

Department of Pathology Academic Programs

The Department of Pathology at Duke University offers a wide array of training programs to fit individual requirements and goals.

The Residency Training program is an ACGME approved program and is available as an Anatomic Pathology/Clinical Pathology combined program, a shorter Anatomic Pathology only program, or an Anatomic Pathology/Neuropathology program. Subspecialty fellowships in Cytopathology, Dermatopathology, Hematopathology, Medical Microbiology, and Neuropathology are also ACGME approved. These programs provide the highest quality of graduate medical education by drawing on the depth and breadth of faculty expertise in the Department in all aspects of anatomic and clinical pathology and the availability of a wide variety of often complex clinical cases seen at Duke University Health System.

For medical students interested in a career in Pathology pre-doctoral fellowships, internships and externships are available.

Research Training in Experimental pathology can be obtained through Pre- and postdoctoral fellowships of one to five years. All pre-doctoral fellows are candidates for the Ph.D. degree in pathology. The Ph.D. is optional in postdoctoral programs, which provide didactic and research training in various aspects of modern experimental pathology.

A two year NAACLS accredited **Pathologists' Assistant Program** leads to a Master of Health Science degree, certifies graduates to sit for the ASCP Board of Certification examination, and leads to exciting career opportunities in a variety of anatomic pathology laboratory settings. Pathologists' assistants are analogous to physician assistants, but with highly specialized training in autopsy and surgical pathology. This profession was pioneered in the Duke Department of Pathology 50 years ago, and is one of only twelve such programs in existence today.

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Pathologists' Assistant Program

This professional program consists of two calendar years of training. There are three semesters during the academic year, including summer practical rotations. During the first year, Fall and Spring academic semesters include medical school level courses in cell and molecular biology, biochemistry, genetics, gross and microscopic human anatomy, human physiology, embryology, microbiology, immunology, pharmacology and pathology. A January Intersession during the first year introduces students to practical surgical and autopsy pathology techniques, medical terminology, educational methodology, and gross and microscopic neuroanatomy. During the summer semester of the first year and throughout the second year, students develop and hone their skills in surgical and autopsy pathology techniques during practical clinical rotations, as well as gaining exposure to laboratory operations and management, educational methodologies, histologic technique, and photography.

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Definition of a Pathologists' Assistant

A pathologists' assistant (PA) is a highly trained allied health professional who provides various services under the direction and supervision of a pathologist. Pathologists' assistants interact with pathologists in a manner similar to physician assistants in surgical and medical practice, carrying out their duties under the direction of their physicians. PAs are academically and practically trained to provide accurate and timely processing of a variety of laboratory specimens, including the majority of pathological specimens. PAs are key components to helping make a pathologic diagnosis, but it is the sole province of the pathologist to render a diagnosis.

The majority of pathologists' assistants are responsible for the gross examination and dissection of anatomic pathology specimens and the performance of postmortem examinations. PAs prepare tissue for numerous pathological tests including frozen section, flow cytometry, molecular studies, cytogenetics and immunohistochemical staining. PAs may photograph gross and microscopic specimens, help prepare educational conferences and provide training to pathology personnel, including pathology residents. The duties of a pathologists' assistant are not always limited to anatomic and surgical pathology; many PAs fill administrative, instructional and supervisory roles as well. PAs are a crucial extension of the pathologist in the healthcare setting, working as a liaison to other departments

and laboratories to ensure quality healthcare.

Pathologists' assistants perform in a wide scope of clinical practices. Although the majority of pathologists' assistants work in academic and community hospitals, PAs can also be employed in other areas such as private pathology laboratories, forensic pathology laboratories and morgues, reference laboratories, government healthcare systems, and medical teaching facilities. Some PAs are even self-employed business owners providing their pathology expertise via long- and short-term contract.

Pathologists' assistants contribute to the overall efficiency of the laboratory or pathology practice in a cost effective manner. With increased pressure on healthcare systems to control costs, the demand for qualified pathologists' assistant is growing every year.

Scope of Practice for Pathologists' Assistants

Pathologists' assistants are qualified by academic and practical training to provide, under the direction and supervision of a licensed, Board certified, or Board eligible pathologist, the following services (NAACLS, 2012):

1. Surgical Pathology:

Preparation, gross description and dissection of human tissue surgical specimens including:

- a. Assuring appropriate specimen accessioning.
- b. Obtaining pertinent clinical information and history, including scans, x-rays, laboratory data etc.
- c. Describing gross anatomic features of surgical specimens, preparing tissues for histological processing, obtaining biological samples such as blood, tissue and toxicological material for studies such as flow cytometry, image analysis, immunohistochemistry, etc., and performing special procedures including Faxitron imaging and tumor triage.
- d. Preparing and submitting appropriate tissue sections for light microscopy (routine processing) as well as special procedures such as frozen section, electron microscopy and immunofluorescence microscopy.
- e. Photographing all appropriate gross specimens and microscopic slides.
- f. Performing duties relating to the administrative maintenance of surgical pathology protocols, reports and data, including the filing of reports, protocols, photographic data or slide, microscopic slides assisting in the completion of specimen coding and billing.
- g. Assuring proper maintenance of equipment, provision of adequate supplies and cleanliness of the surgical pathology suite.
- h. Assisting in the organization and coordination of anatomic pathology conferences.

2. Autopsy Pathology:

Preparation of human postmortem examination, including:

- a. Ascertaining proper legal authorization for autopsy.
- b. Obtaining patient's medical record/chart(s) and other pertinent data for review with the attending pathologist.
- c. Conferring with the attending pathologist(s) to identify any special techniques and procedures to be utilized in the completion of examination (e.g. cultures, smears; histochemical, immunofluorescence, toxicological, viral or electron microscopic studies, etc.), and notifying all personnel directly involved.
- d. Notifying the physician in charge, the funeral home, and all other appropriate authorities prior to the beginning of the autopsy; and coordinating any requests for special specimen sampling (e.g. organ transplantation, research, etc.).
- e. Performing postmortem examinations which may include: external examination; in situ organ inspection; evisceration; dissection and dictation or recording of data such as organ weights, presence of body fluids, gross anatomic findings, etc.

- f. Selecting, preparing and submitting appropriate gross tissue sections for frozen section analysis as well as for light, electron and immunofluorescent microscopy.
- g. Obtaining biological specimens such as blood, tissue and toxicological material for studies including flow cytometry, image analysis, immunohistochemistry, etc.; and performing special procedures such as coronary artery perfusion, central nervous system perfusion, enucleation, inner ear bone dissection, spinal cord removal, etc.
- h. Photographing the body, organs, microscopic slides and other pertinent materials.
- i. Gathering and organizing clinical information and data pertinent to the preparation of the preliminary summarization of the clinical history.
- j. Preparing the body for release, (including indicating the presence of biohazards such as contagious diseases, radiation implants, etc.) and releasing the body to the appropriate mortuary or funeral home representative.
- k. Performing duties related to administrative maintenance of anatomic pathology protocols; photographic and microscopic slides; and assuring the completion of coding.
- l. Assisting in the organization and coordination of anatomic pathology conference.
- m. Assuring the proper maintenance of equipment, the provision of adequate supplies.

3. Administrative Duties:

Performance of administrative, budgetary, supervisory, teaching, and other such duties as may be appropriate and assigned.

For the current AAPA Scope of practice, please go to their website:

https://www.pathassist.org/page/What_is_a_PA

History of the Pathologists' Assistant Profession

In 1965, Dr. Eugene Stead at Duke University Medical Center pioneered the concept of physician extenders when he established the nation's first physician assistant program. This allied health profession differed significantly from all other allied health professions because rather than being another support profession working independently on tasks not considered to be the practice of medicine, these individuals were trained to perform tasks previously performed exclusively by physicians. Dr. Thomas Kinney, Chair of Pathology at Duke University Medical Center, saw a need for similar professionals in anatomic pathology so he initiated the nation's first pathologists' assistant program in 1969. These professionals were trained to perform tasks, under a pathologist's supervision, in autopsy and surgical pathology that had previously been performed by pathologists. Since that time, other programs have been established and the profession has grown in number and stature. The training programs have grown from certificate programs to bachelor's degree programs and currently, all of the programs are graduate level offering Master's degrees.

At its inception, the physician assistant profession was mentored and structured by the American Medical Association and accreditation of training programs and certification of individuals were established. Because of the small number of pathologists' assistants, high degree of specialization, and uneven initial acceptance of the profession by national pathology organizations, no guiding physician or pathology organization would establish criteria for training programs and credentials for individuals. This task was assumed by the national professional organization of pathologists' assistants, [The American](#)

[Association of Pathologists' Assistants \(AAPA\)](#), which was founded and incorporated as a not-for-profit organization under the statutes of Ohio in 1972. The objectives of the organization were to:

- Benefit and further the profession by promoting and maintaining high standards of ethical conduct.
- Provide continuing medical education for its members and work for the development of additional Pathologists' Assistant training programs.
- Inform the public and medical profession as to the goals and professional capabilities of the Pathologists' Assistant.
- Implement new programs that will help maintain the status of the AAPA and its members as a vital link in the health care chain.

