jonas.
- The December, 2013 HeartWeek Issue of Cardiology in the Young was dedicated to John Brown.
- This December, 2014 HeartWeek Issue of Cardiology in the Young is dedicated to Duke Cameron and Joel Brenner

Tribute to: Duke Cameron and Joel Brenner

We would like to dedicate this December, 2014 HeartWeek Issue of Cardiology in the Young to two global leaders in the field of paediatric and congenital cardiac care: Duke Cameron, MD, and Joel Brenner, MD. Duke Cameron is Professor of Surgery at Johns Hopkins University and Cardiac Surgeon-in-Charge at The Johns Hopkins Hospital. Joel Brenner is Professor of Pediatrics at Johns Hopkins University and Director of the Taussig Heart Center at Bloomberg Children's Center, The Johns Hopkins Hospital. Together, Joel and Duke lead the proud paediatric and congenital cardiac programme at The Johns Hopkins Hospital.

In the final manuscript of the HeartWeek 2010 Supplement,¹⁴ Robert Campbell, Chief of Pediatric Cardiology at Children's Healthcare of Atlanta Sibley Heart Center, Emory University School of Medicine in Atlanta, Georgia, presented his 9th Annual William J. Rashkind Memorial Lecture in Paediatric Cardiology, titled "The Reimbursement Tsunami: Preserving the Passion". In this manuscript, Robert Campbell describes the "quintuple threat" professional as the healthcare professional with excellence in the following five domains:

- clinical care;
- teaching;
- research;
- business leadership; and
- alignment.

Duke Cameron and Joel Brenner are truly "quintuple threat" professionals, with sustained excellence in all five of these areas. Jim Quintessenza and I are honoured to dedicate this December, 2014 HeartWeek Issue of Cardiology in the Young to Duke Cameron and Joel Brenner.

Tribute to Joel Brenner, MD

As Professor of Paediatrics at Johns Hopkins University and Director of the Taussig Heart Center at Bloomberg Children's Center, The Johns Hopkins Hospital, Joel Brenner is a model clinician, teacher, investigator, colleague, mentor, and friend (Figs 1–9). His multiple academic contributions span the breadth of paediatric cardiology. Of particular significance are the population-based studies related to the Baltimore-Washington Infant Study.

The Baltimore-Washington Infant Study is a ground-breaking regional epidemiological study of congenital heart disease that provides important information about prevalence rates and inheritance patterns, teratogenic influence, and aetiological underpinnings. Joel has provided important leadership in this initiative, as documented in the multiple publications ranging from 1985 to 2013.^{15–23}



Figure 1.

Joel Brenner is Professor of Pediatrics at Johns Hopkins University and Director of the Taussig Heart Center at Bloomberg Children's Center, The Johns Hopkins Hospital.



Figure 2.

A young Joel Brenner.

The details of Joel's many accomplishments are provided in the tributes below. With the leadership provided by Joel Brenner and Duke Cameron, we are very confident in our future, as the collaboration grows between Johns Hopkins All Children's Heart Institute in Saint Petersburg, Florida Hospital in Orlando, and The Johns Hopkins Hospital in Baltimore. On a personal note, we would like to thank Joel and his wife Susan for their friendship and support of our programme. A highlight for our team every February at our meeting is having Joel and Susan spend time with us. They are colleagues, friends, and



Figure 3.
Joel Brenner: School Days.



Figure 4.
Joel and Susan Brenner.



Figure 5.
Joel Brenner: Family.



Figure 6.
This photo was taken on Thursday, February 21, 2013 at the 6th World Congress of Paediatric Cardiology and Cardiac Surgery in Cape Town, South Africa. From left to right: Luca A. Vricella, Norm Silverman, Joel Brenner, Gary Stapleton, and Bob Anderson. This photo was taken at the Dinner Symposium at The World Congress hosted by The Johns Hopkins All Children's Heart Institute: The Birth of Heart Surgery: Lessons Learned from Tetralogy – A Dinner Conversation. Videos from this Symposium can be viewed at the following hyperlink: (<http://www.allkids.org/wcpccs>).



Figure 7.
Solving the problems of the world!!!! This photo was taken on Friday February 21, 2013 at the Faculty Dinner of the 6th World Congress of Paediatric Cardiology and Cardiac Surgery in Cape Town, South Africa. From left to right: Jeff Jacobs and Joel Brenner.

mentors. We truly cherish and look forward to our multiple pleasant interactions with the Brenners.

The American League East Division of Major League Baseball in the United States of America provides an important topic of debate for Joel Brenner, Jerry Marx, and our team. Although we all agree on multiple academic topics, I doubt that we will ever reach agreement about the Tampa Bay RAYS, Baltimore Orioles, and Boston Red Sox! I look forward to receiving e-mails from Joel Brenner and Jerry



Figure 8.

The team!! This photo was taken on Friday February 21, 2013 at the Faculty Dinner of the 6th World Congress of Paediatric Cardiology and Cardiac Surgery in Cape Town, South Africa. From left to right: Susan Brenner, Joel Brenner, Sylvia Ameen (Vice President, All Children's Hospital Foundation), Susan B. Collins, MBA, RN, FACHE (Executive Director, Johns Hopkins All Children's Heart Institute), Jeff Jacobs, Stacy Jacobs, Paul Chai, Allen Everett.



Figure 9.

From left to right: Joel Brenner, Jeff Jacobs, Susan B. Collins, MBA, RN, FACHE (Executive Director, Johns Hopkins All Children's Heart Institute), and Duke Cameron. This photo was taken at the 6th World Congress of Paediatric Cardiology and Cardiac Surgery in Cape Town, South Africa. The Sixth World Congress of Paediatric Cardiology and Cardiac Surgery took place in Cape Town, South Africa, between 17 and 22 February, 2013. The Paediatric Cardiac Society of South Africa was the host and organiser of this prestigious Congress, which took place at the Cape Town International Convention Centre. For information, please visit: (<http://www.pccs2013.co.za/>).

