

**PROPOSAL FOR THE CREATION OF AN
UNDERGRADUATE CERTIFICATE IN
LABORATORY ANIMAL CARE**

**Nebraska College of Technical Agriculture
Veterinary Technology**

Proposed by: The University of Nebraska-Nebraska College of
Technical Agriculture (NCTA)
Curtis, Nebraska

Proposed program: Certificate in Laboratory Animal Care

Proposed degree: Undergraduate Certificate

Other programs in this field at NCTA: None

CIP Code: 51.9999

Administrative Unit: Veterinary Technology

Proposed delivery site: Nebraska College of Technical Agriculture

Proposed delivery method: Face to face

Date approved by governing board:

Proposed start date: Fall 2016 semester

1. Description and Purpose of the Proposed Program

The Nebraska College of Technical Agriculture (NCTA) proposes that the Veterinary Technology Division establish an Undergraduate Certificate in Laboratory Animal Care. The certificate is developed to provide students with a focused training on the care of animals in a research setting and the management of research animal facilities, with the purpose of preparing students to enter the workforce to be productive employees and citizens. If they choose to continue at NCTA after completing the certificate curriculum, they can ladder into the Veterinary Technician, Veterinary Assistant, Animal Husbandry and Animal Management options of an Associate of Applied Science degree. All of the courses required for the certificate can be used to meet Animal Husbandry and Animal Management option requirements and all but three of the courses are required for the Veterinary Technician, Veterinary Assistant options. With advisor assistance, the student could transition into an AAS degree program very efficiently utilizing the coursework from the certificate program.

This certificate will consist of 20 credit hours of hands-on courses, covering areas in Laboratory Animal Medicine, Medical Terminology, Laboratory Animal Internship, Laboratory Animal Management as well as other courses (see table below). All courses will be offered at NCTA in our newly renovated Veterinary Technology Teaching Complex with both labs and classrooms for lecture discussions.

This curriculum will help prepare students for the American Association of Laboratory Animal Science (AALAS) Certification exam as an Assistant Laboratory Animal Technician. As the graduates progress in their career, they will find that the knowledge and experience gained through this certificate program will also assist them in their preparations to become an AALAS certified Laboratory Animal Technician or a Laboratory Animal Technologist.

2. Program of Study

The proposed Certificate in Laboratory Animal Care consists of 20 credits hours of course content. The certificate allows the division to offer a pathway for individuals to advance their education and skills along a focused, professional course of study and to have those skills and abilities acknowledged, documented, and later applied to an Associate of Applied Science, if the individual wishes to do so. The following table shows the structure of the certificate.

Course	Institution	Credit Hours
VTS 1301 Medical Terminology	NCTA	1
VTS 1262 Lab Animal Internship	NCTA	2
VTS 2563 Fur and Feather	NCTA	3
VTS 1603 Intro to Lab Science	NCTA	3
VTS 1313 Math for Veterinary Technicians	NCTA	3
VTL 1113 Lab Animal Medicine I	NCTA	3
VTL 1122 Lab Animal Medicine II	NCTA	2
VTL 1133 Lab Animal Management	NCTA	3
TOTAL		20

3. Faculty Staff and Other Resources

Number of faculty and staff required to implement the proposed certificate

No new faculty or staff resources are required to implement the certificate. All the courses used in the certificate program for filling student requirements are existing and no new courses are required. The current frequency of course offerings is sufficient to support the proposed certificate program. Enrollment increases are expected but can be accommodated within the balance of existing faculty workloads.

In the State of Nebraska Biennial budget (2015-16 / 2016-17), the appropriations committee submitted \$100,000 for a staff Veterinarian. Duties of this position include teaching courses and advising students in the Laboratory Animal Care certificate program. This submission was fully approved and added to the NCTA allocation.¹

Additional physical facilities needed

No new physical facilities are required, as the current facilities are sufficient for meeting the needs of this program.

Instructional equipment and informational resources

No new information resources are required. Equipment in the program is evaluated annually, and if equipment is needed we utilize funds through our current NCTA learning capital budget.

