

# NAACLS Electronic Self-Study Template

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**Name of Program:** Colorado Mesa University Medical Laboratory Technology Program

**Location (City,ST):** Grand Junction, CO

**Type of Program:** AAS Medical Laboratory Technician

**Self-Study Due Date:** November 15, 2013

**Introduction:** Please give a brief description of your program and how it is organized

Currently, the state of Colorado has one NAACLS accredited Medical Laboratory Technician program at Arapahoe Community College (ACC) in Littleton (Denver area) which limits access to potential MLT students in western Colorado. Many of these potential students are either working as a phlebotomist in a laboratory wanting to further their education in the same field, or they have a baccalaureate in the sciences and are unable to find suitable employment utilizing their degree. The community medical laboratory managers support the development of this program and want to be involved through advisement and participation as a site for internships. They look forward to having a labor pool of well trained knowledgeable medical laboratory technicians as well as promoting their profession by providing clinical sites.

The impetus for the Medical Laboratory Technology program came from the combined efforts of the Workforce Centers of Montrose and Mesa Counties, the University Department of Health Sciences and Western Colorado Community College. Based on this collaboration, Mesa County awarded Colorado Mesa University funding to start this program. Development of the curriculum took place in the fall of 2011 and was approved by the University's curriculum committee in January, 2012. The first cohort of students that met the minimum prerequisite courses were accepted into the program, starting with phlebotomy courses in the summer of 2012.

The Medical Laboratory Technician (MLT) Program at Colorado Mesa University is five semesters in length. General education requirements and foundation courses are taken the first year and summer, the second year consists mainly of MLT program courses, followed by one semester of clinical internship at an affiliated site in western Colorado. The majority of MLT courses are delivered in a hybrid format. Lecture is delivered on-line with lab sessions held on campus. Lab sessions are two days in length and are held five times a semester. All MLT courses are taken concurrently for each semester offered.

Students apply for the program in March each year for the start of the fall program. The beginning fall MLT courses contain introductory concepts and skills in medical laboratory technology which build a foundation for the MLT courses in the spring semester and for the following hospital laboratory internship. Due to the program design, all MLT program courses offered each semester are taken concurrently and in sequence. The didactic courses are delivered on line through the course management system and the lab courses for the semester are performed on campus for a full day on Friday and Saturday, five times a semester.

**Core Standards and Documentation Required for Accredited Programs  
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**Standard 1: Institutional Affiliation**

The sponsoring institution (or at least one participating entity in the case of a consortium or joint venture) and affiliates, clinical and/or academic, if any, must be accredited by recognized regional and/or national agencies.

In programs in which the education is provided by two or more institutions, responsibilities of the sponsor and of each affiliate for program administration, instruction, and supervision must be described in writing and signed by both parties. All provisions of the agreement must be active with written documentation of the following items:

A. General

1. Reason for the agreement
2. Responsibilities of the academic facility
3. Responsibilities of the clinical facility
4. Joint responsibilities

B. Specific

1. Supervisory responsibilities for the students
2. Student professional liability coverage
3. Student health and safety policies
4. Provision for renewal
5. Termination clause providing for program completion of enrolled students

**Standard 1 - Narrative:** Describe the relationship between the sponsoring institution and affiliates.

Colorado Mesa University (CMU), the sponsoring institution, is accredited by the Higher Learning Commission and is a member of the North Central Association of Colleges and Schools. CMU offers the associate of applied science degree in medical laboratory technology. The MLT program combines campus didactic and laboratory learning, followed by an off campus applied learning experience at an affiliate clinical site for one semester (fifteen weeks).

Colorado Mesa University serves a fourteen county region in western Colorado; clinical affiliates are spread throughout the region mainly as small hospitals serving rural areas.

The affiliates accept the students assigned to the site by the university and cooperate in the orientation of all students. The affiliate provides the opportunities for such students to observe and assist in various aspects of laboratory testing.

The clinical affiliates evaluate the performance of the university students using assessment tools provided by the MLT program. Affiliate sites may permit students to perform testing only when under the direct supervision of a clinical mentor. The affiliate advises the university in a timely manner of any serious deficiency noted in an assigned student's performance. In such event, the affiliate and the university will attempt to devise an action plan by which the student may be assisted in achieving the stated objectives of the educational program. The affiliate has the right to withdraw any student whose health (despite reasonable accommodations) or performance is a detriment to patient, client or patron well-being or to the achievement of the objectives of the affiliation.

Attach appropriate documents in boxes below (Notify NAACLS if you have more affiliates than the spaces below provide)

<b>Clinical (C)/Academic (A) Affiliate:</b> <i>Please indicate (C) or (A) after name of affiliate</i>	<b>Clinical Facility Fact Sheet</b>	<b>Signed Current Affiliation Agreement</b>	<b>Capital Equipment</b>	<b>Facility Specific Required Textbooks and Periodical Access</b>	<b>Instr. Resources</b>	<b>Site Specific Obj's and Eval's:</b>	<b>Unique Rules and Policies:</b>
Community Hospital (C)				NA		NA	NA
Delta County Memorial Hospi			Included in In	NA		NA	NA
Family Health West (C)			Included in In	NA		NA	NA
Montrose Memorial Hospital (			Included in In	NA		NA	NA
The Memorial Hospital (C)				NA		NA	NA
Vail Valley Hospital (C)				NA		NA	NA
Veterans Administration Medi				NA		NA	NA

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**Standard 2: Sponsorship**

Educational programs must be sponsored by:

- A. colleges and universities;
- B. hospitals and medical centers;
- C. medical laboratories,
- D. consortia or joint ventures, consisting of two or more participating entities and formed by agreement to undertake a common enterprise as a sponsoring entity, whereby at least one member of the consortium or joint venture must meet the requirements of Standard 1, or;
- E. other institutions which meet comparable standards for education in clinical laboratory science.

Indicate the type of sponsoring institution:

A. University; Colorado Mesa University

**Standard 2 - Narrative:** No narrative required.

## Core Standards and Documentation Required for Accredited Programs Self Study Report

### Standard 3: Responsibilities of the Sponsor

Accreditation is granted to the sponsor (and participating entities, in cases of consortia) that assumes primary responsibility for curriculum planning and selection of course content; coordinates classroom teaching and applied education, appoints faculty to the program, receives and processes applications for admission, and assures that graduates of the program have obtained the appropriate degrees/certificates upon completion of the program, as detailed in Standard 14G:

- A. The sponsor (and participating entities, in cases of consortia) must be responsible for providing assurance that the activities assigned to students in the clinical setting are educational.
- B. There must be documented ongoing communication between the sponsor (and participating entities, in cases of consortia) and its affiliates for exchange of information and coordination of the program.

**Standard 3 - Narrative:** Describe the responsibilities assumed by the sponsor.

The university is responsible for curriculum planning, selecting course content, teaching theory and practical application prior to the applied experience, appointing of faculty, receiving and processing application material, admitting students to the program and granting the associate of applied science degree in medical laboratory technology.

The university is responsible for the implementation and operation of the applied experience of its program at the clinical site. The responsibilities include coordination of the orientation, placement and rotations plans of students at the clinical site as well as preparing assignments and assessments of student performance. The university is responsible for supervision of the students, as well as continued communication with the clinical site regarding student performance and evaluation.

**Standard 3A - Narrative:** Describe how the sponsor assures that assigned activities in the clinical setting are educational.

The university developed a checklist and student evaluation for each clinical section as well as a final exam for each section proctored by the clinical site and administered through the course management system. The checklist and evaluation tools provide, both the students and the clinical mentors, goals for competency and professional behaviors based on expected entry level performance of a medical laboratory technician. All checklists and evaluation tools are turned into the program director at the conclusion of the applied experience for grading purposes and program development.

In order to maximize the educational experience in the clinical site; clinical sites are instructed to schedule students during regular weekday working hours unless there is a reason that the experience cannot be provided during the day, such as evening shift instrument maintenance.

**Standard 3B - Narrative:** Describe how the program communicates with affiliates for exchange of information and coordination.

The MLT program director is responsible for all exchange of information and coordination of the clinical experience for students. Communication takes place primarily between the program director and the clinical liaison through email, phone conversation and visits as requested. Instructions are included for each section rotation that lists my email and phone number for any clinical mentor that may need clarity on a section checklist or evaluation tool. Clinical sites are also given instructions to email the program director immediately if the student is failing to meet daily progress goals.

Communication between the program and the clinical site also takes place during advisory council meetings in which a large number of laboratory managers are members.

**Core Standards and Documentation Required for Accredited Programs  
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**Standard 4: General Resources**

Resources must support the number of students admitted into the program. The instructor to student ratio must be adequate to achieve the stated program goals.

**Standard 4 - Narrative:** Describe how personnel resources (e.g., instructors, staff) support the number of students admitted.

Each year, the MLT program accepts the number of students that can be supported by placement in a clinical site, not to exceed twelve students at this time. Our current enrollment for the fall 2013 cohort is seven students, with two students performing the applied experience from the previous years' cohort. The program utilizes a teaching assistant from the Clinical Education Center for the phlebotomy course's practical experience. The assistants are registered nurses from the university's health sciences staff. The program director and two part-time instructors teach the MLT courses. The program director is responsible for the oversight of the students in the applied experience.

Students are admitted the fall of each year with a maximum instructor to student ratio of 1:12 for both lecture courses and laboratory courses. The ratio of instructor to students increases for the program director with the cohort moving into the applied experience in the fall. At the time of the internship, the maximum instructor (program director) to student ratio possible will be 1:24.

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**Standard 5: Financial Resources**

Financial resources for continued operation of the educational program must be ensured by an adequate, institutionally approved budget or by a statement of continued financial support from an executive officer of the sponsor (or one from each participating entity, in cases of consortia).

**Standard 5 - Narrative:** Describe how the financial resources are adequate to assure the continued operation of the program.

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**Standard 6A: Physical Resources -Facilities**

Classrooms, laboratories, administrative offices and other facilities must be adequate, equipped for safety, and must be in compliance with pertinent governmental laws.

**Standard 6A - Narrative:** Describe the program's academic and clinical facilities (e.g., classrooms, laboratories, administrative offices) and safety features.

**Classrooms and laboratories:**

The 676 sq. ft. room is used for both lecture and laboratory. The design layout is compliant with ADA regulations for accessibility in the classroom. The room is equipped with smart-room technology, a computer, ELMO, microscope with camera attachment, Hitachi SmartBoard, projector and screen used in instruction. A white board the length of the room is placed at the front of the room. Six square (4 x 4 ft.) lab tables that seat two students each are strategically arranged to maximize foot traffic. Each table is equipped with electrical ports built into the top surface. The room has two sinks, one for hand washing and the other is used for staining and waste disposal. An eyewash station is available for students as well as spill kits, MSDS manual and PPE. Two large storage cabinets line the back of the class and house student microscopes as well as various equipment and supplies. Students are instructed not to bring in, or consume food or beverages during laboratory class.

**Storage:**

A storage room (10 x 6) is available in the basement of the same building that houses the classroom for waste storage, equipment and supplies.

**Office:**

An office (8x13) is provided for the program director located in close proximity to the classroom. A shared workspace is provided for adjunct faculty.

**Standard 6B: Physical Resources - Equipment and Supplies**

Each student must have reasonable access to and experience with modern equipment and supplies.

**Standard 6B - Narrative:** No Narrative Required

**Standard 6C: Physical Resources - Information Resources**

Each student must have reasonable access to information resources containing current editions of books, periodicals and other reference materials in contemporary formats related to all content areas of the curriculum.

**Standard 6C - Narrative:** Describe the accessibility of information resources to students.

The university library has an extensive collection of information resources available to the students in a variety of formats. The Interlibrary Loan Department obtains articles or borrows books or other materials not available at Colorado Mesa University library from other libraries at the request of the student through an on-line service or in person. Students can also order materials through Prospector, a unified catalog of over forty academic, public and special libraries in Colorado and Wyoming or a worldwide search of materials can be done with World Libraries through library as well.

