

CARDIOVASCULAR PERFUSION PROGRAM

Program Contact: Robert Cottrell (robert.cottrell@quinnipiac.edu)
203-582-8676

The perfusionist provides consultation to the physician in the selection of the appropriate equipment and techniques to be used during extracorporeal circulation. During cardiopulmonary bypass, the perfusionist provides life support to the patient while the heart and lungs are stopped to enable the surgeon to operate. Perfusionists administer blood products, anesthetic agents and drugs through the extracorporeal circuit. The perfusionist is responsible for the induction of hypothermia and other duties, when required. Perfusionists have a role in the implementation and operation of ventricular assist devices designed to provide long-term circulatory support for the failing heart.

You will learn to operate the equipment perfusionists use to support or replace a patient's heart and lung functions during cardiac surgery and to monitor vital cardiopulmonary signs to keep the patient stable. You'll also learn to administer the appropriate medications and anesthesia during surgery.

Our program is one of only eight in the nation that offers graduate-level training in this profession. As cardiovascular disease becomes increasingly common, the employment opportunities in this field continue to expand, and we prepare you to enter the workforce with a competitive advantage.

A strong sense of responsibility and the capacity to work effectively with other professionals in a high-pressure environment are essential qualities of successful cardiovascular perfusionists. You'll acquire both during group activities and clinical work. Plus, you'll learn in our technologically sophisticated Medicine, Nursing and Health Sciences building.

This program is fully accredited by the Accreditation Committee—Perfusion Education (10940 S Parker Rd. Suite 455, Parker, Colorado 80134) office@ac-pe.org under the Commission on Accreditation of Allied Health Education Programs. caahep.org (<https://www.caahep.org>)

MHS in Cardiovascular Perfusion Curriculum

Course	Title	Credits
First Year		
Fall Semester		
College-based didactic coursework:		
PR 500	Theoretical Foundations of Cardiovascular Perfusion	2
PR 504	Pathophysiology for Cardiovascular Perfu	4
PR 502	Systems Anatomy and Physiology I	3
PR 508	Extracorporeal Circuitry and Laboratory I	1
PR 516	Physiologic Monitoring	4
Credits		14
Spring Semester		
PR 503	Systems Anatomy and Physiology II	3
PR 506	Pharmacologic Intervention in Cardiovascular Perfusion	4

PR 509	Extracorporeal Circuitry and Lab II	1
PR 510	Surgical Techniques	2
PR 526	Mechanical Circulatory Support	4
PR 528	Congenital Defects and Clinical Practice	2
Credits		16

Second Year

Summer Semester

Hospital-based clinical training session:

PR 600	Clinical Practicum I	5
PR 520	Research Methods in Cardiovascular Perfusion	2
Credits		7

Fall Semester

PR 602	Clinical Practicum II	5
PR 522	Research Methods in CV Perfusion II	2
Credits		7

Spring Semester

PR 604	Clinical Practicum III	5
PR 514	Special Topics in Cardiovascular Perfusion	2
Credits		7

Total Credits 51

During the first two didactic semesters, students are introduced to the operating room environment by weekly orientation sessions in one of several affiliated hospitals. Students are required to join the American Society of Extracorporeal Technology and maintain student membership for the duration of the program.

Failure to maintain a 3.00 minimum GPA in all didactic and clinical semesters will result in automatic dismissal from the program. Students must also successfully complete all clinical practicums to graduate from the program.

Student Learning Outcomes

Upon completion of the cardiovascular perfusion program, students will demonstrate the following competencies:

- Foundational knowledge:** Demonstrate an advanced understanding of the basic sciences as they pertain to the treatment of disease states in cardiopulmonary pathology.
- Critical decision-making:** Acquire the concepts and skills necessary to effectively apply technology, equipment and techniques to achieve extracorporeal life support of critically ill patients.
- Professional skills:** Master the skillful application of mechanical cardiac assist devices in patients with failing heart and lungs of all age groups: neonatal, pediatric and adult.
- Interprofessional education:** Collaborate with colleagues and other healthcare professionals in providing quality patient care.
- Professionalism and effective scientist:** Apply research methods to constantly assess and improve practices, with the goal of enhancing patient safety and outcomes.

Mission Statement

The mission of the Master of Health Science in Cardiovascular Perfusion program is to:

- Provide excellent education in both the didactic and clinical learning environment;

2. Provide research opportunities that contribute to the clinical and scientific knowledge base in the field of extracorporeal circulation; and
3. Foster a sense of commitment to continuing education and professional development.

This mission is consistent with the mission of Quinnipiac University, which is to provide a supportive and stimulating environment for the intellectual and personal growth of undergraduate, graduate and continuing education students.