4. Evidence of Need and Demand: Enrollment Projections

Need for Program and employment and educational advancement opportunities for graduates

Biomedical research is an exciting field with a very strong future. The technicians produced in this proposed program would support the researchers involved in biomedical research. An example of the emphasis placed in Nebraska on biomedical research can be seen with the

¹ State of Nebraska, FY 2015-16/FY2016-17, Biennial Budget. Appropriations Committee, 104th Legislature-First Session (P. 205) – April 2015

allocation of legislative funds for the establishment of the University of Nebraska *Innovation Campus*, a facility dedicated to agricultural and biological science research.

According to the Bureau of Labor Statistics, employment of veterinary assistants and laboratory animal caretakers is projected to grow 10 percent from 2012 to 2022, about as fast as the average for all occupations. The biomedical sector is a rapidly growing part of the economy, with a nearly 60% increase in the number of research, testing, and medical laboratories in Nebraska between 2001 and 2010². These institutions look to hire a well trained workforce comfortable with working in this field. There will be demand for laboratory animal caretakers in areas such as public health, food and animal safety, national disease control, and biomedical research on human health problems. Individuals who have a veterinary background can very effectively help satisfy this demand. As one animal care director said, "Educated, qualified and experienced Veterinary Technicians who have received additional training in the specialty field of Laboratory Animal Care/Comparative Medicine during their formal training program are in demand. Researchers and institutions hire these individuals to ensure appropriate and humane care of animals used in biomedical research. Graduates are able to assimilate into the program and the care of research animals much faster than someone without the specialty training."³

Similar jobs in the general field of biomedical research are expected to grow rapidly. The Bureau of Labor Statistics indicates that the job outlook for *Medical and Clinical Laboratory Technologists and Technicians* is expected to grow 22% from 2012 to 2022. This rate of growth is much faster than average for all occupations.

A look at the Comparative Medicine listserv during the months of May and June 2015 showed 25 openings for laboratory veterinary technicians or related positions, a 47% increase in the average number of open positions from the same time period in 2013 and 2014. A survey was sent out from NCTA in 2015 to the directors of animal care at six of the research institutions in Nebraska. The four that responded, indicated that they estimated they would need at least 50 laboratory animal care technicians over the next five years. When asked how they would view an applicant who had a training and/or certification in laboratory animal care, they all responded that such a candidate would be viewed quite favorably, with the all but one saying that they would hire such an individual even if he/she did not have an Associate or Bachelor's degree.

The median annual wage for veterinary assistants and laboratory animal caretakers was \$23,130 in May 2012. The lowest 10 percent earned less than \$17,150, and the top 10 percent earned more than \$35,510⁴. When excluding the veterinary assistant occupation, we see a slightly different picture. A 2012 survey from AALAS showed the following average annual salaries:

² BIO State Bioscience Industry Development, Batelle, 2012

³ Dr. R. Steven Dixon, Comparative Medicine Program Director, UNMC, personal communication 6/15/15

⁴ Bureau of Labor Statistics, U.S. Department of Labor, *Occupational Outlook Handbook, 2014-15 Edition*, Veterinary Assistants and Laboratory Animal Caretakers, on the Internet at <http://www.bls.gov/ooh/healthcare/veterinary-assistants-and-laboratory-animal-caretakers.htm> (visited February 05, 2014).

Research Technician - \$42,336, Animal Health Technician - \$44,739, Training Coordinator - \$56,731, Supervisor - \$53,781, Manager - \$77,266, IACUC Coordinator - \$64,836⁵.

