

The Ohio State University
Campus as a Living Laboratory

Garden Classroom Proposal

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Executive Summary

Ohio State has momentous plans for the future layout of the University. In the decades to come, the College of Food, Agricultural, and Environmental Sciences (CFAES) will completely relocate to the other side of the Olentangy River. The goal of this move is to better incorporate all academic focus onto one area of campus, thereby removing any major boundaries like the Olentangy River. In order to continue the eminence that Ohio State is known for, the University should incorporate a garden classroom into the new CFAES campus. The emotional, educational, and psychological benefits of creating an outdoor learning space are numerous and convincing.

The garden will be centrally located in the new campus in order to increase use and protection. Production crops and meditative plants will be grown in the various garden beds and tables will be placed within the garden to encourage students to utilize this space as a relaxation area. These same tables will be used as seating for outdoor programs and classes that are held in this space. Organic gardening practices, like natural fertilizers and composting, will be used within the garden to reduce harmful run-off.

Costs incurred from the implementation of this garden, as well as future maintenance expenses, will be covered by funding from student organizations. The projected cost of building the garden falls within the range of funding that is readily available to students groups through both the Ohio Union and Undergraduate Student Government. Ohio State has had other gardening projects before, with varying degrees of success. The proposed garden classroom will play off of the successes and failures of these gardens in order to provide a garden experience unlike any other project at Ohio State. Two distinguishable features about this garden are the accessible centralized location and devotion towards community outreach.

The garden will promote two of Ohio State's Discovery Themes: Health and Wellness, and Food Production and Security. Students, faculty, and community members will experience increased wellness from the therapeutic qualities from this garden. They will also benefit from learning about growing personal food supplies through simple gardening methods.

Adding a simple garden classroom is incredibly feasible and greatly beneficial for many reasons. Various student groups and faculty within the college have expressed support for an educational garden. Therefore, we strongly believe that this garden proposal will meet this overwhelming desire, while bringing many welcomed benefits for the entire University.

Introduction

With the College of Food, Agricultural, and Environmental Sciences (CFAES) moving to the east side of the Olentangy River, The Ohio State University's Department of Environment and Natural Resources faces a challenge in providing adequate learning space for the experiential needs of the school. Within the next few decades, CFAES will move to where St. Johns Arena is currently located to better integrate all academics onto main campus and further unify all Ohio State students. Our group sees the relocation of the campus as an opportunity to develop an outdoor garden space that can function as both a classroom and relaxation area for the new CFAES campus. Many CFAES programs, like the Sustainable Agriculture major, require laboratories to provide hands-on experience for their students. A hands-on learning space would provide practical application of, deeper interest in, and immediate affinity for subject materials. Furthermore, outdoor relaxation areas provide many positive psychological benefits that strengthen our argument for the construction of this garden space on the new CFAES campus.

We propose the development of an outdoor garden classroom located within the heart of the new College of Food, Agricultural, and Environmental Sciences. This classroom will serve as an educational space for classes as well as an outlet for student-led projects. The garden will be arranged in a "Block O" structure featuring four main twenty by four foot raised garden beds along with table and bench seating on either end. The central location of the garden will advertise the experiences being offered and invite students into the learning process. The garden will primarily serve to enhance classes within CFAES, and will therefore require the cooperation of CFAES faculty members interested in incorporating it into their curriculum as a source of practical experience. Secondly, the garden will serve student organizations that petition for the use of the garden space with the cooperation of a faculty advisor.

The research areas of food, agriculture, and the environmental sciences are deeply intertwined, and are exemplified through a garden. Our proposed garden will serve as a focal point for promoting the spirit of the new campus while providing hands-on learning in the areas of food production and security, agricultural techniques, and environmental processes. An outdoor garden classroom will educate and provide leisure and aesthetic benefits to the students of CFAES. Other developments in the new campus will be able to tie into and benefit from the construction of this garden, such as dining services, rain gardens, and waste management services. An area for reflection and relaxation would provide students with a space for

decompression and connection. Stress can be damaging to the physical and psychological health of students, and providing an area specifically for relaxation would help to decrease stress and increase wellness. Spending time outdoors has beneficial effects on people (Miles, 1998). An outdoor area that increases student relationships with the natural world would also increase their passion for their field of study.

