

# PATHOLOGISTS' ASSISTANT PROGRAM

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

This program, leading to a Master of Health Science, trains qualified candidates to be pathologists' assistants. Upon successful completion of their training, graduates are employed by pathologists in hospital laboratories, private laboratories and medical research centers. Currently, there is a nationwide demand for pathologists' assistants. This demand results from the tremendous explosion in medical information and technology, the demand for new and more sophisticated pathological determinations and a national decline in the number of medical residents in pathology.

The program is a cooperative educational endeavor involving the following:

- Quinnipiac University;
- Veterans Affairs Medical Center, West Haven, Connecticut;
- Yale-New Haven Hospital, New Haven, Connecticut;
- Yale-New Haven Hospital Saint Raphael Campus, New Haven, Connecticut;
- Yale-New Haven Hospital Bridgeport Campus, Bridgeport, Connecticut;
- Norwalk Community Hospital, Norwalk, Connecticut;
- St. Vincent's Medical Center, Bridgeport, Connecticut;
- St. Francis Hospital, Hartford, Connecticut;
- CT State Medical Examiner Office, Farmington, Connecticut;
- Yale University School of Medicine, New Haven, Connecticut;
- Hartford Hospital, Hartford, Connecticut
- Baylor University, Houston, Texas;
- Massachusetts General Hospital, Boston, Massachusetts;
- Mayo Clinic, Rochester, Minnesota;
- UCLA Medical Center, Los Angeles, California;
- Crouse Hospital, Syracuse, New York;
- Brigham and Women's Hospital, Boston, Massachusetts; and
- Memorial Sloan Kettering Cancer Center, New York, New York.

The program consists of both classroom and clinical training. Quinnipiac University is a charter member of the Association of Pathologists' Assistant Training Programs, and its program meets criteria established by the American Association of Pathologists' Assistants (AAPA). This program is fully accredited by The National Accrediting Agency for Clinical Laboratory Sciences (NAACLS).

## MHS Pathologists' Assistant Curriculum

Course	Title	Credits
<b>First Year</b>		
<b>Summer Semester</b>		
College-based didactic course work		
PA 502	Medical Terminology: Advanced	2
PA 511	Human Microscopic Anatomy	4
PA 512 & 512L	Human Anatomy and Human Anatomy Lab	4

PA 515	Human Physiology	4
PA 526	Biomedical Photography	4
Credits		18

### Fall Semester

BMS 517	Human Embryology	3
BMS 532 & 532L	Histology and Histology Lab	4
PA 513	Basic Human Pathology I	3
PA 518	Laboratory Management	3
PA 535	Disease Mechanisms	4
Credits		17

### Spring Semester

BMS 535 & 535L	Histochemistry and Histochemistry Lab	3
BMS 572	Pathogenic Microbiology	4
PA 514	Basic Human Pathology II	3
PA 516	Clinical Pathology	4
PA 517	Applied Anatomic Pathology	4
Credits		18

### Second Year

#### Summer Semester

12-month hospital-based clinical training session		
PA 520	Autopsy Pathology I	6
PA 523	Surgical Pathology I	6
Credits		12

#### Fall Semester

PA 521	Autopsy Pathology II	6
PA 524	Surgical Pathology II	6
Credits		12

#### Spring Semester

PA 522	Autopsy Pathology III	6
PA 525	Surgical Pathology III	6
Credits		12
Total Credits		89

In addition to the college-based classroom course work taken during the first year, the student is introduced and oriented to the pathologists' assistant profession by weekly attendance at clinical and gross conferences during their second year. This facilitates integration of the classroom course work with intensive clinical training during the second year.

To continue in the pathologists' assistant program, students must maintain the minimum academic and clinical requirements for the program. Students must achieve the following requirements:

1. Maintain an overall GPA of at least a 3.0 following the first didactic year.
2. Maintain an overall GPA of at least a 3.0 during each semester of the clinical year.
3. Successfully complete all clinical rotations.

Failure to meet any of these requirements may result in probation or dismissal from the program.

## Mission Statement

The mission of Quinnipiac University's Pathologists' Assistant program is to prepare students with comprehensive knowledge in the practice and operation of an anatomic pathology laboratory. The program aims to maximize the students' technical proficiency and creative thinking by successfully integrating didactic biomedical knowledge with hospital-based training. The culmination of this type of training assures that the graduates of the program are able to carry out a myriad of functions critical in becoming a successful pathologists' assistant.