As mentioned above, the biomedical field is a rapidly growing sector of the economy. Graduates from the Laboratory Animal Care certificate program can look to find a job at one of over 1,000 animal research facilities in the United States registered with the USDA. In Nebraska, USDA registered facilities include Antelope Valley Bios, Benchmark Biolabs, Central States Research Centre, Creighton University, Father Flanagan's Boy's Home, Natura Pet Products, Nebraska College of Technical Agriculture, Northeast Community College, Omaha VA Center, University of Nebraska Medical Center, University of Nebraska – Lincoln, University of Nebraska – Omaha, and Ximerex. The Association for Assessment and Accreditation of Laboratory Animal Care International (AAALACi) has over 600 accredited organizations with animal research components in the United States. In Nebraska, AAALACi accredited facilities include Creighton University, Nebraska-Western Iowa Health Care System, University of Nebraska – Lincoln, University of Nebraska at Omaha, University of Nebraska Medical Center, and Zoetis. In addition, there are several other small Nebraska companies where animals are integral components of their research work, but who are not required to register with USDA and who choose not to pursue AAALACi accreditation. Most of the institutions referred to above are focused on biomedical research that addresses human health problems, but some provide products or services directed towards companion animals and some support agriculture by performing research on improving livestock health, growth, and performance.

Marketing and outreach efforts to meet projected enrollments

NCTA has marketed the opportunity for students to receive training on laboratory animal care in several ways. The college has three full time recruiting staff dedicated to marketing its programs. Two of the staff are on the road full time recruiting students. The college also recruits for its academic programs through its external relations initiatives. The college has a full-time external relations coordinator who publishes weekly newspaper columns, press releases, radio interviews and other media releases. NCTA expends more than \$300,000 per year on staff salaries and operating expenses associated with marketing and outreach efforts. These recruiters and marketers have effectively communicated the quality of NCTA academic programs, and as a result, NCTA enrollment grew by 29% in the 2014-15 academic year. The freshman class grew by 50% that year. College enrollment growth is on a similar trend for the 2015–16 academic year.

Specifically related to the Laboratory Animal Care program, we have had direct contact with Nebraska high school career counselors and instructors and student advisors in Nebraska college biology departments to provide information about this unique educational opportunity to the individuals who will be guiding our potential students. We have also attended many college fairs and career fairs across the state, as well as veterinary conferences in the region. In addition to placing marketing materials in high school advisement offices, we also had a presence in Omaha high schools through the marketing company eMAGINIT. Marketing materials were also provided to the Department of Labor office in Omaha. Other ways in which we intend to

⁵ Source: 2012 AALAS salary survey. <https://www.aalas.org/media/e6a02798-1c17-4952-8445-48bb4521d87d/-1160264168/CRT/vet-tech.pdf>

enhance the recruitment for this program include updating the College’s recruiting materials to incorporate information about this new certificate program, inclusion of the Society of Laboratory Animal Veterinary Technicians’ list of educational programs, and further contact with science educators in the state.

Demand

In 2012, 12% of Nebraska high school students taking the ACT test and planning on attending college for two years or less indicated their intended major would be “Health Sciences & Technologies”, second in interest level only behind “Repair, Production, & Construction”.⁶

The purpose of this program is to provide a path for individuals who wish to pursue a career as an Assistant Laboratory Animal Technician, a Laboratory Animal Technician or a Laboratory Animal Technologist to advance their education along a focused, professional course of study and to have that path acknowledged and documented. This will benefit individuals who have graduated from a veterinary technician program, students concurrently in the NCTA veterinary technician program, as well as individuals who are not planning on becoming veterinary technicians.

Number of students expected to enroll in the program in each of the first five years of operation and basis for the estimate

The estimated projections on demand for the Certificate in Laboratory Animal Care reflect growing importance of education in this area. The proposed certificate is of interest to students. When asked about her motivation for looking into the Laboratory Animal Care certificate, one student said, “We live in a world full of the unknown. I know the health field has come a long way, but there is so much to discover and I want to be a part of it.”⁷ We currently have six students interested from our current group of enrolled veterinary technician students. As we market this program around the state we anticipate that this number will grow considerably, with a 10% growth per year, and a goal of 10 graduates per year within the next 5 years. We estimate that 80% of our enrollment will be from Nebraska residents.

