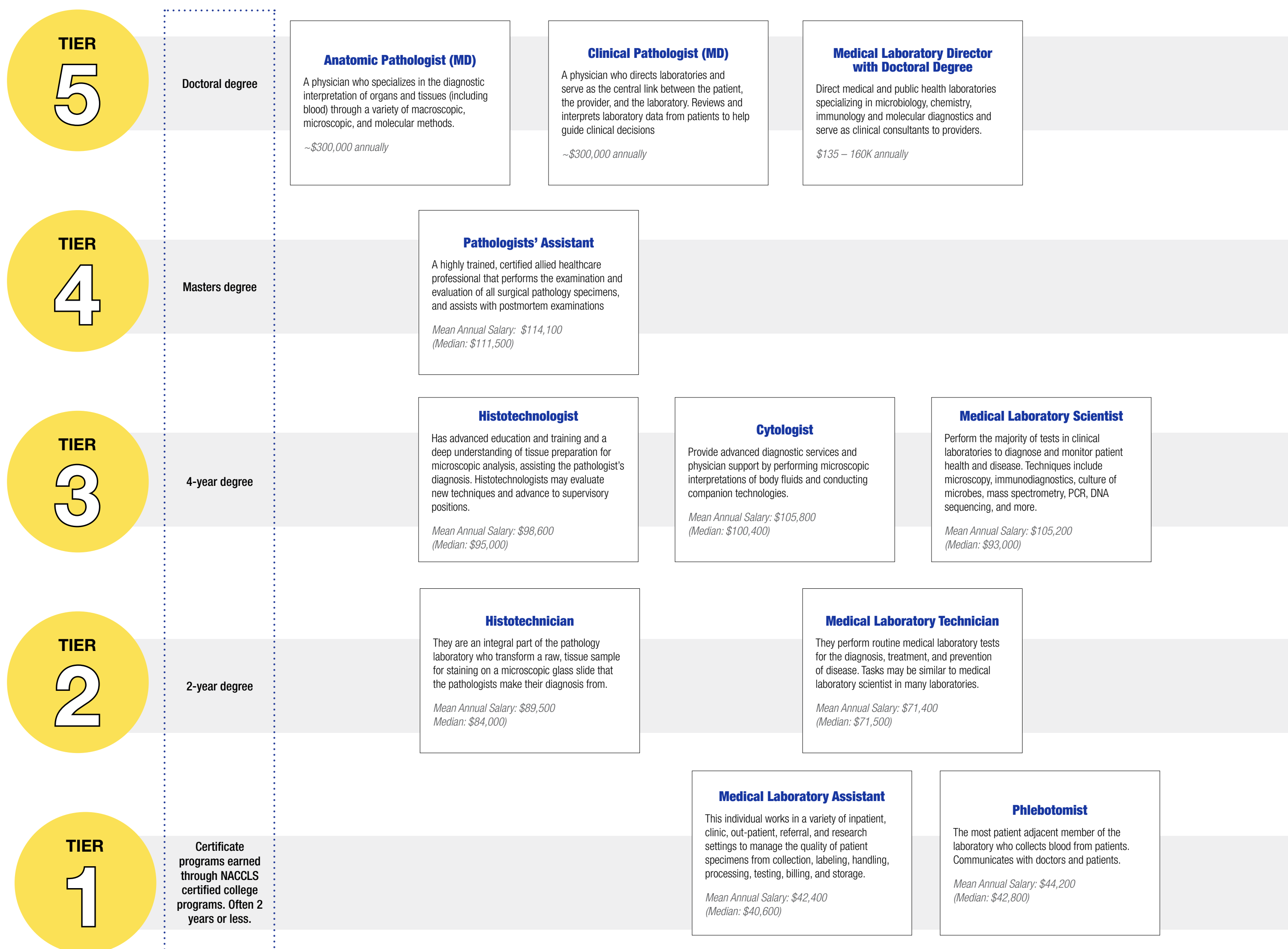


How do I start a career in the medical laboratory?

Many career opportunities are available in medical laboratory science, ranging from roles that require a certificate up to a doctoral degree. There are opportunities to grow in the laboratory through additional education and certifications. Learn more about what laboratory professionals do in the laboratory and be part of the team who provides up to 70% of medical diagnoses. Each of these careers plays a critical role in healthcare, diagnosing patients, and saving lives.

www.whatsmynext.org

EDUCATION



Salaries are based on a national average and will vary by location, years of service and other factors.

