ENVISIONING THE FUTURE OF LAFARM

EVST 400 Senior Capstone Fall 2017

Lafayette College, Environmental Studies Program

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However, we would not be here without the dedication of our College Farmer, Sarah Edmonds.

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INTRODUCTION

As seniors in the Environmental Studies program, our capstone class aimed to envision the future of LaFarm. As a class we created a set of recommendations to present to the LaFarm Advisory Board specifically in expanding sustainably and creating a resilient foodshed. In 2008, after a successful first year orientation program themed "Live Green Lafayette" that included growing corn on the Quad and a visit to Dickinson College Farm, both students and faculty alike were inspired to establish a farm of our own as part of Lafayette College's growing sustainability initiatives (Lafayette College, 2013).[i] The first two acres of LaFarm were established in 2009 as Phase I of LaFarm located close to the Metzger Sports Complex. In 2016, the LaFarm Advisory Board (LaFAB) began Phase II by proposing expansion. This expansion served to enlarge agriculture space, improve fencing, and include parts of the Newlins Farmstead.

As one of Lafayette's sustainability initiatives, LaFarm aims to assist in establishing a sustainable food loop that connects the campus community, dining services, and environmental awareness especially pertaining to food systems. Lafayette's current sustainable food loop entails composting food scraps from the dining halls to fertilize plants and cultivate healthy soil in which crops are grown, then either served in the dining halls or donated.

LaFarm Mission Statement:

> Our mission is to integrate curriculum and practice in sustainable food and agriculture for the campus community. We grow produce for the dining halls, recycle nutrients from composted food back to the soil, and serve as a laboratory for collaborative student-faculty education and research. *(*Lafayette College, 2017).

Purpose

The Fall 2017 senior capstone report envisions the future of LaFarm through recommendations to expand beyond a sustainable food loop and to start building a resilient foodshed. While useful, the term sustainability itself is overused the meaning often distorted to fit with progressing economic goals (Yates, 2012). Through our research we found that sustainability as both a concept and a term is helpful in promoting an efficient use of resources, however, it does not necessarily promote a more responsible use of those resources while adapting to continuously changing climatic conditions (Benson & Craig, 2013). To remain competitive in an era of both known and unknown effects of climatic change, we will need an adaptable model that ensures environmental critical thresholds are not surpassed (Robinson, 2012) To achieve that, we determined that resilience is what we should strive for when envisioning the future of LaFarm. Resilience requires a careful consideration of natural systems and their dynamic behavior and interactions within the environment (Benson and Craig, 2013). A resilient foodshed connects and intertwines with community, land, social interactions, natural environmental conditions, and moral economy (Kloppenburg, Hendrickson, Stevenson, 1996).

Project Groups

Our vision for LaFarm was to create a robust and resilient foodshed. Toward that end, we split into three groups acting as task forces, each addressing a different area. These groups were as follows:

- Engagement*:* The mission of the engagement group goal was to facilitate involvement of students and student groups at LaFarm by increasing visibility and creating both short and long-term engagement opportunities.
- Academics: The mission of the academics group was to strengthen the relationship between LaFarm and Lafayette College's curriculum.
- Operations*:* The mission of the operations group was to plan the expansion of the physical site while finding recommendations for infrastructure that will work within the boundaries of the land, emphasizing farm infrastructure, labor, and funding.

Each group developed a set of recommendations specific to their goal. Ultimately, the accumulation of recommendations from each group aims to create a framework to build and facilitate an enduring relationship between administration, faculty, students and farm and food at Lafayette. Each group developed a set of methods in which they discuss their process, the results of their work, and how the results are interpreted specifically to their group's mission.

The method section of each chapter depicts the specific group's process in creating a set of recommendations for LaFarm, with their recommendations being shared in the result section of each chapter. The interpretation section provides further discourse on these recommendations. Each group has a number assigned to them in chronological order: 1) Engagement, 2) Academics, 3) Operations. These numbers correlate to each group's appendices where you will find more materials, interviews, data, and other items use to make their recommendations. The figures in the report are numbered chronologically throughout the whole report and depending on the group, may also be featured in their appendices.

1. ENGAGEMENT

1.1 Introduction

Over the course of the semester, the Engagement group's goal was to increase the visibility of LaFarm on Lafayette's campus as well as grow the overall student attendance. In order to successfully complete these goals, we understood that a forward-thinking approach to solving the problem of limited student engagement would be necessary. This meant that strategies we suggest need to create long-term engagement to bring students to LaFarm on a regular basis for years to come. Simply having student groups sign up to volunteer once during the academic year will not be enough to deem our project a success. Our end of project goal is to provide the readers of this document with the tools they need to successfully navigate the landscape of sustainable initiatives at Lafayette, especially with how they pertain to LaFarm. Both successes and failures have been included in this chapter so that the future executors of our proposals will be able to better navigate the structure of administration, clubs, academics, etc. at Lafayette College.

Ultimately, the engagement group is offering a number of proposals that aim to bring local food to the forefront of student's minds. These proposals fall into four categories that we have devised, and include our research, communications, and resulting deliverable items. Our first category of deliverables is "First Time Involvement Materials", which aim to provide basic information to students who have little to no prior experience with farming or LaFarm. Second, a section on the "Continued Commitment" of students and student groups is included, providing structure for scheduling and supporting long-term engagement efforts through the use of online resources and a new student-to-LaFarm liaison position. The third category of proposals fall under "Visibility" which highlights the process of constructing a sign at the farm location as well as providing suggestions for transportation improvements. Lastly is the connection to "Dining", where an argument is made for greater engagement between Lafayette students and their dining services provider Bon Appétit. Each of these proposal items builds towards long-term engagement of students at Lafayette. Key members of the Lafayette community such as the faculty and staff that make up the LaFarm Advisory Board have identified the lack of engagement with LaFarm as unsatisfactory when considered in terms of incorporating this resource into the liberal arts experience at Lafayette (LaFarm Vision Document 2016).

