Johns Hopkins School of Medicine

Cardiothoracic Surgery Residency Program
2014
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We are extremely pleased and honored by your interest in our cardiothoracic surgery training program and welcome you to our institution. Your accomplishments and endeavors to date are to be congratulated.

The Johns Hopkins Hospital has a distinguished history of advancements in the treatment of cardiothoracic diseases in adults and children beginning with the Blalock-Taussig shunt in 1944. Our cardiothoracic surgery program currently offers a full complement of surgical interventions—from time-honored surgeries such as coronary artery bypass, valve replacement, and congenital heart procedures to new ground-breaking therapies including minimally invasive cardiac surgery, off-pump coronary bypass, surgical ablation for atrial fibrillation, laser transmyocardial revascularization, and robotic heart surgery. We also offer comprehensive treatment for congestive heart failure, including surgical ventricular restoration procedures, cardiac transplantation, and ventricular assist devices. Finally, our program is an integral part of the Broccoli Center for Aortic Diseases at Johns Hopkins, one of only a few centers in the world that provides comprehensive management and surgical repair of aortic diseases, having particular expertise with patients suffering from Marfan syndrome and Loeys-Dietz syndrome.

In general thoracic surgery, we have the highest surgical volumes in the state of Maryland and the surrounding areas, so your experience in thoracic malignancies including that of lung, esophageal, mediastinal and pleura will be unique. The techniques of Video Assisted Thoracoscopic Surgery (VATS), robotics, lung reduction surgery and lung transplantation are fully integrated into the training program.

Our large clinical volume, consisting of many complex and complicated procedures in all areas of pediatric, adult cardiac and thoracic procedures, assures patients that they are receiving the best care possible from some of the most experienced and expertly skilled surgeons in the world. These same surgeons are committed to studying and evaluating new methods of surgical treatment and improving surgical outcomes through clinical and laboratory research. We hope this information is useful as you move on to the next phase of your surgical career.
Mission

Our mission in Cardiac and Thoracic Surgery is to provide patients with the best and safest surgical care using innovative techniques while fostering leadership through education and research.

Clinical Service Philosophy & Core Values

- Surgical excellence
- Integrity
- Innovation and discovery
- Respect for the individual
- Fostering leadership through education and research
The John Hopkins Hospital opened in 1889, followed four years later by the university’s School of Medicine, revolutionizing medical practice, teaching, and research in the United States. The hospital is now part of the Johns Hopkins Health System, which includes four other acute-care hospitals and other integrated health-care delivery components, with a network of primary and specialty care practices, outpatient care, long-term care, and home care throughout Maryland.

The Johns Hopkins Hospital has been ranked #1 in the 2013 U.S. News and World Report’s annual rankings of American hospitals.
Letter of Johns Hopkins to the Trustees
Baltimore, March 10, 1873


Gentlemen:

I have given you, in your capacity of Trustees, thirteen acres of land; situated in the city of Baltimore, and bounded by Wolfe, Monument, Broadway and Jefferson streets, upon which I desire you to erect a Hospital.

It will be necessary to devote the present year to the grading of the surface, to its proper drainage, to the laying out of the grounds, and to the most careful and deliberate choice of a plan for the erection and arrangement of the buildings.

It is my wish that the plan thus chosen shall be one which will permit symmetrical additions to the buildings which will be first constructed, in order that you may ultimately be able to receive four hundred patients; and that it shall provide for a Hospital, which shall, in construction and arrangement, compare favorably with any other institution of like character in this country or in Europe.

It will, therefore, be your duty to obtain the advice and assistance of those, at home and abroad, who have achieved the greatest success in the construction and management of Hospitals.

I cannot press this injunction too strongly upon you, because the usefulness of this charity will greatly depend upon the plan which you may adopt for the construction and arrangement of the buildings. It is my desire that you should complete this portion of your labor during the current year, and be in readiness to commence the building of the Hospital in the spring of 1874.

It will be our duty, hereafter, to provide for the erection, upon other ground, of suitable buildings for the reception, maintenance and education of orphan colored children.

I direct you to provide accommodation for three or four hundred children of this class; and you are also authorized to receive into this asylum, at your discretion, as belonging to such class, colored children who have lost one parent only, and, in exceptional cases, to receive colored children who are not orphans, but who may be in such circumstances as to require the aid of the charity.

I desire that you shall apply the yearly sum of twenty thousand dollars, or so much thereof as may be necessary of the revenue of the property which you will hereafter receive, to the maintenance of the Orphan's Home intended for such children.
In order to enable you to carry my wishes into full effect, I will now and in each succeeding year during my life, until the Hospital buildings are fully completed, and in readiness to receive patients, place at your disposal the sum of one hundred thousand dollars.

In addition to the gift, already made to you, of the thirteen acres of Land in the city of Baltimore, upon which the Hospital will be built, I have dedicated to its support and to the payment of the annual sum provided to be paid for the support of the Orphan’s Home, property which you may safely estimate as worth, today, two millions of dollars, and from which your corporation will certainly receive a yearly revenue of one hundred and twenty thousand dollars; and which time and your diligent care will make more largely productive.

If the Hospital and Orphan's Home are not built at my death, it will be your duty to apply the income arising from the property so dedicated, to their completion. When they are built, the income from that property will suffice for their maintenance.

The indigent sick of this city and its environs, without regard to sex, age, or color, who may require surgical or medical treatment, and who can be received into the Hospital without peril to the other inmates, and the poor of this city and State, of all races, who are stricken down by any casualty, shall be received into the Hospital, without charge, for such periods of time and under such regulations as you may prescribe. It shall be your duty to make such division of the sexes and patients among the several wards of the Hospital as will best promote the actual usefulness of the charity.

You will also provide for the reception of a limited number of patients who are able to make compensation for the room and attention they may require. The money received from such persons will enable you to appropriate a larger sum for the relief of the sufferings of that class which I direct you to admit free of charge; and you will thus be enabled to afford to strangers, and to those of your own people who have no friends or relations to care for them in sickness, and who are not objects of charity, the advantages of careful and skillful treatment. It will be your special duty to secure for the service of the Hospital surgeons and physicians of the highest character and greatest skill.

I desire you to establish in connection with the Hospital a training school for female nurses. This provision will secure the services of women competent to care for the sick in the Hospital wards, and will enable you to benefit the whole community by supplying it with a class of trained and experienced nurses.

I wish the large grounds surrounding the Hospital buildings to be properly enclosed by iron railings, and to be so laid out and planted with trees and flowers as to afford solace to the sick and be an ornament to the section of the city in which the grounds are located.
I desire that you should in due season provide for a site and buildings, of such description and at such distance from the city as your judgment shall approve, for the reception of convalescent patients. You will be able in this way to hasten the recovery of the sick and to have always room in the main Hospital buildings for other sick persons requiring immediate medical or surgical treatment.

It is my especial request that the influence of religion should be felt in and impressed upon the whole management of the Hospital; but I desire, nevertheless, that the administration of the charity shall be undisturbed by sectarian influence, discipline or control.

In all your arrangements in relation to this Hospital, you will bear constantly in mind that it is my wish and purpose that the institution shall ultimately form a part of the Medical School of that University for which I have made ample provision by my will.

I have felt it to be my duty to bring these subjects to your particular attention, knowing that you will conform to the wishes which I thus definitely express.

In other particulars I leave your Board to the exercise of its discretion, believing that your good judgment and experience in life will enable you to make this charity a substantial benefit to the community.

I am, very respectfully, your friend,

Johns Hopkins
The Johns Hopkins Medical Institution

East Baltimore Medical Campus

The Sheikh Zayed Tower and Bloomberg Children’s Center

Weinberg Pavilion: Sidney Kimmel Comprehensive Cancer Center

Johns Hopkins Bayview Medical Center
Johns Hopkins Pediatric Cardiac Surgery

Charlotte R. Bloomberg  
Children’s Center  
Baltimore, Maryland

All Children’s Hospital  
St. Petersburg, Florida

Florida Hospital for Children  
Orlando, Florida
The Divisions of Cardiac and Thoracic Surgery offer a three year training program following completion of a surgical residency. The first year as a junior cardiac surgery fellow is evenly divided between the Red and Blue cardiac surgery services. During the second year, six months are dedicated to the general thoracic surgery service and six months are spent on an elective rotation. The rotation options are Transthoracic Echocardiography, Cardiovascular Surgical Intensive Care, Transplant, Cardiac Cath and Interventional Lab, and Interventional Pulmonology at Johns Hopkins Hospital as well as Thoracic and Vascular rotations at the Johns Hopkins Bayview Medical Center (JHBMC). The third year of the residency is spent as a chief resident in cardiac surgery and is divided between the Red and Blue cardiac surgery teams. Residents with a strong interest in Thoracic Surgery will have an opportunity to spend time on the thoracic service in the third year.

The Johns Hopkins Hospital has a long history of training academic surgeons, both in general and cardiothoracic surgery. Hopkins cardiac surgery has been directed by leaders in the field, including Alfred Blalock, Vincent Gott, Bruce Reitz, William Baumgartner, and now Duke Cameron. The Division strives to maintain this heritage by fostering clinical expertise, scientific inquiry, and intellectual development, the essence of an academic surgeon. To accomplish this goal, the training program in cardiothoracic surgery provides a wealth of clinical and operative experience in a collegial atmosphere, a diverse house staff and faculty interested in teaching, and a wide variety of clinical and basic research experiences.
CT Surgery Residency Program

- **3 year program**
  - Year 1 - Cardiac (adult/congenital)
  - Year 2 – General Thoracic (6 months)
  - Year 2 – Elective Rotations (6 months)
  - Year 3 – Cardiac (adult/congenital) / Thoracic

- Progressive increase in responsibility
- Progressive increase in operative experience as primary surgeon
- Opportunities for clinical research

**Year 1**  Cardiac (adult/congenital)
- Patient care
- Operative experience
- In-house call (1/4)
- Preoperative decision making
- Consultative experience

**Year 2**  General Thoracic (6 months)
- Patient care
- Operative experience (thoracic and vascular)
- In-house call (1/4)
- Preoperative decision making
- Consultative experience

**Year 2**  Elective Rotation (6 months)
- Patient care
- In-house call (1/4)
- Consultative experience
- Possible electives: JHH Transthoracic Echocardiography, Cardiac Surgery Intensive Care, Transplant, Cardiac Cath and Interventional Lab, Interventional Pulmonology, Thoracic and Vascular

**Year 3**  Cardiac (adult/congenital) / Thoracic
- Overall charge of service
- Substantial operative experience
- No regular In-house call
- Transplant responsibility
CT Surgery Residency Program

**Education**

- Wednesday 12 noon General Thoracic Surgery Conference
- Thursday Cardiac Surgery Conferences
  - 7 a.m. Cardiac Surgery Service Meeting, Visiting Professor Lectureship, Surgery Grand Rounds
  - 7:30 a.m. M & M Conference
  - 8:30-9:30 a.m. Curricular talks/Quarterly Meetings with Dr. Cameron/Journal Club
- Friday General Thoracic Surgery Outpatient Clinic
- Friday 7 a.m. Pediatric Cardiac Conference
- Program Director
- Blalock Visiting Professor-Cardiac Surgery
- Evelyn Grollman-Glick Lectureship Visiting Professor-General Thoracic Surgery
- Susan and Milton Miller Lecture – Cardiac and Vascular Surgery
- Pediatric Cardiac Surgery Guest Lecture Series

**Research**

- Basic laboratory research performed by general surgery residents
- Clinical reviews

**Mentoring**

- Program/Associate Program Director
- Faculty Advisor

**Vacation/Meeting Time Off**

Year
1  2 weeks for vacation
   Optional prep course for ABS board examination

2  2 weeks for vacation
   1 national meeting

3  2 weeks for vacation/employment search
   1 national meeting
## Visiting Lecture Professorships

### The Alfred Blalock Lecture

<table>
<thead>
<tr>
<th>Year</th>
<th>Speaker</th>
<th>Topic</th>
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</thead>
<tbody>
<tr>
<td>2013</td>
<td>Dr. Bruce Lytle</td>
<td>How Coronary Artery Bypass Surgery Created the Modern World</td>
</tr>
<tr>
<td>2012</td>
<td>Dr. Joseph Coselli</td>
<td>Thoracoabdominal Aortic Aneurysm Repair – The Mentor’s Imprint</td>
</tr>
<tr>
<td>2011</td>
<td>Dr. Edward L. Bove</td>
<td>Innovation and Regulation – Can They Both Exist in Today’s Medical Environment?</td>
</tr>
<tr>
<td>2010</td>
<td>Dr. Craig R. Smith</td>
<td>Transcatheter Valve Implantation</td>
</tr>
<tr>
<td>2009</td>
<td>Dr. Randolph Chitwood, Jr.</td>
<td>Innovation in Surgery: Johns Hopkins, Duke and ECU</td>
</tr>
<tr>
<td>2008</td>
<td>Dr. D. Craig Miller</td>
<td>Valve-sparing Aortic Root Replacement – Where Are We Heading and What about BAV and the Arch?</td>
</tr>
<tr>
<td>2007</td>
<td>Dr. Frederick A. Crawford</td>
<td>Does Cardiac Surgery Have A Future?</td>
</tr>
<tr>
<td>2006</td>
<td>Dr. Irving Kron</td>
<td>Surgery for Heart Failure</td>
</tr>
<tr>
<td>2005</td>
<td>Dr. Robert A. Guyton</td>
<td>Evidence-based Surgery: The Case for Coronary Artery Bypass</td>
</tr>
<tr>
<td>2004</td>
<td>Dr. Bruce A. Reitz</td>
<td>Continuing Progress in Heart and Lung Transplantation</td>
</tr>
<tr>
<td>2003</td>
<td>Dr. Timothy J. Gardner</td>
<td>The Evolution of Cardiac Surgery: What Would Dr. Blalock Do?</td>
</tr>
<tr>
<td>2002</td>
<td>Dr. Donald B. Doty</td>
<td>Explorers, Pioneers, and the American Dream</td>
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<tr>
<td>2001</td>
<td>Dr. Randall B. Griepp</td>
<td>Surgery of the Aortic Arch</td>
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<tr>
<td>2000</td>
<td>Dr. Gordon F. Murray</td>
<td>OPCAB “The Beat Goes On”</td>
</tr>
<tr>
<td>1999</td>
<td>Dr. Alden H. Harken</td>
<td>Anyone Can Treat Cardiac Arrhythmias</td>
</tr>
<tr>
<td>1998</td>
<td>Dr. Mark B. Orringer</td>
<td>Evolution, Refinements and Experience with Transhiatal Esophagectomy</td>
</tr>
<tr>
<td>1997</td>
<td>Dr. Ronald C. Elkins</td>
<td>Congenital Aortic Valve Disease-Evolution of Surgical Management</td>
</tr>
<tr>
<td>1996</td>
<td>Dr. James L. Cox</td>
<td>Surgery for Atrial Fibrillation</td>
</tr>
<tr>
<td>1995</td>
<td>Dr. Frank C. Spencer</td>
<td>Experiences in 600 Patients with Reconstruction of the Mitral Valve for Mitral Insufficiency</td>
</tr>
<tr>
<td>1988</td>
<td>Dr. Aldo R. Castaneda</td>
<td>Early Surgical Correction of Congenital, Heart Defects a Therapeutic Leitmotif</td>
</tr>
<tr>
<td>1987</td>
<td>Dr. Denton A. Cooley</td>
<td>Thoracic Aortic Aneurysms: From Hopkins to Houston</td>
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<tr>
<td>1986</td>
<td>Dr. John W. Kirklin</td>
<td>The Movement of Cardiac Surgery Towards the Very Young</td>
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<tr>
<td>1985</td>
<td>Dr. David C. Sabiston, Jr.</td>
<td>The Diagnosis and Surgical Management of Chronic Pulmonary Embolism</td>
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<tr>
<td>1984</td>
<td>Dr. Dwight C. McGoon</td>
<td>The Dimensions of Cardiac Surgery</td>
</tr>
<tr>
<td>1983</td>
<td>Dr. Norman E. Shumway</td>
<td>Heart and Lung Transplantation</td>
</tr>
<tr>
<td>1982</td>
<td>Dr. Mark M. Ravitch</td>
<td>Progress in the Resection of Chest Wall Tumors and Some Reminiscences of Dr. Blalock</td>
</tr>
</tbody>
</table>
### Evelyn Grollman-Glick Lectureship in Thoracic Surgery Lectures