	(FY 2017) Year 1	(FY 2018) Year 2	(FY 2019) Year 3	(FY 2020) Year 4	(FY 2021) Year 5	Total
# of Students	6	7	8	9	10	40

Minimum number of students to make the program viable

Because this program can be integrated into the current NCTA veterinary technician program, there are no additional resources required for the development of the courses in the certificate. A minimum of six students is required to make classes viable. NCTA anticipates that the certificate will grow to 10 students over the next 5 years.

⁶ <http://www.act.org/newsroom/data/2012/pdf/profile/Nebraska.pdf>

⁷ Alexis Olson, student, NCTA Veterinary Technology Systems, personal communication 6/21/15

5. Partnership with Businesses and Internship Sites

NCTA has a state wide advisory council where we share information from across the college. This advisory council has been helpful in helping us move forward with educational needs as well as support and partnerships from across the state of Nebraska. In addition, each division at NCTA has advisory committee's where they meet annually to review and evaluate curriculum. This advisory committee is made up of industry owners and employees. We also will have guest speakers in classes and encourage student membership in professional organizations. Students will have the opportunity to gain real world experience and application of the knowledge and skills they gain in this program through internships. Merck, MVP Labs, and Omaha's Henry Doorly Zoo and Aquarium have varying types of animal based research and are available as internship sites. In addition to these businesses that are open to hosting students for internships, we have been in contact with other Nebraska businesses to coordinating internship possibilities. Beyond Nebraska, NCTA's relationships with businesses around the country will open up many internship opportunities to our students.

Internship sites

NCTA is charged by the Nebraska Legislature with a statewide mission. To remain in compliance with this mission, NCTA recruits students statewide and places students, including those studying Veterinary Technology, in internship sites throughout the state of Nebraska. Several institutions, including UNMC, UNO, Creighton, and UNL have expressed willingness to serve as internship sites for students in this certificate program. There are also several small contract research organizations (CRO's) in suburban and rural communities between Curtis and the above mentioned urban areas, where these companies can carry out their work without drawing unnecessary and unwanted attention. Most of the potential internship sites for the Lab Animal Care Certificate are in the eastern part of Nebraska, but NCTA's location in southwestern Nebraska gives the college the advantage of being relatively equidistance from several additional large research areas, such as Fort Collins, CO, Denver, CO, and Manhattan, KS, which provide many additional internship opportunities.

6. Collaborations within the College

NCTA courses in the certificate are entirely offered by the Veterinary Technician Division, thus no other departments within NCTA are involved in offering the curriculum. We will advertise the availability of this certificate across campus as relevant; potentially, students from Veterinary Technician, Veterinary Assistant, Animal Husbandry and Animal Management options could have an interest in this certificate.

7. Collaborations with Other Higher Education Institutions and Agencies External to the College

Collaborations with outside agencies have been explored and developed. Outreach and recruiting has occurred with area high schools offering tours and career days exploring options in laboratory animal care. Veterinarians and other staff in the Comparative Medicine office of the University of Nebraska Medical Center (UNMC) have been instrumental in helping us establish

the ideas for the Certificate in Laboratory Animal Care. Dr. Glenn Jackson, our instructor, has met with UNMC Veterinarians and staff members to develop the ideas to support courses, sequence and student learning outcomes for the certificate. In addition, NCTA is organizing field trips and experiences for NCTA students to visit UNMC to tour facilities and see things in action at a medical research center. At this time no discussions have taken place with other institutions of higher learning. As the certificate becomes reality we will work with 4-year universities and establish articulation agreements into their programs.

Students will have the opportunity to gain real world experience and application of the knowledge and skills they gain in this program through internships. We have discussed internship opportunities with UNMC, UNO, UNL, and Creighton University. Dr. Jackson has colleagues in animal care units at many other higher education institutions which will facilitate students arranging internships at colleges and universities across the country.

8. Centrality to the Role and Mission of the Institution

The University of Nebraska - Nebraska College of Technical Agriculture (NCTA) is a two year public college of the University of Nebraska system first serving the students and people of Nebraska, but also the nation and the world. Since its founding in 1968, NCTA has evolved into a quality institution of higher education, committed to excellence in program offerings, responsive to a dynamically changing agricultural industry and aspirations of a diverse student population.

