

NAACLS Standards for Accredited Programs

For Adoption 2023

The logo features the acronym "NAACLS" in a bold, black, sans-serif font. The letters are set against a light blue, semi-transparent circular background that has a subtle gradient and a slight shadow effect, giving it a three-dimensional appearance. The text is centered horizontally within this circle.

NAACLS

National Accrediting Agency
for Clinical Laboratory Sciences

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Draft Standards

STANDARDS FOR ACCREDITED PROGRAMS

Core Standards

Recommended Changes in Blue

I. Sponsorship

A. Sponsoring Institution

The sponsor of an educational program must be one of the following:

1. A post-secondary academic institution accredited by an institutional accrediting agency that is recognized by the U.S. Department of Education and given the authority to provide post-secondary education, which awards a minimum of a certificate at the completion of the program.
2. A hospital, medical center, or laboratory that is accredited **or licensed** by an applicable recognized agency, which awards a minimum of a certificate at the completion of the program.
3. A secondary or post-secondary institution recognized by the state in which it is located. (for Phlebotomy and Medical Laboratory Assistant programs only)
4. An institution recognized by the national government or a regional/national accrediting agency for higher education of the country in which it is located as a post-secondary academic institution with degree granting authority (for programs outside of the United States).
5. **A Public Health Laboratory or an organization/corporation of a member of Public Health Laboratories recognized by the state in which it is located and not affiliated with a hospital, medical center or accredited secondary or post-secondary institution.**

B. Consortium Sponsor

A separate and distinct entity consisting of two or more members that exists for the purpose of operating an educational program. Where a consortium exists, at least one member of the consortium must meet the requirements of a sponsoring institution specified in I.A. The creation of the consortium must be clearly documented as a formal memorandum of understanding and signed by all members. This document shall contain the following elements:

1. governance of the consortium

2. lines of authority within the consortium for the educational program
 3. responsibilities of each member in the delivery of the educational program
- C. Multi-location Sponsor
1. A specified campus location of an entity that controls a system of campuses, which is accredited by an institutional accrediting agency that is recognized by the U.S. Department of Education and given the authority to provide postsecondary education. The specified campus location delivers the educational program in its entirety and awards a minimum of a certificate at the completion of the program.
 2. A specified location of an entity that controls a system of hospitals, medical centers, or laboratories **that are accredited or licensed** by an applicable recognized agency which awards a minimum of a certificate at the completion of the program.
- D. Responsibilities of the Sponsor
1. The sponsor has primary responsibility for:
 - a. **ensuring the name of the program is in accordance with unique standards for each accredited program type, when applicable (see Standard VII)**
 - b. supporting curriculum planning and course selection by program faculty and staff
 - c. appointing faculty and staff
 - d. maintaining student transcripts permanently
 - e. granting the degree and/or certificate documenting satisfactory completion of the educational program
 - f. ensuring that appropriate personal safety measures are addressed for students and faculty
 - g. ensuring that all provisions of the Standards are met
 - h. ensuring that graduates of the program have obtained or will obtain the minimum degree and/or certificate upon completion of the program **as described in Standard VIII.**
 - Pathologists' Assistant programs: a master's degree or higher, or a certificate for students who hold the required degree

- CG, DMS, HTL, MLM, MLS, and PHM: a baccalaureate degree or higher, or a certificate for students who hold the required degree
 - MLT and HT programs: an associate degree or higher, or a certificate for students who hold the required degree
 - Phlebotomy and Medical Laboratory Assistant programs: a certificate for the student
2. The sponsor must ensure that the activities assigned to students in the **applied learning experience** settings are educational.
 3. There must be documented ongoing communication between the sponsor and its **active** affiliates for exchange of information and coordination of the program.
 4. The sponsor must provide eligible students the opportunity to participate in **applied learning experiences**.
 5. The sponsor must have a formal affiliation agreement with all other entities that are involved in the education of the students, which describes:
 - a. the relationship
 - b. the roles
 - c. the responsibilities of the sponsor and that entity.

II. Assessment and Continuous Quality Improvement

A. Systematic Assessment

There must be a documented plan for continuous and systematic assessment of the effectiveness of the program.

B. Outcome Measures

A review of the results of the following outcomes measures from the last three active years must be documented, **analyzed**, and used in program assessment and continuous quality improvement of the program. If **the reported** outcome measure(s) do not meet the stated NAACLS required benchmarks, then an analysis and action plan must be submitted **to address and correct any deficiencies**.

1. External certification results
2. Graduation rates

3. Placement rates (i.e., employment positions in the field of study or pursuit of further education)
4. Attrition rates

C. **Feedback**

A review of the results of the following outcomes measures from the last three active years must be documented, analyzed, and used in program assessment and continuous quality improvement of the program.

1. Findings from graduate feedback
2. Findings from employer feedback

D. **Program Assessment and Modification**

The reviews of outcomes measures and feedback must be:

1. Reflected in ongoing **quality improvement**, curriculum development, resource acquisition/allocation, and program modification.
2. Analyzed to demonstrate the effectiveness of any changes implemented.

E. **Inclusion, Diversity, Equity, and Access**

There must be a documented plan for continuous and systematic efforts to incorporate elements of inclusion, diversity, equity, and access into the program. Considerations may include faculty, program staff, students, curriculum, scholarship, and community engagement efforts.

III. **Resources**

A. **General Resources**

1. The sponsor must provide sufficient financial resources for the continued operation of the education program to meet documented goals.
2. Resource assessment of personnel and physical resources must be a part of continuous program evaluation.

B. **Personnel**

1. The sponsor must appoint a sufficient number of personnel to achieve program outcomes.

C. **Physical Resources**

1. The sponsor must provide physical resources such as facilities, equipment and supplies, information resources, and instructional resources sufficient to achieve program outcomes.

IV. Students

A. Publications and Disclosures

1. The following must be defined, published, and readily available to prospective and enrolled students:
 - a. program mission statement;
 - b. program goals and graduate competencies;
 - c. program accreditation status as well as the name, address and contact information for NAACLS [on the home page of the program's website](#);
 - d. results of external certification outcomes, graduation rates outcomes, and placement rates outcomes of the last three active years [on the home page of the program's website and annually submitted to NAACLS](#);
 - e. list of [active clinical/applied learning experience](#) facilities;
 - f. admission criteria, including essentials functions, advance placement, transfer of credits and credits for experiential learning;
 - g. list of course descriptions including the number of academic credit hours per course (if appropriate);
 - h. names and academic rank or title of the program director and faculty; (and medical director for Pathologists' Assistant programs)
 - i. current tuition and fees including withdrawal and refund policies;
 - j. policies and processes by which students may perform [direct patient and/or reportable](#) work;
 - k. policies and procedures for:
 1. advising and guiding students through the program while maintaining confidentiality and impartiality;
 2. [obtaining clinical/applied learning experience assignments, specifically addressing if applied learning experiences are not provided through programmatic processes, or cannot be immediately guaranteed](#);
 3. student grievance and appeals;

4. for program completion, probation, suspension, dismissal, and academic appeals;
 5. promoting diversity and a climate of inclusiveness through recruitment, admission practices, and student support services;
 - l. academic calendar;
 - m. rules and regulations governing acceptable personal and academic conduct, including expectations for behavior while completing clinical/applied learning experiences.
- B. Student Records
1. The program must maintain student records, conforming to any governmental or sponsor regulations.
 2. The student transcript/student record must be retained permanently by the sponsor and contain at least:
 - a. legal name;
 - b. grades and credits;
 - c. dates of admission and completion
- C. Health and Safety
1. Health
 - a. The program must provide evidence that the health and safety of students, faculty, patients, and program specific staff is safeguarded.
 2. Safety
 - a. The program must provide evidence that each enrolled student, all faculty members, and program specific staff have received biohazard and safety training.

V. Operational Policies

Fair Practices

- A. Student recruitment and admission must be non-discriminatory in accordance with existing governmental regulations and those of the sponsor.
- B. Faculty and staff recruitment and employment practices must be non-discriminatory in accordance with existing governmental regulations and those of the sponsor.

- C. The granting of the degree or certificate must not be contingent upon any type of external certification or licensure examination.
- D. A general plan must be provided, addressing temporary and permanent program closure. In the event of such closure, a detailed plan [which includes provisions for current students to complete their course of study](#), must be submitted to NAACLS within 30 days of the official announcement.
- E. [Student employment in the laboratory must be non-compulsory and must be outside of assigned applied learning experiences/academic hours.](#)
- F. [Students must be directly supervised during their applied learning experiences and may not be substituted for laboratory employees/personnel to perform direct patient and/or reportable work.](#)

VI. Administrative: Maintaining Accreditation

Program/Sponsoring Institution Responsibilities

Programs are required to comply with administrative requirements for maintaining accreditation including:

- A. Submitting required documentation [to](#) NAACLS by the established deadlines. These include but are not limited to Self-Study Reports, Applications for Continuing Accreditation and required Progress Reports, Interim Report and Action Plans;
- B. Paying accreditation fees, as determined by NAACLS, by the due date;
- C. Informing NAACLS of relevant administrative and operational changes within 30 days. These include changes in program official names, physical addresses, URL, or telephone numbers; status (e.g. inactivity, closure) or location, [changes in CEO/Dean or President/Chancellor](#), and institution name;
- D. Agreeing to a site visit date before the end of the period for which accreditation is awarded;
- E. Submitting an outcomes report on an annual basis to NAACLS addressing major changes, if any, and program assessment standards (Standard II) by the established deadline date;
- F. Verifying compliance with these Standards upon request from NAACLS, which may include submitting to an [off-cycle](#) site visit.
- G. [Protecting the intellectual property of NAACLS materials by:](#)
 1. [using proper citations when sharing NAACLS content or materials](#)

2. obtaining written approval prior to distributing any content or materials purchased from NAACLS

Draft Standards

Unique Standards Medical Laboratory Scientist (MLS)

PREAMBLE

Objectives

The purpose of these Standards and the Description of the Profession is to establish, maintain, and promote standards of quality for educational programs in the clinical laboratory sciences and to provide recognition for educational programs which meet or exceed the minimum standards outlined in this document.

The Standards are to be used for the development and evaluation of medical laboratory science programs. Paper reviewers and site visit teams assist in the evaluation of the program's compliance with the Standards. Lists of accredited programs are published for the information of students, employers, and the public.

Description of the Medical Laboratory Scientist Professional

The medical laboratory scientist is qualified by academic and applied science education to provide service and research in **medical** laboratory science and related areas in rapidly changing and dynamic healthcare delivery systems. Medical laboratory scientists perform, develop, evaluate, correlate, and assure accuracy and validity of laboratory information; direct and supervise **medical** laboratory resources and operations; and collaborate in the diagnosis and treatment of patients. The medical laboratory scientist has diverse and multi-level functions in the principles, methodologies and performance of assays; problem-solving; troubleshooting techniques; interpretation and evaluation of clinical procedures and results; statistical approaches to data evaluation; principles and practices of quality assurance/quality improvement; and continuous assessment of laboratory services for all major areas practiced in the contemporary clinical laboratory.

Medical laboratory scientists possess the skills necessary for financial, operations, marketing, and human resource management of the **medical** laboratory.

Medical laboratory scientists practice independently and collaboratively, being responsible for their own actions, as defined by the profession. They have the requisite knowledge and skills to educate laboratory professionals, other health care professionals, and others in laboratory practice as well as the public.

The ability to relate to people, a capacity for calm and reasoned judgment and a demonstration of commitment to the patient are essential qualities. Communication skills extend to consultative interactions with members of the healthcare team, external relations, customer service and patient education.

