Environmental Studies Capstone 2016

Strengthening the Southwestern Community Garden
Acknowledgements

Contributors

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IHEs, including Southwestern, have always played a critical role in our society as sources of new knowledge; “for dissemination of knowledge to civic leaders, professionals and members of an educated society; and for their intimate connection with the major institutions of our society. By virtue of their highly leveraged impacts on the nation’s economy and society, they are often described as engines of change” (Cole, 2009).

The Southwestern University Community Garden is currently an undervalued asset that has historically contributed greatly to that positive change. Founded in 2008, it has been the site of countless projects and studies within the campus academic community, helped feed the larger Georgetown community through programs like Meals on Wheels, been designated as a wildlife sanctuary, hosted several volunteer work day events alongside other large organizations, and most importantly, has contributed to the realization of several of Southwestern University’s core values: “cultivating academic excellence, promoting lifelong learning and a passion for intellectual and personal growth, fostering diverse perspectives, and encouraging activism in the pursuit of justice and the common good” (Burger, 2015).

However, institutional support is beginning to collapse for this essential part of the campus community. With the loss of a few of the campus garden’s long-standing supporters, Bob Mathis and Molly Jensen, as well as the de-funding of the garden’s CELTA (Community-Engaged Learning Teaching Assistant) position, it is now more important than ever to re-solidify the garden as an essential space for the realization of Southwestern
University’s core values and growing commitment to sustainability. While Southwestern has historically done well in terms of student engagement with the garden—as evidenced in the many awarded grants for projects such as raised beds in 2015 and a hydroponics system in 2014—its participation in The Big Event volunteer project, and its feature in several Southwestern University articles and magazines, it continues to be important to grow and expand the garden (Barrera 2014 and Davis 2013).

This project aimed to solidify the Southwestern University Community Garden as a valuable and sustainable institution of the campus community. Southwestern University Community Garden can be more fully integrated into the larger goals for achieving sustainability in order to remain a competitive IHE which “encourages contributions toward the well-being of humanity” (Burger, 2015). Not all of these goals were completed by the end of the semester and instead will require engagement with future gardeners in order to achieve sustainability in the long-term. Overall, the goal of this capstone is to ensure that the necessary resources, knowledge, and infrastructure are in place for the continued success of our Southwestern University Community Garden. As a whole, this document and its supplementary resources serve as a record of the projects we completed this semester as well as a guide for future students and faculty interested in continuing this important work.
University campus gardens have their own unique benefits and challenges. This review will look at how other universities maximize the potential of their community gardens as well as how they solve the problems they have faced. The sources indicate a wide variety of solutions that are available to solve common issues that must be tailored to each campus and its community.

An article by The University of California, Berkeley communicated how students have guaranteed the longevity of their campus garden (Wall, 2015). The campus garden is run by the Student Organic Garden Association (SOGA), which is responsible for upkeep and for writing grant proposals each year that keep the garden funded. Measures include hosting classes in the campus garden (such as “Organic Gardening and Food Justice” and “Garden Leaders”) in which students get a chance to create their own garden projects and learn how to manage a garden, internships that help students get connected with other urban gardens in Berkeley to further develop garden management skills in their community, and hosting workshops and programs for local school children (Wall, 2015).

In a case study conducted at Northland College in Ashland, Wisconsin, a student population of just 750 created a sustainable business model for their campus garden. The students implemented methods offered by Oikos International, such as renting plots to students and local citizens. In order to keep the garden managed
over holiday periods, Northland has a position responsible for garden maintenance while students are absent (Neel, 2009). Additionally, Northland College’s campus garden rents plots to local residents during the summer, which also helps to alleviate labor shortages.

Trinity University is another case study to examine. In 2011 the students of Trinity founded a campus garden to form an eco-space, despite the campus having an unsuccessful garden in the past (Lewis, 2011). Initially founded in 2001 as part of a student seminar, the original garden withered and was abandoned due to lack of student interest. In the following years, attempts to revive the original garden were only successful when garden work was integrated into a class, and deteriorated when there was no academic incentive. They found that while generating an extracurricular interest in the garden is important, it is equally if not more important to encourage the integration of the garden into classes. Using the garden to compliment lesson plans would ensure the continued maintenance of the garden while also enriching the classroom experience.

Public access and sense of community are key for maintaining active involvement in a garden (Klein, 2014). Greater accessibility to those who may have disabilities and greater awareness of the garden location through signage help maximize the number of volunteers who put time and effort into the space. The use of social media allows the students to further connect with the garden and spread knowledge of events to a wider audience. Building a sense of community while avoiding feelings of exclusivity to less frequent volunteers must be addressed.
The intention of our capstone this semester was to integrate the Southwestern University Community Garden further into the campus community and to create a space with a wide variety of uses to apply to a greater range of students and faculty. By making the space one that is more involved with the university and its community, we hoped to make it a more sustainable organization with continuous involvement, thus eliminating the challenge of the ebb and flow of participation.
An important aspect of our group project is to physically modify and add on to the current garden infrastructure.

