BOARD OF HIGHER EDUCATION

REQUEST FOR COMMITTEE AND BOARD ACTION

COMMITTEE: Academic Affairs **NO**: AAC 16-01

COMMITTEE DATE: October 20, 2015

BOARD DATE: October 27, 2015

APPLICATION OF BRISTOL COMMUNITY COLLEGE TO AWARD THE ASSOCIATE IN APPLIED SCIENCE IN VETERINARY HEALTH CARE DEGREE PROGRAM

MOVED: The Board of Higher Education hereby approves the application of **Bristol Community College** to award the **Associate in Applied Science in Veterinary Health Care.**

Upon graduating the first class for this program, the College shall submit to the Board a status report addressing its success in reaching program goals as stated in the application and in the areas of enrollment, curriculum, faculty resources, and program effectiveness.

Authority: Massachusetts General Laws Chapter 15A, Section 9(b)

Contact: Winifred M. Hagan, Ed.D.
Interim Deputy Commissioner for Academic and Student Success

BOARD OF HIGHER EDUCATION

August 2015

Bristol Community College
Associate in Applied Science in Veterinary Health Care

INTENT AND MISSION

The proposed Associate in Applied Science (AAS) in Veterinary Health Care (VHC) program aligns with the mission of Bristol Community College (BCC) as the leading resource for education and workforce development in southeastern Massachusetts. It will provide individual opportunities for students as well as prepare employees for regional businesses.

The VHC program will prepare entry-level veterinary health care graduates to practice under the supervision of certified veterinarians and animal rehabilitators. Students will gain the basic principles, attitudes, and experiences needed to work as veterinary health care assistants in veterinary offices and hospitals, animal shelters, wildlife rehabilitation centers, and laboratory animal facilities

The required letter of intent for the proposed program has obtained all necessary governance approvals on campus and was approved by Bristol Community College's Board of Trustees on January 27th, 2014. The required letter of intent was circulated on April 7th, 2014. No comments were received.

NEED AND DEMAND

National and State Labor Market Outlook

BCC reports that in 2011 they surveyed ten area employers located near their Fall River campus who hire Veterinary Health Care Assistants. The majority of those surveyed expressed a need for more qualified individuals in this field. BCC reports this need was further supported by Bureau of Labor Statistics, which has a projected growth for entry level veterinary health care workers of 52 percent in the southeast region of Massachusetts and 10 percent nationally from 2012-2022.

The Bureau of Labor Statistics data also reflects growth projections for the biomedical industry in the Boston, Worcester, MA, and Providence, RI, areas that are currently in need of laboratory animal care technicians and this demand is expected to continue. BCC reported that further placement options exist with zoos throughout Massachusetts and the northeast region due to the lack of specific zoo and aquarium training programs in this part of the country.

Student Demand

As an indicator of strong interest in the proposed program, BCC reported that 54 students enrolled in pilot veterinary courses offered this year as electives in their General Studies program. In addition, BCC reported that academic affairs received 169 calls inquiring about the proposed program. Enrollment is projected to increase once the program receives approval and can be included in BCC's updated course catalog.

OVERVIEW OF PROPOSED PROGRAM

The proposed program was developed through the *Massachusetts Community Colleges & Workforce Development Transformation Agenda.* Based on input from industry partners, the consortium focused on certificate and associate degree programs that provide a career pathway for employment and advancement. Veterinary Services was identified under the Life Sciences/Biotechnology cluster as an occupation with a high median wage and a high rate of projected growth in Massachusetts. It is planned that the program will align with Bristol County Agricultural High School by extending the pathways for students to continue at Bristol Community College through articulation agreements and dual enrollment options. The proposed program is designed as a career program with transfer options to regional Veterinary and Animal Science baccalaureate degree programs such as those at Becker College, Mount Ida College, and the University of Massachusetts Amherst. The proposed program is planned to exist as an independent program within the BCC division of Mathematics, Science, and Engineering. The program is designed to have a coordinator who will report directly to the Dean of Mathematics, Science, and Engineering. The College will seek to receive accreditation from the American Veterinary Medical Association (AVMA) once the program is implemented.