The AAPA held its first meeting in Atlanta in 1975. The first goals set by the organization were guidelines for training programs, a mechanism for approval of training programs, and the development of an examination for fellow status of membership in the AAPA. Graduates from AAPA approved programs or persons with a bachelor's degree and three years of AAPA approved on-the-job-training were eligible to sit for the examination. The major long-term goal of the AAPA was to achieve professional recognition for pathologists' assistants through establishing both independent accreditation of training programs and national certification of individual practitioners. The program approval and membership examination of the AAPA served as de facto accreditation and certification by many employers for over 25 years.

In 1995, the [National Accrediting Agency for Clinical Laboratory Sciences \(NAACLS\)](#), following negotiations with the AAPA, agreed to accredit training programs. Over the following two years, all of the former AAPA approved programs became accredited. Subsequently, all of the initially accredited programs have been through several rounds of evaluation by NAACLS. All programs have been re-accredited.

In 2000, the National Commission for the Certification of Pathologists' Assistants was formed and held its first meeting in Toronto in conjunction with the annual AAPA meeting. The Commission was comprised of representatives from most major stakeholders in the practice of pathology. The Commission was charged with assuring the development and implementation of a national certification process for Pathologists' Assistants. The Commission partnered with the American Society of Clinical Pathology and the first national certification was held in Boston in September 2005 in conjunction with the annual AAPA meeting. Certification is now available only to graduates of NAACLS accredited Pathologists' Assistant Programs, no longer to on-the-job-trained individuals, and the board of certification examination is offered through the ASCP as Computer Adaptive Testing at multiple Pearson Professional Centers throughout the United States. Every three years, a certified PA must demonstrate sufficient CME to maintain ASCP certification.

Today, the American Association of Pathologists' Assistants (AAPA) is dedicated to the advocacy and advancement of the pathologists' assistant profession. The AAPA advocates, promotes and sustains the highest education and professional standards for the profession, for all associated educational training programs and for individual pathologists' assistants. The mission to provide its members with high quality targeted continuing medical education (CME) opportunities, as well as professional development

and leadership activities to include networking and support. Additionally, the AAPA strives to promote and support high quality standards within the scope of practice for pathologists' assistants in anatomic pathology, ensuring the provision of high quality patient care.

GOAL and MISSION STATEMENT of the Duke School of Medicine Pathologists' Assistant Training Program

The Duke University School of Medicine Pathologists' Assistant Training Program goal and mission are to train academically qualified individuals to become allied health professionals who provide surgical pathology and autopsy pathology services under the direct supervision of a board certified pathologist.

Upon graduation from the Duke PA Program, graduates will be able to:

- 1) Demonstrate and apply general knowledge and theory of pathologic disease processes, as they relate to gross and microscopic anatomy, anatomic pathology techniques and laboratory procedural skills, gross and microscopic photography, and the analysis of medical and laboratory data associated with surgical and autopsy pathology;
- 2) Demonstrate and apply, under the direction of a pathologist, the technical skills to perform surgical pathology and autopsy pathology gross examination and prosection of specimens, and the knowledge and judgment to identify and select the appropriate tissues and special studies reflective of the clinical history and general medical information available;
- 3) Demonstrate and apply the knowledge and skills to perform a variety of administrative functions in anatomic pathology, to include budgetary, supervisory, teaching, the selection, use and maintenance of equipment, proactive communication, problem resolution, and interprofessional collaboration as well as other duties that may be assigned.

Program Accreditation

In addition to the accreditation of Duke University, and the School of Medicine, the Pathologists' Assistant Program is individually accredited by the [National Accrediting Agency for Clinical Laboratory Science](#) (NAACLS) which is recognized by the United States Department of Education. For further accreditation information, contact:

National Accrediting Agency for Clinical Laboratory Science
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Suite 720
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773.714.8880 (Telephone)
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<http://www.naaccls.org>

Employment and Salary Opportunities for Graduates

The opportunities for employment and salaries have been excellent. There are very few accredited pathologists' assistant training programs (10 plus several serious applicants for accreditation) and thus the supply of graduates is limited. At Duke most graduates have found employment before completing the training program and average starting salaries currently begin at the mid \$80,000 range.

Core Faculty

Jiaoti Huang, M.D., Ph.D., Professor and Chair of Pathology, Genitourinary Pathology
Rex Bentley, M.D., Professor, Program Director, Chief of Surgical Pathology, General Surgical, Gynecologic and Breast Pathology
Diana Cardona, M.D., Associate Professor, Director of Surgical Pathology Laboratory, Medical Director Pathologists' Assistant Program, Gastrointestinal and Orthopedic Pathology
Pamela B. Vollmer, B.H.S., PA(ASCP), Associate Program Director and Educational Coordinator, Director of Admissions, Staff Pathologists' Assistant and Instructor in Surgical Pathology
Emily Wagner, M.H.S., PA(ASCP), Gross Room Supervisor, Pathologists' Assistant and Instructor in Surgical Pathology
Ayumi Deeny, M.H.S., PA(ASCP), Staff Pathologists' Assistant and Course Coordinator/Clinical Liaison in Surgical Pathology
Matthew Bovender, M.H.S., PA(ASCP), Staff Pathologists' Assistant and Instructor in Surgical Pathology
Jonathan Chen, M.H.S., PA(ASCP), Staff Pathologists' Assistant and Instructor in Surgical Pathology
Nicholas Tofolo, M.H.S., PA(ASCP), Staff Pathologists' Assistant and Instructor in Surgical Pathology
Allison Topper, M.H.S., PA(ASCP), Staff Pathologists' Assistant and Instructor in Surgical Pathology
Meridith Hennessey, M.H.S., PA(ASCP), Staff Pathologists' Assistant and Course Coordinator in Autopsy Pathology
Windy Riley, M.H.S., PA(ASCP), Staff Pathologists' Assistant and Instructor in Autopsy Pathology
Alexis Sharp, M.H.S., PA(ASCP), CCRP, MBA, Senior Clinical Research Coordinator with the Heart Center Clinical Research Unit, Primary and Acute Cardiology
Laura Barisoni, M.D., Professor, Renal Pathology
William Bradford, M.D., Professor Emeritus, Pediatric and Neonatal Pathology
Thomas Cummings, M.D., Professor, General Surgical Pathology, Ophthalmic Pathology, Neuropathology, Pathology Residency Program Director
Rajesh Dash, M.D., Professor, Cytology and General Surgical Pathology
Cynthia Guy, M.D., Professor, Cytology and Gastrointestinal and Liver Pathology
Laura Hale, M.D., Ph.D., Professor, Pathology, Autopsy Pathology
David Howell, M.D., Ph.D., Professor, Immunopathology, Renal and Transplant Pathology, Senior Vice Chair of the Pathology Department
Anand Lagoo, M.D., Professor, Hematopathology
Sara Miller, Ph.D., Professor, Electron Microscopy
Alan D. Proia, M.D., Ph.D., Professor, Ophthalmic Pathology
Victor Roggli, M.D., Professor, Pulmonary Pathology
Maria A. Selim, M.D., Professor, Dermatopathology
Sarah Bean, M.D., Associate Professor, General Surgical Pathology and Cytopathology
Michael Datto, M.D., Ph.D., Associate Professor, Molecular Pathology
Andrea Deyrup, M.D., Ph.D., Associate Professor, Pathology Course Director for Body and Disease
Kenneth Ellington, M.D., Associate Professor, Dermatopathology