Medical laboratory scientists demonstrate ethical and moral attitudes and principles that are necessary for gaining and maintaining the confidence of patients, professional associates, and the community.

Description of **Career** Entry Level Competencies of the Medical Laboratory Scientist

At entry level, the medical laboratory scientist will possess the entry level competencies necessary *to perform* the full range of **medical** laboratory tests in areas such as Clinical Chemistry, Hematology/Hemostasis, Immunology, Immunohematology/Transfusion Medicine, Microbiology, Urine and Body Fluid Analysis, Laboratory Operations, and other emerging diagnostics. They will play a role in the development and evaluation of test systems and interpretive algorithms.

The medical laboratory scientist will have diverse responsibilities in areas of analysis and clinical decision-making, regulatory compliance with applicable regulations, education, and quality assurance/performance improvement wherever laboratory testing is researched, developed, or performed.

At career entry level, the medical laboratory scientist will have the following professional competencies. They will have the ability to:

- A. Comply with government regulations and accreditation standards as they pertain to medical laboratory science;
- B. Follow established procedures for general laboratory safety, biohazard containment, and waste disposal;
- C. Apply principles of data safety and security for laboratory and hospital information systems
- D. Demonstrate professional and ethical conduct and interpersonal communication skills with diverse stakeholders, sufficient to serve the needs of patients, the public, and members of the health care team;
- E. Recognize and act upon individual needs for continuing professional education and development as a function of growth and maintenance of professional competence;
- F. Establish effective interprofessional working relationships with other health care professionals, demonstrating comprehension of and respect for their job responsibilities and patient care;
- G. Recognize and respect the importance and value of collaborating with a diverse workforce;
- H. Respect and promote a workplace culture of inclusivity, diversity, equity, and accessibility;
- I. Apply principles of quality assurance to assure validity and accuracy of laboratory data generated;
- J. Exercise principles and practices of administration and supervision of diverse teams and inclusive collaboration as applied to medical laboratory science;

- K. Employ educational methodologies and terminology sufficient to train/educate users and providers of laboratory services;
- L. Utilize principles and practices of clinical or research study design, equity and data bias, study implementation, and dissemination of results.

VII. MLS Program Administration

A. Name of the Program

- 1. The name of the program must be Medical Laboratory Science or Medical Laboratory Sciences.

B. Program Director

The program must have a NAACLS approved medical laboratory professional serving as program director who meets the following qualifications and executes all required responsibilities.

1. Qualifications

The program director must have:

- a. an earned master's or doctoral degree;
- b. ASCP-BOC or ASCPⁱ-BOC generalist certification as a Medical Laboratory Scientist or nationally recognized certification/licensure for international or non-US programs.
- c. three years teaching experience;
- d. knowledge of education methods and administration as well as current NAACLS accreditation procedures and certification procedures.

2. Responsibilities

The program director must:

- a. be responsible for the organization, administration, instruction, evaluation, continuous quality improvement, curriculum planning and development, directing other program faculty/staff, and general effectiveness of the program;
- b. provide evidence that s/he participates in the budget preparation process;
- c. engage in a minimum of 36 hours of documented continuing professional development every 3 years;

- d. be responsible for maintaining NAACLS accreditation of the program;
 - e. have regular and consistent contact with students, faculty and program personnel.
 - 3. Appointments

The program director must have a faculty or clinical appointment at the sponsoring institution.
 - C. Site Program Coordinator (required for multi-location programs only; assigned to each participating site)
 - 1. Qualifications

The site program coordinator must:

 - a. have an academic degree appropriate to the program level;
 - b. hold the same level certification required of a program director;
 - c. have at least one year of experience in medical laboratory science education.
 - 2. Responsibilities

The site program coordinator is responsible for:

 - a. coordinating teaching and clinical/applied learning experiential education;
 - b. evaluating program effectiveness;
 - c. maintaining appropriate communications with the program director.
 - D. Faculty/Instructors
 - 1. Didactic Instructor Appointments
 - a. Program Responsibilities
 - i. The program must have qualified faculty/instructors who hold appointments within the educational program (e.g. certified professionals in their respective or related fields).
 - ii. The program must ensure and document ongoing professional development of the program faculty/instructors.

- iii. The program will promote diversity and a climate of inclusiveness through its recruitment and retention of faculty and program specific staff.
 - b. Qualifications
Faculty/instructors designated by the program must:
 - i. Demonstrate adequate knowledge and proficiency in their content area;
 - ii. Demonstrate the ability to teach effectively at the appropriate level.
 - c. Responsibilities
The responsibilities of the faculty/instructors must include:
 - i. Participation in teaching courses;
 - ii. Evaluation of student achievement;
 - iii. Development of curriculum, policy and procedures;
 - iv. Assessment of program outcomes.
2. Clinical/**Applied Learning Experience** Liaison
- At least one liaison, who is employed by the clinical/**applied learning** site, must be designated at each **applied learning** site affiliated with the program to coordinate clinical experiences for students.
- a. Qualifications
The clinical/**applied learning experience** liaison must:
 - i. be a **certified medical laboratory professional staff member of the facility** who demonstrates the ability to effectively coordinate clinical/**applied learning** experiences of the students;
 - ii. demonstrate knowledge of the program discipline;
 - iii. have at least one year experience as a medical laboratory professional.
 - b. Responsibilities
The clinical/**applied learning experience** liaison must be responsible for:

- i. coordinating clinical/**applied learning** instruction at the site;
 - ii. maintaining effective communication with the program director or designee.
3. Advisory Committee
 - a. There must be an advisory committee composed of individuals from the community of interest (e.g., practicing professionals, academic professionals, scientific consultants, administrators, pathologists and other physicians, public member) who have knowledge of **medical** laboratory science education.
 - b. The advisory committee of the program shall have input into the program/curriculum to maintain current relevancy and effectiveness.

VIII. MLS Curriculum Requirements

- A. Instructional Areas
 1. **The program must identify prerequisite courses** in biological sciences, chemistry and mathematics that provide the foundation for course work required in the laboratory science program.
 2. **The program must deliver instruction utilizing cognitive, psychomotor, and affective learning domains that enable the student to obtain skills required of the profession.**
 3. **The program must terminate with a baccalaureate degree or higher, or a certificate for students who have completed the required degree.**
 4. The curriculum must address pre-analytical, analytical, and post-analytical components of laboratory services. This includes principles and methodologies, performance of assays, problem-solving, troubleshooting techniques, interpretation and evaluation of clinical procedures and results, statistical approaches to data evaluation, principles and practices of quality assurance/quality improvement, and continuous assessment of laboratory services in the **following current medical laboratory scientific content areas**:
 - a. Clinical Chemistry
 - b. Hematology/Hemostasis
 - c. Immunology
 - d. Immunohematology/Transfusion Medicine

- e. Microbiology
 - f. Urine and Body Fluid Analysis
 - g. Laboratory Operations
5. The program curriculum must also include:
- a. the application of safety and governmental regulations and standards as applied to **medical** laboratory science.
 - b. Principles and practices of professional conduct and the significance of continuing professional development.
 - c. Communications sufficient to serve the needs of patients, the public, and members of the health care team.
 - d. Principles and practices of administration and supervision as applied to **medical** laboratory science.
 - e. Educational methodologies and terminology sufficient to train/educate users and providers of laboratory services.
 - f. Principles and practices of clinical **and research** study design, implementation, and dissemination of results.
 - g. **Interprofessional education and collaborative practice.**
 - h. **Principles and practices of diversity and inclusion sufficient to support a healthy workplace environment and serve the needs of a diverse client population.**
- B. Learning Experiences
- 1. Learning experiences (courses, practica, other required activities) must be properly sequenced and include content and activities **that enable** students to achieve entry level competencies in each major discipline as listed in Standard VIII **Instructional Areas**.
 - 2. After demonstrating competency, students **under** qualified supervision, may be permitted to perform procedures **as defined in Standard V.E.**
- C. Evaluations
- 1. Evaluation systems must relate to course content and **align with** program **and course** competencies.
 - 2. Evaluation systems must be employed frequently enough to provide students and faculty with timely indications of the students' academic standing and progress.

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3. The evaluation systems must serve as a reliable indicator of the effectiveness of instruction and course design.

Draft Standards

Unique Standards Medical Laboratory Technician (MLT)

PREAMBLE

Objectives

The purpose of these Standards and the Description of the Profession is to establish, maintain, and promote standards of quality for educational programs in the clinical laboratory sciences and to provide recognition for educational programs which meet or exceed the minimum standards outlined in this document.

The Standards are to be used for the development and evaluation of medical laboratory technician programs. Paper reviewers and site visit teams assist in the evaluation of the program's compliance with the Standards. Lists of accredited programs are published for the information of students, employers, and the public.

Description of the Medical Laboratory Technician Professional

The medical laboratory technician is qualified by academic and applied science education to provide service in **medical** laboratory science and related areas in rapidly changing and dynamic healthcare delivery systems. Medical laboratory technicians perform, evaluate, correlate, and assure accuracy and validity of laboratory information; direct and supervise clinical laboratory resources and operations; and collaborate in the diagnosis and treatment of patients. The medical laboratory technician has diverse and multi-level functions in the areas of collecting, processing, and analyzing biological specimens and other substances, principles and methodologies, performance of assays, problem solving, troubleshooting techniques, significance of clinical procedures and results, principles and practices of quality assessment, for all major areas practiced in the contemporary clinical laboratory.

Medical laboratory technicians practice independently and collaboratively, being responsible for their own actions, as defined by the profession. They have the requisite knowledge and skills to educate laboratory professionals, other health care professionals, and others in laboratory practice as well as the public.

The ability to relate to people, a capacity for calm and reasoned judgment and a demonstration of commitment to the patient are essential qualities. Communications skills extend to consultative interactions with members of the healthcare team, external relations, customer service and patient education. Laboratory professionals demonstrate ethical and moral attitudes and principles that are necessary for gaining and maintaining the confidence of patients, professional associates, and the community.

Description of Entry Level Competencies of the Medical Laboratory Technician

At entry level, the medical laboratory technician will possess the entry level competencies necessary to perform routine **medical** laboratory tests in areas such as Clinical Chemistry, Hematology/Hemostasis, Immunology, Microbiology, Urine and

Body Fluid Analysis, Immunohematology/Transfusion medicine, and Laboratory Operations.

The level of analysis ranges from waived and point of care testing to complex testing encompassing all major areas of the clinical laboratory. The medical laboratory technician will have diverse functions in areas of pre-analytical, analytical, post-analytical processes. The medical laboratory technician will have responsibilities for information processing, training, and quality control monitoring wherever clinical laboratory testing is performed.

Description of Career Entry Level Competencies of the Medical Laboratory Technician

At career entry level, the medical laboratory technician will have the following professional competencies. They will have the ability to:

- A. Comply with government regulations and accreditation standards as they pertain to medical laboratory technology;
- B. Follow established procedures for general laboratory safety, biohazard containment, and waste disposal;
- C. Apply principles of data safety and security for laboratory and hospital information systems;
- D. Demonstrate professional and ethical conduct and interpersonal communication skills with diverse stakeholders, sufficient to serve the needs of patients, the public, and members of the health care team;
- E. Recognize and act upon individual needs for continuing professional education and development as a function of growth and maintenance of professional competence;
- F. Establish effective interprofessional working relationships with other health care professionals, demonstrating comprehension of and respect for their job responsibilities and patient care;
- G. Recognize and respect the importance and value of collaborating with a diverse workforce;
- H. Respect and promote a workplace culture of inclusivity, diversity, equity, and accessibility;
- I. Apply principles of quality assurance to assure validity and accuracy of laboratory data generated;

VII. MLT Program Administration

A. Name of the Program

1. The name of the program must be Medical Laboratory Technology or Medical Laboratory Technician.

B. Program Director

The program must have a NAACLS approved medical laboratory professional serving as program director who meets the following qualifications and executes all required responsibilities.

