

**From:** [Smith, Randy](#)  
**To:** [Flint, Jaylene](#); [Flint, Mark](#)  
**Cc:** [Leite, Fabio](#); [Reed, Katie](#); [Smith, Randy](#); [Griffiths, Rob](#); [Miriti, Maria](#); [Kowalsky, Lisa](#); [Duffy, Lisa](#); [Hunt, Ryan](#); [Read, Emma](#); [Moore, Rustin](#)  
**Subject:** Proposal to establish Graduate Certificates (types 3a and 5a) in One Welfare  
**Date:** Wednesday, July 17, 2024 8:26:27 AM  
**Attachments:** [image001.png](#)

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Jaylene and Mark:

The proposal from the College of Veterinary Medicine to establish Graduate Certificates (types 3a and 5a) in One Welfare was approved by the Council on Academic Affairs at its meeting on July 15, 2024. Thank you for attending the meeting to respond to questions/comments.

No additional level of internal review/approval is necessary. This action will be included in the Council's next Annual Activities Report to the University Senate (July 2024).

The Office of the University Registrar will work with you on any implementation issues.

Please keep a copy of this message for your file on the proposal and I will do the same for the file in the Office of Academic Affairs.

If you have any questions please contact the Chair of the Council, Professor Fábio Leite (.11), or me.

Randy



**W. Randy Smith, Ph.D.**

Vice Provost for Academic Programs

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TO: Randy Smith, Vice Provost for Academic Programs

FROM: Graduate School Curriculum Services

DATE: **4/29/2024**

RE: Proposal to **Establish a Graduate Certificate in One Welfare** in **Veterinary Medicine**

The **Department of Veterinary Preventive Medicine** in the **College of Veterinary Medicine** is proposing a **Graduate Certificate in One Welfare**.

The proposal was received by the Graduate School on **10/30/2023**. The combined GS/CAA subcommittee first reviewed the proposal on **1/17/2024** and requested revisions. Revisions were received on **3/28/2024**. GS/CAA conducted a second review of the proposal on **4/10/2024** and requested additional minor revisions. The follow up revisions were received on **4/26/2024** and the proposal is recommended for review at CAA.



October 30, 2023

Dear Vice-Provost Smith,

Please find attached with this letter the proposals from the College of Veterinary Medicine regarding Certificates in One Welfare. There are two certificates to consider:

1. Non-credit bearing:
  - a. One Welfare – Professional
    - i. This is a certificate that is intended to provide training in One Welfare concepts for industry professionals that are seeking continuing education. One welfare is related to understanding the interconnected relationships between the welfare of humans, animals, and the environment, and this is relevant to a number of organizations.
    - ii. We are submitting this proposal for CAA to officially record as an active non-credit bearing certificate.
2. Credit bearing (Graduate and Professional students)
  - a. One Welfare – Graduate
    - i. This certificate is intended to be used for DVM students in their training and will provide additional emphasis in One Welfare for those interested. The certificate also meets the needs of graduate students in our college particularly those in the combined DVM-MPH degree or MPH degree programs.
    - ii. This certificate proposal now needs to be reviewed at the Graduate School. It has already been approved for DVM students by the College of Veterinary Medicine Council for Professional Education (our curriculum committee) on 10.11.2023.
    - iii. We are submitting this proposal for CAA to review and provide approval, if they are willing to do so.

Sincerely,

Emma K. Read, DVM, MVSc, DACVS  
Associate Dean for Professional Programs

Cc: Dr. Mark Flint, Dr. Jaylene Flint, Dr. Tom Wittum, Shayna Mohr



To The Graduate School / Council Academic Affairs Committee,

Please find attached the clarifications for the One Welfare Certificate for DVM/graduate students we are seeking approval to offer in 2024-2025.

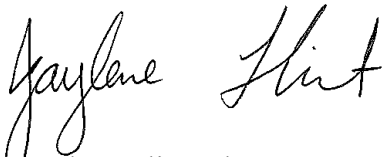
Thank you for your feedback on the drafts we shared. The time that the committee has spent on this application is very much appreciated and we are hopeful in getting this certificate approved to offer our students in the upcoming Fall semester.

Please see the clarifications below:

- The courses will be offered as hybrid with a mix of synchronous and asynchronous. We have edited the proposal to reflect this.
- The practicum is one of the required courses. This is one of the new courses we are creating called One Welfare Practicum. We have changed the minimum requirements section to clarify this.