In this paper, we will examine the role of this garden through research, as well as in comparison to previous facilities that have had similar goals. Groups like the Student Farmers' Coalition and the Heirloom Garden Café have presented their own themes on campus garden projects and their successes, as well as their failures, will be essential points of research for our proposal. Additionally, we will examine the logistics of organizing and maintaining a student led gardening project as well as psychological benefits that students may experience. We will address questions of leadership, sustainability, and long-term objectives of the garden. The environmental impacts of agriculture on campus and the river system are also discussed. We conclude by outlining the specific benefits of our project and how it fits into the Discovery Theme goals of OSU.

Proposal

The garden will be located in the midst of the new CFAES campus. The exact layout of major buildings has not been finalized, therefore the precise location of the garden cannot be determined. The garden will be embedded in the new campus in order to increase protection from outside hazards that may arise due to people and pests. The garden plots will be enclosed in scarlet colored raised wooden beds that will follow the "Block O" theme by integrating Ohio State's school colors. The raised beds will help reduce runoff that may stem from the garden and also help to close off and define the beds. The four larger beds will be primarily for agricultural and production purposes. The three smaller beds located on each end of the garden will be the first option for more relaxing and meditative plants. This placement is due to the table seating that will be located on each end, allowing students to closely interact with those particular plants. Produce grown in the beds each year will vary depending upon the wants and needs of the individual student organizations that will take leadership each year. The garden will be able to house both production crops and vegetation that is used more for beautification and aesthetic purposes. Students will be able to enjoy the psychological benefits of certain plants when they are sitting directly next to them. Keeping the types of plants separated will allow students and

passersby to more easily differentiate between the vegetation types. Organic gardening practices will be implemented in order to reduce the garden's environmental impact. This type of gardening will also help to support the School of Environment and Natural Resources goal of teaching sustainability, especially through sustainable land management. Please see Figure 1 below for the exact layout.