1. Qualifications

The program director must have:

- a. an earned master's or doctoral degree;
- b. ASCP-BOC or ASCPⁱ-BOC generalist certification as a Medical Laboratory Scientist or Medical Laboratory Technician or nationally recognized certification/licensure for international or non-US programs;
- c. three years teaching experience;
- d. knowledge of education methods and administration as well as current NAACLS accreditation procedures and certification procedures.

2. Responsibilities

The program director must:

- a. be responsible for the organization, administration, instruction, evaluation, continuous quality improvement, curriculum planning and development, directing other program faculty/staff, and general effectiveness of the program;
- b. provide evidence that s/he participates in the budget preparation process;
- c. engage in a minimum of 36 hours of documented continuing professional development every 3 years;
- d. be responsible for maintaining NAACLS accreditation of the program;
- e. have regular and consistent contact with students, faculty, and program personnel.

3. Appointments
The program director must have a faculty or clinical appointment at the sponsoring institution.
- C. Site Program Coordinator (required for multi-location programs only; assigned to each participating site)
 1. Qualifications
The site program coordinator must:
 - a. have an academic degree appropriate to the program level;
 - b. hold the same level certification required of a program director;
 - c. have at least one year of experience in medical laboratory science education.
 2. Responsibilities
 - a. The site program coordinator is responsible for:
 - b. coordinating teaching and clinical/[applied learning experiential education](#);
 - c. evaluating program effectiveness;
 - d. maintaining appropriate communications with the program director.
- D. Faculty / [Instructors](#)
 1. Didactic Instructor Appointments
 - a. Program Responsibilities
 - i. The program must have qualified faculty/instructors who hold appointments within the educational program
 - ii. The program must ensure and document ongoing professional development of the program faculty/instructors.
 - iii. [The program will promote diversity and a climate of inclusiveness through its recruitment and retention of faculty and program specific staff.](#)
 - b. Qualifications
Faculty/instructors designated by the program must:
 - i. Demonstrate adequate knowledge and proficiency in their content area;

- ii. Demonstrate the ability to teach effectively at the appropriate level.
- c. Responsibilities
The responsibilities of the faculty/instructors must include:
 - i. Participation in teaching courses;
 - ii. Evaluation of student achievement;
 - iii. Development of curriculum, policy and procedures;
 - iv. Assessment of program outcomes.

2. Clinical/[Applied Learning Experience](#) Liaison

At least one clinical liaison, who is employed by the clinical site, must be designated at each clinical site affiliated with the program to coordinate clinical experiences for students.

a. Qualifications

The clinical/[applied learning experience](#) liaison must:

- i. be a [certified medical laboratory professional staff member of the facility](#) who demonstrates the ability to effectively coordinate clinical/[applied learning](#) experiences of the students;
- ii. demonstrate knowledge of the program discipline;
- iii. have at least one year experience as a medical laboratory professional.

b. Responsibilities

The clinical/[applied learning experience](#) liaison must be responsible for:

- i. coordinating clinical/[applied learning](#) instruction at the site;
- ii. maintaining effective communication with the program director or designee.

E. Advisory Committee

- a. There must be an advisory committee composed of individuals from the community of interest (e.g., practicing professionals, academic professionals, scientific consultants, administrators, pathologists and other physicians, public member) who have knowledge of clinical laboratory science education.

- b. The advisory committee of the program shall have input into the program/curriculum to maintain current relevancy and effectiveness.

VIII. MLT Curriculum Requirements

A. Instructional Areas

1. The program must identify prerequisite content in biological sciences, chemistry and mathematics that provides the foundation for course work required in the laboratory science program.
2. The program must deliver instruction utilizing cognitive, psychomotor, and affective learning domains that enable the student to obtain skills required of the profession.
3. The program must terminate with an associate degree or higher, or a certificate for students who have completed the required degree.
4. The curriculum must address pre-analytical, analytical and post-analytical components of laboratory services. This includes collecting, processing, and analyzing biological specimens and other substances, principles and methodologies, performance of assays, problem-solving, troubleshooting techniques, significance of clinical procedures and results, principles, and practices of quality assessment, for all major areas practiced in the contemporary clinical laboratory. The program curriculum must include the following medical laboratory scientific content:
 - a. Clinical Chemistry
 - b. Hematology/Hemostasis
 - c. Immunology
 - d. Immunochemistry/Transfusion medicine
 - e. Microbiology
 - f. Urine and Body Fluid Analysis
 - g. Laboratory Operations
5. The program curriculum must also include:
 - a. The application of safety and governmental regulations compliance
 - b. Principles and practices of professional conduct and the significance of continuing professional development

- c. Communications sufficient to serve the needs of patients, and members of the health care team
 - d. Interprofessional education and collaborative practice
 - e. Principles and practices of diversity and inclusion sufficient to support a healthy workplace environment and serve the needs of a diverse client population
- B. Learning Experiences
- 1. Learning experiences (courses, practica, other required activities) must be properly sequenced and include content and activities that enable students to achieve entry level competencies in each major discipline as listed in Standard VIII Instructional Areas.
 - 2. After demonstrating competency, students, under qualified supervision, may be permitted to perform procedures as defined in Standard V.E.
- C. Evaluations
- 1. Evaluation systems must relate to course content and align with program and course competencies.
 - 2. Evaluation systems must be employed frequently enough to provide students and faculty with timely indications of the students' academic standing and progress.
 - 3. The evaluation systems must serve as a reliable indicator of the effectiveness of instruction and course design.

Unique Standards for the Histotechnologist (HTL)

PREAMBLE

Objectives

The purpose of these Standards and the Description of the Profession is to establish, maintain, and promote standards of quality for educational programs in the clinical laboratory sciences and to provide recognition for educational programs which meet or exceed the minimum standards outlined in this document.

The Standards are to be used for the development and evaluation of histotechnologist programs. Paper reviewers and site visit teams assist in the evaluation of the program's compliance with the Standards. Lists of accredited programs are published for the information of students, employers, and the public.

Description of the Histotechnologist Professional

Histotechnologist professionals are qualified by academic and applied science education to provide service and research in histotechnology and related areas in rapidly changing and dynamic healthcare delivery systems. They have diverse and multi-level functions in the areas of analysis and clinical decision-making, information management, regulatory compliance, education, and quality assurance/performance improvement wherever anatomic pathology testing is researched, marketed, developed, or performed.

Histotechnologist professionals perform, develop, evaluate, correlate and assure accuracy and validity of laboratory testing and procedures; direct and supervise anatomic pathology laboratory resources and operations; and collaborate in the diagnosis and treatment of patients. They possess skills for financial, operations, marketing, and human resource management of the histopathology laboratory.

Histotechnologist professionals practice independently and collaboratively, being responsible for their own actions, as defined by the profession. They have the requisite knowledge and skills to educate laboratory professionals, health care professionals, and others in laboratory practice, as well as the public.

The ability to relate to people, a capacity for calm and reasoned judgment, and a demonstration of commitment to the patient are essential qualities. Communication skills extend to consultative interactions with members of the healthcare team, external relations, customer service and patient education. Histotechnologist professionals demonstrate ethical and moral attitudes and principles that are necessary for gaining and maintaining the confidence of patients, professional associates, and the community.

Description of Career Entry Level Competencies of the Histotechnologist

At career entry level, the histotechnologist will have the following professional competencies. They will have the ability to:

- A. Comply with government regulations and accreditation standards as they pertain to histotechnology;
- B. Follow established procedures for general laboratory safety, biohazard containment, and waste disposal;
- C. Apply principles of data safety and security for laboratory and hospital information systems;
- D. Demonstrate professional and ethical conduct and interpersonal communication skills with diverse stakeholders, sufficient to serve the needs of patients, the public, and members of the health care team;
- E. Recognize and act upon individual needs for continuing professional education and development as a function of growth and maintenance of professional competence;
- F. Establish effective interprofessional working relationships with other health care professionals, demonstrating comprehension of and respect for their job responsibilities and patient care;
- G. Recognize and respect the importance and value of collaborating with a diverse workforce;
- H. Respect and promote a workplace culture of inclusivity, diversity, equity, and accessibility;
- I. Apply principles of quality assurance to assure validity and accuracy of laboratory data generated;
- J. Exercise principles and practices of administration and supervision of diverse teams and inclusive collaboration as applied to histotechnology;
- K. Employ educational methodologies and terminology sufficient to train/educate users and providers of laboratory services;
- L. Utilize principles and practices of clinical or research study design, equity and data bias, study implementation, and dissemination of results.

VII. HTL Program Administration

A. Program Director

The program must have a NAACLS approved medical laboratory professional serving as program director who meets the following qualifications and executes all required responsibilities.

1. Qualifications

The program director must have:

- a. An **earned master's or doctoral** degree;
- b. ASCP-BOC or ASCPⁱ-BOC certification as a Histotechnologist.
 - i. **or nationally recognized certification/licensure for international or non-US programs.**
 - ii. If the program director does not hold ASCP-BOC or ASCPⁱ-BOC certification as a Histotechnologist, a qualified professional who does hold ASCP-BOC or ASCPⁱ-BOC certification as a Histotechnologist must hold appointment as education coordinator;
 - iii. **three years teaching experience;**
 - iv. **knowledge of education methods and administration as well as current NAACLS accreditation procedures and certification procedures.;**

2. Responsibilities

The program director must:

- a. be responsible for the organization, administration, instruction, evaluation, continuous quality improvement, curriculum planning and development, directing other program faculty/staff, and general effectiveness of the program.
- b. provide evidence that s/he participates in the budget preparation process.
- c. engage in a minimum of 36 hours of documented continuing professional development every 3 years;
- d. be responsible for maintaining NAACLS accreditation of the program.
- e. have regular and consistent contact with students, faculty, and program personnel.

3. Appointments

The program director must have a faculty or clinical appointment at the sponsoring institution.

B. Site Program Coordinator (required for multi-location programs only; assigned to each participating site)

1. Qualifications

The site program coordinator must:

- a. have an academic degree appropriate to the program level;
- b. hold the same level certification required of a program director;
- c. have at least one year of experience in medical laboratory science education.

2. Responsibilities

The site program coordinator is responsible for:

- a. coordinating teaching and clinical education;
- b. evaluating program effectiveness;
- c. maintaining appropriate communications with the program director.

C. Faculty / Instructors

1. Didactic Instructor Appointments

a. Program Responsibilities

- i. The program must have qualified faculty/instructors who hold appointments within the educational program (e.g. certified professionals in their respective or related fields).
- ii. The program must ensure and document ongoing professional development of the program faculty/instructors.
- iii. The program will promote diversity and a climate of inclusiveness through its recruitment and retention of faculty and program specific staff.

b. Qualifications

Faculty/instructors designated by the program must:

- i. Demonstrate adequate knowledge and proficiency in their content area;
- ii. Demonstrate the ability to teach effectively at the appropriate level.

c. Responsibilities

The responsibilities of the faculty/instructors must include:

- i. Participation in teaching courses;
- ii. Evaluation of student achievement;

- iii. Development of curriculum, policy and procedures;
- iv. Assessment of program outcomes.