More engagement with LaFarm has the ability to bolster the liberal arts experience at Lafayette. Increasing the use of this already established resource seems like a simple and efficient way to increase the avenues through which students learn. Many institutions of higher education ranging from small liberal arts to large agricultural science schools across the country have been successful in establishing and running school farms. These farms range from small on-campus plots to sprawling fields used for research and food production (Sayre 2011). When compared to similarly sized schools, Lafayette's engagement lags behind in student involvement with long-term or paid positions in farm management and seasonal production. Evidence for this is provided by the Operations group who have prepared an inventory of college farms as a tool to see where Lafayette is succeeding and where it is failing as the owner of a small college farm. Their inventory shows the personnel of both staff and students who help to manage each of the College or University's farms that are listed. The Academics group has also written about Lafayette's student farm involvement compared to similarly sized schools in their Methods section under "Curricular". Lafayette currently employs one farm manager who oversees daily tasks on the farm, harvesting, planting, and administrative work. Lafayette also employs one to three students as seasonal workers during the summer months through the Excel Scholar program (Edmonds, S.

2015). A survey of college farms in the United States offers us a picture of paid and non-paid student involvement at other schools. Of the 80 farms contacted, 50 responded, giving us a healthy data set to examine. Results show that a mean 60-69 students are involved with college farms on each campus. Of these students, 35%, or approximately 20 students on average receive some form of payment. A similar number of students receive class credit (Leis et al 2011). Lafayette pays many fewer students, only two during the Summer of 2017, for their service at LaFarm and offers no course credit for time spent there (LaFarm Annual Report 2015).

1.2 Methods

Throughout this project, we employed a variety of methods in order to come to our recommendations. In the beginning stages, it was necessary to develop an understanding of what our goals needed to be as the Engagement team. With the help of sustainability librarian Kylie Bailin, we conducted a literature review of engagement activities at other institutions. The article "Student Interest In Campus Community Gardens: Sowing the Seeds for Direct Engagement with Sustainability" offers background on engagement at student farms. This article argued that college farms are one of the best ways to get students involved with sustainability regardless of previous background or interest (De Young, 2016). It described the importance of everyday involvement and how effective it is for students to experience hands-on learning rather than being in a classroom (De Young, 2016). De Young's research justified creating our goal of providing better opportunities at LaFarm that add to the liberal arts experience at Lafayette through student involvement at LaFarm.

As students, we deemed it was best to focus on Lafayette rather than the entire Easton Community. Student oriented engagement became the main focus of our project as we wanted to build its presence among our peers. This allows for the utilization of existing organizational infrastructure the college already has to offer. By utilizing existing organizational infrastructure, such as the ECOrep program, Greek Life, and Pre-Orientation Programs, LaFarm can be efficiently integrated further into campus life. We believe that LaFarm has a lot to offer to the Easton community and the Lafayette faculty, but due to the time constraints of the project, we wanted to focus on the students at Lafayette College.

In the initial stages, we brainstormed a large set of projects separated into three categories: Visibility, Accessibility, and Attendance. These initial brainstormed projects ideas are based off of the early literature the capstone class studied and can offer future direction for members of LaFAB (Figure 1). To narrow our projects down, we examined existing college farm models at other similar institutions to draw from existing ideas our peer institutions use. We also contacted various administrative members at Lafayette to see where LaFarm can fit into organizations we already have on campus. As we describe further below, we ended up with four new bins of projects: First Time Involvement, Continued Commitment, Visibility and Dining (Figure 2). These four categories cover the full scope of students at Lafayette by engaging with those that may not have been previously exposed to food & farm, first-year students, and students who want to develop their involvement with LaFarm.

Figure 1: Final priority list for engagement.

1.2a Methods - First Time Involvement

As students ourselves, we understand that the best way to get students involved is during their first year, as soon as they arrive at Lafayette. Students are most impressionable at this stage and as they do not know many people yet, they place their trust in a few hands. The first group of mentors for incoming students are Orientation Leaders, who help adjust first years during the first few days on campus, Residential Advisors, who live among the first years and tend to their housekeeping, and ECOreps, who help with recycling efforts during move-in and are friendly sources to remind the students about sustainability practices within the dorm. Many of student leaders on campus are trusted sources of information and guidance upon arrival. With that in mind, we wanted to use existing organizations and activities that have proven successful at Lafayette to reach these first years. Kristin Cothran is the Director of Student Involvement and Orientation Activities and helped the engagement team create ideas on how the first years can get involved. As she explained, orientation is a busy time to fit in new activities, but there are other methods to get first years involved. For example, the Orientation Leaders(OLs) were able to go out to LaFarm, pick their food and cook it with the executive chef as a team building experience during their training. According to the Director of Student Involvement and Orientation, Kristin Cothran, this program was a success as it was easy to put on through coordination between Sarah Edmonds, the college farmer, and Chef John, the executive chef at Bon Appetit (K. Cothran, Personal Communications, October 2017). The students really enjoyed it and were able to clearly understand the connection between the farm and their food as they picked the produce and cooked with it. (K. Cothran, Personal Communications, October 2017). It was also successful for the orientation administration who see this as an activity they will include in the coming years. We believe this can be used as a model for further engagement opportunities at LaFarm.

Amber Zuber, the director the Landis Outreach Center and POSP Activities, provided further insight on how to include first years in other opportunities. The OL model described above, sparked inspiration to create other events that can bridge the connection for students to understand the food and farming initiative at Lafayette. Amber was able to provide direction about opportunities that we already have through Landis and POSP, but discouraged using Landis Mosaic program as a volunteer opportunity as the academic year does not align with the gardening season. Even though it appears that the Landis Mosaic program could have been a good opportunity, her discouragement is reasonable as the timeline of the program misses out on

majority of the farming season. We thought this existing structure would be a great idea, especially since they already work with the Easton Hunger Coalition and Urban Garden, however the Landis Mosaic program starts in late Fall after most of the gardening season is over (A. Zuber, Personal Communication, November 2017). Instead a better opportunity to engage with the Landis Center is through the POSP program. POSP is the Pre-Orientation Service Project that immerse first years into community service as well as engaging them with the Easton Community at the beginning of their college careers. POSP seems like a viable option to improve student engagement. We discuss our plans for a new LaFarm based POSP program in more detail below.

