

PATHOLOGISTS' ASSISTANT PROGRAM

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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, North Haven Campus, North Haven, Connecticut
- Hartford HealthCare - Hartford Hospital, Hartford, Connecticut
- Hartford HealthCare - St. Vincent's Hospital, Bridgeport, Connecticut
- Hartford HealthCare - The Hospital of Central Connecticut, New Britain, Connecticut
- UC Davis Health, Sacramento, California
- Children's Hospital of Philadelphia, Philadelphia, PA
- Health Network Laboratories, Allentown, Pennsylvania
- Harris County Medical Examiner's Office, Houston, TX
- Northwell Health: North Shore University/Long Island Jewish Medical, Lake Success, New York
- CT 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
- Yale New Haven Hospital Greenwich Campus, Greenwich, Connecticut
- Yale University School of Medicine, New Haven, Connecticut
- Montefiore Hospital, Bronx, NY
- Nuvance Health, Norwalk Hospital, Norwalk, Connecticut
- Nuvance Health, Danbury Hospital, Danbury, Connecticut
- Nuvance - Vassar Brothers Medical Center, Poughkeepsie, New York
- CT State Medical Examiner Office, Farmington, Connecticut
- Stamford Hospital, Stamford, Connecticut
- UCONN Health Hospital, Farmington, Connecticut
- Massachusetts General Hospital, Boston, Massachusetts
- UMass Memorial Health Alliance Clinton, Leominster, Massachusetts
- UMass Memorial Medical Center, Worcester, Massachusetts
- Boston Children's Hospital, Boston, Massachusetts
- Melrose/Wakefield Healthcare, Melrose, Massachusetts
- Saint Vincent Hospital, Worcester, Massachusetts
- Mayo Clinic, Rochester, Minnesota
- Mayo Clinic, Jacksonville, Florida
- Los Angeles County Medical Examiner-Coroner, Los Angeles, California

- Crouse Hospital, Syracuse, New York
- Denver Health, Denver, Colorado
- Memorial Sloan Kettering Cancer Center, New York, New York
- NYC Health: Harlem Hospital, New York, New York
- NYC Health: Bellevue Hospital, New York, New York
- AdventHealth Ocala, Florida
- Dartmouth-Hitchcock Medical Center, New Hampshire
- Garnet Health Medical Center, Middletown, New York
- St. George Regional Hospital, St. George, Utah
- NYU Langone Health—Long Island, Mineola, New York
- NYU Langone Health—Tisch Hospital, New York

The program consists of both on-ground didactic classroom training at Quinnipiac University and clinical training with affiliated clinical partners. This program is fully accredited by the National Accrediting Agency for Clinical Laboratory Sciences (NAACLS). Quinnipiac University is a charter member of the American Association of Pathologists' Assistants (AAPA), supporting member of the Association of Pathologists' Assistant Training Programs (APATP).

MHS Pathologists' Assistant Curriculum

Course	Title	Credits
First Year		
Summer Semester		
College-based didactic coursework		
BMS 532	Histology and Lab	4
PA 502	Medical Terminology: Advanced	2
PA 512 & 512L	Human Anatomy and Human Anatomy Lab	4
PA 515	Human Physiology	4
PA 505	Forensic Pathology	2
PA 506	Forensic Imaging	2
Credits		18
Fall Semester		
BMS 517	Human Embryology	3
PA 511	Human Microscopic Anatomy	4
PA 513	Basic Human Pathology I	3
PA 535	Disease Mechanisms	4
BMS 504	Quality and Safety in Healthcare Organization	3
Credits		17
Spring Semester		
BMS 535	Histochemistry and 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 coursework 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 coursework 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 3.00 following the first didactic year.
2. Maintain an overall GPA of at least a 3.00 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.

Student Learning Outcomes

Upon completion of the Pathologists' Assistant program, students will demonstrate the following competencies:

1. **Accountability:** Possess the emotional health and stability to deal with death, dead bodies and body parts and exercise good judgment in a professional and caring way.
2. **Organizational Hierarchy:** 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.
3. **Teamwork:** Possess sufficient interpersonal skills to interact with both professional and hospital staff as well as university personnel in a diplomatic and team atmosphere approach.
4. **Problem Solving:** Demonstrate comprehensive knowledge of scientific facts, principles and data that contribute to the practice and operation of a pathology laboratory.
5. **Clinical Reasoning:** Compare the structure and physiological functions of normal organs, tissues and cells to those of abnormal ones.
6. **Inclusivity:** Display core values of mutual respect, academic excellence, open inquiry, free expression and respect for diversity.