Admission

Interested candidates must have earned a bachelor's degree from a regionally accredited institution in the U.S. or Canada. Scores for the tests of English as a Foreign Language (TOEFL) or International English Language Testing System (IELTS) are required if the applicant is from a non-English speaking country. Applicants must have the following course prerequisites:

- two semesters of general biology (with labs)
- two semesters of anatomy and physiology (with labs)
- two semesters of general chemistry (with labs)
- one semester of biochemistry or cell physiology
- one semester of physics (with lab)
- one semester of microbiology (with lab)
- one semester (2 or 3 credits) of medical terminology
- one semester of college algebra, calculus or biostatistics
- certification in Basic Life Support from the American Heart Association

Prerequisites should be completed within 10 years of application. Applicants to the program should have a strong background in the health sciences and be able to work for long periods under intense conditions. Individuals already working in the fields of nursing, respiratory care, physician assistant, physical therapy, paramedical and biomedical engineering are ideally suited for admission into the program.

Applicants must have a minimum undergraduate cumulative GPA of 3.00 and at least two years of experience working in a healthcare field involving direct patient care.

Applications can be obtained from the Office of Graduate Admissions. Applicants should refer to the graduate admission requirements (<http://catalog.qu.edu/graduate-studies/#admissionstext>) found in this catalog.

A detailed autobiography of personal, professional and educational achievements, and three letters of recommendation must accompany the student's application.

All applications, transcripts, reference letters and supporting materials must be submitted to the Office of Graduate Admissions.

Admission to the program is competitive. Personal interviews, required for admission, are offered to the most qualified candidates.

The curriculum for the professional courses in the program are subject to modification as deemed necessary to maintain a high-quality educational experience and keep current with best practices in the profession.

Background Check and Drug Screen

To ensure their safety and maintain high-quality care of patients, clinical affiliates of the university require students to have a criminal background

check and drug screen. All students entering the Quinnipiac University Cardiovascular Perfusion program are required to undergo a criminal background check and drug screen (through the university vendor) prior to beginning classes and prior to beginning the clinical year. This is a mandatory component of the program. In addition, Cardiovascular Perfusion students may be required to undergo a criminal background recheck and/or a drug screen prior to any of their clinical rotations. The results are made available to the student through their own personal and secure online portal. Whenever a Quinnipiac University Cardiovascular Perfusion student may need proof of criminal background check for clinical rotations and/or to be eligible to sit for their certification exam, the student will release the information directly from their personal portal to the clinical site. The cost of the criminal background check and any re-checks and/or drug screens is the responsibility of each individual student.

Additional Program Costs

As a clinical education program, the Cardiovascular Perfusion program requires some expenses that go beyond standard university tuition and fees:

1. **Clinical/Fieldwork Education Travel** (gas, parking, public transportation, housing). **Costs - variable**
2. **Immunizations:** Consistent with the School of Health Sciences policy, all students must have a full battery of immunizations and in some cases, titer affirmation of immunity for common diseases including but not limited to: MMR, HepB, varicella, polio, TDAP, TB and influenza. These must be documented prior to the start of clinical experiences during the sophomore year and must be maintained through the duration of the program. **Costs - variable (please check with your insurance carrier)**
3. **Background Check:** All students must undergo an initial background check prior to the start of any clinical/fieldwork experience.
 - a. Initial background check cost is \$63 for all domestic addresses for the past 7 years or \$158 for students who have resided in New York state in the last 7 years due to NY state surcharge.
 - b. Students will be required to do an annual recheck one year after the initial background recheck. **Cost - \$32 per annual recheck**
4. **Drug Screening:** Students are required to complete an annual 14-panel drug screening test. **Cost - \$42.25**
5. **Liability Insurance:** All students have liability insurance coverage through the university, free of charge, while performing required clinical activity. Students may choose to purchase additional coverage at their own expense.
6. **EXXAT and APPROVE:** Students enrolled in professional programs must enroll in EXXAT and APPROVE.
 - a. **EXXAT** is the clinical tracking and assessment program used by the School of Health Sciences. **Cost - one-time payment of \$150 per student for the current major (students are responsible for this cost).**
 - b. **APPROVE** is the program within EXXAT that tracks all student health and safety records, provides documentation to prospective clinical sites, and provides notification of impending expiration dates. **Cost - \$35 for first year, \$10 per year thereafter.**
7. **Professional Association Membership:** Students are required to join and maintain membership in both the American Academy of Cardiovascular Perfusion and the American Society of Extracorporeal Technology. **Cost - \$25 annually for AACV; \$15 one-time fee for AmSECT.**

The Cardiovascular Perfusion program is accredited by:

Commission on Accreditation of Allied Health Education Programs
9355 - 113th St. N, #7709
Seminole, FL 33775

Phone: 727-210-2350

Website: [caahep.org](http://www.caahep.org) (<http://www.caahep.org>)