Yale University has an existing program similar to Lafayette's POSP program. For the past 16 years, Yale hosts a pre-orientation program called Harvest for first year students (Yale College, 2017). During this program, first years spend five days in August working at family owned farms in Connecticut (Yale College, 2017). Students are able to learn about sustainable agriculture before arriving at Yale and immediately gain a connection to farming within the area. We believe that the success of the Yale program, shows that Lafayette can run a similar program through our POSP program which will immerse students into food and farm before beginning classes at Lafayette.

1.2b Methods - Continued Commitment

Andie Mitchell '18 and Jen Giovanniello '20 worked at LaFarm during the summer of 2017 as members of Lafayette's EXCEL scholarship program. In addition to helping at LaFarm, they also worked through the ViC program assisting in that as well. In addition, they both are actively involved with The Lafayette Food and Farm Cooperative (LaFFCo) which is a student club coordinates engagement activities and service opportunities at at LaFarm. Some events LaFFCo has organized is tea and yoga on the farm as well as their continuous volunteer efforts they have there (J. Giovanniello, Personal Communications, October 2017). Unfortunately, one of the major downsides is that the club is very limited in numbers with only five actively committed members (J. Giovanniello, Personal Communications, October 2017). This is due to the scope of our small school where it is difficult to create large membership in student clubs. As LaFarm continues to grow, more skilled workers like the members of LaFFCO which will be needed to facilitate future programming events at the farm (J. Giovanniello, A. Mitchell, Personal Communications, October 2017)

The brothers of Delta Upsilon fraternity are also actively involved with volunteer efforts at LaFarm. They have been volunteering with LaFarm for three years now and have sustained a connection to the farm through their model (J. Zinn, Personal Communications, October, 2017). The DU brothers have a student farm manager who is the liaison between Sarah Edmonds and the rest of the brothers (J. Zinn, Personal Communications, October 2017). Sarah values this connection as they are a reliable source and that through this model we believe Greek Life can be utilized further and the idea of a student farm manager can be replicated. Other comparable colleges to ours like Yale University and Dickinson College have additional staff at their college farms, so as LaFarm continues to grow there will be a need for a new pilot staff member under the DU model (Sayre, 2011).

The ECOrep program was created under the EVST Capstone of 2015. Since then it has changed dramatically, and now each ECOrep has a specific focus they are delegated to work on (M. Wilcha, Personal Communications, September 2017). As the ECOreps program already exists and has paid staff, we thought this would be a natural fit to create an Assistant LaFarm Manager position under the ECOreps. Through using this existing program, and basing it off the DU model

of their farm manager, it will provide LaFarm with a student liaison to further the connection between students and the farm.

Lastly, we explored Athletics at Lafayette as another potential source of new student engagement at LaFarm. Athlete's C.A.R.E. is a national organization with representatives at Lafayette. The mission of this group is to provide assistance and support to the needy, hungry, and homeless in communities surrounding colleges & universities across the country (Athletes C.A.R.E). This mission is in line with the ViC program, however, we were unable to contact any representatives of this organization. Athlete's C.A.R.E. has been a part of Lafayette's service to the community for only a handful of years and the most recent student leader graduated from Lafayette in the Spring of 2017. Since then, communication between sports teams and Athlete's C.A.R.E. organizers has stalled.

1.2c Methods – Visibility

LaFarm is a symbol of the college's commitment to sustainability and should be regarded as such with all dues and respect afforded to any other program at Lafayette. Adherence to branding allows for LaFarm to establish a unique identity, one that is part of the college yet also a separate entity. This duality allows LaFarm to be an extension of the Lafayette community without adhering to the central campus' landscaped aesthetic. Increasing engagement between LaFarm and the campus community begins with visibility. The engagement team aims to enhance the visibility of LaFarm to increase engagement between LaFarm and the Lafayette community. This encompasses everything from an increased social media presence to a physical road sign for LaFarm.

1.2c.1 Signage

In promoting visibility to effectively enhance engagement with LaFarm it is essential to have a sign for LaFarm. Although seemingly simple, a sign establishes validity and a sense of permanence that LaFarm is lacking. Signage also allows for passersby to match a place and a name and reaches a wider audience. In Laura Sayre's book *Fields of Learning,* which documents a wide range of schools from small liberal arts colleges, to large agricultural universities, visibility was a key component to the success of student involvement. (Sayre, 2011). Similarly to Lafayette, there were a few college farms featured that were not directly on campus, which was combated by a heavy emphasis on both engagement and visibility to close the proximity gap.

Creating signs that adhere to the college's standards and brand not only distinguishes LaFarm as a designated college farm but also separates LaFarm from the surrounding farmlands. Signs are also incredibly important for directional purposes. There is currently no sign that orients visitors who turn off of Sullivan trail to take the gravel road right off of the street. Signage is also important as it incorporates Lafayette College's brand as well as the sustainably minded vision of LaFarm. Bolstering and promoting farm to fork options in our dining hall, offering opportunities for service hours, and teaching life skills are a small portion of what LaFarm can offer Lafayette students. The engagement team aims to enhance the visibility of LaFarm to increase engagement between LaFarm and the Lafayette community.

Increasing engagement between the Lafayette College community and LaFarm relies on increasing visibility. By increasing visibility, we aim to create a strong presence both on campus and off. Creating a strong presence on campus allows us to broaden the exposure to multiple audiences. Engaging the campus community allows us to work on building a resilient foodshed.