PHLEBOTOMIST



American Society for
Clinical Pathology

What do I do?

I am the most patient adjacent member of the laboratory. I draw blood for tests, transfusions, donations, or research. I sometimes explain the procedure to patients and assist in the recovery of patients with adverse reactions. I communicate with both doctors and patients.

My typical day includes:

- Dispose of contaminated sharps, in accordance with applicable laws, standards, and policies.
- Organize or clean blood-drawing trays, ensuring that all instruments are sterile and all needles, syringes, or related items are of first-time use.
- Draw blood from veins by vacuum tube, syringe, or butterfly venipuncture methods.
- Match laboratory requisition forms to specimen tubes.
- Dispose of blood or other biohazard fluids or tissue, in accordance with applicable laws, standards, or policies.

Necessary Skill Sets



Ability to follow set procedures and routines.



Work with ideas and require an extensive amount of thinking.



Tasks include practical, hands-on problems and solutions.



Communication skills required.

Salary

Average Salary*: \$37,000 Annual

Certification

[Earn certification as a Phlebotomist from the American Society for Clinical Pathology Board of Certification \(ASCP BOC\).](#)

Education Requirements

High school graduation or equivalent, AND successful completion of a NAACLS accredited phlebotomy program within the last five years.

* Salaries are based on a national average and will vary by location and years of service and other factors.

MEDICAL LABORATORY ASSISTANT



American Society for
Clinical Pathology

What do I do?

As a vital member of the healthcare team the I work with other medical professionals to ensure each patient sample is appropriate for testing. Quality specimen management leads to results that are accurate for the diagnosis, treatment, management, and prognosis of disease states impacting health.

My typical day includes:

- Proper identification of each patient in order to collect the correct specimen
- Accurate labeling of each specimen and ensure proper handling
- Timely receipt and processing of samples within the laboratory for testing
- Perform instrument maintenance to monitor analytic equipment status
- Analyze quality control material as directed by the Laboratory Manager
- Prepare samples to ship for referral lab testing

Necessary Skill Sets



COMMUNICATION
Includes both written and verbal communication skills. Medical Laboratory Assistants need to communicate clearly and efficiently with patients and others in the laboratory and healthcare team.



TECHNICAL SKILLS
Develop an in-depth knowledge of the proper process and handling of patient specimens and oversight of sensitive medical equipment used in diagnostic testing.



INTERPERSONAL
Also known as “people skills”, these include cooperation and teamwork. Active listening is an example of a skill integral to the respect and care of patients and others in the laboratory and healthcare team.



TIME MANAGEMENT
Prioritize tasks and responsibilities so work is performed in an efficient and timely manner for optimal patient care.



ATTENTION TO DETAIL
This refers to being thorough and accurate when performing tasks because a patient's care is dependent upon error free work.



ANALYTICAL SKILLS
Assessing each activity from collection of a specimen, labeling, process and handling, storage, evaluation of instrument performance, and quality control to ensure a quality result.

Salary

Mean Annual Salary*: \$41,200
(Median: \$38,200)

Certification

[Earn certification as a Medical Laboratory Assistant \(MLA\) from the American Society for Clinical Pathology Board of Certification \(ASCP BOC\).](#)

Education Requirements

Must have a minimum of a high school diploma.

* Salaries are based on a national average and will vary by location and years of service and other factors.

MEDICAL LABORATORY TECHNICIAN

What do I do?

Perform routine medical laboratory tests for the diagnosis, treatment, and prevention of disease. May work under the supervision of a medical laboratory scientist. Tasks may be similar to medical laboratory scientist in many laboratories.

My typical day includes:

- **Collect blood by venipuncture.** Prepare blood, body fluids and other specimens for analysis.
- **Conduct chemical analysis of blood and body fluids** using manual methods and automated instruments to detect abnormalities or diseases. Analyze finding to check the accuracy of results.
- **Assess blood samples** to determine the number and types of cells; or blood group and compatibility for transfusions.
- **Perform microbiologic culture** and other methods to diagnose infections.
- **Utilize molecular and immunologic methods** to determine the presence of genetic and immunologic markers of health and disease.
- **Record data from medical tests** and enter results into the patient's medical record.
- **Operate, calibrate, maintain and perform quality control** of automated medical laboratory equipment.