Thank you again for your time and comments. If there is any further information required, please don't hesitate to reach out to either myself, Dr. Mark Flint or Dr. Emma Read. We look forward to hearing from you soon.

Sincerely,



Jaylene Flint, PhD, BSc

Assistant Professor, Department of Veterinary Preventive Medicine

Associate Director of Research and Education, One Welfare Sustainability Center

## Certificate in One Welfare- Graduate

### Academic Affairs Proposal

#### I. Well-defined program

A. Title of the program: **One Welfare- Graduate**

B. Certificate category and justification. Currently, only one category is permitted per certificate program.

##### **1. Graduate – standalone**

**We are proposing this certificate program be offered as a Graduate certificate program to provide graduate-level training for participants to develop skills and expertise in the field of One Welfare.**

C. State purpose of program –why the faculty chose to create the certificate and why the certificate is the best route of delivery of the education to the student

**We propose a Certificate in One Welfare through the One Welfare and Sustainability Center in the College of Veterinary Medicine that can be obtained by graduate and veterinary students.**

**This certificate will provide graduate-level training in the emerging discipline of One Welfare and provide one of the first formal training programs in the United States in One Welfare. We plan for participants to be able to earn the certificate without the need to enroll in a degree-seeking program. By offering unique educational opportunities in this field through a variety of delivery modes (see below), this certificate will be appealing to current students.**

**The benefit of this certificate will be solidifying The Ohio State University and the College of Veterinary Medicine as a national leader in a globally new emerging field – One Welfare – by offering a university wide program that can take full advantage of our evolving online virtual classroom capacity. This will increase our profile at the university and national level; and will create a line of revenue generation from other colleges and external participants.**

**This certificate will provide concentrated graduate-level training in the emerging discipline of One Welfare by providing comprehensive training in the multi-disciplinary science encompassing animal and human welfare, as well as societal and environmental health.**

1. Method of delivery (online, in-person, hybrid)

**All courses will be offered via hybrid mode of delivery. Courses will be offered a combination of synchronous and asynchronous options for participation.**

2. Has the method of delivery been approved in the past, and is it changing?

**The use of synchronous/asynchronous course delivery has become standard practice for graduate-level coursework in the College of Veterinary Medicine, and methods of delivery for each individual course in this certificate program have been previously approved.**

**D. Are multiple methods of delivery available concurrently?**

**There are not multiple methods of delivery for this certificate program’s content. All participants will participate in the same delivery methods for courses they are enrolled in. However, a big advantage to offering online Zoom based lectures and sessions is that these deliveries can be saved and accessed at any time by participants.**

**E. Date the program would become effective, if approved**

**If approved, we intend for this certificate program to become effective for the 2024-2025 Academic Year.**

**F. Program goals**

**The goal of this certificate program is to offer a concentrated graduate-level training in the emerging discipline of One Welfare by providing comprehensive training in the multi-disciplinary science encompassing animal and human welfare, as well as societal health and environmental sustainability targeted towards professional Doctor of Veterinary Medicine (DVM) students, graduate students, and veterinary clinical residents.**

**G. Expected learning outcomes supporting the program goals (“Upon completion of the certificate, the graduate will be able to ....”)**

**Upon completion of the certificate, the graduate will be able to:**

- 1) Demonstrate an understanding of the interconnected relationships between the welfare of humans, animals, and the environment, from a One Welfare perspective**
- 2) Communicate effectively with peers and stakeholders to develop collaborative solutions for addressing challenges using a One Welfare approach**

**H. Minimum requirements to complete program, including off-campus field experiences (if applicable)**

**A minimum of 12 total credit hours are required to complete the program. Students in the certificate program will complete a combination of core and elective courses, including completion of a One Welfare Practicum, which will involve collaborating with off-campus, external partners. The One Welfare Practicum covers 2 of the 8 required core credit hours.**

**I. Table showing the number of credit hours that can be achieved:**

<b>In-person only</b>	<b>Online only</b>	<b>In-person or online</b>
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0	0	12
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J. For programs in which 50% of the credits may be achieved online, an MOU with ODEE is needed