We focused our efforts on a few major projects: constructing new raised beds, preparing the outdoor classroom area, reclaiming the neglected hillside, redesigning the master plan, and other smaller aesthetic improvements.

To construct the raised beds we implemented simple building techniques and materials with the end goal of creating a more accessible bed with fewer weeds. To prepare for bed construction, we removed the existing garden plot and leveled the ground. Next, we dug two trench perimeters for the cinder block walls of our 4x4 raised beds. We laid out overlapping layers of black weed-cover mats over the areas we were going to build on. To build the walls, our raised bed design utilized cinder blocks and cob mortar to bind. To make the cob mortar we mixed 1:1 ratio of sand to clay/soil on a large tarp. Next we added water and straw to the mixture while mixing the cob with our feet. After thoroughly mixing the ingredients, we applied the cob mortar to the tops of and in-between our first layer of cinder blocks. Continuing this way, two layers of cinder blocks were added to the first. To fill the beds we first placed cardboard down to sheet mulch the base of the beds. Next we placed a layer of logs and sticks (that will eventually decompose and
return nutrients to the soil) on top of the sheet mulch. Then we filled in the rest with a 1:2 ratio of soil to compost. Lastly we topped off the beds with 3” of mulch. This project was open and welcome to the whole campus community, involving several students not normally involved in the garden, and engaging others through popular posts of the project on social media.

To reclaim the neglected hillside, we first removed the tattered weed mat that originally suppressed weed growth. Next, we removed weeds and rocks using hoes, shovels, and other tools. We then added fresh soil to the hillside and broadcast seeded native grasses. Unfortunately unseasonable temperatures and existing weeds inhibited seed germination. After this, we modified our plans and constructed two systems of berm-swales to reduce runoff and erosion. Lastly, we re-seeded the hillside using seed balls that contained compost to achieve higher germination rates. Currently, the hillside is ready for cover-cropping and terrace construction that could possibly result in a good seating area in the future.

The Master Plan of the garden, originally created by Bob Mathis, was redrawn and edited by our capstone to reflect the previously mentioned changes we
wanted to make, as well as possible changes we could pass on to future garden
generations. The use of maps was particularly important in the decision making
process because creating several drafts allowed us to effectively communicate ideas
to the members of the Garden Club, making these projects more inclusive and not
limited to people within the capstone group.

Outside of these major projects, there were also a large number of important
aesthetic improvements made to the garden. A bamboo screen was placed on the
fence bordering Physical Plant, providing more privacy and creating a more
peaceful atmosphere within the garden. Another small action with huge aesthetic
value was the painting of the benches and tables within the garden with bright,
singular colors. Before, these furniture items were painted lovingly, but messily,
with a patchwork of colors, and now the benches are yellow and the tables are
orange, simultaneously brightening and unifying the center seating space of the
garden. A third important aesthetic improvement was the planting of plants that are
native, culturally significant, and aesthetically pleasing. By planting more native
plants, the work necessary to maintain the garden was lowered, improving
appearance in itself by being easily negligible. Another way maintenance needs were successfully lowered was by reducing the number of beds, thus reducing the amount of space to weed, water and otherwise maintain.

Cleaning up and aesthetically improving the garden was a huge achievement during the semester. Though appearance is sometimes second on the mind of those who value the space for its educational and agricultural value, it is often important in the minds of those who consider investing in a space or of students and faculty not associated with the garden who wish to use the space for other reasons. Cleaning up the appearance and functionality of the garden and greenhouse allows all parties to use and enjoy the space however they see fit.
In order to engage with the Southwestern Community on a higher level, our Capstone group knew that we needed an improved classroom space. Not many professors use the garden as a classroom space because there is not a designated or easy to use area in the garden for classes. The professors that do take their classes to the garden are often crammed uncomfortably in the small center space. Using grant money that we received, we were able to purchase gravel, tarp, and plastic lining to create a designated classroom area. After much labor, we completely cleared a large plot out of the center of the garden to accommodate a real classroom space. We added the tarp, gravel and liner. We received funding for benches or chairs and for the construction of an outdoor lecture stage. The completion of this project is still underway and will be completed during the summer.