American Society for
Clinical Pathology

Necessary Skill Sets



ATTENTION TO DETAIL

Perform routine laboratory procedures and complex analyses that require a high level of cognitive understanding with skill and efficiency, producing accurate and precise results within a specified period of time.



COMMUNICATION

Describe and relate the theoretical and practical aspects of each test performed in the laboratory. Relate normal, abnormal and critical values with their significance by demonstrating correct follow-up actions.



ETHICAL BEHAVIOR

Exhibit attitudes of honesty and integrity in the performance of all laboratory procedures, with an understanding of the ultimate consequences gained from a knowledge of medical ethics.



PROBLEM SOLVING

Ability to troubleshoot instrumentation and assess abnormal results.

Salary

Mean Annual Salary: \$68,700 (Median: \$68,800)

* Salaries are based on a national average and will vary by location and years of service and other factors.

Certification

[Earn certification as a Medical Laboratory Technician from the American Society for Clinical Pathology Board of Certification \(ASCP BOC\).](#)

Education Requirements

Associate degree and Medical Laboratory Technician (MLT) certification

Job Titles

Medical Laboratory Technician, Certified Medical Laboratory Technician (MLT), Clinical Laboratory Technician

Career Video:

www.youtube.com/watch?v=QS97tc_7DqQ

All information can be found at <https://www.onetonline.org/link/summary/29-2011.00>
Additionally, take the online career interest profiler at <https://www.mynextmove.org/explore/ip>
Skills needed for MLT career: <https://www.swccd.edu/locations/higher-education-center-at-national-city/programs/medical-lab-tech-program/files/mlt-student-handbook-2023-2024v2.pdf>
NAACLS Program Finder: <https://naacls.org/Find-a-Program.aspx>
2021 ASCP Wage Survey Report: <https://doi.org/10.1093/ajcp/aqac116>

Learn about Careers in the Medical Laboratory: <https://www.whatsmynext.org>
Promote Careers in the Medical Laboratory in your communities: <https://www.ascp.org/content/get-involved/ambassadors#load>
ASCP Board Of Certification Resource: https://www.ascp.org/content/docs/default-source/boc-pdfs/boc-us-guidelines/mlt_content_guideline.pdf?sfvrsn=28



HISTOTECHNICIAN

What do I do?

I process tissue samples from patients for staining on a glass microscope slide used by the pathologist to diagnose cancers, infections and other diseases.

My typical day includes:

- **Embedding processed tissue** samples into paraffin wax blocks.
- Rotary microtomy (**cutting**) of tissue samples.
- Operating and maintaining laboratory equipment used in the **processing or staining of tissue** samples, such as H&E stainers, microtome/cryostat, tissue processors, or coverslippers.
- Entering **patient information** to corresponding case number of the tissue sample.
- **Filing of glass slides** and/or paraffin wax blocks for archival purposes.
- Performing **special staining techniques** for further **diagnostic testing**.

Necessary Skill Sets



PROBLEM SOLVING
Ability to troubleshoot equipment, staining, or processing issues that may occur within the course of the day.



CONVENTIONAL
Requires following set laboratory procedures and processes.



FLEXIBLE
Able to adjust to the volume and unpredictability of the workflow in the laboratory setting.



ATTENTION TO DETAIL
Ability to recognize inaccuracies in tissue processing, microtomy, and staining.

Salary

Mean Annual Salary*: \$83,900 (Median: \$79,800)

Certification

[Earn certification as a Histotechnician \(HT\) from the American Society for Clinical Pathology Board of Certification \(ASCP BOC\).](#)

Education Requirements

Successful completion of a NAACLS (National Accrediting Agency for Clinical Laboratory Sciences) accredited Histotechnician program.

or

60 semester hours of academic credit from an accredited college/university that includes 12 semester hours of chemistry and biology or an Associate degree from an accredited college/university with a combination of 12 semester hours in biology and chemistry and one year of full time acceptable work experience in a histopathology (clinical, veterinary, industry, or research) laboratory or an accredited laboratory within the last five years or successful completion of a 50-week US military histotechnician training course within the last ten years.