Wen-Chi Foo, M.D., Associate Professor, Surgical Pathology
Xiaoyin "Sara" Jiang, M.D., Associate Professor, Head and Neck Pathology, Cytopathology
Claudia Jones, M.D., Associate Professor, Director of Cytology
John Madden M.D., Ph.D., Associate Professor, General Surgical Pathology and Urologic Pathology
Shannon McCall, M.D., Associate Professor, Gastrointestinal and Liver Pathology
Thomas Sporn, M.D., Associate Professor, Forensic Pathology, Pulmonary Pathology
Robin Vollmer, M.D., Associate Professor and Director of Surgical Pathology at the Durham Veterans Affairs Hospital, General Surgical Pathology, Cytopathology, and Dermatopathology
Christopher Alley, M.D., Assistant Professor, General Surgical Pathology and Cytopathology, Durham Veterans Affairs Hospital
Elizabeth Boswell, M.D., Assistant Professor, Surgical Pathology, Chief, Pathology and Laboratory Medicine Services, Durham Veterans Affairs Hospital
Anne Buckley, M.D., Ph.D., Assistant Professor, Neuropathology, Muscle and Nerve Pathology
Jennifer Carbrey, Ph.D., Assistant Research Professor, Cell Biology
John Carney, M.D., Assistant Professor, Pulmonary and Autopsy Pathology
Edgardo Parilla Castellar, M.D., Assistant Professor, Breast and Molecular Pathology
Lani Clinton, M.D., Ph.D., Assistant Professor, Gastrointestinal Pathology
Louis DiBernardo, M.D., Assistant Professor, Cardiovascular Pathology
Carolyn Glass, M.D., Ph.D., Assistant Professor, Cardiovascular and Thoracic Pathology, Autopsy Pathology: Autopsy Service Chief
Allison Hall, M.D., Assistant Professor, Surgical Pathology
Michael Hueing, M.D., Assistant Professor, General Surgical Pathology and Cytopathology, Durham Veterans Affairs Hospital, VA Surgical Pathology Rotation Coordinator
William Jeck, M.D., Assistant Professor, Surgical Pathology
Giselle Lopez, M.D., Ph.D., Assistant Professor, Neuropathology
Chad McCall, M.D., Assistant Professor, Hematopathology
Jadee Neff, M.D., Ph.D., Assistant Professor, Hematopathology and Molecular Pathology
Elizabeth Pavlisko, M.D., Assistant Professor, Pulmonary and Cardiovascular Pathology
Avani Pendse, M.D., PhD, Cytopathology, Genitourinary, and Gastrointestinal Pathology
Danielle Range, M.D., Assistant Professor, Head and Neck Pathology
Kyle Strickland M.D., Ph.D., Assistant Professor, Gynecologic Pathology path and Cytopathology
Shih-Hsiu "Jerry" Wang, M.D., Ph.D., Assistant Professor, Neuropathology and Autopsy Pathology
Kathryn Perkinson, BS, HTL(ASCP), Technical Manager, Molecular Pathology and Clinical Laboratories
Steven Conlon, Senior Medical Photographer, Department of Pathology
Emily Knutson, HTL(ASCP), Manager, Research Immunohistochemistry Laboratory, Department of Pathology

Program of Study

The program is 23.5 months long, beginning with the start of the medical school academic year in August of each year (see current Duke Medical School Bulletin for exact dates). Students take most of their first year basic science courses in the School of Medicine with medical students. The first year provides a broad, graduate level background in cell and molecular biology, biochemistry, genetics, gross and microscopic human anatomy, human physiology, microbiology, embryology, immunology and pathology. In the second year, students train in small group and one-on-one experiences with Pathology Department faculty and staff, and participate in external rotations.

Curriculum

<u>Year 1 Fall</u>	<u>Credits</u>
PATHASST 100 Human Structure and Function 1	6
PATHASST 101 Human Structure and Function2	12

<u>Year 1 Spring</u>	<u>Credits</u>
PATHASST 102 Body and Disease	16
PATHASST 204 Intro to Practical Anatomic Pathology Techniques	3

<u>Year 1 Summer</u>	<u>Credits</u>
PATHASST 210 Introduction to Autopsy Pathology	2
PATHASST 215 Histology Techniques	1
PATHASST 221 Introduction to Surgical Pathology-Duke	2
PATHASST 222 Introduction to Surgical Pathology-DVAMC	2

<u>Year 2 Fall</u>	<u>Credits</u>
PATHASST 217 Molecular Pathology Techniques	1
PATHASST 321 Surgical Pathology I-Duke	4
PATHASST 322 Surgical Pathology I-DVAMC Site	4
PATHASST 340 Photography I	1
PATHASST 323 Autopsy Pathology I	4
PATHASST 361 Pathologic Basis of Clinical Medicine I	3
PATHASST 359 Laboratory Technologies and Management	2

<u>Year 2 Spring</u>	<u>Credits</u>
PATHASST 331 Surgical Pathology II-Duke	7
PATHASST 332 Surgical Pathology II-DVAMC	4
PATHASST 302 Forensic Pathology	2
PATHASST 324 Autopsy Pathology II	4
PATHASST 341 Photography II	2
PATHASST 362 Pathologic Basis of Clinical Medicine II	3

<u>Year 2 Summer</u>	<u>Credits</u>
PATHASST 330 Autopsy Practicum	3
PATHASST 351 Surgical Pathology Practicum-Duke	2
PATHASST 352 Surgical Pathology Practicum-DVAMC	2
PATHASST 390 Senior Seminar	2
CERTIFICATE and ACADEMIC DEGREE AWARDED	94

Course Descriptions

PATHASST-100, 101—Human Structure and Function 1 and 2. This core preclinical course focuses on the scientific principles underlying the structure and function of the human body, thereby providing the foundational knowledge for the practice of medicine and facilitating the incorporation of the new scientific knowledge throughout the medical career. The course content includes: biochemistry, cell biology, genetics, histology, anatomy, physiology, and the neurosciences. Topics pertaining to human disease and injury are incorporated into the curriculum to promote application of course material. Core material is presented through team-based learning, didactic lectures, laboratory exercises, clinical case based problem-solving, and clinical correlations with patients. Credit: 6, 12. Carbrej and staff

PATHASST 102—BODY AND DISEASE. This core course in human disease is presented from late January through June of the first year. The course begins with fundamental principles of the four basic sciences most directly related to human disease: immunology, microbiology, pathology, and pharmacology. This segment comprises the first seven weeks and also includes discussion of disease classes not related specifically to any one organ system, including cancer, immunodeficiency diseases, and chemically-induced diseases. The remaining thirteen weeks are devoted to an integrated presentation of the most common human diseases organized sequentially by organ system. Teaching modes include lectures, a variety of small group activities guided by faculty, clinically-oriented disease workshops, and team-based learning. Credit: 16. *Muzyk, Alspaugh, Gunn, Deyrup, Roberts, and Velkey*

PATHASST 204—Introduction to Practical Anatomic Pathology Techniques. Students are introduced to autopsy pathology and the daily activities of a busy autopsy service, and to the daily activities in a surgical pathology laboratory. Emphasis is placed on neurologic gross and microscopic anatomy and dissection of the brain and spinal cord. Students become acquainted with the various duties assumed by trained Pathologists' Assistants and are introduced to basic tissue dissection techniques taught through participation in the surgical pathology service. Lectures in basic medical terminology are presented with emphasis on pathologic, surgical and diagnostic processes. Students are also exposed to educational methodologies in lecture and laboratory settings, medical ethics and professionalism and basic laboratory safety. Credit: 3. *P. Vollmer, Riley and staff*

PATHASST 210 - Introduction to Autopsy Pathology. This is a summer rotation given during the first summer session. It is designed to re-acquaint the student with autopsy prosection and workup training and experience, building on concepts introduced in PATHASST 204. Students work with the PA on service and assist residents in full autopsy dissections. 2 credits. *Glass, Hennessey, Riley, and staff*

PATHASST 215 - Histology Techniques. Students participate in rotations through the histology

Commented [PV1]: New course names ofr PATHASST 100 and 101

laboratory. The rotation is designed to acquaint students with the various laboratory techniques used in tissue processing, routine histology, and special procedures. 1 credit. *Knutson and staff*

PATHASST 217—Molecular Pathology Techniques. Students are introduced to ancillary diagnostic technologies and techniques used to assess cellular and subcellular pathology, to include immunohistochemistry, flow cytometry, molecular diagnostic studies and electron microscopy in various laboratory settings. Credit: 1. *Perkinson and staff*

PATHASST 221 Introduction to Surgical Pathology-Duke. This is the initial practical rotation conducted during the first summer session. It is designed to re-acquaint students with the techniques of gross dissection, descriptions, and submission of tissue samples from surgical specimens, focusing on small biopsy specimens and building on concepts presented in PATHASST 204. It runs concurrently with PATHASST 222, and is designed to introduce students to the variations and differences between a university medical center and a Veterans Affairs Medical Center's Surgical Pathology Service. 2 credits. *Bentley, Deeny, and staff*

PATHASST 222 Introduction to Surgical Pathology-DVAMC. This is the initial practical rotation conducted during the first summer session complimenting PATHASST 221. It presents students with the techniques of gross dissection, descriptions, and submission of tissue samples from surgical specimens processed at the Durham Veterans Affairs Hospital's Surgical Pathology Service. Emphasis is placed on the close interaction with the attending pathologist, pathology resident and their interactions with the surgical team. Students are introduced to tissue triage, slide preparation, frozen section technique and case sign-out logistics, comparing the variations and differences between a university medical center and a Veterans Affairs Hospital Surgical Pathology Services. 2 credits. *Huening and staff*

PATHASST 302- Forensic Pathology. This is a practical rotation at the North Carolina Office of the Chief Medical Examiner observing and participating (on a limited basis) with forensic pathologists performing medical-legal autopsies. 2 credits. *Aurelius and staff*

PATHASST 321 (Duke), 322 (DVAH) - Surgical Pathology I - Duke and DVAH. These courses run concurrently during the fall semester of the second year, and are meant to be complimentary. They are practical rotations on the Duke University and Veterans Affairs Hospital's Surgical Pathology Services respectively, building on the techniques and skills taught in PATHASST 221 and 222. These courses consist of continuing laboratory training in the orientation, description, and dissection of gross surgical specimens with special emphasis on frozen section technique, tissue triage and the role of the PA and their interaction with the attending pathologist and pathology resident following many of the cases through to sign-out by the pathologist at the DVAH. 4 credits each. *Bentley, Deeny, Huening, and staff*

