ADULT CARDIOTHORACIC ANESTHESIOLOGY FELLOWSHIP PROGRAM

ACGME Accredited Fellowship Program

Department of Anesthesiology
Vanderbilt University Medical Center
Division of Cardiothoracic Anesthesiology

Compassionate | Creative | Committed | Collaborative
The Vanderbilt Adult Cardiothoracic Anesthesia Fellowship Program is committed to providing the highest quality training for future leaders, educators, and practitioners of cardiothoracic anesthesia. We offer a breadth of clinical experience including, but not limited to:

- On-pump coronary artery bypass surgery
- Off-pump coronary artery bypass surgery (OPCAB)
- Valve surgery
- Minimally invasive surgery
- Aortic surgery (including DHCA)
- Thoracic surgery (VATS, open and interventional pulmonology)
- Airway reconstruction
- Heart and lung transplant
- Ventricular assist device placement
- Hybrid operating room procedures (Atricure, TAVR, Mitraclip, Lariat, Watchman)

Our ACGME-accredited program offers three one-year positions available annually. We have made an application to expand the fellowship and expect to fill five positions starting in 2017. For our large clinical volume (1,500 cardiac cases/year), the number of fellows in the program is relatively small, allowing the opportunity for a personalized, tailored educational experience for each fellow. While the fellowship has a primary focus of clinical training, fellows are required to complete at least one academic project with a faculty mentor during their fellowship year.

For fellowship candidates interested in a more intensive research experience, we offer a research track in Cardiothoracic Anesthesia which requires a 2-year commitment. The first year consists of research conducted under the supervision of a faculty member at Vanderbilt, and may be spent in any suitable laboratory or research group. The second year is spent in the regular clinical fellowship, and successful completion of this program will enable a competitive application to the departmental NIH T32 training program for academic perioperative physicians (75% protected non-clinical time). During this advanced research program, fellows may simultaneously pursue a Master of Science in Clinical Investigation (MSCI), a master’s program specifically designed to pair young investigators with established mentors and provide coursework in statistical analysis and clinical trial design. Applicants with an interest in this academic path may also apply after their clinical fellowship year.

There are also clinical two-year fellowship options for fellows who wish to pursue additional subspecialty training and/or certification in critical care, pain, or pediatric cardiac anesthesiology.
The clinical program follows the course of study outlined by the ACGME Adult Cardiothoracic Anesthesia Fellowship criteria.

**Adult cardiothoracic rotation (7 months)**

We are committed to providing the highest quality training for future leaders, educators, and practitioners of cardiothoracic anesthesia. We offer a breadth of clinical experience in core cardiac surgery procedures such as CABG, valve replacement surgery, aortic surgery and heart and lung transplant. In addition, fellows will get ample exposure to caring for patients undergoing hybrid procedures (Atricure, TAVR, Mitraclip, Lariat, Watchman), electrophysiology procedures (pacemaker/ICD placement), and interventional cardiology procedures (tandem heart and ECMO placement, catheter based pulmonary thrombectomy, and device closure of septal defects). As part of a program of graduated responsibility, teaching/supervision of residents in cardiac cases will be available in the second half of fellowship (January to June).

**Cardiovascular intensive care unit rotation (1 month)**

Fellows spend a month in the cardiovascular ICU under the supervision of cardiothoracic and critical care anesthesiologists. Fellows will be responsible for the comprehensive management of critically ill cardiovascular and thoracic patients.

**Adult thoracic anesthesia rotation (1 month)**

Fellows will get exposure to a wide variety of thoracic surgery cases (600 cases/yr.) including VATS, thoracotomy, esophagectomy, lung volume reduction surgery, lung transplantation, airway reconstruction and pectus repair. Fellows can also choose to spend time in the bronchoscopy suite where we have a robust interventional pulmonary practice (1,800 cases/yr.).

**Pediatric cardiothoracic anesthesia rotation (1 month)**

Fellows are the primary anesthesia provider for pediatric cardiac surgery patients under the direct supervision of the attending. Pediatric cardiac areas include operating rooms, a catheterization lab, and an electrophysiology lab.