**We are actively engaged with Ohio State Online Office and an MOU will be forthcoming.**

K. List of required courses and elective courses

**Required Courses:**

Course #	Course Name	Credit Hours
VME I VMCOLL 6120	Healthy Populations (One Health & One Welfare)	2
VME II VMCOLL 6320	Population Medicine (One Health & One Welfare)	2
VETPREV 7783	Population Welfare	2
VETPREV #####	One Welfare Practicum	2
VETPREV 7710	Ecosystem Health and Conservation Medicine	2

**Elective Courses:**

Course #	Course Name	Credit Hours
VETPREV 7700	Introduction to Aquatic Animal Health and Medicine	2
VETPREV 7745	Introduction to Exotic Terrestrial & Riparian Animal Health and Medicine (Basic Exotic Animal Medicine)	2
VETPREV 7760	Opportunities in Global Veterinary Medicine and Public Health	1
VETPREV 7724.01	Environmental Health at the Human-Animal Interface	1
BUSOBA 7253	Sustainable Operations	1.5
VETPREV 7781	Advanced Topics in Zoo Medicine- Journal Club	1
ANIMSCI 5420	Environmental Impacts of Crop-Livestock Systems	3

L. Length of program compared to similar programs

**This certificate would require a total of 12 credit hours, 8 hours of required, core courses, and the remainder to be completed from the above list of elective courses. The certificate coursework must be completed within the participant's primary degree timeframe. The length of this program is comparable to similar programs both within the University and externally. The 12-credit hour requirement is consistent with the University requirements for a graduate certificate program, as well as similar to the requirements for certificate programs at other institutions (see section IV.C below).**



## II. Adequate Enrollment

### A. Projected enrollment (include justification for estimate)

**Projected enrollment for this certificate program would be approximately five students per academic year. Enrollment in the Zoo and Wildlife Conservation Medicine & Ecosystem Health Residency Program and One Welfare Residency Program, on average, is cumulatively 2 students per year, and we anticipate most, if not all, those students would enroll in this certificate program. Additionally, there are several graduate students in the Department of Veterinary Preventive Medicine working within the One Welfare discipline who would be anticipated to enroll in the program as well.**

#### 1. Will there be problems if too many students enroll in the certificate program?

**So long as enrollment in the certificate program does not cause individual courses to exceed their enrollment maximums, we do not anticipate problems arising from too many students enrolling in the certificate program. The administrative duties required to facilitate students' progress through this program will be relatively minimal, so additional enrollment would not cause undue burden on the personnel involved.**

#### 2. Will there be problems if too few students enroll in the certificate program?

**There will not be problems if too few students enroll in the certificate program. Given that both required and elective courses for this program are either existing offerings or are being developed to be offered to professional veterinary students in addition to certificate participants, none of these courses are entirely dependent on enrollment in this program. Therefore, the ability of these courses to run in a given semester will be independent of certificate program enrollment.**

### B. Opportunities for graduates

#### 1. For standalone certificates, include metrics to assess how the program will measure benefit to graduates

**Based on statistics for the class of 2023, 25% of DVM students are interested in zoo and wildlife conservation medicine and ecosystem health. This is a competitive field that demands internships, residency programs, and/or graduate training to practice. We have found that students who have successfully undertaken additional training during their veterinary degree are more likely to get zoo and wildlife-related placements for their internship and residency. Offering this certificate will increase the competitiveness of students wanting to enter this field. See further evidence in Section V.A below.**

### C. Minimum requirements to undertake program of study; admissions policy

**Requirements for admission to this certificate program will be:**

**Completion of Bachelor degree or advanced degree in a relevant field.**

**Meet all requirements of The Ohio State University Graduate School for admission to graduate-level academic certificate programs.**

**Have good academic standing as a current graduate or professional degree-seeking student.**

### III. Sufficient Resources

- A. Adequacy and availability of facilities and staff, including off-campus field experience sites

**There are adequate facilities and staff already available to support the offerings of this certificate program. This includes classroom space for the courses included in this program, faculty to instruct the courses, and a staff member to facilitate the administration of this certificate program, all of which are already available. Further, we have community links both here and overseas, to facilitate the Practicum in One Welfare component.**

**The One Welfare and Sustainability Center currently offers Veterinary Resident and Graduate Training Programs. Through these programs we have established relationship with multiple industry representatives including (The Columbus Zoo and Aquarium, The Wilds, Proctor and Gamble, Louis Vuitton Moet Hennessy, Ohio SeaGrant, COSI and The Ohio Wildlife Center) which we will use to facilitate the Practicum in One Welfare component.**