2. Clinical/**Applied Learning Experience** Liaison

At least one clinical liaison, who is employed by the clinical/**applied learning** site, must be designated at each clinical/**applied learning** site affiliated with the program to coordinate clinical experience for students.

a. Qualifications

The clinical/**applied learning experience** liaison must:

- i. be a **certified medical laboratory professional staff member of the facility** who demonstrates the ability to effectively coordinate clinical/**applied learning** experiences of the students
- ii. demonstrate knowledge of the program discipline;
- iii. have at least one year experience as a medical laboratory professional.

b. Responsibilities

The clinical/**applied learning experience** liaison must be responsible for:

- i. coordinating clinical/**applied learning** instruction at the site;
- ii. maintaining effective communication with the program director or designee.

D. Advisory Committee

- a. There must be an advisory committee composed of individuals from the community of interest (e.g. practicing professionals, academic professionals, scientific consultants, administrators, pathologists and other physicians, public member) who have knowledge of clinical laboratory science education.
- b. The advisory committee of the program shall have input into the program/curriculum to maintain current relevancy and effectiveness.

E. Education Coordinator (when required)

1. Qualifications

The education coordinator, when required, must be a medical laboratory professional who:

- a. has at least a baccalaureate degree and three years of experience in the program discipline;
- b. holds ASCP-BOC or ASCPⁱ-BOC certification as a Histotechnologist;
- c. has knowledge of NAACLS accreditation and current certification procedures.

2. Responsibilities

The education coordinator, when required, must provide supervision and coordination of the instructional faculty in the academic and clinical phases of the education program.

VIII. HTL Curriculum Requirements

A. Instructional Areas

1. The program must identify prerequisite content in biological sciences, chemistry and mathematics that provides the foundation for course work required in the laboratory science program.
2. The program must deliver instruction utilizing cognitive, psychomotor, and affective learning domains that enable the student to obtain skills required of the profession.
3. The program must terminate with a baccalaureate degree or higher, or a certificate for students who have completed the required degree.
4. Applications of histology, immunohistochemistry, enzyme histochemistry, cytology specimen preparation, electron microscopy, light microscopy, management, education, and regulations. This includes principles and methodologies, performance of tests, problem-solving, troubleshooting, techniques, interpretation of procedures and results of laboratory services for all major areas practiced in the contemporary histopathology laboratory.
5. Concepts and principles of laboratory operations must include:
 - a. Accessioning
 - b. Gross examination
 - c. Frozen Sectioning

- d. Fixation
 - e. Processing, to include chemistry principles and theories
 - f. Embedding/Microtomy
 - g. Staining principles, procedures, reagents and quality control
 - h. Laboratory operations including safety, instrumentation, quality control, and regulations
6. Identification of tissue structures, cell components, and their staining characteristics and relating them to physiological functions
7. The program curriculum must also include:
- a. The application of safety and governmental regulations and standards as applied to histotechnology.
 - b. Principles and practices of professional conduct and the significance of continuing professional development.
 - c. Communications sufficient to serve the needs of patients, the public, and members of the health care team.
 - d. Principles and practices of administration, supervision, and safety as applied to histotechnology.
 - e. Education techniques and terminology sufficient to train/educate users and providers of laboratory services.
 - f. Interprofessional education and collaborative practice
 - g. Principles and practices of diversity and inclusion sufficient to support a healthy workplace environment and serve the needs of a diverse client population.
- B. Learning Experiences
- 1. Learning experiences (courses, practica, other required activities) must be properly sequenced and include content and activities that enable students to achieve entry level competencies in each major discipline as listed in Standard VIII Instructional Areas.
 - 2. After demonstrating competency, students, under qualified supervision, may be permitted to perform procedures as defined in Standard V.E.
- C. Evaluations
- 1. Evaluation systems must relate to course content and align with program and course competencies.

2. Evaluation systems must be employed frequently enough to provide students and faculty with timely indications of the students' academic standing and progress.
3. The evaluation systems must serve as a reliable indicator of this effectiveness of instruction and course design.

Draft Standards

Unique Standards for the Histotechnician (HT)

PREAMBLE

Objectives

The purpose of these Standards and the Description of the Profession is to establish, maintain, and promote standards of quality for educational programs in the clinical laboratory sciences and to provide recognition for educational programs which meet or exceed the minimum standards outlined in this document.

The Standards are to be used for the development and evaluation of histotechnician programs. Paper reviewers and site visit teams assist in the evaluation of the program's compliance with the Standards. Lists of accredited programs are published for the information of students, employers, and the public.

Description of the Histotechnician Professional

Histotechnician professionals are qualified by academic and applied science education to provide service and research in histotechnology and related areas in rapidly changing and dynamic healthcare delivery systems. They have diverse and multi-level functions in the areas of analysis and clinical decision-making, information management, regulatory compliance, education, and quality assurance/performance improvement wherever anatomic pathology testing is researched, marketed, developed or performed.

Histotechnician professionals perform, develop, evaluate, correlate and assure accuracy and validity of laboratory testing and procedures; direct and supervise anatomic pathology laboratory resources and operations; and collaborate in the diagnosis and treatment of patients. They possess skills for financial, operations, marketing, and human resource management of the histopathology laboratory.

Histotechnician professionals practice independently and collaboratively, being responsible for their own actions, as defined by the profession. They have the requisite knowledge and skills to educate laboratory professionals, health care professionals, and others in laboratory practice, as well as the public.

The ability to relate to people, a capacity for calm and reasoned judgment, and a demonstration of commitment to the patient are essential qualities. Communication skills extend to consultative interactions with members of the healthcare team, external relations, customer service and patient education. Histotechnician professionals demonstrate ethical and moral attitudes and principles that are necessary for gaining and maintaining the confidence of patients, professional associates, and the community.

Description of Career Entry Level Competencies of the Histotechnician

At career entry level, the histotechnician will have the following professional competencies. They will have the ability to:

- A. Comply with government regulations and accreditation standards as they pertain to histotechnology;
- B. Follow established procedures for general laboratory safety, biohazard containment, and waste disposal;
- C. Apply principles of data safety and security for laboratory and hospital information systems;
- D. Demonstrate professional and ethical conduct and interpersonal communication skills with diverse stakeholders, sufficient to serve the needs of patients, the public, and members of the health care team;
- E. Recognize and act upon individual needs for continuing professional education and development as a function of growth and maintenance of professional competence;
- F. Establish effective interprofessional working relationships with other health care professionals, demonstrating comprehension of and respect for their job responsibilities and patient care;;
- G. Recognize and respect the importance and value of collaborating with a diverse workforce;
- H. Respect and promote a workplace culture of inclusivity, diversity, equity, and accessibility;
- I. Apply principles of quality assurance to assure validity and accuracy of laboratory data generated;

VII. HT Program Administration

A. Program Director

The program must have a NAACLS approved medical laboratory professional serving as program director who meets the following qualifications and executes all required responsibilities.

1. Qualifications

The program director must have:

- a. a baccalaureate degree or higher;
- b. ASCP-BOC or ASCPⁱ-BOC certification as a Histotechnologist or Histotechnician.
 - i. If the program director does not hold ASCP-BOC or ASCPⁱ-BOC certification as a Histotechnologist or Histotechnician, a qualified professional who does hold

ASCP-BOC or ASCPⁱ-BOC certification as a Histotechnologist or Histotechnician must hold appointment as education coordinator;

- ii. [three years teaching experience](#);
- iii. [knowledge of education methods and administration as well as current NAACLS accreditation procedures and certification procedures](#).

2. Responsibilities

The program director must:

- a. be responsible for the organization, administration, instruction, evaluation, continuous quality improvement, curriculum planning and development, directing other program faculty/staff, and general effectiveness of the program;
- b. provide evidence that s/he participates in the budget preparation process;
- c. engage in a minimum of 36 hours of documented continuing professional development every 3 years;
- d. be responsible for maintaining NAACLS accreditation of the program;
- e. have regular and consistent contact with students, faculty, and program personnel.

3. Appointments

The program director must have a faculty or clinical appointment at the sponsoring institution.

B. Site Program Coordinator (required for multi-location programs only; assigned to each participating site)

1. Qualifications

The site program coordinator must:

- a. have an academic degree appropriate to the program level;
- b. hold the same level certification required of a program director;
- c. have at least one year of experience in medical laboratory science education.

2. Responsibilities

The site program coordinator is responsible for:

- a. coordinating teaching and clinical/[applied learning experiential](#) education,
- b. evaluating program effectiveness;
- c. maintaining appropriate communications with the program director.

C. Faculty /[Instructors](#)

1. Didactic Instructor Appointments

a. Program Responsibilities

- i. The program must have qualified faculty/instructors who hold appointments within the educational program (e.g. certified professionals in their respective or related fields).
- ii. The program must ensure and document ongoing professional development of the program faculty/instructors.
- iii. [The program will promote diversity and a climate of inclusiveness through its recruitment and retention of faculty and program specific staff.](#)

b. Qualifications

Faculty/instructors designated by the program must:

- i. Demonstrate adequate knowledge and proficiency in their content area;
- ii. Demonstrate the ability to teach effectively at the appropriate level.

c. Responsibilities

The responsibilities of the faculty/instructors must include:

- i. Participation in teaching courses;
- ii. Evaluation of student achievement;
- iii. Development of curriculum, policy and procedures;
- iv. Assessment of program outcomes.

2. Clinical / [Applied Learning Experience](#) Liaison

At least one clinical liaison, who is employed by the clinical/[applied learning](#) site, must be designated at each clinical/[applied learning](#)

site affiliated with the program to coordinate clinical experiences for students.

a. Qualifications

The clinical/[applied learning experience](#) liaison must:

- i. Be a [certified](#) medical laboratory professional [staff member](#) who demonstrates the ability to effectively coordinate clinical/[applied learning](#) experiences of the students;
- ii. demonstrate knowledge of the program discipline;
- iii. have at least one year experience as a medical laboratory professional.

b. Responsibilities

The clinical/[applied learning experience](#) liaison must be responsible for:

- i. coordinating clinical/[applied learning](#) instruction at the site;
- ii. maintaining effective communication with the program director or designee.

D. Advisory Committee

- a. There must be an advisory committee composed of individuals from the community of interest (e.g. practicing professionals, academic professionals, scientific consultants, administrators, pathologists and other physicians, public member) who have knowledge of clinical laboratory science education.
- b. The advisory committee of the program shall have input into the program/curriculum to maintain current relevancy and effectiveness.

E. Education Coordinator (when required)

1. Qualifications

- a. The education coordinator must be a medical laboratory professional who:
 - i. has a [baccalaureate degree](#) and three years of experience in the program discipline;
 - ii. holds ASCP-BOC U.S. certification as a Histotechnologist or Histotechnician;

- iii. has knowledge of NAACLS accreditation and current certification procedures.
2. Responsibilities
 - a. The education coordinator must provide supervision and coordination of the instructional faculty in the academic and clinical phases of the education program.