<table>
<thead>
<tr>
<th>Year</th>
<th>Speaker</th>
<th>Title</th>
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</thead>
<tbody>
<tr>
<td>2013</td>
<td>Dr. James Luketich</td>
<td>Evolution of Minimally Invasive Esophagectomy</td>
</tr>
<tr>
<td>2012</td>
<td>Dr. Claude Deschamps</td>
<td>Esophagectomy: A Score Card</td>
</tr>
<tr>
<td>2011</td>
<td>Dr. Richard Feins</td>
<td>Deliberate Practice to Surgical Practice – The Training of the Elite Surgeon</td>
</tr>
<tr>
<td>2010</td>
<td>Dr. Mark Orringer</td>
<td>Transhiatal esophagectomy---the Hopkins connection</td>
</tr>
<tr>
<td>2009</td>
<td>Dr. Harold Urschel</td>
<td>Capricious Vagaries of Thoracic Outlet Syndrome</td>
</tr>
<tr>
<td>2008</td>
<td>Dr. Alex Patterson</td>
<td>Current Strategies in Lung Transplantation</td>
</tr>
<tr>
<td>2007</td>
<td>Dr. Harvey Pass</td>
<td>Mesothelioma: New Ideas to Combat a Controversial Killer</td>
</tr>
<tr>
<td>2006</td>
<td>Dr. Valerie Rusch</td>
<td>Evolving Management of Early Stage Lung Cancers in the Era of Molecular Medicine</td>
</tr>
<tr>
<td>2005</td>
<td>Dr. Joe B. Putnam</td>
<td>An Academic Model for the 21st Century</td>
</tr>
<tr>
<td>2004</td>
<td>Dr. Jack Roth</td>
<td>Targeting Thoracic Cancers</td>
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</tbody>
</table>

### Special Pediatric Cardiac Surgery Guest Lectures

<table>
<thead>
<tr>
<th>Year</th>
<th>Speaker</th>
<th>Title</th>
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</thead>
<tbody>
<tr>
<td>2013</td>
<td>Dr. John W. Brown</td>
<td>The Ross Procedure: Lessons Learned and Outcomes of 350+ Children and Adults</td>
</tr>
<tr>
<td>2012</td>
<td>Dr. Christopher Caldarone</td>
<td>New Treatments for Pulmonary Venous Stenosis and TAPVC</td>
</tr>
<tr>
<td>2012</td>
<td>Dr. Bob Anderson</td>
<td>AVSDs and DORV</td>
</tr>
<tr>
<td>2012</td>
<td>Dr. Marshall Jacobs</td>
<td>Anomalous Aortic Origin of a Coronary Artery: A Surgical Disease</td>
</tr>
<tr>
<td>2012</td>
<td>Dr. Constantine Mavroudis</td>
<td>Fontan Conversion</td>
</tr>
<tr>
<td>2011</td>
<td>Dr. Joseph A. Dearani</td>
<td>Ebstein’s Anomaly</td>
</tr>
<tr>
<td>2011</td>
<td>Dr. Jeffrey Jacobs</td>
<td>Outcomes Analysis and Quality Improvement for the Treatment of Patients with Congenital Heart Disease</td>
</tr>
<tr>
<td>2011</td>
<td>Dr. James Quintessenza</td>
<td>Surgical Strategies for Reconstruction of the Pulmonary Valve</td>
</tr>
<tr>
<td>2011</td>
<td>Dr. Emile A. Bacha</td>
<td>Hybrid and Fetal Procedures in Congenital Heart Surgery</td>
</tr>
<tr>
<td>2011</td>
<td>Dr. Giovanni Stellin</td>
<td>Transatrial-Transpulmonary Repair of Tetralogy of Fallot</td>
</tr>
<tr>
<td>2005</td>
<td>Dr. Martin Elliott</td>
<td>Advances in Neonatal Cardiac Surgery</td>
</tr>
<tr>
<td>2004</td>
<td>Dr. Leonard Bailey</td>
<td>Pediatric Heart Transplantation – The “Baby Fae” Legacy</td>
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</tbody>
</table>
### Susan and Milton Miller Lectures

<table>
<thead>
<tr>
<th>Year</th>
<th>Speaker</th>
<th>Title</th>
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<tbody>
<tr>
<td>2014</td>
<td>Dr. Charles Fraser</td>
<td>CCHS Evolution through 10,000 Surgeries</td>
</tr>
<tr>
<td>2013</td>
<td>Dr. Vivian Gahtan</td>
<td>Thrombospondin-1 and Intimal Hyperplasia – A Role for Statins</td>
</tr>
<tr>
<td>2012</td>
<td>Dr. Keith Horvath</td>
<td>Innovations in Cardiac Surgery – From the Files of the NHLBI</td>
</tr>
<tr>
<td>2011</td>
<td>Dr. Richard Cambria</td>
<td>Thoracic/thoracoabdominal Aortic Surgery: Perspectives and Progress with Spinal cord Ischemia</td>
</tr>
<tr>
<td>2010</td>
<td>Dr. David Yuh</td>
<td>Can Technology Create Better Surgeons? Confessions of a Washed Up video Game Programmer</td>
</tr>
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### Lynn Van Praag Lectures

<table>
<thead>
<tr>
<th>Year</th>
<th>Speaker</th>
<th>Title</th>
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<tbody>
<tr>
<td>2014</td>
<td>Dr. David Fullerton</td>
<td>Perioperative Management of Pulmonary Hypertension</td>
</tr>
<tr>
<td>2013</td>
<td>Dr. Alden Harken</td>
<td>The Past, Present and Future of Cardiac Surgery</td>
</tr>
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# Cardiothoracic Surgery Schedules

## Cardiac OR Schedule

<table>
<thead>
<tr>
<th>OR Room</th>
<th>Surgeon</th>
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<tbody>
<tr>
<td>Monday</td>
<td>Cameron</td>
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<tr>
<td></td>
<td>Shah</td>
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<tr>
<td></td>
<td>Sciortino</td>
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<tr>
<td></td>
<td>Hybrid OR</td>
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<td></td>
<td>Vricella (am only)</td>
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<tr>
<td>Tuesday</td>
<td>Cameron</td>
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<td>Price</td>
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<td>Conte</td>
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<tr>
<td></td>
<td>Vricella</td>
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<tr>
<td>Wednesday</td>
<td>Conte</td>
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<tr>
<td></td>
<td>Mandal</td>
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<tr>
<td></td>
<td>Sciortino</td>
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<tr>
<td></td>
<td>Vricella (am only)</td>
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<tr>
<td>Thursday</td>
<td>Cameron</td>
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<td></td>
<td>Zehr</td>
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<tr>
<td></td>
<td>Conte</td>
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<tr>
<td></td>
<td>Hybrid OR</td>
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<td></td>
<td>Vricella (am only)</td>
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<tr>
<td>Friday</td>
<td>Zehr</td>
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<tr>
<td></td>
<td>Price</td>
</tr>
<tr>
<td></td>
<td>Mandal</td>
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<td></td>
<td>Shah</td>
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<tr>
<td></td>
<td>Vricella (am only)</td>
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## Thoracic Schedule

<table>
<thead>
<tr>
<th>Battafarano</th>
<th>Clinic</th>
<th>Monday</th>
<th>7:30-5:00</th>
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<tbody>
<tr>
<td>OR</td>
<td>Tuesday</td>
<td>7:30-5:00</td>
<td></td>
</tr>
<tr>
<td>Clinic</td>
<td>Wednesday</td>
<td>8:45-5:00</td>
<td></td>
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<tr>
<td>Clinic</td>
<td>Thursday</td>
<td>8:00-5:00</td>
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<table>
<thead>
<tr>
<th>Brock</th>
<th>OR</th>
<th>Thursday pm</th>
<th>12:00-5:00</th>
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</thead>
<tbody>
<tr>
<td>Clinic</td>
<td>Friday</td>
<td>9:00-12:00</td>
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<table>
<thead>
<tr>
<th>Molena</th>
<th>Clinic</th>
<th>Monday</th>
<th>8:00-3:00</th>
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<tr>
<td>Clinic</td>
<td>Tuesday</td>
<td>8:00-5:00</td>
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<tr>
<td>OR</td>
<td>Thursday</td>
<td>8:45-5:00</td>
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<tr>
<td>OR</td>
<td>Friday</td>
<td>7:30-5:00</td>
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<tr>
<th>Yang</th>
<th>OR</th>
<th>Monday, Tuesday</th>
<th>7:30-5:00</th>
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<tr>
<td>Clinic</td>
<td>Wednesday</td>
<td>1:00-5:00</td>
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<tr>
<td>OR</td>
<td>Thursday</td>
<td>8:45-5:00</td>
<td></td>
</tr>
<tr>
<td>Clinic</td>
<td>Friday</td>
<td>8:00-5:00</td>
<td></td>
</tr>
</tbody>
</table>
## Cardiac Service Organization

### Red Team
- J. Conte
- C. Sciortino
- A. Shah

Chief Resident
1st Year CT Resident
Advance Practice Nurses

### Blue Team
- D. Cameron
- K. Mandal
- J. Price
- L. Vricella
- K. Zehr

Chief Resident
1st Year CT Resident
Advance Practice Nurses

### Physician Assistants

<p>| | | |</p>
<table>
<thead>
<tr>
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</thead>
<tbody>
<tr>
<td>Calef, Andrea</td>
<td>Gordon, Matthew</td>
<td>Pack, Jim</td>
</tr>
<tr>
<td>Chittenden, Edith</td>
<td>Holden, Fab</td>
<td>Paras, Jen</td>
</tr>
<tr>
<td>DeCarlo, Stephen</td>
<td>Johnson, Jairus</td>
<td>Riner, Lauren</td>
</tr>
<tr>
<td>Giuliani, Rosanne</td>
<td>Khoshaeyv, Rakhmin</td>
<td>Wisniewski, Steven</td>
</tr>
</tbody>
</table>

## General Thoracic Organization

### Faculty
- R. Battafarano
- M. Brock
- D. Molena
- S. Yang

### Clinical Staff
- S. Hebert, RN, BSN
- J. Laslett, RN
- E. Kluck, PA-C
- L. Sirgedas, PA-C
Graduated Residents from 1965-2013

- Initial academic job 62%
- Remained in academic medicine 46%
- Chair/Chief 42%

Resident Research Awards

The Hugh R. Sharp, Jr. Endowed Research Fellowship in Cardiac Surgery
Established by The Sharp Foundation to recognize an investigator in Cardiac Surgery at the Johns Hopkins Medical Institution

- David Caparrelli, M.D.
- Brian Bethea, M.D.
- Christopher Barreiro, M.D.
- Lois U. Nwakanma, M.D.
- J. Geoffrey Allen, M.D.
- Timothy George, M.D.

The Irene Piccinini Investigator in Cardiac Surgery
Established by The Anthony Piccinini family to annually recognize an outstanding research trainee in Cardiac Surgery at the Johns Hopkins Medical Institution

- Eric Peck, M.D.
- Jay Shake, M.D.
- Stephen Cattaneo, M.D.
- Torin Fitton, M.D.
- Jason Williams, M.D.
- Eric Weiss, M.D.
- George J. Arnaoutakis, M.D.
- Claude Beaty, M.D.
Specialty Areas

Cardiovascular Surgery

- Surgery for Marfan syndrome and Loeys-Dietz syndrome
- Minimally invasive/robotic cardiac surgery
- Surgery for atrial fibrillation
- Surgery for advanced heart and lung disease
  - Heart transplant
  - Lung transplant
  - LVADs for permanent implantation
  - ECMO
- Adult congenital procedures
- High risk congenital heart procedures
- Valve-sparing aortic root procedures
- Neurological outcomes research
- Cardiac surgery critical care research
- Clinical outcomes research
- Endovascular and thoracic open aortic repair (collaboration with vascular surgery)
- Transcatheter Aortic Valve Implantation (TAVI)

General Thoracic Surgery

- Minimally invasive/robotic surgery
- Geriatric surgery
- National clinical trials
- Translational genomics
- Biomarkers
- Outcomes Research
- Database
  - Lung cancer
  - Esophagectomy
International Alliances

International Collaboration

Trinidad  Eric Williams Hospital
South America El Golf Hospital, San Borja Hospital, Aliada Cancer Center
Saudi Aramco Johns Hopkins Aramco Health Care in Dammam on East Coast

International Outreach – Humanitarian Programs

Harbin China Harbin Children’s Hospital
Havana Cuba The William Soler Pediatric Hospital
Pavia Italy/Padua Italy
Cambodia Jayavarman VII Children’s Hospital, Siem Riep
Panama City Children’s Hospital Panama, Punta Pacifica
Costa Rica Clinical Collaboration with Cardiologist, Dr. Carlos Mas
# Johns Hopkins University School of Medicine
## Department of Surgery

### Jonathan Efron, M.D.
Acting Chair

<table>
<thead>
<tr>
<th>Division of Cardiac Surgery</th>
<th>Division of Thoracic Surgery</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Duke Cameron, M.D.</strong></td>
<td><strong>Richard Battafarano, M.D.</strong></td>
</tr>
<tr>
<td>Cardiac Surgeon-in-Charge</td>
<td>Chief, Thoracic Surgery</td>
</tr>
<tr>
<td>Director, Broccoli Center</td>
<td>Regional Dir., Gen. Thoracic</td>
</tr>
<tr>
<td>for Aortic Diseases</td>
<td>Surgery</td>
</tr>
</tbody>
</table>

### Cardiac Surgeons

<table>
<thead>
<tr>
<th>Name</th>
<th>Position</th>
</tr>
</thead>
<tbody>
<tr>
<td>John Conte, M.D.</td>
<td>Director, Percutaneous Valve Technology</td>
</tr>
<tr>
<td>Kaushik Mandal, M.D.</td>
<td>Cardiac Surgeon/CVSICU Attending</td>
</tr>
<tr>
<td>Joel Price, M.D.</td>
<td>Cardiac Surgeon/CVSICU Attending</td>
</tr>
<tr>
<td>Chris Sciortino, M.D.</td>
<td>Cardiac Surgeon/CVSICU Attending</td>
</tr>
<tr>
<td>Ashish Shah, M.D.</td>
<td>Associate Dir., Cardiac Surgery Surgical Dir., Heart &amp; Lung Transplant</td>
</tr>
<tr>
<td>Luca Vricella, M.D.</td>
<td>Director, Pediatric Cardiac Surgery Director, Ped Heart &amp; Lung Transplant</td>
</tr>
<tr>
<td>Kenton Zehr, M.D.</td>
<td>Cardiac Surgeon</td>
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### CV Surgical ICU