## Program Goals

Through their graduate studies, pathologists' assistant students are able to:

1. Develop a comprehensive knowledge of scientific facts, principles and data that contribute to the practice and operation of a pathology laboratory.
2. Understand performance-based education to assist the anatomic pathologist in the hospital or in other medical environments.
3. Compare the structure and physiological functions of normal organs, tissues and cells to those of abnormal ones.
4. Understand the characteristics of stains and the staining properties of normal and abnormal cells and their cellular constituents.
5. Assist the pathologist who is determining the pathogenesis of disease by:
  - a. Properly collecting and handling specimens and keeping appropriate records using biomedical/photography techniques.
  - b. Submitting tissues and selecting the necessary and appropriate techniques for processing and proper staining procedures.
  - c. Reviewing histological slides for technical quality and collecting clinical information and laboratory data for final diagnosis by the pathologist.
6. Perform a postmortem examination and relate the clinical history to the results of the dissection.
7. Recognize and record anatomic and morphologic changes in relation to clinical manifestations and laboratory data for the pathologist's interpretation.
8. Understand the operation and services provided by the anatomic pathology laboratories and develop skills for the operation and management of the autopsy suite and surgical cutting room.
9. Interact with the pathologist by integrating didactic biomedical knowledge with practical hospital-based training.
10. Through management training and experience, supervise and coordinate the work of other laboratory professionals.

## Admission

Students are admitted to the Pathologists' Assistant program on a rolling basis. Applications are accepted until September 1. Interviews are conducted during the summer, spring and fall semesters. The six-semester class cycle begins with summer semester I.

The most competitive applicants will ideally possess a minimum undergraduate cumulative GPA of 3.0. Interested candidates must have a bachelor's degree from a regionally accredited institution in the United States or Canada and must possess, at a minimum, the following courses to be eligible to apply for admission:

- two semesters of basic biology (or equivalent)

- two semesters of general chemistry
- two semesters of anatomy and physiology (or A&P I and A&P II)
- one semester of organic chemistry or biochemistry (lab preferred)
- one semester of mathematics
- four semester courses in biology or chemistry, particularly courses in microbiology, physiology, anatomy and biochemistry.

All prerequisites must be completed at a regionally accredited institution in the United States or Canada. We are not able to accept prerequisite courses that have been completed online.

Scores from the Graduate Record Examination are not required.

Applications may be obtained from the Office of Graduate Admissions. Applicants should refer to the Graduate Admission Requirements (<https://na01.safelinks.protection.outlook.com/?url=https%3A%2F%2Fnextcatalog.qu.edu%2Fgraduate-studies%2F%23admissionstext&data=02%7C01%7C%77Cbff416286d4c45c3641408d5bb350f6a%7C0940985869fb4de9987990db22b52eaf%7C0%7C0%7C636620758909705207&sdata=2IAwvNPLlyg%2FsHBrlYUJfRust%2BgLruj4mjo7ugkFjYM%3D&reserved=0>) found in this Catalog. A detailed resume of personal, professional and educational achievements as well as two letters of reference, official transcripts and other supporting materials including copies of relevant professional licenses and/or certifications must be submitted with a student's application directly to the Office of Graduate Admissions.

Admission to the program is competitive. Personal interviews, required for admission, are offered to the most qualified individuals. A personal laptop computer is required.

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 Pathologists' Assistant program are required to undergo a criminal background check and drug screen (through the university vendor) prior to beginning the didactic portion of the first year. This is a mandatory component of the program. In addition, pathologists' assistant students may be required to undergo a criminal background re-check 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 Pathologists' Assistant student may need proof of criminal background check for clinical rotations and/or to be eligible to sit for their ASCP 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.

## Accreditation

The program consists of both didactic classroom and clinical training. Quinnipiac University is in compliance and fully accredited by the National Accrediting Agency for Clinical Laboratory Sciences (NAACLS).

The Pathologists' Assistant program is a member of the American Society of Clinical Laboratories (ASCP) and is a charter member of the

Association of Pathologists' Assistant Training Programs established by the American Association of Pathologists' Assistants (AAPA).