PATHASST 323, 324, Autopsy Pathology I, II. These practical rotations during the second year present a detailed consideration of the morphologic, physiologic, and biochemical manifestations of disease. The courses include gross dissection, histologic examinations, processing, and analyzing of all autopsy findings under tutorial supervision. 4 credits each course or 8 total credits. *Glass, Hennessey, Riley, and staff*

PATHASST 330 - Autopsy Practicum. This is the final autopsy rotation completed during the summer of the second year of training. Students must perfect their dissection skills, demonstrate the ability to conduct full autopsy prosections in all possible situations, and write full preliminary autopsy reports. In addition, special dissection skills are taught in this course. 3 credits. *Glass, Hennessey, Riley, and staff*

PATHASST 331 (Duke), 332 (DVAH) - Surgical Pathology II - Duke and DVAH. These courses run concurrently during the spring semester of the second year, and are meant to be complimentary. They

are continuing, practical rotations on the Duke University and Veterans Affairs Hospital's Surgical Pathology Services respectively, building on the techniques and skills taught in PATHASST 221, 222, 321 and 322. These courses consist of continuing laboratory training in the orientation, description, and dissection of gross surgical specimens with special emphasis on the role of the PA and their interaction with the attending pathologist and pathology resident, following many of the cases through to sign-out by the pathologist at the DVAH. Students also participate in enrichment experiences at one or more external rotation sites during these courses. 7 credits for 331, 4 credits for 332. *Bentley, Deeny, Huening, and staff*

PATHASST 340, 341 - Photography I, II. This is an introduction to medical photography. Students become familiar with photography equipment and the fundamentals of gross specimen photography and photomicrography. 1 credit for PATHASST 340 and 2 credits for PATHASST 341. *Conlon*

PATHASST 351 (Duke), 352 (DVAMC) Surgical Pathology Practicum-Duke and DVAMC. These are the final surgical pathology rotations completed during the second year of training both at Duke and the Veterans Affairs Hospital. Students must perfect their dissection skills and demonstrate the ability to orient, dissect, describe, and submit appropriate tissue samples from all commonly encountered surgical pathology specimens. Students also participate in a one week enrichment experience at an external rotation site during these courses. 2 credits each. *Bentley, Deeny, Huening, and staff*

PATHASST 359—Laboratory Technologies and Management. Students are presented with fundamentals of laboratory management to include regulatory and compliance issues, basic management techniques, laboratory safety and infection control in lectures and practical applications, as well as practical applications of fine needle aspiration and bone marrow aspiration and biopsy.

Credit: 2. *Department of Pathology faculty and staff.*

PATHASST 361, 362 - Pathologic-Basis of Clinical Medicine I, II. This course consists of lectures and seminars by the departments of Pathology and Medicine faculty emphasizing both basic science and systemic pathologic topics. 3 credits each course. *Department of Pathology and Medicine faculty*

PATHASST 390- Senior Seminar. Students complete an independent study under the supervision of a Department of Pathology faculty member or senior pathology resident. Topics are selected from Surgical Pathology or Autopsy Pathology cases, and are researched, developed and presented to the PA Program administration and the Department of Pathology faculty and staff as a final senior seminar. 2 credits. *Bentley and staff*

Degree and Certificate Requirements

After completion of 85 units of graduate credit, a further 9 units of credit earned in the final summer rotations, including a required comprehensive oral seminar presentation before the Pathology Department faculty and staff, the academic Master of Health Science (MHS) degree and the professional certificate as a Pathologists' Assistant are awarded. Duke's MHS degree and certificate are prerequisites to take the American Society of Clinical Pathology (ASCP) certification exam for Pathologists Assistants, but passing the ASCP certification examination is not a prerequisite for graduating with the MHS degree or institutional certificate.

Program Policies and Grading Standards

Grades for courses and clinical rotations in the Pathologists' Assistant curriculum are assigned on the basis of the following: Honors (H), Pass (P), Low Pass (L), and Fail (F). Exceptions are PATHASST 100 and 101—Human Structure and Function 1 and 2, PATHASST 102—Body and Disease, PATHASST 302 (Forensic Pathology), PATHASST 340 and 341—Photography, PATHASST 361-362 (Pathologic Basis of Clinical Medicine) and PATHASST 390 (Senior Seminar) which are graded as either Pass (P) or Fail (F) and PATHASST 222—Introduction to Surgical Pathology—VAMC which is graded as Pass (P), Low Pass (L) or Fail (F). A grade of Honors in any didactic course is defined as an overall average score of 90% and an overall average score of less than 70% constitutes failure.

Grades for courses and rotations are H (honors), P (pass), LP (low pass), F (fail), and I (incomplete). The determination of what performance equates with what grade is up to the individual instructor and course although for written examination a minimum of 70% is usually required to pass. Two grades of LP results in academic probation, and will require the student to complete remediation before progression to the next semester's courses. A single grade of F can result in dismissal from the program.

Many rotations and courses also use subjective means of evaluation such as direct observation of the student's work, student participation, and evaluation of written materials. In all rotations evaluations of performance are written and grades are derived from these evaluations.

The program is designed to integrate classroom and clinical learning experiences considered necessary for competency as health care providers and each course in the curriculum is required. Therefore, the failure of any course in which the student is unable to successfully remediate will ultimately result in withdrawal from the program. Determination of satisfactory academic progress is made by the program director upon advisement of the program advisory committee.

The advisory committee will evaluate all student deficiencies and will invite the student to a hearing. The student has the option of including a faculty member or fellow student in the hearing. The decision made by the advisory committee is sent to the Program Director, who will evaluate and accept, reject or modify the recommendations from the committee. The student has the benefit of appeal to the Dean of the School of Medicine. An appeal to the Dean may only be made on the grounds of improper procedures in the appeals process rather than continued disagreement regarding the outcome of the process. The Dean will review the data related to the process of the appeal and determine whether the process was valid. If the process is found to be valid, the decision is final and binding. If the process is found to be invalid, a new review panel will be convened.

Students in the Pathologists' Assistant Program are participants in a professional training program whose graduates assume positions of high responsibility as health care providers. Students are therefore evaluated not only on their academic performance and technical skills, but on their professional conduct. These evaluations will be in a written form as part of the general clinical rotation summaries. Deficiencies in professional conduct may result in academic probation; repeated episodes or patterns of misconduct may result in suspension or dismissal from the program. The Medical Center Registrar will be notified of the student's status of academic probation or suspension and the status will be noted on the student's transcript at the completion of the semester(s) during which the status is assigned. If the student successfully returns to good academic standing from academic probation, the statement will be removed; if the student is suspended, however, the statement will remain permanently on the transcript.

Remediation

Students who initially receive a failing grade in any course must undergo a remediation process as defined by the individual course instructor and approved by the program director. Successful remediation will result in the student receiving a pass (P). Unsuccessful remediation will result in academic probation, with additional remediation and academic counseling required. If these additional steps are unsuccessful, failure will result and the student will be withdrawn from the program.

Appeals of academic status (academic probation or withdrawal)

A student placed on academic probation or withdrawal from the program may appeal by indicating in writing to the program director reasons why they did not achieve minimum academic standards and factual evidence for changing the academic standing. Appeals will be considered individually on their merits and will not be considered as precedent. The program director will notify the student of the decision of the appeal in writing within three weeks of receipt of the appeal.

Appeals of course grades

A student may appeal a course grade by writing the course coordinator and program director, providing factual evidence for changing the final course grade. Appeals will be considered individually on their merits and will not be considered precedent. The program director will notify the student in writing of the appeal decision within three weeks of the appeal.

Satisfactory Academic Progress

Satisfactory academic progress consists of the receipt of a passing grade in all didactic and practical courses and is defined as follows:

Year One: Completion of all required courses and rotations (a total of 44 credits) during the fall, spring, and summer within the scheduled semester.

Year Two: Completion of all clinical rotations, courses, and a senior seminar during the fall, spring and summer rotations (a total of 50 credits) within the scheduled semester.

In unusual circumstances (illness or academic remediation) the determination of satisfactory progress is made by the program director.

Leave of absence

A Pathologists' Assistant student, after presenting a written request to the program director, may be granted an official leave of absence for personal, medical or academic reasons for a period not to exceed one calendar year. If the leave of absence is approved, the program director provides written notification including applicable beginning and ending dates to the student, the medical school registrar and the director of financial aid. The student must notify the program director in writing of his or her wish to return to the program at least 60 calendar days prior to the stated date of re-entry. When a leave of absence is taken, the program director may require the student to repeat some or all of the courses completed prior to the leave of absence. In all cases of leave of absence, the student is required

to complete the entire curriculum to be eligible to earn the Masters of Health Science degree and the Pathologists' Assistant institutional certificate.

Return From Leave of absence

Returning students who must complete degree requirements off-schedule from their entering cohort are required to meet all degree requirements as established at time of program completion for the cohort to which the student is joined. Following are general guidelines for return from leave of absence; individual situations may be addressed in a more detailed manner at the discretion of the program administration. For students who have withdrawn after the sixth week of a semester, tuition will be waived for the equivalent term when the student returns. For students who withdrew from the first to the sixth week, tuition will be charged according to the schedule below. The student is responsible for all other University/program fees for the returning term regardless of the timing of the withdrawal. Students completing off-schedule should contact the Office of Financial Aid regarding continued eligibility for federal education loans.

