STUDENT ORGANIZATION SUSTAINABILITY INITIATIVE PROPOSAL FORM

Part I- General Information:

Name of Student Organization	VMCVM Classes of 2019 and 2020
Contact/Responsible Person	**Fran Rowe**
Contact Office Held/Title	**Fundraising Chair**
Contact Email Address	**fcrowe@vt.edu**
Contact Telephone Number	**(540) 570-8444**

Part II- Project Cost Information

Estimated Cost of this Proposal	$10,000	See III.C. below
Estimated Savings -	$0	See III.D. below
Net Cost of this Proposal =	$10,000	

Part III- Supporting Information

A. Please describe your sustainability initiative and attach supporting documentation.

I. Project Overview

The Virginia-Maryland College of Veterinary Medicine (VMCVM) Classes of 2019 and 2020, in addition with the BioBuild Studio class (GRAD 5134) from the Myers-Lawson School of Construction, are collaborating on a project to relocate and update the outdoor dog run at VMCVM. This outdoor run is utilized for the teaching dog colony housed at VMCVM and used during the Doctor of Veterinary Medicine (DVM) curriculum.

The teaching dogs are a valuable educational resource and integral aspect of the curriculum at VMCVM. Each year, these dogs are utilized in teaching labs designed to expose veterinary students to a variety of important clinical skills. During their first year, students are assigned a dog and are charged with socializing their dog, teaching him/her basic commands, and ultimately making him/her an excellent candidate for adoption. Throughout the DVM program, first-, second-, and third-year students use the dogs in physical exam labs, dermatology labs, ophthalmology labs, and spay/neuter surgeries. Prior to the end of the academic year in the Spring, these dogs are offered for adoption to the public.

The outdoor dog run is designed as a safe location for the teaching dogs and their first-year student handlers to interact and play off-leash. Not only can the dogs play together while in the outdoor run and learn canine social skills, but students can also play fetch with their dogs and teach them commands to foster appropriate and positive canine-human social interaction. The outdoor run greatly increases the quality of life for these dogs during their year in the teaching program, as well as provides an interactive and educational environment for students to learn canine behavior and animal-handling skills. However, the current outdoor run is outdated and needs to be relocated for multiple reasons, which will be elaborated upon in subsequent sections.

Most other DVM programs in the country no longer utilize teaching dogs in their curriculum due to the high cost of maintenance and the difficulty of managing a favorable public opinion about kenneled dogs. This is why students at VMCVM are so grateful to learn from the teaching dogs, and insistent upon giving them an environment in which they can thrive. The Classes of 2019 and 2020 are very passionate about collaborating on a project to relocate and update the outdoor dog run that will provide a better quality of life for the dogs, a better facility for public outreach, and a better long term solution for the environment.

II. Interdisciplinary Collaboration

The Classes of 2019 and 2020 have partnered with the BioBuild Studio class for the design phase of the project. The BioBuild Studio course, led by Dr. Annie Pearce from VT College of Architecture & Urban Studies and College of Engineering and Dr. Virginia Buechner-Maxwell from VMCVM, is an interdisciplinary course sponsored by the Graduate School and run by the BioBuild IGEP program. This course is designed to

expose students to construction and design considerations for buildings that are inclusive of non-human species. The BioBuild Studio class has committed to designing the new outdoor run, which takes into account not only functional considerations for the project, such as integrating a new structure into an existing structure, working around an established fire exit, and complying with protocols involving animal biosecurity, but also considerations for student comfort.

Additionally, the Classes of 2019 and 2020 plan to partner with students in the Construction and Materials (BC 2044), Sustainable Building Performance Management (BC 4334), and Sustainable Facility Systems (BC 5134) courses for the construction phase of the project. All three of these courses are led by Dr. Annie Pearce during Spring semester, and she has planned to integrate different aspects of this project into each of the courses. Ultimately, both undergraduate and graduate students would be involved in the construction of the dog run based on the design developed by the BioBuild Studio students. For instance, construction activities will be integrated into labs for the Construction and Materials course, undergraduate students in the Sustainable Building Performance Management course will implement management plans for project execution, and graduate students in the Sustainable Facility Systems course will supervise the project. Lastly, canine enrichment structures (see Section III) will be designed together with VMCVM's Center for Animal-Human Relationships and the BioBuild Interdisciplinary Graduate Education Program. They will be constructed using recovered and recycled materials presently part of the Myers-Lawson School of Construction Sustainable Building Performance undergraduate coursework.