VIII. HT Curriculum Requirements

- A. Instructional Areas
 1. The program must identify prerequisite content in biological sciences, chemistry and mathematics that provides the foundation for course work required in the laboratory science program.
 2. The program must deliver instruction utilizing cognitive, psychomotor, and affective learning domains that enable the student to obtain skills required of the profession.
 3. The program must terminate with an associate degree or higher, or a certificate for students who have completed the required degree.
 4. Applications of histology, immunohistochemistry, enzyme histochemistry, cytology specimen preparation, electron microscopy and light microscopy. This includes principles and methodologies, problem-solving, and troubleshooting, for all major areas practiced in the contemporary histopathology laboratory.
 5. Concepts and principles of laboratory operations must include:
 - a. Accessioning
 - b. Gross examination
 - c. Frozen sectioning
 - d. Fixation
 - e. Processing
 - f. Embedding/Microtomy
 - g. Staining principles, procedures, reagents and quality control
 - h. Laboratory operations including safety, instrumentation, quality control, laboratory mathematics
 6. Identifying tissue structures and staining characteristics.
 7. The program curriculum must also include:

- a. [The application](#) of safety and governmental regulations and standards as applied to histotechnology.
 - b. Principles and practices of professional conduct and the significance of continuing professional development.
 - c. Communications sufficient to serve the needs of patients, and members of the health care team.
 - d. Principles and practices of safety as applied to histotechnology.
 - e. [Interprofessional education and collaborative practice](#)
 - f. [Principles and practices of diversity and inclusion sufficient to support a healthy workplace environment and serve the needs of a diverse client population](#)
- B. Learning Experiences
1. Learning experiences (courses, practica, other required activities) must be properly sequenced and include content and [activities that enable](#) students to achieve entry level competencies in each major discipline as listed in Standard VIII [Instructional Areas](#).
 2. After demonstrating competency, students, [under](#) qualified supervision, may be permitted to perform [procedures as defined in Standard V.E.](#)
- C. Evaluations
1. Evaluation systems must relate to course content and [align with](#) program [and course](#) competencies.
 2. Evaluation systems must be employed frequently enough to provide students and faculty with timely indications of the students' academic standing and progress.
 3. [The evaluation systems must serve as a reliable indicator of the effectiveness of instruction and course design.](#)

Unique Standards for the Diagnostic Molecular Scientist (DMS)

PREAMBLE

Objectives

The purpose of these Standards and the Description of the Profession is to establish, maintain, and promote standards of quality for educational programs in the clinical laboratory sciences and to provide recognition for educational programs which meet or exceed the minimum standards outlined in this document.

The Standards are to be used for the development and evaluation of diagnostic molecular science programs. Paper reviewers and site visit teams assist in the evaluation of the program's compliance with the Standards. Lists of accredited programs are published for the information of students, employers, and the public.

Description of the Diagnostic Molecular Scientist Professional

Diagnostic molecular scientist professionals are qualified by academic and applied science education to provide service and research in the molecular diagnosis of acquired, inherited, and infectious diseases. They have diverse and multi-level functions in the areas of analysis and clinical decision-making, information management, regulatory compliance, education, and quality assurance/performance improvement. Diagnostic molecular scientists perform, develop, evaluate, correlate, and assure accuracy and validity of laboratory testing and procedures; direct and supervise laboratory resources and operations; and collaborate in the diagnosis and treatment of patients. They possess skills for financial, operations, marketing, and human resource management of the molecular pathology laboratory. Diagnostic molecular scientists practice independently and collaboratively, being responsible for their own actions, as defined by the profession. They have the requisite knowledge and skills to educate laboratory professionals, health care professionals, and others in laboratory practice, as well as the public.

The ability to relate to people, a capacity for calm and reasoned judgment, and a demonstration of commitment to the patient are essential qualities. Communication skills extend to consultative interactions with members of the healthcare team, external relations, customer service and patient education. Diagnostic molecular scientists demonstrate ethical and moral attitudes and principles that are necessary for gaining and maintaining the confidence of patients, professional associates, and the community. An attitude of respect for the patient and confidentiality of the patient's record and/or diagnosis must be maintained.

Description of Career Entry Level Competencies of the Diagnostic Molecular Scientist

At career entry level, the diagnostic molecular scientist will have the following professional competencies. They will have the ability to:

- A. Comply with government regulations and accreditation standards as they pertain to diagnostic molecular science;
- B. Follow established procedures for general laboratory safety, biohazard containment, and waste disposal;
- C. Apply principles of data safety and security for laboratory and hospital information systems;
- D. Demonstrate professional and ethical conduct and interpersonal communication skills with diverse stakeholders, sufficient to serve the needs of patients, the public, and members of the health care team;
- E. Recognize and act upon individual needs for continuing professional education and development as a function of growth and maintenance of professional competence;
- F. Establish effective interprofessional working relationships with other health care professionals, demonstrating comprehension of and respect for their job responsibilities and patient care;;
- G. Recognize and respect the importance and value of collaborating with a diverse workforce;
- H. Respect and promote a workplace culture of inclusivity, diversity, equity, and accessibility;
- I. Apply principles of quality assurance to assure validity and accuracy of laboratory data generated;
- J. Exercise principles and practices of administration and supervision of diverse teams and inclusive collaboration as applied to diagnostic molecular science;
- K. Employ educational methodologies and terminology sufficient to train/educate users and providers of laboratory services;
- L. Utilize principles and practices of clinical or research study design, equity and data bias, study implementation, and dissemination of results.

VII. DMS Program Administration

A. Program Director

The program must have a NAACLS approved medical laboratory professional serving as program director who meets the following qualifications and executes all required responsibilities.

1. Qualifications

The program director must have:

- a. an earned master's or doctoral degree;
- b. ASCP-BOC or ASCPⁱ-BOC certification in Molecular Biology or ABMGG certification in Molecular Biology.
- c. three years teaching experience;
- d. knowledge of education methods and administration as well as current NAACLS accreditation procedures and certification procedures.

2. Responsibilities

The program director must:

- a. be responsible for the organization, administration, instruction, evaluation, continuous quality improvement, curriculum planning and development, directing other program faculty/staff, and general effectiveness of the program;
- b. provide evidence that s/he participates in the budget preparation process;
- c. engage in a minimum of 36 hours of documented continuing professional development every 3 years;
- d. be responsible for maintaining NAACLS accreditation of the program;
- e. have regular and consistent contact with students, faculty, and program personnel;

3. Appointments

The program director must have a faculty or clinical appointment at the sponsoring institution.

B. Site Program Coordinator (required for multi-location programs only; assigned to each participating site)

1. Qualifications

The site program coordinator must:

- a. have an academic degree appropriate to the program level;
- b. hold the same level certification required of a program director;
- c. have at least one year of experience in medical laboratory science education.

2. Responsibilities

The site program coordinator is responsible for:

- a. coordinating teaching and clinical education,
- b. evaluating program effectiveness;
- c. maintaining appropriate communications with the program director.

C. Faculty / [Instructors](#)

1. Didactic Instructor Appointments

a. Program Responsibilities

- i. The program must have qualified faculty/instructors who hold appointments within the educational program (e.g. certified professionals in their respective or related fields).
- ii. The program must ensure and document ongoing professional development of the program faculty/instructors.
- iii. [The program will promote diversity and a climate of inclusiveness through its recruitment and retention of faculty and program specific staff.](#)

b. Qualifications

Faculty/instructors designated by the program must:

- i. Demonstrate adequate knowledge and proficiency in their content area;
- ii. Demonstrate the ability to teach effectively at the appropriate level.

c. Responsibilities

The responsibilities of the faculty/instructors must include:

- i. Participation in teaching courses;

- ii. Evaluation of student achievement;
- iii. Development of curriculum, policy and procedures;
- iv. Assessment of program outcomes.

2. Clinical/**Applied Learning Experience** Liaison

At least one clinical/**applied learning experience** liaison, who is employed by the clinical/**applied learning** site, must be designated at each clinical site affiliated with the program to coordinate clinical experiences for students.

a. Qualifications

The clinical liaison must:

- i. Be a **certified medical laboratory professional staff member of the facility** who demonstrates the ability to effectively coordinate clinical/**applied learning experiences** of the students
- ii. demonstrate knowledge of the program discipline;
- iii. have at least one year experience as a medical laboratory professional.

b. Responsibilities

The clinical/**applied learning experience** liaison must be responsible for:

- i. coordinating clinical/ **applied learning experience** instruction at the site;
- ii. maintaining effective communication with the program director or designee.

D. Advisory Committee

- a. There must be an advisory committee composed of individuals from the community of interest (e.g. practicing professionals, academic professionals, scientific consultants, administrators, pathologists and other physicians, public member) who have knowledge of clinical laboratory science education.
- b. The advisory committee of the program shall have input into the program/curriculum to maintain current relevancy and effectiveness.

VIII. DMS Curriculum Requirements

A. Instructional Areas

1. The program must identify prerequisite courses in biological sciences including genetics, chemistry and mathematics that provide the foundation for course work required in the laboratory science program.
2. The program must deliver instruction utilizing cognitive, psychomotor, and affective learning domains that enable the student to obtain skills required of the profession.
3. The program must terminate with a baccalaureate degree or higher, or a certificate for students who have completed the required degree.
4. The curriculum must address pre-analytical, analytical and post-analytical components of diagnostic molecular laboratory services covering diagnostic molecular tests used to detect or diagnose acquired (infectious and noninfectious) diseases and genetic predisposition or disorders. This includes principles and methodologies, performance of assays, problem-solving, troubleshooting techniques, interpretation and evaluation of clinical procedures and results, statistical approaches to data evaluation, principles and practices of quality assurance/quality improvement, and continuous assessment of laboratory services.

The program curriculum must include the following scientific content:

- a. Organic and/or biochemistry, genetics, cell biology, microbiology, immunology, and diagnostic molecular biology;
 - b. Principles, methodologies, and applications of molecular microbiology (infectious diseases), molecular pathology (hematology/oncology), and molecular genetics. Techniques of molecular science must include current techniques in each of separation and detection, amplification, and sequence analysis, for example Sanger sequencing;
 - c. Clinical significance of laboratory procedures in diagnosis and treatment
5. The program curriculum must also include:
 - a. The application of safety and governmental regulations and standards as applied to diagnostic molecular science.
 - b. Principles and practices of professional conduct and the significance of continuing professional development.

- c. Communications sufficient to serve the needs of patients, the public, and members of the health care team.
 - d. Principles and practices of administration, supervision, and quality management as applied to diagnostic molecular science.
 - e. Educational methodologies and terminology sufficient to train/educate users and providers of laboratory services.
 - f. Principles and practices of applied study design, implementation, and dissemination of results.
 - g. [Interprofessional education and collaborative practice.](#)
 - h. [Principles and practices of diversity and inclusion sufficient to support a healthy workplace environment and serve the needs of a diverse client population.](#)
- B. Learning Experiences
- 1. Learning experiences (courses, practica, other required activities) must be properly sequenced and include content and [activities that enable](#) students to achieve entry level competencies in each major discipline as listed in Standard VIII [Instructional Areas](#).
 - 2. After demonstrating competency, students, [under](#) qualified supervision, may be permitted to perform procedures [as defined in Standard V.E.](#)
- C. Evaluations
- 1. Evaluation systems must relate to course content and [align with](#) program [and course](#) competencies.
 - 2. Evaluation systems must be employed frequently enough to provide students and faculty with timely indications of the students' academic standing and progress.
 - 3. [The evaluation systems must serve as a reliable indicator of the effectiveness of instruction and course design.](#)

Unique Standards for the Cytogenetic Technologist (CG)

PREAMBLE

Objectives

The purpose of these Standards and the Description of the Profession is to establish, maintain, and promote standards of quality for educational programs in the clinical laboratory sciences and to provide recognition for educational programs which meet or exceed the minimum standards outlined in this document.

The Standards are to be used for the development and evaluation of Cytogenetic Technology programs. Paper reviewers and site visit teams assist in the evaluation of the program's compliance with the Standards. Lists of accredited programs are published for the information of students, employers, and the public.