- B. Projected resource needs and plans to meet those needs

**There are no additional resource needs we anticipate requiring for successful implementation of this certificate program.**

### IV. Justifiable Expenses

- A. Additional faculty

**No additional faculty will be required for this program.**

- B. Course additions or deletions

**All courses offered are new to this certificate**

### Required Courses:

Course #	Course Name	Credit Hours
VME I VMCOLL 6120	One Health & One Welfare	2
VME II VMCOLL 6320	Population Medicine (One Health & One Welfare)	2
VETPREV 7783	Population Welfare	2
VETPREV #####	One Welfare Practicum	2
VETPREV 7710	Ecosystem Health and Conservation Medicine	2

**Elective Courses:**

Course #	Course Name	Credit Hours
VETPREV 7700	Introduction to Aquatic Animal Health and Medicine	2
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VETPREV 7781	Advanced Topics in Zoo Medicine- Journal Club	1
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**VM 6120 One Health & One Welfare**

In this course you will learn about the historical, philosophical, and scientific developments that have led to our current understanding of animal welfare and how it should be assessed. The Block provides an overview of the tenancies of One Health and One Welfare, the role of the Veterinarian in a range of disciplines, and the ways in which this framework may be applied to our everyday lives.

Assessment is based on quizzes and an individual and group assignment.

**Lectures:**

- Introduction to Animal Welfare
- The Ethics of Animal Welfare
- The Three Circles
- Animal Welfare Assessments
- Clinical Case: Cat Welfare in Shelters
- Complexities of Animal Welfare in Research, Teaching, and Testing
- Working Animal Welfare
- The Human-Animal Bond
- Recognizing and Reporting Animal Cruelty
- Documenting and Prosecuting Animal Cruelty
- Introduction to Euthanasia
- A Brief Tour of Ecology and Conservation Biology
- One Health and Veterinary Medicine
- Principles of EcoHealth
- Don't Be the Lorax
- Health, Disease, and the Environment: How to Diagnose
- Climate Change

- Wildlife Forensics
- Introduction to One Welfare
- Using One Welfare to Approach Issues to Practice Medicine in the One Welfare Framework

### **VETPREV 7783 Population Welfare**

Through lectures, readings, laboratories, discussions and self-directed learning, this course will introduce the principles and practices of population welfare and explore the theories and applications of this welfare science to species of conservation concern.

Theory will cover the influences of varying degrees of pressure on a range of ecosystems and the resultant ecohealth with respect to the principles of population welfare, welfare ethics, the harm reduction approach and salutogenesis concept, cultural and economic factors, and ways to determine and assess the stressors acting on a wildlife population or captive managed group of animals. Special topics examining specific stressors such as climate change and environmental contamination, and specific populations of terrestrial and aquatic animals including charismatic megafauna and wildlife and zoo species will reinforce concepts and demonstrate the use of veterinary medicine, biology and ecology in population welfare with the parallel disciplines of ecosystem health and One Health.

Laboratories will include on-sites visits to zoological, wildlife and agricultural facilities and in class exercises developing assessment tools to undertake a welfare impact assessment.

Two assignments will allow students to explore specific areas of interest under the discipline.

#### *Lectures:*

- Population Welfare as a Diagnostic Tool and Welfare ethics- the Five Viewpoints
- Large scale ecological threats to population welfare
- Cultural and economic factors that drive conservation welfare
- Approaches to measure welfare at the population level
- Population welfare in zoos, farms and wildlife
- Welfare parameters that can be measured in zoos and wildlife
- Special topics: Climate Change
- Special topics: Contaminants
- Special topics: Charismatic Megafauna vs Ugly Animals
- Special topics: Elephants- The Death of the Circus
- Special topics: Zoo Welfare
- Special topics: Marine Mammal Welfare
- Special topics: Marine Turtle Welfare

### **VETPREV XXXX One Welfare Practicum**

In this course, participants will become involved with a community-based project that will assess and improve the One Welfare of a community and its environment.

Assessment will be based on a report describing the process and outcome.

*No lectures*

### **VETPREV 7710 Ecosystem Health and Conservation Medicine**

Principles and application of ecosystem health and conservation medicine will be examined using the One Health One Medicine paradigm. This course may also serve as a component of a non-degree certificate for external veterinarians interested in gaining training in ecosystem health, conservation medicine and/or One Health.