As a result, the interdisciplinary nature of the project is a valuable and rare educational experience for all the students involved. Student representatives from VMCVM have taken on the challenge of getting this project approved and coordinating with the various departments involved in the project. Students in the BioBuild Studio course have had the exciting educational opportunity to apply their knowledge and contribute to a real project on campus. Similarly, students in the Spring Construction classes will also have the opportunity to apply their skills outside of the classroom.

III. Project Goals: Educational Perspective

The overall goals of this project are to relocate the outdoor run to a more suitable location and to provide updates that increase the educational experiences for veterinary students by encouraging students to spend more time socializing with their dogs. In addition to increasing the size of the outdoor run (from approximately 1500 square feet to 3200 square feet), there are a number of student comfort updates that are planned to be incorporated into the new structure. These include installing benches and tables, a wifi amplifier, and a charging station for students to relax and study; low maintenance lighting or solar panels for safety during evening hours; and a canopy for shade and protection during inclement weather. Additionally, canine enrichment structures will be added as an enrichment tool for the dogs and students alike. The dogs can explore these structures and they will increase training opportunities for students. These are all elements that are lacking from the current dog run.

Additionally, it is a goal of this project to bring more educational opportunities to the public with regards to the function of the teaching dogs within the DVM curriculum. As stated previously, at the end of the academic year, all of the teaching dogs are adopted out to individuals and families throughout the United States. The new outdoor run would be the ideal location for potential adopters to learn about the how the dogs are utilized within the curriculum, meet the dogs, and interact with them in a safe and comfortable environment.

B. How does this initiative help to achieve the goals of the Virginia Tech Climate Action Commitment Resolution and Sustainability Plan?

IV. Project Goals: Sustainability Perspective

The Mission of the VT Climate Commitment Resolution and Sustainability Plan is to transition the University into a future of environmental stewardship and sustainability. The decision to relocate the outdoor dog run to a more suitable location, as opposed to only updating the current outdoor run, is largely due to the unsustainability and negative environmental impacts of the existing dog run area. In its current location, run-off from the outdoor run drains directly into a stormwater drop inlet, which increases sediment deposition and urine contamination into the nearby creek and pond. Wear and tear from the dogs using the outdoor run every day throughout the school year prevents grass from growing year round. This, in combination with rain and snow, this increases muddy conditions and soil erosion. In an effort to preserve the outdoor run and allow grass to grow back, it is often closed for use during rainy and snowy weather. Consequently, the outdoor run is not functionally or environmentally sustainable in its current location. As stated previously, the outdoor run is an important location for students to socialize and train their dogs off-leash. Closing the run when its conditions are poor has a direct impact on the educational experience of working with the teaching dogs.

Therefore, updates for the new outdoor run to mitigate soil erosion include installing synthetic K9Grass turf, which is a durable, safe, and low maintenance alternative to natural grass turf. Additionally, installing a drainage system that allows the structure to drain appropriately and minimizes run-off into the storm drains or water supply is an imperative objective. The turf will be installed over a compacted level of coarse aggregate to encourage rapid filtration of water through the turf surface. Furthermore, a drop-in drainage system will be installed to maximize drainage from the structure. This will prevent turf cleaning agents from running-off into the environment prior to treatment, as well as divert run-off to a nearby municipal wastewater line in the event that emergency sterilization of the area is required. Lastly, landscaping or garden beds around the exposed parameter of the dog run would be an extra plant-based filtration defense mechanism to prevent environmental run-off.