One aspect of visibility we wanted to work on from the beginning is adding signage at LaFarm. This will serve to enhance visibility for passersby of both the college community and not. When considering what type of sign would fit best, we looked to other campus farms to see what was successful and what was not. A report by the University of Michigan School of Natural Resources and Environment detailed aspects of their successful signage and branding at their farm so we decided to replicate what seemed successful, and how we can incorporate it to make it our own. They described the importance of creating a welcoming atmosphere so that it draws people to the farm (Borgman, Burnette, et al 2014). We collaborated with Lafayette facilities as well as the Office of Sustainability to ensure there are funds for the sign and that our proposal is consistent with the College's branding. (See Appendix 1.n-1.w)

1.2c.2 Transportation

Transportation is a critical element in our engagement project as proximity remains a literal barrier for engaging the campus community on LaFarm. As Lafayette transitions into a walking campus it complicates student's ability to physically get to LaFarm. As shown in Figure 2, LaFarm is located three miles away, and even if you were to walk or take the bike on back roads, you would still have to be alongside the main road. This poses not only an inconvenience to students but a safety concern as well.

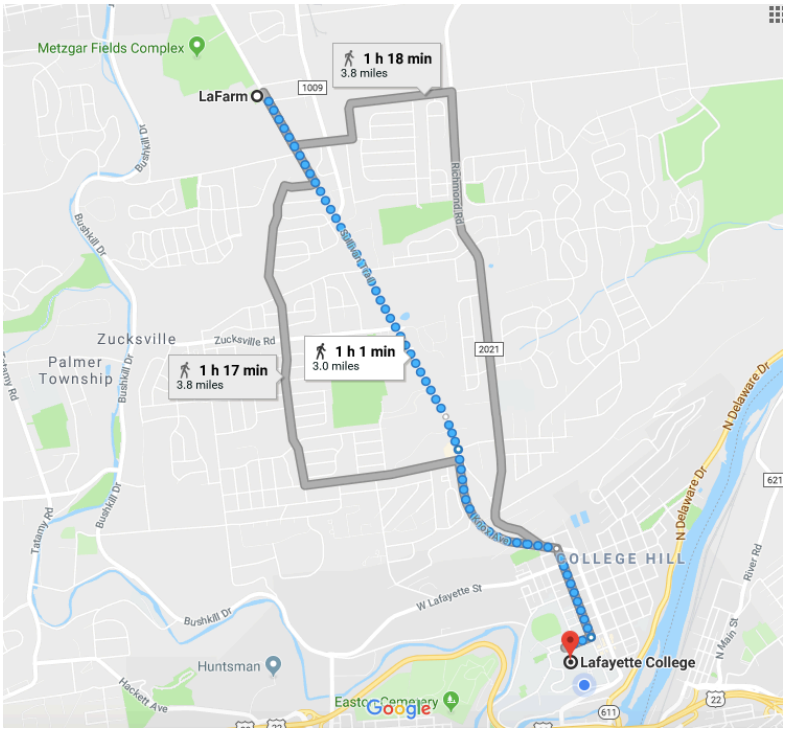

Figure 2: Walking directions to LaFarm

The only current transportation to the area is the Lafayette Campus Area Transport which only goes to Metzger Fields complex and the Downtown Arts Campus. As the farm manager, Sarah Edmonds works on the farm on a business week schedule with her days starting anywhere from 7-9 and ending around 4-5 any additional help she receives on needs to follow her existing work schedule. Currently, the Lafayette College Area Transportation services (LCAT) only begins

to pick up students and bring them out to the Metzger complex at 3:10 on weekdays, which does not allow for sufficient time to get to LaFarm, get set up and begin working. As these times misalign, the engagement team proposes alternate pick up and drop off times for the LCAT specific to LaFarm and Sarah Edmond's work schedule.

1.2d Methods - Dining

Dining services are provided by the Bon Appétit Management Company which is a national cafeteria food provider for over 1000 corporations, museums, colleges & universities, and other venues (*Bon Appétit Management Company*, 2017). The company visibly pursues sustainability in their corporate mission statement as well as their communications to students through the dining halls. Following the class visitation of the Lafayette College Bon Appétit management team, Engagement also met with the general manager and district manager of Bon Appétit: Lafayette. During this meeting, ideas for increasing the visibility within the student body of sustainable initiatives such as Meatless Monday and Weigh the Waste was brought up. New programs were also discussed that involved bringing students into the dining halls to get a sense of how food from LaFarm is prepared and how expansive the process of preparing food for the College is. Some ideas came from General Manager Chris Brown and District Manager Carolyn Karwick who brought up things like the sustainable practices that are upheld by the company nationally as well as how the Engagement Team could aid in distribution of information about the dining halls, how LaFarm ingredients are used, and how students can apply for work-study in the dining halls. Afterwards, questions were directed towards Chris Brown and Carolyn Karwick about student experiences with preparing LaFarm ingredients into meals with Bon Appétit and cooking classes in the dining halls.

Although both of these contacts are new to Lafayette, they have already begun a number of initiatives that directly and indirectly relate to increasing engagement with LaFarm. Alongside a successful activity between orientation leaders and Bon Appétit, dining services is: developing their own guide to their sustainable food practices, offering a series of ready-to-prepare dorm meal options, and researching ways to offer cooking classes in the school's kitchens. One area that Carolyn Karwick emphasized was the need for dining services to have a time during freshman orientation to talk about their role in student life at Lafayette. School administrators and members of the Lafayette College community attended the final Environmental Studies/Sciences Capstone presentation. Vice President for Campus Life Annette Diorio and Vice President for Finance and Administration Roger Demareski were present at this presentation and heard our proposal to include dining in orientation and cooking class experiences for new and returning students.