A search of the medical laboratory discipline with the aforementioned services; delivered a wide arrange of books, periodicals, and image atlases. Periodical articles are free to download in PDF format for both periodicals that I searched for: Transfusion Medicine and Hematology.

<http://www.coloradomesa.edu/cmulibrary/index.html>

**Standard 6D - Narrative:** Describe the resources, including clinical, reference and demonstration materials (e.g., practice specimens, stock cultures, case studies) used in instruction for each laboratory discipline.

**Standard 6D: Physical Resources - Instructional Resources**

Adequate instructional resources must be available to facilitate each student's attainment of entry level competencies.

Most MLT texts, references, and computer programs are housed in the MLT office, Clinical Education Center department and the laboratory. Materials are promptly available at the student's request. The instructional resources utilized in the MLT program for each laboratory discipline include:

**Hematology/Hemostasis**

Blood drawn from students in both hematology & phlebotomy

Digital image atlas; images of WBCs, platelets and RBCs, normal & abnormal

On-line case studies in coagulation

Hematology case studies

Hemoglobin reagent/Pointe180 analyzer

Microhematocrit tubes/centrifuges)

Wright stain set

Stained slide sets for red cell morphology and differentials –both normal and abnormal

Sedimentation rate system with tubes, racks and leveling plate

Hemoglobin reagent, calibrators and controls for use with Pointe 180 analyzer

**Microbiology**

Case studies

Digital image atlas

CO2 incubator

Bacterial stock cultures

Anaerobic stock cultures

Gram stain and AFB stains

RapID ANA II, SSu, NH and STR identification systems for anaerobes, UTI pathogens, Neisseria/Haemophilus, and strep and coryneform ID.

Corresponding ERIC system for computerized identification.

GASPack jars, envelopes, bags etc.

Simulated samples for unknowns

Catalase, coagulase, oxidase, microdase, PYR, optochin, bacitracin, spot indole, and beta lactamase tests

Agglutination identification kits: strep, salmonella, and staph aureus,

McFarland Turbidity Standards

Antibiotic disks

Blood, Chocolate, MacConkey, HE, Mueller Hinton plates

Urease and TSI slants

**Chemistry**

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**Standard 6E: Physical Resources - Computer Technology**

Each student must have access to and experience with contemporary computer technology.

**Standard 6E - Narrative:** Describe how access to contemporary computer technology is provided to students.

Leading computer technology in the MLT program is utilized in classroom lecture presentations as well as the use of computer interactive CD programs which the student can view either at the MLT lab computer or through the use of the Clinical Education Center computer lab located in the basement of the health sciences department.

All of our students possess either a home computer or a laptop. Students that do not have personal access to a computer are directed to the campus library which houses 46 student computers as well as public Internet access computers. The university is equipped with wireless capability as well for personal computing and communication use.

**Core Standards and Documentation Required for Accredited Programs  
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**Standard 7: Program Description/Publications**

Students must be provided with a clear description of the program and its content and current publications, which must include:

- A. program mission statement;
- B. program goals and competencies;
- C. course objectives;
- D. applied education assignments (if applicable);
- E. admission criteria, both academic and non-academic;
- F. a list of course descriptions;
- G. names and academic rank or title of the program director and faculty (and medical director/medical advisor for PathA programs)
- H. tuition and fees with refund policies;
- I. causes for dismissal;
- J. rules and regulations;
- K. a listing of clinical facilities (if applicable);
- L. essential functions;
- M. policies and procedures when applied experience cannot be guaranteed, and
- N. outcomes measures.

**Standard 7 - Narrative:** Identify the specific publication(s) in which items in Standard 7 A-N are included.

Publications which contain the items listed in this standard include the Colorado Mesa University Catalog, the MLT website, MLT Student Handbook application information packet and syllabi. Information is often given in multiple publications. Please see publications attached in the Standard 7 Matrix for more detail.

Syllabi contain the course descriptions, the student learning outcomes for the program as well as course learning objectives. Course goals and student learning outcomes for each course are currently being developed in each syllabus.

The first class will graduate December 2013; outcome measures will be performed and published in the spring of 2014.

A matrix is provided to assist you in identifying the publication(s) that address the items listed in Standard 7 A-M.  
 \*Use of the matrix is optional. For any documents not attached in the matrix please attach in the box below.

<b>Standard 7 Matrix (All Programs)</b>				
	<b>Publications</b>			
	<b>Catalog</b>	<b>Student Handbook</b>	<b>Application Form</b>	<b>Website</b>
Program mission statement				
Program goals and competencies				
Course objectives				
Applied education assignments (if applicable)				
Admission criteria, both academic and non-academic				
A list of course descriptions				
Names and academic rank or title of the program director and faculty				
Tuition and fees with refund policies	 	 		
Causes for dismissal				
Rules and regulations				
Listing of clinical facilities (if applicable)				
Essentials functions				
Policies and procedures when applied experience cannot be guaranteed				
Outcomes Measures	Not applicable (no g			

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**Standard 8: Admissions**

Admission of students, including advanced placement if available, must be made in accordance with the clearly defined and published practices of the institution. Specific academic standards and essential functions required for admission to the program must be clearly defined, published and provided to prospective students and made available to the public.

**Standard 8 - Narrative:** Describe how academic standards and essential functions required for admission to the program are provided to prospective students and made available to the public.

Describe how admission to the program is made in accordance with clearly defined and published practices of the institution.

Students must meet Colorado Mesa University's admission criteria, which includes academic standards, and be accepted as a student of the University prior to placing an application with the MLT program. It is the policy of Colorado Mesa University and the MLT program, not to discriminate on the basis of sex, race, religion, veteran status, national origin or handicap in its educational programs, activities or employment status. A separate application and selection process is required for acceptance into the MLT program.

Students are advised prior to submitting an application about the career, academic requirements, essential functions, student learning outcomes, clinical placement and NAACLS accreditation status. All application materials, student learning outcomes, essential functions, deadlines, NAACLS accreditation status, FAQs are available to the public which are located on the Colorado Mesa University MLT website.

The MLT Degree Program Sheet is available to the public through the Colorado Mesa University website. The program sheet states the academic standards required for prerequisite and general education coursework as well as academic standards required for graduation. Students who do not meet the minimum academic standards are advised to repeat courses with low grades.

Successful applicants to the program are chosen based on grade point average from college courses taken (minimum 2.0 GPA required), essays, interviews, coursework in high school, HOBET scores, and quality and completeness of application materials including completed coursework required toward the degree. The applicants with the highest scores are ranked and selected for admission on a space available basis.

**Core Standards and Documentation Required for Accredited Programs  
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**Standard 9: Acceptable Conduct**

Rules and regulations governing acceptable personal and academic conduct must be defined and provided to all students upon entering the program.

**Standard 9 - Narrative:** Describe rules and regulations governing acceptable conduct for both the academic and clinical setting. Indicate how they are distributed

Once student are admitted to the university they receive the Maverick Guide that educates students on expected personal and academic conduct, students have access to this guide on-line through the university's website. (The Maverick Guide has replaced the CMU Student Handbook referenced in the MLT Student Handbook.)

New MLT students are sent via email, the student handbook to print and bring to an orientation the first week of class. Students are required to read the handbook prior to orientation and sign the Statement of Understanding form regarding the contents of the handbook, with particular attention paid to rules and regulations that could result in dismissal from the program. Students are given the opportunity to ask questions during the orientation, as well as a brief dialog covering each rule.

The handbook contain the rules and regulations governing the acceptable personal and academic conduct for the didactic courses as well as the following applied experience.

**Core Standards and Documentation Required for Accredited Programs  
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**Standard 10: Student Records**

Student records must be maintained for admission, evaluation, and counseling or advising sessions. Individual grades and credits for courses must be recorded and permanently maintained by the sponsoring institution. The program must maintain the student records, conforming to any governmental regulations and the regulations of any other accrediting agencies.

**Standard 10 - Narrative:**

Describe how the sponsoring institution maintains records for graduates and enrolled students.

Student application and admissions records to the MLT Program are maintained by the Health Sciences Department. The administrative assistant to the MLT Program maintains a secure electronic database of all requirements such as; but not limited to criminal background checks, immunization records, and physical examination. The database is accessible to health sciences leadership personnel and administrative assistants. All paper records are scanned into the University's Extender (data imaging) system.

Student records pertaining to evaluations, counseling and advising sessions are maintained in the MLT Program Director's office which is locked when not occupied and through the University's course management system. Records are in both paper and electronic format. The MLT Program utilizes the University's course management system for a majority of the delivery of the program content. Course assignments and grades can be accessed through the system by the Program Director for all courses in the program. Paper assignments not returned to the students are maintained for a period of one year, after such time confidential records are shredded. Email communications from each student is saved indefinitely, and are easily accessed through the University's Groupwise communication system.

Individual grades and credits for courses are recorded and permanently maintained by the University Banner system in accordance with federal regulations that stipulate retention of academic records for seventy-five years. At this time, the University does not have a written policy for the retention of student academic records.

**Core Standards and Documentation Required for Accredited Programs  
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**Standard 11: Health and Safety**

There must be a procedure for determining that each applicant's or student's health will permit the individual to meet the written essential functions of the program. Students must be informed of and have access to the usual student health care services of the institution. The health and safety of students, faculty, and patients associated with educational activities must be safeguarded. Emergency medical care must be available for students while in attendance.

**Standard 11 - Narrative:**

Describe how students are informed of and have access to the usual student health care services of the institution.

Describe how the health and safety of students, faculty and patients associated with educational activities are safeguarded.

Describe how emergency medical care is made available to students while they are in attendance.

Students accepted into the MLT program must complete a physical examination by a health care provider to verify good health before they register for their program courses and provide proof of immunization for a number of communicable diseases. All students must present the Medical Laboratory Essential Functions list to the health care provider performing the exam. The physical form is supplied by the department of health sciences and must be completed and signed by the physician. The exam must be performed within one year of initial direct patient contact. A student may not participate in the program courses until the physical is complete and the documentation is submitted to the Administrative Assistant to the MLT Program. Students must also submit proof of personal health insurance upon admission into the program. Students are required to obtain the insurance at their own expense and to maintain for the period of enrollment in the program.

Students are oriented and trained in safety procedures and regulations for handling biological specimens before participating in the campus laboratory experience. The laboratory is equipped with spill kits, an eye wash station and appropriate PPE for the tasks performed in the lab courses. Every effort is made to eliminate potential hazards with the use of safety equipment. Open flames are not allowed in the laboratory, caustic/corrosive materials have been substituted with less hazardous material, only small volumes of flammable liquids are present. A MSDS manual has been created for the student laboratory for all substances in use. Students are taught how to use a MSDS manual in the introductory course. Students are provided with all PPE and are trained in the proper usage. Students are provided the blood borne pathogen training and the Exposure Protocol for campus lab as well as the Exposure Protocol for the applied experience.

Students and faculty injured on campus have access to the Colorado Mesa University Student Health Center, located on campus adjacent to Community Hospital. The center's goal is to provide quality, accessible medical care. Medical treatment and prevention is provided for students and their dependents, similar to the services of a family physician. Hours of operations are Monday - Saturday: 8 a.m. - 8 p.m. and Sunday: Noon - 4 p.m. In the event medical care is needed after hours, please use the Community Hospital emergency department. Students and faculty injured on campus are responsible for all healthcare associated costs. Information is provided in the MLT Student Handbook during student orientation.

Students entering the clinical site have access to employee health during regular operating hours or emergency services after hours in cases of exposure or injury. Students are given the information prior to the applied experience in an orientation with the Program Director and in the MLT Student Handbook. Students are covered in the applied experience by the University's Workers' Compensation certificate for injuries sustained at the clinical site. Students are required to also maintain health insurance at the clinical site as part of the Health Sciences Department policy.

**Core Standards and Documentation Required for Accredited Programs  
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**Standard 12: Guidance**

Guidance must be available to assist students in understanding and observing program policies and practices, for advising on professional and career issues, and for providing counseling or referral for personal and financial problems that may interfere with progress in the program. Confidentiality and impartiality must be maintained in dealing with student problems.