Assessment is based on examination and presentations.

*Lectures:*

- Principles of ecosystem health and conservation medicine and how to assess.
- Assessment: Research in Conservation Medicine (Project Design)
- Assessment: Outbreaks, epidemiology, and risk analysis
- Ecology: Problems in Conservation and Animal Welfare
- Diseases: Wildlife Clinical Pathology
- Diseases: Health issues as threatening processes
- Human Dimensions: Engineered solutions, prevention, restoration, threatened species recovery, pest management and conservation genetics
- Human Dimensions: Landscape management and communication locally and globally
- Human Dimensions: Public engagement/ citizen science/ cultural considerations
- Environment: Types of Ecosystems and Climate Change

### **VETPREV 7700 Introduction to Aquatic Animal Health and Medicine**

This course will serve as an entry-level class exposing professional veterinary and graduate students to the diverse field of aquatic animal health, medicine, and welfare. It aims to equip veterinarians with an interest in aquatic medicine, higher research degree earning students, and professionals with an interest in the disease ecology of aquatic species to gain skills directly applicable to their profession. Oral lectures, journal article reviews, group projects, facility site visits, and clinical wet labs will introduce the principles and practices involved in the field with an emphasis on the role of the veterinarian. Concepts will cover principles of aquaculture, the natural aquatic environment, common diseases, and treatments. Laboratories will include animal sampling techniques, water quality parameter evaluation, and the application of theory to design an aquaculture system.

Assessment is based on quizzes and final group presentation.

*Lectures:*

- Natural and Artificial Systems & Water Quality
- Aquatic Animal Anatomy and Pathology- Reptiles
- Aquatic Animal Anatomy and Pathology- Mammals
- Special topics- rehabilitation and welfare
- Special topics- wild aquatic animal welfare

- Special topics- elasmobranch medicine
- How to write a VFD and commonly used medications in aquaculture
- Zebrafish and other fish in Biomedical Research
- Public, Health, Zoonotic and Fish (Seafood) Safety
- Common Aquatic Parasites
- Fish Necropsy and Common Clinical Diseases in Aquaculture (live demonstration)
- Anesthesia and Euthanasia Techniques in Aquatic Species (live demonstration)
- Fish Anesthesia and Anesthesiology

### **VETPREV 7745 Introduction to Terrestrial & Riparian Animal Health and Medicine (old Basic Exotic Animal Medicine)**

Provide a basic background for veterinarians and professionals regarding terrestrial and riparian species from the five phyla of animals. Assessments are based on quizzes and examination.

#### *Lectures:*

- Course introduction
- Husbandry and preventive medicine for mammals
- Common diseases of mammals
- Exotic animal practice case studies - mammals
- Husbandry and preventive medicine for birds
- Common diseases of birds
- Exotic animal practice case studies - birds
- Husbandry and preventive medicine for reptiles
- Common diseases of reptiles
- Exotic animal practice case studies - reptiles
- Husbandry and preventive medicine for amphibians
- Common diseases of amphibians
- Exotic animal practice case studies - amphibians
- Husbandry, preventive medicine, and diseases of invertebrates
- Exotic animal practice case studies - invertebrates

### **VETPREV 7760 Opportunities in Global Veterinary Medicine and Public Health**

This elective course is designed as a preparatory course for veterinary professional (DVM) curriculum and Masters of Public Health, MPH-VPH students who plan to engage in international and non-traditional veterinary medicine and public health. This course is graded S/U based on assignments and participation.

#### *Lectures:*

- Introduction to Class and Term Project

- Travel Logistics and Risk Management
- Education Abroad
- Global One Health Ethics
- Mentoring
- Global One Health Opportunities 1
- Global One Health Opportunities 2
- Global One Health Opportunities 3
  - Options for 'opportunities' lectures:
    - MPH-VPH
    - GOHi
    - FAO
    - CDC
    - USDA
    - Conservation Medicine
    - Welfare and Industry
- Regional Case Study 1
- Regional Case Study 2
- Regional Case Study 3
- Regional Case Study 4
- Regional Case Study 5
  - Region case study options:
    - France
    - Panama
    - Thailand
    - Eastern Europe
    - Native American
    - South Africa
    - India
    - Argentina
    - Central and South America
- Final Group Project