There were several reasons for the construction of an outdoor classroom space. This classroom space in the garden would allow for interdisciplinary learning, deeper engagement with Southwestern students and faculty, and, of course, more awareness and participation in the Southwestern University Community Garden. Southwestern prides itself in its emphasis on the liberal arts experience, and more specifically, on interdisciplinary learning. The garden would be the perfect space to emphasize this. Bringing classes from different disciplines into the garden to learn and interact with the garden is an amazing example of interdisciplinary learning. This classroom space would also allow for the Garden Club to become more involved with the Southwestern Community. Many students and faculty do not know where the garden is or how they can use it and if more faculty brought classes down to the garden, awareness and participation would increase immensely.
Campus Outreach

Garden Socials

Having monthly socials in the garden was a useful way to bring people to the garden. The garden socials that we had were always potluck style and sometimes had a theme to them. One of the themes this year was Essential Oils. We used the lavender, sage, and rosemary plants in the garden to teach students an easy way to make essential oils. Our biggest campus outreach was the Garden Movie Night. We had a major PR campaign leading up to the event and we grilled free burgers and showed a movie, all for the campus community to enjoy.

Yoga

One of the Garden Club members leads a Sunday Yoga Session every Sunday in the garden. This is another method of campus outreach and a great way to utilize the garden space. Yoga classes can be expensive and offering a free session once a week is another way to engage with the community and show them what the garden has to offer them.
Professors

We reached out to a few professors this semester and were able to receive several commitments from them to work with the Southwestern University Community Garden. These commitments ranged from having mandatory work hours in the garden to holding a class in the garden every once in a while. The outdoor classroom space should also serve professors well once it has been completed.

Student Organizations

Because student organizations often already have a lot happening on their own agendas, it was more difficult than we anticipated to get organizations involved. Many seemed interested in the service hour aspect of the garden, but never followed through. Just speaking about the garden to the entire organization raised awareness, but did not necessarily increase their participation.

Prospective Students

We also worked with the Southwestern Office of Admission to increase awareness of the garden to potential incoming students as well as to give the Office of Admission an edge when showing how environmentally friendly and sustainable Southwestern is. The Office of Admission added more information about the SU Community Garden and even included taking students down to see it on Admitted Students Day and Top Scholar Weekend. For Admitted Student Day, it was used as a service opportunity if prospective students were interested and for Top Scholar Weekend it was one of the locations on their scavenger hunt activity. The Office of Admission turned out to be a valuable campus partner in promoting the SU Community Garden.
In order to have a sustainable garden members must have sustainable ways to kill pests such as the invasive fire ants. Diatomaceous Earth can be used in organic gardening, is nontoxic, and is effective at killing insects. This type of pest control uses powder-sized crushed shells to tear through insects when they walk over it. This was mixed into the raised beds to limit the fire ant population there.
Weather

The weather was a challenge at times when we were trying to maximize our productivity, but this is an aspect that is unavoidable when working in any garden. When the weather was particularly bad for days in a row, it was understood that our group would have to work that much harder the next week to make up for lost time. An upside to rainy weather was that we knew the garden was receiving plenty of water.

Public Relations

Our public relations efforts consisted of speaking to different organizations and classes, posting flyers, banners and campus notices, and creating Facebook events. Public relations was a challenge because it was hard to remember to keep up consistent advertising when there were so many other jobs to be done. Our initial strategy was to go to the meetings of different organizations to raise awareness about the location of the garden, how students can get community service hours by working in the garden, and to tell them they had the opportunity to adopt a plot and cultivate whichever plants they would like in their plot. Only one organization adopted a plot, but going from organization to organization still raised awareness of the garden for many students. We heavily publicized Sunday Yoga Session in the garden which is led by one of the garden members.

Our biggest push for publicizing the SU Community Garden was hosting the Garden Movie Night. We painted banners, printed flyers to hand out to classes and to put inside napkin dispensers in the Commons, created a Facebook event, and used our own social media accounts to boost the event. All of campus was welcome and
we showed *Ghostbusters* on a huge inflatable screen in the center of the garden. We also served free hamburgers as another way to persuade more people to come. This event was about showing all of our hard work that had been done, raising awareness of the garden and the location of the garden, and being able to give back to the community and engage with more students.

**Funding**

It was fortunate that the garden already had some small funds we were able to use to get started. These funds were from a SEED Grant and the student organization funds from the school that any campus organizations can request and apply for. However, once we decided on our big goals that would need more funding, we knew we would have to apply for grants. Since we only had one semester for our project, we quickly applied for the available grants. We submitted proposals for the Presidential Innovation Grant and the Green Fund Grant, and were extremely
fortunate to receive a generous donation from an anonymous donor. The Presidential Innovation Grant was for the garden classroom space and for the lecture stage for teachers that we hope to get contracted. We also received a Green Fund Grant to cover the other half of the costs for the classroom and stage area. Left over SEED grant money went into more pollinators and transplants. We drew from the anonymous donation for items like new tools, gloves, hose dispensers, decorations, paint and transplants.