**Standard 12 - Narrative:**

Describe the guidance available to assist students. Describe how confidentiality and impartiality are maintained in dealing with student problems.

New students desiring a major in MLT are oriented to the career and the program in advising sessions prior to admittance to the program by the program director and other health science faculty members. For new students, the Program Director discusses the essential functions, educational program requirements and designs an academic plan for the student prior to application to the MLT program. Student progress in pre-MLT course work is monitored through the Early Alert system and end of semester review of transcripts for each advisee.

An advisee assigned to the MLT Program Director is contacted early to arrange an advising appointment if one has not already occurred, at regular intervals, at the discretion of the faculty and as needed by the student. Topics discussed include required curriculum, student progress in the classroom and applied experience sites, utilization of learning resources and other academic matters. Confidentiality and impartiality are maintained in dealing with student issues. Audits of all pre-MLT coursework are done at the time of application to the program, at admission and periodically throughout the length of the program.

The first day of class and orientation is held for all new incoming students. Student are given the MLT Student Handbook that contains all of the policies and practices. Selected items from the handbook are discussed, students are asked if they need clarity on any policy. Students are required to sign a statement of understanding attached to the back of the handbook and are advised to read the handbook thoroughly and to contact the Program Director within the first week if they have questions. Important polices are distributed again in course syllabi with regards to grading practices and successful progression in the courses.

The Program Director maintains office hours four days a week and encourages student to make an appointment for any issues that may be affecting their performance. The director is also available via email and telephone.

Students are referred to the Office of Student Services if needed. Services include Student Life, the University Center, Residence Life, Registrar's Office, Financial Aid, Diversity, Advocacy and Health, Campus Safety, Campus Recreation, as well as student health and counseling services. The Office of Student Services works to support CMU students in all aspects of college life, by offering a vast array of services, resources and programs that make each student's time at Colorado Mesa University as exciting and successful as possible. Student Services works collaboratively with faculty, students, and staff to create a campus community that fosters the growth of students as strong individuals and productive citizens.

Career Services Office provides resources and guidance for students and alumni in their journey toward reaching their career goals. The office takes an active role in providing career exploration, workshops, fairs, and on-campus employer visits to encourage students to investigate and gain information while creating their career path. The office also helps employers make campus connections to build relationships toward meeting their recruitment needs and hiring goals.

**Core Standards and Documentation Required for Accredited Programs  
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**Standard 13: Appeal Procedures**

Appeal procedures must be distributed to students upon entering the program. They must include provisions for academic and non-academic types of grievances and a mechanism for neutral evaluation that ensures due process and fair disposition.

**Standard 13 - Narrative:** Describe when appeals procedures are distributed.

Appeals procedures are distributed to students on the first day of class in orientation. The procedures are distributed in the MLT Student Handbook. In addition to the provisions contained in the MLT Student Handbook, students are directed to the University's Maverick Guide (University's Student Handbook) for additional guidance.

**Core Standards and Documentation Required for Accredited Programs  
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**Standard 14: Fair Practices**

- A. Programmatic announcements must accurately reflect the program offered and include NAACLS' name, address and phone number.
- B. Student recruitment and admission must be non-discriminatory in accordance with existing governmental regulations and the regulations of any other accrediting agencies applicable to the institution.
- C. Faculty recruitment and employment practices must be non-discriminatory in accordance with existing governmental regulations and the regulations of any other accrediting agencies applicable to the institution.

**Standard 14 A - Narrative:** No Narrative Required

**Standard 14B - Narrative:** No Narrative Required

**Standard 14C - Narrative:** No Narrative Required

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**Standard 14: Fair Practices**

- D. Academic credits and costs to the student must be accurately stated, published, and made known to all applicants.

**Standard 14D - Narrative:** Describe how academic credits and costs are published and made known to all applicants.

Required academic credits for the A.A.S. MLT degree are published, as well as current cost per credit hour with the Colorado Mesa University website which is on the public domain.

Applicants have access to the MLT website in which an estimate of program tuition and fees are listed for the semester. A disclaimer is attached that informs the students that "tuition and fees are listed as in-state and assume COF eligibility. Figures do not include cost of general education and prerequisite courses. This list serves as an estimate to assist students in budgeting. The costs are approximate and are subject to change without notice. Students are referred to the website for the current tuition costs per credit in advising sessions."

Students are given the tuition costs again at the time of orientation in the MLT Student Handbook.

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**Standard 14: Fair Practices**

- E. Policies and procedures for student withdrawal and refunds of tuition and fees must be published and made known to all applicants.

**Standard 14E - Narrative:** Describe how policies and procedures for student withdrawal and refunds of tuition and fees are published and made known to all applicants.

The MLT program follows the University's policies for course withdrawal and refunds of tuition. The MLT program does not assess lab or program fees, so refunds specific to the program are not applicable.

Students can access the policies and procedures for withdrawal and refunds through the business office, the University's website, hard copy catalog, and in the MLT handbook.

**Documentation:**

1. The Colorado Mesa University Catalog, 2013-2014 contain the polices and procedures for withdrawal and student liability for tuition and fees. See attached catalog; pages 37-38 under Registration Policies and Procedures.
2. MLT Student Handbook, Section: Degree Requirements and Program Progression, sub section Withdrawal and Refund Policy

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**Standard 14: Fair Practices**

- F. If the sponsor offers more than one clinical laboratory science program, the sponsor must demonstrate that each program is being conducted to assure appropriate instruction for the students at the different educational levels.

**Standard 14F - Narrative:** If more than one level of clinical laboratory science program is offered, **THEN** describe how each program is being conducted to assure appropriate instruction for students at different educational levels.

Not applicable

**Core Standards and Documentation Required for Accredited Programs  
Self Study Report**

**Standard 14: Fair Practices**

G. The program must culminate in

- (For CLS/MT, DMS, HTL, CG, or Path. Asst., programs) at least a baccalaureate degree or higher, or in a certificate for the student who otherwise completes the required degree.
- (For CLT/MLT programs) an associate degree, or in a certificate for the student who otherwise completes the required degree.
- (For HT programs) in a certificate or an associate degree, as appropriate.

The granting of the degree or certificate must not be contingent upon the student's passing any type of external certification or licensure examination. Academic standards for the program must be acceptable to the institution that grants the degree.

**Standard 14G - Narrative:**

Indicate whether the program culminates in a degree or a certificate for the student who otherwise completes the required degree.

Successful completion of the Medical Laboratory Technology program will culminate in an Associate of Applied Science degree in Medical Laboratory Technology. Successful completion of the MLT program is not contingent upon passing an external certification or licensure.

Documentation:

MLT Student Handbook, Section: Degree Requirements and Program Progression. 4. Graduation Requirement, f. The AAS MLT degree conferred is not contingent upon passing a national certification exam.

**Core Standards and Documentation Required for Accredited Programs  
Self Study Report**

**Standard 14: Fair Practices**

H. A written record of formal student complaints and resolution must be maintained.

**Standard 14H - Narrative:** Describe the process in which student complaints are handled.

Students have access to the official complaint process through the University's website. Students are also advised during orientation and given information for the grievance and appeals processes for grades and conduct sanctions. Students are encouraged to speak with the instructor of the course first to seek resolution. If resolution is unsuccessful, students are given information in the MLT Student Handbook how to proceed with the grievance. Written records of student complaints, regardless of resolution status with the instructor, are maintained in the Program Directors office as well as the student file.

The University also has a formal complaint policy from the Office of Academic Affairs. An official complaint can be initiated when a student alleges that the University has violated local, state, and/or federal law; a breach of contract e.g. failure to meet institutional obligations as presented in a recruiting material document, application for enrollment or student housing, course syllabus, etc. or; a passive response by the institution to a complaint by a student that resulted in material damages to the student.

Disagreement with an administrative decision, or the outcome of an appeal of that decision, is not a complaint unless it alleges improper, unfair, or arbitrary treatment. The complaint must be in writing with an identifiable signature and is not already covered by another existing policy or process.

A student wishing to file a complaint should do so as promptly as possible following the alleged violation, but by no later than February 15 for a concern occurring during the prior fall semester, June 15 for the prior spring semester, and September 15 for the prior summer term. Timely initiation of a complaint rests with the student. The complaint should be in writing and signed by the complainant or submitted electronically from a Colorado Mesa University student email address. The complaint should 1) describe the issue that is the basis for the complaint, including the steps have been taken to informally resolve the problem, and 2) include any relevant documents the student would like to be reviewed as part of the complaint process.

Depending on the nature of the violation, the complaint should be sent to the Office of the

- Vice President for Academic Affairs or the Vice President for Community College Affairs if the concern is academic-related;
- Vice President for Finance and Administration if service-related;
- Vice President for Student Services if behavior or conduct related; or
- Director of Human Resources if an alleged violation of discrimination in employment or education opportunity.

Following the submission of the written complaint to one of the above administrators, the relevant administrator (or designee) will investigate the complaint and respond in writing to the student with his/her decision within 30 days of receipt of the complaint. The intent of the University is always to reach a decision in as timely a manner as possible.

The administrator is to protect the rights of both the student and the University when such situations arise. All materials reviewed by the administrator are protected, where appropriate, by Family Educational Rights and Privacy Act (FERPA) regulations. The ruling of the investigating Vice President/Director of Human Resources is final; there is no appeals process.

**Core Standards and Documentation Required for Accredited Programs  
Self Study Report**

**Standard 14: Fair Practices**

- I. Program evaluation information, including graduation, placement and any certification pass rates must be made available to NAACLS upon request.

**Standard 14I - Narrative:** Describe the availability of the program evaluation information.

Data for graduation rates, employment and certification pass rates will be available to NAACLS upon request. The first class will graduate December 2013; collection of data anticipated within the year of graduation.

**Core Standards and Documentation Required for Accredited Programs  
Self Study Report**

**Standard 15: Systematic Review**

There must be a mechanism for continually and systematically reviewing the effectiveness of the program to include survey and evaluation instruments that incorporate feedback from a combination of students, employers, faculty, graduates, exit or final examinations, and accreditation review.

**Standard 15 - Narrative:** Describe the formal evaluation plan for continually and systematically reviewing the effectiveness of the program.

The University has an Academic Program Review process that the MLT program is required to perform. All program reviews are based on a six-year cycle in which each program's faculty members must complete a self-study that addresses the curriculum currency, analysis of student demand and success, academic program resources, student learning outcomes and assessments, and future program plans. Within the student learning outcomes and assessment portion of the University's self study; the program must submit assessment results that describe the findings of student satisfaction, as well as current student and alumni success should be included (i.e. graduate employment, awards, pass rates on certification/licensure exams, advanced degrees obtained, results of graduate and employer surveys, etc.)

Career and Technical Education programs, such as the MLT Program at CMU, are responsible for completing the VE-135 report. The report is completed one year after the students have graduated. Student contact information is provided by the Colorado College Community System with specific survey questions that address: employment, continuing education, and certification pass rates. [Reference: Document VE-135]

**Student Feedback:**

Data is gathered throughout the year in the form of faculty evaluations at the completion of each course. Paper computerized forms were used in the past, this fall the University began an on-line faculty evaluation process.

[Reference: CMU MLT Program Online Student Survey Questions and Faculty Evaluation Paper Form]

Students in the internship setting are requested to complete an on-line short survey at the conclusion of each internship rotation to aid in identifying strengths and weaknesses in the program and clinical site effectiveness.

[Reference: Student Rotation Survey]

**Clinical Site Feedback:**

A survey is emailed annually to each clinical site for program and general student feedback at the conclusion of the internship semester.

[Reference: Clinical Site Evaluation for Affiliates]

**Graduate and Employer Surveys:**

Graduate and employer surveys have not been performed for the program at this time, but a graduate survey and employer survey have been developed and will be used two years post graduation.