<table>
<thead>
<tr>
<th>Name</th>
<th>Position</th>
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<tbody>
<tr>
<td>Glenn Whitman, M.D.</td>
<td>Director, CVSICU</td>
</tr>
<tr>
<td>Nevin Katz, M.D.</td>
<td>CVSICU Attending</td>
</tr>
<tr>
<td>Marc Sussman, M.D.</td>
<td>CVSICU Attending</td>
</tr>
</tbody>
</table>

### Thoracic Surgeons

<table>
<thead>
<tr>
<th>Name</th>
<th>Position</th>
</tr>
</thead>
<tbody>
<tr>
<td>Malcolm Brock, M.D.</td>
<td>Director, Thoracic Research Lab</td>
</tr>
<tr>
<td>Daniela Molena, M.D.</td>
<td>Thoracic Surgeon</td>
</tr>
<tr>
<td>Stephen Yang, M.D.</td>
<td>Thoracic Surgeon</td>
</tr>
</tbody>
</table>

### Additional Faculty

<table>
<thead>
<tr>
<th>Name</th>
<th>Position</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wm Baumgartner, M.D.</td>
<td>Director, Cardiac Research Lab Vice Dean Clinical Affairs</td>
</tr>
<tr>
<td>Vincent Gott, M.D.</td>
<td>Professor of Emeritus</td>
</tr>
<tr>
<td>Peter Greene, M.D.</td>
<td>Chief Medical Information Officer</td>
</tr>
<tr>
<td>Marshall Jacobs, M.D.</td>
<td>Director, Pediatric Research</td>
</tr>
<tr>
<td>Levi Watkins, M.D.</td>
<td>Professor of Emeritus</td>
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</table>

### Adjunct Faculty

<table>
<thead>
<tr>
<th>Name</th>
<th>Position</th>
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<tbody>
<tr>
<td>Sunjay Kaushal M.D.</td>
<td>Pediatric Surgeon</td>
</tr>
<tr>
<td>Juan Sanchez, M.D.</td>
<td>Cardiac Faculty</td>
</tr>
</tbody>
</table>

### Administrative

<table>
<thead>
<tr>
<th>Name</th>
<th>Position</th>
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</thead>
<tbody>
<tr>
<td>Colbey Walker</td>
<td>Administrative Director</td>
</tr>
<tr>
<td>Stacey Baldwin</td>
<td>Administrative Director</td>
</tr>
<tr>
<td>Donna Riley</td>
<td>Residency Program Coordinator</td>
</tr>
<tr>
<td>Ashish Shah, M.D.</td>
<td>Associate Dir., Cardiac Surgery Surgical Dir., Heart &amp; Lung Transplant</td>
</tr>
<tr>
<td>Luca Vricella, M.D.</td>
<td>Director, Pediatric Cardiac Surgery Director, Ped Heart &amp; Lung Transplant</td>
</tr>
<tr>
<td>Colbey Walker</td>
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<tr>
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<td>Stacey Baldwin</td>
<td>Administrative Director</td>
</tr>
<tr>
<td>Donna Riley</td>
<td>Residency Program Coordinator</td>
</tr>
</tbody>
</table>
Duke E. Cameron, M.D.
Cardiac Surgeon-In-Charge
Professor of Surgery and Pediatrics
The James T. Dresher Sr. Professor
Director, The Dana and Albert “Cubby” Broccoli
   Center of Aortic Diseases

Background
- Yale Medical School (M.D. 1978)
- Johns Hopkins Hospital - cardiothoracic surgery fellowship (1984-1987)
- Johns Hopkins Hospital Division of Cardiac Surgery (1987-present)
- Consultant Surgeon, Royal Children's Hospital, Melbourne, Australia (1993)

Clinical Interests
- Adult and pediatric cardiac surgery
- Cardiac transplantation
- Marfan Syndrome
- Mitral valve repair
- Aortic surgery including valve sparing root procedures

Research Interests
- Inflammation and cardiopulmonary bypass
- Hypothermic circulatory arrest
- Aortic surgery

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E-mail: dcameron@jhmi.edu
Bio-sketch: Duke E. Cameron, M.D.

Dr. Duke E. Cameron is the James Dresher, Sr. Professor of Cardiac Surgery and Cardiac Surgeon-in-charge at Johns Hopkins. A graduate of Harvard College and Yale Medical School, he completed his general surgery training at Yale-New Haven Hospital and the Middlesex Hospital in London. After his cardiothoracic surgical fellowship at Johns Hopkins, he joined the faculty of Johns Hopkins School of Medicine in 1987, and in 1993 he held a joint appointment at the Royal Children’s Hospital in Melbourne, Australia as a locum consultant surgeon.

Dr. Cameron is also the Director of The Dana and Albert “Cubby” Broccoli Center for Aortic Surgery Center. His clinical interests are pediatric cardiac surgery, valve repair, adult congenital heart disease and aortic surgery, particularly for Marfan syndrome.

His early investigative work focused on inflammatory mediators in cardio-pulmonary bypass, but more recently has shifted to clinical research in adult and pediatric cardiac surgery. His experience and personal series of valve-sparing aortic root replacements have made him a renowned speaker throughout the world on the subject of aortic surgery.

The author of over 160 peer reviewed articles, he has also co-edited three books, including Current Therapy in Thoracic and Cardiovascular Surgery, The Johns Hopkins Manual of Cardiac Surgery and Critical Heart Disease in Infants and Children.
Selected Publications: Duke E. Cameron, M.D.


Richard J. Battafarano, M.D., Ph.D.
Associate Professor
Chief of the Division of Thoracic Surgery
Regional Director of General Thoracic Surgery

Background
- Hahnemann University School of Medicine (1988)
- University of Minnesota Hospital and Clinics: general surgery residency (1989-1997)
- Memorial Sloan Kettering Cancer Center–New York Hospital cardiothoracic surgery fellowship (1997-1999)
- Washington University in St. Louis- Assistant Professor (1999-2007)
- University of Maryland- Associate Professor (2007-2013)
- Johns Hopkins University Division of Thoracic Surgery (2013-present)

Clinical Interests
- Thymic tumors
- Mesothelioma
- Esophageal cancer
- Lung cancer

Research Interests
- Overexpression of Survivin in esophageal cancer
- Biologic behavior of neuroendocrine lung cancers
- Effect of comorbidity and gender on survival in non-small cell lung cancer
Bio-sketch: Richard J. Battafarano, M.D., Ph.D.

Dr. Richard J. Battafarano completed his general surgical residency and his Ph.D. at the University of Minnesota in Minneapolis and did his CT cardiothoracic surgery fellowship at Memorial Sloan-Kettering Cancer Center and New York Hospital. After serving as an Assistant Professor in the Division of Thoracic Surgery at the Washington University in St. Louis and as an Associate Professor and Chief of the Division of Thoracic Surgery at the University of Maryland, he moved to Johns Hopkins University as Associate Professor and Chief of the Division of Thoracic Surgery. He also serves as the Regional Director of General Thoracic Surgery for Johns Hopkins Medicine.

Dr. Battafarano conducts basic and translational research as it relates to lung and esophageal cancer and has written over 40 peer reviewed articles and a number of book chapters.
Selected Publications: Richard J. Battafarano, M.D., Ph.D.


William A. Baumgartner, M.D.
The Vincent L. Gott Professor
Director of Cardiac Surgery Research Laboratory
Vice Dean of Clinical Affairs
President of Clinical Practice Association
Johns Hopkins Medicine Senior Vice President for the Office of Johns Hopkins Physicians
Executive Director of American Board of Thoracic Surgery

Background
• Xavier University (B.S.-1969)
• University of Kentucky Medical School (M.D.-1973)
• Stanford University Medical School - General Surgery (1973-1981)
• Stanford University Department of Cardiothoracic Surgery (1975-1978)
• Johns Hopkins University - Cardiac Surgery (1982-present)

Clinical Interests
• Cardiac transplantation
• Healthcare reform

Research Interests
• Transplant organ preservation
• Neurological protection during cardiopulmonary bypass
• Simulation training and education

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Edward D. Miller Research Building, Suite 115
733 N. Broadway, Baltimore, MD 21205
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E-mail: wbaumgar@jhmi.edu
Bio-sketch: William A. Baumgartner, M.D.

Dr. William A. Baumgartner joined the Johns Hopkins Cardiac Surgery Division in 1982. The following year he reinitiated the heart transplant program at the Johns Hopkins Hospital, which has grown into one of the leading centers in the surgical treatment of heart failure in the country. For 17 years, he led the Division as the Cardiac Surgeon-in-Charge. Today he serves on the cardiac surgery faculty as the Vincent L. Gott Professor and Director of the Surgical Research Laboratory.

Past president of the Society of Thoracic Surgeons and the International Society of Heart and Lung Transplantation, Dr. Baumgartner has held top posts in several other national and international professional organizations. He is currently the Executive Director of the American Board of Thoracic Surgery.

His early work focused on organ preservation for transplantation and determination of methods for the non-invasive diagnosis of rejection. He has since been involved in the field of neurological protection in cardiac surgery for which he has had continuous NIH support for 19 years. In 2002, he received the Javits Neuroscience Research Investigator Award from The National Institutes of Health. In 2003 and 2009, he received the Socrates Teacher of the Year Award from the Thoracic Surgery Residents Association. In 2007, he received the Distinguished Alumnus Award from the University of Kentucky Medical Alumni Association and in 2008 the Society of Thoracic Surgeons presented him with the Earl Bakken Scientific Research Award.

Dr. Baumgartner is also the President of the Clinical Practice Association (CPA) of the Johns Hopkins University which is a group practice of over 1700 full-time faculty members who provide medical care to patients. In this role, he is responsible for planning, managing, and coordinating the clinical and administrative activities of the Association. He recently was appointed Johns Hopkins Medicine (JHM) Senior Vice President for the Office of Johns Hopkins Physicians. This office broadens the scope of responsibilities to include all employed and affiliated physicians within JHM.

A graduate of Xavier University and of the University of Kentucky Medical School, Dr. Baumgartner received his surgical training at Stanford University Medical Center. His bibliography includes more than 350 journal articles, book chapters and books. He is married to Betsy Baumgartner and has 3 accomplished children.
Selected Publications: William A. Baumgartner, M.D.


Malcolm V. Brock, M.D.
Associate Professor of Surgery and Oncology
Director, Thoracic Research Laboratory

Background
- Princeton University (B.A. 1985)
- Oxford University, Rhodes Scholarship M.Litt. (1987)
- Johns Hopkins School of Medicine (M.D. 1991)
- Johns Hopkins Cardiothoracic Residency (1997-2001)
- Johns Hopkins Division of Thoracic Surgery (2001-present)

Clinical Interest
- Surgical treatment of lung and esophageal malignancies
- Hyperhydrosis

Research Interests
- Translational application of DNA hypermethylation and epigenetic therapies
- Molecular profiling and molecular staging of thoracic malignancies
- Lung cancer and HIV
- Early detection of thoracic malignancies
- Biomarkers predicting chemosensitivity

Mailing Address
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Email: mbrock@jhmi.edu
Bio-sketch: Malcolm V. Brock, M.D.

Dr. Malcolm Brock’s research is focused primarily on the translational applications of biomarkers, namely DNA methylation, to the clinic in lung and esophageal cancer. He has 3 major projects, all of which have received NIH funding. The first project involves detecting occult lymph node metastases in stage 1 patients with node negative disease. This method of DNA methylation seems to predict stage 1 patients that recur postoperatively after curative surgery. The second project involves the clinical detection of lung cancer in HIV patients. We have gathered the largest cohort in the world now of HIV and Lung Cancer (over 100 patients). Since lung cancer in these individuals seems like a different disease than conventional lung cancer (earlier onset, more aggressive), we are screening these patients with CT scans. In addition, we have a second protocol in which the screening of these patients will take place initially via molecular biomarkers in sputum and then by CT. The third project is based on determining predictive molecular markers for chemosensitivity in lung and esophageal cancer. We have a current observational study, J0388 in esophageal cancer, that is gathering pre-neoadjuvant tumor samples and serum for analysis by DNA methylation and proteomics.
Selected Publications: Malcolm V. Brock, M.D.

Meguid Robert A; Hooker Craig M; Harris James; Xu Li; Westra William H; Sherwood J Timothy; Sussman Marc; Cattaneo Stephen M; Shin James; Cox Solange; Christensen Joani; Prints Yelena; Yuan Nance; Zhang Jennifer; Yang Stephen C; Brock Malcolm V. Long-term survival outcomes by smoking status in surgical and nonsurgical patients with non-small cell lung cancer: comparing never smokers and current smokers. Chest 2010;138(3):500-9.


Cardiothoracic Surgery

Faculty

John V. Conte, M.D.
Professor of Surgery
Surgical Director, Transcatheter Aortic Valve Program

Background
- Providence College, cum laude (1981)
- Georgetown University (M.S. 1983)
- Georgetown University (M.D. 1986)
- Georgetown University - residency (1986-1992)
- University of Maryland Medical Center (1995-1998)
- Johns Hopkins Hospital (1998-present)

Clinical Interests
- Adult cardiac surgery
- Minimally invasive cardiac surgery
- Transcatheter aortic valve implantation (TAVI)
- Ventricular Restoration
- Mechanical circulatory support
- Surgery for congestive heart failure

Research Interests
- Clinical outcomes research
- Transcatheter aortic-valve implantation (TAVI)
- Mechanical circulatory support
- Surgical techniques of ventricular reconstruction

Mailing Address
Johns Hopkins Cardiac Surgery
1800 Orleans Street, Zayed Tower 7107
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Phone: (410) 955-1753
Fax: (410) 955-3809
E-mail: jconte@jhmi.edu
Bio-sketch: John V. Conte, M.D.

Dr. John Conte joined the faculty at Johns Hopkins in 1998 to direct the Heart and Lung Transplant programs. Since that time both programs have achieved or maintained Medicare approval and have achieved excellent clinical and academic productivity.

Dr. Conte directs the division’s Surgical Ventricular Remodeling (SVR) program, In collaboration with the Division of Cardiology Dr. Conte is the surgical director of the Transcatheter Aortic Valve Implantation Program. To date, over 130 transcatheter aortic valve replacements have been performed.

Dr. Conte is a graduate of Providence College and Georgetown University School of Medicine. He trained in general surgery at Georgetown and cardiac surgery at Stanford University. He and his wife have 5 children.

Dr. Conte has played an active role in the Society of Thoracic Surgeons and has served on the Task force on End Stage Heart Disease and was Chair of the Task force on the Annual meeting in 2006. He currently serves as the Chair of the Council on Education and Member Services. He is also a member of and served in voluntary leadership roles for the ISHLT, AATS, AHA, and UNOS amongst others.