Marx, in part because, regardless of whether these e-mails address an important academic or social issue, they will always address the state of the American League East Division of Major League Baseball! Indeed, our professional interactions and friendships

are important – these interpersonal relationships form the backbone of a successful programme on many levels and in multiple domains. Jim Quintessenza and I are proud to pay tribute to Joel Brenner!

Jim Quintessenza and I have asked cardiologists from Johns Hopkins and Boston Children's Hospital, Harvard Medical School, to provide their thoughts about Joel Brenner:

- The first tribute to Joel Brenner is written by his colleagues at Johns Hopkins: Anne M. Murphy, Allen D. Everett, Jane E. Crosson, and Richard E. Ringel.
- The second tribute to Joel Brenner is written by Jerry Marx, MD, of Boston Children's Hospital and Harvard Medical School.

Tribute to Joel Brenner, MD, written by Anne M. Murphy, Allen D. Everett, Jane E. Crosson, and Richard E. Ringel. For someone who said "I never planted asparagus because I wasn't sure I would stay in Baltimore long enough to reap the harvest", Dr Joel Brenner has been a Paediatric Cardiology icon in Baltimore and the State of Maryland for over 30 years.

Joel Brenner is a native of New York, whose first role model was his father, Sam Brenner, a businessman who always conducted himself with the highest degree of integrity and ethics. "We all grew up admiring our father, and striving to follow his example," Dr Brenner stated on the occasion of a lectureship on paediatric ethics established at Johns Hopkins in honour of his father. Joel Brenner's devotion to his family as a husband to Susan, father to Sean and Beth, and grandfather to Jacob and Max is legendary.

Dr Brenner's career began with a BA from the University of Pennsylvania, an MD from New York Medical College, followed by internship and Residency at New York Hospital-Cornell Medical Center, and Paediatric Cardiology fellowship with Professor Norman Talner at Yale. After his training, he served in the Navy at Bethesda Naval Hospital, and once he was established in the Mid-Atlantic he stayed. His first academic position was at the University of Virginia, where he served as director of the catheterisation laboratory. Soon after, Dr Michael Berman recruited him to the faculty at the University of Maryland. When Dr Berman became Chair of Paediatrics at the University of Maryland, Joel Brenner became the director of the division of Paediatric Cardiology at the University of Maryland in 1985. In 1999, Dr George Dover recruited Joel and his colleagues to join the Paediatric Cardiology division at Johns Hopkins Children's Center. He became the Co-director of the division at Johns Hopkins, and ultimately Director of the Division and

Helen B. Taussig Professor of Paediatric Cardiology in 2002. Thus, he will reach the 3-decade mark as a leader of a Paediatric Cardiology Division in 2015.

Locally, Dr Joel Brenner has been an important voice in the advancement of paediatric cardiology services in the state of Maryland. From early in his career in the state, he was actively involved in the local branch of the American Heart Association's efforts to increase community awareness of congenital heart disease as well as hypertension in children. In the 1970s, he helped initiate paediatric cardiology outreach services in the state of Maryland, an effort sustained to this day. Dr Brenner has been listed many times among Baltimore's top doctors. He was awarded the Presidential Recognition Award from the American Heart Association Maryland Affiliate in 1991 and the Affiliates Helen B. Taussig Award in 1996. He has also served as President of the affiliate.

Joel Brenner was one of the leaders in the Baltimore-Washington region who collaborated on the Baltimore-Washington Infant study. This remarkable NIH-supported epidemiological study provided much of the basis of what is known about the natural history of congenital heart disease and firmly established that congenital heart disease had strong genetic roots but is also influenced by environmental factors. The success of this long-term multi-institutional study was dependent on the collaborative nature of many leaders in the region, including Joel Brenner. Dr Brenner also reached out internationally. Along with Erik Meijboom, Dr Brenner organised international courses promoting the application and performance of foetal echocardiography, helping this technology to become established worldwide.

One of Dr Brenner's legacies is the hundreds of medical students, paediatric residents, and fellows inspired by his kind and gentle mentoring. Among his colleagues, he is always the one to step up to immediately arrange to see a new patient or talk to a worried parent. The legacies of personal devotion to his patients, encouragement to others, and selfless service are his greatest gifts.

Tribute to Joel Brenner, MD, written by Jerry Marx, MD, Boston Children's Hospital, Harvard Medical School. Joel Brenner is the ultimate "all-around" paediatric cardiologist. His long-term, illustrious career is replete with countless contributions to the field. Beginning in 1978, Joel described the potential applications of echocardiography to analyse the haemodynamic effects of ventilation in the neonate. He was one of the pioneers in the field of echocardiography and was the director of non-invasive imaging at the University of Maryland from 1977 to 1992. Joel was always on the forefront of non-invasive imaging, and was

the organiser of the first international course on foetal cardiology in 1987. He has written multiple articles on the application of echocardiography to understand the anatomy and physiology of congenital cardiac disease. As any who knows Joel, his unbridled enthusiasm did not end in echocardiography but also branched out to other non-invasive modalities. In 1982, he described the analysis of left ventricular performance in infants and children using radionuclide angiography, and in 1983, he demonstrated the application of computerised axial tomography in the diagnosis of a vascular ring in an infant. Unquestionably, Joel was and continues to be a Renaissance Man. Joel was and is the "all-around cardiologist". During his career, he has written articles and lectured nationally and internationally on a myriad of subjects: myocarditis, brain abscess, chest pain, electrophysiology, haematological disorders, and 24 hour blood pressure monitoring. Joel has been a leader in advancing the understanding of cardiac surgery, including an early analysis in 1993 of the extracardiac total cavopulmonary connection. Perhaps his signature work has been the ever important analysis of neurodevelopmental outcomes of surgery. Or perhaps it has been his important contributions to the field in developing a better and more comprehensive understanding of the aetiology, epidemiology, and genetics of congenital heart disease.