Duplication

The two closest institutions offering similar programs are Massasoit Community College and the New England Institute of Technology, both located approximately 25 miles away from BCC's Fall River Campus. Accredited associate degree programs in Veterinary Technology exist at North Shore Community College, Holyoke Community College, and at Mount Ida and Becker Colleges.

ACADEMIC AND RELATED MATTERS

Admission

Requirements for admission to the proposed program are expected to follow BCC's guidelines of evidence of a high school diploma or equivalent. Candidates will be required to pass college level placement tests in Math and English prior to enrollment. Candidates interested in the program will be informed that BCC expects admitted students to be able to communicate clearly and effectively in English through speech and writing with faculty, staff, and peers; to be physical able with sufficient mobility and motor coordination to safely provide animal care; to have the cognitive ability to learn and apply skills necessary to meet curriculum requirements to attain entry-level status into the profession; to have sufficient visual acuity, with or without correction, to safely provide animal patient care; and emotional stability sufficient to interact professionally with patients, faculty, staff, and peers.

Candidates requiring developmental coursework in math, reading and English may need additional time for degree completion, but admission into the program will not be declined based solely upon English and mathematics levels. It is planned that students will be allowed to enroll in the program while taking necessary English and mathematics developmental classes as they work toward meeting certain pre-requisite course requirements. In all cases, BCC admissions uses English and mathematics placement testing to determine what, if any, developmental coursework will be needed to ensure student success.

During the application process, students will be apprised that upon admission to the proposed VHC program, students must undergo a Criminal Offender Record Information (CORI) check during their first semester. Students found to have certain criminal convictions or pending criminal actions will be ineligible for work experience placements. Bristol Community College is authorized by the Commonwealth's Department of Criminal Justice to access CORI records. During the application process candidates will have readily accessible information to important facts such as additional laboratory tests, including drug screening, vaccinations, and rabies vaccination, which are required by most facilities. In addition, candidates will be provided with clear information that once they are admitted and engaged in field experiences they will be responsible for their transportation to off-campus sites. During the application process they will also be notified regarding the need to obtain professional liability and medical insurance.

PROGRAM ENROLLMENT PROJECTION

	# of Students Year 1 pilot (Actual)	**# of Students Year 2**	**# of Students Year 3**	**# of Students Year 4***
New Full-Time	4	6	15	20
Continuing Full-Time	2	10	8	12
New Part-Time	44	8	26	20
Continuing Part-Time	4	35	29	29
Totals	54	59	78	81

Curriculum (Attachment A)

BCC reports the veterinary courses, which have been piloted through industry partners and local media, have developed a base of interested students. Individual veterinary healthcare courses, that are applicable to the General Studies degree program, and non-credit animal care courses have allowed for schedule flexibility and the creation of *'non-credit-to-credit bridge*' providing students with an on-ramp to the proposed credit-bearing program. It is planned that the non-credit certificate program will become a feeder for the proposed academic program.

Internships or Field Studies

The proposed program includes a required 320-hour field experience class, which is an externship under the direction of the Animal Science faculty. It is expected that students may specialize in a particular area aligned with the externship placement. BCC plans that field experience sites will be located within a maximum 1-hour commute from campus. BCC reports that many community veterinarian and other professional animal facilities have expressed interest in supporting the growth and development of the proposed program, beginning with the initial meetings under the Transformation Agenda at the outset to the proposed program design. Many veterinarians and animal-facility professionals have returned surveys stating that they

would be willing to host students on field experiences. These sites are evaluated for appropriateness of placement by the BCC Program Coordinator.

There is a Student Field Experience Agreement signed by all parties which outlines the understandings and agreements between BCC and the host facility for the field experience. The agreement was designed based on the recommendations and forms from the *Massachusetts Community Colleges Experiential Education: Internships & Cooperative Education, A Handbook for Practitioners & Administrators*. The intern positions are unpaid during the Field Experience hours.

Once the program is approved, BCC plans that existing externship documents and forms and will be compiled in a handbook format and will be provided to students in addition to the class syllabus. Students will complete a survey and meet with the program coordinator at the beginning of the fall semester prior to their intended Field Experience class. Expectations will be discussed, and documents will be provided for the students at this time. It is intended that students will receive a list of at least three possible sites for their field experience, to which they apply by providing a resume and participating in an interview. Both the student and the host facility have the option to select or decline placement. All placements must be established prior to the end of the semester before the intended start of the Field Experience class.