Dr. Conte has been actively involved in laboratory and clinical investigation. His research interests parallel his interests in end stage heart and lung disease. He has been awarded several grants dealing with topics ranging from extended cardiac preservation to investigation of an artificial lung. He is currently involved with two protocols involving stem cells. The first involves the use of bone marrow derived stem cells in patients with ischemic cardiomyopathy undergoing coronary artery bypass grafting and another involving autologous cardiac stem cells in patients undergoing left ventricular assist device implantation.
Selected Publications: John V. Conte, M.D.


Cardiothoracic Surgery
Faculty

Vincent L. Gott, M.D.
Professor of Emeritus

Background
• University of Wichita (1949)
• Yale Medical School (M.D. 1953)
• University of Minnesota - General and Cardiothoracic Surgery (1953-1959)
• University of Minnesota Department of Surgery (1959-1960)
• University of Wisconsin Department of Surgery (1960-1965)
• Johns Hopkins Division of Cardiac Surgery (1965-2009)

Clinical Interests
• Adult cardiac surgery
• Marfan syndrome

Research Interests
• Aortic surgery

Mailing Address
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1800 Orleans Street, Zayed Tower 7107
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Phone: (410) 955-2800
Fax: (410) 955-3809
E-mail: vgott@jhmi.edu
Bio-sketch: Vincent L. Gott, M.D.

**Dr. Vincent Gott** was born in Wichita, Kansas in 1927. He attended Wichita University and graduated from Yale Medical School in 1953.

As an intern at the University of Minnesota Hospital in 1954, Dr. Gott observed first-hand Dr. C. Walton Lillehei’s first cross-circulation case. Dr. Gott worked as a research fellow in Dr. Lillehei’s laboratory during 1956 and 1957; during this time, the pacemaker in combination with myocardial wire, was developed for use in children developing heart block following ventricular septal defect repair.

On completion of his residency training, Dr. Gott joined the faculty at the University of Wisconsin in Madison. While in Madison, Dr. Gott with Ronald Daggett, Professor of Plastic Engineering, developed a bileaflet prosthetic valve for clinical use. This valve had a carbon coating with heparin bonded to the surface.

Dr. Gott was appointed as Cardiac Surgeon-in-Charge at the Johns Hopkins Medical Institutions in 1965. He remained in this position until 1982 when he was succeeded by Dr. Bruce Reitz. Dr. Gott remained active in clinical cardiac surgery until 1994.

Dr. Gott is past president of the American Society for Artificial Internal Organs and the Society of Thoracic Surgeons. His honors include the A.M.A. Hektoen Gold Medal and the Antoine Marfan Award from the National Marfan Foundation. He is an honorary member of the European Association for Cardio-Thoracic Surgery and the Japanese Association for Thoracic Surgery. In 1998, Dr. Gott gave the Ralph Alley lecture at the annual meeting of the Society of Thoracic Surgeons; in 2000 he gave the William Glenn Lecture at the annual meeting of the American Heart Association and in 2001 he gave the John Gibbon Lecture at the annual meeting of the American College of Surgeons.

In 2005 Dr. Gott was selected by the Lillehei Heart Institute for a *Lifetime Achievement Award* during the 50th Anniversary of Open Heart Surgery by Cross-Circulation at the University of Minnesota. (Eleven individuals were honored for “seminal contributions to the development of open heart surgery”.)

In January 2006 Dr. Gott received the *Earl Bakken Scientific Achievement Award* from the Society of Thoracic Surgeons. “To recognize individuals who have made outstanding contributions that have enhanced the practice of cardiothoracic surgery.”

Dr. Gott is the author or co-author of more than 300 scientific publications related to cardiac surgery.

Dr. Gott is most proud of his role in helping to train more that 60 cardiac surgeons at Johns Hopkins over the past 40 years. Two of Dr. Gott’s trainees, Dr. Mark Orringer and Dr. Timothy Gardner are respectively, past presidents of the Society of Thoracic Surgeons and the American Association for Thoracic Surgery.
Selected Publications: Vincent L. Gott, M.D.


Cardiothoracic Surgery

Faculty

Peter S. Greene, M.D.
Chief Medical Information Officer
Associate Professor of Surgery
Associate Dean for Emerging Technologies

Background
- Yale Medical School (M.D. 1985)
- Johns Hopkins Hospital Division of Cardiac Surgery (1994-present)

Interests
- Healthcare information technology
- Educational technologies
- Clinical outcomes research

Mailing Address
Johns Hopkins Cardiac Surgery
600 N. Wolfe Street
Administration Building Room 312
Baltimore, MD 21287
Phone: (410) 735-6171
E-mail: pgreene@jhmi.edu
Bio-sketch: Peter S. Greene, M.D.

Dr. Peter Greene joined the Johns Hopkins Division of Cardiac Surgery faculty in 1994 after completing his surgical residency training at Johns Hopkins. He is currently an Associate Professor of Surgery and in 2001 became Associate Dean for Emerging Technologies at the Johns Hopkins University School of Medicine.

Dr. Greene completed his undergraduate degree at Harvard University in 1981 and a medical degree from Yale School of Medicine in 1985. In the Division of Cardiac Surgery at Hopkins, Dr. Greene performed adult cardiac surgery, including heart transplantation, valve surgery and the implantation of mechanical cardiac assist devices. His clinical interests were in mitral valve repair and cardiac assist devices.

Dr. Greene is also a leader in the field of informatics in cardiothoracic surgery. He has served as the Chair of the Society of Thoracic Surgeons Information Technology Committee. He is the founder, executive editor and key architect of Cardiothoracic Surgery Network (CTSNet), the online community of 40 professional cardiothoracic surgery societies. He has more than 15 years of experience in information technology using a variety of medical applications in parallel to a clinical career. He had an important role in co-founding the MedBiquitous Consortium and serves as the consortium’s executive director. Founded by Johns Hopkins Medicine and leading professional medical societies, MedBiquitous is a non-profit, international group of professional medical and healthcare associations, universities, commercial, and governmental organizations dedicated to advancing healthcare education through technology standards that promote professional competence, collaboration, and better patient care.

Dr. Greene has over authored over 50 peer reviewed articles and has an active career in advancing healthcare education with information technology.

In 2006 Dr. Greene was appointed Chief Medical Information Officer and in this role he is involved in the implementation of a provider order entry and clinical documentation system throughout Johns Hopkins. As Associate Dean for Emerging Technologies he has developed a single portal for clinical E-learning across Johns Hopkins Medicine.
**Selected Publications: Peter S. Greene, M.D.**


Hersh W, Bhupatiraju RT, **Greene PS,** Smothers V, Cohen C: A standards-based approach for facilitating discovery of learning objects at the point of care. AMIA Annu Symp Proc, 979, 2005.


Cardiothoracic Surgery

Faculty

Marshall L. Jacobs, M.D.
Professor (PAR) of Surgery
Division of Cardiac Surgery
Johns Hopkins School of Medicine

Background
- Yale College (B.S. 1972)
- Harvard Medical School (M.D. 1976)
- Wessex Regional Cardiothoracic Center, Southampton, U.K. senior registrar (1982)

Clinical Interests
- Pediatric and adult congenital heart surgery
- Heart transplantation
- Functionally univentricular heart (including HLHS)
- Pediatric cardiac critical care

Research Interests
- Surgical databases and multi-institutional outcomes analysis
- Patient safety / quality of care
- Neurodevelopmental outcomes and protective strategies
- Management of single ventricle anomalies
- Pediatric heart transplantation

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Bio-sketch: Marshall L. Jacobs, M.D.

Dr. Marshall Jacobs joined the faculty of the Department of Surgery at Johns Hopkins School of Medicine in May, 2013. Dr. Jacobs has been a cardiovascular surgeon and clinical investigator for three decades, with special emphasis on congenital heart disease. In his role in the Division of Cardiac Surgery at Hopkins, he assists the Surgeon-in-charge with respect to oversight of collaboration between the three Pediatric Cardiac Surgery programs affiliated with Johns Hopkins Medicine, and coordinates pediatric cardiac surgery outcomes research for these programs.

Dr. Jacobs’ early investigative work focused on basic cardiovascular physiology, including response to pressure and volume overload under conditions of normal and abnormal coronary perfusion. He was the principle investigator of NIH-funded research that evaluated magnetic resonance imaging and spectroscopy in the diagnosis of cardiac transplant rejection in a primate model. In the clinical realm he participated in the development and evaluation of innovations in the surgical management of congenital heart malformations, including the staged reconstructive approach to functionally univentricular hearts.

His current concentration in outcomes research includes participation in the multi-institutional studies of the Congenital Heart Surgeons Society as Chair of the Research Committee. He is a member of the Workforce on National Databases of the Society of Thoracic Surgeons. The author of more than 250 peer reviewed publications, Dr. Jacobs is as member of several editorial boards and is Editor-in-Chief of World Journal for Pediatric and Congenital Heart Surgery.
**Selected Publications: Marshall L. Jacobs, M.D.**


Cardiothoracic Surgery

Faculty

Nevin M. Katz, M.D.
Associate Professor of Surgery
Intensivist, Cardiac Surgery ICU
President & Executive Director
Foundation for the Advancement of
CardioThoracic Surgical Care

Background
- Swarthmore College (1967)
- Case Western Reserve University (M.D. 1971)
- Children’s Hospital Medical Center, Boston, MA – Chief Resident in Cardiovascular Surgery (1976-1977)
- University of Alabama School of Medicine, Birmingham, AL
  Research Associate in Cardiovascular Surgery (1977-1978)
- University of Alabama School of Medicine, Birmingham, AL
- Georgetown University, Division of CV and Thoracic Surgery (1980-2000)
- The George Washington University, Division of CT (2001-2010)
- Johns Hopkins Hospital, Division of Cardiac Surgery (2010-present)

Clinical Interests
- Cardiovascular-thoracic critical care
- Development of cardiothoracic critical care units
- Hemodynamic simulation for training in CVT critical care

Research Interests
- Cardiac surgery-associated acute kidney injury
- Effects of vasopressor therapy on patient outcomes

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Bio-sketch: Nevin M. Katz, M.D.

Nevin M. Katz, M.D. was born in Dayton, Ohio, and obtained his MD from Case Western Reserve University in 1971. He completed a residency in General Surgery at the Massachusetts General Hospital, a chief residency in CV Surgery at the Children’s Hospital Medical Center in Boston, and a fellowship and residency in CT Surgery at the University of Alabama under the direction of Dr. John W. Kirklin. Dr. Katz was a full-time faculty member in the Department of Surgery at Georgetown University from 1980 to 2000, and rose to Professor of Surgery. He initiated and directed the Georgetown University Hospital Heart Transplantation Program.

In 2001, Dr. Katz joined the faculty of The George Washington University Medical Center as Clinical Professor of Surgery and changed his focus to the new evolving specialty, Cardiothoracic Surgical Critical Care. In 2004, Dr. Katz created and directed the annual CME conference, CardioThoracic Surgical Critical Care. In August 2005, Dr. Katz created the Foundation for the Advancement of CardioThoracic Surgical Care (FACTS-Care) which has been dedicated to providing multi-disciplinary educational activities to advance the specialty of CT Critical Care. He is President and Executive Director of FACTS-Care. In 2009, the content of the annual conference was broadened and the conference was renamed Cardiovascular-Thoracic (CVT) Critical Care.

In July 2010, Dr. Katz joined the full-time faculty of the Johns Hopkins University Division of Cardiac Surgery focusing on Cardiac Surgical Critical Care. He continues to be President and Executive Director of FACTS-Care.

In May 2010, Dr. Katz co-directed the first AATS/STS Symposium on Cardiothoracic Critical Care at the 90th Annual Meeting of the American Association for Thoracic Surgery. He then co-directed the 2011 and 2012 Symposia at the AATS Annual Meetings. In January 2011, Dr. Katz co-directed the first STS Postgraduate Cardiothoracic Critical Care Symposium at the 47th Annual Meeting of The Society of Thoracic Surgeons, and then co-directed the Symposia at the 2012 and 2013 Annual Meetings.

Dr. Katz has participated in a variety of clinical and laboratory research studies. Dr. Katz has had a continuing interest in developing strategies to prevent and manage cardiac surgery-associated renal failure. He has participated in international meetings in this regard, including the Acute Dialysis Quality Initiative (ADQI) VI of 2007, ADQI VII of 2008, and was a faculty member of the International Vicenza Course on Critical Care Nephrology in 2010.

His professional memberships include the American Association for Thoracic Surgery, the American College of Cardiology, the American College of Chest Physicians, The Society of Thoracic Surgeons, and the Society of Critical Care Medicine.

In 2008 he was appointed to the Editorial Board of The Journal of Thoracic and Cardiovascular Surgery, and in 2012, he became Associate Editor for Perioperative Management.
Selected Publications: Nevin M. Katz, M.D.


Kaushik Mandal, M.D.
Assistant Professor of Surgery
Attending Cardiac Surgeon
Intensivist, Cardiac Surgical Intensive Care Unit

Background
- All India Institute of Medical Sciences, New Delhi (MBBS 1996, MS 1999)
- Royal College of Surgeons of Edinburgh, UK (MRCS 2001)
- University of London, UK (MD 2005)
- Intercollegiate Board of Cardiothoracic Surgery, UK (FRCS- CTh 2007)
- Johns Hopkins Hospital – Cardiothoracic surgery fellowship (2008 – 2011)
- Johns Hopkins Hospital – Division of Cardiac Surgery (2011-present)

Clinical Interests
- Minimally invasive cardiac surgery
- Mitral valve repair
- Aortic surgery
- Surgical management of heart failure

Research Interests
- Minimally invasive cardiac surgery
- Aortic aneurysms- Understanding the disease at proteome level
- Heat shock protein mediated inflammation & stem cells in atherosclerosis
- Inflammation & atrial fibrillation

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Bio-sketch: Kaushik Mandal, M.D.

Dr. Kaushik Mandal is an Assistant Professor in the Division of Cardiac Surgery. He was a graduate of the All India Institute of Medical Sciences (AIIMS) in New Delhi, India. He completed his general surgery training from AIIMS and the Royal College of Surgeons of Edinburgh in London, UK. He began his academic cardiothoracic surgical training in the UK, completing his doctoral research (MD) from the University of London and clinical cardiothoracic surgical training from Guy's & St. Thomas Hospital, St. Mary's Hospital and St. George's Hospital. Pursuit for excellence brought him to Hopkins and he chose to extend his training by another three years in order to further his clinical skills in the area of minimally invasive cardiac surgery and cardiopulmonary transplantation. After completing the cardiothoracic surgical fellowship at Johns Hopkins, he joined the faculty of Johns Hopkins University School of Medicine in 2011.

Dr. Mandal’s clinical interests are adult cardiac surgery especially minimally invasive cardiac surgery, mitral valve repair, aortic surgery and surgical management of heart failure.

His early investigative work focused on inflammation and autoimmunity in the pathogenesis of atrial fibrillation and atherosclerosis, but more recently has shifted to clinical outcomes research in the field of heart failure surgery and mitral valve surgery.

Dr. Mandal has authored over 30 peer reviewed articles and contributed numerous book chapters.
Selected Publications: Kaushik Mandal, M.D.