A comprehensive study on the relationship between local food, dining service providers, and college & universities in New England was completed by Farm to Institute New England. This nonprofit organization has the goal of connecting and sharing resources for increasing the amount of local food sourced by institutions and provided to students. Results of this Farm to College (FTC) survey are provided by FINE as well as recommendations for college administrators, donors, legislators, and dining operators. A number of these recommendations apply to the research of the Engagement team and provide evidence for the assumptions we have made about what Lafayette needs. For one, the definition of what local food is and what it means for Lafayette. This is already being done as informational popup infographics in the dining halls on each of the tables which students sit at, thanks to Bon Appetit's clear understanding of what local food means to them. Another recommendation is to track the procurement and use of local produce, and

provide this information to the greater student body (Campus Dining 101). Combining these two approaches is the number one way that visibility of local food in the dining halls can be increased for students. The recommendation of the Engagement group is that Lafayette administration considers the Real Food Calculator resource to evaluate the sustainability of the food it sources and provide real-time information for students on the locality of the food they are eating (Real Food Standards 2.0).

1.3 Results

We are proposing a four part approach to increasing student engagement with LaFarm. As introduced earlier, the four categories of deliverables are: First time involvement, continued commitment, visibility, and dining. These categories contain both completed documents and proposed plans for implementation of different plans such as a welcome sign and a Pre-orientation program at LaFarm.

1.3a First Time Involvement

First Time Involvement Materials:

First time involvement materials are designed with the goal of preparing new student volunteers for the first trip to LaFarm. With this goal in mind, a multi-page booklet of infographics is now available as a resource for the student body and farm manager's use (Appendix 1.c-1.f).

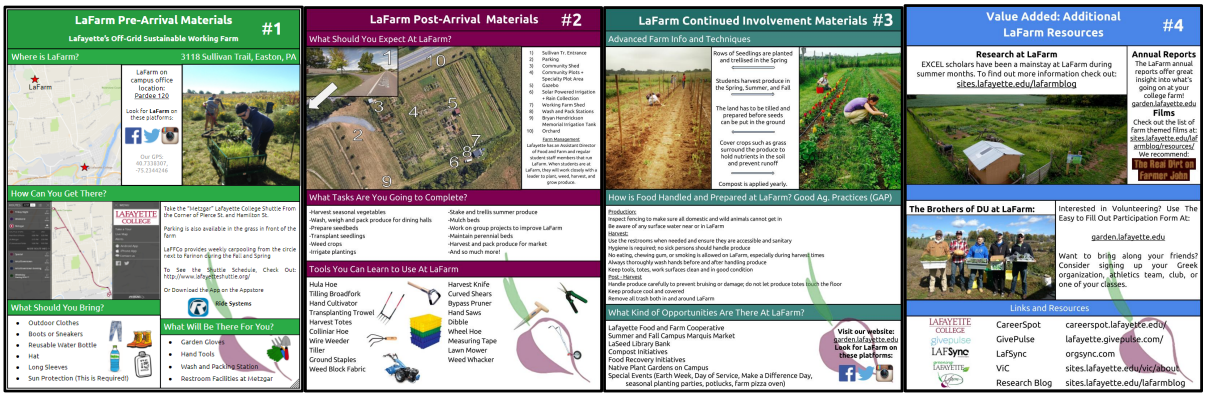

Figure 3: LaFarm First Time Involvement Materials Pamphlet, pages 1-4

Each page of the guide is meant to teach a new aspect of LaFarm. Starting with the simplest information such as where the farm is, where to park, and what to bring along, the guide then moves into more advanced information for second or third time visitors. LaFarm's proximity to Lafayette and directions on how to use the LCAT shuttle system to get to the farm are included. Later pages show the locations of different pieces of LaFarm's infrastructure, the names of tools that can be used, and the information needed to plant, raise, and harvest the produce students are most likely to be involved with. Food safety, special events, student clubs that are involved, research opportunities, and student positions are also included on the latter pages.

The farm manager and new ECOrep Assistant LaFarm Manager will be the primary means by which these materials are dispersed to students. Leaders in student groups such as Greek

Organizations, LaFFCo, interested classes, and the ECOreps will also be provided the guide and given instructions to share with volunteering members before they arrive at LaFarm. First time involvement materials will also be provided online at the sustainability webpage, LafSync, and the LaFarm webpage. This will all be done in hopes that students feel more welcome after reading through a booklet that has been prepared solely with them in mind. Students will feel more welcome and more willing to accompany members of their organizations or friends to LaFarm after reading information on how to be prepared and how to get their on their own. We believe this will make LaFarm feel more accessible to new students as they will not have to worry about forgetting necessary items, getting lost on the way to LaFarm, or not knowing what to do when they get there.

1.3b Connected Communities Program:

One avenue that the engagement group pursued was first time involvement for first-year students during orientation. This is coupled with the Academic Team's vision to incorporate co-curricular learning opportunities on campus. This offered a way for new students to become acquainted with LaFarm within their first few days at Lafayette and would be a step in the right direction towards incorporating food and farm as a core piece of Lafayette's identity. Inclusion of new programs into the incredibly busy schedule of orientation is not be something that the school would be interested in (K. Cothran Personal Communication, October 2017). Instead, we were pointed towards pursuing the inclusion of LaFarm with the connected communities program. While this program is new and is currently going through a period of change, we believe that it will provide the framework for engagement opportunities that we have been actively trying to connect to LaFarm. This program was created to help first-year students feel more welcome by grouping their dormitories into "commons" that held events together. A commons council for first-year students is also held by Residence Life and is currently overseen by Terrence Haynes and Tim Uhrich of Residence Life. The Academics Group is proposing plans for the creation of a community garden plot near the Kunkel Biology Building which would be tended for by the different commons. This falls directly in line with the goals of the Engagement Group and would offer first-year students another opportunity to get involved right away and feel as though they are a part of something on campus. We are supporting the plans of the Academics group by providing the leadership of the ECOrep Assistant LaFarm Manager as the organizer of gardening efforts and the enforcer of time commitments from different commons. We believe our lack of success in this area does offer insight into this program at Lafayette and we have chosen to include this as an idea for future food and farm initiatives at Lafayette.