Description of the Cytogenetic Technologist Professional

Cytogenetic technologist professionals are qualified by academic and applied science education to provide service and research in classical cytogenetics (chromosome analysis) molecular cytogenetics (fluorescent in situ hybridization – FISH), genomic analysis (array comparative genome hybridization) and other related areas in rapidly changing and dynamic healthcare delivery systems. They have diverse and multi-level functions in the areas of chromosome and genome analysis and clinical decision-making, information management, regulatory compliance, education, and quality assurance/performance improvement wherever constitutional or acquired genetics testing is researched, marketed, developed or performed. Cytogenetic technology professionals perform, develop, evaluate, correlate and assure accuracy and validity of laboratory testing and procedures; direct and supervise laboratory resources and operations; and collaborate in the diagnosis and treatment of patients. They possess skills for financial, operations, marketing, and human resource management of the genetics laboratory.

Cytogenetic technologist professionals practice independently and collaboratively, being responsible for their own actions, as defined by the profession. They have the requisite knowledge and skills to educate laboratory professionals, health care professionals, and others in laboratory practice, as well as the public.

The ability to relate to people, a capacity for calm and reasoned judgment, and a demonstration of commitment to the patient are essential qualities. Communication skills extend to consultative interactions with members of the healthcare team, external relations, customer service and patient education. Cytogenetic technologist professionals demonstrate ethical and moral attitudes and principles that are necessary for gaining and maintaining the confidence of patients, professional associates, and the community.

Description of **Career** Entry Level Competencies of the Cytogenetic Technologist

At career entry level, the cytogenetic technologist will have the following professional competencies. They will have the ability to:

- A. Comply with government regulations and accreditation standards as they pertain to cytogenetic technology;
- B. Follow established procedures for general laboratory safety, biohazard containment, and waste disposal;
- C. Apply principles of data safety and security for laboratory and hospital information systems;
- D. Demonstrate professional and ethical conduct and interpersonal communication skills with diverse stakeholders, sufficient to serve the needs of patients, the public, and members of the health care team;
- E. Recognize and act upon individual needs for continuing professional education and development as a function of growth and maintenance of professional competence;
- F. Establish effective interprofessional working relationships with other health care professionals, demonstrating comprehension of and respect for their job responsibilities and patient care;
- G. Recognize and respect the importance and value of collaborating with a diverse workforce;
- H. Respect and promote a workplace culture of inclusivity, diversity, equity, and accessibility;
- I. Apply principles of quality assurance to assure validity and accuracy of laboratory data generated;
- J. Exercise principles and practices of administration and supervision of diverse teams and inclusive collaboration as applied to cytogenetic technology;
- K. Employ educational methodologies and terminology sufficient to train/educate users and providers of laboratory services;
- L. Utilize principles and practices of clinical or research study design, equity and data bias, study implementation, and dissemination of results.

VII. CG Program Administration

A. Program Director

The program must have a NAACLS approved medical laboratory professional serving as program director who meets the following qualifications and executes all required responsibilities.

1. Qualifications

The program director must have:

- a. an earned master's or doctoral degree;
- b. ASCP-BOC or ASCPⁱ-BOC certification in cytogenetics or ABMGG certification in clinical cytogenetics;
- c. three years teaching experience;
- d. knowledge of education methods and administration as well as current NAACLS accreditation and certification procedures.

2. Responsibilities

The program director must:

- a. be responsible for the organization, administration, instruction, evaluation, continuous quality improvement, curriculum planning and development, directing other program faculty/staff, and general effectiveness of the program;
- b. provide evidence that s/he participates in the budget preparation process;
- c. engage in a minimum of 36 hours of documented continuing professional development every 3 years;
- d. be responsible for maintaining NAACLS accreditation of the program;
- e. have regular and consistent contact with students, faculty, and program personnel.

3. Appointments

The program director must have a faculty or clinical appointment at the sponsoring institution.

B. Site Program Coordinator (required for multi-location programs only; assigned to each participating site)

1. Qualifications

The site program coordinator must:

- a. have an academic degree appropriate to the program level;
- b. hold the same level certification required of a program director;

- c. have at least one year of experience in medical laboratory science education.

2. Responsibilities

The site program coordinator is responsible for:

- a. coordinating teaching and clinical/applied learning experiential education;
- b. evaluating program effectiveness;
- c. maintaining appropriate communications with the program director.

C. Faculty

1. Didactic Instructor Appointments

a. Program Responsibilities

- i. The program must have qualified faculty/instructors who hold appointments within the educational program (e.g. certified professionals in their respective or related fields).
- ii. The program must ensure and document ongoing professional development of the program faculty/instructors.
- iii. The program will promote diversity and a climate of inclusiveness through its recruitment and retention of faculty and program specific staff.

b. Qualifications

Faculty/instructors designated by the program must:

- i. Demonstrate adequate knowledge and proficiency in their content area;
- ii. Demonstrate the ability to teach effectively at the appropriate level.

c. Responsibilities

The responsibilities of the faculty/instructors must include:

- i. Participation in teaching courses;
- ii. Evaluation of student achievement;
- iii. Development of curriculum, policy and procedures;

iv. Assessment of program outcomes.

2. Clinical/ **Applied Learning Experience** Liaison

At least one clinical/ **applied learning experience** liaison, who is employed by the clinical/ **applied learning** site, must be designated at each clinical site affiliated with the program to coordinate clinical experiences for students.

a. Qualifications

The clinical liaison must:

- i. Be a **certified medical laboratory professional staff member of the facility** who demonstrates the ability to effectively coordinate clinical/**applied learning experiences** of the students;
- ii. demonstrate knowledge of the program discipline;
- iii. have at least one year experience as a medical laboratory professional.

b. Responsibilities

The clinical/**applied learning experience** liaison must be responsible for:

- i. coordinating clinical/**applied learning** instruction at the site;
- ii. maintaining effective communication with the program director or designee.

D. Advisory Committee

- a. There must be an advisory committee composed of individuals from the community of interest (e.g. practicing professionals, academic professionals, scientific consultants, administrators, pathologists and other physicians, public member) who have knowledge of clinical laboratory science education.
- b. The advisory committee of the program shall have input into the program/curriculum to maintain current relevancy and effectiveness.

VIII. **CG Curriculum Requirements**

A. Instructional Areas

1. The program must identify prerequisite content in biological sciences, chemistry and mathematics that provides the foundation for course work required in the laboratory science program.
2. The program must deliver instruction utilizing cognitive, psychomotor, and affective learning domains that enable the student to obtain skills required of the profession.
3. The program must terminate with a baccalaureate degree or higher, or a certificate for students who have completed the required degree.
4. The program curriculum must include the following scientific content:
 - a. Specimen preparation and processing
 - b. Molecular cytogenetic testing
 - c. Chromosome analysis and Imaging
 - d. Laboratory operations including safety, professional standards and conduct, quality control, guidelines and regulations
5. The program curriculum must also include:
 - a. Principles of interpersonal and interdisciplinary communication and team-building skills and the significance of continuing professional development;
 - b. Principles and practices of administration and supervision;
 - c. Educational methodologies and terminology sufficient to train/educator users and providers of laboratory services sufficient for future clinical faculty);
 - d. Principles and practices of clinical study design, implementation and dissemination of results.
 - e. Interprofessional education and collaborative practice
 - f. Principles and practices of diversity and inclusion sufficient to support a healthy workplace environment and serve the needs of a diverse client population

B. Learning Experiences

1. Learning experiences (courses, practica, other required activities) must be properly sequenced and include content and activities that enable students to achieve entry level competencies in each major discipline as listed in Standard VIII Instructional Areas.

2. After demonstrating competency, students, **under** qualified supervision, may be permitted to perform procedures **as defined in Standard V.E.**

C. Evaluations

1. Evaluation systems must relate to course content and **align with** program **and course** competencies.
2. Evaluation systems must be employed frequently enough to provide students and faculty with timely indications of the students' academic standing and progress.
3. **The evaluation systems must serve as a reliable indicator of the effectiveness of instruction and course design.**

Unique Standards for the Pathologists' Assistant (PathA)

PREAMBLE

Objectives

The purpose of these Standards and the Description of the Profession is to establish, maintain, and promote standards of quality for educational programs in the clinical laboratory sciences and to provide recognition for educational programs which meet or exceed the minimum standards outlined in this document.

The Standards are to be used for the development and evaluation of Pathologists' Assistant programs. Paper reviewers and site visit teams assist in the evaluation of the program's compliance with the Standards. Lists of accredited programs are published for the information of students, employers, and the public.

Description of the Pathologists' Assistant Professional

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's 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.

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.

The ability to relate to people, a capacity for calm and reasoned judgment and a demonstration of commitment to the patient are essential qualities. Communications skills extend to consultative interactions with members of the healthcare team, external relations, customer service and patient education. Pathologist's Assistant professionals demonstrate ethical and moral attitudes and principles that are necessary for gaining and maintaining the confidence of patients, professional associates, and the community.

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."

(American Association of Pathologists' Assistants Web Site, 2011)

Description of Career Entry Level Competencies of the Pathologists' Assistant

At career entry level, the pathologists' assistant will have the following professional competencies. They will have the ability to:

- A. Comply with government regulations and accreditation standards as they pertain to pathologists' assistants;
- B. Follow established procedures for general laboratory safety, biohazard containment, and waste disposal;
- C. Apply principles of data safety and security for laboratory and hospital information systems;
- D. Demonstrate professional and ethical conduct and interpersonal communication skills with diverse stakeholders, sufficient to serve the needs of patients, the public, and members of the health care team;
- E. Recognize and act upon individual needs for continuing professional education and development as a function of growth and maintenance of professional competence;
- F. Establish effective interprofessional working relationships with other health care professionals, demonstrating comprehension of and respect for their job responsibilities and patient care;
- G. Recognize and respect the importance and value of collaborating with a diverse workforce;
- H. Respect and promote a workplace culture of inclusivity, diversity, equity, and accessibility;
- I. Apply principles of quality assurance to assure validity and accuracy of laboratory data generated;
- J. Exercise principles and practices of administration and supervision of diverse teams and inclusive collaboration as applied to pathologists' assistants;
- K. Employ educational methodologies and terminology sufficient to train/educate users and providers of laboratory services;
- L. Utilize principles and practices of clinical or research study design, equity and data bias, study implementation, and dissemination of results.

At career entry level, the Pathologists' Assistant will possess the following entry level competencies:

- A. **Surgical Pathology:**
The ability to prepare, grossly describe and dissect human tissue surgical specimens encompassing:
 - 1. Assurance of appropriate specimen accessioning;

2. Chronicle pertinent clinical information and history, including scans, x-rays, laboratory data etc.;
3. Description of gross anatomic features of surgical specimens, preparation of tissues for histological processing, collection of 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;
4. Preparation and submission of appropriate tissue sections for light microscopy (routine processing) as well as special procedures such as frozen section, electron microscopy and immunofluorescence microscopy;
5. Photographing all appropriate gross specimens and microscopic slides;
6. Performance of duties relating to the administrative maintenance of surgical pathology protocols, reports and data, including the submission of reports, protocols, photographic data or slides, assisting in the completion of specimen coding and billing;
7. Assurance of proper maintenance of equipment, provision of adequate supplies and cleanliness of the surgical pathology suite;
8. Assisting in the organization and coordination of anatomic pathology conferences.