Each site will provide a competent supervisor for direct oversight of the student during their intern hours. The program coordinator will provide site-visit observations and appraisals during the course of the semester to monitor the progress of the student. The facility supervisors and the program coordinator maintain their relationship through open communication via e-mail and evaluation forms in addition to the on-site visits made by the program coordinator. A specific skills check sheet will be provided to each student and facility, including the professional skills applicable to the placement. Additionally, the students will be formally evaluated at both the mid-term and final points of the semester. Non-faculty externship supervisors will be evaluated by the program coordinator and students. Current agreements or internship sites include the Buttonwood Park Zoo, Capeway Veterinary Hospital, Mattapoisett Animal Hospital, Mount Hope Animal Hospital, Roger Williams Park Zoo, Sylvan Animal Clinic, Taunton Cat Hospital, and the Wildlife Rehabilitators Association of Rhode Island. Further agreements are anticipated following BHE approval.

RESOURCES AND BUDGET

Fiscal (Attachment B)

The budget for the program covers instruction, materials and supplies, support staff, and program coordination. The programmatic courses are being taught by four adjunct faculty teaching approximately 6 credits per semester. It is estimated that $30,000 would cover four instructors' salaries for these courses in the first year. Once the program is approved it is expected that enrollment will increase requiring additional faculty.

BCC estimates 63 credits will be needed for students to graduate. BCC also assumes a three-year average completion rate for students. Resources from the Massachusetts Community College & Workforce Development Transformation Agenda (MCCWDTA) grant have been used to acquire supplies and equipment and to pilot components of the proposed curriculum. BCC also estimates additional facilities, equipment and supplies at a cost of $5,000. It is expected

that the proposed program lab equipment, purchased through the Transformative Agenda Grant will serve the program well with little need to purchase any new major equipment. The lab supplies are perishables that are expected to be purchased just before use or other consumable items.

A lab technician to handle animals and fulfill other duties is expected to cost $5,000 per year, with an additional $5,000 for field and clinical supplies and resources.

BCC has budgeted $3,000 for marketing the proposed program in the first few years. It is anticipated that these costs will lessen in year 4 reducing the expense to $1,000 in year 4.

Earning veterinary software certification is highly desired by employers and will be provided by the proposed program. Certification is conducted biannually and would require $4,400 in years 2 and 4 of the program. It is planned that BCC graduates would enter the job market already certified in veterinary software.

The part-time Program Coordinator salary is planned to be equivalent to a 3-credit course release at $7,000 per year.

Faculty and Administration (Attachment C)

BCC has actively sought and secured faculty members with master's or doctoral degrees in veterinary medicine, and areas of specialty. The existing faculty consists of part-time and full-time staff with appropriate degrees in animal sciences. Several faculty members are veterinarians. The coordinator of the program has experience and background in lab animal care and management, over a decade of teaching experience in animal care career training programs, and over 7 years of department head experience in a similar program from another community college. The College is strongly considering the hiring of an additional full-time faculty member for this program based on enrollment growth and available resources.

Facilities, Library and Information Technologies

It is planned that the Elsbree Street Campus of Fall River will house the Animal Science classes, including laboratory related classes required for the program. It is expected that classes will be held in a traditional lab classroom (L-204) that is shared with the Biotechnology program.

BCC anticipates that the laboratory classroom and adjacent prep room will house the specialized equipment, which includes CPR and venipuncture practice mannequins, common restraint equipment (catch poles, tranquilizer projectors, humane traps), electric rise exam table with restraint, centrifuge, microscopes, incubator/drying oven, chemical storage cabinets, specimen storage refrigerator, digital gram scales, and table top autoclave.

Affiliations and Partnerships

The local agricultural high school, Bristol County Agriculture High School, located in Dighton, (less than twelve miles from BRCC's Fall River Campus), has expressed interest in developing articulation agreements with this program and in partnering with the College to provide facilities and access to animals.