The National Accrediting Agency for Clinical Laboratory Sciences (NAACLS)  
5600 North River Road, Suite 720  
Rosemont, IL 60018  
Phone: 773-714-8880  
Fax 773-714-8886  
naacls.org (<http://naacls.org>)

**PA 502. Medical Terminology: Advanced. 2 Credits.**

This course is intended for students enrolled in the pathologists' assistant program. Students study the etymology of medical and surgical terms with an emphasis on the principles of word analysis, construction and evolution. The course includes a review of anatomy and abstraction of current published case studies.

**Offered:** Every year, Summer

**PA 511. Human Microscopic Anatomy. 4 Credits.**

This course is intended for students enrolled in the pathologists' assistant program. Human anatomy at the light microscopic level is explored through a general and systemic approach using a lecture-lab combination. Students are introduced to primary tissues and their cellular components followed by system (organ) investigation morphologically that uses the light microscope emphasizing pattern recognition as the mechanism employed for tissue identification.

**Offered:** Every year, Fall

**PA 512. Human Anatomy. 4 Credits.**

This course is intended for students enrolled in the pathologists' assistant program. This course covers dissection of the human body with particular attention to the morphological relationships of individual organ systems. Emphasis is placed on internal anatomy as a major facet of this instruction that is designed for eventual autopsy evisceration and subsequent dissection.

**Offered:** Every year, Summer

**PA 512L. Human Anatomy Lab. 0 Credits.**

Lab to accompany PA 512.

**Offered:** Every year, Summer

**PA 513. Basic Human Pathology I. 3 Credits.**

This course is intended for students enrolled in the pathologists' assistant program. This series of lectures utilizes slides of gross and microscopic pathology starting with a general introduction to pathology covering inflammation and neoplasia, and then progressing to pathology by the systems such as cardiovascular, endocrine and gastrointestinal systems.

**Offered:** Every year, Fall

**PA 514. Basic Human Pathology II. 3 Credits.**

This course is intended for students enrolled in the pathologists' assistant program. This series of lectures utilizes slides of gross and microscopic pathology of specific areas of disease in a systemic approach including such specialty areas as dermatologic, perinatal, pediatric and forensic pathology as well as the genitourinary, musculoskeletal, respiratory and neuropathology systems.

**Offered:** Every year, Spring

**PA 515. Human Physiology. 4 Credits.**

This course is intended for students enrolled in the pathologists' assistant program. Various aspects of human physiology are examined, with emphasis on the physiologic and biochemical function. The fundamental functional principles for general and systematic organ systems are covered.

**Offered:** Every year, Summer

**PA 516. Clinical Pathology. 4 Credits.**

This course is intended for students enrolled in the pathologists' assistant program. Clinical relationships to disease are examined, highlighting such topics as hematology, chemistry, toxicology, serology, urinalysis, blood banking and cytology. Basic techniques and theoretical applications from a case history medical approach are emphasized.

**Offered:** Every year, Spring

**PA 517. Applied Anatomic Pathology. 4 Credits.**

This course is intended for students enrolled in the pathologists' assistant program. Basic principles of clinical history taking, physical examinations and general medical terms and symbols are studied. Emphasis is on autopsy and surgical techniques of evisceration and organ system dissection through lectures, films, slides and practical exposure.

**Offered:** Every year, Spring

**PA 518. Laboratory Management. 3 Credits.**

This course is intended for students enrolled in the pathologists' assistant program. The organization and function of an anatomic pathology laboratory is investigated to include ordering supplies, money management, computerization, laboratory safety, organization compliance (JACHO, CAP, OSHA) and quality assurance.

**Offered:** Every year, Fall

**PA 520. Autopsy Pathology I. 6 Credits.**

This course is only for second-year pathologists' assistant students. This three-semester rotational, practical course on the techniques of autopsy dissection includes summarization of clinical histories and gross autopsy findings. The 12-month rotation involves several different hospitals in both community and university settings.

**Offered:** Every year, Summer

**PA 521. Autopsy Pathology II. 6 Credits.**

This course is only for second-year pathologists' assistant students. This three-semester rotational, practical course on the techniques of autopsy dissection includes summarization of clinical histories and gross autopsy findings. The 12-month rotation involves several different hospitals in both community and university settings.

**Offered:** Every year, Fall

**PA 522. Autopsy Pathology III. 6 Credits.**

This course is only for second-year pathologists' assistant students. This three-semester rotational, practical course on the techniques of autopsy dissection includes summarization of clinical histories and gross autopsy findings. The 12-month rotation involves several different hospitals in both community and university settings.