B. Autopsy Pathology:

The ability to perform human postmortem examination, including:

1. Ascertaining proper legal authorization for autopsy;
2. Obtaining patient's medical record/chart(s) and other pertinent data for review with the attending pathologist;
3. 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;
4. 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.);

5. 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.;
6. Selecting, preparing, and submitting appropriate gross tissue sections for frozen section analysis as well as for light, electron and immunofluorescent microscopy;
7. 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.;
8. Photographing the body, organs, microscopic slides and other pertinent materials;
9. Gathering and organizing clinical information and data pertinent to the preparation of the preliminary summarization of the clinical history;
10. 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;
11. Performing duties related to administrative maintenance of anatomic pathology protocols; photographic and microscopic slides; and assuring the completion of coding;
12. Assisting in the organization and coordination of anatomic pathology conference;
13. Assuring the proper maintenance of equipment, the provision of adequate supplies

C. Administrative Duties

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

(Reference: American Association of Pathologists' Assistants Bylaws, January, 2010)

At career entry level, the Pathologists' Assistant will have the following basic knowledge and skills in:

- A. Anatomy and Basic Microanatomy
- B. General and Systemic Human Pathology
- C. Anatomic Pathology
 - 1. Surgical Pathology Techniques
 - 2. Autopsy Techniques
 - a. Toxicology Collection Techniques
 - 3. Histological Methods and Techniques
 - a. Concepts of Immunohistochemistry
 - 4. Concepts of Molecular Diagnostics
- D. Microbiology/Immunology
- E. Clinical Pathology
- F. Embryology
- G. Laboratory Safety
- H. Laboratory Information Systems
- I. Laboratory Management
- J. Medical Ethics
- K. Medical Terminology
- L. General Biology
- M. General and Organic Chemistry
- N. College-level Mathematics, through Algebra
- O. Educational Methodologies

VII. PathA Program Administration

A. Program Director

The program must have a NAACLS approved medical laboratory professional serving as program director who meets the following qualifications and executes all required responsibilities.

1. Qualifications

The program director must:

- a. be a graduate of a NAACLS accredited (AAPA approved prior to 1995) pathologists' assistant educational program with an advanced degree (masters or doctoral);
- b. currently hold ASCP-BOC certification as a Pathologists' Assistant, or a board-certified pathologist.
 - i. If the Program Director is a pathologist, there must be an ASCP certified, NAACLS Accredited program educated Pathologists' Assistant employed as the educational coordinator/clinical coordinator;
- c. have a faculty appointment in the sponsoring institution and meet all requirements specified by the institution responsible for providing the didactic portion of the educational program and maintaining the overall operation of the program;
- d. have practical knowledge of educational methods and administration as well as current NAACLS accreditation and professional certification procedures, demonstrates adequate knowledge and proficiency in their content areas, demonstrates the ability to teach effectively at the appropriate level.

2. Responsibilities

The program director must:

- a. be responsible for the organization, administration, instruction, evaluation, continuous quality improvement, curriculum planning and development, directing other program faculty/staff, and general effectiveness of the program;
- b. provide evidence that s/he participates in the budget preparation process;

- c. engage in a minimum of 60 hours of documented continuing professional development every 3 years;
 - d. be responsible for maintaining NAACLS accreditation of the program;
 - e. have regular and consistent contact with students, faculty, and program personnel.
 - 3. Appointments

The program director must have a faculty or clinical appointment at the sponsoring institution.
- B. Site Program Coordinator (required for multi-location programs only; assigned to each participating site)
 - 1. Qualifications

The site program coordinator must:

 - a. have an academic degree appropriate to the program level;
 - b. hold the same level certification required of a program director.
 - 2. Responsibilities

The site program coordinator is responsible for:

 - a. coordinating teaching and clinical education;
 - b. evaluating program effectiveness;
 - c. maintaining appropriate communications with the program director.
- C. Faculty / Instructors
 - 1. Didactic Instructor Appointments
 - a. Program Responsibilities
 - i. The program must have qualified faculty/instructors who hold appointments within the educational program (e.g. certified professionals in their respective or related fields).
 - ii. The program must ensure and document ongoing professional development of the program faculty/instructors.

- iii. The program will promote diversity and a climate of inclusiveness through its recruitment and retention of faculty and program specific staff.

- b. Qualifications

Faculty/instructors designated by the program must:

- i. Demonstrate adequate knowledge and proficiency in their content area;
- ii. Demonstrate the ability to teach effectively at the appropriate level.

- c. Responsibilities

The responsibilities of the faculty/instructors must include:

- i. Participation in teaching courses;
- ii. Evaluation of student achievement;
- iii. Development of curriculum, policy and procedures;
- iv. Assessment of program outcomes.

- 2. Clinical Liaison

At least one clinical liaison, who is employed by the clinical site, must be designated at each clinical site affiliated with the program to coordinate clinical experiences for students.

- a. Qualifications

The clinical liaison must:

- i. Be a medical laboratory professional who demonstrates the ability to effectively coordinate clinical experiences of the students;
- ii. demonstrate knowledge of the program discipline;
- iii. have at least one year experience as a medical laboratory professional.

- b. Responsibilities

The clinical liaison must be responsible for:

- i. coordinating clinical instruction at the site;
- ii. maintaining effective communication with the program director or designee.

- D. Advisory Committee

- a. There must be an advisory committee composed of individuals from the community of interest (e.g. practicing professionals, academic professionals, scientific consultants, administrators, pathologists and other physicians, public member) who have knowledge of clinical laboratory science education.
- b. The advisory committee of the program shall have input into the program/curriculum to maintain current relevancy and effectiveness.

E. Education Coordinator (when required)

1. Qualifications

The education coordinator must be a medical laboratory professional who:

- a. has maintained 60 credit hours (completed within a three-year time period) of CME related to pathology;
- b. holds ASCP-BOC U.S. Certification as a Pathologists' Assistant;
- c. has knowledge of NAACLS accreditation and current certification procedures.

2. Responsibilities

The education coordinator / clinical coordinator, when required, must provide supervision and coordination of the instructional faculty in the academic and clinical phases of the education program.

F. Medical Director

The Program must have a qualified medical director who does not also serve as the Program Director.

1. Qualifications

The medical director must:

- a. have a faculty appointment in the sponsoring institution
- b. be a licensed, board-certified anatomic pathologist.

2. Responsibilities

The medical director must provide continuous medical direction for clinical instruction. The medical director must actively elicit the understanding and support of practicing physicians and must participate in the clinical instruction of pathology within the program.

VIII. PathA Curriculum Requirements

A. Instructional Areas

1. The program must identify prerequisite courses in biology, chemistry and mathematics that provide the foundation for course work required in the Pathologists' Assistant program.
2. The program must deliver instruction utilizing cognitive, psychomotor, and affective learning domains that enable the student to obtain skills required of the profession.
3. The program must terminate with a master's degree or higher, or a certificate for students who have completed the required degree.
4. The curriculum must provide a comprehensive knowledge of practices in Anatomic Pathology encompassing surgical and autopsy pathology. This includes principles and methodologies, performance of procedures, correlation of clinical information and gross pathology with proper technique, problem solving, troubleshooting techniques, principles and practices of quality assurance/quality improvement, and laboratory management. The program curriculum must include the following scientific and academic content:
 - a. Anatomy and Basic Microanatomy
 - b. Human Physiology
 - c. General and Systemic Human Pathology
 - d. Anatomic Pathology
 - i. Surgical Pathology Techniques
 - a) Adult
 - b) Pediatric
 - ii. Autopsy Techniques
 - a) Medical Autopsy Techniques
 - 1 Adult
 - 2 Pediatric
 - b) Forensic Autopsy Techniques
 - 1 Adult
 - 2 Pediatric

iii. Histological Methods and Techniques

a) Concepts of Immunohistochemistry

iv. Concepts of Molecular Diagnostics

v. Microbiology/Immunology

vi. Clinical Pathology

vii. Embryology

viii. Laboratory Safety

ix. Laboratory Information Systems

x. Laboratory Management

xi. Medical Ethics

xii. Medical Terminology

xiii. Biomedical Photography

5. The program curriculum must also include:

- a. The application of laboratory safety governmental regulations and standards as applied to anatomic pathology.
- b. Principles and practices of professional conduct.
- c. Principles of interpersonal and interdisciplinary communication and team-building skills.
- d. Principles and practices of administration and supervision as applied to clinical laboratory science.
- e. Educational methodologies.
- f. Interprofessional education and collaborative practice
- g. Principles and practices of diversity and inclusion sufficient to support a healthy workplace environment and serve the needs of a diverse client population

B. Learning Experiences

1. Learning experiences (courses, practica, other required activities) must be properly sequenced and include content and activities that enable students to achieve entry level competencies in each major discipline as listed in Standard VIII Instructional Areas.

2. After demonstrating competency, students, [under](#) qualified supervision, may be permitted to perform procedures [as defined in Standard V.E.](#)

C. Evaluations

1. Evaluation systems must relate to course content and [align with](#) program [and course](#) competencies.
2. Evaluation systems must be employed frequently enough to provide students and faculty with timely indications of the students' academic standing and progress.
3. [The evaluation systems must serve as a reliable indicator of the effectiveness of instruction and course design.](#)

Unique Standards for the Phlebotomist (PBT)

PREAMBLE

Objectives

The purpose of these Standards and the Description of the Profession is to establish, maintain, and promote standards of quality for educational programs in the clinical laboratory sciences and to provide recognition for educational programs which meet or exceed the minimum standards outlined in this document.

The Standards are to be used for the development and evaluation of phlebotomy programs. Self-study reviewers and site visit teams assist in the evaluation of the program's compliance with the Standards. Lists of accredited programs are published for the information of students, employers, and the public.

Description of the Phlebotomist Professional

Phlebotomist professionals are qualified by academic and practical education to collect, transport, and process blood and non-blood specimens for analysis. Phlebotomy professionals collect and instruct patients to collect non-blood specimens such as urine, stool, sputum, throat or other. They select the appropriate phlebotomy equipment, technique and collection site based on a thorough understanding of human anatomy and physiology. Phlebotomy professionals perform venipunctures and capillary (dermal) punctures adhering to all standards governing patient and employee safety. Phlebotomists perform waived and point of care test (POCT) procedures using standard protocol.

The ability to relate to people, a capacity for calm and reasoned judgment, and a demonstration of commitment are essential qualities. Phlebotomists consider age specific and psycho-social factors that may impact specimen collection. Communication skills involve direct interaction with the patient, family members of the patient, fellow members of the laboratory team, and other members of the healthcare team. Phlebotomy professionals display ethical and moral attitudes and principles that are necessary for gaining and maintaining the confidence of patients, professional associates, and the community.

Description of Career Entry Level Competencies of the Phlebotomist

At career entry level, the phlebotomist will have the following professional competencies. They will have the ability to:

- A. Comply with government regulations and accreditation standards as they pertain to phlebotomy;
- B. Follow established procedures for general laboratory safety, biohazard containment, and waste disposal;

- C. Apply principles of data safety and security for laboratory and hospital information systems;
- D. Demonstrate professional and ethical conduct and interpersonal communication skills with diverse stakeholders, sufficient to serve the needs of patients, the public, and members of the health care team;
- E. Recognize and act upon individual needs for continuing professional education and development as a function of growth and maintenance of professional competence;
- F. Establish effective interprofessional working relationships with other health care professionals, demonstrating comprehension of and respect for their job responsibilities and patient care;
- G. Recognize and respect the importance and value of collaborating with a diverse workforce;
- H. Respect and promote a workplace culture of inclusivity, diversity, equity, and accessibility;

VII. PBT Program Administration

A. Program Director

The program must have a NAACLS approved medical laboratory professional serving as program director who meets the following qualifications and executes all required responsibilities.

1. Qualifications

The program director must have:

- a. a baccalaureate degree or higher;
- b. ASCP-BOC or ASCPⁱ-BOC certification as a Medical Laboratory Scientist, Medical Laboratory Technician, or holds certification in phlebotomy from an applicable recognized certification agency.
- c. one year teaching experience;
- d. knowledge of educational methods and administration as well as current NAACLS accreditation and certification procedures.