Joel's enormous contributions have also included years of service to a myriad of organisations - in particular, the American Heart Association. His dedication to teaching and academia include many appointments and positions. His expertise has led to serving on multiple advisory committees, including those on hypertension, echocardiography, exercise, and sudden death. Currently, Joel is the Director of Paediatric Cardiology at Johns Hopkins's University. He has been well-recognised for his achievements, including being voted as a Top Doctor in the Baltimore community, and has received the Humanitarian Cardiology Award, and in 1996, the prestigious Helen B. Taussig Award. We are proud to extend a well-deserved tribute to an outstanding person, doctor, and friend, Joel Brenner.

Tribute to Duke Cameron, MD

As Professor of Surgery at Johns Hopkins University and Cardiac Surgeon-in-Charge at The Johns Hopkins Hospital, Duke Cameron is a true international leader and giant in our field (Figs 9–22). Duke truly excels in patient care, research, teaching, and professional advocacy. His multiple academic contributions span the breadth of paediatric and adult cardiac surgery.

Duke is internationally known as an expert in aortic surgery and specifically in aortic root reconstruction for syndromic patients.^{24–30} In 2009, Duke and the team from Hopkins published their



Figure 10.
Duke (then a Resident in Cardiothoracic Surgery) and his daughter Danielle outside of the Johns Hopkins Hospital (1984). Danielle is currently a Postgraduate Year 3 (PGY-3) Resident in Surgery at Yale University.



Figure 13.
Scrubbing for a case at the William Soler Hospital for Children in Havana, Cuba, 2009.



Figure 11.
The Cameron Clan in 1985.



Figure 14.
Postoperative rounds in the Pediatric Cardiac Surgical Intensive Care Unit in Havana, Cuba, 2009.



Figure 12.
Duke Cameron (bottom right), Bruce Reitz (to his right), and the Johns Hopkins surgical team involved in the first successful separation (1987) of craniophagus Siamese twins with Dr Benjamin Carson (fourth from bottom right).

experience with aortic root replacement in 372 patients with Marfan syndrome over 30 years.³⁰ Between September, 1976 and September, 2006, 372 patients with Marfan syndrome underwent aortic root replacement:

- 269 had a Bentall composite graft;
- 85 had valve-sparing aortic root replacement;



Figure 15.
Duke Cameron (left) and Luca Vricella performing a valve-sparing aortic root replacement at the University of Pavia, Italy, in 2009.



Figure 16.
The only time Duke Cameron was photographed in orange scrubs. Pavia, Italy, 2009 (with Luca Vricella, left and Jackie Martin).



Figure 17.
Duke Cameron with members of the Board of the National Marfan Foundation, among whom are Bart Loeys (upper right) and Hal Dietz (background, left). Duke was the 2010 recipient of the National Marfan Foundation's award.



Figure 18.
Boola, Duke and Claudia's dog of 14 years (2013).



Figure 19.
Duke Cameron with Faculty and Residents of the Johns Hopkins Division of Cardiac Surgery, 2013.

- 16 had aortic root replacement with homografts; and
- two had aortic root replacement with porcine xenografts.

In the first 24 years of the study, 85% received a Bentall graft, whereas during the last 8 years of the study, 61% underwent a valve-sparing procedure. There was no operative or hospital mortality among the 327 patients who underwent elective repair; there were two deaths among the 45 patients (4.4%) who underwent urgent or emergent operative repair. There were



Figure 20.
Duke and his wife Claudia in Patagonia (2014).

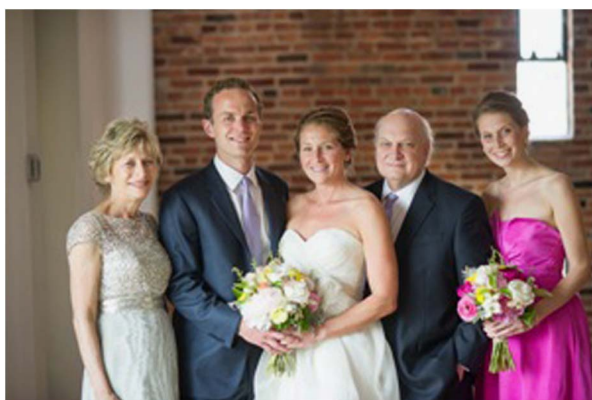


Figure 21.
Duke and his family. Left to right: Claudia, Charles Culp and Danielle, Duke and Nicole (2014).

74 late deaths for the following procedures: 70 Bentalls, two homograft, and two valve-sparing aortic root replacements. The most frequent causes of late death were dissection or rupture of the residual aorta (10 of 74) and arrhythmia (9 of 74). Of the 85 patients who underwent a valve-sparing procedure, 40 underwent a David II remodelling operation; there was one late death in this group, and five patients required late aortic valve replacement for aortic insufficiency. A David I reimplantation procedure using the De Paulis Valsalva graft has been used exclusively since May, 2002. All 44 patients in this last group have 0 to 1+ aortic insufficiency. From their experience, the authors concluded, "Prophylactic surgical replacement of the ascending aorta in patients with Marfan syndrome has low operative risk and can prevent aortic catastrophe in most patients. Valve-sparing procedures, particularly using the reimplantation technique with the Valsalva graft, show promise but have not yet proven as durable as the Bentall".³⁰



Figure 22.
Duke Cameron is Professor of Surgery at Johns Hopkins University and Cardiac Surgeon-in-Charge at The Johns Hopkins Hospital. This photograph of members of Johns Hopkins Children's Heart Surgery was taken on 20 February, 2012 in the Vinoy Grand Ballroom at the Renaissance Vinoy Resort & Golf Club, Saint Petersburg, Florida, United States of America. This photograph was taken during Johns Hopkins All Children's Heart Institute 12th Annual International Symposium on Congenital Heart Disease. From left to right: Luca A. Vricella, James A. Quintessenza, Paul J. Chai, Jeffrey P. Jacobs, and Duke Cameron – since this photo was taken, Constantine Mavroudis, Tom R. Karl, and Marshall L. Jacobs have all joined Johns Hopkins Children's Heart Surgery. Also since this photo was taken, our former partner Paul J. Chai has taken a position at Columbia University and Children's Hospital of New York.