[Reference: Employer Survey 2013 and Graduate Survey 2013]

**Core Standards and Documentation Required for Accredited Programs  
Self Study Report**

**Standard 16: Outcome Measures**

A review of outcomes measures (e.g. external certifying examination results, results from capstone projects) from the last three active years must be documented, analyzed and used in the program evaluation.

**Standard 16 - Narrative:**

Describe how outcome measures (e.g., the performance of graduates on external certifying examinations or capstone projects) from the last three active years are considered in the program evaluation.

Not applicable.

**Standard 16 - Documentation:**

Submit the outcome measures for the last three active years and the number of graduates from the program. (For performance on certification exams, list the number taking the certifying examination, the pass rates (percentages) and the program and national mean scores.)

Not applicable

**Core Standards and Documentation Required for Accredited Programs  
Self Study Report**

**Standard 17: Graduation and Placement Rates**

A review of graduation rates and placement rates must be documented, analyzed and used in the program evaluation.

**Standard 17 - Narrative:** Describe how the reviews of graduation and placement rates are documented, analyzed and used in the program evaluation.

Not applicable.

**Core Standards and Documentation Required for Accredited Programs  
Self Study Report**

**Standard 18: Program Evaluation and Modification**

The results of program evaluations must be documented and reflected in ongoing curriculum development and program modification, followed by an analysis of the effectiveness of any changes implemented.

**Standard 18 - Narrative:**

Describe how the results of program evaluation are reflected in the curriculum and other elements of the program.

Not applicable

**Standard 18 - Documentation:**

Submit an example of significant change resulting from program evaluation. Include the analysis of the effectiveness of that change.

Not applicable

**Standard 19: No Narrative or Documentation needed for Self-Study**

**Unique Standards and Documentation Required for Accredited Programs:**  
**Self Study Report**

**Standard 20: Program Administration**

For CLS/MT

A. Program Director

1. The program must have a qualified program director.
2. Responsibilities: The program director must be responsible for the organization, administration, periodic review, planning, development, evaluation and general effectiveness of the program. The program director must have input into budget preparation and must be responsible for maintaining NAACLS approval of the program.
3. Qualifications: The program director must be a clinical laboratory scientist/medical technologist who holds nationally recognized generalist certification and who has a master's or doctoral degree and three years of experience in clinical laboratory science education that includes teaching courses, conducting and managing learning experiences, evaluating student achievement, providing input into curriculum development, policy and procedure formulation, and evaluation of program effectiveness. The program director must have a knowledge of education methods and administration as well as current accreditation and certification procedures.
4. Faculty Appointments: The program director must have a faculty appointment at the sponsoring institution or must have a faculty appointment in each affiliated academic institution. In the case of a clinically based program, the program director's appointment at affiliated academic institutions may be a regular one, a non-salaried clinical or courtesy appointment, or an adjunct appointment, depending upon the regulations of the academic institution.

B. Advisory Committee

1. There must be an advisory committee composed of individual(s) from the community of interest (i.e. pathologists, other physicians, scientific consultants, academic professionals, administrators, practicing clinical laboratory scientists/medical technologists, practicing clinical laboratory technicians/medical laboratory technicians and other professionals) who have knowledge of clinical laboratory science education.
2. Responsibilities: The advisory committee of the program shall have input into any aspect of the program/curriculum with regard to its current relevancy and effectiveness.

For CLT/MLT

A. Program Director

1. The program must have a qualified program director.
2. Responsibilities

The program director must be responsible for the organization, administration, periodic review, planning, development, evaluation and general effectiveness of the program. The program director must have input into budget preparation and must be responsible for maintaining NAACLS approval of the program.

For CLT/MLT (continued)

3. Qualifications

The program director must be a clinical laboratory scientist/medical technologist who holds nationally recognized generalist certification and who has a master's or doctoral degree and three years of experience in clinical laboratory science education that includes teaching courses, conducting and managing learning experiences, evaluating student achievement, providing input into curriculum development, policy and procedure formulation, and evaluation of program effectiveness. The program director must have a knowledge of education methods and administration as well as current accreditation and certification procedures.

4. Faculty Appointments

The program director must have a faculty appointment at the sponsoring institution or must have faculty appointments in each affiliated academic institution. In the case of a clinically based program, the program director's appointment at affiliated academic institutions may be a regular one, a non-salaried clinical or courtesy appointment, or an adjunct appointment, depending upon the regulations of the academic institution.

B. Advisory Committee

1. There must be an advisory committee composed of individual(s) from the community of interest (i.e. pathologists, other physicians, scientific consultants, academic professionals, administrators, practicing clinical laboratory scientists/medical technologists, practicing clinical laboratory technicians/medical laboratory technicians and other professionals) who have knowledge of clinical laboratory science education.

2. Responsibilities

The advisory committee of the program shall have input into any aspect of the program/curriculum with regard to its current relevancy and effectiveness.

For CG

A. Program Director

1. The program must have a qualified program director.

2. Responsibilities

The program director must be responsible for the organization, administration, periodic review, planning, development, evaluation and general effectiveness of the program. The program director must have input into budget preparation and must be responsible for maintaining NAACLS accreditation of the program.

For CG (continued)

3. Qualifications

The program director must maintain current certification or licensure in cytogenetic technology, medical genetics, or another human genetics area. The program director must have a minimum of a master's degree and at least three years of experience in education that includes teaching courses, conducting and managing laboratory sciences learning experiences, evaluating student achievement, providing input into curriculum development, policy/procedure formulation and evaluation of program effectiveness. The Program Director must be a cytogeneticist, medical geneticist, or other human geneticist with three years of clinical cytogenetic experience. The program director must have knowledge of education and administration as well as current accreditation, certification and licensure procedures. The program director, if applicable, must demonstrate relevant continuing education hours (3.6 CEUs or 36 hours) within the previous three years.

4. Faculty Appointments

The program director must have a faculty appointment at the sponsoring institution or must have a faculty appointment in each affiliated academic institution. In the case of a clinically based program, the program director's appointment at affiliated academic institutions may be a regular one, a non-salaried clinical or courtesy appointment, or an adjunct appointment, depending upon the regulations of the academic institution.

B. Advisory Committee

1. There must be an advisory committee composed of individuals(s) from the community of interest, (i.e., pathologists, other physicians, scientific consultants, academic professionals, administrators, practicing cytogenetic technologists and other health professionals) who have knowledge of cytogenetic education.

2. Responsibilities

The advisory committee of the program shall have input into any of the program/curriculum with regard to its current relevance and effectiveness into the medical content of the program.

For DMS

A. Program Director

1. The program must have a qualified program director.

2. Responsibilities

The program director shall be responsible for the organization, administration, periodic review, planning, development, evaluation, and general effectiveness of the program. The program director shall have input into budget preparation and must be responsible for maintaining NAACLS accreditation of the program.

For DMS (continued)

3. Qualifications:

The program director must be a clinical laboratory scientist/medical technologist, clinical laboratory specialist in cytogenetics or molecular biology laboratory specialist who holds nationally recognized certification and who has a master's or doctoral degree and three years of experience in clinical laboratory science or diagnostic molecular education that includes teaching courses, conducting and managing clinical laboratory learning experiences, evaluating student achievement, providing input into curriculum development, policy and procedure formulation, and evaluation of program effectiveness. The program director must have a knowledge of education methods and administration, as well as current accreditation and certification procedures.

4. Faculty Appointments

The program director must have a faculty appointment at the sponsoring institution or must have a faculty appointment in each affiliated academic institution. In the case of a clinically based program, the program director's appointment at affiliated academic institutions may be a regular one, a non-salaried clinical or courtesy appointment, or an adjunct appointment, depending upon the regulations of the academic institution.

B. Advisory Committee

1. There must be an advisory committee composed of individual(s) from the community of interest, (i.e., pathologists, other physicians, scientific consultants, academic professionals, administrators. Practicing laboratory clinical laboratory scientist/medical technologists, practicing clinical laboratory technicians/medical laboratory technicians, and other health professionals) who have knowledge of molecular science education.

2. Responsibilities

The advisory committee of the program shall have input into any of the program/curriculum with regard to its current relevancy and effectiveness into the medical content of the program.

For HT

A. Program Director

1. The program must have a qualified program director.

2. Responsibilities

The program director must be responsible for the organization, administration, periodic review, planning, development, evaluation and general effectiveness of the program. The program director must have input into budget preparation and must be responsible for maintaining NAACLS accreditation of the program.

For HT (continued)

3. Qualifications

a. The program director must:

- have a baccalaureate degree, and
- have three years of experience in medical or laboratory education that includes teaching courses, conducting and managing learning experiences, evaluating student achievement, providing input into curriculum development, policy and procedure formulation, evaluation of program effectiveness, and
- have knowledge of education methods and administration as well as current accreditation and certification procedures.

b. The program director must be nationally certified in histotechnology, or, if the program director is not certified in histotechnology, a qualified, nationally certified in histotechnology education coordinator must be an employee of the sponsoring institution or a contractual relationship between the parties must be documented.

4. Faculty Appointments

The program director must have a faculty appointment at the sponsoring institution or must have faculty appointments in each affiliated academic institution. In the case of a clinically based program, the program director's appointment at affiliated academic institutions may be a regular one, a non-salaried clinical or courtesy appointment, or an adjunct appointment, depending upon the regulations of the academic institution.

AA. Education Coordinator (when required)

1. 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.

2. Qualifications

The education coordinator, when required, shall be a histotechnology professional who is certified in histotechnology by a nationally recognized certifying agency, and who has

at least an associate's degree and three years of experience in histotechnology. The education coordinator must have knowledge of education methods and current accreditation and certification procedures.

B. Advisory Committee

1. There must be an advisory committee composed of individuals from the community of interest which may include pathologists, other physicians, scientific consultants, academic professionals, administrators, histotechnologists, histotechnicians, guidance counselors, or other medical professionals with a basic knowledge of laboratory medicine.

2. Responsibilities

The advisory committee of the program shall have input into aspects of the program / curriculum with regard to its current relevancy and effectiveness.

For HTL

A. Program Director

1. The program must have a qualified program director.

2. Responsibilities

The program director must be responsible for the organization, administration, periodic review, planning, development, evaluation and general effectiveness of the program. The program director must have input into budget preparation and must be responsible for maintaining NAACLS accreditation of the program.

3. Qualifications

a. The program director must:

- have a baccalaureate degree, and
- have three years of experience in medical or laboratory education that includes teaching courses, conducting and managing learning experiences, evaluating student achievement, providing input into curriculum development, policy and procedure formulation, evaluation of program effectiveness, and
- have knowledge of education methods and administration as well as current accreditation and certification procedures.

b. The program director must be nationally certified in histotechnology, or, if the program director is not certified in histotechnology, a qualified, nationally certified in histotechnology education coordinator must be an employee of the sponsoring institution or a contractual relationship between the parties must be documented.

4. Faculty Appointments

The program director must have a faculty appointment at the sponsoring institution or must have faculty appointments in each affiliated academic institution. In the case of a clinically based program, the program director's appointment at affiliated academic institutions may be a regular one, a non-salaried clinical or courtesy appointment, or an adjunct appointment, depending upon the regulations of the academic institution.

5. Education Coordinator (when required)

A. 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.

B. Qualifications

The education coordinator, when required, shall be a histotechnology professional who is certified in histotechnology by a nationally recognized certifying agency, and who has at least a baccalaureate degree and three years of experience in histotechnology. The education coordinator must have knowledge of educational methods and current accreditation/certification procedures.

For HTL (continued)

B. Advisory Committee

1. There must be an advisory committee composed of individuals from the community of interest which may include pathologists, other physicians, scientific consultants, academic professionals, administrators, histotechnologists, histotechnicians, guidance counselors, or other medical professionals with a basic knowledge of laboratory science education.

2. Responsibilities

The advisory committee of the program shall have input into aspects of the program / curriculum with regard to its current relevancy and effectiveness.

For PathA

A. Program Director

1. The program must have a qualified program director

2..Responsibilities

The program director must be responsible for the organization, administration, periodic review, planning, development, evaluation and general effectiveness of the program. The program director must have input into budget preparation and must be responsible for maintaining NAACLS accreditation of the program.

