



February 5, 2018

Dr. James D. Fielder, Jr.
Secretary
Maryland Higher Education Commission
6 North Liberty Street
Baltimore, Maryland 21201

Dear Secretary Fielder,

The Community College of Baltimore County (CCBC) respectfully submits the attached proposal for a new Associate of Applied Science degree program in Histotechnology. The proposed program in Histotechnology will be the only degree program in the State of Maryland and seeks the Health Manpower Shortage Designation. The program will be seeking accreditation from the National Accrediting Agency for Clinical Laboratory Sciences (NAACLS). Graduates will be eligible to sit for the American Society of Clinical Pathologists (ASCP) certification examination.

Histotechnicians are integral members of the health care team. Duties of the histotechnician include the preparation of human tissue from biopsy or autopsy for microscopic examination by processing and cutting tissues, mounting tissues on slides and staining tissues with special dyes for microscopic examination by a pathologist for disease diagnosis. Most histotechnicians work in hospital, medical research, veterinary pathology, marine pathology, dermatopathology, pharmaceutical or forensic laboratories.

The proposed Histotechnology A.A.S. provides an affordable means for students to complete a degree that will build transferable work skills and enable entry into a professional career. Hospitals and other healthcare facilities face a critical shortage of qualified laboratory personnel, including histotechnicians. A request for development of the Histotechnology program was initiated by Johns Hopkins Hospital and other local hospitals supported this request. The proposal has the support of allied health program advisory committees and will allow CCBC to address workforce demands.

Thank you for your consideration of this request. Feel free to contact me with any questions.

Sincerely,

A handwritten signature in black ink that reads 'Mark McColloch'.

Mark McColloch
Vice President of Instruction

cc: Jennifer Kilbourne
Shawn McNamara
Candice Grayson

443-840-CCBC (2222)

CCBC Catonsville
800 South Rolling Road
Baltimore, Maryland
21228

CCBC Dundalk
7200 Sollers Point Road
Baltimore, Maryland
21222

CCBC Essex
7201 Rossville Boulevard
Baltimore, Maryland
21237

CCBC Hunt Valley
11101 McCormick Road
Suite 100
Hunt Valley, Maryland
21031

CCBC Owings Mills
10300 Grand Central Avenue
Owings Mills, Maryland
21117

**CCBC Randallstown
at The Liberty Center**
3637 O'futt Road
Randallstown, Maryland
21133

*The incredible value
of education.*

www.cbcmd.edu

MARYLAND HIGHER EDUCATION COMMISSION
ACADEMIC PROGRAM PROPOSAL

PROPOSAL FOR:

- NEW INSTRUCTIONAL PROGRAM
 SUBSTANTIAL EXPANSION/MAJOR MODIFICATION
 COOPERATIVE DEGREE PROGRAM
 WITHIN EXISTING RESOURCES REQUIRING NEW RESOURCES

Community College of Baltimore County

Institution Submitting Proposal

July, 2018

Proposal Implementation Date

Associate of Applied Science

Award to be Offered

Histotechnology

Title of Proposed Program

5205

Suggested HEGIS Code

51.1007

Suggested CIP Code

School of Health Professions

Department of Proposed Program

Dr. Shawn McNamara

Name of Department Head

Candice Grayson


Contact Name

cgrayson@ccbcmd.edu

Contact E-Mail Address

443-840-1029

Contact Phone Number


Signature and Date

President/Chief Executive Approval

January 31, 2018

Date Endorsed/Approved by Governing Board

**Academic Program Proposal – Histotechnology, AAS degree
The Community College of Baltimore County, POC: Candice Grayson**

Date

A. Centrality to institutional mission statement and planning priorities:

The Community College of Baltimore County (CCBC) mission states that CCBC provides accessible, affordable, and high-quality education that prepares students for transfer and career success, strengthens the regional workforce, and enriches our community.

The proposed program directly supports CCBC's strategic plan, *CCBC 2020: A College on the Cutting Edge*, by creating an academic program that develops workforce-ready skills. Additionally, this degree supports CCBC's strategic direction of Teaching and Learning Excellence by providing a high-quality program that has state-of-the-market viability and responds to the evolving needs of the student, community, and workforce.

This program also affirms a key institutional priority related to enrollment stabilization based on CCBC's mission and demographics. The College is prioritizing and investing resources in areas/initiatives with expansion and/or stabilizing potential. Given the abundant job opportunities for Histotechnicians described later in this document, this program has excellent potential to address the documented workforce development need.

The Histotechnology Program prepares the student to be an important member of the anatomical pathology laboratory team. Histotechnicians are laboratory personnel that prepare human or animal tissue samples for microscopic examination. These samples are used for diagnosing disease, conducting research, and teaching medical personnel. The analysis of a variety of body tissues and organs to detect the presence or absence of disease is performed in the medical laboratory commonly known as Anatomic Pathology.

Histotechnicians work in a variety of settings such as: hospital laboratories, reference laboratories, physician office laboratories, State Department of Health, fertility clinics, pharmaceutical/biotechnology industry; veterinary laboratories and forensic laboratories. Job responsibilities include preparing sections of human tissue from biopsy or autopsy for microscopic examination by processing and cutting tissues, mounting them on slides and staining them with special dyes for microscopic examination by a pathologist for the diagnosis of disease, in addition to equipment maintenance and troubleshooting.

The Histotechnology Program at CCBC provides courses that offer the full range of clinical and didactic experience to practice as Histotechnician. Graduates of the program are eligible to be certified by the American Society for Clinical Pathology (ASCP). This program helps meet the needs of the local workforce while providing affordable high-quality education to our students.

Academic Program Proposal – Histotechnology, AAS degree
The Community College of Baltimore County, POC: Candice Grayson

B. Critical and compelling regional or Statewide need as identified in the State Plan:

Societal Needs

The proposed Histotechnology A.A.S. provides an affordable means for students to complete a degree that will generate transferable work skills and entry into a professional career. Access for minority and educationally disadvantaged students is since CCBC's tuition and fees are much lower when compared to four-year institutions.