* Salaries are based on a national average and will vary by location and years of service and other factors.

MEDICAL LABORATORY SCIENTIST



American Society for
Clinical Pathology

What do I do?

I am a key member of the medical community that performs the large majority of the laboratory tests on samples collected. I interact with health care providers to recommend appropriate testing and convey critical values that may impact patient care. I may be involved in teaching, new test development and quality assurance.

My typical day includes:

- **Conduct chemical analysis of body fluids**, including blood, urine, or spinal fluid, to determine presence of normal or abnormal components.
- **Analyze laboratory findings** to check the accuracy of the results.
- **Assess blood samples** to determine the number and type of cells; or blood group and compatibility for transfusions.
- Perform microbiologic culture and other methods to diagnose infections.
- Record data from medical tests and enter results into a patient's medical record.
- Discuss results and findings of laboratory tests and procedures with physicians.
- **Operate, calibrate, or maintain equipment** used in quantitative or qualitative analysis, such as spectrophotometers, calorimeters, flame photometers, or computer-controlled analyzers.
- Operate laboratory equipment, such as microscopes and automated cell counters.

Necessary Skill Sets



ATTENTION TO DETAIL

Perform routine laboratory procedures and complex analyses that require a high level of cognitive understanding with skill and efficiency, producing accurate and precise results within a specified period of time.



COMMUNICATION

Describe and relate the theoretical and practical aspects of each test performed in the laboratory. Relate normal, abnormal and critical values with their significance by demonstrating correct follow-up actions.



ETHICAL BEHAVIOR

Exhibit attitudes of honesty and integrity in the performance of all laboratory procedures, with an understanding of the ultimate consequences gained from a knowledge of medical ethics.



PROBLEM SOLVING

Ability to troubleshoot instrumentation and assess abnormal results.

Salary

Mean Annual Salary*: \$86,900
(Median: \$83,200)

Certification

[Earn certification as a Medical Laboratory Scientist \(MLS\) from the American Society for Clinical Pathology Board of Certification \(ASCP BOC\).](#)

Education Requirements

Minimum bachelor's degree in Medical Laboratory Science and MLS certification

* Salaries are based on a national average and will vary by location and years of service and other factors.



HISTOTECHNOLOGIST

What do I do?

I have advanced education and training and a deep understanding of tissue preparation for microscopic analysis, assisting the pathologist's diagnosis. Histotechnologists may evaluate new techniques and advance to supervisory positions in the pathology laboratory.

My typical day includes:

- **Embedding processed tissue** samples into paraffin wax blocks
- Rotary microtomy (**cutting**) of tissue samples
- Operating and maintaining laboratory equipment used in the **processing or staining of tissue** samples, such as H&E stainers, microtome/cryostat, tissue processors, or coverslippers.
- Entering **patient information** to corresponding case number of the tissue sample
- **Filing of glass slides** and/or paraffin wax blocks for archival purposes
- Performing **special staining techniques** for further **diagnostic testing**

* Salaries are based on a national average and will vary by location and years of service and other factors.

Necessary Skill Sets



PROBLEM SOLVING
Ability to troubleshoot equipment, staining, or processing issues that may occur within the course of the day.



CONVENTIONAL
Requires following set laboratory procedures and processes.



FLEXIBLE
Able to adjust to the volume and unpredictability of the workflow in the laboratory setting.



ATTENTION TO DETAIL
Ability to recognize inaccuracies in tissue processing, microtomy, and staining.

Salary

Mean Annual Salary*: \$89,100
(Median: \$85,500)

Certification

[Earn certification as a Histotechnologist \(HTL\) from the American Society for Clinical Pathology Board of Certification \(ASCP BOC\).](#)

Education Requirements

Baccalaureate degree from an accredited college/university with a combination of 30 semester hours in biology and chemistry (must include credit hours in both) and successful completion of one of the following:

- NAACLS (National Accrediting Agency for Clinical Laboratory Sciences) accredited Histotechnician or Histotechnologist program within the last five years.
- One year of full-time acceptable work experience in a histopathology (clinical, veterinary, industry, or research) laboratory or an accredited laboratory within the last five years.
- Successful completion of a 50-week US military histotechnician training course within the last ten years.