The College has initiated negotiations with the UMass Amherst – Stockbridge School of Agriculture, Mount Ida College, New England Institute of Technology, and Becker College to ensure transfer opportunities for graduates of this program. Community partnerships with Forever Paws Animal Shelter, Animal Instincts, Exotic Animal Pet Store, and Stoney Creek Farm have been established to provide the hands-on instructional activities with a variety of species that are required by the program. An Institutional Animal Care and Use Committee (IACUC) and Advisory Board has been formed to oversee and advise on program content and protocol, and the membership list was included in the program proposal.

In addition, students will be eligible to participate in Bristol CC's Urban Massachusetts Louis Stokes Alliance for Minority Participation (UMLSAMP) program, led by the University of Massachusetts Boston. This program is designed to address the need to train Massachusetts citizens as STEM professionals and technicians.

PROGRAM EFFECTIVENESS

Goal	Measurable Objective	Strategy for Achievement	Timetable
Demonstrate entry-level competence and technical skills as a generalist veterinary technician assistant in appropriate settings.	Skill sets will be assessed by field experience supervisors based on the CVA skills list generated by Animal Care Technologies (Denton, TX).	Independent testing of knowledge through Animal Care Technologies. Hands-on activities in the class room followed by 320 hours of field experience at a host facility Additional adjunct faculty member with DVM accreditation	Competencies determined and achievement standards established, in consultation with advisory board members, during the curriculum development process. Assessment of students' skills and abilities, associated with these competencies is an ongoing process accomplished through the evaluation of course work and clinical performance.
Demonstrate the ethical standards, values, and attitudes of the veterinary profession.	Student assessments based on appearance, attitude, use of terminology, team work, etc.	ANS program handbook with complete description of professionalism policy and required professionalism grades (10%) of each ANS class	Competencies determined and achievement standards established, in consultation with advisory board members, during the curriculum development process. Assessment of students' skills and abilities associated with these competencies is an

			ongoing process accomplished through the evaluation of course work and clinical performance.
Utilize verbal and nonverbal modalities to communicate with clients and animal care or veterinary team members.	Dedicated classes for medical terminology, professionalism building activities, client communication activities	Hands-on activities in and out of the classroom, case studies and role play	Competencies determined and achievement standards established, in consultation with advisory board members, during the curriculum development process. Assessment of students' skills and abilities associated with these competencies is an ongoing process accomplished through the evaluation of course work and clinical performance.
Demonstrate knowledge of discipline related software and effectively utilize the Internet.	Dedicated classes for veterinary office procedures E-Learning	Licensing purchase of Idexx Cornerstone 8.3 Veterinary Software and training program Projects and presentations requiring Internet searches for current medical information	Purchase at the onset of the non-credit building block programs funded by the MCCWDTA grant. Competencies determined and achievement standards established, in consultation with advisory board members, during the curriculum development process. Assessment of students' skills and abilities associated with these competencies is an ongoing process accomplished through the evaluation of course work and clinical performance.
Demonstrate a fundamental knowledge of the housing, husbandry, nutritional, and social requirements specific to species/breed of a	Dedicated classes for the housing, husbandry, nutritional, and social requirements specific to species/ breed of a variety	Complementary disciplines of faculty members Adjunct faculty member with husbandry and	Competencies determined and achievement standards established, in consultation with advisory board members, during the curriculum development process. Assessment of

variety of common companion animals.	of common companion animals Animal Care Technology videos and test	animal nutrition background	students' skills and abilities associated with these competencies is an ongoing process accomplished through the evaluation of course work and clinical performance.

EXTERNAL REVIEW AND INSTITUTIONAL RESPONSE

The review team comprised two members Dr. Steven M. Niemi, Director of the Office of Animal Resources with the Harvard University Faculty of Arts and Sciences, and Dr. Erin C. Oakham, Associate Veterinarian at the Halifax Veterinary Service in Massachusetts. Both reviewers determined that the proposed Associate of Applied Science in Veterinary Health Care would adequately prepare students for careers in the veterinary health care field upon completion.