The details of Duke's many accomplishments are provided in the tributes below. With the leadership provided by Duke Cameron and Joel Brenner, we are very confident in our future, as the collaboration grows between Johns Hopkins All Children's Heart Institute in Saint Petersburg, Florida Hospital in Orlando, and The Johns Hopkins Hospital in Baltimore. On a personal note, we would like to thank Duke for his tremendous friendship and support of our programme. Duke's vision has facilitated and supported the creation of a paediatric and congenital cardiac programme spanning Baltimore, Tampa Bay, and Orlando, a programme that now includes the following surgeons:

- Duke Cameron
- Luca A. Vricella
- James A. Quintessenza
- Jeffrey P. Jacobs
- Tom R. Karl
- Constantine Mavroudis
- Marshall Lewis Jacobs

Duke spelled out this vision at a dinner held during the 2012 annual meeting of The Society of Thoracic Surgeons (STS) on Tuesday, 31 January, 2012 in the Marlin Room at Bimini Boat Yard, 1555 SE 17th Street, Fort Lauderdale, Florida, United States of

America. This dinner was attended by Duke Cameron, Luca A. Vricella, James A. Quintessenza, Jeffrey P. Jacobs, Constantine Mavroudis, and Marshall Lewis Jacobs. At this dinner, Duke described his vision for the creation of a multi-site programme under the umbrella of Johns Hopkins University: a programme that collaborates to excel in patient care, research, education, and professional advocacy, capitalising on the individual unique strengths of all involved individuals and institutions. All members of this programme are truly indebted to Duke for his leadership and vision!

In 2015, we are honoured to have Duke Cameron as our George R. Daicoff Visiting Professor, where he will present the Daicoff Keynote Dinner Presentation. Jim Quintessenza and I are proud to pay tribute to Duke Cameron!

Jim Quintessenza and I have asked five surgeons to provide their thoughts about Duke Cameron:

- Luca A. Vricella, MD, FACS, Associate Professor of Surgery and Pediatrics at Johns Hopkins University, and Director of Paediatric Cardiac Surgery and Heart Transplantation at The Johns Hopkins Hospital.
- Tom R. Karl, our new partner at Johns Hopkins All Children's Heart Institute.
- Constantine Mavroudis, MD, Professor of Surgery, Johns Hopkins University School of Medicine; Site Director, Johns Hopkins Children's Heart Surgery, Florida Hospital for Children, Orlando, Florida; and a Past President of The Congenital Heart Surgeons' Society (CHSS).
- Peter J. Gruber, MD, PhD, Johann L. Ehrenhaft Professor and Chair, Department of Cardiothoracic Surgery, Co-Director, Abboud Cardiovascular Research Center, Carver School of Medicine, University of Iowa.
- Marshall Lewis Jacobs from Johns Hopkins University and President of The Congenital Heart Surgeons' Society (CHSS).

Tribute to Duke Cameron, MD, written by Luca A. Vricella. I felt very privileged when I was invited by the Editor to write a tribute to my colleague, mentor, and friend, Dr Duke Edward Cameron. I have been closely associated with Duke for almost 12 years, ever since coming to the Johns Hopkins Hospital eager to start my journey in the field of Paediatric Cardiac Surgery. I vividly remember the day in which I was offered the opportunity of joining him at Hopkins; when mentioning this to a member of the Stanford University Faculty, he immediately said, "... you will see, Duke Cameron raises the bar very high". He could not have been more correct. I was soon to learn how a real leader in our field centred his day and life on delivering clinical prowess to his patients, wisdom

and encouragement to those he mentored, and academic excellence to the institution that has been lucky to have him within its ranks since he was a Fellow in Cardiothoracic Surgery.

Duke Cameron was born in Miami in 1952, and left Florida to attend College at Harvard, where he graduated Magna Cum Laude in 1974. He completed medical school and then joined the General Surgery training programme at Yale University. At Yale, he met William Glenn, who was influential in his decision of pursuing a career in Cardiac Surgery. In 1983, he visited Baltimore, seeking a training position in Cardiac Surgery at The Johns Hopkins Hospital. The new Head of the Division, Dr Bruce Reitz, had just arrived from Stanford at the age of 37 after performing the world's first successful Heart-Lung transplant; Dr Reitz hired Duke on the spot, that very same day. Duke was his first Resident, and the first trainee who had not come through the rigorous Halsted General Surgery service. As someone who has had the privilege of training under Dr Reitz, I believe that he was one of the most influential figures in Duke's development as a cardiac surgeon. Dr Reitz was a true master surgeon, equally proficient in adult and congenital cardiac surgery. When I came to Johns Hopkins, I was struck in observing Duke operating. Like Dr Reitz, he had complete control of the operating room. The surgical field was spotless, his hands were gentle and elegant, and every aspect of the procedure was planned and executed with no wasted moves. One immediately understood that everything had a reason, and that he had seen the silver lining of every cloud. Although Duke is a consumed musician, the operating room was strikingly quiet, truly the "sanctuary" he often likes to describe it as.