Alignment with the Maryland State Plan

In accordance with the Maryland State Plan for Postsecondary Education, college completion was identified as one of the significant issues in the Plan and a primary focal point of postsecondary education in Maryland. This program will promote Goal #1: *Quality and Effectiveness* of the Maryland State Plan by establishing a program that will be nationally accredited by The National Accrediting Agency for Clinical Laboratory Sciences (NAACLS). This esteemed agency sets forth the criteria for a highly competent and sophisticated workforce nationwide. Accreditation will validate the program's quality effectiveness through compliance with national recognized standards in the practice area. The program will be seek accreditation upon approval.

The program also promotes Goal #2: *Access, Affordability and Completion*. This program provides an affordable means for students to garner the academic background and skills needed to earn an Associate degree in Histotechnology thereby supporting access and facilitating completion. Due to high market demand for Histotechnologists in Maryland and the lack of educational opportunities, the program seeks the Health Manpower Shortage program designation. Through this designation the program will be able to provide affordable options with quality experiences. The CCBC School of Health Professions (SHP) is the largest educator of health care professionals in the State of Maryland. SHP has demonstrated commitment to the completion agenda by providing supplemental instruction and tutoring for all programs within the school. Through these services and a dedicated faculty, retention rates throughout the school have increased over the past three years. Our success and knowledge in the area of retention will benefit this new program and provide pathways to student completion.

The program promotes Goal #3: *Diversity*. CCBC has a general population of over 63,000 students with 55% of credit students from minority populations. The School of Health Professions has a minority population of 53%. The addition of the Histotechnology program will provide minorities the opportunity for another career track.

Goal #4: *Student-Centered Learning* encourages the development of new, diverse, creative, and collaborative practices that enhance the quality, effectiveness, and adeptness of offerings and services provided by postsecondary institutions. Student laboratories and integrated learning activities provide opportunities for students to model professional skills and activities. As part of the curriculum, four clinical internships are required of all

Academic Program Proposal – Histotechnology, AAS degree
The Community College of Baltimore County, POC: Candice Grayson

students. These internships offer students practical training in a professional environment.

This program will also promote Goal #5: *Economic Growth and Vitality* of the Maryland State Plan by supporting a knowledge-based economy through education and training. As indicated in the Plan, the Associate degree is required for entry into practice. This program will provide a pipeline of skilled graduates who are prepared to take the certification examination and enter the workforce in the Baltimore-Washington Region.

C. Quantifiable & reliable evidence and documentation of market supply & demand in the region and State:

Hospitals and other healthcare facilities face a critical shortage of qualified laboratory personnel, including histotechnicians. Requests for development of the Histotechnology program were initiated by Johns Hopkins Hospital and supported by the advisory board for the Medical Laboratory Technology (MLT) program. Members of the advisory board represent laboratory supervisors and managers from 20 local hospitals, such as Greater Baltimore Medical Center, Medstar Hospital system, Mercy Medical Center, Sinai Hospital and University of Maryland Medical system. The U.S. Department of Labor, Bureau of Labor Statistics projects that the employment growth will increase by 16% by 2024, much faster than the average for all occupations. Locally, the average starting annual salary for a Histotechnologist is \$45,000. Presently, there are fewer than forty nationally accredited programs providing graduates to enter the field, with a local need of at least five histotechnologists per area hospital. As Histotechnologists are in high demand in Maryland and there are no AAS programs in the State, the program seeks approval for the Health Manpower Shortage Program designation.

Admission will be capped at twenty students per year due to the limitations posed by clinical placement. Students require a 1:1 preceptor, as per accreditation standards.

D. Reasonableness of program duplication:

There is currently one certificate program in the State of Maryland. Harford Community College awards students a certificate with the education/training occurring on the job. CCBC anticipates offering the only A.A.S degree program in the State of Maryland, as necessitated by market demand outlined above.

E. Relevance to high demand programs at Historically Black Institutions (HBIs)

The Histotechnology Program at CCBC does not have a negative impact on historically black institutions, as it will be the only program of its kind in the State.

F. Relevance to the Identity of Historically Black Institutions (HBIs)

Academic Program Proposal – Histotechnology, AAS degree
The Community College of Baltimore County, POC: Candice Grayson

Since this program is relatively unique in the State of Maryland, there will be no negative impact on the implementation or maintenance of high-demand programs at HBIs as well as the uniqueness and institutional identities and missions of HBIs.

G. Adequacy of curriculum design and delivery to related learning outcomes consistent with Regulation .10 of this chapter:

1. Provide a list of courses with title, semester credit hours and course descriptions, along with a description of program requirements.

Curriculum:

Histotechnology

Associate of Applied Science (A.A.S.)

Program Prerequisites

• ENGL 101*	College Composition I	3 Credits
• BIOL 110*	Biology I Molecular and Cells	4 Credits
• BIOL 109	Human Anatomy and Physiology	4 Credits
• CHEM 107*	Fundamentals of Chemistry	3 Credits
• CHEM 108	Fundamentals of Chemistry Lab	1 Credits
• MLTC 101	Introduction to Laboratory Techniques	<u>3 Credits</u>
*Also serve as a General Education Requirement		18 Credits

General Education Requirements

Beyond Program Prerequisites:

• CMNS 101	Fundamentals of Communication	3 Credits
• MATH 135	Applied Algebra & Trigonometry	3 Credits
• SOCL 141	Racial and Cultural Minorities	<u>3 Credits</u>
		9 Credits

Program Requirements

• ALHL 115	Medical Terminology	3 Credits
• BIOL 230	Microbiology	4 Credits
• HSTO 101	Laboratory Operations & Instrumentation	2 Credits
• HSTO 102	Histology Laboratory Techniques	1 Credit
• HSTO 103	Tissue Fixation and Processing	2 Credits
• HSTO 104	Embedding, Microtomy, & Staining	3 Credits
• HSTO 155	Histology Practicum I	3 Credits
• HSTO 106	Special Staining I	2 Credits
• HSTO 255	Histology Practicum II	3 Credits
• HSTO 206	Special Staining II	2 Credits

Academic Program Proposal – Histotechnology, AAS degree
The Community College of Baltimore County, POC: Candice Grayson

- HSTO 256 Histology Practicum III 3 Credits
 - HSTO 257 Histology Practicum IV 3 Credits
 - HSTO 260 Trends in Histology 2 Credits
- 33 Credits

Total Number of Credits Required for Degree: 60 Credits

Course (Catalog) Descriptions

Program Pre-requisites:

ENGL 101 – 3 credits – College Composition I - Provides instruction that focuses on writing skills, evaluating, and explaining ideas, conducting library and Internet research, developing a research paper, and documenting research. **Prerequisite(s):** Placement is based on assessment and/or successful completion of ESOL 052 and ESOL 054 or ACLT 052 or ACLT 053

BIOL 110 – 4 credits – Biology I: Molecular and Cells – Serves as the introductory course for Biology and Pre-Allied Health majors and is the prerequisite course for Anatomy and Physiology and Microbiology. It stresses the basic biological principles common to all living things. Evolution and homeostasis serve as central themes for the topics, which include cell structure and function (both physical and chemical), molecular and cellular reproduction and genetics. The laboratory introduces the student to various biological techniques and emphasizes the process of science.
Prerequisite(s): ESOL 052 and ESOL 054 or ACLT 052 or ACLT 053

BIOL 109 – 4 credits – Human Anatomy and Physiology - Provides a basic understanding of human anatomy and physiology through study of the structure and function of the human body. In addition to introductory principles of chemistry and cell biology, the following organ systems are examined: integumentary, skeletal, muscular, nervous, endocrine, immune, circulatory, respiratory, digestive, urinary, and reproductive. Includes both lecture and laboratory component and is a General Education laboratory science. **Prerequisite(s):** ESOL 054 and ESOL 052 or ACLT 052 or ACLT 053; and MATH 082

CHEM 107 – 3 credits – Fundamentals of Chemistry – Serves as a prerequisite course for allied health, engineering, and science majors. It surveys the concepts of general chemistry. Topics include states of matter, atomic structure, periodic table, bonding, nomenclatures, chemical reactions, chemical equations, and quantitative relationships. **Prerequisite(s):** ESOL 042 and ESOL 054 or ACLT 052 or ACLT 053; and MATH 082

CHEM 108 – 1 credit - Fundamentals of Chemistry Laboratory – Serves as a lab course to accompany CHEM 107; examines how to make and record accurate observations and measurements in an investigative lab setting. **Prereq/Corequisite(s):** Concurrent enrollment in or successful completion with a “C” or better of CHEM 107

Academic Program Proposal – Histotechnology, AAS degree
The Community College of Baltimore County, POC: Candice Grayson

MLTC 101 – 3 credits - Introduction to Medical Laboratory Technology - Presents a survey of medical laboratory technology for students who wish to apply for admission to the Medical Laboratory Technology or Histology program. Includes safety, lab math, ethics, and divisions of a clinical laboratory. **Prerequisite(s):** ENGL 101 and MATH 083, or may be taken concurrently

General Education:

CMNS 101 - 3 credits - Fundamentals of Communication - Introduces the study of communication; develops an understanding of and applied theoretical principles of verbal and non-verbal interaction. The course covers a variety of communication patterns, including intrapersonal, interpersonal, cross-cultural, group, and the development of public speaking skills. **Prerequisite(s):** ESOL 052 and ESOL 054 or ACLT 052 or ACLT 053

MATH 135 – 3 credits – Applied Algebra and Trigonometry – Covers a wide range of college-level algebraic and trigonometric topics, such as linear and quadratic equations, right-triangle trigonometry and vectors, exponents, and logarithms, and students will develop problem-solving skills relevant to their disciplines. This course is primarily for students in certain technically oriented disciplines. **Prerequisite(s):** ESOL 042 and ESOL 054 or ACLT 052 or ACLT 053; and MATH 083

SOCL 141 – 3 credits – Racial and Cultural Minorities – Examines race and ethnic relations in America from a historical and sociological perspectives; focuses on the response of the dominant society to minority groups; examines current controversial issues that affect racial and ethnic minorities. **Prerequisite(s):** ESOL 054 and ESOL 052 or ACLT 052 or ACLT 053

Program Requirements:

ALHL 115 – 3 credits – Medical Terminology – Studies the language of medicine including word construction, definitions, and use of words related to medical science in general, emphasizes the interpretation and translation of medical records and documents. **Prerequisite(s):** ESOL 052 and ESOL 054 or ACLT 052 or ACLT 053

BIOL 230 – 4 credits – Microbiology – Introduces and discusses concepts related to the study of bacteria, viruses, protozoa, fungi and both the beneficial and pathogenic interrelationships with humans; emphasizes basic laboratory techniques such as microscopy, staining and aseptic technique. **Prerequisite(s):** Completion of BIOL 110 with a grade of “C” or higher and MATH 083

HSTO 101 – 2 credits - Laboratory Operations and Instrumentation - Provides an overview of laboratory operations and instrumentation in a histology laboratory. This includes workflow, regulations and procedures, quality control, biological, chemical, and infectious hazards, storage and disposal of chemicals, acids, and bases.

Academic Program Proposal – Histotechnology, AAS degree
The Community College of Baltimore County, POC: Candice Grayson

Instrumentation utilized in the histology laboratory is covered, as well as the maintenance, troubleshooting and quality control of equipment. **Prerequisites:** MLTC 101 and Admission to the Histotechnology Program

HSTO 102 – 1 credit - Histology Laboratory Techniques - Introduces the theoretical and practical aspects of histology. Laboratory procedures include paraffin embedding, sectioning, and basic staining. The student will become familiar with preparing an embedding station, demonstrate the embedding methods used for different tissue types, and utilize embedding instruments. Students will receive laboratory instructions on the use, safety, and troubleshooting of a microtome. The student will develop dexterity and precision in using a microtome. Hematoxylin and Eosin (H&E) hand staining will be performed and evaluated. Students will analyze the stained slides under a microscope. Troubleshooting basic staining will be reviewed. **Prerequisites:** MLTC 101 and Admission to the Histotechnology Program

HSTO 103 – 2 credits - Tissue Fixation and Processing- Explains the functions, actions and factors that affect the quality and choice of a fixative. Topics include simple and compound fixatives, coagulant and non-coagulant fixatives, and aqueous and non-aqueous fixatives, along with various procedures of histology requiring fixation. Identify fixation pigments, artifacts and troubleshooting methods. The course examines tissue processors with regards to reagents used, maintenance and troubleshooting, as well as tissue processing and special techniques in processing of decalcification and frozen sectioning. **Prerequisites:** HSTO 101 and HSTO 102