Cardiothoracic Surgery

Faculty

Daniela Molena, M.D.
Assistant Professor of Surgery
Director, Robotic and Minimally Invasive Thoracic Surgery
Director, Thoracic Surgery at Johns Hopkins Bayview Medical Center

Background

- University of Padova, School of Medicine, Italy (M.D. 1996)
- University of Padova General Surgery Residency (1997-2001)
- University of Rochester Medical Center General Surgery Residency (2005-2009)
- Memorial Sloan-Kettering Cancer Center Cardiothoracic Residency (2009-2011)
- New York Presbyterian Hospital Cardiothoracic Residency (2009-2011)
- Johns Hopkins Hospital Division of Thoracic Surgery (2011-present)

Clinical Interests

- Esophageal Cancer
- Esophageal dismotility disorders
- Minimally invasive and robotic surgery
- Lung cancer

Research Interests

- Targeted therapies for lung and esophageal cancers
- Cancer screening tools for early diagnosis
- Genetic characteristics of lung and esophageal cancer

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Bio-sketch: Daniela Molena, M.D.

Dr. Daniela Molena joined the Johns Hopkins faculty in September 2011 as a thoracic surgeon and assistant professor in the Department of Surgery. She specializes in the treatment of benign and malignant diseases of the chest, including minimally invasive surgery for lung and esophageal cancer, mediastinal diseases, esophageal dismotility disorders, gastroesophageal reflux disease and benign lung and pleura conditions.

A member of the Society of Thoracic Surgeons, Dr. Molena serves on the national committee for resident and fellow education. She extends this educational mission to her own research, which focuses on clinical esophageal diseases, using cancer screening tools for early diagnosis, and the genetic characteristics of lung and esophageal cancer. Dr. Molena’s goal is to better understand how these tumors develop, especially in females and nonsmokers, to help find new targeted therapies.

Dr. Molena sees patients at The Johns Hopkins Hospital and Johns Hopkins Bayview Medical Center.
Selected Publications: Daniela Molena, M.D.


Cardiothoracic Surgery
Faculty

Joel E. Price, M.D.
Assistant Professor of Surgery
Attending Cardiac Surgeon
Intensivist, Cardiac Surgical Intensive Care Unit

Background
• University of Western Ontario, London, Canada (M.D. 2004)
• The University of Ottawa Heart Institute, Ottawa, Canada – Cardiac Surgery Residency (2004-2010)
• Harvard School of Public Health, Boston, MA – MPH, Quantitative Methods (2007-2009)
• Fellow of the Royal College of Surgeons of Canada (2010)
• Cliniques Universitaires Saint Luc, Brussels, Belgium – Fellowship, Complex Valve Reconstruction (2010-2011)
• The Cleveland Clinic, Cleveland, OH - Fellowship, Aortic and Endovascular Surgery (2012)
• The Johns Hopkins Hospital, Division of Cardiac Surgery (2013-present)

Clinical Interests
• Aortic Valve Repair, Aortic Root Reconstruction, Aortic Valve Sparing Root Replacement
• Mitral Valve Repair
• Aortic and Endovascular Surgery
• Medical Education and Surgical Simulation Training

Research Interests
• Clinical Outcome in Cardiac Surgery
• Clinical Trials
• Surgical Simulation

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Bio-sketch: Joel E. Price, M.D.

Dr. Joel Price was born and raised in Calgary, Canada. After 3 years of undergraduate study in biochemistry, physiology and cellular and molecular biology he was admitted early to medical school at the University of Western Ontario. After graduating in 2004, he began a six year residency in Cardiac Surgery at the University of Ottawa Heart Institute. Contemporaneous with his senior years of residency training, he completed a Master of Public Health degree, with a major in Quantitative Methods, at Harvard University. During residency training, Dr. Price won multiple research and teaching awards. He also developed a keen interest in reconstructive valve surgery. Upon completion of residency, he was awarded the Detweiler Fellowship from the Royal College of Physicians and Surgeons of Canada to pursue fellowship training in complex cardiac valve reconstruction in Belgium. Under the mentorship of Professor Gebrine El Khoury, Dr. Price studied techniques for aortic and mitral valve repair. In a second fellowship under the mentorship of Dr. Lars Svensson at the Cleveland Clinic, he expanded his surgical repertoire to include aortic and endovascular surgery. In 2013, Dr. Price joined the surgical faculty at the Johns Hopkins University Hospital, where he is currently Assistant Professor of Surgery.

Dr. Price’s clinical and research interests include aortic valve repair, valve sparing aortic root replacement and aortic root reconstruction in bicuspid and tricuspid aortic valves and connective tissue disorder. He is involved in open, hybrid and completely endovascular therapy for ascending, arch, descending and thoraco-abdominal aortic disease. He is also interested in transcatheter and minimally invasive valve surgery. Dr. Price has a strong interest in surgical education with a focus on simulation.

Dr. Price is a Fellow of the Royal College of Surgeons of Canada with a specialty certification in Cardiac Surgery. He is author and co-author of numerous articles and book chapters, and has presented his research nationally and internationally.
Selected Publications: Joel E. Price, M.D., MPH, FRCSC


Cardiothoracic Surgery
Faculty

Christopher M. Sciortino, M.D., Ph. D.
Assistant Professor of Surgery
Attending Cardiac Surgeon
Intensivist, Cardiac Surgical Intensive Care Unit

Background
- Case Western Reserve University (M.D. 2005, Ph.D. 2001)
- Johns Hopkins Hospital - general surgery residency (2010)
- The Johns Hopkins Hospital – cardiothoracic surgery fellowship (2010-2013)
- The Johns Hopkins Hospital, Division of Cardiac Surgery (2013-present)

Clinical Interests
- Adult cardiac surgery
- Heart and lung transplant
- Mechanical circulatory support

Research Interests
- Aortic surgery
- Minimizing postoperative infections and complications in high-risk patients
- Heart failure outcomes after cardiac surgery

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Bio-sketch: Christopher M. Sciortino, M.D., Ph.D.

Dr. Christopher M. Sciortino is an Assistant Professor in Cardiac Surgery at Johns Hopkins. A graduate of Case Western Reserve University, he completed his general surgery training at Johns Hopkins. After his cardiothoracic surgical fellowship at Johns Hopkins, he joined the faculty of Johns Hopkins School of Medicine in 2013.

He specializes in adult cardiac surgical procedures including coronary artery bypass; valve, aortic and arrhythmia surgeries, surgical treatment of advanced heart failure including mechanical circulatory support and transplant, ECMO and minimally invasive surgery. As a member of the heart failure team, he plays an active role in heart transplant, VAD implantation and mechanical support.

Among Dr. Sciortino’s research interests are minimizing postoperative infections and complications, particularly with high-risk patients. He is also interested in studying heart failure outcomes after cardiac surgery as well as biomechanical device development and the biophysics of heart function.
Selected Publications: Christopher M. Sciortino, M.D., Ph.D.


Ashish S. Shah, M.D.
Associate Professor of Surgery
Associate Director, Cardiac Surgery
Surgical Director, Heart and Lung Transplantation
and Mechanical Circulatory Support

Background
- Duke University, BSE (1991)
- University of Pittsburgh School of Medicine (M.D. 1995)
- Duke University Medical Center, General Surgery (1995-2002)
- Duke University Medical Center, Cardiothoracic Surgery (2002-2005)
- Johns Hopkins Hospital Division of Cardiac Surgery (2005-present)

Clinical Interests
- Adult cardiac surgery
- Lung transplantation
- Cardiac transplantation and mechanical circulatory support

Research Interests
- Lung transplantation
- Reperfusion injury and allograft failure
- Clinical outcomes in thoracic transplantation and cardiac surgery

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Bio-sketch: Ashish S. Shah, M.D.

Dr. Ashish S. Shah joined the Johns Hopkins faculty in 2005. Since then he has had a special interest in thoracic transplantation and in particular lung transplantation. He trained at Duke University Medical Center in General and Cardiothoracic Surgery with advance training in thoracic transplantation and mechanical circulatory support. His other clinical interests include full spectrum adult cardiac surgery including complex coronary and valvular heart disease.

Dr. Shah’s research interests include new ways to describe and prevent lung injury in the transplant setting.

Dr. Shah was born in London, UK and raised in Connecticut. He obtained his undergraduate degree in Biomedical Engineering from Duke University and a medical degree from the University of Pittsburgh where he was a member of the Alpha Omega Alpha Honor Society. He is the author or co-author of over 100 peer reviewed publications and six book chapters.
Selected Publications: Ashish S. Shah, M.D.


Marc S. Sussman, M.D.
Assistant Professor of Surgery
Intensivist, Cardiac Surgical Intensive Care Unit

Background
- Massachusetts Institute of Technology (1979)
- Johns Hopkins School of Medicine (M.D. 1984)
- NYU Medical Center - general surgery residency (1984-1991)
- NYU Medical Center - cardiothoracic surgery fellowship (1991-1993)
- Johns Hopkins Hospital Division of Cardiac Surgery (1993-2004)
- Johns Hopkins Hospital Division of Thoracic Surgery (2004-2013)
- Johns Hopkins Hospital Cardiovascular Surgical ICU (2013–present)

Clinical Interests
- Lung cancer
- Video assisted thoracic surgery (VATS)
- Cardiovascular intensive care

Research Interests
- Residency education

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Bio-sketch: Marc S. Sussman, M.D.

Dr. Marc Sussman has been on staff at Johns Hopkins since 1993. He was born and raised in the suburbs of New York City. His undergraduate degree is from the Massachusetts Institute of Technology. He received his M.D. from the Johns Hopkins School of Medicine in 1984. Dr. Sussman did both his General Surgery and Thoracic Surgery training at the NYU Medical Center. During his training he spent two years in the laboratory of Dr. Gregory Bulkley at Johns Hopkins.

In 1993 Dr. Sussman joined the Johns Hopkins Division of Cardiac Surgery. In 2004 Dr. Sussman’s clinical practice was centered at Johns Hopkins Bayview Medical Center in General Thoracic Surgery. His research interests include geriatric oncology, minimally invasive surgery and outcomes research.

In 2013 Dr. Sussman joined the Cardiovascular Surgical Intensivist team.
Selected Publications:  Marc S. Sussman, M.D.


Meguid RA; Hooker CM; Harris J; Xu Li; Westra WH; Sherwood JT; Sussman M; Cattaneo SM; Shin J; Cox S; Christensen J; Prints Y; Yuan N; Zhang J; Yang SC; Brock MV. Long-term survival outcomes by smoking status in surgical and nonsurgical patients with non-small cell lung cancer: comparing never smokers and current smokers. Chest 2010;138(3):500-9.
Cardiothoracic Surgery
Faculty

Luca A. Vricella, M.D.
Associate Professor of Surgery and Pediatrics
Director, Pediatric Cardiac Surgery
Director, The Pediatric Heart Transplantation Program

Background
• Catholic University School of Medicine, Rome, Italy (M.D. 1991)
• The George Washington University School of Medicine – Internship and General Surgery Residency (1992-1999)
• Loma Linda University of Medical Center – Research Fellowship, Congenital Cardiac Surgery (1996-1997)
• Stanford University School of Medicine - Cardiothoracic Surgery (1999-2002)
• Johns Hopkins Hospital Division of Cardiac Surgery (2002-present)

Clinical Interests
• Pediatric Cardiac Surgery
• Neonatal Cardiac Surgery
• Pediatric Cardiac Transplantation
• Adult Congenital Cardiac Surgery
• Aortic Root Surgery

Research Interests
• Clinical outcomes in Pediatric Cardiac Surgery

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Bio-sketch: Luca A. Vricella, M.D.

Dr. Luca Vricella was born in Rome, Italy and graduated Summa cum Laude from the Catholic University of Rome Medical School in 1991. He then moved to the United States and completed training in General Surgery at the George Washington University Medical Center, were he was elected Alpha Omega Alpha during his Chief Residency year. During this time, he developed a profound interest in the field of congenital cardiac surgery, and pursued a period of clinical and laboratory research training under the direction of Leonard L. Bailey, with the division of Pediatric Cardiac Surgery at the Loma Linda University Medical Center. He then completed a Cardiothoracic Surgery Fellowship at Stanford University, and subsequently served as Senior Registrar in Pediatric Cardiac Surgery at Great Ormond Street Hospital for Children in London, United Kingdom. In 2003 he joined the surgical faculty at the Johns Hopkins University Hospital, where he is currently Associate Professor of Surgery and Pediatrics, and Director of the Pediatric Cardiac Surgery and Heart Transplantation Program.

Dr. Vricella’s clinical and research interests revolve around the field of pediatric cardiac surgery, with emphasis on complex neonatal repair and the care of adults with congenital heart disease. In light of his training and of his association with Dr. Duke Cameron, Dr. Vricella has also developed a particular interest in aortic root surgery, with focus on pediatric patients with connective tissue disorders.

Dr. Vricella is Board Certified in General and Cardiothoracic Surgery, and is a Fellow of the American College of Surgeons and a member of the Society of Thoracic Surgeons. He is author and co-author of several articles and book chapters, and is one of the editors of the Johns Hopkins Manual of Cardiothoracic Surgery.
Selected Publications: Luca A. Vricella, M.D.


Cardiothoracic Surgery

Faculty

Levi Watkins, Jr., M.D.
Professor of Emeritus

Background
- Tennessee State University (1966)
- Vanderbilt University School of Medicine (M.D. 1970)
- Johns Hopkins Hospital - general surgery residency (1971-1973)
- Harvard Medical School Department of Physiology (1973-1975)
- Johns Hopkins Hospital - cardiothoracic surgery fellowship (1976-1978)
- Johns Hopkins Hospital Division of Cardiac Surgery (1977-2013)

Clinical Interests
- Adult cardiac surgery
- Cardiac arrhythmias and sudden death

Research Interests
- Automatic defibrillation
- Healthcare disparities
- Medical education

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Bio-sketch: Levi Watkins, Jr., M.D.

Dr. Levi Watkins Jr. grew up in Montgomery, Alabama and was exposed to widespread prejudice and the early civil rights movement at a young age. The teachings of two influential pastors, Dr. Ralph Abernathy and Dr. Martin Luther King Jr., have left a dramatic impression on Dr. Watkins since he was first introduced to both pastors during childhood. Graduating with the highest honors from Tennessee State University, Dr. Watkins integrated Vanderbilt University School of Medicine in 1966, becoming the first African-American student admitted.

In 1970, Dr. Watkins commenced his surgical training at The Johns Hopkins Hospital. Between 1973 and 1975, Dr. Watkins interrupted his surgical training to develop his research interests at Harvard Medical School Department of Physiology, where he helped define the role of the renin-angiotensin system during congestive heart failure; this eventually led to the clinical use of angiotensin blockers in the treatment of congestive heart failure today. After completing residency, he joined the full time faculty in the Division of Cardiac Surgery at Johns Hopkins. Since joining the faculty, Levi has pursued several different interests, both professional and political. Professionally, he performed the world’s first human implantation of the automatic implantable defibrillator in February of 1980 and subsequently developed several different techniques for the implantation of this device. To date, over 1 million devices have been implanted and the lives of approximately 2/3 of these patients have been saved with this treatment. He has also helped develop the cardiac arrhythmia service at Hopkins where various new open-heart techniques are now being performed to treat patients at risk of sudden cardiac death. His interest in coronary heart disease in blacks led to his research in that area.