Withdrawal

If a student withdraws, including involuntary withdrawal for academic reasons, tuition is refunded according to the following schedule:

Before classes begin:	Full amount
During first or second week:	80%
During third to fifth week:	60%
During sixth week:	20%
After sixth week:	none

Student fees are nonrefundable after classes begin.

Attendance and Excused Absences

Students are required to attend all mandatory lectures, laboratories, seminars, and clinical assignments. Absences are excused only for illness or personal emergency, and students must notify course coordinators and program faculty in advance of an expected absence from a mandatory event. Absences of one to two days duration for professional purposes during the second year are allowed with the approval of the program director.

Registration and drop/add policy

Registration in the Pathologist's Assistant program is offered on a full-time basis only and part-time enrollment is not allowed. All required course registrations are processed in the Office of the Registrar. As the program is only offered full-time, and all courses are mandatory, dropping and adding courses is not permitted.

Procedure when applied experience cannot be guaranteed

The Duke School of Medicine and Allied Health and the Pathologists' Assistant Program will, to the best of its ability, strive to provide all clinical rotations as outlined. We reserve the right to add or deactivate specific courses or clinical affiliates as needed by program demands or the requirements of the clinical

affiliate site itself. Students may not rotate through all affiliate sites, and site assignment is at the discretion of the program director.

In the unlikely event of program closure, matriculated students are guaranteed that they will be given the opportunity to complete the entire curriculum and receive the Masters of Health Science degree and institutional certificate of completion if the program should unexpectedly be discontinued for any reason. The Pathology department guarantees office and learning space for the PA students, and utilizes School of Medicine and Duke University health System space as part of our teaching area. If the program were discontinued for some reason, the department will continue to support the program for two years to ensure that all students have an opportunity to graduate and complete the certificate requirements.

In the event of program closure:

The Department of Pathology guarantees that all students will be able to complete all didactic courses and clinical experiences;

The program will notify NAACLS, ASCP and AAPA of closure and submit a teach out plan within 30 days of decision to close;

Admissions will be suspended and no further students will be admitted. Any candidates that have begun the admissions process will be notified of program closure;

Students in the second (clinical) year will complete all courses and rotations to meet requirements for graduation and institutional certification, and subsequently be eligible to sit for the ASCP BOC;

Students in the first (didactic) year will complete all program classes and be assigned to clinical rotations for the second year of the program to meet requirements for graduation and institutional certification, and subsequently be eligible to sit for the ASCP BOR.

Honor code

Students enrolled in the Duke Pathologists' Assistant Program are expected to adhere to the Duke University School of Medicine Honor Code of Professional Conduct as detailed in the Policies for all School of Medicine Programs found elsewhere in this Manual.

Policies and processes by which students may perform service work

Exactly what students are and are not allowed to do in a patient care setting is set by the supervising pathologist. Students must strictly adhere to those guidelines. These limitations may vary as to the student's individual development in the program. The specific rules will be set on each rotation but the following always apply:

1. Never render a diagnosis or give out a diagnosis to anyone in any manner. This is solely the responsibility of the attending pathologist.
2. Never proceed with any dissection in which there is uncertainty. Call the pathologist.

3. Never begin any autopsy or complicated dissection of a surgical specimen without first discussing it with the pathologist.

Lastly, although students are expected to perform service activities while on both internal and external clinical rotations, that otherwise be completed by residents, faculty or staff PA's, these duties and activities are defined as educational, meant for the students benefit to meet MHS degree or certificate requirements. It is important to understand students should never be required to take the place of an autopsy, forensic or surgical pathology employee in order to get the work completed.

Students do participate in student worker programs after hours associated with the Department of Pathology; however, these student worker programs are not mandatory or considered to be part of the academic or clinical training of the Pathologists' Assistant Program, and are performed on a fee-for-service basis. Students are also invited to participate in research studies involving tissue procurement, but, again, this is neither mandatory nor considered part of the training program and is also performed on a fee-for-service basis.

Student Guidance and Counseling

The PA Program Administration and Faculty offer student guidance and support in matters concerning academic, development, social and interpersonal relationships, work study opportunities and job placement. The Program advocates an "Open Door" Policy when it comes to students having access to Program Administration and Faculty. Students are encouraged to discuss concerns and issues with the Program Director, Associate Director, and Medical Director, and the Program Administration meets regularly with both first and second year students to solicit student concerns, and to provide advice concerning academic issues, clinical rotation requirements and anything brought to the attention of the Administration.

When student concerns cannot be addressed by PA Program Administration, the University and School of Medicine provide a wide variety of student oriented services which are designed to help students in need. These range from informal, one-on-one peer and faculty support to University Student Health and Wellness programs sponsored by the University Student Wellness Center, University Counseling and Psychological Services (CAPS), and individual tutoring and mentoring programs sponsored by the School of Medicine's Office of the Curriculum and Office of Student Affairs (<http://studentaffairs.duke.edu/caps>). Career counseling is also available through Duke Student Affairs.

Second year students counsel and advise first year students as they navigate through the first year curriculum. Each rising second year class provides both written academic program guidance in the form of "Pathologists' Assistant Program – Unofficial Help Guide 20__ through 20__", and one-on-one peer support to new students. In addition, Program Faculty, especially the eight PA's employed on the Surgical Pathology and Autopsy Pathology Services provide an excellent student support system, helping both first and especially second year students who rotate in training through the respective services. In short, both first and second year students have an extensive support system which provides ample opportunities for support, guidance, and direction in all matters academic, as well as interpersonal.

Maintaining student privacy about confidential matters is taken seriously. The administration takes care that counseling sessions take place behind closed doors, and all records of counseling sessions are

maintained in the individuals' private computer files. All serious personal matters are referred to the Counseling and Psychological Services; their policy is as follows:

CAPS Confidentiality and Privacy Statement

We take students privacy very seriously, and our personal and professional ethics guide us in ensuring that the services you receive here remain confidential. Information revealed in counseling, even the information that you have made an appointment, is not disclosed to others unless you provide written authorization for that information to be released.

The exceptions to this practice are:

1. When a counselor believes you present an imminent danger to yourself or others.
2. When a counselor believes the life or safety of a readily identifiable third person is endangered.
3. When a counselor believes that a child or vulnerable adult is being subjected to abuse, neglect, or exploitation.
4. When disclosure is made necessary by legal proceedings.

Please note that we operate as a team when we provide services. To provide effective and up-to-date services, our individual counselors sometimes consult with with one another about our work with students. However, we all maintain the same allegiance to confidentiality described here to protect your privacy.

Email Policy:

No e-mail communication regarding clinical issues or appointments is permitted due to the lack of security available when communicating via e-mail.

Staff differ in how often they check email, and it is important that you not rely on e-mail as a means of trying to contact CAPS for counseling or consultation about mental health concerns.

We rely on more traditional ways of communicating—the telephone or stopping by in person.

Student formal grievance policy

The Duke Pathologists' Assistant Program takes all student complaints seriously and will address all complaints in a confidential, timely and impartial manner. Honor Code violations, appeals of academic status or course grade appeals are handled as delineated elsewhere in the PA Student Manual and DUSOM Bulletin. Other formal grievances will be addressed in a manner similar to and in the spirit of the "Initiation of Complaints" procedure documented in the Duke School of Medicine Honor Code of Professional Conduct.

- The initial complaint is to be directed to the Program Director and/or Associate Program Director. If the initial complaint is concerning the Director or Associate Director, then the initial complaint is to be directed to the Duke School of Medicine Vice Dean for Education.

- The Program Director or Associate Director will conduct an initial investigation of the complaint and will attempt to resolve the complaint to the student's satisfaction. Actions taken and resolution proposed will be documented on the PA Student Complaint Form and will be filed in the student's folder. If the student(s) is satisfied with the resolution, no further action is necessary.
- If the Program Director or Associate Director cannot resolve the complaint, the student(s) complaint will be directed to the PA Program Advisory Committee to review the complaint, findings of the initial investigation and recommendations. The committee will make its recommendations concerning resolution of the complaint.
- If the Department of Pathology faculty and staff committee cannot resolve the student's complaint, the student will be directed to the Duke School of Medicine Dean of Education whose recommendations concerning resolution of the complaint will be the final decision.

Policy on Appropriate Treatment of Learners Duke University School of Medicine

Policy Statement

Duke University School of Medicine (SOM) is committed to creating and maintaining a positive learning environment for learners that is respectful and appropriately attentive to their learning needs and free from conduct by teachers that could be interpreted by learners as mistreatment. Behavior that violates this stated expectation will be investigated, and if found to represent mistreatment, may become the subject of disciplinary action by the SOM. Additional details are found elsewhere in this brochure.

Health Insurance

All students are required to carry full major medical health insurance throughout their enrollment in the program. If the student does not elect to take the Duke Student Accident and Hospitalization Insurance policy, evidence of other comparable health insurance coverage must be provided and appropriate waiver submitted. The Student Health Fee is mandatory for all students.