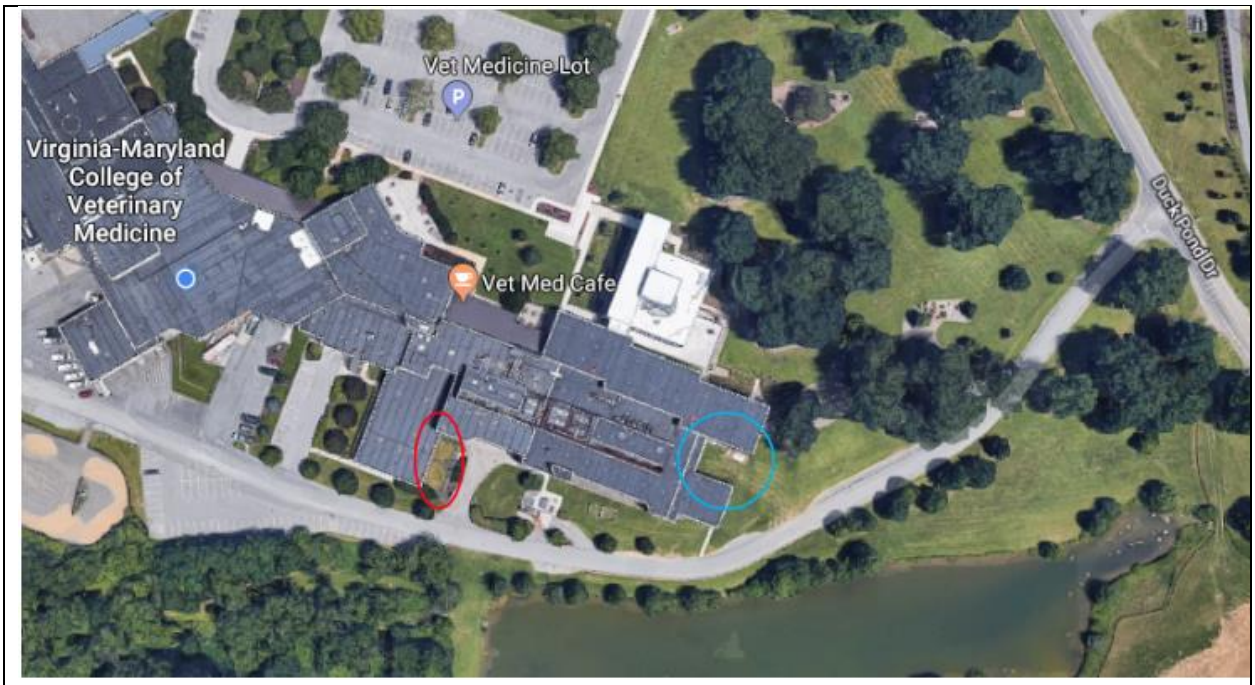

Figure 1. This aerial image shows the current location of the outdoor run (circled in red) and the proposed new location (circled in blue). This alcove is not currently used for any purpose and would make the ideal location for the new outdoor run because it is relatively flat and the building walls can be integrated into the structure, which minimizes the amount of fencing required.

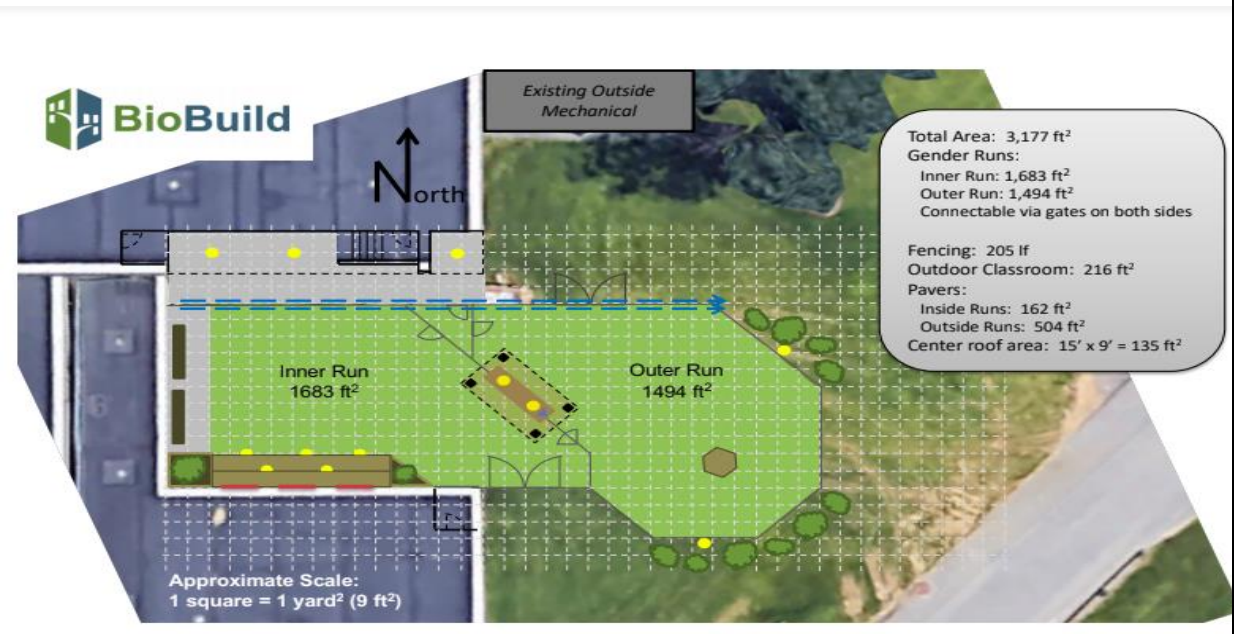

Figure 2. This is the design rendering of the new dog run developed by the BioBuild Studio class. This design would double the size of the current dog run, provide better

water run-off solutions, and increase the overall functionality of the space for the DVM students.

