Cardiothoracic Surgery

Chair
- Peter J. Gruber

Faculty: http://www.medicine.uiowa.edu/dept_primary_apr.aspx?appointment=Cardiothoracic%20Surgery
Web site: http://www.medicine.uiowa.edu/ctsurgery/

The University of Iowa cardiothoracic surgery program is the third oldest program of its kind in the United States. Since its establishment in 1948 as the Division of Cardiothoracic Surgery, the program has advanced from providing operative interventions for patients with diseases of the chest to performing a broad range of the most current and innovative surgical procedures.

The Department of Cardiothoracic Surgery's facilities are located at University of Iowa Hospitals and Clinics. Each year cardiothoracic surgeons at the hospitals perform more than 500 adult and pediatric heart surgeries, including coronary bypasses, transplants, and placement of mechanical cardiac assist devices; minimally invasive procedures such as mitral valve replacement and epicardial lead placement; and more than 600 general thoracic surgeries with emphasis on esophageal and lung diseases. Preparations are under way for providing coronary artery bypass grafting using robotics.

M.D. Student Training

The department trains fourth-year M.D. students in two courses, CTS:8401 Subinternship in Cardiothoracic Surgery and CTS:8497 Research in Cardiothoracic Surgery.

Residency Program

Iowa's cardiothoracic surgery residency program was established in 1948 and is fully accredited by the Accreditation Council for Graduate Medical Education. It is the only cardiothoracic surgery training program in Iowa. Two residents are accepted into the two-year program each year.

Postbaccalaureate Training

The department plays a primary instructional role in University of Iowa Hospitals and Clinics' 20-month postbaccalaureate Perfusion Technology Program; see the department's perfusion technology courses listed under "Courses" later in this section. For more information about the Perfusion Technology Program, contact the Department of Cardiothoracic Surgery or visit the Perfusion Technology Program web site.

Research

University of Iowa cardiothoracic surgeons are leaders in clinical research, particularly in oncologic surgery, diseases of the esophagus, artificial organs, pediatric cardiac surgery, and transplantation. Research also is under way in the sequence of mutations and in localization of genes predisposed to cancer.

Facilities

The Department of Cardiothoracic Surgery has specialty laboratories in gastric motility, analytical chemistry, transplantation, tissue culture, surgical bacteriology, shock, and cardiac bypass. These facilities permit study of experimental procedures such as heart valve replacement in large animals and heterotopic heart transplantation in mice and rats.

The laboratories also are used for supervised teaching exercises in surgical technique for medical students and junior residents, and for refinement of technique for senior residents and faculty members.

Courses

Cardiothoracic Surgery

CTS:8401 Subinternship in Cardiothoracic Surgery arr.
Participation in diagnosis, preoperative, operative, and postoperative care of thoracic and cardiac patients.

CTS:8497 Research in Cardiothoracic Surgery arr.
Participation in diagnosis, preoperative, operative, and postoperative care of thoracic and cardiac patients.

Perfusion

PERF:4161 Instrumentation in Perfusion Technology 3 s.h.
Electrical circuitry, filters, pressure transducers, thermistors, cardiac output computers, fluid dynamics, intra-aortic balloon pumps, blood gas analyzers. Requirements: Perfusion Technology Program enrollment.

PERF:4162 Pathophysiology of Perfusion Technology 5 s.h.
Hemostasis, acid base physiology, gas transfer, heart anatomy, heart embryology, congenital cardiac defects. Requirements: Perfusion Technology Program enrollment.

PERF:4163 Clinical Experience I 2 s.h.
Perfusion in operating room: patient workup, observation, and reporting on extracorporeal setup, surgical procedure. Requirements: Perfusion Technology Program enrollment.

PERF:4164 Clinical Experience II 3 s.h.
Continuation of PERF:4163; setup of extracorporeal circuit; ancillary duties of perfusionist. Prerequisites: PATH:8133 and PERF:4161 and PERF:4162 and PERF:4163.

PERF:4165 Clinical Experience III 12 s.h.
Continuation of PERF:4164; management of cardiopulmonary bypass system. Prerequisites: PCOL:4130 and PERF:4164 and PERF:4170 and PERF:4171.

PERF:4166 Clinical Experience IV 12 s.h.
Continuation of PERF:4165; emphasis on supply maintenance, perfusion department management. Prerequisites: PERF:4165.

PERF:4167 Perfusion Seminar 1 s.h.
Ethics in perfusion. Requirements: Perfusion Technology Program enrollment.
**PERF:4168 Research in Perfusion**  
1 s.h.  
From topic selection to manuscript. Requirements: Perfusion Technology Program enrollment.

**PERF:4169 Clinical Experience V**  
12 s.h.  
Continuation of PERF:4166. Prerequisites: PERF:4166.

**PERF:4170 Principle and Practice of Perfusion Technology**  
6 s.h.  
Hypothermia, hemodilution, left heart bypass, dialysis, ultrafiltration, membrane and bubbler oxygenation. Prerequisites: PATH:8133 and PERF:4161 and PERF:4162 and PERF:4163.

**PERF:4171 Devices in Perfusion Technology**  
3 s.h.  