2. Responsibilities

The program director must:

- a. be responsible for the organization, administration, instruction, evaluation, continuous quality improvement, curriculum planning and development, directing other

program faculty/staff, and general effectiveness of the program;

- b. provide evidence that s/he participates in the budget preparation process;
- c. engage in a minimum of 36 hours of documented continuing professional development every 3 years;
- d. be responsible for maintaining NAACLS accreditation of the program;
- e. have regular and consistent contact with students, faculty, and program personnel.

B. Site Program Coordinator (required for multi-location programs only; assigned to each participating site)

1. Qualifications

The site program coordinator must:

- a. have an academic degree appropriate to the program level;
- b. hold the same level certification required of a program director
- c. have at least one year of experience in medical laboratory science education.

2. Responsibilities

- a. The site program coordinator is responsible for:
 - b. coordinating teaching and clinical education;
 - c. evaluating program effectiveness;
 - d. maintaining appropriate communications with the program director.

C. Faculty / **Instructors**

1. Didactic Instructor Appointments

a. Program Responsibilities

- i. The program must have qualified faculty/instructors who hold appointments within the educational program (e.g. certified professionals in their respective or related fields).
- ii. The program must ensure and document ongoing professional development of the program faculty/instructors.

iii. The program will promote diversity and a climate of inclusiveness through its recruitment and retention of faculty and program specific staff.

b. Qualifications

Faculty/instructors designated by the program must:

- i. demonstrate adequate knowledge and proficiency in their content areas;
- ii. demonstrate the ability to teach effectively at the appropriate level.

c. Responsibilities

The responsibilities of the faculty/instructors must include:

- i. Participation in teaching courses;
- ii. Evaluation of student achievement;
- iii. Development of curriculum, policy and procedures;
- iv. Assessment of program outcomes.

4. Clinical Liaison

At least one clinical liaison, who is employed by the clinical site, must be designated at each clinical site affiliated with the program to coordinate clinical experiences for students.

a. Qualifications

The clinical liaison must:

- i. Be a medical laboratory professional who demonstrates the ability to effectively coordinate clinical experiences of the students;
- ii. demonstrate knowledge of the program discipline;
- iii. have at least one year experience as a medical laboratory professional.

b. Responsibilities

The clinical liaison must be responsible for:

- i. coordinating clinical instruction at the site;
- ii. maintaining effective communication with the program director or designee.

D. Advisory Committee

- a. There must be an advisory committee composed of individuals from the community of interest (e.g. practicing professionals, academic professionals, scientific consultants, administrators, pathologists and other physicians, public member) who have knowledge of clinical laboratory science education.
- b. The advisory committee of the program shall have input into the program/curriculum to maintain current relevancy and effectiveness.

VIII. PBT Curriculum Requirements

A. Instructional Areas

The program curriculum must include instruction and experiences in the following:

1. The program must deliver instruction utilizing cognitive, psychomotor, and affective learning domains that enable the student to obtain skills required of the profession.
2. A variety of collection techniques including evacuated tube collection devices, syringe collection, and capillary/dermal puncture methods;
3. Contact with various patient types in a variety of settings such as health fairs, donor or pheresis centers, nursing homes, in addition to the typical inpatient and outpatient settings;
4. The curriculum must include a minimum of 100 hours of clinical experiences and a minimum of 100 successful unaided collections;
5. The application of safety and governmental regulations and standards as applied to phlebotomy;
6. Principles and practices of professional conduct;
7. Principles of interpersonal and interdisciplinary communication and team building skills.
8. Interprofessional education and collaborative practice
9. Principles and practices of diversity and inclusion sufficient to support a healthy workplace environment and serve the needs of a diverse client population

B. Learning Experiences

1. Learning experiences (courses, practica, other required activities) must be properly sequenced and include content and activities that

enable students to achieve entry level competencies in each major discipline as listed in Standard VIII [Instructional Areas](#).

2. After demonstrating competency, students, [under](#) qualified supervision, may be permitted to perform procedures [as defined in Standard V.E.](#)

C. Evaluations

1. Evaluation systems must relate to course content and [align with](#) program [and course](#) competencies.
2. Evaluation systems must be employed frequently enough to provide students and faculty with timely indications of the students' academic standing and progress.
3. [The evaluation systems must serve as a reliable indicator of the effectiveness of instruction and course design.](#)

Unique Standards for the Medical Laboratory Assistant (MLA)

PREAMBLE

Objectives

The purpose of these Standards and the Description of the Profession is to establish, maintain, and promote standards of quality for educational programs in the clinical laboratory sciences and to provide recognition for educational programs which meet or exceed the minimum standards outlined in this document.

The Standards are to be used for the development and evaluation of Medical Laboratory Assistant programs. Paper reviewers and site visit teams assist in the evaluation of the program's compliance with the Standards. Lists of accredited programs are published for the information of students, employers, and the public.

Description of the Medical Laboratory Assistant Professional

Medical Laboratory Assistants are qualified by academic and practical education to perform multiple skills to support medical laboratory professionals. Medical laboratory assistants collect, transport, and process blood and non-blood specimens for analysis. They prepare and reconstitute reagents, standards and controls, perform waived and point of care test (POCT) procedures using standard protocol and follow established quality control protocols.

The ability to relate to people, a capacity for calm and reasoned judgment, and a demonstration of commitment are essential qualities. Medical Laboratory Assistants consider age specific and psycho-social factors that may impact specimen collection. Communication skills involve direct interaction with the patient, family members of the patient, fellow members of the laboratory team, and other members of the healthcare team. Medical laboratory assistant professionals display ethical and moral attitudes and principles that are necessary for gaining and maintaining the confidence of patients, professional associates, and the community.

Description of Career Entry Level Competencies of the Medical Laboratory Assistant

At career entry level, the medical laboratory assistant will have the following professional competencies. They will have the ability to:

- A. Comply with government regulations and accreditation standards as they pertain to medical laboratory assistants;
- B. Follow established procedures for general laboratory safety, biohazard containment, and waste disposal;
- C. Apply principles of data safety and security for laboratory and hospital information systems;
- D. Demonstrate professional and ethical conduct and interpersonal communication skills with diverse stakeholders, sufficient to serve the needs of patients, the public, and members of the health care team;
- E. Recognize and act upon individual needs for continuing professional education and development as a function of growth and maintenance of professional competence;
- F. Establish effective interprofessional working relationships with other health care professionals, demonstrating comprehension of and respect for their job responsibilities and patient care;
- G. Recognize and respect the importance and value of collaborating with a diverse workforce;
- H. Respect and promote a workplace culture of inclusivity, diversity, equity, and accessibility;

VII. MLA Program Administration

A. Program Director

The program must have a NAACLS approved medical laboratory professional serving as program director who meets the following qualifications and executes all required responsibilities.

1. Qualifications

The program director must have

- a. a baccalaureate degree or higher;
- b. ASCP-BOC or ASCPⁱ-BOC certification as a Medical Laboratory Scientist or Medical Laboratory Technician.
 - i. or nationally recognized certification/licensure for international or non-US programs
- c. three years teaching experience;

- d. knowledge of education methods and administration as well as current NAACLS accreditation procedures and certification procedures.

2. Responsibilities

The program director must:

- a. be responsible for the organization, administration, instruction, evaluation, continuous quality improvement, curriculum planning and development, directing other program faculty/staff, and general effectiveness of the program.
- b. provide evidence that s/he participates in the budget preparation process;
- c. engage in a minimum of 36 hours of documented continuing professional development every 3 years;
- d. be responsible for maintaining NAACLS accreditation of the program;
- e. have regular and consistent contact with students, faculty, and program personnel.

- B. Site Program Coordinator (required for multi-location programs only; assigned to each participating site)

1. Qualifications

The site program coordinator must:

- a. Have an academic degree appropriate to the program level;
- b. Hold the same level certification required of a program director;
- c. Have at least one year of experience in medical laboratory science education

2. Responsibilities

The site program coordinator is responsible for:

- a. Coordinating teaching and clinical/[applied learning](#) education;
- b. Evaluating program effectiveness;
- c. Maintaining appropriate communications with the program director.

C. Faculty/[Instructors](#)

1. Didactic Instructor Appointments

a. Program Responsibilities

- i. The program must have qualified faculty/instructors who hold appointments within the educational program (e.g. certified professionals in their respective or related fields).
- ii. The program must ensure and document ongoing professional development of the program faculty/instructors.
- iii. [The program will promote diversity and a climate of inclusiveness through its recruitment and retention of faculty and program specific staff.](#)

b. Qualifications

Faculty/instructors designated by the program must:

- i. Demonstrate adequate knowledge and proficiency in their content area;
- ii. Demonstrate the ability to teach effectively at the appropriate level.

c. Responsibilities

The responsibilities of the faculty/instructors must include:

- i. Participation in teaching courses;
- ii. Evaluation of student achievement;
- iii. Development of curriculum, policy and procedures;
- iv. Assessment of program outcomes.

2. [Clinical/Applied Learning Experience](#) Liaison

At least one [clinical/applied learning experience](#) liaison, who is employed by the [clinical/applied learning](#) site, must be designated at each clinical site affiliated with the program to coordinate clinical experiences for students.

a. Qualifications

The clinical liaison must:

- i. Be a medical laboratory professional who demonstrates the ability to effectively coordinate clinical experiences of the students;
 - ii. demonstrate knowledge of the program discipline;
 - iii. have at least one year experience as a medical laboratory professional.
 - b. Responsibilities
The clinical liaison must be responsible for:
 - i. coordinating clinical instruction at the site;
 - ii. maintaining effective communication with the program director or designee.
- D. Advisory Committee
 - a. There must be an advisory committee composed of individuals from the community of interest (e.g. practicing professionals, academic professionals, scientific consultants, administrators, pathologists and other physicians, public member) who have knowledge of clinical laboratory science education.
 - b. The advisory committee of the program shall have input into the program/curriculum to maintain current relevancy and effectiveness.

VIII. MLA Curriculum Requirements

- A. Instructional Areas
 - 1. The program must deliver instruction utilizing cognitive, psychomotor, and affective learning domains that enable the student to obtain skills required of the profession.
 - 2. The program curriculum must include instruction and experiences in the following:
 - a. Core module competencies;
 - i. blood collection,
 - ii. preparation/reconstitution of reagents, standards and controls,
 - iii. performance tests at the Medical Laboratory Assistant level and
 - iv. following established quality control protocols;

- v. Curriculum in any module(s) beyond the core module must meet the minimum required standards as stated for the core module. These modules include but are not limited to: chemistry, donor room, hematology, immunology, microbiology and/or urinalysis.
 - b. 100 hours of clinical experiences
 3. The program curriculum must also include:
 - a. The application of safety and governmental regulations compliance
 - b. Principles and practices of professional conduct, working with diverse stakeholders, and the significance of continuing professional development
 - c. Communicating effectively with a range of audiences; sufficient to serve the needs of patients, the public, and members of the health care team
 - d. Interprofessional education and collaborative practice
 - e. Principles and practices of diversity and inclusion sufficient to support a healthy workplace environment and serve the needs of a diverse client population
 - B. Learning Experiences
 1. Learning experiences (courses, practica, other required activities) must be properly sequenced and include content and activities that enable students to achieve entry level competencies in each major discipline as listed in Standard VIII Instructional Areas.
 2. After demonstrating competency, students, under qualified supervision, may be permitted to perform procedures as defined in Standard V.E.
 - C. Evaluations
 1. Evaluation systems must relate to course content and align with program and course competencies.
 2. Evaluation systems must be employed frequently enough to provide students and faculty with timely indications of the students' academic standing and progress.
 3. The evaluation systems must serve as a reliable indicator of the effectiveness of instruction and course design.