Early exposure to the civil rights movements and its leaders sealed Dr. Watkins’ commitment to racial equality, particularly in the area of medicine. In 1979, he joined the Admissions Committee of The Johns Hopkins School of Medicine, and after four years, minority representation increased 400 percent. In 1991, he was promoted to Professor of Cardiac Surgery and also appointed Dean of Postdoctoral Programs of The Johns Hopkins University School of Medicine. A member of the Alpha Omega Alpha Medical Honor Society, Dr. Watkins also has been honored at Vanderbilt, where he was awarded not only with a Vanderbilt Medal of Honor for outstanding alumni in 1998 but also with a Professorship and Associate Deanship established in his name in 2002 because of his work for diversity in medical education. In October 2005, his portrait was unveiled at Vanderbilt’s School of Medicine, honoring his life’s work and commitment to the institution.

Dr. Watkins’ interest in worldwide human rights led him to initiate the annual Martin Luther King Jr. commemoration at the Johns Hopkins Medical Institutions in 1982. He has brought to the program many world leaders, including Nobel Laureate Desmond Tutu, Coretta Scott King, Andrew Young, Harry Belafonte and Maya Angelou. Because of Dr. Watkins’ work in medicine and human rights, he has received honorary doctorate degrees from Sojourner-Douglass College, Meharry Medical College, Spelman College and Morgan State University. Dr. Watkins had been a visiting professor at numerous medical institutions around the world. In April 1993, his life and work were featured on PBS’ New Explorers program entitled “A Dream Fulfilled”. Two recently published books, *African-American Medical Pioneers* by Charles H. Epps Jr. and *Noteworthy Publications by African-American Surgeons* by Claude H. Organ Jr. M.D., feature his achievements.

Dr. Watkins retired from surgical practice in 2005 to donate more time to his role in the Dean’s office and his intense interest in human rights and diversity. In December 2013 he retired, but is available for patient consultation and referral services.
Selected Publications: Levi Watkins, Jr., M.D.


Cardiothoracic Surgery

Faculty

Glenn J. R. Whitman, M.D.
Director, Cardiac Surgical Intensive Care Unit
Director, Heart Transplant Program
Associate Professor of Surgery

Background

• Harvard College (B.A., 1974)
• Lionel DeJersey Harvard Scholar, Cambridge University, England (1975)
• University of Pennsylvania School of Medicine (M.D., 1974-1979)
• University of Pennsylvania - general surgery residency (1979-1984)
• University of Colorado Health Science Center – general and cardiac surgery (1984-1988)
• University of Colorado Health Science Center – Chief Cardiothoracic Surgery, Denver VAH (1988-1990)
• The Medical College of Pennsylvania Hospital – Chief Cardiac Surgery (1990-1998)
• University of Maryland School of Medicine – Chief Cardiac Surgery (1998-2000)
• Temple University School of Medicine – Associate Hospital Director (2002-2007)
• Thomas Jefferson University, Jefferson College of Medicine – Director CSICU (2007-2009)
• Johns Hopkins Hospital Division of Cardiac Surgery – Director CSICU (2009 - present)
• Johns Hopkins Hospital – Director of Adult Heart Transplant Program (2011 - present)

Clinical Interests

• Critical care in cardiac surgery
• Quality improvement

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Bio-sketch: Glenn J. R. Whitman, M.D.

Dr. Glenn Whitman joined the Johns Hopkins Division of Cardiac Surgery in 2009 as Associate Professor of Surgery. His training began at the University of Pennsylvania where he was a resident in surgery from 1979-1984. At that time he followed Dr. Alden Harken to the University of Colorado where he finished his general surgery training and then completed his training as a cardiothoracic surgeon. Thereafter, Dr. Whitman became an Assistant Professor at the University of Colorado and Chief of Cardiothoracic Surgery at the Denver Veteran’s Administration Hospital where he remained for two years. In 1990 he returned to his home city of Philadelphia where he became the Chief of Cardiac Surgery at the Medical College of Pennsylvania formerly Women’s Medical College, the first medical school in the United States to accept women. Dr. Whitman remained at the Medical College of Pennsylvania for eight years before moving to the University of Maryland as the Chief of Cardiac Surgery. Unfortunately, in the year 2000, he had to withdraw from the active practice of Cardiothoracic Surgery due to arthritis. Since that time Dr. Whitman has had a variety of roles in health care.

He has served as the Director of Transplantation and UNOS Representative at Temple University Hospital in Philadelphia, as well as its Director of Perioperative Services, managing preadmission testing, the operating room, and the post anesthesia care unit. In 2007 he left Temple for Thomas Jefferson Hospital to join Dr. Charles Yeo, taking over the responsibilities of running the Cardiac Surgery Intensive Care Unit. In the summer of 2009, he was recruited by Dr. Duke Cameron to return to Baltimore to run the Cardiac Surgery Intensive Care Unit and oversee the Performance Improvement/Quality Assurance program for Cardiac Surgery at Johns Hopkins.

Dr. Whitman’s initial research interests were in Cardiac Ischemia Reperfusion Injury and P31 Nuclear Magnetic Resonance of Cardiac Bioenergetics, for which he received both NIH and Veterans Administration funding. He has since become involved with quality outcomes and has presented both at the American College of Surgeons as well as the Society of Thoracic Surgery regarding the difficulties associated with Performance Improvement and Quality Assurance in the field of health care, and in particular, in the Intensive Care Unit.
Selected Publications: Glenn J. R. Whitman, M.D.


Stephen C. Yang, M.D., F.A.C.S., F.C.C.P.
Professor of Surgery and Oncology
Division of Thoracic Surgery
The Arthur B. and Patricia B. Modell Professor
Surgical Director, Thoracic Oncology Program

Background
- Duke University (B.A. Chemistry, 1980)
- Medical College of Virginia (M.D., 1984)
- University of Texas Health Science Center in Houston, General Surgery Residency (1984-1987, 1990-1992)
- University of Texas M.D. Anderson Cancer Center – Thoracic Surgical Oncology Research Fellowship (1987-1990)
- Medical College of Virginia - Cardiothoracic Surgical Residency (1992-1994)
- Johns Hopkins Division of Thoracic Surgery (1994 - present)

Clinical Interests
- Lung cancer
- Esophageal cancer
- Mesothelioma
- Robotic thymectomy
- Video assisted thoracic surgery (VATS) / robotics
- Lung volume reduction surgery

Research Interests
- Development of molecular markers for lung cancer
- Molecular biology of mesothelioma
- Surgical education

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Bio-sketch: Stephen C. Yang, M.D., F.A.C.S., F.C.C.P.

Dr. Stephen C. Yang graduated Magna Cum Laude from Duke University in 1980 with a B.A. in Biochemistry (music minor) and received his M.D. from the Medical College of Virginia in 1980. His training included a general surgical residency at the University of Texas Health Science in Houston, a 3 year thoracic surgical research fellowship at the M. D. Anderson Cancer Center, and a cardiothoracic surgical fellowship at the Medical College of Virginia. In 1994, he joined the faculty at Johns Hopkins Hospital and currently is Professor of Surgery and of Medical Oncology. In 2001, he was named Chief of Thoracic Surgery at the Johns Hopkins Medical Institutions. In October 2008 he was named the first recipient of The Arthur B. and Patricia B. Modell Professor in Thoracic Surgery.

He serves as Director of the Thoracic Oncology Program and the Associate Director of the Cardiothoracic Surgery Residency Program. He was awarded the 1997 American Association of Thoracic Surgery Research Scholar, the 1996 William F. Rienhoff award for teaching and research at Johns Hopkins, the 2004 Medical College of Virginia Outstanding Alumnus, and the 2007 Thoracic Surgery Directors Association Program Director research award. He is an extreme supporter for the medical students, being the only surgeon (amongst 20 chosen from the School of Medicine) for the medical student advisory Colleges system, and is the faculty sponsor for the Surgery Interest Group and the Asian Pacific American Medical Student Association.

He currently serves on the Postgraduate Affairs, Medical School Admissions, Educational Policy, and Curriculum Reform Committees in the Johns Hopkins School of Medicine. He is an active member of the American College of Surgeons, American College of Surgeons Oncology Group, the Society of Thoracic Surgeons, International Society of Heart and Lung Transplantation, Association for Academic Surgeons, the Association for Surgical Education, the Society of University Surgeons, and the American Association of Thoracic Surgeons. He served on numerous national and international committees for these organizations, and is the Taskforce Chair on the “Looking to the Future” Residency Scholarships for the Society of Thoracic Surgeons. He is Editor of “Practical Reviews in Chest Medicine” and guest editor/reviewer for numerous peer review journals. He is co-editor of the book “Current Therapy in Thoracic and Cardiovascular Surgery”, edited the esophageal surgical section in the 2nd edition of “Atlas of Gastrointestinal Surgery” with John Cameron, M.D., and series editor-in-chief of “The Early Diagnosis of Cancer” also editing the book volume of “The Early Diagnosis of Lung Cancer.” In 2001, he and his lung transplant team were featured in the ABC series “24/7” and was followed in the sequel to that series focusing in on resident and medical student teaching. This series as well as other experiences are still shown on the Discovery Channel. The extensive work in preparing an esophageal cancer patient for surgery on the BBC and the Discovery Channel.

His laboratory research interests include using molecular techniques for lung cancer screening and for molecular staging of micrometastasis to predict recurrence following surgical resection. His clinical practice and research covers the breath of general thoracic surgery in pulmonary and esophageal surgery, video-assisted and robotics thoracic surgery, mediastinal and pleural work, lung volume reduction surgery for emphysema, and work in geriatric thoracic surgery.
Selected Publications: Stephen C. Yang, M.D.


Cardiothoracic Surgery

Faculty

Kenton J. Zehr, M.D.
Associate Professor of Surgery
Cardiovascular Surgeon

Background

- Pennsylvania State University, Milton S. Hershey Medical School (M.D. 1978)
- Mayo Clinic, Division of Cardiac Surgery (1998-2006)
- University of Pittsburgh Medical Center, Cardiac Surgery Chief (2006-2008)
- Perm Heart Institute, Perm, Russian Federation, Staff Surgeon, Education Director (2008)
- Scott & White Healthcare, Cardiothoracic Surgery Director (2009-2013)
- The Johns Hopkins Hospital, Division of Cardiac Surgery (2014-present)

Clinical Interests

- Adult cardiac surgery
- Aortic surgery
- Aortic and Mitral Valve Repair
- Mechanical Assist for the Failing Heart and Lungs (VAD therapy, ECMO)
- Surgical Maze

Research Interests

- The Inflammatory Response to Extracorporeal Circuits
- Hypothermic circulatory arrest
- Device Development

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Bio-sketch: Kenton J. Zehr, M.D.

Dr. Kenton J. Zehr is a Cardiovascular Surgeon at Johns Hopkins Hospital and Associate Professor of Surgery. After his General and Cardiothoracic Surgical training at Johns Hopkins and a Fellowship in Aortic Surgery and Thoracic Organ Transplantation with Sir Magdi H. Yacoub at Harefield Hospital, London, UK, he joined the faculty at the Mayo Clinic in Rochester, MN. During his tenure at the Mayo Clinic he concentrated on clinical surgery. In addition, he developed a keen interest in international education and has lectured and operated extensively throughout the globe. Prior to returning to Johns Hopkins, he has held the positions of Chief of Cardiac Surgery at the University of Pittsburgh Medical Center, Senior Staff Surgeon and Educational Director at the Perm Heart Institute in Perm, Russia where he holds an honorary professorship and Director of Cardiothoracic Surgery at Scott & White Healthcare in Temple, Texas.

Over his career Dr. Zehr has developed his clinical interests in aortic root and aortic aneurysm surgery, repair techniques for the aortic and mitral valves, and mechanical assistance for the failing heart and lungs. He has been recognized for his teaching abilities and has been awarded the Anthony L. Imbembo Surgical Residents Teaching Award from the Johns Hopkins Hospital and the Faculty Teaching Award from the University of Pittsburgh Medical Center.

His early investigative work concentrated on study of the inflammatory response triggered by blood/synthetic surface interactions and morphed into research aimed at ameliorating the inflammatory responses of hyperacute rejection and the neurological, pulmonary, and cardiac sequelae of ischemia/reperfusion injury. Over the last decade, he has been primarily interested in device development related to cardiac surgery and holds patents for various devices.

Dr. Zehr is an author of over 110 publications and 11 book chapters covering nearly the entire gamut of acquired adult cardiac surgical diseases. He enjoys travel and new experiences. He has a wide range of interests outside of the operating room including cultural anthropology, ornithology, and Russian Impressionism of the Leningrad School.
Selected Publications: Kenton J. Zehr, M.D.


Cardiac Surgery

Administrative Director

Stacey Baldwin
Administrative Director

Stacey Baldwin has been at Johns Hopkins since 2001. She is the Administrative Director of the Hopkins Cardiac Surgery Division since June 2010.

Ms. Baldwin’s special skills and interests include integration of clinical, financial and research data to enhance operational and business initiatives within health care systems. She holds an undergraduate degree from Towson University and a MBA from University of Maryland.

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Donna Riley serves as the Residency Program Coordinator for the Johns Hopkins Cardiac Surgery Division and the Medical Office Coordinator for Drs. Ashish Shah and Luca Vricella. She came to Johns Hopkins in 2000 and joined the Cardiac Surgery Division in 2003. Ms. Riley also served as the Office Manager for our division from 2009-2013.

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For generations, people with serious heart problems have turned to Johns Hopkins physicians for help. Recognized worldwide, Hopkins cardiologists and cardiac surgeons provide comprehensive care of the highest quality, ensuring that patients receive the most advanced treatments known to medicine.

Now, this superb program is looking to advance further by establishing the Johns Hopkins Heart and Vascular Institute within the new Cardiovascular & Critical Care Tower, which will seamlessly integrate state-of-the-art diagnostic and therapeutic services. In this new facility, patients experience personalized medical care in a high tech environment, while having the advantage of the research and education assets unique to Hopkins. Specialists in every branch of cardiac care – cardiology, cardiac surgery, vascular medicine, radiology, and critical care anesthesia – work collaboratively in a hospital setting designed to foster innovative treatments and accelerate the science of medicine.

At the Johns Hopkins Heart Institute, cardiac specialists will swiftly translate laboratory discoveries into new treatments, with the ultimate goal of saving more lives from heart disease, the leading cause of death in the United States.
Pediatric and Congenital Cardiac Service

One of the historical milestones of congenital cardiac surgery took place at the Johns Hopkins Hospital on November 29, 1944. Up to that day, most infants and children with congenital heart disease (the then so-called “blue babies”) had in fact no hope for cure, and died as a consequence of their heart condition. Because of their abnormalities, many children suffered from chronic lack of oxygen, and followed the unfortunate course of their disease to their premature death.

Dr. Alfred Blalock and the Pediatric Cardiac Team at the Johns Hopkins Hospital first offered to these children the possibility of increasing their oxygen levels, by creating a connection between oxygen-rich and oxygen-deprived blood vessels (the “Blalock-Taussig shunt”). After that first successful operation, hundreds of children traveled to Baltimore to become pink again. Over the ensuing decades, many more underwent ever more complex operations, to correct anomalies that affect age groups from neonatal period to adulthood.