## **BUSOBA 7253 Sustainable Business Operations**

Businesses contribute to global environmental issues, such as air and water pollution and waste, but they are also part of the solution. We will explore some of the challenges and opportunities firms face in managing their environmental impact. Some firms adopt environmental management practices to cut cost; others pursue them to differentiate themselves. If the benefits of sustainability were obvious and easy to pursue, then why do we not observe all firms implementing the same strategy? We will explore emerging topics in sustainable operations management through cases, team debates, lectures, guest speakers, and student presentations. Topics include remanufacturing, closed-loop supply chains, carbon footprinting, waste reduction, new sustainable business models, and transparency. We will examine the

sustainable operations and supply chain strategies of different companies such as John Deere, EMMA, SC Johnson, Interface, and Carvajal Empaques.

Assessment is based on attendance, assignments, case write-ups, presentations and debate.

*Lectures:*

- Intro to Corporate Sustainability
- Waste and Recycling
- Remanufacturing
- Servicization
- Sustainable Supply Chains
- Sustainability, Product Quality, and Information
- Business and Climate Change

*\*This course has a stated pre-requisite of MBA 6233, however we have received written permission from the Department Chair that the pre-req can be waived for students enrolled in this certificate program (documentation attached)*

### **VETPREV 7724.01 Environmental Health at the Human-Animal Interface**

This course will provide an overview of environmental health issues related to human and animal interactions and animal agriculture. Topics will include water and air quality, waste management, occupational safety, and environmental toxicology. This course is appropriate for graduate or professional students in public health and other health sciences. It is delivered as 13 lectures and assessed via two examinations, one written assignment and participation.

*Lectures:*

- Introduction & One Health
- Environmental Regulatory Agencies & Regulations
- NIOSH and the Deepwater Horizon Oil Spill 4 1/29 Spangler 215 VMAB
- WATER: Drinking Water & Public Health
- WATER: Wastewater Treatment
- WATER/AIR: Animal Feeding Facilities & Environmental Health
- WATER/AIR: Manure Management
- AIR: Agricultural Air Quality
- WATER: Harmful Algal Blooms
- ECOSYSTEM: Integrated Pest Management
- ECOSYSTEM: Climate Change: Is it Real...What are the Impacts?
- ECOSYSTEM: Animals as Sentinels and Bioindicators
- ECOSYSTEM: Human-Wildlife Conflict

### **VETPREV 7781 Advanced Topics in Zoo Medicine- Journal Club**



Advanced Topics in Zoological Medicine is the study of the current literature in zoo medicine, conservation medicine and wildlife medicine. This includes mammals, reptiles, aquatics, invertebrates and birds.

Through weekly meetings, participants meet via Zoom to present and discuss the preset literature/material.

Materials cover zoological textbooks and journals as approved by the American College of Zoological Medicine and American College of Animal Welfare as part of the required reading to credential for board examination in each discipline.

This course is assessed via summaries provided for the selected literature.

*No lectures*

C. Necessary budget adjustments

**No budget adjustments are necessary to support this certificate program.**

D. Available and anticipated funding

**Operationally, we have the required funding to run these courses and certificate program. Several courses are already in operation and have been for several years. The new courses being offered have designated financial support through the One Welfare and Sustainability Center.**

V. Adequate Demand

A. Evidence of sufficient demand by students, faculty, general public, and/or business

- In the absence of a clear market demand for a standalone certificate, metrics to assess benefit to the graduates will be crucial for CAA approval

**There is clear demand from graduate and professional veterinary students for opportunities to demonstrate a specialization in the emerging field of One Welfare. The Residency training programs mentioned previously (One Health and Zoo Wildlife Conservation Medicine and Ecosystem Health) receive a combined 35-40 applications annually, indicating clear interest within the veterinary science discipline in seeking advanced training in these topics. Additionally, recent job postings for related positions at the Manager and Director levels list requirements of not only a graduate degree, but also further training and experience in the topics of ‘welfare science’, ‘conservation science’, ‘interdisciplinary science’, and more. Completion of this graduate-level certificate in One Welfare would clearly demonstrate these qualifications, allowing Ohio State graduates to increase their competitiveness for these positions.**

**Further, there is demand from the broader industry for veterinarians to have received advanced training in this field as well. This has been made clear by the recent change to the DVM curriculum in requiring all first-year veterinary students to complete a**

block of coursework focused on One Health & One Welfare. This introduction to the topic will allow students to form a foundation to be expanded upon through completion of this certificate program. Demonstrating advanced training in this field will allow graduates to have increased competitiveness when entering the job market, elevating The Ohio State University's contributions to the veterinary industry.