3. Qualifications

The program director shall 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. The program director shall be a graduate of a NAACLS-accredited (AAPA approved prior to 1995) pathologists' assistant educational program with an advanced degree (masters or doctoral), or a board-certified anatomic pathologist, or hold a doctoral degree in a basic medical science. The program director shall have practical knowledge of educational methods, and current accreditation and certification procedures.

4. Faculty Appointments

The program director must have a faculty appointment at the sponsoring institution or must have a faculty appointment in each affiliated academic institution.

B. Advisory Committee

1. Composition

The program must have an advisory committee composed of individuals from the communities of interest (i.e., pathologists, other physicians, scientific consultants, academic professionals, administrators, practicing pathologists' assistants, and other professionals who have knowledge of clinical laboratory science education).

For PathA (continued)

2. Responsibilities

The advisory committee shall have input into all aspects of the program and curriculum regarding relevance and effectiveness.

C. Medical Advisor/Medical Director

1. The Program must have a qualified medical advisor/director separate from the Program Director.

2. Responsibilities

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

3. Qualifications

The medical advisor/director shall have a faculty appointment in the sponsoring institution and shall be a licensed, board-certified anatomic pathologist.

**Standard 20B2 - Narrative:** Describe the responsibilities of the advisory committee.

The major responsibilities of the MLT advisory committee are to:

1. Advise in developing course content in terms of relevant trends and job duties;
2. Suggest competent resource individuals for program improvement;
3. Assist in job placement of students;
4. Assist in program evaluation;
5. Assist in providing recruiting efforts;
6. Assist in development of community understanding and support for the MLT program
7. Consult and advise in faculty recruitment and selection.

**Unique Standards and Documentation Required for Accredited Programs:**  
**Self Study Report**

**Standard 21: Faculty**

For CLS/MT

The program must have qualified faculty (e.g., clinical laboratory scientists/medical technologists, administrators, managers and physicians).

A. Responsibilities

The faculty must participate in teaching courses, supervising applied laboratory learning experiences, evaluating student achievement, developing curriculum, formulating policy and procedures, and evaluating program effectiveness.

B. Qualifications

Faculty designated by the program must demonstrate adequate knowledge and proficiency in their content areas and demonstrate the ability to teach effectively at the appropriate level.

C. Professional Development

The program must assure and document ongoing professional development of the program faculty to assure that the faculty members are able to fulfill their instructional responsibilities.

D. Consortium Education Coordinator (when required, one at each participating entity in a consortium or joint venture)

1. Responsibilities

The Consortium Education Coordinator, when required, is responsible for coordinating classroom teaching and applied education, evaluating program effectiveness, and must have appropriate communications with the Program Director.

2. Qualifications

The education coordinator, when required, must hold an appropriate nationally recognized certification required of a program director as stated in Standard 20, an academic degree appropriate to the program level, and at least one year of experience in clinical laboratory science education, including teaching courses, conducting and managing learning experiences, evaluation student achievement, and evaluating instructional effectiveness.

For CLT/MLT

The program must have qualified faculty (e.g., clinical laboratory scientists/medical technologists, clinical laboratory technicians/medical laboratory technicians, administrators, managers and physicians).

A. Responsibilities

The faculty must participate in teaching courses, supervising applied laboratory learning experiences, evaluating student achievement, developing curriculum, formulating policy and procedure, and evaluating program effectiveness.

For CLT/MLT (continued)

B. Qualifications

Faculty designated by the program must demonstrate adequate knowledge and proficiency in their content areas and the ability to teach effectively at the appropriate level.

C. Professional Development

The program must assure and document ongoing professional development of the program faculty to assure that the faculty members are able to fulfill their instructional responsibilities.

D. Consortium Education Coordinator (when required, one at each participating entity in a consortium or joint venture)

1. Responsibilities

The Consortium Education Coordinator, when required, is responsible for coordinating classroom teaching and applied education, evaluating program effectiveness, and must have appropriate communications with the Program Director.

2. Qualifications

The education coordinator, when required, must hold an appropriate nationally recognized certification required of a program director as stated in Standard 20, an academic degree appropriate to the program level, and at least one year of experience in clinical laboratory science education, including teaching courses, conducting and managing learning experiences, evaluation student achievement, and evaluating instructional effectiveness.

For CG

The program must have qualified didactic and clinical faculty. (Didactic faculty are defined as persons teaching the didactic components of cytogenetic technology. Clinical faculty are defined as instructors teaching the clinical skills components of cytogenetic technology).

A. Faculty Responsibilities

The faculty must participate in teaching courses, supervising applied laboratory learning experiences, evaluating student achievement, developing curriculum, formulating policy and procedures, and evaluating program effectiveness. Faculty must have a working knowledge of educational methodologies and cytogenetic techniques.

B. Qualifications

1. Didactic Faculty

Didactic Faculty designated by the program must demonstrate adequate knowledge and proficiency in their content area and demonstrate the ability to teach effectively at the appropriate level. Didactic faculty must have a minimum of a bachelor's degree. Didactic faculty must also hold an academic appointment at their institution.

For CG (continued)

2. Clinical Faculty

Clinical instructors must hold a minimum of a Bachelor's degree with 3 years of full-time cytogenetic experience and maintain current certification in cytogenetic technology.

C. Professional Development

The program must assure and document ongoing professional development of the program faculty to assure that the faculty members are able to fulfill their instructional responsibilities.

D. Consortium Education Coordinator (when required, one at each participating entity in a consortium or joint venture)

1. Responsibilities

The Consortium Education Coordinator, when required, is responsible for coordinating classroom teaching and applied education, evaluating program effectiveness, and must have appropriate communications with the Program Director.

2. Qualifications

The education coordinator, when required, must hold an appropriate nationally recognized certification required of a program director as stated in Standard 20, an academic degree appropriate to the program level, and at least one year of experience in clinical laboratory science education, including teaching courses, conducting and managing learning experiences, evaluation student achievement, and evaluating instructional effectiveness.

For DMS

The program must have qualified faculty (e.g., clinical laboratory scientist/medical technologists, administrators, managers and physicians).

A. Responsibilities

The faculty shall participate in teaching courses, supervising diagnostic molecular laboratory learning experiences, evaluating student achievement, developing curriculum, formulating policy and procedures, and evaluating program effectiveness.

B. Qualifications

Faculty designated by the program must demonstrate adequate knowledge and proficiency in their content areas and demonstrate the ability to teach effectively at the appropriate level.

C. Professional Development

The program must assure and document ongoing professional development of the program faculty to assure that the faculty are able to fulfill their instructional responsibilities.

For DMS (continued)

D. Consortium Education Coordinator (when required, one at each participating entity in a consortium or joint venture)

1. Responsibilities

The Consortium Education Coordinator, when required, is responsible for coordinating classroom teaching and applied education, evaluating program effectiveness, and must have appropriate communications with the Program Director.

2. Qualifications

The education coordinator, when required, must hold an appropriate nationally recognized certification required of a program director as stated in Standard 20, an academic degree appropriate to the program level, and at least one year of experience in clinical laboratory science education, including teaching courses, conducting and managing learning experiences, evaluation student achievement, and evaluating instructional effectiveness.

For HT

The program must have qualified faculty (e.g., histotechnologists, histotechnicians, administrators, managers, or physicians).

A. Responsibilities

The faculty must participate in teaching courses, supervising applied laboratory learning experiences, evaluating student achievement, developing curriculum, formulating policy and procedure, and evaluating program effectiveness.

B. Qualifications

Faculty designated by the program must demonstrate adequate knowledge and proficiency in their content areas and the ability to teach effectively at the appropriate level.

C. Professional Development

The program must assure and document ongoing professional development of the program faculty to assure that the faculty members are able to fulfill their instructional responsibilities.

D. Consortium Education Coordinator (when required, one at each participating entity in a consortium or joint venture)

1. Responsibilities

The Consortium Education Coordinator, when required, is responsible for coordinating classroom teaching and applied education, evaluating program effectiveness, and must have appropriate communications with the Program Director.

2. Qualifications

The education coordinator, when required, must hold an appropriate nationally recognized certification required of a program director as stated in Standard 20, an academic degree appropriate to the program level, and at least one year of experience in clinical laboratory science education, including teaching courses, conducting and managing learning experiences, evaluation student achievement, and evaluating instructional effectiveness.

## For HTL

The program must have qualified faculty (e.g., histotechnologists, histotechnicians, administrators, managers, or physicians).

### A. Responsibilities

The faculty must participate in teaching courses, supervising applied laboratory learning experiences, evaluating student achievement, developing curriculum, formulating policy and procedure, and evaluating program effectiveness.

### B. Qualifications

Faculty designated by the program must demonstrate adequate knowledge and proficiency in their content areas and demonstrate the ability to teach effectively at the appropriate level.

### C. Professional Development

The program must assure and document ongoing professional development of the program faculty to assure that the faculty members are able to fulfill their instructional responsibilities.

### D. Consortium Education Coordinator (when required, one at each participating entity in a consortium or joint venture)

#### 1. Responsibilities

The Consortium Education Coordinator, when required, is responsible for coordinating classroom teaching and applied education, evaluating program effectiveness, and must have appropriate communications with the Program Director.

#### 2. Qualifications

The education coordinator, when required, must hold an appropriate nationally recognized certification required of a program director as stated in Standard 20, an academic degree appropriate to the program level, and at least one year of experience in clinical laboratory science education, including teaching courses, conducting and managing learning experiences, evaluation student achievement, and evaluating instructional effectiveness.

## For PathA

The program must have qualified faculty (e.g., educators, pathologists' assistant supervisors, administrators, laboratorians, and physicians).

### A. Responsibilities

The faculty must participate in developing curriculum, formulating policy and procedures, teaching courses, supervising applied laboratory learning experiences, evaluating student achievement, and evaluating program effectiveness.

### B. Qualifications

Program faculty must demonstrate practical knowledge and proficiency in their content areas. Faculty members must demonstrate the ability to teach effectively at a level consistent with entry into the profession.

For PathA (continued)

C. Professional Development

The program must document ongoing professional development of the program faculty to demonstrate a continuing effort to increase practical knowledge and proficiency.

D. Consortium Education Coordinator (when required, one at each participating entity in a consortium or joint venture)

1. Responsibilities

The Consortium Education Coordinator, when required, is responsible for coordinating classroom teaching and applied education, evaluating program effectiveness, and must have appropriate communications with the Program Director.

2. Qualifications

The education coordinator, when required, must hold an appropriate nationally recognized certification required of a program director as stated in Standard 20, an academic degree appropriate to the program level, and at least one year of experience in clinical laboratory science education, including teaching courses, conducting and managing learning experiences, evaluation student achievement, and evaluating instructional effectiveness.

**Standard 21 - Narrative:** No Narrative Required

**Standard 21 - Documentation:** List the **major** clinical/didactic faculty for each laboratory discipline.

*(Notify NAACLS if you have more faculty than the spaces below provide)*

<b>Faculty Member:</b>	<b>Laboratory Discipline/Content Area:</b>
Tracy L. Matthews	Phlebotomy, UA and Body Fluids, Hematology, Blood B
Angela Silva	Microbiology
Yvette Poitras	Immunology, Chemistry

**Standard 21A - Narrative:** Describe the responsibilities of the program faculty.

Currently, the program has one full time faculty member that serves as the program director, faculty and clinical coordinator. Two part-time instructors teach courses in the program with limited ability to contribute beyond the classroom. Primary responsibilities of the part-time faculty include:

1. Prepare and teach assigned courses in accordance with course outlines and published course schedule.
2. Maintain accurate records for each course taught.
3. Be responsible for professional development and maintaining professional competence.