1.3c POSP Plans:

During the summer there is a program called Veggies in the Community(ViC) and it helps alleviate aspects of the food desert in Easton. Members of the community stop by the Easton Urban Garden to receive fresh vegetables grown at LaFarm at the Easton Urban Garden. These vegetables are distributed to community members on a donation basis by a handful of volunteers including a few Lafayette students. Professor Ben Cohen is actively involved with the ViC program and has experienced difficulty receiving student volunteer efforts at the end of the summer when the summer workers are finished and just before the official school year starts and those students arrive (B. Cohen, Personal Communication, September 2017). Through our research, we found that Yale has a very successful "Harvest", pre-orientation program" for 16 years that places small groups of

incoming freshman on about a dozen local farms over the course of six days (Yale College, 2017). As a result, we believe that Lafayette can create a similar program through our existing organizational systems. Implementing a new Pre-Orientation Service Project (POSP) will help close that gap for the ViC program and is a natural opportunity to utilize existing operations at Lafayette. POSP is a three day long service opportunity for first year students to get involved with at the start of their collegiate career. There are currently 5 service programs, and now the engagement group proposes a new one for LaFarm. Our proposal is to implement a new LaFarm based service project in coordination with the ViC program for the first year students.

The purpose of POSP is to introduce first years to the Easton Community and to make connections through meaningful service experiences so students will develop an increased appreciation for Easton as they get adjusted to Lafayette. LaFarm is a perfect opportunity for students to engage with the College and Community through service at the farm. Because POSP is an established program already, most of the logistics are already in place to accommodate incoming students. The program charges accepted students a registration fee of $250 which is comprehensive of housing, meals, transportation, and recreational activities (POSP Website). The program will need to accommodate an additional 5 students to arrive on campus earlier, but many of their expenses will be paid for through the registration fee that is already created. The program currently accepts 36 students and hosts 24 returning leaders who are split up among the existing 5 projects. This proposal suggests adding 4 first year students and 1 additional leader to make the total involvement as 40 first year students and 25 POSP Leaders. Only 2-3 students volunteer at ViC over the summer and an additional four would be a substantial help to the program and would only need one leader to manage those first year students (A. Mitchell, Personal Communication, October 2017).

The POSP leader will be a member of LaFFCo as they are already familiar with farm work and the operations at ViC (J. Giovanniello, Personal Communications, October 2017). In addition to the LaFFCo POSP leader, we imagine the ECOrep Assistant LaFarm Manager will take a large role coordinating with Sarah Edmonds their involvement with LaFarm as they will already be on campus due to their own orientation. Sarah Edmonds will be at the farm during the beginning to meet with the new students and help those students get adjust to the farm and to Lafayette. The ECOrep Assistant LaFarm Manager will assist the LaFFCo POSP leader in handing out First Time Involvement Materials to the first year students, so they grasp a better understanding of their efforts at LaFarm.

On the first day, students will read over these materials and learn about the farm so that they will be ready to work on the farm on the following days. Through the next two days, first years will harvest fruits and vegetables and store them in a cooler. As the Operations Team has suggested, the addition of a cooler will help expand the harvesting capacity as well as keep in line with good agricultural practices through the cold storage of food. Then on the evening of the ViC program, these students will help distribute the produce at the Easton Urban Garden to members of the community to fully immerse themselves with the community. Each evening, all POSP first year students come together for a meal and activity together. With the future implementation of a Wood-Fired Pizza Oven and Gazebo facility as suggested by the Operations Team, students can make their own personal pizzas together using vegetables and herbs the specific LaFarm first years had picked earlier in the day Provided is a sample schedule for the LaFarm trips which are in keeping with the other POSP project trips (Appendix 1.h). This will help bring the first year students together and give a bigger appreciation for their food. POSP's goal is for allow students to gain a meaningful and educational experience from service and to bring students closer to members

within the Easton Community. Adding a new LaFarm program will simply just be another avenue POSP can complete their goals, and will help the Sustainability Program at Lafayette bridge a gap with the efforts at ViC.

1.3d Continued Commitment

1.3d.1 ECOrep Assistant LaFarm Manager

As the capstone class progressed, it became clear that an enduring student position would be needed to connect the many different outcomes between each of the teams for our project. This student liaison would be the executor of some of our proposals including distribution of first time materials, communication with new and old student groups, and facilitating the proposals the Academics and Operations team created. As contacts change within student groups, having a person who is up to date with LaFarm and the sustainability office at Lafayette would allow for seamless communication and the passing on of responsibilities much more efficiently.

Through conversations with Sarah Edmonds about volunteer efforts from the brothers of Delta Upsilon fraternity, it appears they have a good model of service and actively have helped Sarah for years through this sustained connection. The DU brothers have a student farm manager who is the liaison between Sarah Edmonds and the rest of the brotherhood. This idea of a student farm manager was helpful in coming up with an Assistant Manager at LaFarm because we saw the benefits of having a student on campus who is close with other students to rally the efforts from on campus.

As the ECOreps program is already established and has paid staff members, we thought this would be a natural fit to create an Assistant Manager position within the ECOreps program. We chose to use an ECOrep to be the LaFarm Assistant Manager because it eliminates the need to find additional funding. Miranda Wilcha, the Sustainability Fellow at Lafayette, was on the team that created the ECOreps program and believes this future opportunity is a great way to engage students with LaFarm. The program can be accommodating to a new role like this as each ECOrep has their own separate responsibility already. We imagine this person within the ECOreps program being environmentally minded that is interested in food and farm.