**Offered:** Every year, Spring

**PA 523. Surgical Pathology I. 6 Credits.**

This course is only for second-year pathologists' assistant students. This is a three-semester inclusive practical course in methods of gross tissue description, dissection and preparation, fixation and storage of surgical specimens for light, immuno-fluorescent, immunochemical, frozen and electron microscopy. The 12-month rotation involves several different hospitals in both community and university settings.

**Offered:** Every year, Summer

**PA 524. Surgical Pathology II.****6 Credits.**

This course is only for second-year pathologists' assistant students. This is a three-semester inclusive practical course in methods of gross tissue description, dissection and preparation, fixation and storage of surgical specimens for light, immuno-fluorescent, immunochemical, frozen and electron microscopy. The 12-month rotation involves several different hospitals in both community and university settings.

**Offered:** Every year, Fall**PA 525. Surgical Pathology III.****6 Credits.**

This course is only for second-year pathologists' assistant students. This three-semester inclusive practical course covers methods of gross tissue description, dissection and preparation, fixation and storage of surgical specimens for light, immuno-fluorescent, immunochemical, frozen and electron microscopy. The 12-month rotation involves several different hospitals in both community and university settings.

**Offered:** Every year, Spring**PA 526. Biomedical Photography.****4 Credits.**

This course is only for second-year pathologists' assistant students. This is a team-taught course designed to give the pathologists' assistant student a basic background leading to practical application of photographic techniques used in the anatomic pathology laboratory. It also includes an introduction to the principles of imaging radiography. The course is divided into three parts over two summer-school semesters: basic photographic principles and technique; the theoretical and practical aspects of photomacrography and photomicrography as they are applied to anatomic specimens and imaging radiology.

**Offered:** Every year, Summer**PA 535. Disease Mechanisms.****4 Credits.**

This course is only for second-year pathologists' assistant students. This course investigates how the normal physiology of the human body is altered in disease states. The mechanisms by which diseases become established, cause damage and alter organ system function are established. Natural body responses and therapeutic measures are examined for their mode of action, side effects and after affects.

**Offered:** Every year, Fall**BMS 517. Human Embryology.****3 Credits.**

This course considers the fundamental processes and mechanisms that characterize the embryological development of the human organism. Knowledge of the developing human serves as a basis for understanding normal relationships of body structures and causes of congenital malformation. Emphasis is on clinical as well as classical embryology.

**Offered:** Every year, Fall**BMS 332. Histology.****4 Credits.**

This course is intended for senior ELMPA students. It entails the microscopic and ultra-microscopic study of the structure of cells, tissues and organs, and emphasizes their functional mechanisms. Students learn how to prepare and stain normal tissue slides for histological and histochemical study, and how to examine these prepared slides.

**Prerequisites:** Take BIO 211-212 CHE 210-211.**Offered:** Every year, Spring**BMS 532. Histology.****4 Credits.**

This course is intended for pathologists' assistant students with a background in basic descriptive microscopic anatomy. The lecture material includes the microscopic and ultramicroscopic structure of cells, tissues and organs with emphasis on biochemical composition and distribution as related to functional mechanisms. The laboratory work involves the preparation of microscope slides of normal vertebrate tissues, including those of humans, for histological and histochemical studies as the student may expect to encounter in the clinical laboratory.

**Offered:** Every year, Summer**BMS 532L. Histology Lab.****0 Credits.**

Lab to accompany BMS 532. (3 lab hrs.)

**Offered:** Every year, Fall and Summer**BMS 535. Histochemistry.****3 Credits.**

This course is intended for pathologists' assistant students with a background in basic descriptive microscopic anatomy. The lecture material includes the microscopic and ultramicroscopic structure of cells, tissues and organs with emphasis on biochemical composition and distribution as related to functional mechanisms. The lab work involves the preparation of microscope slides of normal vertebrate tissues, including those of humans for histological and histochemical studies as the student may expect to encounter in the clinical laboratory.

**Offered:** Every year, Spring**BMS 535L. Histochemistry Lab.****0 Credits.**

This lab accompanies BMS 535.

**Offered:** Every year, Spring**BMS 572. Pathogenic Microbiology.****4 Credits.**

This graduate microbiology course involves the study of medically important microbes, with a particular emphasis on the pathology associated with human infection. Students examine the underlying principles of microbial pathogenesis, including elements of structural biology, epidemiology, immunology and pathology. They also survey microbial organisms that plague mankind today.

**Offered:** Every year, All