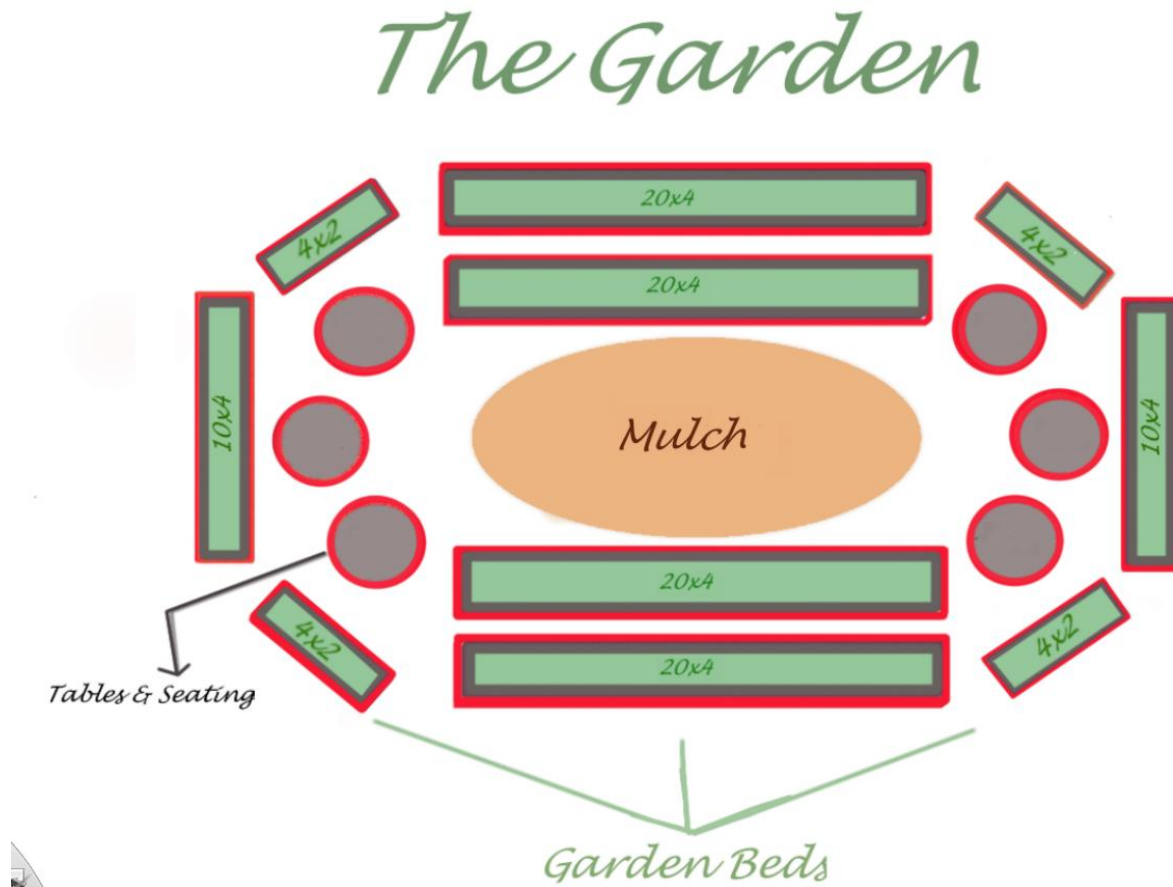


Figure 1. A schematic showing the proposed garden layout.

Maintenance and Implementation

Reliable funding, physical labor, and continuous care are the three biggest concerns specific to this garden plan. Integrating student organizations into this ambitious garden plan will provide access to necessary resources and labor to not only start, but also successfully sustain an idea that will greatly improve The Ohio State University.

Student organizations at Ohio State are automatically connected to various funding opportunities that can be dedicated to buying necessary garden materials. The Ohio Union provides funding for active student organizations through the Council for Student Affairs, Undergraduate Student Government, and links to external grants. The Council for Student Affairs can provide a student organization with two hundred dollars for operations and three thousand dollars for programs open to all OSU students. With the garden bed measurements and general garden layout in mind, this garden space is roughly 700 square feet. The average start-up costs can reach up to 7,000 dollars, but these estimates include many non-applicable costs like land permits, building entire irrigation systems, and land insurance (Langellotto, 2012). Therefore, we can expect costs no higher than roughly 3,000 dollars. Theoretically, a student organization looking for a new project can undertake this garden plan and easily acquire funding to get it started. Organizations can use two hundred dollars strictly for supplies like garden tools and soil, and three thousand dollars to host a fundraiser or open program that will generate money, donations, or further support (The Ohio Union, 2014, p. 16). As long as the organization is active and in good financial standing with the Ohio Union, they are guaranteed funding. Additionally, registration guidelines set by OSU state that “funds should have an impact on the campus community... and should benefit the student body and University as a whole” (The Ohio Union, 2014, p. 3). Starting a garden that provides a plethora of benefits for the student body is a responsible and sustainable use of funds. Undergraduate Student Government also provides up to one thousand five hundred dollars for undergraduate student organizations on a reimbursement basis which is yet another accessible and easy way to get funding for this project (Picha, n.d.).

Continuous care and labor are also vital in protecting these gardens and maintaining their productivity. Most student organizations require their members to invest time in community service, volunteer work, or Ohio State related projects. While these organizations do not have to volunteer, official registration guidelines state that these groups must “serve as a medium for community service” and work to “make an effective learning environment” for all students (The Ohio Union, 2014, p. 2). Evidently, student organizations are strongly encouraged to give back to their communities and participate in projects that enhance the University for everyone. Each student group is required to write a Constitution outlining their rules and, coincidentally, most of the environmental student organizations require some type of project involvement or community service. Ideally, this commitment can be dedicated towards time and labor for starting the garden

as well as weekly volunteer hours to tend to the crops while they grow. Moreover, the goal is that involved student organizations have a true passion for this project and will tend to it not because they have to, but because they want to.

