The Vanderbilt University Medical Center 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
- Off-pump coronary artery bypass
- Valve surgery
- Minimally invasive surgery
- Aortic surgery
- Thoracic surgery
- Airway reconstruction and management
- Heart and lung transplants
- Ventricular assist device placement
- Hybrid operating room procedures

Our program is ACGME-accredited and we have three one-year positions available annually. 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 fellow candidates interested in a more intensive research experience, we also offer a research track in Cardiothoracic Anesthesia and Clinical Pharmacology Fellowship Track. This involves a two-year commitment. The first year consists of clinical training in cardiothoracic anesthesia. The second year is dedicated to research under the mentorship of a faculty member of the Clinical Pharmacology Division, the largest and one of the most successful divisions of its kind in the world. During this advanced research program, fellows would 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 course-work in statistical analysis and clinical trial design. Trainees with interest in this academic path may also apply after their 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)**

Our program offers 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, and 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 the fellowship.

**TEE Rotation (1 month)**

In addition to the TEE exposure throughout the year while performing cardiac cases, fellows will have two 2 week rotations on TEE, where they will have structured and focused TEE training on advanced echocardiography skills. 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.

**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 including VATS, thoracotomy, esophagectomy, lung volume reduction surgery, lung transplantation, airways reconstruction and pectus repair. In addition, fellows will spend time in the bronchoscopy suite performing bronchoscopies, BALS, and lung biopsy procedures under the guidance of our interventional pulmonologist.

**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)**

Fellows can choose either a TTE rotation, under the supervision of adult echocardiography cardiologists or heart failure elective, under the supervision of heart failure specialists. During the TTE rotation, fellows continue to develop skills in performance and interpretation of transthoracic echocardiography. They are required to attend all cardiology conferences during that month.
The fellowship has several components that contribute to the academic enrichment of fellows:

**Weekly Cardiothoracic 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 pulmnologists, 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.
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Chief, Division of Cardiothoracic Anesthesiology
Associate Professor of Anesthesiology
and Clinical Pharmacology

Bantayehu Sileshi, MD
Program Director
Cardiothoracic Anesthesiology Fellowship Program
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