The Johns Hopkins tradition of surgical intervention on patients with congenital heart disease now spans over six decades, and has evolved into a premiere team that is capable of addressing all forms of congenital heart disease at any patient’s age, performing over 250 congenital cardiac procedures per year, in the greater context of a cardiac team that performs yearly over 1,000 open heart surgeries on patients referred by a local, national and international physician networks.
These operations navigate the full spectrum of cardiac malformations, from premature patients to adults with congenital heart disease. Dr. Luca Vricella, Director of Pediatric Cardiac Surgery and Director of Pediatric Cardiac Transplantation, is Board Certified in cardiothoracic surgery and has specifically trained in congenital cardiac surgery, with particular interest in the area of neonatal cardiac surgery, surgical procedures in pediatric patients with connective tissue disorders and adult congenital cardiac surgery. In particular, the pediatric cardiac center at the Johns Hopkins Hospital has unparalleled experience in valve-sparing aortic root replacement in pediatric patients with the Marfan syndrome. Complex operations addressing malformations such as hypoplastic left heart syndrome, transposition of the great arteries and other extreme forms of neonatal pathology are carried out in the setting of an academic facility committed to the care of the pediatric patient, the Children’s Center at the Johns Hopkins Hospital. This interfaces smoothly with the adult cardiac surgical service, so that older patients with heart disease benefit from the expertise of clinicians dealing on a daily basis with adult pathology, as well as pediatric cardiologists and cardiac surgeons well-rounded in the complicated field of congenital heart disease. It is anticipated that, over the next decade, most pediatric cardiac units will see a proportion of at least 50% of their practice devoted to adults with congenital cardiac pathology. With additional expertise in implantable ventricular assist devices, extra corporeal membrane oxygenation (ECMO) and cardiopulmonary transplantation, the structure of the pediatric cardiac service at the Johns Hopkins Hospital is ideally structured to meet the challenge of this constantly growing patient population.

An experienced, multidisciplinary team of physicians and healthcare specialists completes the pediatric cardiac team at the Johns Hopkins Hospital. Pediatric cardiac surgeons and pediatric cardiologists work closely together in the pre-operative evaluation of pediatric cardiac patients and adults with congenital heart disease. During the intra and immediately post-operative phase, our patients are carefully managed by surgeons, cardiologist, anesthesiologists and a world-class pediatric intensive care team whose primary area of expertise and focus are patients with heart malformations. Being Johns Hopkins, a leading center in the training of the future generations of cardiac surgeons, residents are also deeply involved in the care of children with congenital heart disease, assisting in complex operative procedures and following these complex patients during the post-operative recovery phase.

The features of the Pediatric Cardiac Service at the Johns Hopkins Hospital is enhanced in the new Johns Hopkins Heart and Vascular Institute, within the Charlotte R. Bloomberg Children’s Center. In this new, futuristic structure, a separate tower is devoted to the care of children, with dedicated intensive care unit space, operating rooms and state-of-the art equipment exclusively available to patients with congenital heart disease.
Minimally-Invasive Cardiac Surgery

The Johns Hopkins Minimally Invasive Cardiac Surgical Program offers several operations using minimally-invasive approaches:

- Mitral Valve Repair
- Aortic Valve Replacement
- Tricuspid Valve Repair or Replacement
- Atrial Septal Defect/Patent Foramen Ovale Closure
- Biventricular Epicardial Pacing Lead Placement
- Surgical Radiofrequency Ablation for Atrial Fibrillation

In 2003 Dr. David Yuh led a team that performed Hopkins’ first minimally-invasive robotic heart operation, placing a biventricular pacemaker lead in a patient with ischemic dilated cardiomyopathy using the da Vinci surgical robotic system. Dr. Yuh’s team subsequently performed Hopkins’ first robotic “open-heart” operation, successfully repairing the mitral valve of a 78 year old man. Operations are performed using much less invasive incisions than those used with the standard sternotomy approach. Compared to standard open-chest cardiac surgery, these minimally-invasive techniques involve less pain, fewer wound complications, shorter hospital stays, superior cosmesis, and faster recovery times for patients.

Transcatheter Aortic Valve Replacement

The TAVR program at Johns Hopkins began in July 2011. The program is a joint program run under the collaborative efforts of Cardiology and Cardiac Surgery. The Medical Director of the program is Dr. Jon Resar and the Surgical Director is Dr. John Conte.

The program currently implants the Medtronic Corevalve and the Edwards Sapien devices with plans to participate in clinical trials as new technology is developed. The program uses iliofemoral, subclavian, direct aortic and apical approaches to implant the devices. Patients are evaluated jointly by both teams and discussed at a weekly TAVR conference. The technical aspects of each procedure are jointly performed with cardiology and surgery rotating between the various implanting positions.

Weekly block time has been allotted to accommodate this growing practice with the expectation that there will be a need for two TAVR days per week. Thus far the program has done approximately 130 cases with a referral volume of several new cases each week. Excellent outcomes have been experienced to date with limited morbidity.
The Dana & Albert "Cubby" Broccoli Center for Aortic Diseases

The Dana and Albert “Cubby” Broccoli Center for Aortic Diseases is world renowned for its expertise and medical resources. We offer a unique multidisciplinary approach. As one of the few centers in the world that truly focuses on diseases of the aorta, the Broccoli Center brings together leading physicians and scientists in clinical and laboratory research, at the nation's best hospital. This cohesive program provides a continuing opportunity to make key advances in the field of aortic diseases, while offering the highest level of care and treatment available anywhere in the world.

The Broccoli Center treats a large number of patients with aortic diseases--from newborns to the elderly. With a Marfan clinic established in 1950 by Dr. Victor McKusick, Johns Hopkins Hospital has the world's longest experience with surgery for Marfan aortic disease. Our surgical teams include specialists in cardiac surgery, vascular surgery, radiology, anesthesia, and neurological monitoring, assuring the best possible surgical outcomes, and minimizing the risk of complications.

Hopkins Comprehensive Marfan Center

The Johns Hopkins Comprehensive Marfan Center is an internationally recognized center for surgical management of patients with Marfan and Non-Marfan disease.

We offer a collaborative approach for treatment of all clinical manifestations of Marfan Syndrome with expertise in genetics, ophthalmology, orthopedics, vascular and cardiac operations.
Aortic Valve Repair

Aortic valve repair is a treatment option for preservation of the native valve in patients with aortic insufficiency. This technique is particularly useful in young patients with bicuspid valve disease and connective tissue disorders. This approach could avoid the drawbacks of tissue and mechanical valve prosthesis in patients with a longer life expectancy. Surgical techniques include aortic-valve sparing root replacement, sub-commissural annuloplasty and leaflet reconstruction.

Thoracic Endovascular Aortic Repair

Endovascular therapy is becoming an increasingly attractive option to treat higher risk patients with various aortic pathologies. Hybrid open and endovascular procedures are expanding the scope of patients who can be treated. Currently aneurysm, dissection and trauma can all be treated using endovascular options. The endovascular skill set will be critical to the cardiac surgeon of the future.
Cardiomyopathy and Heart Failure Program

The Johns Hopkins Cardiomyopathy and Heart Failure Practice use a multidisciplinary approach to the evaluation and management of patients with heart failure due to any cause. Important components of this team approach include social work, dietary counseling, physical rehabilitation, educational programs, and support groups. Our goal is to empower patients to better care for themselves by improving compliance, patient understanding, and family support.

The keystone to this program remains cutting edge, individualized patient diagnosis and treatment provided by the faculty in conjunction with our nurse practitioners. Our patients range from those who are asymptomatic to those in desperate need of cardiac transplantation.

Johns Hopkins offers a new innovative procedure known as Surgical Ventricular Restoration (SVR). SVR is a surgical procedure to treat congestive heart failure caused by myocardial infarction. Following a heart attack, scar or an aneurysm may develop resulting in an enlarged rounded heart that may lead to congestive heart failure (CHF). The goal of the SVR is to restore the heart to a more normal size and shape, therefore improving function. We have been on the leading edge in the refinement of this novel procedure.

Mechanical Circulatory Support Program

The Johns Hopkins Hospital Mechanical Circulatory Support (MCS) Program began in 1986 with success in improving the survival of many patients. These devices are also used as destination therapy, a means of improving quality of life for end stage heart failure patients, who do not qualify for a heart transplant.

The program offers a variety of ventricular assist devices. Each one is designed to address specific patient conditions. Our physicians will discuss with each patient the options and select the device that is most suited for that patient.

Our MCS team consists of highly trained and committed clinicians who are dedicated to providing our patients with the best care available. The team includes cardiologists, cardiac surgeons, operating room clinicians, the cardiovascular surgical intensive care unit (CVSICU) team, the cardiovascular progressive care unit (CVPCU) team, physical therapists, occupational therapists, nurses, social workers, transport personnel, and MCS coordinators.

Our approach to caring for a patient with a ventricular assist device implant is different in many areas. We fully believe in developing a relationship with the patients and their families so that they may have a comfortable and trusting group of care givers around them at all times. We remain active throughout the pre-operative evaluation phase, during the surgery, while recovering from surgery in the hospital, and after discharge while adjusting to a new life at home with the new device.
Comprehensive Transplant Center

*Heart Transplant Program*

Patients who come to Johns Hopkins gain access to the vast resources of one of the world’s premier medical institutions. Whatever conditions face our patients, whatever challenges may arise during the transplantation process, the full resources of Johns Hopkins are available to them.

Established in 1983, the Johns Hopkins Heart Transplant Program developed an approach to treating congestive heart failure while reducing hospital admissions, improving the quality of life for patients and lowering mortality rates. Besides an aggressive medical approach, the program stresses intensive education and lifestyle counseling. Johns Hopkins is proactive in maintaining or stabilizing patients awaiting heart transplants and following them through the post transplant process.

*Lung Transplantation Program*

Since the time of its inception The Johns Hopkins Lung Transplant Program is the most active and aggressive program in the state performing over 350 lung transplants. The program is centered on a team approach that includes surgeons, pulmonologists, immunogenetics, advance practice nurses, pharmacists, physical therapy, respiratory therapists, social work, nutritionists, and psychologists. In addition to our clinical program we have an active research program. Our mission is to improve the quality of life and outcomes in our lung transplant patients.
Cardiac Surgery -
A Leader in Excellence & Innovation

Hopkins Highlights

The Johns Hopkins Hospital ranked #1 in the 2013 U.S. News and World Report ranking of American hospitals.

- Cardiovascular Program ranked #4 in the country.
- First successful “blue baby operation” in the world to correct congenital heart defects.
- Performed the world’s first human implantation of the automatic implantable defibrillator.
- World’s longest experience with surgery for Marfan aortic disease.
- The first domino heart transplant procedure in the United States.

“Hopkins Firsts”

Johns Hopkins Cardiac Surgery has been the first hospital in Maryland to perform the following specialized operations:

- heart transplantation
- heterotopic heart transplantation
- heart-lung transplantation
- bilateral lung transplantation
- pediatric lung transplantation
- lobar lung transplantation
- ventricular assist device implantation
- ventricular assist device implantation as destination therapy
- adult extra-corporeal membrane oxygenator (ECMO) implantation
- robot-assisted cardiac operation
- robotic thymectomy
- robotic lobectomy
- percutaneous valve replacement
History of Cardiac Surgery Research

Cardiac surgical research at The Johns Hopkins Hospital has a long and productive history. Since its inception in 1942 by Alfred Blalock, M.D., and Vivien Thomas, investigators in the Cardiac Surgery Research Laboratory have set the standards for surgical research today. Areas of research include:

- solutions to congenital cardiac defects, i.e. tetralogy of Fallot (blue baby)
- early advances in cardiopulmonary bypass using the heart-lung machine to facilitate open heart surgery
- early prosthetic valve development with related coating and bonding studies
- early development of the intra-aortic balloon pump
- comparisons of anti-rejection medications in heart and heart-lung transplantation
- heart and lung organ preservation techniques
- effects of leukocyte filtration on cardiopulmonary bypass
- techniques for safely extending hypothermic circulatory arrest and minimizing neurological injury
- preventing spinal cord injury during aortic surgery
- investigating the use of gene therapy to preserve the life of vein grafts
- robotic cardiac surgery
- surgical approaches to connective tissue disorders in Marfan syndrome and Loeys-Dietz syndrome
- multi-center clinical trials of ventricular assist devices for bridge to transplant and bridge to destination therapy
- understanding and improving the cardiac surgical care of elderly patients
Active Cardiac Surgery
Clinical Research Programs
2014

- Prospective Randomized On-X Valve Anticoagulation Clinical Trial (PROACT)
- Serum Biomarkers to Predict Brain Injury Study
- Stroke database study – review of brain MRI’s in patients with stroke after cardiac surgery
- Non-Invasive Monitoring of Cerebral Blood Flow During and After CPB to Assess and Compare for the Presence of Delirium in Post-Op Patients (DELIRIUM)
- Hypoperfusion and stroke after CABG surgery
- MRI of cerebrovascular reactivity using induced hypercapnia and its relationship with mild cognitive decline (RespirAct)
- Neuropsychiatric Outcomes After Heart Surgery (NOAHS)
- Red Cell Storage Duration in Cardiac Surgery Patients (RECESS)
- Impact of Blood Storage Duration on Physiologic Measures: (RECESS)
- Ancillary Physiologic Study (RECAP)
- Medtronic CoreValve: Pivotal Trial/SURTAVI/Expanded Use
- The EXCEL trial: Abbott Vascular EXCEL Clinical Trial: Evaluation of Xience Prime or Xience V versus Coronary Artery Bypass Surgery for Effectiveness of Left Main Revascularization
- Genetic Determinants of Postoperative Atrial Fibrillation In Patients Undergoing Cardiac Surgery
- Congenital Heart Surgeon Society Database (CHSS)
- Aortic Valve Operative Outcomes in Marfan Patients
- National Registry of Genetically Triggered Thoracic Aortic Aneurysms and Cardiovascular Conditions (GenTAC)
- COCAD Study – longitudinal study of cognitive outcomes in patient with coronary artery disease
- Cardiac Structural & Functional Assessments using Three-Dimensional Transesophageal Echocardiographic Imaging
- Monitoring of Cerebral Blood Flow Autoregulation using Near Infrared Spectroscopy
- Continuous Cerebral Autoregulation Monitoring to reduce brain injury from cardiac surgery
- Pilot Study of the Feasibility of Multicenter NIRS Data Collection and Interventions for Desaturation in Cardiac Surgery
- GeneTICS – MSSA Swabs
- Society of Thoracic Surgeons (STS) Adult Cardiac Surgery Database participant
- Society of Thoracic Surgeons (STS) Congenital Heart Surgery Database participant
- INTERMACS - Interagency Registry for Mechanically Assisted Circulatory Support
- PEDIMACS – Pediatric Registry for Mechanical Assisted Circulatory Support
The Cardiac Surgery Research Lab
Active Research

Ex-Vivo Human Lung Reperfusion

- Human lung pairs are harvested and reperfused on an ex-vivo circuit and treated with inhaled hydrogen sulfide gas. The lungs treated with hydrogen sulfide demonstrated improved oxygenation as well as decreased reactive oxygen species formation and an upregulation in the ‘safety pathways’ associated with lung injury.

Ex-Vivo Rabbit Lung Model

- The ex-vivo platform has been utilized to investigate the possible benefits of nanoparticles (dendrimer) as drug-delivery vehicles in lung injury following transplantation. The biodistribution profile demonstrated uptake of the dendrimer in the epithelium, endothelium and immune cells. Tissue from the first conjugated experiment (dendrimer-n-acetylcysteine) has been sent for tissue analysis. Results are pending. The next iterations of this project include the use of dendrimer-dexamethasone and dendrimer-surfactant analogs.