Duke was immediately hired as Faculty after completion of his training, with the specific task of focussing on paediatric cardiac surgery. In 1993, he was Consultant Paediatric Cardiac Surgeon at the Royal Children's Hospital in Melbourne. Thereafter, he single-handedly carried the weight of our paediatric cardiac surgical practice for two decades. Although Duke is renowned as a world-class expert in aortic root surgery, he is in my view often under-recognised as an extraordinary congenital cardiac surgeon. The capacity of performing a stage-I Norwood procedure on a 2 kilogram baby in the morning and a third-time aortic root replacement in the afternoon is something that most surgeons simply do not have.

Because of the large volume of patients with connective tissue disorders seen at the Johns Hopkins Hospital, Duke developed a unique expertise over the years, merging his passion for aortic root surgery and his experience as a congenital heart surgeon in the treatment of children with aneurysmal disease of the aorta. The "signature operation" of Duke Cameron is

undoubtedly the valve-sparing aortic root replacement. This valve-sparing aortic root replacement is an operation that Duke has truly perfected, and, in my mind, his greatest technical contribution to our field is that of having rendered this seemingly elaborate procedure reproducible by trainees and visitors from around the world. To this date, he has performed well over 300 of such operations in adults and children, with outstanding results.

Duke Cameron became the James T. Dresher Professor of Surgery at The Johns Hopkins University in 2002, and assumed his current role of Chief of the Division of Cardiac Surgery in 2010. Beyond authoring and co-authoring a multitude of peer-reviewed articles, chapters, and textbooks, Duke has held leadership positions in all major professional organisations of our field and lectured in almost every corner of the world. I had the privilege of travelling with him to help programmes in Cuba, China, and Italy develop their expertise in congenital and aortic root surgery. During these endeavours, I always viewed him as the “ambassador of clinical excellence” that most of us could only hope to ever be. His kind, modest, and congenial personality seems to always strike those who come in contact with him and have the fortune of being on the receiving end of a wonderful transfer of knowledge. In a field where the development of a sense of omnipotence is a real risk, modesty belongs in my opinion to the true giants of our speciality.

Every academic institution or cardiac surgical programme has a surgeon who emerges as the “doctor’s doctor”, the one who you would trust with your loved one, who you can see with a day’s notice, and who will personally call patients on the eve of surgery just to see how they are doing. Every Department has an individual who has the last word of wisdom, that final comment or brilliant idea at the end of every Faculty meeting. There is one on your Staff who is a master surgeon and one who is a selfless mentor. The Johns Hopkins Division of Cardiac Surgery is fortunate to have all those qualities in one extraordinary individual.

Tribute to Duke Cameron, MD, written by Tom R. Karl. It is a pleasure and an honour to introduce Professor Duke Cameron, who will be our distinguished lecturer and Daicoff Visiting Professor for the 2015 Johns Hopkins All Childrens Heart Institute International Symposium on Congenital Heart Disease. I cannot imagine a more appropriate and deserving individual for this recognition. Through his surgical lineage to Alfred Blalock, as well as his own significant contributions, Duke’s name and work have become well known to all of us working in cardiothoracic surgery. Moreover, he is one of the few surgeons in our era who has met with success in both the paediatric and adult arms of our speciality.

My association with Duke now spans 3 decades, going back to our days as residents in Yale New Haven Hospital. In retrospect, it was an auspicious time, with William Glenn, Horace Stansel, and Hillel Laks all on the faculty, and John Elefteriades as our co-resident. Duke was an interesting and somewhat eccentric character who seemed to know a bit about every subject under the sun, from surgery to guitars, sports cars, world events, and beyond. I was not surprised that he went on to Johns Hopkins for further education at the source, so to speak.

We were quite busy, working on different continents for a time, and Duke’s name re-surfaced in the world press in the late 1980s. At that time, he and one of his great Hopkins mentors (Bruce Reitz) had successfully separated a pair of craniopagus twins using deep hypothermic circulatory arrest (DHCA). With sublime and characteristic understatement, Duke commented in his case report that “several unusual problems were encountered, including transfusion of a large blood volume from one extracorporeal circuit to the other through the common venous sinus, deleterious warming of the exposed brain during circulatory arrest, and thrombosis of both pump oxygenators”. No worries!

I met Duke shortly afterwards at a meeting of The American Association for Thoracic Surgery (AATS), and he related (with great excitement) that Bruce Reitz had helped him do his first arterial switch operation. Thus, Duke completed his rite of passage into paediatric cardiac surgery and stayed on the Hopkins faculty after residency. He has remained there since his original faculty appointment in 1987, despite frequent attempts to lure him to other institutions. I was fortunate to have Duke as a (locum tenens) colleague at the Royal Children’s Hospital in Melbourne in the 1993 and so had another chance to catch up. Duke had by then acquired exceptional skills not just in paediatric cardiac surgery but in computer technology as well, anticipating the importance of what was to come. We have, since that time, met frequently at various cardiac functions and academic visits around the world and collaborated on several textbook projects.

At Hopkins, Duke took up (and expanded and refined) the work started by Dr Vincent Gott, dealing with surgical and pathologic-genetic aspects of Marfan syndrome and related aortic diseases. He has cultivated his interest in this discipline, which has now matured as an amazing career statement – one that has touched all things aortic. He was an early proponent of the Ross operation and is now a well-recognised expert on valve-sparing surgery of the aortic root. His thoughtful and scholarly analysis and recommendations, based on a huge personal and institutional experience, now form the basis for much of the surgical world’s decision making for patients with various types of aortic root pathology.