Additional option:

Valid HT(ASCP) certification and a baccalaureate degree from an accredited college/university and six months of full-time acceptable work experience in a histopathology (clinical, veterinary, industry, or research) laboratory or an accredited laboratory within the last five years.



CYTOLOGIST

What do I do?

I am a health care professional who provides advanced diagnostic services and physician support by integrating morphologic interpretations with companion technologies.

My typical day includes:

- **Microscopically evaluate** patient cell samples for evidence of infection, or neoplasia.
- Collaborate with cytopathologists to determine **companion technologies** needed to provide quality patient care.
- **Performs Rapid On-Site-Evaluation (ROSE)** during patient biopsy procedures to ensure adequate tissue procurement for diagnostic and prognostic studies.
- Independently **evaluate cervicovaginal cytology specimens** to issue a final report for specimens showing no evidence of abnormality.
- **Selects and marks appropriate cells of interest** in a cytologic sample to present to a pathologist for diagnostic interpretation.
- **Triage cytologic specimens** for the appropriate companion diagnostic methodology on a case-by-case basis; including but not limited to immunohistochemistry, special stains, flow cytometry and molecular diagnostics.
- Develops **differential diagnosis** based on synthesis of appropriate case data during morphologic evaluation of small diagnostic samples, and cell blocks samples.
- Cytologists are proficient in all aspects of the **preparation of cytology samples**.

Necessary Skill Sets



FLEXIBILITY



PROBLEM SOLVING



ATTENTION TO DETAIL



CRITICAL THINKING

Salary

Mean Annual Salary*: \$90,700
(Median: \$92,000)

Certification

[Earn certification as a Cytologist \(CT\) from the American Society for Clinical Pathology Board of Certification \(ASCP BOC\).](#)

Education Requirements

Minimum Bachelor's Degree, Cytologist Certification or a master's degree

* Salaries are based on a national average and will vary by location and years of service and other factors.



PATHOLOGISTS' ASSISTANT

What do I do?

I am a highly trained, certified allied healthcare professional that performs the examination and evaluation of all surgical pathology specimens as well as performs postmortem examinations. Under the direction and supervision of a pathologist, I provide diagnostic information on anything from cancer staging to cause of death. Pathologists' assistant's can also move up to supervisory roles in the laboratory and beyond.

My typical day includes:

- Submitting tissue samples for testing.
- Examining **tissue** and **organs** removed during surgery.
- Performing **postmortem examinations**.
- **Photographing** the body and individual organs.
- Performing research and **training pathology residents**, pathologists' assistant students, and other pathology lab personnel.

Necessary Skill Sets



TECHNICAL

the evaluation of solid tissue specimens from biopsies and surgical procedures.



ANATOMY, PHYSIOLOGY & DISEASE MECHANISMS

enjoy learning about the major organ systems, how they work and disease that can occur

Salary

Mean Annual Salary*: \$105,500
(Median: \$102,000)

Certification

[Earn certification as a Pathologists' Assistants \(PA\) from the American Society for Clinical Pathology Board of Certification \(ASCP BOC\).](#)

Education Requirements

- A minimum of a baccalaureate degree from an accredited college/university
- AND completion of a NAACLS accredited Pathologists' Assistant Program

* Salaries are based on a national average and will vary by location and years of service and other factors.

MEDICAL LABORATORY DIRECTOR WITH DOCTORAL DEGREE

What do I do?

I have a doctoral degree and direct medical and public health laboratories specializing in microbiology, chemistry, immunology or molecular diagnostics. I am responsible for medical and scientific oversight of testing and often responsible for maintaining the laboratory's accreditation. Working as a team with managers and medical laboratory scientists, I ensure quality of testing and help troubleshoot problems. I am accountable for maintaining an appropriate test menu, and act as a clinical consultant to providers. Laboratory directors, especially in academic settings, may be involved in teaching and research activities.

My typical day includes:

- **Technical oversight:** ensures accuracy of methods and results. Trouble-shoots technical problems. Selects and validates new test methods.
- **Quality:** maintains awareness of regulatory standards and makes certain that appropriate testing practices, quality control and quality assurance measures are in place to meet standards and maintain accreditation.
- **Clinical Consultation:** guides providers in test selection and result interpretation. Communicates suggestions that may impact treatment and prognosis.
- **Education:** teaches medical laboratory professionals, medical students, residents and fellows in the classroom setting or as they rotate within the laboratory department.
- **Knowledge:** is abreast of the current science relevant to the laboratory discipline. Attends conferences, reviews literature, acquires training, and engages in thoughtful discourse with colleagues to maintain awareness of new methodologies, diseases, and circumstances related to public health.