HSTO 104 – 3 credits - Embedding, Microtomy, and Staining - Explains the embedding of tissue processed by paraffin, factors in the choice of paraffin, melting points and influence on support. Embedding topics include: embedding units, instruments, specimen orientation, alignment, inking, tissue carryover, and troubleshooting. The course discusses the different types of microtomes, the microtomy of different specimens and troubleshooting microtomy issues. Review the ultrastructure of the cell and the differences between nuclear and cytoplasmic staining. In addition, topics include theory of staining and impregnation, comparison of natural and synthetic dyes, examine types and uses for hematoxylin and differentiation between progressive, regressive and polychromatic staining. Along with identifying troubleshooting issues with Hematoxylin and Eosin (H&E) staining and contrast resinous media versus aqueous media. **Prerequisites:** HSTO 101 and HSTO 102

HSTO 106 – 2 credits - Special Staining I - Explains the use of a variety of special stains, dyes, and techniques to highlight individual tissue components once an Hematoxylin and Eosin (H&E) stain is evaluated. The student demonstrates the purpose, principles, reagents, controls, troubleshooting, and results of each special stain. Understanding of both the theory and techniques employed in the histology laboratory prepares the students to successfully integrate greater skills to enter the field of Histotechnology. **Prerequisite:** HSTO 155

Academic Program Proposal – Histotechnology, AAS degree
The Community College of Baltimore County, POC: Candice Grayson

HSTO 155 – 3 credits - Histology Practicum I - Provides the student with entry-level clinical experiences in a histopathology laboratory. Throughout the practicum, the student acquires a working knowledge of sectioning specimens, processing schedules, paraffin embedding of tissue, routine staining, mounting techniques and troubleshooting. After demonstrating proficiency, students may be permitted to perform procedures under qualified supervision. Participate in the supportive functions of instrument operation, quality control, troubleshooting and problem solving. The student performs procedures according to documented methodology, policy and protocol established for routine and specialized areas. The student rotates to various clinical sites during the practicum. **Prerequisites:** HSTO 101 and HSTO 102

HSTO 206 – 2 credits - Special Staining II - Explains the use of a variety of special stains, dyes and techniques to highlight individual tissue components once an H&E stain is evaluated. The student will demonstrate the purpose, principles, reagents, controls, troubleshooting, and results of each special stain. Understanding of both the theory and techniques employed in the histology laboratory will prepare the students to successfully integrate greater skills to enter the field of Histotechnology. **Prerequisite:** HSTO 106

HSTO 255 – 3 credits - Histology Practicum II - Provides the student with clinical experiences in special stains that will include carbohydrates, amyloid, connective tissue, muscle, and lipids. Throughout the practicum, the students continue to section specimens, paraffin embedding of tissue, routine staining, mounting techniques and troubleshooting. After demonstrating proficiency, students may be permitted to perform procedures under qualified supervision. Participate in the supportive functions of instrument operation, quality control, troubleshooting and problem solving. **Prerequisite:** HSTO 155

HSTO 256 – 3 credits - Histology Practicum III - Provides the student with clinical experiences in the histopathology laboratory applying and integrating theory, skills, and concepts regarding microorganisms, pigments & minerals, and neural tissue. The student builds upon the techniques learned in previous practicums. The student demonstrates special stains that include microorganisms, nerve and lipids, along with participate in the supportive functions of instrument operation, quality control, troubleshooting and problem solving. **Prerequisite:** HSTO 256

HSTO 257 – 3 credits - Histology Practicum IV - Provides the student with clinical experiences in the histopathology laboratory applying and integrating theory, skills, and concepts regarding special stains. This practicum concentrates on immunohistochemistry methods as the student participates in the supportive functions of instrument operation, quality control, troubleshooting and problem solving. The student rotates to various clinical sites during the practicum. **Prerequisite:** HSTO 256; **Corequisite:** HSTO 260

HSTO 260 – 2 credits - Trends in Histotechnology - Introduces new practice developments, emerging technologies, and “hot topics” in the current literature within

Academic Program Proposal – Histotechnology, AAS degree
The Community College of Baltimore County, POC: Candice Grayson

the scope of practice of the histology technician. The course also includes a comprehensive review of the major discipline areas within the histology technician curriculum to prepare the student for the national certification examination. The course provides career preparation with regard to resume writing and interviewing skills.

Prerequisite: HSTO 256; **Corequisite:** HSTO 257

2. Describe the educational objectives and intended student learning outcomes.

Graduates of the Histotechnology Program will have completed all academic training required for an entry level histology technician and will be immediately employable in a laboratory setting within hospital, clinic, or private laboratories.

Educational Objectives:

At the completion of the program, students will be able to:

1. demonstrate professionalism and adherence to ethical and legal standards of the histotechnology profession;
2. demonstrate critical thinking skills in relation to prioritizing, analyzing, and resolving issues in the histology laboratory environment;
3. exhibit competency in the role of the histotechnician in various healthcare settings;
4. provide safe practice within the healthcare environment; and
5. communicate effectively with members of the interprofessional healthcare team.

Student Learning Outcomes:

At the completion of the program, students who successfully complete the HT degree will be able to:

1. perform routine laboratory procedures encompassing all major areas of the histology laboratory;
2. accurately and proficiently embed tissue and understand the principles of microtomy;
3. proficiently produce slides of quality and quantity for patient diagnosis;
4. evaluate the principles of staining and perform various staining techniques;
5. recognize unexpected results and instrument malfunctions and take appropriate action;
6. comply with safety procedures and ethical standards of practice;
7. demonstrate professional and interpersonal communication skills with patients, laboratory personnel, pathologists, other health care professionals, and the public;
8. recognize continuing education as a function of growth and maintenance of professional competence; and
9. prepare to take the national certification examination offered by American Society for Clinical Pathology (ASCP).

Academic Program Proposal – Histotechnology, AAS degree
The Community College of Baltimore County, POC: Candice Grayson

3. Discuss how general education requirements will be met, if applicable.

General Education requirements will be met in conjunction with program requirements and meet COMAR and CCBC policy. A semester-by-semester sequence will be provided accordingly in the college catalog.