We see this ECOrep position as a substantial role for the future of LaFarm. This ECOrep Assistant LaFarm Manager will take on a variety of responsibility. We specifically see the ECOrep Assistant LaFarm Manager taking on an administrative role coordinating volunteer efforts at LaFarm. The assistant manager will be in charge of the LaFarm website, social media and the calendar of commitment as well. In addition, this Assistant LaFarm Manager will put on the future goals of the Academic Team such as Transfarm your Skills workshop and the local food and farm tours as well as come with future programming to utilize the gazebo and pizza oven that the Operations Team has planned for. As a result we have created a job description for this new ECOrep position to be advertised each year (Appendix 1.i). This will alleviate these responsibilities from the farm manager who may not have consistent access to online resources throughout the day. The engagement team believes that creating a student-farm liaison would be the best option to facilitate the flow of information and scheduling between the farm and the College.

1.3d.2 Calendar of Commitment:

One of the key roles that the ECOrep Assistant LaFarm Manager will take on is the scheduling of events and volunteering at LaFarm. This will add structure and support for managing

the farm to ensure that all activities and volunteering opportunities are clearly and explicitly shared for students. As a student, ECOrep Assistant LaFarm Manager will be in contact with other student groups on campus in order to easily get in touch and accommodate their schedules for using the calendar. This calendar will be hosted on the garden.lafayette.edu web page (Appendix 1.i). We suggest a Google Calendar being used and embedded on the webpage so that dynamic changes can be displayed right away.

We are proposing the Google Calendar approach as this is a simple tool that will be available to use by the farm manager and ECOrep Assistant. Google Calendars can be created and kept within the Google Drive provided by the school for Lafayette students, faculty, and administration. From there, directions provided on the Google Support - Calendar web page will show the user how to embed the calendar onto the LaFarm or other web page (Calendar Help). Any additions or edits to events or volunteer opportunities will display from the Google Calendar to the web page, allowing for students to check for trips to LaFarm themselves. This will greatly increase the visibility of these opportunities and we will no longer rely on word of mouth or connection to LaFFCo for information on current events at LaFarm. An additional tab within the subsections of the LaFarm website that will include the calendar and within that there will be separate tabs to view each month (Appendix 1.j).

Currently, Sarah Edmonds is in charge of the LaFarm website, but we feel that the ECOrep Assistant LaFarm Manager will be able to easily create submissions to the website and update the calendar accordingly. Sarah already has consistent groups who volunteer, but this calendar will make it visible to campus who is involved and which days new groups can get involved. On this page there will be a section that leaves the ECOrep Assistant LaFarm Manager's contact name and email so new groups can get in touch. The ECOrep Assistant LaFarm Manager will organize the events on the calendar and will relay the schedule to Sarah so she can handle farm duties while the ECOrep Assistant LaFarm Manager handles the communications duties.

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Figure 4: The location of the LaFarm form for interested students and the form itself

As a result of our communication with farm manager Sarah Edmonds, a "Get Involved @ LaFarm" student interest and signup sheet is now available on the LaFarm webpage (Figure 4.10). This document gives instructions for interested students to provide their contact information and availability to the farm manager so that a scheduled volunteer event or casual farm activity can be set up. Opportunities could include weeding, planting, harvesting, put the beds to sleep for the winter, making value-added products like salsa, planning seed orders, or winter vegetable planting such as garlic. This document acts as a formal way that students who may not be affiliated with LaFFCo, other environmental clubs, or students who already attend LaFarm can reach the farm manager.

1.3d.3 Greek Life:

One avenue that can help add to continued commitment is Greek Life. Lafayette has a robust Greek Life, with all organizations looking to give back to the community and Lafayette. Each chapter has around 70 members and are very committed to their own chapter. LaFarm has already seen success through Greek Life as they have had active commitment from the brothers of Delta Upsilon for years. Within the past year there has been new involvement through Delta Tau Delta, Delta Delta Delta, and Chi Phi. It is clear that these organizations enjoy giving back to the farm and find it a great opportunity to immerse themselves in service and farming. Currently, philanthropic engagement is the drive of these organizations and it should be continued in the future. Within the appendix is a document of a compiled list of Greek Philanthropy chairs for each fraternity and sorority for the upcoming 2018-2019 school year. The ECOrep Assistant LaFarm Manager will reach out to these contacts at the beginning of the semester to make the connection using a sample email that will be personalized for each chair person (Apendix 1.l). In the future, with the added infrastructure the Operations Team has suggested, there can be other opportunities besides service at LaFarm. We imagine that Greek Organizations will want to bring chapters out to the new engagement space at LaFarm for pizza night at the Wood-Fired Pizza Oven as programming and bonding activities for their chapters.

1.3e Visibility

1.3e.1 Signage

In accordance with the Lafayette signage standards as written in *Exterior Campus Sign Standards Manual* in April 2016, the engagement team proposes three separate signs. A wayfinding directional sign to act as a guide, a large banner with the LaFarm logo to be placed on the fence and large enough for passing cars to read, and another identification sign at the entrance of LaFarm.

The guide sign will follow sign standard Sign Type 100A Off-campus Trailblazer. The technical description of the specificities taken from the taken from the Exterior Campus Sign Standards Manual is as follows, "Aluminum post and panel signs with cast finial and aluminum bar bracket. Trailblazers are used for providing vehicular oriented directions to campus entrances and the athletic fields, on roadways along the perimeter of campus." Utilizing Photoshop, the engagement team designed options for all proposed signage with different logos, while still maintain both the branding specifics of the college as well as the current LaFarm logo. (See Appendix 1.n-1.w for variations)