American Society for
Clinical Pathology

Necessary Skill Sets



LEADERSHIP



PROBLEM-SOLVING



AN INQUISITIVE
NATURE



COMMUNICATOR



SELF-DIRECTED
LEARNING



RESPONSIBILITY

Salary

Average Salary*: \$135 – 160K annually

Certification

American Board of Medical Microbiology (ABMM),
American Board of Clinical Chemistry (AACC)

[Earn certification as a Diplomate in Laboratory Management from the American Society for Clinical Pathology Board of Certification \(ASCP BOC\).](#)

Education Requirements

A doctoral degree in a chemical, biological, physical or clinical laboratory science from an accredited institution. Two years of post-doctoral laboratory training which usually occurs through a fellowship program.

* Salaries are based on a national average and will vary by location and years of service and other factors.



CLINICAL PATHOLOGIST

What do I do?

I serve as the central link between the patient, the provider, and the lab. I review and interpret laboratory data from patients to help guide clinical decisions and improve patient outcomes. With a focus on patient care, one of our duties is to ensure the integrity and reliability of laboratory data as it relates to patient reporting as laboratory results play an integral part in medical plans for patients in an inpatient and outpatient setting. I am the liaison and expert in our field serving surgeons and clinical providers with expert knowledge regarding laboratory samples, helping to correlate clinical presentations that establish the future direction of patient's care.

Salary

Average Salary*: ~\$300,000 Annually

Certification

Boarded by the American Board of Pathology (ABP)

Education Requirements

- College – 4 Years
- Medical School – 4 Years
- Pathology residency – 3-4 Years
- Pathology Fellowship (optional) – 1-2 Years

My typical day includes:

- Serve as **medical directors** of clinical subspecialty areas.
- **Mange subspecialty laboratory teams**, standard operating procedures and proficiency metrics helps to ensure the highest level of care to our patients.
- Serve as **primary investigators on institutional review board** research protocols.
- Run basic research laboratories, **helping to develop new treatments** and discoveries for the future of medicine.
- Active in **teaching and mentoring** future laboratorians and students from all areas of medicine.
- Working to embrace **artificial intelligence and large data-set mining**

* Salaries are based on a national average and will vary by location and years of service and other factors.



ANATOMIC PATHOLOGIST

What do I do?

I am a physician who specializes in the diagnostic interpretation of organs and tissues (including blood) through a variety of macroscopic, microscopic, and molecular methods. I am a key member of the multidisciplinary patient care team, and provide crucial diagnostic, prognostic and predictive information that is needed for the treatment of their patients. Anatomic pathologists are also the directors of Anatomic Pathology laboratories, providing oversight and leadership for the daily operations of the entire laboratory team.

My typical day includes:

- » Examination of patient specimens (whole organs and tissues) and microscopic slides made from those tissues in order to make diagnoses that guide patient care.
- » Interpretation of specialized testing performed on patient samples in order to **provide prognostic and predictive information that guides the treatment of their patients.**
- » Works with the multidisciplinary team (oncologists, surgeons, internists, subspecialists, nurses, etc) to provide **coordinated care for their patients.**
- » Provides leadership and direction of medical **laboratories.**
- » **Guides other physicians** on best practices for test ordering and interpretation.

Subdisciplines of Anatomic Pathology include:



SURGICAL PATHOLOGY

the evaluation of solid tissue specimens from biopsies and surgical procedures course of the day.



AUTOPSY PATHOLOGY

examination of a body post-mortem and processes.



CYTOPATHOLOGY

the evaluation of cells that are exfoliated from the surface of tissues or extracted with a needle.

Salary

Average Salary*: ~\$300,000 Annually

Certification

Boarded by the American Board of Pathology (ABP)

Education Requirements

- College – 4 Years
- Medical School – 4 Years
- Pathology residency – 3-4 Years
- Pathology Fellowship (optional) – 1-2 Years

* Salaries are based on a national average and will vary by location and years of service and other factors.