4. Identify any specialized accreditation or graduate certification requirements for this program and its students.

The Histotechnology Program will seek accreditation by the National Accrediting Agency for Clinical Laboratory Science (NAACLS), upon approval by MHEC. The current CCBC Medical Laboratory Technology (MLT) program is accredited by NAACLS, earning the highest award of 10 years in October of 2015. The accreditation status awarded indicates the programs compliance and high level of standards. Maintenance is required by an annual report and a site visit by the organization will occur in 2025 to award a new accreditation award. The MLT and Histotechnology programs will utilize the same Program Director for consistency and compliance with NAACLS requirements.

Upon completion of the program, graduates will be eligible to sit for the national certification examination given by the American Society of Clinical Pathology (ASCP).

5. If contracting with another institution or non-collegiate organization, provide a copy of the written contract.

N/A

H. Adequacy of articulation

While there is currently no Bachelor's degree program for Histotechnology in the State of Maryland, graduates will be encouraged to seek additional education to support a role in Laboratory Administration or Management. The program will explore the opportunity for students to utilize the articulation agreement that currently exists with Towson University to earn a Bachelor of Technical or Professional Studies (B.T.P.S.) in Allied Health. CCBC has a dedicated full-time coordinator of transfer, articulation, and prior learning assessment who will assist in these efforts.

I. Adequacy of faculty resources (as outlined in COMAR 13B.02.03.11).

Grayson, Candice, M.S., M.A., MLS (ASCP)^{CM}
Associate Professor, Medical Laboratory Technology
B.S., University of Maryland, School of Medicine
Medical and Research Technology (1997)
American Society of Clinical Pathologist Board Certified (1997)
M.A., University of Maryland, Baltimore County

**Academic Program Proposal – Histotechnology, AAS degree
The Community College of Baltimore County, POC: Candice Grayson**

Instructional Systems Development (2006)
M.S., Rutgers University, School of Health Related Professions
Clinical Laboratory Science (2015)
Program Director-HSTO 260

Stephan, Karen, M.A., MLS (ASCP)^{CM}
Assistant Professor, Medical Laboratory Technology
B.S., University of Maryland, School of Medicine
Medical and Research Technology (1998)
American Society of Clinical Pathologist Board Certified (1998)
M.A., University of Maryland, Baltimore County
Instructional Systems Development (2011)
Clinical Coordinator-MLTC 101, HSTO 155, HSTO 255, HSTO 256, HSTO 257

The College is committed to hiring a full-time faculty member who will serve as the Education Coordinator with the following criteria:

- Associate's degree in Histotechnology
- Bachelor's degree in a Health Related Field
- 3 yrs. of experience in Histotechnology
- Current ASCP certified in Histotechnology

Education Coordinator-HSTO 101, HSTO 102, HSTO 103, HSTO 104, HSTO 106, HSTO 206

J. Adequacy of library resources (as outlined in COMAR 13B.02.03.12).

Describe the library resources available and/or the measures to be taken to ensure resources are adequate to support the proposed program. If the program is to be implemented within existing institutional resources, include a supportive statement by the President for library resources to meet the program's needs.

Upon approval of the program, current library resources including textbooks and periodicals will be expanded to support the program. The College also subscribes to several online databases that would be helpful to students in this program. The CCBC Libraries' collection includes over 60,000 ebooks and access to over 44,000 different journals and periodicals. Students can access these resources anytime from any computer or mobile device on or off-campus.

Beyond the resources provided through CCBC, the CCBC Library has a reciprocal use and borrowing agreement with the University of Maryland Baltimore County, Albin O. Kuhn Library and the University of Baltimore, Langsdale Library that entitles CCBC students to on-site access and use of the facilities and resources of these libraries as well as the opportunity to check out books. The College also provides InterLibrary Loan service, <http://library.ccbcmd.edu/screens/borrowingfromotherlibs.html>. In addition, to make library services more accessible to students, the CCBC Library

**Academic Program Proposal – Histotechnology, AAS degree
The Community College of Baltimore County, POC: Candice Grayson**

participates in a 24/7 online reference service through the AskUsNow Maryland statewide program.

K. Adequacy of physical facilities, infrastructure and instructional equipment (as outlined in COMAR 13B.02.03.13)

New program proposals at CCBC are reviewed and approved according to the process developed through college governance, which includes approval by the Curriculum and Instruction Committee and the full College Senate. In addition, this new degree proposal was carefully reviewed by the President and her Senior Staff prior to submission to the CCBC Board of Trustees for their endorsement. The President has affirmed that the program can be implemented within existing institutional resources and the addition of one full time faculty. A plan for ongoing equipment and facility upgrades and other routine needs has been developed in accordance with CCBC’s strategic plan.

The Histotechnology program will share laboratory and lecture space with the MLT program. The MLT program has a dedicated laboratory and lecture space that accommodates 24 students. Schedules for both program classes have been reviewed to allow for timing of all courses and open laboratory/study time in the space. Office space is sufficient. Administrative assistance is already incorporated in the MLT program and will serve the Histotechnology program. Equipment and supplies are being provided as a donation from Johns Hopkins Hospital. Hospital will provide microtomes, embedding stations, oven, and tissue specimens, with additional items already established within the MLT laboratory space.

L. TABLE 1: RESOURCES Adequacy of financial resources with documentation (as outlined in COMAR 13B.02.03.14)

Narrative: The following breakdown of costs is based on in-county tuition rates and having one student complete 15 credits total during the fall and spring semesters over a one-year period.

Tuition (\$120 x 30)	\$3,600.00
General Services Fee (\$15 per credit hour)	450.00
Registration Fee (\$55 per semester)	110.00
Capital Fee (\$10 per semester)	20.00
Technology Fee (\$11 per billable hour)	330.00
Activity Fee (\$48 maximum per semester)	72.00
Total	\$4,582.00
 Graduation fee	 \$ 75.00

All students are eligible for regular CCBC financial aid.