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 will be able to:

1. Demonstrate problem-solving abilities and have the intellectual ability to learn, integrate, analyze and synthesize data.
2. Create sufficient interpersonal skills to interact with both professional and hospital staff as well as university personnel in a diplomatic and team atmosphere approach.
3. Identify and express good personal grooming habits including personal hygiene and selection of appropriate apparel to be in accordance with the stated university and hospital policies.
4. Demonstrate comprehensive knowledge of scientific facts, principles and data that contribute to the practice and operation of a pathology laboratory.
5. Practice performance-based education in order to assist the anatomic pathologist in the hospital or in other medical environments.
6. Evaluate the structure and physiological functions of normal organs, tissues and cells compared to those of abnormal ones.
7. Identify the characteristics of stains and the staining properties of normal and abnormal cells and their cellular constituents.
8. Assist the pathologist who is determining the pathogenesis of disease by:
 - Properly collecting and handling specimens and keeping appropriate records using biomedical/photography techniques.
 - Submitting tissues and selecting the necessary and appropriate techniques for processing and proper staining procedures.
 - Practicing accurate gross descriptions and selective sectioning of surgical specimens following established protocols and procedures.
 - Evaluating histological slides for technical quality and collecting clinical information and laboratory data for final diagnosis by the pathologist.
 - Performing a postmortem examination and relating the clinical history to the results of the dissection.
9. Identify and record anatomic and morphologic changes in relation to clinical manifestations and laboratory data for the pathologist's interpretation.
10. 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.
11. Interact with the pathologist by integrating didactic biomedical knowledge with practical hospital-based training.
12. Integrate management training and experience to supervise and coordinate the work of other laboratory professionals.
13. Recognize similarities and differences that one may encounter with coworkers, promoting a sense of inclusion in the workplace; embrace diversity practices that build a more improved healthcare team.

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 3.00. Interested candidates must hold 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)
- one semester of microbiology
- two semesters of anatomy and physiology
- two semesters of general chemistry
- 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. Due to COVID-19, the program will consider prerequisite courses that have been completed in its entirety online for all course offerings (lecture and lab) if completed at a regionally accredited institution in the United States or Canada. Hybrid courses are acceptable if they include an on-campus lab component.

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 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 (American Society for Clinical Pathology) 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 Pathologists' Assistant program requires some expenses that go beyond standard university tuition and fees:

1. **Clinical/Fieldwork Education Travel** (e.g., gas, parking, public transportation) – Cost varies, and specific information and estimates are provided by the clinical site during on-boarding procedures. **Costs: variable and subject to change with minimal notice**
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 didactic first year phase and must be maintained through the entire second year clinical phase of education. **Costs: variable (please check with your insurance carrier)**
3. **Background Check** – All students must undergo an initial background check prior to the start of the first year didactic phase of education. Prior to the start of the second year clinical/fieldwork experience a new background check or recheck may be required.
 - 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. Some students may be required to do an annual recheck one year after the initial background recheck. **Cost: \$32 per annual recheck**
4. **Drug Screening** – Information provided during first year on-boarding prior to orientation and is mandatory for all incoming students. Additional screening may be required by specific clinical affiliates during the on-boarding process throughout the second year clinical phase. **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** – FOR THOSE PROGRAMS USING EXXAT ONLY. 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** – Free student membership provided by the *ASCP* and the *American Association of Pathologists' Assistants* (AAPA) for all incoming students through the entire length of the program.
8. **Certification examination costs** – **Costs: variable and subject to change with minimal notice. Information is given out by the ASCP during the second year clinical phase prior to registering for the certification exam.**

Accreditation

The program consists of both didactic classroom and clinical training. Quinnipiac University is in compliance with 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).

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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.

Prerequisites: None

Offered: Every year, Summer

PA 506. Forensic Imaging. 2 Credits.

The course provides an introduction to the principles of diagnostic imaging and its applications in forensics. The advantages and disadvantages of various imaging modalities for the examination of specimens and cadavers are presented as well as radiation safety, x-ray and image production, types of recording media and radiographic exposure. Students will apply the concepts learned throughout the course to navigate and troubleshoot basic radiographic simulation scenarios.

Prerequisites: None

Offered: Every year, Summer

PA 505. Forensic Pathology. 2 Credits.

This course introduces the principles of forensic pathology as it pertains to the scope of practice for a pathologists' assistant. Students will apply the concepts learned throughout the course to satisfy NAACLS accreditation standards in forensic pathology and to prepare the student for the ASCP certification/licensure examination upon graduation. This course will review specific types of circumstances in which a forensic autopsy provides the best opportunity for competent investigation.

Prerequisites: None

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.

Prerequisites: None

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.

Prerequisites: None

Offered: Every year, Summer

PA 512L. Human Anatomy Lab. 0 Credits.

Lab to accompany PA 512.

Prerequisites: None

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.

Prerequisites: None

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.

Prerequisites: None

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.

Prerequisites: None

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.

Prerequisites: None

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.

Prerequisites: None

Offered: Every year, Spring

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.

Prerequisites: None

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.

Prerequisites: None

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.

Prerequisites: None

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.

Prerequisites: None

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.

Prerequisites: None

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.

Prerequisites: None

Offered: Every year, Spring

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.

Prerequisites: None

Offered: Every year, Fall

BMS 504. Quality and Safety in Healthcare Organization. 3 Credits.

This course will introduce students to the science of quality improvement, error reduction, and patient safety from the perspective of healthcare organizations. Medical errors, quality and safety initiatives, intervention strategies, and institutional challenges to improve patient care in the US healthcare systems will be discussed. Case-based studies will be used to cover complex topics in real-world settings. Students will earn a Basic Certificate in Quality and Safety through the Institute for Health Care Improvement.

Prerequisites: None

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.

Prerequisites: None

Offered: Every year, Fall

BMS 532. Histology and Lab. 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.

Prerequisites: None

Offered: Every year, Fall

BMS 535. Histochemistry and Lab. 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.

Prerequisites: None

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.

Prerequisites: None

Offered: Every year, All