Technology Fee

All matriculating students in the program will be assessed a mandatory technology fee. The fee will not only cover hardware such as laptop and other devices as deemed appropriate for the program, but service, software and technical updates to comply to all Duke Health System compliance guidelines.

Degree Requirements

After completion of 85 units of graduate credit, a further 9 units of credit earned in the final summer rotations, including a required comprehensive oral seminar presentation before the Pathology Department faculty and staff, the academic Master of Health Science (MHS) degree and the professional certificate as a Pathologists' Assistant are awarded. Duke's MHS degree and certificate are prerequisites to take the American Society of Clinical Pathology (ASCP) certification exam for Pathologists Assistants, but passing the ASCP certification examination is not a prerequisite for graduating with the MHS degree or institutional certificate.

Commencement and Certificate Award

The Pathologists' Assistant student must successfully complete 85 credits, including all scheduled courses and clinical rotations, in order to receive the Masters of Health Science degree. In order to receive institutional certification of completion and be eligible to sit for the American Society of Clinical Pathology (ASCP) Board of Registry Examination, an additional 9 credits (for an overall total of 94 credits), to include the remaining autopsy and surgical pathology practical rotations, and the Senior Seminar must be completed 2 months later by the end of July. Because of these requirements, transfer students from other programs are not allowed.

Granting of the degree and certificate is not contingent upon the students passing any type of external certification or licensure examination.

Please review the Bulletin of the Duke University School of Medicine (<https://medschool.duke.edu/education/school-medicine-bulletin>) for additional policies of the of the Pathologists' Assistant Program and School of Medicine.

Facilities

The major facilities supporting this program are the classrooms, laboratories, and libraries of the Duke School of Medicine, and the Autopsy and Surgical Pathology Laboratories at Duke University Hospital and the Durham Veterans Affairs Hospital. The pathology laboratories provide exposure to nearly 375 autopsies and over 55,000 surgical pathology accessions.

The Mary Duke Biddle Trent Semans Center for Health Education (TSC) is a six-story, 104,000-square-foot health education building centrally located on the medical center campus, close to Duke University Hospital, laboratory and research buildings, medical clinics, the Duke Cancer Center and the Duke Medicine Pavilion. Featuring a floor dedicated to simulation laboratories that can transform from mock clinical exam rooms to surgery suites and emergency rooms, the Trent Semans Center also includes a ground floor auditorium, a learning hall, and flexible, state-of-the-art classrooms with moveable walls and chairs to accommodate team-based activities. Spaces on the third and fourth floors provide dedicated study rooms for students and areas where faculty and trainees can meet informally.

The Seeley G. Mudd Medical Center Library's collection includes the Trent Room (a rebuilt 18th century English library that contains the private collection of Dr. Josiah C. Trent) and contains all significant current journals and over 200,000 volumes. The Medical Center Library & Archives provides the services and collections necessary to further educational, research, clinical, and administrative activities in the medical field. Services are available to Duke Medicine faculty, staff, and students in the School of Medicine, School of Nursing, allied health programs, and graduate programs in the basic medical sciences. The Library also serves Duke Hospital and Health System. The building is connected to the TSC and to the Searle Center, which contains conference, lecture and banquet halls.

In addition, students participate in external rotations at the following sites:

1. The Office of the Chief Medical Examiner in Raleigh, N.C. The North Carolina Medical Examiner System is a network of medical doctors and allied health professionals throughout North Carolina who voluntarily devote their time, energy, and medical expertise to see that deaths of a suspicious, unusual

or unnatural nature are adequately investigated. The OCME investigates all deaths in North Carolina due to injury or violence, as well as natural deaths that are suspicious, unusual, or unattended by a medical professional. This resource is maintained by the Office of the Chief Medical Examiner of the state of North Carolina. The OCME is a branch in the Epidemiology Section of the Division of Public Health. The OCME also functions as the Division of Forensic Pathology of the UNC School of Medicine, Department of Pathology and Laboratory Medicine.

2. The surgical pathology laboratories of the University of North Carolina Hospital in Chapel Hill, N.C. The McLendon Clinical Laboratories (MCL) provide extensive diagnostic services in Anatomic Pathology and in Laboratory Medicine to the University of North Carolina Hospitals.

3. The surgical pathology laboratories of Duke Regional Hospital in Durham, N.C. Duke Regional Hospital serves Durham, Orange, Person, Granville and Alamance counties and the surrounding areas in a community hospital setting.

All students receive a new lap top computer and tablet on entry. Each student is assigned an individual carrel in a dedicated PA student office that is wired for on line services. Internet, Medline, and e-mail addresses are provided for each student. Support is provided by Medical Education Information Technology (MedEdIT).

Class Size

The program accepts 6-8 students for each class.

Admissions Policies

Applicants will submit a completed application form, additional materials, and fees to the Associate Director for review. After review by the admissions committee, selected candidates will be invited for an interview. A review committee consisting of the Program Director, Associate Director and at least three others drawn from either the Medical Director, the Surgical Pathology Training Coordinator, staff pathologists, staff PA's, and 2nd year students will approve all final admissions decisions. Criteria for admission are weighted to academic preparation and performance. Preparation in basic sciences such as cell and molecular biology, genetics, physiology and immunology is preferred, but courses such as gross anatomy, histology and microbiology are also recommended. Surgical pathology laboratory experience and/or the shadowing of a pathologist or pathologists' assistant are also required, but cannot replace adequate academic preparation.

Prerequisites for Admission

1. A baccalaureate degree in a biological or chemical science from an accredited institution which includes course work in general chemistry, organic chemistry and/ or biochemistry, biological science, college mathematics (at least to the level of algebra).

-or-

A baccalaureate degree in a non-science major to include the courses defined above and at least 24 credit hours in biological sciences and chemistry of such depth that the admissions committee determines that the candidate has the minimum scientific background to successfully begin the study of medical sciences.

2. Scores for the Graduate Record Examination (GRE) taken within the last five years (no more than 5 years old on January 15 of the year admission is desired) are required. MCAT scores are **not** accepted in lieu of the GRE. Candidates who receive their baccalaureate degree from institutions outside the United States must submit a transcript evaluation showing degree equivalency and course by course subject matter description, and must submit either TOEFL or IELTS scores (no more than 2 years old) if English is not their native language.
3. A minimum of 10 hours shadowing in anatomic pathology, specifically surgical pathology (preferably in more than one setting), or surgical pathology laboratory work experience is required. Autopsy shadowing is also preferred, but not mandatory.
4. All candidates for the Masters of Health Science degree and certification as Pathologists' Assistants must possess the physical and mental skills and abilities necessary to successfully complete the training program curriculum. To achieve the optimal educational experience, students are required to participate in all phases of the training program, in compliance with the following **Technical Standards:**

The study of medicine is not a pure intellectual exercise. Rather, a specific set of minimal physical, mental, emotional and social abilities are needed to be a successful student. Students must possess all of the abilities listed in the five Technical Standards categories below. The use of an intermediary that would, in effect, require a student to rely on someone else's power of observation and/or communication will not be permitted.

I. Observation

- a) Visually observe materials presented in the learning environment including audiovisual presentations, written documents, microbiology cultures, microscopic examination of microorganisms, tissues and gross organs in the normal and pathologic state, and diagnostic images;
- b) Observe specimens accurately and completely, both at a distance and directly. This requires functional vision, hearing, and sensation.

II. Communication

- a) Effectively speak, write, hear, read and use a keyboard utilizing the English language;
- b) Perceive non-verbal communications, including facial expressions, body language, and affect;
- c) Communicate effectively and sensitively with patients and their families via speech as well as reading/writing;
- d) Communicate in oral and written form with the healthcare team in an effective, accurate, and efficient manner.

III. Motor

- a) Elicit information from surgical specimens and postmortem examinations by palpation and use

of dissection instruments;

- b) Execute movements reasonably required to provide optimal gross analysis of surgical specimens and postmortem examinations. These skills require coordination of gross and fine motor movements, equilibrium, and sensation;
- c) Manipulate equipment and instruments to perform basic dissection procedures as required to attain curricular goals. (e.g., scalpel, forceps, scissors, needles and syringes, large dissection knife, band saw, camera).

IV. Intellectual/conceptual, Integrative, and Quantitative Abilities

- a) Perform calculations necessary to solve quantitative problems as required by the curriculum;
- b) Collect, organize, prioritize, analyze and assimilate large amounts of technically detailed and complex information in a timely fashion. This information will be presented in a variety of educational settings, including lectures, small group discussions, and individual clinical settings. The applicant should be able to analyze, integrate, and apply this information appropriately for problem solving and decision-making;
- c) Apply knowledge and reasoning to solve problems as outlined by the curriculum;
- d) Comprehend the three dimensional spatial relationships of structures;
- e) Remain awake and alert.