Academic Program Proposal – Histotechnology, AAS degree
The Community College of Baltimore County, POC: Candice Grayson

Resources Categories	Year 1	Year 2	Year 3	Year 4	Year 5
1. Reallocated Funds	0	0	0	0	0
2. Tuition/Fee Revenue (c+g below)	\$ 91,640	\$ 91,640	\$ 183,280	\$ 183,280	\$ 183,280
a. # F.T. Students	20	20	40	40	40
b. Annual Tuition/ Fee Rate	\$4, 582	\$ 4,582	\$ 4,582	\$ 10,012	\$ 10,312
c. Annual Full Time Revenue (a x b)	\$91,640	\$91,640	\$183,280	\$ 183,280	\$ 183,280
d. # Part Time Students	20	20	20	20	20
e. Credit Hour Rate	120	120	120	120	120
f. Annual Credit Hours	15	15	15	15	15
g. Total Part Time Revenue (d x e x f)	\$36,000	\$36,000	\$36,000	\$36,000	\$36,000
3. Grants, Contracts, & Other External Sources	0	0	0	0	0
4. Other Sources	0	0	0	0	0
TOTAL (Add 1-4)	\$127,640	\$127,640	\$ 219,280	\$ 219,280	\$ 219,280

Students in years 1 and 2 will be taking prerequisite coursework for the program. In years 3, 4 and 5, enrollment will be based on 20 students admitted to the program each year plus students taking program prerequisites.

**Academic Program Proposal – Histotechnology, AAS degree
The Community College of Baltimore County, POC: Candice Grayson**

Table 2 includes the salary and benefit expenditures to hire a new full-time faculty member to support the program. In addition, a combined 0.5 FTE will support the program, split between two existing Medical Laboratory faculty. A part-time (0.33 FTE) will be utilized to support the program starting in Year 3.

Expenditure Categories	Year 1	Year 2	Year 3	Year 4	Year 5
1. Faculty (b+c below)	\$ 66,586	\$ 68,584	\$ 70,640	\$ 72,760	\$ 74,742
a. # FTE	1	1	1	1	1
b. Total Salary	\$ 61,854	\$ 63,710	\$ 65,620	\$ 67,589	\$ 69,616
c. Total Benefits	\$ 4,732	\$ 4,874	\$ 5,020	\$ 5,171	\$ 5,326
2. Admin. Staff (b+c below)	\$ 59,997	\$ 61,797	\$ 63,651	\$ 65,560	\$ 67,527
a. # FTE	0.5	0.5	0.5	0.5	0.5
b. Total Salary	\$ 44,841	\$ 46,186	\$ 47,572	\$ 48,999	\$ 50,469
c. Total Benefits	\$ 15,156	\$ 15,611	\$ 16,079	\$ 16,562	\$ 17,059
3. Support Staff (b+c below)	0	0	\$ 18,875	\$ 19,441	\$ 20,025
a. # FTE	0	0	0.33	0.33	0.33
b. Total Salary	0	0	\$ 14,107	\$ 14,530	\$ 14,966
c. Total Benefits	0	0	\$ 4,768	\$ 4,911	\$ 5,059
4. Equipment	0	0	0	0	0
5. Library	\$ 1,000	\$ 1,000	\$ 1,000	\$ 1,000	\$ 1,000
6. New or Renovated Space	0	0	0	0	0
7. Other Expenses	0	0	0	0	0
8. TOTAL (Add 1 – 7)	\$ 127,583	\$ 131,381	\$ 154,176	\$ 158,762	\$ 163,294

M. Adequacy of provisions for evaluation of program as outlined in COMAR 13B.02.03.15.

Assessment and documentation of student achievement will occur as part of CCBC's program review process. Academic programs are reviewed on a five-year cycle. As part of the program review, Histotechnology will participate in program outcome assessment projects. Program coordinators must document how student-learning outcomes were developed and validate how the outcomes relate to the College's mission. It is noteworthy that CCBC's student learning assessment program received a Commendation and an Exemplary Practice award as part of the College's most recent Middle States decennial review.

Full-time faculty prepare an Annual Professional Summary every year to document their achievements in the categories of Professional Assignment, College and Community Service, and Professional Development. Supervisors use this information to complete annual evaluation of faculty performance. Students can also complete course evaluations on a regular basis. Courses are evaluated by anonymous

Academic Program Proposal – Histotechnology, AAS degree
The Community College of Baltimore County, POC: Candice Grayson

comments/feedback offered by students through evaluation tools. Student results on required examinations and performance during clinical practicums are also included to evaluate each course. In addition, students' performance on certification examinations will be utilized to evaluate the program. In order to maintain NAACLS accreditation, standards will be reviewed and evaluated for effectiveness with the guidance of administration, faculty, clinical affiliates, advisory board members, graduates and students.

N. Consistency with the State's minority student achievement goals as outlined in COMAR 13B.02.03.05 and in the State Plan for Postsecondary Education.

CCBC is devoted to providing an environment where cultural diversity thrives. CCBC has a dedicated multicultural affairs office and offers a host of programs designed to enhance minority student success including guest speakers, study programs, clubs, and academic counseling.

Many students enrolled in this program are expected to be current employees of surrounding hospital laboratories who are in pursuit of advanced training and an associate's degree. Once the program is advertised in the community at large, it can be anticipated that the classroom may be filled by individuals who are:

- Career changers;
- High School students; and
- Interested members of the community college campuses.

CCBC does not discriminate based on race, sex, age, religion, national origin, marital status, sexual orientation, or disabilities.

To promote minority student success, one of the hallmarks of CCBC's strategic plan is the value of inclusiveness. That is, we honor the diversity of people, cultures, ideas, and viewpoints. To help faculty appreciate and to maximize the potential of a diverse student population in their classrooms, CCBC has a Culturally Responsive Teaching and Training Program (CRT). The CRT Program is a multi-faceted initiative that engages faculty, staff, administrators, and students in the recursive process of self-reflection, dialogue, change, and growth regarding cultural understanding and cooperation. This program has helped the College to close achievement gaps and thereby improve student success. It is noteworthy that CCBC received the Leah Meyer Austin Award at the Achieving the Dream Conference in 2015, and the CRT Program was an important component to enable CCBC to improve student achievement and to meet equity goals. Both the Program Director and Clinical Coordinator have completed and participated in the Culturally Responsive Teaching and Training Program.

Since its inception in 2004, the CRT Program has led 500+ faculty and staff and thousands of students to actively address individual and collective self-awareness, attitudes and beliefs, knowledge of others, and the skills needed to implement new understandings through best practices of cultural competence.