I could probably stop here and just say that “the rest is history”. However, for the record, Duke is (among other things) Professor and Cardiac Surgeon-in-Charge at Johns Hopkins Hospital, Chief of Cardiac Surgery at Johns Hopkins University School of Medicine, the James T. Dresher Sr Professor of Surgery, and Director of the A.C. Broccoli Center for Aortic Disease at Johns Hopkins Hospital. Duke leads a group of nearly 250 faculty, trainees, and staff; he also oversees an annual research budget of \$1.3 million, of which \$1 million comes from the National Institutes of Health.

Despite this impressive academic success and his revered status in our specialty, Duke remains the “working man’s” surgeon, and I suspect that he always will. He is one of the true gentlemen of cardiac surgery, and enthusiastically interacts with and relates to people from all walks of life. His teaching efforts at Hopkins (and in other parts of the world) and his special efforts on behalf of his trainees are legendary. And he still picks up the guitar and performs in Baltimore when the mood strikes!

In conclusion, it has been a great honour to have known Duke over the years and to have been a passenger on the same train. I am certain that we will hear some very interesting and compelling information and insights regarding an extraordinary career in cardiac surgery.

Tribute to Duke Cameron, MD, written by Gus Mavroudis. Duke Cameron was born in 1952 in Miami. After moving to Fort Lauderdale, Florida, he attended Plantation High School (1967–1970). He maintained an exemplary academic standing and was admitted to Harvard College to study biological sciences en route to medical school and beyond. He excelled at Harvard and was graduated Magna Cum Laude in 1974. After these noteworthy achievements, he was admitted to Yale Medical School where he continued his academic excellence and was graduated Alpha Omega Alpha in 1978. At Yale Medical School, he gained the educational experience that propelled him towards a career in cardiothoracic surgery.

One pauses for a moment when thinking about these two great universities to remember the commencement address of John Kennedy at Yale University on 11 June, 1962, on the occasion of receiving an honorary degree. At the onset of his speech, President Kennedy said:

Let me begin by expressing my appreciation for the very deep honor that you have conferred upon me. As General de Gaulle occasionally acknowledges America to be the daughter of Europe, so I am pleased to come to Yale, the daughter of Harvard. It might be said now that I have the best of both worlds, a Harvard education and a Yale degree.

Indeed, Duke put his education to the test and was admitted to the general surgery training programme at Yale University-New Haven Hospital, furthering his Yale education. He was the first General Surgery Resident outside of the Hopkins Training Program to be awarded the coveted position as Thoracic Surgery Resident at Johns Hopkins University Department of Surgery. This led to a 30-year affiliation with Johns Hopkins University School of Medicine and the Department of Surgery. Duke quickly rose through the ranks and achieved multiple levels of expertise, which are a matter of record. It was no accident that he was chosen to direct the Division of Cardiothoracic Surgery in 2010 as The James T. Dresher Sr Professor of Surgery and Cardiac Surgeon-in-Charge.

One of my earliest experiences with Duke occurred during a meeting in Adelaide, Australia, where we found ourselves delivering lectures on congenital heart surgery topics in August, 1994. We had met previously during a Southern Thoracic Surgical Association meeting in the late 1980s. The Adelaide meeting was informative and spirited with discussion of many interesting and timely topics. We found ourselves with a free day and quickly determined ensemble that we absolutely needed to travel to Kangaroo Island off the coast of South Australia for a field trip to see nature’s wild first hand. It was a promising locale featuring wild kangaroos, seals, eagles, koalas, and much more. We took off from the local airport in a propeller-driven plane that looked for all the world like a DC 3 airplane that may have been a holdover from World War II. We inquired about parachutes; answers were mumbled with vague references to cold waters and great white sharks. Equanimity ruled the day. The trip to Kangaroo Island was mostly serene, and we landed in a field of grass just after a rainfall. This was the beginning of Philosophy 101 with Duke Cameron. Upon exiting the plane, two full rainbows filled the sky and captured our attention and riveted our gazes upwards as if Plato was signalling the beauty of the Forms and the intelligent design of nature. A cousin of Crocodile Dundee greeted us and showed us the natural beauty of the island. Our subsequent conversations centred on contemplative life with references to nature, Aristotle, Plato, and Kant. Although surgery was in the wind, the history of thought captured our dialogue. Thereafter and at every national meeting at which we found ourselves, Duke and I seemed to gather together and discuss philosophy. I found him to be a deep thinker and curious student of nature in all its forms. It explained all of his vast interests and ability to grasp and resolve complex ideas. It is not hard to see how he can excel in surgery, resident education, and national leadership. Although it may

be trite to say in these advanced times, Duke is truly a man for all seasons.

This collective dedication to Duke Cameron by his colleagues and trusted peers is no doubt one of many, although I would imagine that he might cherish it the most. He is a gifted surgeon, an effective teacher, and a model for the contemplative life. Duke's career continues. His vision to create a Mega-Division of Congenital Heart Surgery anchored by the almost limitless intellectual resources of Johns Hopkins University is in progress and may in fact deliver a new paradigm of clinical and research opportunities. "Thinking outside the box" it is called. We can all pause for a moment and honour Duke Cameron for all of his achievements and future endeavours.

Tribute to Duke Cameron, MD, written by Peter J. Gruber. For me, as for others, Duke is many things. But, basically, Duke is our friend: always available, immediately responsive, generous, and tireless. Most tributes are written after the heart has stopped. Duke is the pulse for many, and decades after I first met him, he is, to many, still just that.

Those of us who have worked with Duke consider it a badge of honour. We have learnt from, and worked with, a uniformly acknowledged master surgeon, one who is a mentor as well as a friend. Duke displays unerring sincerity, serenity, and integrity.