The Nebraska College of Technical Agriculture is devoted to a statewide mission of preparing students for successful careers in agriculture, veterinary technology, food and related industries. The college provides open access to innovative technical education resulting in associate degrees, certificates, diplomas and other credentials⁸. The Certificate in Laboratory Animal Care supports the overall role and mission by providing a focused curriculum that contributes to workforce development and helps to bring new students into the university. Specifically, the certificate is consistent with several objectives in the same areas as are noted in the next section, including accessibility, lifelong education, student preparation, targeted programs, collaboration, and workforce development.

9. Consistency with the University of Nebraska Strategic Framework

The proposed certificate builds on the University's focus on excellence in undergraduate education by implementing a series of options and certificates that addresses an important need both in the state, regionally and nationally. This certificate will further highlight Nebraska as a regional, national, and international leader in education. In relation to the University's Strategic Planning Framework⁹, the certificate aligns well with the long-term interests of the University of Nebraska's goal to build a talented, competitive workforce while pursuing excellence through targeted programs (strategic Goals 2b and 3). The certificate will afford many opportunities to local professionals to develop lifelong educational opportunities through preparation for success

⁸ <http://ncta.unl.edu/mission-statement>

⁹ <http://nebraska.edu/docs/StrategicFramework.pdf>, University of Nebraska Strategic Planning Framework, 2014-2016

in higher education (Goal 1e). Furthermore, this it aligns well with Goal 3 as we attract and build a talented and competitive workforce. The program also aligns with Goal 5 in that the faculty, staff and students in the program are already directly engaged with the business community in Nebraska through advisories, and professional organizations. Overall, the spirit of the following passages from the University's Strategic Planning Framework is evident in this proposal:

1. The University of Nebraska will provide the opportunity for Nebraskans to enjoy a better life through access to high quality, affordable undergraduate, graduate and professional education.

- a. The university will strive to increase affordability and ensure qualified students are not denied access based on economic circumstances.
- b. Increase the percentage of Nebraska high school graduates (the state “college-going rate”) who enroll at and graduate from the university.
- e. Promote adequate student preparation for and success in higher education.

2. The University of Nebraska will build and sustain undergraduate, graduate and professional programs of high quality with an emphasis on excellent teaching.

- b. Pursue excellence through focus on targeted programs in areas of importance to Nebraska where the university can be a regional, national and/or international leader (e.g. agriculture and natural resources, life sciences, information technology and architectural engineering).

3. The University of Nebraska will play a critical role in building a talented, competitive workforce and knowledge-based economy in Nebraska in partnership with the state, private sector and other educational institutions.

- b. Increase proportion of the most talented Nebraska high school students who attend the University of Nebraska.
- c. To attract talent to the state, increase the number of nonresident students who enroll at the university.

5. The University of Nebraska will serve the entire state through strategic and effective engagement and coordination with citizens, businesses, agriculture, other educational institutions, and rural and urban communities and regions.

- a. Support economic growth, health and quality of life through policy initiatives consistent with university mission.

10. Avoidance of Unnecessary Duplication

Our research has not revealed the existence of a similar undergraduate Certificate in Laboratory Animal Care in Nebraska or surrounding states. This is a very unique program, not only for Nebraska, but for the entire Midwest region. To the best of our knowledge, the only other program remotely similar is at The University of Missouri – Columbia, which offers online courses in Veterinary Biomedical Technology, available only to graduate veterinary technicians.

11. Consistency with the Comprehensive Statewide Plan for Postsecondary Education: How this program would enhance relevant statewide goals for education

The proposed certificate is consistent with expectations of the veterinary and biomedical communities and the strategic plan of the college. Students who complete the Certificate in

Laboratory Animal Care will be prepared to contribute and succeed in a highly skilled world through their understanding of the vital role of animal health, animal welfare, and facility management in the advancement of science and medicine.