**Academic Program Proposal – Histotechnology, AAS degree
The Community College of Baltimore County, POC: Candice Grayson**

O. Relationship to low productivity programs identified by the Commission:

N/A

P. Principles of Good Practice in Distance Education (as outlined in COMAR 13B.02.03.22C).

Curriculum and Instruction

The proposed Histotechnology A.A.S. degree program was developed by CCBC's MLT faculty and advising from histotechnologists within the field. The components were vetted and approved by the College's internal curriculum governance process to ensure that the curriculum is coherent, cohesive, and comparable in academic rigor to programs offered in traditional academic formats. As part of this process, the learning outcomes were examined to ensure they were appropriate given the rigor and breadth of the program. The careful research that is performed in the development of newly approved programs facilitates their internal adoption within CCBC's established planning and resource allocation processes.

The College uses Blackboard as its Learning Management System (LMS). Within this environment, numerous tools provide for appropriate real-time or synchronous communications as well as delayed interaction or asynchronous communications between faculty and students. Although the courses will not be initially implemented for online delivery, the possibility does exist to adapt didactic courses. All courses will utilize components of the LMS as a supplemental tool to in person delivery. Faculty who will be teaching online are trained to take best advantage of these technologies in their courses. Faculty members include any assignments for development of new distance education courses in their Annual Professional Summaries as part of the faculty evaluation process.

All levels of academic and instructional technology planning are integrated in the development of new distance education courses and programs. Distance education planning is also coordinated with CCBC's Enrollment and Student Services and Administrative Services divisions to ensure that students have access to academic and physical resources needed to promote student success.

Role and Mission

As part of CCBC's mission, the College is committed to preparing students for career success and strengthening the regional workforce. The Histotechnology A.A.S. degree will help to fulfill both goals. In addition, as part of CCBC's strategic direction of Teaching and Learning Excellence, the College is committed to using the most technologically appropriate and effective teaching methods and formats available. The effectiveness of current technologies to support the objectives of all academic programs

Academic Program Proposal – Histotechnology, AAS degree
The Community College of Baltimore County, POC: Candice Grayson

is reviewed on an ongoing basis, as illustrated below, and additional resources are allocated to meet documented needs.

In spring 2007, the College commissioned an assessment of information technology services and resources. To complement these efforts, in fall 2007 the Vice President of Instruction (VPI) charged the Distance Education Task Force (DETF), that included a large complement of faculty, with reviewing distance learning at CCBC and recommending a framework for future development and improvement. The DETF report was submitted to the VPI and Chief Information Officer (CIO) in June 2008.

In July 2008, CCBC's Information Technology Services (ITS) was reorganized to create a robust, effective technical help desk and information technology support model for the College. To build on these accomplishments, ITS has its own formal planning document that is aligned and prepared in accordance with the CCBC Strategic Plan. One of the action items in the ITS Plan is to evaluate, adopt, and maintain the most current technologies available in support of online and distance learning. Achievement of this action item is measured on an ongoing basis through CCBC's institutional assessment processes. It is noteworthy that the College was commended for its culture of institutional assessment in its Middle States decennial reaccreditation in 2012.

Faculty Support

CCBC is a Quality Matters Institution. As a subscriber, CCBC uses Quality Matters standards to build, teach, and review both online and blended courses. This provides students with the quality and consistency they need to be successful in online courses. To promote high-quality instruction, once new online education courses and programs have been approved, a faculty member must complete CCBC's Online Course Development Institute before developing and teaching a distance education course. This course is offered online and includes a minimum 80 hours of activities. Through this professional development, faculty members learn about the pedagogical and technological aspects of teaching online and work with an instructional designer to develop the course shell and materials. The instructional design team reviews the course for compliance with Quality Matters standards before the course is offered in the schedule of classes. Through this review, the faculty member and instructional design team ensure that the design of the course will enable a student to achieve the learning outcomes and that these outcomes are assessed appropriately. The Introduction to Laboratory Techniques (MLTC 101) has successfully completed internal Quality Matters evaluation and is currently taught online. The Program Director and Clinical Coordinator are currently trained and serve as peer reviewers for the college's Quality Matters reviews. Faculty who are teaching online for the first time but not developing the course for online delivery (i.e., teaching an already existing distance education course), complete the professional development opportunity, Teaching an Online Course, to become skilled in teaching within this environment. This course is offered online and includes 40 hours of activities.

**Academic Program Proposal – Histotechnology, AAS degree
The Community College of Baltimore County, POC: Candice Grayson**

To ensure that the principles of best practice for teaching in a distance education format are established and implemented, the Distance Learning Advisory Board (DLAB) was created in 2009 and is comprised of institutional leaders, including faculty who teach online as well as representatives from CCBC's Shared Governance system. This group was charged by the VPI to develop policy proposals designed to improve distance education outcomes for consideration by the College's governance structure. As new policies are approved, they are monitored and assessed as part of the established institutional assessment processes.

The College provides a robust array of support services for faculty teaching in a distance education format. Led by the Executive Dean as well as Assistant Dean of Online Learning, the Office of Online Learning includes an Instructional Design Group as well as a Learning Management Systems/Instructional Training Group to provide support to faculty in the design of courses and courseware. The Online Learning/Instructional Design Group is led by a Director and includes three Instructional Designers (two at the senior level). The Learning Management Systems and Instructional Training Group is led by a Director and includes two LMS Administrators, two Technology Trainers, and an Administrator for Digital and Emerging Technologies. Additional support is provided to faculty via a 24/7 Technical Help Desk and an externally hosted LMS, which includes the highest level of technical support available.

To ensure appropriate learning resources are available to students, CCBC offers online tutoring, which is provided by trained tutors. The format for the service is through an asynchronous discussion board using Blackboard. Students self-register for each subject in which they seek tutoring; these subjects then appear on their Blackboard class list and include allied health, biology (all levels), chemistry (all levels), math (all levels), physics, and psychology. Online tutoring for other subjects, such as accounting, economics, and philosophy, may be available upon request. To increase awareness of online tutoring the Student Success Centers provide an announcement on Blackboard and provide a brochure during the classroom announcements in the first week of school.

As indicated in the Library section of this proposal, the College subscribes to several online databases that would be helpful to students in this program. The CCBC Library collection is growing in the area of eBooks. Students can access these eBooks anytime from any computer or mobile device on or off-campus.