C. What is the cost of your proposal? Please describe in adequate detail the basis for your cost estimate.

V. Cost Estimate

The estimated cost for this project is $87,000 (total cost). However, in-kind contributions provided by the Myers-Lawson School of Construction and BioBuild IGEP classes will roughly half this projection (adjusted cost). As described in Section II, the involvement of the BioBuild Studio class and Spring Construction classes eliminates the burden of hiring outside architects and construction crews for design rendering, construction management, labor, and equipment. Additionally, recovered and recycled construction materials from the Myers-Lawson School of Construction will be utilized for many of the canine enrichment and student amenity structures. Therefore, the adjusted cost of the project, taking these factors into consideration, is $40,000.

Table 1. Estimated Project Budget

Item	**Total Cost**	**Adjusted Cost**
Earth work and site preparation	$1,735	$1,105
Ground surfaces- includes turf, concrete patio, brick pavers, and landscaping	$45,217	$22,239
Site furnishings- includes benches, canopy, enrichment structures, etc.	$16,659	$5,095
Fencing	$15,799	$5,915
Lighting and electrical	$760	$760
Drainage	$2,930	$1,235
Plumbing	$3,755	$3,755
Grand Total	**$86,855**	**$40,104**

D. Will your proposal produce cost savings for the University? If so, how much? Please describe in adequate detail the basis for your savings estimate.

VI. Long-Term Cost Savings

The long-term cost savings associated with this project are the potential use of solar panels and the overall aspects of longevity taken into account with the new design of the dog run. The use of turf and adequate drainage solutions mean that this dog run should be functionally and environmentally sustainable, and require very little maintenance and renovations in the future. Additionally, it is likely that utilizing solar panels would yield negative net energy consumption, meaning that the panels produce more energy than they use. Thus, the excess energy could be sold back to the power company that supplies electricity to the veterinary school.

Lastly, the long-term financial benefits associated with this project are in the form of public perception, and it is difficult to assign a dollar figure to this concept. As described in Section III, one of the main objectives of the project is to increase public education on the function of the teaching dogs within the DVM curriculum. Positive outreach to the public will undoubtedly support the University, whether it be by inspiring young children and teens to attend VT for undergraduate studies, encouraging community members to use the Teaching Hospital for their veterinary services, or anything in between.

E. Is this funding request for a One-Time need or an Ongoing need (**please check one**)?

X **One-time** ☐ **Ongoing**

F. Is funding available for this request from another source? If yes, describe the funding (source, amount, etc.)

VII. Additional Funding

This project is being funded in part by the Virginia-Maryland College of Veterinary Medicine Classes of 2019 and 2020. The combined total contributions from these two classes is approximately $4,500. In addition, VMCVM Alumni will have the opportunity to donate to the project. Efforts will be primarily directed towards graduating classes from the past six years (graduating classes of 2012 through 2018), as this is a great opportunity for young Alumni to perpetuate the positive impact the teaching dogs have on the educations of veterinary students for years to come. While it is unknown exactly how much funding this project will receive from Alumni donations, the Classes of 2019 and 2020 estimate that a minimum of $2,000 will be contributed. Lastly, the Dean's Office of VMCVM will likely contribute to the project, at a minimum matching the contributions made by the Classes of 2019 and 2020. Therefore, additional funding from the VMCVM community is estimated to be between $4,500 and $11,000.

Furthermore, corporate donors with a history of supporting the service learning projects at the Myers-Lawson School of Construction will be approached about providing materials to support the construction of the dog run. These companies include Chandler Concrete, Simpson Strong Tie, and Salem Stone. The value for these items has already been taken into account in the adjusted total budget for the project with the assumption that an agreement to donate will be secured. These donated materials are estimated to be worth approximately $12,000.

Part IV- Requestors/Reviewers

Fran Rowe, DVM Candidate Class of 2020 Prepared By (Name of Contact for Student Organization)	11/15/18 Date
Peter Jobst, Director of Facilities at VMCVM Reviewed By (Name of Appropriate University Official)	11/15/18 Date
Reviewed By (Name of Office of Energy and Sustainability Representative)	Date