The review team found that the proposed AAS program is adequate to deliver BCC's program and in line with the college's academic mission. The team found that justification for this program under-estimates local demand for qualified lab animal care technicians. The reviewer team commented that the triangle formed by Boston, Worcester, and Providence encompasses a high density of biomedical research and development involving colleges and universities, medical schools, teaching hospitals, biopharmaceutical and medical device companies, and federal laboratories. The reviewers noted that much of this enterprise is dependent on lab animals, and an adequate pool of competent technicians who care for those animals is critical to the vitality of the enterprise. The reviewers also commented on the initial name of the program as 'cumbersome' and 'junior' as it minimizes the degree-holder's qualifications to potential employers. It was suggested that '*Applied Associate of Science in Veterinary Care'* is a simpler one that includes the two words science and veterinary.

The reviewers found the proposed faculty to be adequate for introductory teaching and added that a robust summer or part-time externship program for students would strengthen the program. The reviewers indicated that BCC's proposed AAS program is well rounded, rigorous and well balanced, and suggested the program could benefit from adding coursework in ethics, math, marketing, and social media.

In response to the review BCC has changed the proposed name to the Associate in Applied Science (AAS) in Veterinary Health Care, and developed a new course to cover ethical issues. It is also now planned that this course, *Social and Ethical Issues in Science, Technology, and Health Science*, will be part of BCC's new Biotechnology program, and cover the ethical component of working with animals. The BCC department head for Mathematics has been engaged to design a new mathematics class for human and animal healthcare professionals. BCC indicated that they are creating an alternative option by adding *Modern College Mathematics* as a math choice with a dedicated section specifically for animal science students. This section would focus on word problems, conversions, algebraic equations for dosage calculations, and other veterinary healthcare applications.

BCC also responded that general concepts of marketing applications and duties for the veterinary practice are covered as part of the content provided in Veterinary Office Procedures.

BCC also underscored that they offer a Marketing Certificate and numerous individual marketing courses that cover the content noted by reviewers. Students in the proposed program would be encouraged to take advantage of these courses. Student selection, alumni surveys and advisory board reviews are expected to provide BCC with avenues to identify content areas that may need revisions.

BCC agreed that an independent assessment using labor market information reflected a strong need for qualified lab animal care technicians, providing another area of specialization the program can accommodate.

Regarding nomenclature, BCC responded that the proposed AAS is designed to have two pathways available at completion. Students may either transfer to a baccalaureate program or go directly to a job as a veterinary healthcare assistant. The curriculum is designed to cover the content areas associated with a certified veterinary technician program.

STAFF ANALYSIS AND RECOMMENDATION

Staff thoroughly reviewed all documentation submitted by the **Bristol Community College** and external reviewers. Staff recommendation is for approval of the proposed **Associate of Applied Science in Veterinary Health Care.**

ATTACHMENT A: CURRICULUM

Undergraduate Program Curriculum Outline

Required (Core) Courses in the Major (Total # courses required = 23***)***		
Course Number	Course Title	Credit Hours
CSS 101	College Success Seminar	1
ENG 101	Composition 1: College Writing	3
ENG 102	Composition II: Writing about Literature	3
HST114	US History from 1877	3
SOC 252	The Sociology of Human Relations	3
ANS 101	Intro to Animal Care and Management	3
ANS 103	Applied Animal Behavior	3
ANS 107	Medical Terminology for Animal Science I	1
ANS 108	Medical Terminology for Animal Science II	1
ANS 115	Community Health and Zoonosis	3
AND 121	Animal Handling and Restraint	3
ANS 147	Veterinary Office Procedure	2
ANS 153	Animal Health and Diseases	3
ANS 201	Anatomy and Physiology of Domestic Animals	4
ANS 205	Clinical Methods	3
ANS 216	Veterinary Pharmacology	2
ANS 221	Veterinary Assistant Field Experience and Seminar	3
ANS 222	Humane Euthanasia Seminar	2
ANS 240	Animal Nutrition and Feeding	3
BIO 111	General Biology I	4
OFC 160	Veterinary Administrative Software I	1
OFC 161	Veterinary Administrative Software II	1
SCI 125	Social and Ethical Issues in Science, Technology, and Health Science	3
	Sub-Total Required Credits	58
Elective Courses (Total # courses required = 1, One MTH from list below)		
MTH 131	Elements of College Math	3
MTH 119	Fundamental Statistics	3
	Sub Total Elective Credits	3