Duke was educated at Harvard College (1974) and Yale Medical School (1978). He stayed on at Yale for his internship and general surgery residency (1984) before moving to Baltimore for his cardiac surgery fellowship (1987). At Johns Hopkins Hospital, he has stayed in the Division of Cardiothoracic Surgery as a clinical, educational, and academic lynchpin. For many years, he served as Director of Paediatric Cardiothoracic Surgery while filling his busy operative schedule with cases paediatric and adult, congenital and acquired. More recently, he has taken over as the James T. Dresher Sr Professor of Surgery, the Chief of the Division of Cardiothoracic Surgery, and Cardiac Surgeon-in-Charge of the John's Hopkins Hospital.

Surgeons may debate over who has contributed most to the knowledge of aortic root reconstruction. Few will dispute that Duke Cameron is a master. Those lucky enough to have trained with him know that these complex sets of operations are made easier through his combination of efficiency and cool. Operating with Duke is a joy. His trainees recognise the characteristics of a master surgeon that are always on display: *compassion* for the patient led him to personally call everyone the night before surgery; *preparation* in reviewing the cases with trainees in advance; *measured independence* in assuring that reasonable portions of the case were carried out by competent assistants; *efficiency* that manifests

as speed; *judgement* that is reported in superb outcomes over decades; and *generosity* of time and knowledge, all allowing the rest of us with more humble talents to succeed in our own way.

His lectures often seem more like private conversations – chats in which he shares his vast knowledge with exceptional clarity. No complicated slides or graphs, they are simple illustrations and clear information, easy points that everyone can take home. His experience with the modified Bentall and valve-sparing David procedures are renowned.^{24–30} The unparalleled experience of the Hopkins group in aortic root reconstruction for syndromic patients is a tribute to the team. However, Duke quickly deflects praise to Dr Gott who preceded him and others such as Dr Vricella who have followed.

Should Duke be reading, at this point, he will likely interrupt with some protestation to the effect of, "I'm not dead, yet!"

This decency imbues his trainees with the same, although few of us can live up to his standards. I vividly remember one day covering the Cardiac Intensive Care Unit as a 3rd-year general surgery resident at Johns Hopkins. Duke had two cases that day, an adult Ross and an arterial switch. He was doing rounds in the ICU that afternoon having finished both cases in time for dinner. I was in awe not of his speed, not of his calm, but of his energy and love for the practice. I told him I thought that was pretty much the best day a surgeon could have. He responded along the lines of "It was a good day, what's tomorrow?"

That is Duke, content with his good work, but looking forward towards a better tomorrow.

Tribute to Duke Cameron, MD, written by Marshall Lewis Jacobs. A Few Words About Duke Cameron:

Question: What do James Brown and Leonardo da Vinci share in common?

Answer: Each of them is frequently referred to using the exact terms that crossed my mind when the idea of writing a brief tribute to my friend and colleague Duke Cameron was suggested to me: "Hardest Working Man" and "Renaissance Man".

Acclaimed journalist James Sullivan's 2009 biography of the Godfather of Soul is titled *The Hardest Working Man: How James Brown Saved the Soul of America*. Sullivan's account of the life of James Brown captures the magnificent achievements that made Brown a revolutionary icon of American popular culture, and, as the title implied, the Herculean amount of energy expended in James Browns' art and his work was an inescapable hallmark. Leonardo is studied and

celebrated as a painter, sculptor, architect, musician, mathematician, engineer, inventor, anatomist, geologist, botanist, cartographer, and writer. His genius epitomised the Renaissance humanist ideal. Leonardo has often been described as the archetype of the Renaissance Man.

Having known Duke for a little more than 25 years, I have always admired him. However, recently, I have come to recognise even more of his many admirable attributes and gifts than had been apparent through a less-proximate relationship. I had known for years that he was a talented and committed paediatric cardiac surgeon, transplant surgeon, and aortic surgeon, to mention just a few of his pastimes. The recognition that he is also the consummate gentleman was likewise obvious and inescapable. But the opportunity to spend more time around Duke, and see this “hardest working man” on the job, has given me new insights into his equally important roles as educator (passionately dedicated to the career development and professional quality-of-life of his younger staff colleagues, residents, and students), administrator (firm but fair with unbelievable attention to detail and unflappable integrity), ambassador and spokesperson for the interests of patients and of the medical profession (to both of whom he has devoted year upon year of twenty-five hour days), scholar and man of letters (be prepared to read his 5 a.m. emails on subjects ranging from Herman Melville to Moby Grape, from the United Nations to digital technology). Duke is an erudite student, discussant, and teacher of literature, art, music, and history.

The cardiothoracic surgery residents at Johns Hopkins have it easy. That’s right – I said easy. What makes it easy for them? Is it the enormous clinical workload? Is it the expectation of academic productivity while completing their clinical training? Is it the challenge of mastering the scientific and physiologic aspects of cardiovascular and thoracic disease while also learning to perform operations and navigate the electronic health record? Here is the answer: What makes it easy for the residents at Johns Hopkins is their continuous exposure and proximity to a Renaissance Man, who is also one of the profession’s Hardest Working Men, who is always looking out for their best interests. They do not have to look far to figure out what makes one a world-class clinician and academician in their chosen discipline. Some surgeons-in-training have to make a conscious effort to find mentorship. In that respect, the young surgeons at Hopkins have it easy!

We have all been influenced in positive and negative ways by senior surgeons whom we have encountered at various stages of our careers. The individuals who have Duke Cameron as a mentor are truly fortunate. Like few others in our field – Sir Magdi Yacoub is one who

comes to mind – Duke is a master of ALL aspects of cardiovascular surgery, a world leader in aortic surgery and congenital cardiac surgery, a clinician-scientist who has made contributions in domains including physiology, genetics, neuroprotection, biomechanics, transplantation biology, patient safety and quality of care, and medical devices – to name just a few. In addition, equally importantly, he is constantly reminding the residents that there is life beyond cardiac surgery. He is also reminding them that critical thinking and decision-making based on fact and fairness and consideration of others is just as important “out there” as it is in the crucible of clinical surgery. That is mentorship.