Outcomes Research

- Prolonged Ischemia does not Affect Survival Following Lung Transplantation
- Performance Status Impacts Mortality Following Lung Transplantation
- Lung Retransplantation for Early Graft Failure: Trends and Results in 112 Patients over a 24-Year Period
- An Easily Calculable and Highly Predictive Risk Index for Postoperative Renal Failure after Heart Transplantation
- The Use of Thoracic Epidural Anesthesia in Lung Transplant
- Risk Factors for Medication Non-Adherence in Cystic Fibrosis Patients After Lung Transplant
The safety of a surgical patient is closely related to the quality of the surgeon’s training. This is particularly true for patients undergoing cardiac surgery, where stakes are high and technical skills are demanding. In most surgical training, technical skills are taught by apprenticeship: residents learn surgery in the operating room, doing parts or all of real operations on real patients. Unfortunately, today’s operating room provides insufficient time in which to teach surgery, has no tolerance for the inefficiency inherent in education, offers no chance for deliberate practice of skills, and cannot provide for orchestrated training in how to deal with adverse events. But all of these are essential to the training of a safe surgeon. This study intends to show that training in cardiac surgical techniques can be improved by using modern cardiac surgery simulation technology combined with a rigorous, simulation-based curriculum. This should produce surgeons with better skills and thus ensure safety for patients.

This three-year project will determine the effectiveness of using simulator-based training in component tasks and overall procedures based on six modules: three types of cardiac surgical operations and three significant adverse events that can occur during cardiac surgery. The procedures will be taught using a computer-controlled, tissue-based cardiac surgery simulator which has been shown to realistically duplicate the actual patient undergoing cardiac surgery. Eight institutions (University of North Carolina at Chapel Hill, Massachusetts General Hospital, Johns Hopkins University, Vanderbilt University, University of Rochester, Mayo Clinic, Stanford University, and University of Washington) will participate in the study, which will include 16 first-year cardiothoracic residents in each of two consecutive academic years.

This simulation study is conducted in the Johns Hopkins Cardiac Surgery Research Lab and utilizes the Ramphal Cardiac Surgery Simulator (RCSS). “The model uses a porcine heart that is prepared with an intraventricular balloon in each ventricle. The balloons are inflated by a computer controlled activator. The computer program is able to simulate the beating heart, various cardiac arrhythmias, hypo- and hypertensive states, cardiac arrest, and even placement of an intra-aortic balloon pump. The model is perfused with a washable blood substitute. When placed in a replica of the pericardial well in a mannequin, the RCSS is capable of duplicating most aspects of cardiac surgery including all aspects of cardiopulmonary bypass, coronary artery bypass grafting both on and off bypass, aortic valve replacement, heart transplantation, and aortic root reconstruction. The computer protocols also make experience with adverse events such as accidental instillation of air into the pump circuit, aortic dissection, and sudden ventricular fibrillation after discontinuation of cardiopulmonary bypass possible.”

“The model has been used in the training of more than 140 cardiothoracic surgery residents in the United States at the Thoracic Surgery Directors Association (TSDA) Resident Boot Camps (intensive training sessions for physicians who are beginning their residency training in cardiothoracic surgery) and the Resident Technology Symposia and has been shown to be a very effective training tool.”

1http://www.med.unc.edu/ct/faculty/feins/simulators
Innovation and Discovery
Johns Hopkins Heart and Vascular Institute

Project: The Hopkins Heart

**Mission:**

The mission of the Hopkins Heart Initiative is to develop a replacement heart that can improve the function of, promote the regeneration of, and, if necessary, completely replace a diseased heart.

- This artificial heart will generate blood flow that is continuously coordinated with the patient's physiological demands, operate in harmony with the circulatory system without inciting dot-inducing or other disruptions in the bloodstream, provide power through an energy source without infection-prone tethering lines, and be fully implantable with an individualized geometry and configuration.
- An intense collaboration of specialists devoted to this project will bring together a spectrum of disciplines spanning cardiology and cardiac surgery, hemo- and fluid dynamics, biomedical engineering, physics, control theory and materials science.
- Rigorous principles of systems design and development will enable and guide the discovery processes of the team to produce synergistic and goal oriented innovations.
- Johns Hopkins University will draw upon its unparalleled capacity for transdisciplinary research between engineering and medicine, complex systems development and patient-centered clinical care to ensure success in this revolutionary mission.

**Vision:**

The Hopkins Heart Initiative will:

- Lead the team through an inclusive approach that draws from a spectrum of expertise in clinical, biological and engineering sciences
- Systematically enable an inspired, radical discovery process
- Unify the efforts of the diverse research participants, by instilling a patient centered mindset
- Promote transdisciplinary collaboration by leveraging the Hopkins tradition of excellence, integrity, respect, and collegiality
- Educate and engage the next generation of scientists and engineers in this medical and technological endeavor.

This is a ten year program to develop a replacement organ to treat heart failure. The team was organized in April 2013 and $100 million development campaign is underway.

The first Hopkins Heart Symposium was on February 8, 2014 and the keynote speaker was William DeVries, MD.
Active Thoracic Surgery
Clinical and Translational Research Programs
2014

- **Outcomes/Clinical Research**
  1. Induction therapy for esophageal cancer
  2. Induction therapy for mesothelioma
  3. Adjuvant chemo for lung cancer
  4. CT screening for second primaries
  5. PET/CT pre and post induction
  6. Outcomes in pectus in the adult
  7. Incidence of cancer in high grade Barrett’s dysplasia is there a change
  8. Geriatrics: induction therapy, lung cancer, esophageal cancer, QOL
  9. Complicated esophageal reconstructions
  10. Outcomes from bilateral sequential thoracotomies
  11. Robotics in thoracic surgery
  12. Esophageal cancer in the African-American
  13. Socioeconomic status and lung cancer
  14. Lung cancer in patients under 40
  15. Tobacco and multiple cancers
  16. Characterization of non-smoking lung cancer patients
  17. Second lung primaries and survival

- **Translational Research**
  1. Methylation in old vs. young cancer patients
  2. Methylation in specific anatomical areas
  3. Profiling metastasis vs. primary tumors in lung cancer
  4. Methylation Profiles of Patients with Recurrent Lung Cancer
  5. New Methods of Detecting DNA Methylation using Nanotechnology

- **Case Studies**
  1. RFA/esophageal injury
  2. CAM with systemic arterial supply
  3. Unusual tumors of the lung
  4. Results of 3 Patient Response to Epigenetic Therapy
Active Thoracic Surgery
Clinical and Translational Research Programs
2014 (continued)

- **NCI Funded Clinical Research**
  1. Screening for cancer in the HIV patient
  2. Hypermethylation in lung cancer and lymph nodes
  3. Hypermethylation as a predictor of chemosensitivity in esophageal cancer
  4. Adjuvant Epigenetic Therapy in Early Non-Small Lung Cancer
  5. Molecular Profiling of Lung Cancers from HIV positive patients
  6. Epigenetic Therapy in Rodents with Lung Cancer
  7. The NCI Cancer Genome Atlas Project Profiling of Squamous Carcinomas of the Lung

- **National Trials**
  1. Resectable small cell ca (proposed ACOSOG)
  2. Geriatrics database (proposed ACOSOG/ECOG)
  3. ACOSOG Sublobar resection with brachytherapy
  4. ACOSOG RFA for lung tumors
  5. Adjuvant Epigenetic Therapy in Early Non-Small Lung Cancer (SPORE/Stand Up 2 Cancer)
  6. Validation of Epigenetic Biomarkers of Lung Cancer Recurrence (ACOSOG Correlative Study to Z0040, CALGB)
  7. Testing Epigenetic Biomarkers of Chemosensitivity in Esophageal Cancer (ACOSOG Correlative Study to Z4051)

- **International Trials**
  1. Validation of Epigenetic Biomarkers of Lung Cancer Recurrence in Israel (FAMRI Israel-New York-Hopkins Collaborative)
  2. Validation of Epigenetic Biomarkers of Esophageal Cancer Recurrence in Japan
The Cardiac Surgery Research Laboratory is located in the Children's Medical and Surgical Center of The Johns Hopkins University at the East Baltimore Campus in Baltimore, Maryland. The lab consists of two surgical suites, one for sterile, chronic procedures and another for acute studies. The labs are equipped to do cardio-pulmonary bypass procedures with continuous intensive care monitoring and data collection.

Johns Hopkins' Department of Surgery has opened a training laboratory for today's surgeons to learn and perfect the minimally invasive techniques of tomorrow.
The Cardiac Surgery Skills Laboratory (CSSL)

The CSSL training laboratory is a new addition to the Johns Hopkins cardiac surgery training program. The CSSL was established in 2009 under the direction of our former Chief of Cardiac Surgery, Dr. William Baumgartner, for the purpose of skills training for incoming and current cardiothoracic residents. It is adjacent to the Cardiac Surgery Research Laboratory. The CSSL incorporates state of the art surgical models by The Chamberlain Group, Inc., as well as porcine hearts and vein grafts for training on coronary artery anastomoses and aortic and venous cannulation. What is truly unique about the CSSL is the teacher himself, Dr. Baumgartner who generously dedicates time to training residents in the lab; giving trainees access to a master cardiac surgeon for instruction on basic and essential cardiac surgical techniques in a low-stress environment.

Skills taught with the Chamberlain models and porcine hearts include:
- Cardiac anatomy and anomalies
- Aortic and venous cannulation
- Coronary anastomosis
- Aortic valve replacement
- Mitral valve repair/replacement

CABG Heart
Realistic, soft, four chambered, and highly detailed internal and exterior model with sutureable native coronary sites for CABG training

Aortic Root Trainer
Detailed aortic root with valve plane and aortic sinuses reinforced for valve implantation training.
Minimally Invasive Surgical Training Center (MISTC)

Known as the Johns Hopkins/United States Surgical Minimally Invasive Surgical Training Center (MISTC), the facility features two laboratory training areas with a total of nine operating tables, a state-of-the-art conference room with seating for 35, locker rooms and office space. Robotic surgery may be performed in either suite. Faculty and trainers standing at the conference room's podium can view and discuss operations conducted in the next room. Telemedicine capabilities will allow lectures to be broadcast anywhere in the world and permit physicians to direct operations in distant locations.

The new center, launched February 6, 2002 with $3.5 million in funding from U.S. Surgical and equipment donations from Stryker Communications and Steris Corp., offers specialists at Hopkins and elsewhere a place to practice minimally invasive surgeries on animate and inanimate models and mannequins. It also provides a venue for surgical and medical device companies to test new instruments.

MISTC Laboratory

MISTC serves as a home base for continuing medical education courses for Hopkins residents and faculty.

The center occupies renovated space most famously inhabited in the 1940s by the late Hopkins surgeon in chief, Alfred Blalock. Dr. Blalock spent hundreds of hours there, rehearsing the operation that was the first to successfully repair the hearts of "blue babies," so named because their congenital heart defects left them blue from lack of oxygen.
Baltimore History

Johns Hopkins Hospital is located in historical Baltimore, Maryland. Baltimore was settled in 1661. By 1729 the town was founded and named for the barons Baltimore, the British founders of the Maryland Colony. During the Revolutionary War, the Continental Congress met in Baltimore in 1777 while the British occupied Philadelphia. The War of 1812 had a significant battle fought at Fort McHenry. Despite heavy shelling, the Fort held and the British evacuated the port. This inspired Francis Scott Key to write the "Star-Spangled Banner" later to become the National Anthem. In 1827, the B&O Railroad (Baltimore & Ohio) became America’s first railroad. The city was occupied by Union troops during the Civil War. A large fire in 1904 destroyed much of the downtown section. There was much industrial growth during the 1st half of the 20th century. During the second 1/2 of the 20th century, urban development led to revitalizing the downtown and Inner Harbor areas. Baltimore's economy is also dependent on research and development, especially in the areas of aquaculture, pharmaceuticals, medical supplies and services. There are numerous federal research laboratories in the area.
Baltimore

Located in northern Maryland this city is the major urban area in Maryland and its largest city. It is located less than 50 miles from Washington D.C. It is also 100 miles from Philadelphia and is 200 miles from New York City. The city’s size is 81 square miles and the population in 2010 was 620,961 people. It is the 26th largest city in the U.S.A. The metro area is much larger with 7,608,070 people as it includes nearby Washington, D.C. It is serviced by 3 major airports, Baltimore Washington International (BWI) Thurgood Marshall Airport, Dulles and Reagan International. The major routes that go through Baltimore include I-70, I-83 and I-95.
Living in Baltimore

Baltimore is also fondly referred to as the Clipper City and as Charm City, renowned for its soft shell crabs. It is divided into numerous sections around the Inner Harbor. These include Federal Hill, Fells Point, Little Italy and Canton. All areas have restaurants and various nightlife activities. The city has over 4000 acres dedicated to parks. There are many universities in the area. Museums include the Baltimore Museum of Art, the National Aquarium, the B&O Railroad Museum, the Baltimore Museum of Industry and the Maryland Science Center.
Baltimore is the perfect place for a sports fan. From world-champion professional players to top-notch college teams, Baltimore has an assortment of legends and teams to learn about, root for and watch. Take in an exciting game at one of the area's leading universities; visit one of the incredible state-of-the-art stadiums; or learn about hometown favorites like Cal Ripkin, Babe Ruth and Johnny Unitas.

And for those interested in more than a spectatorship, you can golf, climb, jog, walk, skate, and of course sail your way through Baltimore. Discover traditions such as jousting (Maryland's official state sport) or duckpin bowling. Spring, summer, fall or winter, there is always a season for fun in Baltimore.
Baltimore Weather

Much like the rest of the Mid-Atlantic region, Baltimore weather enjoys all four seasons. Average temperatures in the spring and fall are a mild 50 to 60 degrees. In winter, temperatures aren't known to drop much lower than 30 degrees, but occasional snow is usual in January and February. It seems like a "big" snowstorm hits once every few years. Baltimore summers tend to be hot and humid, with average temperatures in the 80’s and 90’s. Keep in mind though that since it's on the water, the Chesapeake Bay, the weather can change often. The city receives 43 inches per year of rain. Baltimore offers a "continental climate" with a "maritime influence".
Summary

- Excellent operative and balanced teaching experience
- Commitment to education and training
- Commitment to mentoring, guiding and finding a successful job opportunity
- Excellent skills in preoperative decision making
- Collegial atmosphere
- Academic career opportunities
- Excellent tradition in medical and surgical training
- Elective 6 months in the field of cardiothoracic surgery with affiliate rotations
Useful Web Sites

JHH Department of Surgery
http://www.hopkinsmedicine.org/surgery

JHH Division of Cardiac Surgery
http://www.hopkinsmedicine.org/heart_vascular_institute/

JHH Division of Thoracic Surgery
http://www.hopkinsmedicine.org/surgery/div/thoracic.html

JHH Comprehensive Transplant Program
http://www.hopkinsmedicine.org/transplant

JHH Sidney Kimmel Cancer Center
http://www.hopkinskimmelcancercenter.org

Johns Hopkins Medicine
http://www.hopkinsmedicine.org

Johns Hopkins Hospital
http://www.hopkinshospital.org

City of Baltimore and Surrounding Areas
http://www.baltimorecity.gov
Resources

We participate in the National Resident Matching Program
http://www.nrmp.org

For more information on our residency program, please contact:

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