**Cardiology elective (1 month)**

Four weeks are spent in the subspecialty of echocardiography under the supervision of adult echocardiography cardiologists. During the rotation, fellows continue to develop skills in performance and interpretation of transthoracic echocardiography. They are required to attend all cardiology conferences during that month.

**Elective rotation (1 month)**

Typically, one of the two elective months is a cardiology rotation, but other clinical or research electives pertaining to cardiothoracic anesthesia may be substituted with permission of the Program Director.
The fellowship has several components that contribute to the academic enrichment of fellows:

**Weekly Cardiotoracic Division Conference (CME)**

Our CME accredited weekly conference covers a wide spectrum of topics pertinent to the management of the cardiothoracic patient. Lectures are given by cardiothoracic surgeons, interventional and heart failure cardiologists, electrophysiology specialists, thoracic surgeons, interventional pulmonologist, as well as our cardiothoracic anesthesiology faculty. Every quarter a guest lecturer from an outside institution is invited to give a talk in their area of expertise. In addition challenging case presentations and journal club are also held during this conference. This conference has been highly regarded by past fellows as an integral part of their training.

**Weekly Echo Conference (CME)**

Led by Dr. Robert Deegan, director of perioperative echocardiography who has 20 years of echocardiography experience, fellows will get exposure to evaluation and interpretation of both common and rare cardiac pathology. Approximately 150 cases are reviewed annually during this conference.

**TEE Simulation**

Cardiothoracic fellows will receive image acquisition training on our high fidelity Heartworks TEE simulators in CELA and our division office suite. The simulators demonstrate cardiac anatomy and the complex spatial relationships involved in TEE imaging with impressive clarity. Experience with the TEE simulator allows fellows to rapidly master basic imaging anatomy in order to progress to more advanced aspects of the TEE exam.

**Scholarly Activities**

Fellows are encouraged to attend and submit presentations to local, regional, and national cardiothoracic meetings. They are given a Continuing Medical Education (CME) budget to help defray the expenses of a conference. All fellows will be expected to attend the Society of Cardiovascular Anesthesiologists Annual meeting to present their work.

**Oral Board Preparation**

Several members of the department are oral board examiners. Fellows will be eligible to participate in the departmental oral board preparation program, which includes several mock oral examinations.
KEY FACULTY

Warren Sandberg, MD, PhD
Professor and Chair

Mias Pretorius, MBChB, MSCI
Associate Professor of Anesthesiology and Clinical Pharmacology
Interim Chief, Cardiothoracic Anesthesiology
Program Director, Cardiothoracic Anesthesia Fellowship

Andrew Shaw MB, FRCA, FFICM, FCCM
Professor of Anesthesiology
Vice-Chair of Clinical Affairs
Executive Medical Director for Perioperative Services

Bantayehu Sileshi, MD
Assistant Professor of Anesthesiology
Associate Program Director, Cardiothoracic Anesthesia Fellowship

Robert Deegan, MB, ChB, BAO, PhD, FFARCSI
Associate Professor of Anesthesiology and Clinical Pharmacology
Director, Intraoperative Echocardiography
Medical Director II, OR Cardiac Services

Susan Eagle, MD
Associate Professor of Anesthesiology
Director, Thoracic Anesthesiology
KEY FACULTY

Jeremy Bennett, MD
Assistant Professor of Anesthesiology
Director, Non OR Cardiac Anesthesiology

Josh Billings, MD, MSCI
Assistant Professor of Anesthesiology
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Yafen Liang, MD
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Antonio Hernandez, MD
Associate Professor of Anesthesiology
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Julian Bick, MD
Assistant Professor of Anesthesiology

Jane Brock, DO
Associate Professor of Anesthesiology

Amr Waly, MD
Assistant Professor of Anesthesiology

Jason Kennedy, MD
Assistant Professor of Anesthesiology
Medical Director, Perfusion Services and ECMO