This December, 2015 HeartWeek Issue of Cardiology in the Young

We are pleased and honoured to dedicate this December, 2014 HeartWeek Issue of Cardiology in the Young to Joel Brenner and Duke Cameron.

All manuscripts in Cardiology in the Young and all manuscripts in all Supplements to Cardiology in the Young, including this December, 2014 HeartWeek Issue of Cardiology in the Young, are listed in MEDLINE[®], which is the premier bibliographic database of the National Library of Medicine of the United States of America, covering the fields of medicine, nursing, dentistry, veterinary medicine, the healthcare system, and the pre-clinical sciences. All manuscripts in Cardiology in the Young and all manuscripts in all Supplements to Cardiology in the Young, including this December, 2014 HeartWeek Issue of Cardiology in the Young, are assigned a Digital Object Identifier (DO or DOI), which is a unique and persistent digital identification code for any object of intellectual property. The references to these articles and their Digital Object Identifier can be found in PubMed, which comprises >20 million citations for biomedical literature from MEDLINE, life science journals, and online books. Citations in PubMed may include links to full-text content from PubMed Central and publisher web sites.

It is gratifying for Jim Quintessenza and me, as representatives of Johns Hopkins All Children’s Heart Institute, to confirm our ongoing commitment to continue “HeartWeek in Florida”, combining the International Symposium on Congenital Heart Disease now organised by All Children’s Hospital and Johns Hopkins Medicine with the annual post-graduate course in Paediatric Cardiovascular Disease organised by Children’s Hospital of Philadelphia. We thank Jack Rychik, Director of the meeting organised by Children’s Hospital of Philadelphia, Tina Mannices, Manager of Continuing Medical

Education at the Children's Hospital of Philadelphia, and Tom Spray and Bill Gaynor for their support.

The December, 2014 HeartWeek Issue of Cardiology in the Young that you are now about to read therefore focusses on "*Highlights of HeartWeek 2014: Diseases of the Cardiac Valves from the Foetus to the Adult*". It has been prepared to give a flavour of Johns Hopkins All Children's Heart Institute's 14th Annual International Symposium on Congenital Heart Disease, which was held at the Renaissance Vinoy Resort & Golf Club, Saint Petersburg, Florida, from 15-18 February, 2014:

- Special Focus: "*Diseases of the Cardiac Valves from the Fetus to the Adult*"
- Co-Sponsor: The American Association for Thoracic Surgery (AATS)

This December, 2014 HeartWeek Issue of Cardiology in the Young contains 20 manuscripts and is divided into three Parts:

- Part 1 includes this Introduction to this December, 2014 HeartWeek Issue of Cardiology in the Young and also includes an Editorial about the past, present, and future of Cardiology in the Young.
- Part 2 is a series of 16 manuscripts that highlight Johns Hopkins All Children's Heart Institute's 14th Annual International Symposium on Congenital Heart Disease and its special focus: "*Diseases of the Cardiac Valves from the Fetus to the Adult*".
- Part 3 offers two articles related to the theme of paediatric and congenital cardiac care. First, an article written by The Children's Medical Services (CMS) of Florida Cardiac Technical Advisory Panel (CTAP) is titled "Development of Paediatric Electrophysiology Standards for Florida Children's Medical Services". Then, this December, 2014 HeartWeek Issue of Cardiology in the Young concludes with the published transcript of the awesome 2014 George R. Daicoff Dinner Presentation, which was presented by John William Brown and was titled "*Pediatric Cardiac Surgery – It's a Wonderful Life*".

Over the years, HeartWeek in Florida has provided many opportunities for excellent scientific exchange of ideas and the development of awesome friendships. I would like again to thank Bob Anderson and Ted Baker for all of their help, support, trust, and patience during the preparation of these HeartWeek Issues and Supplements of Cardiology in the Young. I would also like to thank my good friends who compose the Editorial Board of this December, 2014 HeartWeek Issue of Cardiology in the Young: Jim Quintessenza, Gul Dadlani, Allan D. Everett, and

Robert H. Anderson. Each of the members of the Editorial Board of this HeartWeek Issue of Cardiology in the Young has made important and valued contributions.

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Jim Huhta and I have now collaborated on this meeting for 15 years. The meeting would not have been possible without the leadership and vision of Jim Huhta. Finally, I thank my current partners, Jim Quintessenza, Gus Mavroudis, Marshall Jacobs, Duke Cameron, Luca A. Vricella, and Tom R. Karl, and my former partners, Harald Lindberg and Paul Chai, for their constant support and guidance, as well as my wife Stacy and children Jessica and Joshua for their understanding and patience. It continues to be an ongoing fact, as I have emphasised in previous introductions to Supplements, that all of the family members of the authors of the reviews included in this December, 2014 HeartWeek Issue of Cardiology in the Young are owed a debt of gratitude, because writing manuscripts markedly decreases the time available with them.

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The author would like to dedicate this December, 2014 HeartWeek issue of Cardiology in the Young to two global leaders in the field of paediatric and congenital cardiac care: Duke Cameron, MD, and Joel Brenner, MD. Duke Cameron is Professor of Surgery at Johns Hopkins University and Cardiac Surgeon-in-Charge at The Johns Hopkins Hospital. Joel Brenner is Professor of Pediatrics at Johns Hopkins University and Director of the Taussig Heart Center at Bloomberg Children's Center, The Johns Hopkins

Hospital. Together, Joel and Duke lead the proud paediatric and congenital cardiac programme at The Johns Hopkins Hospital.

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