Distribution of General Education Requirements	Gen Ed Credits
Arts and Humanities, including Literature and Foreign Languages	9
Mathematics and the Natural and Physical Sciences	7
Social Sciences	3

Sub-Total General Education Credits	19
Curriculum Summary	
Total number of courses required for the degree	24
Total credit hours required for degree	61
Prerequisite, Concentration, or Other Requirements: *In order to obtain admittance in the program, students must complete a CORI form. Students convicted of a felony charge of Animal Cruelty or similar charge will not be allowed to continue.*	

ATTACHMENT B: BUDGET

NEW ACADEMIC PROGRAM BUDGET

One Time/ Start Up Costs		***Annual Expenses***			
	Cost Categories	**Year 1**	**Year 2**	**Year 3**	**Year 4**
	Full-Time Faculty *(Salary & Fringe)*	0	0	0	0
	Part Time/Adjunct Faculty *(Salary & Fringe)*	$30,000	$127,000	$127,000	$127,000
	Staff *(Lab Technician)*	$5,000	$5,000	$5,000	$5,000
	General Administrative Costs *(Red Cross Certifications $15.00 each x 69)*	$1,025	$1,025	$1,025	$1,025
	Instructional Materials, Library Acquisitions	$500	$250	$250	$250
	Facilities/Space/Equipment	$1,000	$1,000	$1,000	$1,000
	Field & Clinical Resources supplies	$4,000	$4,000	$4,000	$4,000
	Marketing	$3,000	$3,000	$2,000	$1,000
	Other Software ACT certification renewal $2,000 and IDEXX $2,400		$4,400		$4,400
	TOTALS	**$44,525**	**$145,675**	**$140,275**	**$143,675**

One Time/Start-Up Support		***Annual Income***			
	Revenue Sources	**Year 1**	**Year 2**	**Year 3**	**Year 4**
	Grants	$76,818	$0	$0	$0
	Tuition	$27,216	$29,736	$39,312	$40,824
	Fees	$175,770	$192,045	$253,890	$263,655
	Departmental	0	0	0	0
	Reallocated Funds	0	0	0	0
	Other	0	0	0	0
	TOTALS	**$279,804**	**$221,781**	**$293,202**	**$304,479**

ATTACHMENT C: FACULTY

Faculty Form

Summary of Faculty Who Will Teach in Proposed Program **Please list full-time faculty first, alphabetically by last name.**							
Name of faculty member (Name, Degree and Field, Title)	**Check if Tenured**	**Courses Taught (C) indicates core course. (OL) indicates any course currently taught online.**	**Number of sections**	**Division of College of Employment**	**Full- or Part-time in Program**	**Full- or part-time in other department or program**	**Sites where individual will teach program courses**
Abraham, Ranijini DVM, Adjunct Instructor of Animal Care Sciences		• Intro to Animal Care & Man (C) • Medical Terminology for Animal Science I (C) • Clinical Methods (C)	(1) (1) (1)	Division V	Part-time	No	Fall River Campus
Jasper, Angela DVM, Adjunct Instructor of Animal Care Sciences		• Animal Health and Diseases (C) • Anatomy & Physiology of Domestic Animals (C) • Medical Terminology for Animal Science II (C)	(1) (1) (1)	Division V	Part-time	No	Davol Street Campus
Martin, Carol MBA, Department Chair & Professor of Office Administration	✓	• Veterinary Administrative Software I (C) • Veterinary Administrative Software II (C)	(1) (1)	Division V	Full-time	Yes (Business Division III)	Fall River Campus

Remington, Christine MS, Animal Health Sciences Program Coordinator & Adjunct Professor of Animal Care Sciences		• Intro to Animal Care & Man (C) • Applied Animal Behavior (C) • Veterinary Office Procedures (C) • Animal Handling & Restraint (C) • Animal Nutrition & Feeding (C) • Veterinary Assistant Field Experience & Seminar (C) • Humane Euthanasia Seminar (C)	(1) (1) (1) (1) (1) (1) (1)	Division V	Part-time	No	Fall River Campus
Semu, Dawit DVM, Adjunct Instructor of Animal Care Sciences		• Community Health & Zoonosis • Veterinary Pharmacology	(1) (1)	Division V	Part-time	Yes (Biology Division V)	Fall River Campus