V. Behavioral, Emotional and Social Attributes

- a) Possess the emotional health to fully apply his/her intellectual skill, exercise good judgment, and to complete all responsibilities attendant to the diagnosis and care of surgical specimens and postmortem examinations;
- b) Develop a mature, sensitive, and effective relationship with patients and colleagues;
- c) Tolerate the physical, mental and emotional stress experienced during training and patient care;
- d) Possess qualities of adaptability, flexibility, and the ability to function in the face of uncertainty;
- e) Form a compassionate relationship with his/her patients while maintaining appropriate boundaries for a professional relationship;
- f) Behave in an ethical and moral manner consistent with professional values and standards;
- g) Exhibit sufficient interpersonal skills, knowledge, and attitudes to interact positively and sensitively with people from all parts of society, ethnic backgrounds, and belief systems;
- h) Cooperate with others and work corroboratively as a team.

The faculty of the Duke University School of Medicine's Pathologists' Assistant Program recognizes its responsibility to present candidates for the MHS degree and certification that have the knowledge, attitudes, and skills to function in the specialized setting of anatomic pathology.

The Admissions Committee is responsible for adhering to these technical standards during the selection of students for the Pathologists' Assistant Program.

Tuition and Fees

Tuition for the entering class in 2019 is \$28,334 per year with a yearly technology, insurance and parking fees of ~\$8000. The entering tuition and technology fee costs are guaranteed for the second year and will not increase. Rent, food, books and other miscellaneous costs average approximately \$27,000.

Financial Aid

Unsubsidized Stafford loans are available. Supplemental loans up to the program's recommended budget are available from private lenders.

For more detailed information, contact:

Office of Financial Aid

Duke University School of Medicine

Box 3067 Duke University Medical Center

Durham, NC 27710

<https://medschool.duke.edu/education/student-services/office-financial-aid>

Application Procedures

The deadline for applications for admission is **January 15** of each year. Application reviews will be completed by mid-February, and selected candidates will be interviewed during the following month. All applicants will be notified of their current status by April 1.

Application forms can be obtained by downloading from our website:

<https://pathology.duke.edu/education/pathologists-assistant-program/admissions-application>

or by writing: Pamela Vollmer, BHS, PA(ASCP) Associate Director, Pathologists' Assistant Program, Department of Pathology Box 3712, Duke University Medical Center, Durham, NC 27710.;

or by email at pamela.vollmer@duke.edu

The program office telephone number is (919) 684-2159.

Applications must include:

1. A completed Duke University School of Medicine Pathologists' Assistant Program application form and a non-refundable application fee of \$55.00.
2. Official transcripts of all colleges and universities attended.
3. GRE scores no more than 5 years old on the application deadline. Scores should be sent to the codes provided in the application form. In addition, scores and percentiles should be written in the application form.
4. Internet-based TOEFL or academic IELTS scores (no more than two years old) are required for international students whose native language is not English. Internet-based TOEFL scores of 115 total or

greater and academic IELTS scores of 8 or greater overall are competitive. Scores should be sent to the codes given in the application form.

5. Three letters of recommendation.

INCOMPLETE APPLICATIONS WILL NOT BE REVIEWED

Candidates will be notified of the admission committee's final decisions no later than April 30. Accepted candidates will be required to submit a non-refundable deposit of \$450.00 to retain their places in the class, along with a signed copy of the Duke Pathologists' Assistant Program Technical Standards. This deposit will be applied towards the first semester tuition, fees and criminal background checks.

Policy of Nondiscrimination

Duke University is committed to encouraging and sustaining a learning and work community that is free from prohibited discrimination and harassment. The university prohibits discrimination on the basis of race, color, religion, national origin, disability, veteran status, sexual orientation, gender identity, gender expression, sex, genetic information, or age in the administration of its educational policies, admission policies, financial aid, employment, or any other university program or activity. The university also makes good faith efforts to recruit, employ and promote qualified minorities, women, individuals with disabilities, and veterans. It admits qualified students to all the rights, privileges, programs, and activities generally accorded or made available to students.

The university also does not tolerate harassment of any kind. Sexual harassment and sexual misconduct are forms of sex discrimination and prohibited by the university. Duke University has designated Dr. Benjamin D. Reese, Vice-President for Institutional Equity, as the individual responsible for the coordination and administration of its nondiscrimination and harassment policies. The Office for Institutional Equity is located in Smith Warehouse, 114 S. Buchanan Blvd., Bay 8, Durham, North Carolina 27708. Dr. Reese's telephone number is (919) 684-8222, and his email address is ben.reese@duke.edu

Questions or comments about harassment or discrimination can be directed to the Office for Institutional Equity, (919) 684-8222. Additional information, including the complete text of the harassment policy and appropriate complaint procedures, may be found by contacting the Office for Institutional Equity, or visiting its website at: www.duke.edu/web/equity/

For further information on notice of nondiscrimination, you can contact the appropriate federal office by visiting the website: wdcrobcol01.ed.gov/CFAPPS/OCR/contactus.cfm for the address and phone number of the office that serves your area, or call 1 (800) 421-3481.

Student Conduct

Duke University Graduate School Regulations The Duke Community Standard

Duke University is a community dedicated to scholarship, leadership, and service and to the principles of honesty, fairness, respect, and accountability. Citizens of this community commit to reflect upon and uphold these principles in all academic and non-academic endeavors, and to protect and promote a culture of integrity.

To uphold the Duke Community Standard:

- I will not lie, cheat, or steal in my academic endeavors;
- I will conduct myself honorably in all my endeavors; and
- I will act if the Standard is compromised

Standards of Conduct

Graduate students at Duke University freely choose to join a community of scholarship predicated on the open exchange of ideas and original research. At Duke University, students assume the responsibility to foster intellectual honesty, tolerance, and generosity and to encourage respectful debate and creative research. By accepting admission to Duke University, graduate students pledge to uphold the intellectual and ethical standards of the University, as expressed in the *Duke Community Standard*, to respect the rights of their colleagues, to abide by University regulations, and to obey local, state, and federal laws. The Graduate School and the University specifically prohibit the following:

1. *Lying*: Knowing misrepresentations to gain illicit benefit or to cause harm to others. Examples include misrepresentation in applications for admissions or financial aid, lying during a formal inquiry by the University, and false accusations of misconduct by others.
2. *Cheating*: A dishonest or unfair action to advantage an individual's academic work or research. Such dishonesty would include the falsification of data, plagiarism, and tampering with another person's documents or research materials.
3. *Theft*: Misappropriation of property, services, credentials, or documents. Theft includes the misuse or willful damage of University property, equipment, services, funds, library materials, or electronic networks.
4. *Harassment*: The creation of a hostile, intimidating, disrespectful environment based on race, religion, gender, ethnicity, or sexual orientation, in which verbal or physical conduct, because of its severity or persistence, is likely to interfere significantly with an individual's work or education, or affect adversely an individual's living conditions. Duke University is committed to protecting academic freedom for all members of the university community. This policy against harassment is, therefore, applied so as to protect the rights of all parties to a complaint. Academic freedom and freedom of expression include but

are not limited to the expression of ideas, however controversial, in the classroom, residence hall, and, in keeping with different responsibilities, in workplaces elsewhere in the university community.

5. *Sexual harassment*: Coercion through speech or action for sexual purposes. Examples include verbal or written threats, unwanted sexual solicitation, stalking, and the use of a position of authority to intimidate or coerce others. Duke teaching personnel, employees, and graduate students are expected to report *consensual sexual relationships* between individuals in a supervisory or teaching relationship to their superiors. Examples of such supervisory/teaching relationships include: instructor and student; advisor and student; and supervisor and staff member.
6. *Assault*: An attack on another person resulting in either physical or psychological injury.
7. *Possession of illicit drugs on University property or as part of any University activity*: Students are prohibited to manufacture, sell, deliver, possess, or use a controlled substance without legal authorization. The North Carolina Controlled Substances Act defines a controlled substance as any drug, substance or immediate precursor, including but not limited to opiates, barbiturates, amphetamines, marijuana, and hallucinogens. Possession of drug paraphernalia is also prohibited under North Carolina law and University policy. Drug paraphernalia includes all equipment, products and material of any kind that are used to facilitate, or intended or designed to facilitate, violations of the North Carolina Controlled Substances Act.
8. *Refusal to comply with the directions of a University police officer*. Students must comply with the lawful directions of the University police. In addition, *interference with the proper operation of safety or security devices*, including emergency telephones, door locks, fire alarms, smoke detectors or any other safety device is prohibited.
9. *Trespassing*: Students may not enter University property to which access is prohibited.
10. *Possession of explosives, incendiary devices, or firearms on University property*.

Students are expected to meet academic requirements and financial obligations, as specified elsewhere in the School of Medicine Bulletin, in order to remain in good standing. Failure to meet these requirements and to abide by the rules and regulations of Duke University may result in summary dismissal by the Dean of the Graduate School or the Provost. In accepting admission, students indicate their willingness to subscribe to and be governed by these rules and regulations and acknowledge the right of the university to take disciplinary action, including suspension and/or expulsion, as may be deemed appropriate for failure to abide by such rules and regulations or for conduct adjudged unsatisfactory or detrimental to the university.