Student Farmers Coalition (SFC), The Sierra Club, and Collegiate Young Farmers are several student organizations that are capable of undertaking this garden project. The leader of Outreach and Collaboration in the Student Farmers Coalition provided great insight regarding the capability of student organizations and what needs must be met in order to successfully start and maintain this proposed project. As long as the faculty advisor of a student group approves the project and enough time is provided to gather resources and support, the individual in Student Farmers Coalition believes that this garden project would be a massive success. The importance of having the faculty advisor on board is crucial because they have the most influence and power in getting permission and needed resources. The reason for recruiting environmentally based organizations is because most of their faculty advisors are within CFAES and therefore have a direct connection to this project. Another important requirement is that detailed plans are provided well in advance of the actual start date. Student organizations often plan their projects and volunteering years in advance (H. Peller, personal communication, February 27, 2014). Because this project is many years down the road, providing a comprehensive, well thought out, and practical plan is the best way to get student organizations on board. Providing such advanced notice also gives student organizations time to gather their resources and apply for funding. Most importantly, finding organizations that are interested in this project, like Student Farmers Coalition, is crucial in making sure that there will be passionate students who are willing and eager to see this project succeed.

While no organization has formally committed to this project, members of the previously mentioned student organizations have shown strong support and interest. Environmental student organizations show interest in this project and have the necessary resources to get it going. Therefore, relying on student organizations to kick start and sustain this garden project for the new CFAES campus is an effective solution.

Comparative Analysis to Past and Current Garden Projects

The consideration of any project must include the examination of similar projects that have come before it. The Ohio State University has hosted gardening projects before, and their experiences can help shape our expectations and goals for our own project going forward. We

must also thoroughly consider what resources are already available in order to avoid redundancies and understand where there may be demands that have not yet been met.

One applicable project is the Ohio State Student Farm at the Waterman Farm Laboratory, managed by The Student Farmers Coalition (SFC). The SFC has run a community supported agriculture program for the past three years using the land they are provided on Waterman Farm. Members of the Ohio State faculty and student body can pay an upfront fee for weekly deliveries of vegetable produce grown by organic and integrated crop management methods.

Aside from producing food for Ohio State students and faculty, the Student Farm has also functioned as an educational facility, which has occurred both formally and informally. Formally, students in the Sustainable Vegetable Production class, taught by research associate Elaine Grassbaugh, are required to complete a certain number of volunteer hours on the farm in order to complete the class. This opportunity provides them with hands on experience implementing the techniques they learn in the classroom. This is a unique opportunity for students to put theory to practice in a social and cooperative learning experience. Education also occurs informally on the Student Farm through student volunteers who elect to spend their free time on the farm for the purposes of their own enrichment. The Student Farm has hosted a number of interactive community events, including last year's Harvest Tunes music work night and popular earth day potlucks.

While the Student Farm does earn some revenue through its community supported agriculture program, it still operates at a significant loss year to year. Annual expenses include tool acquisitions and maintenance, seed and plant purchases, annual expendables such as row cover, and most significantly, the price of labor to maintain the farm. Much of the farm's labor is voluntary, but a few student managers are paid hourly. The Council on Student Affairs has not been able to meet the financial needs of sustaining and expanding the Student Farm. This expense has previously been met by dedicated grant writers within the SFC, who just last year earned a \$15,000 Coca-Cola sustainability grant that helped to add a composting project. However, relying on grants has left the farm's future in a tenuous position because the money is never guaranteed every year. Also, the funds rely on consistently engaged student leadership that remains committed to the Farm's success throughout leadership changes as members graduate and move on. Without reliable University funding or a significant remodeling of expenditure, the Student Farm faces an uncertain future at Ohio State.

The other serious problem facing Waterman Farm is related to its location. While Waterman Farm is ideal for its fertile land and access to industrial farm tools, it is remote and difficult to access without a car, especially in the winter when bicycle riding is unpopular. Waterman Farm is on the far northwest corner of campus between the busy roads of Lane and Kenny. There is only one infrequent bus that stops at the location and walking or cycling is dissuaded by the volume of traffic moving around the farm. This obstacle has caused volunteer attendance to suffer, and limits exposure of the farm to the general student body. Even amongst agriculture majors, few students are aware of the existence of the Student Farm. This social and physical distance between the farm and the school will only increase with the new CFAES campus relocation to the other side of the Olentangy River.