In addition to the above duties; the program is seeking a full-time instructor to aid the program director in the following areas:

1. Prepare, review, and update course outlines on a regular basis.
2. Aid in formulating policies and procedures for the program and student handbook.
3. Supervise students in the applied experience.
4. Program assessment of outcomes.
5. Recommend and assist with curriculum revisions as necessary.
6. Assist in student recruitment, selection, advising, and retention.
7. Participate in curriculum advisory committee meetings, if applicable.
8. Assist in selection and ordering of equipment, supplies, and textbooks.
9. Cooperate in scheduled student evaluations of instructor and course.
10. Attend instructor and departmental meetings as scheduled.

**Standard 21B - Narrative:** Describe how faculty are evaluated relative to appropriate qualifications.

Faculty members are evaluated by the students at the conclusion of each course. In the past, evaluations were performed on standardized computer forms which also allowed for short response to improve teaching methods. This semester students are asked to complete an on-line evaluation. Part-time faculty are evaluated by the program director in observance of lab class and through review of the on-line learning management system. The program director's teaching effectiveness is evaluated by the Department Head.

Clinical mentors are evaluated as a group by the students at the completion of each rotation, students are asked if the mentors were knowledgeable, exhibited professionalism, and encouraged the students to be inquisitive and critical thinkers.

**Standard 21C - Narrative:** Describe how the program ensures ongoing professional development of its' clinical and didactic faculty.

Faculty members are required to maintain national certification standards in continuing education for the faculty position. Currently, a minimum of 12 credits per year or a cumulative of 36 credits for three years is required through ASCP. Part-time faculty is financially responsible for maintaining certification.

The MLT program is part of the Colorado Community College System which qualifies the program for Perkins Funds. Funds may be used for (but not limited to) occupationally-relevant equipment, vocational curriculum materials, materials for learning labs, curriculum development or modification, and staff development. The main use of the funds over the past three years has been the allocation of funds for professional development needs relevant to laboratory education and program accreditation in the form of conference and travel monies to the annual Clinical Laboratory Educators Conference and the concurrent NAACLS workshop.

Professional development opportunities are offered through the university. The Extended Studies Office offers webinars and workshops that increase on-line teaching effectiveness with design, content and student engagement with our learning management system. The university also hosts speakers periodically. Recently, Dr. Mark Taylor, who is recognized in the USA and Canada as an educator, expert, speaker and consultant dedicated to helping colleges and universities better understand and serve our students for learning, development, persistence and successful integration into the "after college" world, spoke to the university faculty.

**Unique Standards and Documentation Required for Accredited Programs:**  
**Self Study Report**

**Standard 22: Curricular Requirements**

For CLS/MT

A. Curricular Structure

Instruction must follow a plan which documents a structured curriculum composed of general education, basic sciences, and professional courses including applied (clinical) education. The curriculum must include clearly written program goals and competencies and course syllabi which must include individual course goals and objectives.

The curriculum must include all the major subject areas currently offered in the contemporary clinical laboratory. Behavioral objectives which address cognitive, psychomotor, and affective domains must be provided for didactic and applied (clinical practice) aspects of the program and must include clinical significance and correlation. Course objectives must show progression to the level consistent with entry into the profession.

B. Instructional Areas

The curriculum must include:

1. Scientific content (either prerequisite or as an integral part of the curriculum) to encompass areas such as anatomy/physiology, immunology, genetics/molecular biology, microbiology, organic/biochemistry, and statistics.
2. Pre-analytical, analytical, and post-analytical components of laboratory services, such as hematology, hemostasis, chemistry, microbiology, urinalysis, body fluids, molecular diagnostics, immunology, phlebotomy, and immunohematology. This includes principles and methodologies, performance of assays, problem-solving, troubleshooting, techniques, interpretation of clinical procedures and results, statistical approaches to data evaluation, and continuous assessment of laboratory services for all major areas practiced in the contemporary clinical laboratory.
3. Principles and practices of quality assurance/quality improvement as applied to the pre-analytical, analytical, and post-analytical components of laboratory services.
4. Application of safety and governmental regulations and standards as applied to laboratory practice.
5. Principles of interpersonal and interdisciplinary communication and team-building skills.
6. Principles and application of ethics and professionalism to address ongoing professional career development.
7. Education techniques and terminology sufficient to train/educate users and providers of laboratory services.
8. Knowledge of research design/practice sufficient to evaluate published studies as an informed consumer.
9. Concepts and principles of laboratory operations must include:
  - a. Critical pathways and clinical decision making;
  - b. Performance improvement;
  - c. Dynamics of healthcare delivery systems as they affect laboratory service;
  - d. Human resource management to include position description, performance evaluation, utilization of personnel, and analysis of workflow and staffing patterns, and;
  - e. Financial management: profit and loss, cost/benefit, reimbursement requirements, materials/inventory management.

## For CLS/MT (continued)

### C. Learning Experiences

The learning experiences needed in the curriculum to develop and support entry level competencies must be properly sequenced and include instructional materials, classroom presentations, discussion, demonstrations, laboratory sessions, supervised practice and experience.

1. Student experiences must be educational and balanced so that all competencies can be achieved.
2. Student experiences at different clinical sites must be comparable to enable all students to achieve entry level competencies.
3. Policies and processes by which students may perform service work must be published and made known to all concerned in order to avoid practices in which students are substituted for regular staff. After demonstrating proficiency, students, with qualified supervision, may be permitted to perform procedures. Service work by students in clinical settings outside of academic hours must be noncompulsory.

### D. Evaluations

Written criteria for passing, failing, and progression in the program must be provided. These must be given to each student at the time of entry into the program. Evaluation systems must be related to the objectives and competencies described in the curriculum for both didactic and applied components. They must be employed frequently enough to provide students and faculty with timely indications of the students' academic standing and progress and to serve as a reliable indicator of the effectiveness of instruction and course design.

## For CLT/MLT

### A. Curricular Structure

Instruction must follow a plan which documents a structured curriculum composed of general education, basic sciences, mathematics, and professional courses including applied (clinical) education. The curriculum must include clearly written program goals and competencies and course syllabi which must include individual course goals and objectives.

The curriculum must include all the major subject areas currently offered in the contemporary clinical laboratory. Behavioral objectives which address cognitive, psychomotor, and affective domains must be provided for didactic and applied (clinical practice) aspects of the program and must include clinical significance and correlation. Course objectives must show progression to the level consistent with entry into the profession.

The applied courses must be taught in a clinically equipped teaching laboratory on the college campus, in an affiliated clinical facility, or in both facilities sufficient for developing basic skills, understanding principles, and mastering the procedures involved.

For CLT/MLT (continued)

B. Instructional Areas

The curriculum must include principles of:

1. Methodologies for all major areas currently practiced by a modern clinical laboratory, including problem solving and troubleshooting techniques;
2. Collecting, processing, and analyzing biological specimens and other substances;
3. Laboratory result use in diagnosis and treatment;
4. Communications sufficient to serve the needs of patients and the public;
5. The required competencies to participate in the orientation of new employees;
6. Quality assessment in the laboratory;
7. Laboratory safety and regulatory compliance;
8. Information processing in the clinical laboratory;
9. Ethical and professional conduct, and;
10. Significance of continued professional development.

C. Learning Experiences

The learning experiences needed in the curriculum to develop and support entry level competencies must be properly sequenced and include instructional materials, classroom presentations, discussion, demonstrations, laboratory sessions, supervised practice and experience.

1. Student experiences must be educational and balanced so that all competencies can be achieved.
2. Student experiences at different clinical sites must be comparable to enable all students to achieve entry level competencies.
3. Policies and processes by which students may perform service work must be published and made known to all concerned in order to avoid practices in which students are substituted for regular staff. After demonstrating proficiency, students, with qualified supervision, may be permitted to perform procedures. Service work by students in clinical settings outside of academic hours must be noncompulsory.

D. Evaluations

Written criteria for passing, failing, and progression in the program must be provided. These must be given to each student at the time of entry into the program. Evaluation systems must be related to the objectives and competencies described in the curriculum for both didactic and applied education components. They must be employed frequently enough to provide students and faculty with timely indications of the students' academic standing and progress and to serve as a reliable indicator of the effectiveness of instruction and course design.

For CG

A. Curricular Structure

Instruction must follow a plan which documents a structured curriculum, including applied education, with clearly written program goals. Course syllabi must include individual course objectives and competencies to be achieved and evaluation criteria.

For CG (continued)

The curriculum must include all major subject areas currently offered in the contemporary full-service cytogenetic laboratory. Behavioral objectives which address cognitive, psychomotor, and affective domains must be provided for didactic and applied (clinical practice) aspects of the program **and must include clinical significance and correlation**. Course objectives must show progression to the level consistent with entry into the profession.

B. Instructional Areas

The following areas of study must be included in either the professional program or as pre-requisites:

1. General Biology, General Chemistry, Biochemistry or Cell Biology, Genetics, Hematology, Microbiology, Immunology.
2. Principles, practice, and acquisition of computer technology.
3. Cytogenetics
  - a. history of cytogenetics
  - b. mechanisms of numerical and structural abnormalities
  - c. clinical correlation of autosomal and sex chromosome anomalies
  - d. cancer cytogenetics and clinical correlation between diagnosis and treatment
  - e. molecular applications of cytogenetics
4. Principles and methodologies for all major areas (competencies) commonly practiced by a full service diagnostic cytogenetic laboratory, to include:
  - a. specimen processing
  - b. appropriate cell and tissue culture techniques
  - c. harvest techniques
  - d. chromosome banding and staining techniques
  - e. fluorescence in situ hybridization (FISH) Techniques
  - f. microscopy and image analysis
  - g. chromosome analysis
5. Principles and practices of laboratory management and supervision.
6. General laboratory practice, safety, quality control and continuous quality improvement, and professional and ethical standards

C. Learning Experiences

The learning experiences needed in the curriculum to develop entry level competencies must be properly sequenced and include instructional materials, classroom presentations, discussions, demonstrations, laboratory sessions, supervised practice and experience.

1. Student experiences must be educational and balanced so that all competencies can be achieved.
2. Student experiences at different clinical sites must be comparable to enable students to achieve entry level competencies.
3. Policies and processes by which students may perform service work must be published and made known to all concerned in order to avoid practices in which students are substituted for regular staff. After demonstration proficiency, students, with qualified supervision, may be permitted to perform procedures. Service work by students in applied settings outside of regular academic hours must be noncompulsory

For CG (continued)

D. Evaluations

Include written criteria for passing, failing, and progression in the program. These must be given to each student at the time of entry into the program. Evaluation systems must be related to the objectives and competencies described in the curriculum for both didactic and applied components. They must be employed frequently enough to provide students and faculty with timely indications of the students' academic standing and progress and to serve as a reliable indicator of the effectiveness of instruction and course design.

For DMS

A. Curricular structure:

Instruction must follow a plan that documents a structured curriculum including applied education with clearly written program goals. Course syllabi must include individual course objectives and competencies to be achieved and evaluation criteria.

The curriculum must include pre-analytical, analytical, and post-analytical components of diagnostic molecular laboratory services covering diagnostic molecular tests used to detect or diagnose acquired (infectious and non-infectious) diseases and genetic pre-disposition or disorders. Behavioral objectives which address cognitive, psychomotor, and affective domains must be provided for didactic and applied (clinical practice) aspects of the program and must include clinical significance and correlation. Course objectives must show progression to the level consistent with entry into the profession.

B. Instructional areas:

The following areas of study must be included in either the professional program or as pre-requisites:

1. organic and/or biochemistry, genetics, cell biology, microbiology, immunology, and diagnostic molecularbiology.
2. principles, methodologies, and applications of molecular microbiology (infectious diseases), molecular pathology (hematology/oncology), and molecular genetics. Techniques of molecular science must include at least two techniques in each of separation and detection, amplification, and sequence analysis.
3. clinical significance of laboratory procedures in diagnosis and treatment;
4. principles and practices of quality management;
5. principles and practices of laboratory administration, supervision, safety, and problem solving;
6. principles and practices of professional conduct;
7. principles and practices of applied study design, implementation and dissemination of results.

C. Learning Experiences

The learning experiences needed in the curriculum to develop entry level competencies must be properly sequenced and include instructional materials, classroom presentations, discussions, demonstrations, laboratory sessions, supervised practice and experience.