Duke Pathologists' Assistant Program and School of Medicine Expectations

Students who enroll in the PA Program are expected and required by the Program and University to uphold the highest standards of scholarship, conduct, ethics, integrity, and professionalism. These expectations carry forward not only in the academic arena, but in all clinical settings, as well as non-academic environments where the student represents the Program and/or the University. Because this is a professional program and it is taught in large part using actual patient material and information, the

highest standards of confidentiality and ethical conduct are required. Failure to adhere to these rules can result in dismissal from the program. Students are also expected to uphold the utmost standard of professionalism by following the Code of Professional Conduct of the School of Medicine defined below. Students who are on call for any service must have a functioning cell phone with them at all times. Failure to respond will result in disciplinary action.

A. Patient Confidentiality

All patient information is confidential and is not to be discussed with anyone in any manner other than that required to perform required duties and at approved conferences or supervised learning experiences. Students using any type of social media are expected to conform to the standards delineated in the Duke University Social Media Policy outlined in Section XVIII (above), and will face corrective action up to and including dismissal for failure to comply with the Policy.

B. Honesty

In addition to the honor code governing academic affairs, students must be forthcoming and honest about all aspects of handling and processing tissues and records that may affect patient care. All mistakes, problems, or potential problems will immediately be reported to the supervising pathologist.

C. Limitations of Duties

Exactly what students are and are not allowed to do in a patient care setting is set by the supervising pathologist. Students must strictly adhere to those guidelines. These limitations may vary as to the student's individual development in the program. The specific rules will be set on each rotation but the following always apply:

1. Never render a diagnosis or give out a diagnosis to anyone in any manner. This is solely the responsibility of the attending pathologist.
2. Never proceed with any dissection in which there is uncertainty. Call the pathologist.
3. Never begin any autopsy or complicated dissection of a surgical specimen without first discussing it with the pathologist.

Lastly, although students are expected to perform service activities while on both internal and external clinical rotations, that otherwise be completed by residents, faculty or staff PA's, these duties and activities are defined as educational, meant for the students benefit to meet MHS degree or certificate requirements. It is important to understand students should never be required to take the place of an autopsy, forensic or surgical pathology employee in order to get the work completed.

Students do participate in student worker programs after hours associated with the Department of Pathology; however, these student worker programs are not mandatory or considered to be part of the academic or clinical training of the Pathologists' Assistant Program, and are performed on a fee-for-service basis. Students are also invited to participate in research studies involving tissue procurement, but, again, this is neither mandatory nor considered part of the training program and is also performed on a fee-for-service basis.

HONOR CODE

All entering students are required to sign an Honor Code signatory sheet attesting to high ethical standards in school performance. The rights and responsibilities of students with regard to university-wide regulations pertaining to student conduct can be found in the Duke Community Standard in Practice: A Guide for Undergraduates (<http://registrar.duke.edu/university-bulletins/duke-community-standard-practice-guide-undergraduates>).

- The students of the Duke University School of Medicine understand that it is a privilege to learn the practice of their chosen professions in a clinical setting. At the same time, they recognize the obligation that they have to the health and welfare of their patients and to their patients' families. As they enter professions in which they will have an extraordinary responsibility for others' lives and health, students will strive to hold themselves to the highest standards of academic integrity and conduct. As part of their education and training, students must begin to practice the ethic of service that they will uphold for the rest of their professional lives. Since training in ethical and professional behavior is integral to the education of the health professional, violations of this Honor Code will be considered as an academic issue and may jeopardize advancement and graduation in the same way as other academic matters.

- The Honor Code is written to promote a sense of intellectual honesty, trust, responsibility, and professionalism among students, faculty and staff of the School of Medicine. It should be understood that these guidelines represent standards to strive for, and that not every infraction will necessitate investigation. It should also be recognized that this Honor Code cannot anticipate every potential offense and that unethical behavior not specifically mentioned in this code can still be investigated. Specific incidents will be considered in the context in which they occur. In addition, the magnitude and chronicity of infractions will be taken into account.

To uphold the Honor Code, the student will:

- demonstrate intellectual integrity and honesty;
- show concern for the welfare of others and act responsibly; and
- demonstrate respect for the rights of others, build trust in professional relationships, and demonstrate professional demeanor.

Code of Professional Conduct of the School of Medicine

Preamble

The Duke University School of Medicine strives to educate health professional students who have a high capacity for ethical professional behavior. Since training in professional behavior is a part of training in the health professions enrolled students commit themselves to comply with all regulations regarding conduct established by Duke University (the Community Standard and the Bulletin of Information and Regulations of Duke University), the School of Medicine and the individual's own academic program, as well as the Social Media Policy of the Duke University Health System. Professionalism is an academic issue and failure to demonstrate prescribed professional standards may jeopardize advancement and

graduation in the same way as other academic matters. These standards closely follow those established and expected for the medical profession for which the student is training and are intended to serve as a precursor to future professional expectations.

Statement of the Code of Professional Conduct

The Code of Professional Conduct is intended to promote:

- Intellectual integrity and honesty in all endeavors
- Concern for the welfare of others and respect for the rights of others
- Professional demeanor and behavior

Students will be expected to hold themselves to these standards:

The student will not:

- Cheat
- Lie
- Alter or falsify academic, research or patient documents (both paper and electronic)
- Commit plagiarism or submit for course work that of another individual, unless it is expressly as part of an accepted group learning exercise as defined by the Instructor
- Participate in academic activities, including patient care, having used non-prescribed psychotropic substances (including alcohol) or having inappropriately used prescribed substances.
- Engage in romantic, sexual, or other nonprofessional relationships with a patient or a patient's family member, even upon the apparent request of a patient or patient's family member
- Engage in disruptive behavior in the classroom, clinic, hospital, or laboratory that might interfere with the learning, work or clinical care of others.
- Gain or provide unauthorized access to academic or administrative files, patient medical records, or research documents, via computer or any other means or method
- Misrepresent him or herself as a licensed or certified health care provider

The student will:

- Offer original work for each assignment or learning task
- Admit errors to his/her supervisor and not knowingly mislead others in the classroom, clinical setting or laboratory
- Respond promptly to official communications from the school, comply with attendance standards for learning activities (including assigned call duties), and meet all School of Medicine mandatory deadlines

- Engage in the responsible and ethical conduct of research
- Treat patients or research subjects, their family members, and his/her colleagues with respect and dignity both in their presence and in discussions with others, and maintain appropriate privacy and confidentiality of patient communications and records.
- Recognize the limitations of his/her knowledge, skills, or physical or emotional state, and seek supervision, advice, or appropriate help before acting.
- Learn to recognize when his/her ability to function effectively is compromised, ask for relief or help, and notify the responsible person if something interferes with the ability to perform clinical or research tasks safely and effectively.
- Deal with colleagues in a considerate manner and with a spirit of cooperation, and avoid offensive language, gestures, or remarks while interacting with all persons encountered in a professional capacity regardless of race, color, ethnicity, religion, national origin, age, sex, gender identity, sexual orientation, disability or socio-economic status
- Take personal action to support equity and inclusivity in the learning environment
- Maintain a neat and clean appearance, and dress in attire that is appropriately professional and safe for the patient population served or the learning activity (and when in doubt, ask his/her instructor for guidance).
- Report promptly any witnessed violations of the Code of Professional conduct to a school official or via the website: https://duke.qualtrics.com/SE/?SID=SV_0xINCG6gxBow5Rr

Scope of the Code of Professional Conduct

The Code of Professional Conduct is designed to promote the professional development of students in the School of Medicine. It should be understood that these guidelines represent standards to strive for. It should also be recognized that this code cannot anticipate every potential offense and that unprofessional behavior not specifically mentioned in this code can still be subject to academic sanctions. Specific incidents will be considered in the context in which they occur. In addition, the magnitude and chronicity of infractions will be taken into account. Finally, it is important for students to understand and accept that professional behavior in the classroom, laboratory, and clinical setting is considered to be as significant an element of academic performance as subject-related evaluations such as Molecules and Cells examinations or clinical performance in Internal Medicine.

The Code of Professional Conduct is intended to guide the professional behavior of students studying in the health professions programs and applies to all endeavors and conduct pertaining to those studies. It is not intended to guide behavior that is a part of a student's private life away from his or her studies in a direct way, but students should be aware that society has high standards for the conduct of medical professionals, and such behavior may come to the attention of the school in several ways and become the focus of a Code of Professional Conduct investigation.

The Code of Professional Conduct applies to a student while enrolled, and also after graduation in matters pertaining to certifying credentials, issuing transcripts, and verifying degrees that have been granted by the School of Medicine

Program Outcomes

Measures	Class of 2014	Class of 2015	Class of 2016	Class of 2017	Class of 2018	Class of 2019
Graduation	100 %	100 %	100 %	100 %	100 %	100 %
Attrition	0 %	0 %	0 %	0 %	0 %	0 %
Placement within 6 months of graduation	100 %	100%	100%	100%	100%	100%
Board of Certification Exam pass rate	100 %`	100%	100%	100%	100%	100%