Another student-led gardening initiative on campus was done in conjunction with The Heirloom Cafe, located on east campus. The Heirloom Garden was designed as a private garden that grew produce exclusively to be served at the Heirloom Cafe. The Heirloom Garden also earned a Coca-Cola sustainability grant for its start-up funds, but only existed for two growing seasons before relocating off campus. The Heirloom Garden was located in an ideal location directly off of the Oval and connected to the Wexner Center for the Arts.

Despite its prime location, the Heirloom Garden failed to gain significant traction in the community. One reason was its inconspicuous advertising, lacking any signage to notify anyone that it existed. It also failed to engage the community because it was a private garden, used exclusively for private consumption. The space was small, busy, and unfit for use in community events. The private use and public location of the garden were at odds with each other, which led to the garden's eventual relocation.

Other gardens exist at Ohio State today for the pleasure of the public. These include the Howlett Greenhouse, the ornamental gardens around The School of Environment and Natural Resources, and the Biological Sciences Greenhouse. All of these facilities offer opportunities to students, but none of them serve to engage the community and invite cooperative learning. Our garden project fills in the gaps left by these previous projects and supports the goals of the Ohio State mission. The role of the garden is best illustrated by reflecting it against the stated Discovery Theme goals of the University.

Discovery Themes

Ohio State has developed three main Discovery Themes to focus their efforts on: Health and Wellness, Energy and Environment, and Food Production and Security. The purpose of these Discovery Themes is to exemplify Ohio State's ability to provide advanced technology and ability in these areas, while helping to solve social, technological, and environmental problems of today's global society (Ohio State, 2014). The proposed garden classroom will aid in two of these Discovery Themes: Health and Wellness, and Food Production and Security.

The focus of the Health and Wellness theme will be "on such issues as disease prevention, community health, and health systems" (Ohio State, 2014). The garden will directly influence the health of the Ohio State community. Students, faculty, and community members will be able to experience the mental and physical benefits of the garden. Participating in gardening, as well as enjoying the aesthetic pleasures of them, is proven to have therapeutic qualities on people. Individuals' enjoyment of everyday activities is often increased by active participation in gardening (Hale et al., 2011).

The focus of the Food Production and Security theme will be "on enhancing the quality of food and animal feed and ensuring an adequate, affordable, and safe food supply for a global population" (Ohio State, 2014). The first step taken in order to secure and increase safe food supplies around the world is spreading education about the importance of the issue. People who do not know the importance of having a safe food supply, or the dangers that could occur if a major disaster happens, will not take the initiative to make any changes in their life or practices. However, spreading education on these issues can help Ohio State reach this theme goal. The importance of backyard gardening can easily be taught through the garden classroom. Students, faculty, and their families can benefit from new knowledge on how to secure a personal food supply through gardening. Ohio State can use the garden as a mode to communicate the importance of gardening and food security to its students and local community members.

Garden Benefits

There are many additional benefits to starting a student garden project at The Ohio State University. A garden can be substituted with a piece of art, or some tables and benches, but the holistic benefits of a garden are much more powerful. Studying the benefits of having connections with natural space is a relatively new area of research, but these benefits are starting

to gain significant credibility. Students live in a world full of unnatural distractions, and it is easy to lose sight of the natural environments from which humans originated.

One of the highest priorities of this University should be to promote the mental health of its students. With so much going on in the life of a college student, stress and anxiety is all too common. Classes, social spheres, and paying the bills are enough to cause stress for anyone, and college students who are relatively new to these processes often have difficulty adjusting to the stress that comes with these responsibilities. Our goal is to create a healthy, natural space where students can go to reduce stress, relax, and enjoy the beauty of nature.