B. Duration of demand (long/short term)

For a few years now, there has been steady demand for advanced training in the form of the Residency programs offered, and we anticipate continued, long-term demand from students for these types of opportunities. One Welfare is a quickly growing field that will only continue to become increasingly necessary as we work towards cross-disciplinary solutions to the challenges we face at the intersection of humans, animals, and the environment.

C. Ability of other programs to meet demand

There are no current programs offered that are able to meet the demand for this holistic approach to One Welfare. Although some offerings exist to train students in the dynamic relationship between human and animal health, this program offers a broader scope, expanding beyond just the health implications to provide students with the skills and expertise in the multi-disciplinary science encompassing animal and human welfare, as well as societal health and environmental conservation. Although there is a Graduate Certificate in Global One Health that is currently offered, this program provides students the opportunity for more in-depth studies related to the epidemiological interface between humans, animals, and the environment. This program does not meet the demand for learning opportunities related to the broader connections related to welfare, conservation, and sustainability, that this certificate program does. Specifically, the curriculum inclusion of topics such as animal husbandry and preventive medicine, ecosystem health and population-level welfare, wildlife conservation, and environmental sustainability in practice, is a unique offering that meets demand for concentrated education in these areas.

There is very minimal overlap between the curriculum of the existing certificate and our proposed program, as described in section VI.B below. Additionally, this program includes the One Welfare Practicum course, which allows students to engage in a hands-on learning opportunity potentially with one of our established community partners. This opportunity for students to be directly involved with practical application of these topics and gaining experience with industry stakeholders is unique to this program.

VI. Competitiveness with other Institutions: Limited Overlap within the University

A. Overlap with other programs or departments (include letters of concurrence with any programs that may be affected)

There is no considerable overlap with existing programs at the University. Notably, the One Welfare Residency Training Program offered through the Department of Veterinary Preventive Medicine is exclusively for veterinarians, and although it has a focus in One Welfare topics, does not provide opportunities for graduate students seeking advanced training in this topic, so this certificate would not overlap with that programmatic offering.

B. Duplication of effort by other areas in the University, another university, or another school

The College of Public Health and College of Veterinary Medicine's offering of a Global One Health Certificate does provide graduate-level training in a somewhat related area of study, however that program focuses on an epidemiological approach to the health interface between humans, animals, and the environment. Additionally, that certificate program has an entirely different set of required core courses and only one elective course (VETPREV 7724.01) that overlaps with this proposed program. Given that the focus of the certificate training and course content of the programs have minimal to no overlap, there is no real duplication of effort across these programs.

C. Similar programs at other universities in Ohio or in the United States and their levels of success

To our knowledge, there are no similarly One Welfare-focused programs at other universities in the United States. The development of the One Welfare Residency was also the first of its kind, demonstrating The Ohio State University's commitment to being a preeminent leader in this emerging discipline. The development of this certificate program would complement the Residency program by offering advanced training for non-veterinary graduate students in this field.

Outside of Ohio State, there are programs at universities across the United States (see list below) which focus on the interface between humans, animals, and the environment, although exclusively from a health perspective. Additionally, these programs are primarily housed in Public Health academic units, while offering this program through the College of Veterinary Medicine would provide unique insights.

In contrast to these programs at other universities, and other offerings at Ohio State, the program being proposed here takes a more holistic approach in the form of One Welfare – recognizing that the interconnectedness of these three facets of our world extends far beyond health. One Welfare encompasses not only health impacts, but also preservation of biodiversity, conservation of the natural world, sustainability, animal welfare/well-being, and societal wellbeing.

Examples of programs at other universities include:

University of Washington – Center for One Health Research

Graduate Certificate in One Health

<https://deohs.washington.edu/cohr/graduate-certificate-one-health>

University of Florida – College of Public Health and Health Professionals

One Health Certificate (<https://egh.phhp.ufl.edu/education/degree-programs/one-health-certificate/>)

The University of Arizona – Mel & Enid Zuckerman College of Public Health

Graduate Certificate in One Health  
(<https://publichealth.arizona.edu/academics/certificates/one-health>)