Beyond the resources provided through CCBC, the College provides Inter-Library Loan service, <http://library.ccbcmd.edu/screens/borrowingfromotherlibs.html>. In addition, to make library services more accessible to students, the CCBC library participates in a 24/7 online reference service through the *AskUsNow* Maryland statewide program.

Students and Student Services

**Academic Program Proposal – Histotechnology, AAS degree
The Community College of Baltimore County, POC: Candice Grayson**

The CCBC College Catalog is updated on an annual basis and will contain clear, complete, and timely information on the proposed curriculum, course and degree requirements, nature of faculty/student interaction, and assumptions about technology competence and skills. Within Blackboard, students can access useful information after they have registered for an online course such as Blackboard tutorials and technical requirements, availability of academic support services and 24/7 Help Desk support, and financial aid resources. Costs and payment policies are consistent for classes in online and traditional formats; this information is contained in the College catalog at the following URL: <http://catalog.ccbcmd.edu/content.php?catoid=29&navoid=2017>.

Distance education students and other learners can receive enrollment and student support services online including advisement, enrollment, financial aid, library and additional services. Five designated full-time advisors dedicate 2-10 hours of advising time to respond to online student inquiries on a weekly basis. General information is provided within two business days. All CCBC students may access online advisement services, which maintains confidentiality and offers all protections as specified through FERPA regulations. Online advising services average 200 students per month. All primary enrollment services functions are now offered through an online domain, including the application for admissions to the college at large.

The financial aid application process, including the counseling component, can be completed online. Financial Aid videos are also available on the CCBC website at the following URL: <http://ccbc.financialaidtv.com/>. Distance education students are eligible for all facets of financial aid offered through CCBC.

CCBC has an extensive array of print and electronic communications to inform the public and other College audiences of the strength of CCBC's mission, the quality of its academic programs, and the diversity of training offerings and support services available. Revisions are made regularly to reflect program, policy, and/or procedural changes and to modify or rebrand the marketing message. As part of providing these communication tools and outreach initiatives for students and the community, several positive outcomes have been achieved. Staff training and the implementation of communication technology have augmented CCBC's efforts to comply with Higher Education Opportunity Act regulations related to misrepresentation. Additionally, a consistent message is provided when working directly with prospective and enrolled students. This same focus on quality would be applied to all advertising, recruiting, and admissions materials prepared for this proposed degree program.

Commitment to Support

CCBC faculty are evaluated annually in three areas—Professional Assignment, College and Community Service, and Scholarship/Professional Growth. It is stipulated that 60-70% of the evaluation must be based on Professional Assignment, and 10-20% must cover Professional Development. Within the category of Professional Assignment, the written faculty evaluation policy recognizes the importance of instructional improvement; and efforts made to convert, develop, or implement classes in online or

**Academic Program Proposal – Histotechnology, AAS degree
The Community College of Baltimore County, POC: Candice Grayson**

blended formats are named in the category of instructional improvement. Potential areas of Scholarship/Professional Growth include furthering one's technical education by learning new software and/or technology. In addition, public performances, presentations, and exhibitions that recognize one's area(s) of expertise that involves research and scholarly preparation are also recognized as acceptable means of documenting scholarship and professional growth.

According to CCBC policy, when a program of study is discontinued, students will be afforded time to complete the program requirements. Program Directors will work with students to develop plans to help students complete their course work. If courses are no longer offered, substitutions will be made. The length of time for services and benefits to be extended is determined by the number of credits the student needs to complete the program, with the maximum of up to two years after the discontinuance of the program. Requests for further extensions must be submitted in writing to the Vice President of Instruction. This policy would apply to this proposed program of study.

Evaluation and Assessment

Learning outcomes assessment projects are used for individual courses in the proposed program. This program will be incorporated in CCBC's program review process that supports CCBC's strategic direction of Student Success and fulfillment of the related institutional goal to measure and assess student outcomes routinely, evaluate multiple measures of student achievement and success, and act upon the results to improve student outcomes.

CCBC's Office of Planning, Research, and Evaluation (PRE) maintains information on student retention in academic programs. This data is provided as part of the program review process for analysis and program improvement. To further promote quality in instruction and assess the performance of the faculty member in the online environment, the Distance Learning Advisory Board developed and implemented a student course evaluation instrument for distance education courses. Faculty satisfaction with Distance Education Services and with Instructional Technology is measured through the annual CCBC Employee Survey.

As part of CCBC's commitment to an evidenced-based approach to the best online teaching practices, the College provides budgetary resources to support Quality Matters (QM), a faculty-centered peer review process designed to certify the quality of online course design. Approximately 200 faculty have completed the Applying the QM Rubric workshop and nearly 20 are QM certified peer course reviewers. By faculty applying the QM rubric to existing distance education sections, CCBC can discern that essential course components, including learning objectives, assessments and measurements, resources and materials, learner engagement, and course technology have sufficient academic rigor and serve to enable students to meet the learning expectations and outcomes for the course. Increasing numbers of online courses are being evaluated for Quality Matters' certification. Continuous improvement is promoted through ongoing monitoring of student performance in distance education offerings by CCBC's

Academic Program Proposal – Histotechnology, AAS degree
The Community College of Baltimore County, POC: Candice Grayson

Planning, Research, and Evaluation staff. The results of this monitoring are shared with appropriate constituencies so that any needed adjustments in curriculum can be made.

Student performance in online courses is also benchmarked against student performance in the same courses offered in a face-to-face format to evaluate differences. Comparisons of student retention/persistence are also made. The Office of Planning, Research, and Evaluation provided success rates for fall 2015 online courses of 67%, compared to 77% in face-to-face courses and found that this gap had narrowed slightly in recent years. Additionally, the withdrawal rate for online courses in fall 2015 was 3% higher (10%) than for face-to-face courses (7%). Data shows that many students who register late for online courses do so because classroom sections are full, and students who register late have lower success rates across all modes of instruction.

Assessment and documentation of student achievement will occur as part of CCBC's program review process. Academic programs, whether they are offered online or in traditional formats, are reviewed on a five-year cycle. Program coordinators must document how student-learning outcomes were developed and validate how the outcomes relate to the College's mission.