### For DMS (continued)

1. Student experiences must be educational and balanced so that all competencies can be achieved.
2. Student experiences at different applied sites must be comparable to enable students to achieve entry level competencies.
3. Policies and processes by which students may perform service work must be published and made known to all concerned in order to avoid practices in which students are substituted for regular staff. After demonstrating proficiency, students, with qualified supervision, may be permitted to perform procedures. Service work by students in applied settings outside of regular academic hours must be noncompulsory.

#### D. Evaluations

Written criteria for passing, failing, and progression in the program must be provided. These shall be given to each student at the time of entry into the program. Evaluation systems shall be related to the objectives and competencies described in the curriculum for both didactic and applied components. They must be employed frequently enough to provide students and faculty with timely indications of the students' academic standing and progress and to serve as a reliable indicator of the effectiveness of instruction and course design.

### For HT

#### A. Curricular Structure

Instruction must follow a plan which documents a structured curriculum composed of basic sciences, mathematics, and professional courses including applied (clinical) education. The curriculum must include clearly written program goals and competencies with syllabi which include individual course goals and objectives.

The curriculum must include all the major subject areas currently offered in the contemporary clinical histopathology laboratory. Behavioral objectives which address cognitive, psychomotor, and affective domains must be provided for didactic and applied aspects of the program and must include clinical significance and correlation. Course objectives must show progression to the level consistent with entry into the profession.

The applied courses must be taught in a clinically equipped teaching laboratory on the college campus, in an affiliated clinical facility, or in both facilities sufficient for developing basic skills, understanding principles, and mastering the procedures involved.

#### B. Instructional Areas

The curriculum must include:

1. Methodologies for all major areas currently practiced by a modern histopathology laboratory, including problem solving and troubleshooting techniques;
2. Receiving and documenting, processing, and analyzing biological specimens and other substances;
3. Histopathologic examination utilization in diagnosis and treatment;
4. Communications sufficient to serve the needs of patients and the public;
5. Technical training sufficient to orient new employees:

For HT (continued)

6. Quality assessment in the laboratory;
7. Laboratory safety and regulatory compliance;
8. Information processing in the clinical histopathology laboratory;
9. Ethical and professional conduct; and,
10. Significance of continued professional development.

C. Learning Experiences

The learning experiences needed in the curriculum to develop and support entry level competencies must be properly sequenced and include instructional materials, classroom presentation, discussion, demonstrations, laboratory sessions, supervised clinical practice and experience.

1. Student experiences must be educational and balanced so that all competencies can be achieved.
2. Student experiences at different clinical sites must be comparable to enable all students to achieve entry level competencies. At all clinical sites, the students must be supervised by a nationally certified histotechnician or histotechnologist.
3. Policies and processes by which students may perform service work must be published and made known to all concerned in order to avoid practices in which students are substituted for regular staff. After demonstrating proficiency, students, with qualified supervision, may be permitted to perform procedures. Service work by students in clinical settings outside of academic hours must be noncompulsory.

D. Evaluations

Written criteria for passing, failing, and progression in the program must be provided. These must be given to each student at the time of entry into the program. Evaluation systems must be related to the objectives and competencies described in the curriculum for both didactic and applied education components. They must be employed frequently enough to provide students and faculty with timely indications of the students' academic standing and progress and to serve as a reliable indicator of the effectiveness of instruction and course design.

For HTL

A. Curricular Structure

Instruction must follow a plan which documents a structured curriculum composed of basic sciences, mathematics, and professional courses including applied clinical education. The curriculum must include clearly written program goals and competencies with course syllabi which include individual course goals and objectives.

The curriculum must include all the major subject areas currently offered in the contemporary clinical histopathology laboratory. Behavioral objectives which address cognitive, psychomotor, and affective domains must be provided for didactic and applied (clinical) aspects of the program and must include clinical significance and correlation. Course objectives must show progression to the level consistent with entry into the profession.

For HTL (continued)

The applied courses must be taught in a clinically equipped teaching laboratory on the college campus, in an affiliated clinical facility, or in both facilities sufficient for developing basic skills, understanding principles, and mastering the procedures involved.

B. Instructional Areas

The curriculum must include:

1. Scientific content (either prerequisite or as an integral part of the curriculum) to encompass areas such as biology, chemistry and mathematics.
2. Applications of histology, immunohistochemistry, enzyme histochemistry, and microscopy. 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.
3. Principles and practices of quality assurance, improvement, and assessment as applied to the contemporary histopathology laboratory.
4. Application of safety and governmental regulations and standards as applied to laboratory practice.
5. Principles of interpersonal and interdisciplinary communication and team building skills.
6. Principles and application of ethics and professionalism to address ongoing professional career development.
7. Education techniques and terminology sufficient to train/educate users and providers of laboratory services.
8. Knowledge of research design/practice sufficient to evaluate published studies as an informed consumer.
9. Concepts and principles of laboratory operations must include:
  - a. Fixation
  - b. Frozen Sectioning
  - c. Processing
  - d. Decalcification
  - e. Embedding
  - f. Microtomy
  - g. Routine and special stains
  - h. Instrumentation
  - i. Tissue identification and microscopy
  - j. Accessioning
  - k. Laboratory Mathematics
  - l. Immunohistochemistry, including enzyme pretreatment
  - m. Laboratory safety
  - n. Human Resource Management to include position description, performance evaluation, utilization of personnel, and analysis of workflow and staffing patterns
  - o. Financial management: profit and loss; cost/benefit, reimbursement requirements, materials/inventory management
  - p. Education methodologies

## For HTL (continued)

### C. Learning Experiences

The learning experiences needed in the curriculum to develop and support entry level competencies must be properly sequenced and include instructional materials, classroom presentation, discussion, demonstrations, laboratory sessions, supervised clinical practice and experience.

1. Student experiences must be educational and balanced so that all competencies can be achieved.
2. Student experiences at different clinical sites must be comparable to enable all students to achieve entry level competencies. At all clinical sites, the students must be supervised by a nationally certified histotechnician or histotechnologist.
3. Policies and processes by which students may perform service work must be published and made known to all concerned in order to avoid practices in which students are substituted for regular staff. After demonstrating proficiency, students, with qualified supervision, may be permitted to perform procedures. Service work by students in clinical settings outside of academic hours must be noncompulsory.

### D. Evaluations

Written criteria for passing, failing, and progression in the program must be provided. These must be given to each student at the time of entry into the program. Evaluation systems must be related to the objectives and competencies described in the curriculum for both didactic and applied (clinical practice) components. They must be employed frequently enough to provide students and faculty with timely indications of the students' academic standing and progress and to serve as a reliable indicator of the effectiveness of instruction and course design.

## For PathA

### A. Curricular Structure

Instruction must follow a plan which documents a structured curriculum composed of general education, basic sciences, and professional courses including applied (clinical) education. The curriculum must include clearly written program goals and course syllabi, which must include individual course goals.

The length of the educational program for the pathologists' assistant shall be a minimum of 22 months. The program must culminate in a minimum of a baccalaureate degree with documentation of completion of the clinical educational program. The curriculum shall contain both clinical and didactic elements. The evaluation procedures shall be clearly established and the criteria for the successful completion of the program made available to each student.

The curriculum must include all major subject areas currently offered in the contemporary surgical pathology and autopsy laboratories. Curriculum content shall provide the student with a comprehensive body of knowledge and the necessary skills to accurately and reliably perform the tasks, functions and duties defined in the Preamble.

For PathA (continued)

Behavioral objectives, which address cognitive, psychomotor, and affective domains, must be provided for Professional Sequence courses and for courses principally taught by Program faculty. These objectives must address the scientific content areas of the program and must include clinical significance and correlation. Course objectives must show progression to the level consistent with entry into the profession.

Course Syllabi are required for cognate courses as content area must be consistent with the goals and competencies for the program.

B. Instructional Areas

Prerequisite college course work shall include general chemistry, organic chemistry and/or biochemistry, biological science, microbiology, mathematics and English composition.

The program curriculum must include the following scientific content:

Professional Sequence Courses:

Anatomic Pathology Management  
Gross Autopsy Pathology Techniques  
Gross Forensic Pathology/Toxicology Specimen Techniques  
Gross Pediatric Pathology Techniques  
Gross Surgical Pathology Techniques  
Educational Methodologies

Required Cognates:

Clinical Pathology  
Computerization and Information Systems  
Embryology  
General and Systemic Human Pathology  
Histology/Microscopic Anatomy  
Human Anatomy  
Human Physiology  
Medical Ethics  
Medical Microbiology  
Medical Photography  
Medical Terminology  
Safety Regulations

C. Learning Experience

The learning experiences needed in the curriculum must be properly sequenced and include: Instructional materials, classroom and laboratory presentations, discussion and demonstrations, supervised practice and experience, Evaluation of students to assess cognitive, affective and psychomotor objectives; problem solving skills; and motor and clinical competencies, and the competencies necessary for graduation.

1. Student experiences must be educational and balanced so that all competencies can be achieved.
2. Student experiences at different clinical sites must be comparable to enable all students to achieve entry level competencies.

For PathA (continued)

3. Policies and processes by which students may perform service work must be published and made known to all concerned in order to avoid practices in which students are substituted for regular staff. After demonstrating proficiency, students, with qualified supervision, may be permitted to perform procedures. Service work by students in clinical settings outside of academic hours must be noncompulsory.

D. Evaluations

Written criteria for passing, failing, and progression in the program must be provided. These must be given to each student at the time of entry into the program. Evaluation systems must be related to the objectives and competencies described in the curriculum for both didactic and applied components. They must be employed frequently enough to provide students and faculty with timely indications of the students' academic standing and progress and to serve as a reliable indicator of the effectiveness of instruction and course design.

**Standard 22A - Narrative:**

Narrative Not Required for CLS/MT, CG, DMS, HTL, and PathA

**\*FOR CLT/MLT and HT ONLY\***

**Standard 22A** - **Narrative:** *Note where applied courses are taught (i.e. clinically equipped student laboratory on a college campus, affiliated clinical facility, or both)*

Applied courses take place in affiliated clinical facilities only. Applied courses include:

- MLTP 102 Applied Phlebotomy
- MLTP 180 Applied Immunohematology
- MLTP 182 Applied Hematology and Body fluids
- MLTP 250 Applied Chemistry/Serology
- MLTP 252 Applied Microbiology

**Standard 22B - Narrative:**

Describe the coursework required for completion of the program and indicate whether the course work is addressed as part of the professional program or prior to admission to the program.

Identify where the items described in Standard 22B are included in the curriculum.

***\*FOR PathA ONLY\**** - Identify all Required Cognate courses substantially or fully taught by PathA program faculty

The MLT program at Colorado Mesa University is five semesters in length. Required general education and prerequisite courses are generally taken the first year and summer. The second year consists mainly of MLT program courses, followed by one semester of applied experience. In order for students to qualify for full-time status (12 credits) during the first MLT semester, a general education course is suggested (3 credits). Prerequisites for program completion are MLTP 101, MLTP 102, BIOL 209 and BIOL 209L, BIOL 210 and BIOL 210L, CHEM 121 and CHEM121L or CHEM 131 and CHEM 131L.