Campus Support

Professors were very supportive and open minded about working with us to get their classes involved in the garden and also let us come speak to their classes about opportunities to work in the garden. Dr. John Ore of the Environmental Studies and Theater Departments agreed to voluntary summer work, but come fall and spring, he will designate a certain amount of garden hours that will be
mandatory for his Theater Sustainability course. Dr. Joshua Long agreed to continue the use of the Southwestern Community Garden in his Sustainable Food and Agriculture course. The Southwestern University GIS professor, Anwar Sounny-Slitine, agreed to implement the garden into his GIS courses. Finally, President Burger has also agreed to use the garden as a classroom space and has been especially supportive by granting us funds from the Presidential Innovation Grant in order to create the classroom space and stage area.

Campus clubs and fraternity/sorority meetings were attended, encouraging student participation as organizations. The newest sorority on campus, Alpha Kappa Alpha, committed to adopting their own plot of vegetables that they have regularly weeded and maintained independently from garden club members. A challenge in the past has been student organizations committing to a plot in the garden, then leaving the maintenance to Garden Club members.

Paideia is already in the works of being engaged, and most recently the Situating Place Paideia cluster has included the garden in its activities. With the installation of the outdoor classroom stage, it is only a matter of time until the Southwestern University Community Garden is successfully integrated into the Paideia curriculum.
Summer is always a difficult time for the garden. Increased temperatures and lack of students available for gardening leads to plots becoming overgrown with weeds and crops dying of drought. With this challenge soon upon us, our group assisted Garden Club members with successfully writing a grant for two garden workers over the summer. This will help reduce the amount of work needed to prepare the garden for fall planting in September. Additionally, we’ve recommended summer preparation protocols that include cover-cropping unused beds to inhibit weed growth, establishing watering/weeding schedules, and coordinating with Physical Plant to setup automatic irrigation in certain beds. These tasks are planned for the beginning of the summer and will be modified as needed depending on changing circumstances.
After putting in countless hours of hard labor, we can look at the tangible evidence of our efforts in the garden and know it will sustain and make a difference in the Southwestern Community. The classroom space is almost completed as well as the raised beds. The space looks neater and more colorful with newly painted benches, art pieces, and fewer beds to manage. There has been a huge marketing push that has brought out student organizations, President Burger, prospective students and current students. The Garden Movie Night was a huge success and will be repeated in future semesters. Though not every action we took this semester turned out as planned, these projects were not in vain and have added up to achieve our original goals of the SU Community Garden being more strongly integrated into the Southwestern Community and being a space with a wide variety of uses.

In addition to the pre-planned projects, there were some unexpected advances in the garden this semester. As mentioned earlier, an anonymous donor provided a sum of money that will certainly help in regular maintenance and future improvement projects. Also, the Garden Club and our capstone group had a meeting in the garden with the Southwestern University Board of Trustees, giving us the chance to demonstrate and discuss the SU Community Garden, its importance, its place in the community, and all the great changes happening. This extra level of institutional support has the potential to be very important and influential in the future, and the members of the Board of Trustees were very receptive and supportive during the meeting.
**Future Recommendations**

**PR/Event Strategies**

Recommendations for future Garden Club members are to consistently use campus notices for Sunday Yoga Session and for all weekly garden sessions. We also recommend hosting monthly socials in the garden and a movie night once a semester. In order to make events successful and well publicized, we also highly encourage Garden Club members to use Student Activities’ services such as concourse and catwalk banners, flyers, and napkin dispenser inserts in the Commons. These are strategies that helped new students find the garden and raised awareness of the SU Community Garden’s presence and activity on campus. It also helped to add a map showing where the garden is located, but hopefully in the future there will be better signage directing students to the SU Community Garden.
Best Gardening Practices

If the garden is to maintain high levels of production using sustainable practices, there are a few key practices that should be consistently implemented. Firstly, devise a flexible but detailed planting calendar that lists which crops to plant, when to plant them, and how to plant them. This will vary as the growing season progresses, but having this growing calendar as a guideline will keep production on track. Secondly, record everything planted in the garden in a logbook. This would include, crop type, date planted, and where the crop was planted. Keeping accurate records is important for future planting. Another important practice is to plant seed trays in the greenhouse (or indoors elsewhere) to maintain a steady supply of seedlings ready for transplanting into outdoor garden plots. Next, whenever seeding indoors or outdoors, consider companion planting when possible to maximize space and productivity. There are several different beneficial planting combinations; refer to online sources or the greenhouse library resources for specific examples. Finally, to better ensure healthy and fruitful crops, consider using organic fertilizers in combination with non-toxic pesticides at regular intervals. A general organic fertilizer/pesticide recipe is located in the greenhouse resource library. For all of these tasks, refer to the garden safety guide in order to keep yourself and others safe in the garden.

Burger, Edward B. *VISION, DIRECTION, AND GOALS FOR SOUTHWESTERN UNIVERSITY*. Georgetown: Southwestern University, 17 Nov. 2015. PDF.