One theory of the cause of underlying stress in many people is the idea that humans do not change their state of mind when they change environments (Stevens, 2010). Paul Stevens, a physician at the Centre for Well-Being & Quality of Life in the UK, has been pressing the need for a paradigm shift from an isolated society to a much more integrated one. Most modern humans consider themselves separate from nature, when in reality we are all part of a much larger process. Holding the idea that we are not part of the natural processes has created a state of mind that is unchanged by the environment around us. The basic forms of interaction that allow us to perceive the world are blocked out because they come from a source that most humans do not consider themselves a part of: the natural world. This false mindset is a major factor in mental health and stress levels. By looking at ourselves as a part of nature, one's state of mind can be transformed by the smallest actions. Picture this: A student has just taken a test, which they believe they did very poorly on, and therefore they are stressed out. While leaving the building, the student pays no attention to the light breeze, the cheerful bird songs, or the warming rays of the Sun. Stressed out and angry, the student walks home in a rushed pace and unwinds by watching their favorite TV show. Now, say that the student considered himself or herself to be as much a part of nature as it is of them, a practice termed by Stevens as adoptive perception. The physical interactions we have with nature (i.e. light breeze, bird calls, and sunshine) can have an effect on the state of mind of the student, as one's state of mind should be determined by their surrounding environment. The students' mood would benefit from this interaction.

A garden would provide a convenient way for students and community members to receive these small, natural interactions. If we do not recognize the importance of nature in our lives then we are shielding ourselves from potential psychological benefits. We simply go from one task to the other, letting our emotions dictate our state of mind, and blocking out the natural

interactions we have with the environment around us. This paradigm of isolation needs to change in order for the mental health of our society to flourish. Adding a peaceful garden to the CFAES campus will provide a haven for students and community members alike, to spend time relaxing and receiving the soothing beneficial interactions from nature.

Another supporting reason for the construction of a garden on the CFAES campus are the positive effects that vegetation can have on crime rates in urban, inner-city areas. While campus is not necessarily considered “inner-city,” it is located within the large city of Columbus, and deals with many of the same problems that inner-city areas face. For instance, vandalism and theft are problems in almost every area of the world. In a study conducted by Frances Kuo and William Sullivan out of the University Of Illinois, they found that, when studying the crimes rates of 98 different housing complexes, there was a very interesting trend regarding the amount of vegetation surrounding the complex. With other variables considered, such as randomness of residents and number of units per building, the study found that residents living in complexes that were surrounded with more vegetation had less violent and aggressive behavior, lower levels of fear, and fewer incivilities than compared to complexes that had less vegetation (Kuo, 2001). This study was only applied to vegetation that does not impede the visibility of the surrounding area, as that type of vegetation has been shown to have the opposite effects on fear levels. When the vegetation was maintained, participants also felt a sense of territoriality over the area (Kuo, 2001). Therefore, we can assume that the construction of this garden may aid in declining crime rates on the new CFAES campus.

Having a garden on the new campus can promote a positive state of mind, while also providing naturally beautiful ornamentation. The garden will contribute maintained vegetation, which can help lower fear and crime rates around the CFAES campus. The natural décor will also add a sense of territoriality for the students living around it, as they will see it as a part of their living situation. By simply adding maintained vegetation to the new campus, OSU students can experience a plethora of positive benefits. With significant research to back up these findings, the benefits of implementing a garden on the new campus are undeniable.

Discussion

There are many questions to answer before this garden project can become a reality. Un-sustained funds and labor, potential lack of support from the CFAES administration, and social and environmental degradation are three major obstacles that must be addressed. While many

organizations share their interest and commitment to this project, there must be a way to solidify support. Student organizations also need to be held accountable for their management of the garden space. Creating a formal contract with a student organization to incorporate this project into their Constitution and mission is the best solution. For example, Student Farmers Coalition and Students for Food Sovereignty have a long-standing agreement to volunteer at Waterman Farm and commit their time and effort towards sustaining this particular facility. If this agreement can be enforced for a multi-acre farm, it can definitely work for a smaller, more accessible garden plot. Given the amount of time before this project will begin, a contract can be written for an existing student organization or for a newly created organization focused specifically on the proposed garden. This will require careful thought and realistic expectations, but it is something that must be considered in order to ensure a sustainable CFAES garden.

More importantly, if the CFAES administration does not support this project, it simply will not be adopted. Each student organization potentially interested in this project has a faculty advisor who serves as the final decision maker and must agree with this garden plan in order for it to move forward. An agreement such as this has not been guaranteed at this time. Formal agreements are an option, but these contracts have to be precise in materials, time, and money required. Therefore, the next step in this project is to perfect a garden layout, create sample contracts for students and advisors, and calculate the exact amount of money and time needed to complete this garden.