Prior to program admission, the following courses are required:

First Semester:

ENGL 111 English Composition 3 credits  
MATH 113 College Algebra or higher 4 credits  
KINE 100 Health and Wellness 1 credit  
KINA Activity 1 credit  
BIOL 209 Anatomy and Physiology I 3 credits  
BIOL 209L Anatomy and Physiology I Lab 1 credit

Second Semester:

General education Select from Applied Studies 3 credits  
ENGL 112 English Composition 3 credits  
CHEM 121 Principles of Chemistry 4 credits  
CHEM 121L Principles of Chemistry Lab 1 credit  
OR  
CHEM 131 General Chemistry 4 credits  
CHEM 131L General Chemistry Lab 1 credit  
BIOL 210 Anatomy and Physiology II 3 credits  
BIOL 210L Anatomy and Physiology II Lab 1 credit

Summer:

MLTP 101 Phlebotomy 3 credits  
MLTP 102 Applied Phlebotomy 1 credit

*\*\*Matrices are provided below to assist you in identifying where units of instruction are located in the program's curriculum. Use of the matrices is optional*

<b>Standard 22B Matrix (CLS/MT)</b>		<b>Page 1 / 2</b>
<b>Clinical Laboratory Scientist/Medical Technologist</b>	<b>Course</b>	<b>Location or Unit Number</b>
<b>Standard 22B1</b>		
Anatomy/physiology		
Immunology		
Genetics/molecular biology		
Organic/biochemistry		
Microbiology		
Statistics		
<b>Standard 22B2</b>		
Pre-analytical, analytical, and post-analytical components of laboratory services		
Hematology		
Hemostasis		
Chemistry		
Microbiology		
Urinalysis		
Microscopy		
Molecular diagnostics		
Immunology		
Immunohematology		
<b>Standard 22B3</b>		
Principles and practices of quality assurance/quality improvement as applied to the pre-analytical components of laboratory services		
<b>Standard 22B4</b>		
Application of safety to laboratory practice		
Application of governmental regulations and standards as applied to laboratory practice		
<b>Standard 22B5</b>		
Principles of interpersonal and interdisciplinary communication and team-building		

**Standard 22B Matrix (CLS/MT)**

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Clinical Laboratory Scientist/Medical Technologist	Course	Location of Unit Number
<b>Standard 22B6</b>		
Principles and application of ethics		
Principles and applications of professionalism to address ongoing professional career development		
<b>Standard 22B7</b>		
Education techniques and terminology sufficient to train/educate users and providers of laboratory services		
<b>Standard 22B8</b>		
Knowledge of research design/practice sufficient to evaluate published studies as an informed consumer.		
<b>Standard 22B9</b>		
Critical pathways and clinical decision making		
Performance improvement		
Dynamics of healthcare delivery systems as they affect laboratory service		
Human resource management to include position description, performance evaluation, utilization of personnel, and analysis of workflow and staffing patterns		
Financial management: profit and loss, cost/benefit, reimbursement requirements, materials/inventory management		

## Standard 22B Matrix (CLT/MLT)

Clinical Laboratory Technician/Medical Laboratory Technician	Course	Location or Unit Number
<b>Standard 22B1</b>		
Methodologies including problem solving and troubleshooting techniques	(see attached table)	
Hematology		
Hemostasis		
Chemistry		
Microbiology		
Urinalysis		
Microscopy		
Immunology		
Immunochemistry		
<b>Standard 22B2</b>		
Collecting, processing, and analyzing biological specimens		
<b>Standard 22B3</b>		
Laboratory result use in diagnosis and treatment		
<b>Standard 22B4</b>		
Communications sufficient to serve the needs of patients and the public		
<b>Standard 22B5</b>		
Technical training sufficient to orient new employees		
<b>Standard 22B6</b>		
Quality assessment in the laboratory		

**Standard 22B Matrix (CLT/MLT)**

Clinical Laboratory Technician/Medical Laboratory Technician	Course	Location of Unit Number
<b>Standard 22B7</b>		
Laboratory safety and regulatory compliance		
<b>Standard 22B8</b>		
Information processing in the clinical laboratory		
<b>Standard 22B9</b>		
Ethical and professional conduct		
<b>Standard 22B10</b>		
Significance of continued professional development		

**Standard 22B Matrix (CG)**

<b>Cytogenetic Technologist</b>	<b>Course</b>	<b>Location or Unit Number</b>
<b>Standard 22B1</b>		
Areas of study in professional or as prerequisites		
General biology		
General chemistry		
Biochemistry or cell biology		
Genetics		
Cytogenetics		
Hematology		
Microbiology		
Immunology		
Computer skills, including laboratory information systems		
Laboratory safety		
Quality control		
<b>Standard 22B2</b>		
Principles, practice and acquisition of computer technology		
<b>Standard 22B3</b>		
Cytogenetics		
History of cytogenetics		
Mechanisms of numerical and structural abnormalities		
Clinical correlation of autosomal and sex chromosome anomalies		
Cancer cytogenetics and clinical correlation between diagnosis and treatment		
Molecular applications of cytogenetics		
<b>Standard 22B4</b>		
Principles and practices		
Specimen processing		
Appropriate cell and tissue culture techniques		
Harvest techniques		
Chromosome banding and staining techniques		
Flourescence in situ hybridization (FISH) techniques		
Microscopy and image analysis		
Chromosome analysis		

**Standard 22B Matrix (CG)**

<b>Cytogenetic Technology</b>	<b>Course</b>	<b>Location of Unit Number</b>
<b>Standard 22B5</b>		
Principles and practices of laboratory management and supervision		
<b>Standard 22B6</b>		
General laboratory practice		
Safety		
Quality control and continuous quality improvement		
Professional and ethical standards		

<b>Diagnostic Molecular Scientist</b>	<b>Course</b>	<b>Location or Unit Number</b>
<b>Standard 22B1</b>		
Organic/biochemistry		
Genetics		
Cell biology		
Microbiology		
Immunology		
Diagnostic molecular biology		
<b>Standard 22B2</b>		
<b>Principles, methodologies, and applications of:</b>		
<ul style="list-style-type: none"> <li>• molecular microbiology (infectious diseases)</li> </ul>		
<ul style="list-style-type: none"> <li>• molecular pathology (hematology/oncology)</li> </ul>		
<ul style="list-style-type: none"> <li>• molecular genetics</li> </ul>		
<b>Techniques of molecular science must include at least two techniques in:</b>		
<ul style="list-style-type: none"> <li>• separation and detection</li> </ul>		
<ul style="list-style-type: none"> <li>• sequence analysis</li> </ul>		
<b>Standard 22B3</b>		
Clinical significance of laboratory procedures in diagnosis and treatment		
<b>Standard 22B4</b>		
Principles and practices of quality management		
<b>Standard 22B5</b>		
Principles and practices of laboratory administration, supervision, safety, and problem solving;		
<b>Standard 22B6</b>		
Principles and practices of professional conduct		

**Standard 22B Matrix (DMS)**

Page 2 / 2

Diagnostic Molecular Scientist	Course	Location of Unit Number
<b>Standard 22B7</b>		
Principles and practices of applied study design, implementation and dissemination of results		

**Standard 22B Matrix (HT)**

<b>Histotechnician</b>	<b>Course</b>	<b>Location or Unit Number</b>
<b>Standard 22B1</b>		
Methodologies for all major areas currently practice by a modern histopathology laboratory, including problem solving and troubleshooting techniques		
Fixation		
Frozen sectioning		
Processing		
Decalcification		
Embedding		
Microtomy		
Routine and special stains		
Instrumentation		
Tissue identification and microscopy		
Accessioning		
Laboratory mathematics		
Laboratory safety		
<b>Standard 22B2</b>		
Receiving and documenting, processing and analyzing biological specimen and other substances		
<b>Standard 22B3</b>		
Histopathologic examination utilization in diagnosis and treatment		
<b>Standard 22B4</b>		
Communications sufficient to serve the needs of patients and the public		
<b>Standard 22B5</b>		
Technical training sufficient to serve the needs of patients and the public		
<b>Standard 22B6</b>		
Quality assessment in the laboratory		

**Standard 22B Matrix (HT)**

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Histotechnician	Course	Location of Unit Number
<b>Standard 22B7</b>		
Laboratory safety and regulatory compliance		
<b>Standard 22B8</b>		
Information processing in the clinical histopathology laboratory		
<b>Standard 22B9</b>		
Ethical and professional conduct		
<b>Standard 22B10</b>		
Significance of continued professional development		

<b>Histotechnologist</b>	<b>Course</b>	<b>Location or Unit Number</b>
<b>Standard 22B1</b>		
Biology		
Chemistry		
Mathematics		
<b>Standard 22B2</b>		
Applications of histology, immunohistochemistry, enzyme histochemistry, and microscopy. 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.		
<b>Standard 22B3</b>		
Principles and practices of quality assurance, improvement, and assessment as applied to the contemporary histopathology laboratory.		
<b>Standard 22B4</b>		
Application of safety and governmental regulations and standards as applied to laboratory practice.		
<b>Standard 22B5</b>		
Principles of interpersonal and interdisciplinary communication and team building skills.		
<b>Standard 22B6</b>		
Principles and application of ethics and professionalism to address ongoing professional career development.		

**Standard 22B Matrix (HTL)**

Histotechnologist	Course	Location of Unit Number
<b>Standard 22B7</b>		
Education techniques and terminology sufficient to train/educate users and providers of laboratory services.		
<b>Standard 22B8</b>		
Knowledge of research design/practice sufficient to evaluate published studies as an informed consumer.		
<b>Standard 22B9</b>		
Concepts and principles of laboratory operations include:		
Fixation		
Frozen Sectioning		
Processing		
Decalcification		
Embedding		
Microtomy		
Routine and special stains		
Instrumentation		
Tissue identification and microscopy		
Accessioning		
Laboratory Mathematics		
Immunohistochemistry, including enzyme pretreatment		
Laboratory safety		
Human Resource Management to include position description, performance evaluation, utilization of personnel, and analysis of workflow and staffing patterns		
Financial management: profit and loss; cost/benefit, reimbursement requirements, materials/inventory management		
Education methodologies		

## Standard 22B Matrix (PathA)

Pathologists' Assistant	Course	Location or Unit Number
<b>Standard 22B: Prerequisite coursework</b>		
General chemistry		
Organic chemistry and/or biochemistry		
Biological science		
Microbiology		
Mathematics		
English composition		
<b>Standard 22B: Professional Sequence Courses – knowledge and skills in the following areas</b>		
Anatomic Pathology Management		
Gross Autopsy Pathology Techniques		
Gross Forensic Pathology/Toxicology Specimen Techniques		
Gross Pediatric Pathology Techniques		
Gross Surgical Pathology Techniques		
Educational Methodology		
<b>Standard 22B: Required Cognates – knowledge and skills in the following areas</b>		
Clinical Pathology		
Computerization and Information Systems		
Embryology		
General and Systemic Human Pathology		
Histology/Microscopic Anatomy		
Human Anatomy		
Human Physiology		
Medical Ethics		
Medical Microbiology		
Medical Photography		
Medical Terminology		
Safety Regulations		

**Standard 22C - Narrative:** Briefly describe how the required material and activities listed in Standard 22B are used in the program to develop entry-level competencies.

If applicable, describe how student experiences at different clinical sites are ensured as comparable.

Justify learning experiences during hours other than the normally scheduled clinical experience.

Describe how policies and procedures regarding service work are distributed to students and clinical facilities.

Lab practicals are given in MLT 101 (venipuncture competency), MLT 132 (manual differentials performed and cell identification performed), MLT 231 (unknowns identified), MLT 142 (complete urinalysis unknowns), MLT 141 (ABO/Rh; Type & Screen and identify one antibody). In MLT 232 a parasitology and mycology slide identification practical is given.

Great care is given to ensuring that students experience all facets of the laboratory no matter where they do their clinical training. The clinical rotation checklists have items listed for discussion which is utilized for tests that may not be available at a given clinical facility. Students are responsible for the information regarding the test principle, sources of error and the use of test results in health and disease regardless if the test is not performed at the clinical site. Documentation of work completed in the rotation is combined in a binder for all section rotations for each student. In addition, the clinical instructor supervising the student during the rotation completes an evaluation of technical competency for that rotation.

Students are required to prepare for each rotation by reviewing material presented in the applicable course(s) prior to the internship. Students are assessed by the clinical mentors on knowledge recall and application. Students are also required to complete rotation exams for each section.

Policies and procedures regarding service work are distributed in the student handbook at orientation, in the applied course syllabi and in the instruction packet for clinical mentors. Discussions between the clinical mentor and the program director also take place prior to students entering the clinical site.

**Standard 22D - Narrative:** *Narrative Not Required.*