TABLE 1: PROJECTED EXPENSES - NEW INSTRUCTIONAL PROGRAM
Laboratory Animal Care Undergraduate Certificate at NCTA

	(FY2017) Year 1		(FY2018) Year 2		(FY2019) Year 3		(FY2020) Year 4		(FY2021) Year 5		Total	
	FTE	Cost	FTE	Cost	FTE	Cost	FTE	Cost	FTE	Cost	FTE	Cost
Personnel												
Faculty ¹												
Professional												
Graduate assistants												
Support staff												
Subtotal												
Operating												
General Operating												\$0
Equipment ²		\$500		\$750		\$1,000		\$1,250		\$1,500		\$5,000
New or renovated space												\$0
Library/Information Resources												\$0
Other												\$0
Subtotal		\$500		\$750		\$1,000		\$1,250		\$1,500		\$5,000
Total Expenses		\$500		\$750		\$1,000		\$1,250		\$1,500		\$5,000

¹ No new staff or faculty will be required to implement this certificate program.

² Yearly expenses for equipment repair and maintenance.

**TABLE 2: REVENUE SOURCES FOR PROJECTED EXPENSES - NEW INSTRUCTIONAL PROGRAM
Laboratory Animal Care Undergraduate Certificate at NCTA**

	FY(2017) Year 1	(FY2018) Year 2	(FY2019) Year 3	(FY2020) Year 4	(FY2021) Year 5	Total
Reallocation of Existing Funds						\$0
Required New Public Funds						\$0
1. State Funds						\$0
2. Local Tax Funds (community colleges)						\$0
Tuition and Fees ¹	\$17,230	\$20,280	\$26,360	\$29,820	\$33,440	\$127,130
Other Funding						\$0
1						\$0
2						\$0
3						\$0
Total Revenue	\$17,230	\$20,280	\$26,360	\$29,820	\$33,440	\$127,130

¹ Tuition revenue is based on a projected enrollment of 6 students in 2017, each taking 20 credit hours. Student numbers are expected to grow approximately 20% per year, with 80% being Nebraska residents and 20% being non-residents. NCTA's 2017 tuition rate is \$121.00 per credit hour for residents and \$256.50 per credit hour for non-residents; for this revenue estimate, subsequent tuition rates have been incremented by 3% annually.

December 22, 2015

RECEIVED

DEC 23 2015

Coordinating Commission
for Postsecondary Ed.

Dr. Kathleen Fimple
Academic Programs Officer
Coordinating Commission for Postsecondary Education
P.O. Box 95005
Lincoln, NE 68509-5005

Dear Dr. Fimple,

Attached please find a revised proposal for the Nebraska College of Technical Agriculture's Laboratory Animal Care certificate. The revised proposal addresses the request for additional information communicated in your June 4, 2014 letter.

Outreach Efforts to Meet Projected Enrollments

- Notes active marketing by three recruiters (including two full-time, on-the-road staff), with activities in Omaha and across the state
- Notes increase in student enrollments

Evidence of Need (Need in NE biomedical industry)

- Updated Bureau of Labor Statistics data
- Informal survey of Nebraska-based directors of animal care facilities
- Specific list of Nebraska-based companies, plus noted regional companies with animal care facilities

Potential for Internship Locations

- Notes statewide mission (not just rural western Nebraska)
- Notes current internship sites for Vet Tech students (across the state)
- Notes urban and rural locations, indicates primary internships in Eastern Nebraska but with potential opportunities in Fort Collins, Denver, and Manhattan

Budget Information

- Updated format; includes information on the recently-hired veterinarian

The proposal also includes information relative to professional-career growth and a more realistic perspective on the role this training will provide in achieving professional certifications.

December 22, 2015
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Please let me know if the revised proposal adequately addresses the request for additional information.

Sincerely,

A handwritten signature in blue ink that reads "Susan Fritz". The signature is written in a cursive style with a large, stylized "S" and "F".

Susan Fritz
Executive Vice President and Provost

Attachment

C: Dr. David Jackson
Dr. Ron Rosati
Dr. Ronnie Green
Dr. Ron Yoder