We are confident that securing a sustainable source of support for this facility will not be a challenge. After speaking with several authority figures and staff members within the CFAES, the demand for an experiential garden is unwavering. Students involved with previously mentioned organizations voiced strong support for an agricultural learning garden that can be utilized by students, groups, and classes. Additionally, many faculty members agree that the presence of such a unique space would provide a learning experience unlike any other. The fact is that such a unique learning environment is in high demand and will be eagerly embraced by the Ohio State community.

Negative social and environmental impacts can potentially harm the productivity of this garden, however we have several solutions to ensure success. Such impacts include vandalism, dangerous run-off, waste dumping, and general environmental degradation. To prevent hazardous run-off from polluting the Olentangy River, our garden will exclusively use organic

gardening practices that will eliminate the use of harmful pesticides. Any additional run-off, whether it comes from our garden or the surrounding green space, can be controlled with the implementation of rain gardens around the new CFAES campus. This optional rain garden implementation plan can be left at the discretion of Sasaki or transform into a student collaboration opportunity.

Vandalism and excess littering is another prominent concern that we can comprehensively address. Firstly, we can provide extra trash, compost, and recycling bins surrounding the garden so students have a plethora of waste disposal options. Secondly, we can post signs utilizing descriptive norms around the garden urging students to refrain from littering and vandalism. Many sociological studies have proven that posting signs with descriptive norms, phrases like “Join your fellow citizens in keeping our gardens clean and safe”, are extremely effective in preventing destructive behavior (Tracey, 2005). Descriptive norms are so effective because they indicate that an entire group is participating in a specific behavior, so the reader is inclined to participate as well. Ultimately, we believe these first two strategies will effectively deter Ohio State students from damaging this garden.

Unfortunately, preventing non-Ohio State students and outside community members from destroying this garden space is a different challenge. However, this challenge is met with an easy solution due to 24-hour security surveillance of Ohio State’s main campus, conducted by the Department of Public Safety (“University Security and Protective Services”, 2014). The garden will be located within the new CFAES campus, which falls inside the area protected by OSU police. Therefore, we are confident that OSU can provide enough surveillance to discourage outsiders from trespassing or vandalizing our garden.

This project will also convey impactful psychological and environmental benefits that would otherwise be impossible if the space was used differently. The creation of this garden will improve environmental conditions surrounding the campus by increasing natural capital and buffering dangerous runoff. The concrete surface area on OSU’s campus is immense and developing green space, particularly garden beds, reduces the amount of runoff that goes into our sewers and pollutes the Olentangy River. Developing natural capital is an environmentally responsible way of decreasing the flow of harmful chemicals. The use of organic techniques within our garden will lower pollution and increase awareness regarding safe gardening practices. This is yet another opportunity to protect our natural resources and promote

responsible actions. Furthermore, many studies show the psychological benefits of having gardens and increased vegetation. College is one of the most stressful times in an individual's life, and it is irresponsible to disregard environmental projects that could alleviate that stress and improve the psychological status of our students.

Ohio State is more than capable of bringing this project to life because of its simple layout and straightforward process. The science behind proper gardening lies in ground preparation, constructing garden beds, planting seeds, and tending to crops. Building and maintaining gardens has been done for centuries and it has proven to be a positive and simple cycle. Moreover, the land is available and should be used for a project that is productive and beneficial for all. The attractiveness of this proposal lies in its simplicity and feasibility. These key points are the strongest reasons for why the garden is a practical, beneficial, and sustainable use of resources.

Conclusion

This proposed small-scale garden project will have huge positive benefits for the College of Food, Agricultural, and Environmental Sciences. This outdoor learning garden aligns with the Discovery Themes of Ohio State and the mission of SENR by creating a psychologically and environmentally beneficial haven. Getting student organizations involved minimizes external costs and labor needs while enhancing connectivity and growing their passions. Ultimately, this project can redefine Ohio State and transform the University into a leader in environmental enrichment.

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