Figure 5: White LaFarm logo on 100D.04

Figure 6: Close up white LaFarm logo on 100D.04

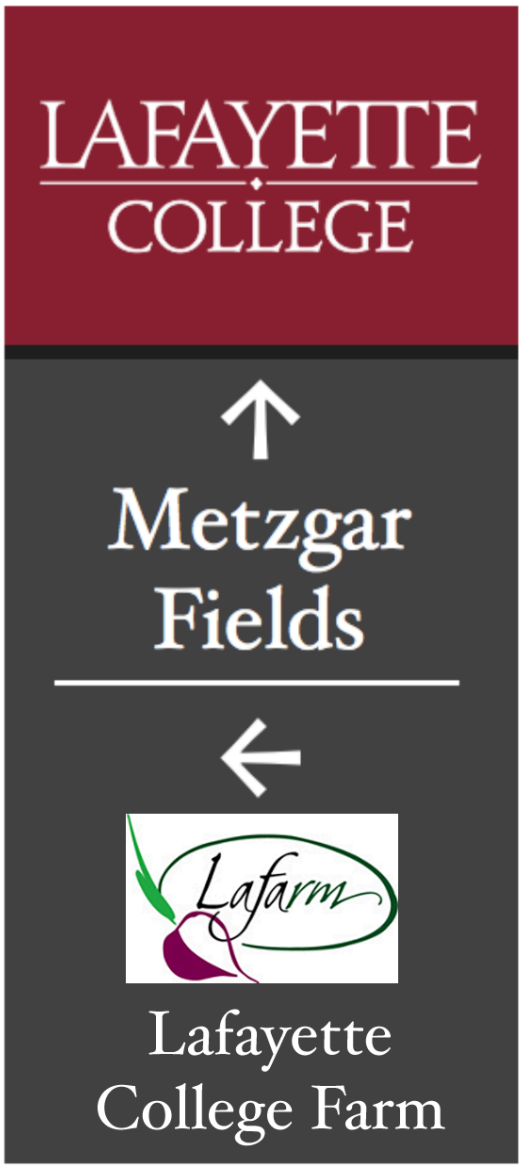

Figure 7:Close up alternative LaFarm logo #1 on 100D.04

The sign at the entrance of LaFarm will follow the template for off campus buildings, modeled as depicted in 112B.02 of the manual, "Wall mounted aluminum sign panel and frame mounted adjacent to building entrance. Used to identify off-campus buildings."

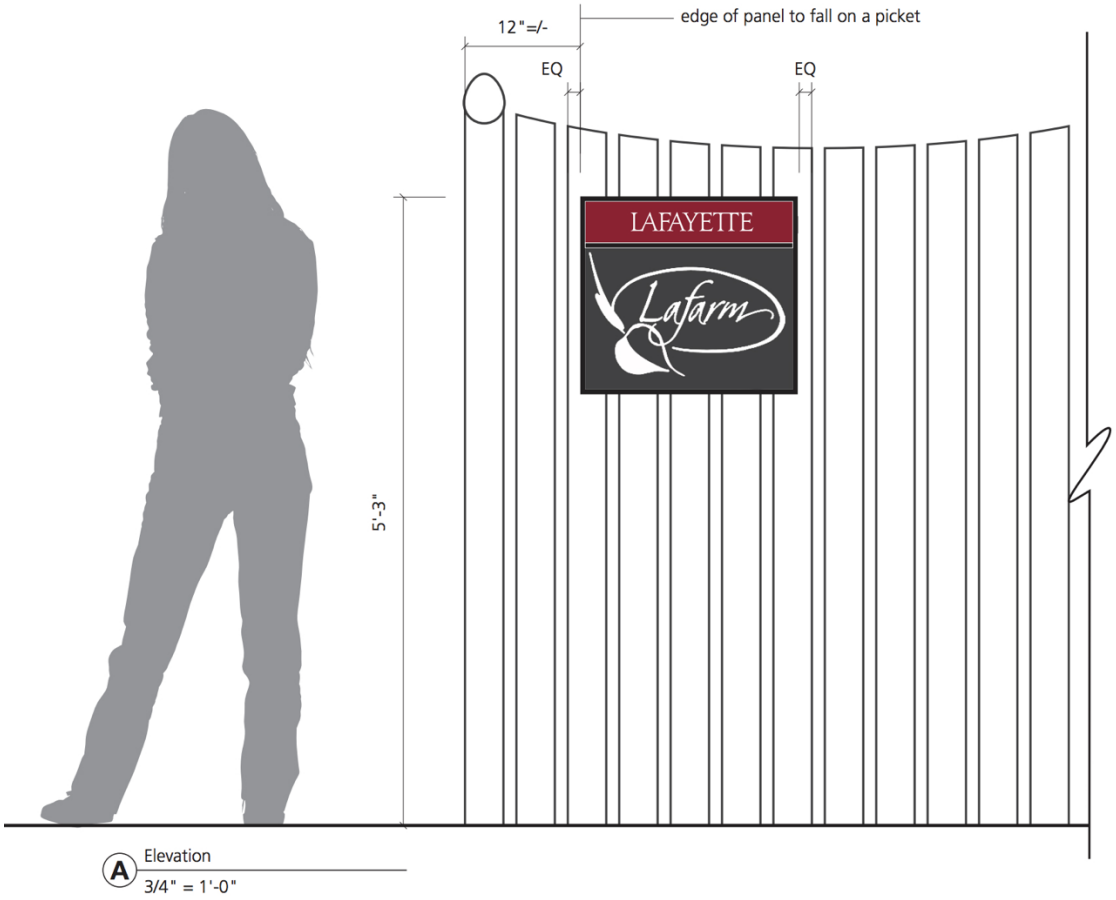

Figure 8: White LaFarm on 112B.01

We have also created signage to put in the dining halls as table tents. These will serve as a visual reminder of Lafayette's sustainable food loop while students and faculty alike partake in the process. These can be swapped out to showcase particular events, locally grown foods, or engagement opportunities.

Figure 9: Sustainable food loop table tents

1.3e.1 Transportation

As we do not yet know how many students will utilize this service, we propose two different schedules to see which works better for both students, shuttle driver, and work needs at LaFarm. On Monday through Friday we propose an addition to the LCAT shuttle service to that is regularly scheduled to bus student to and from the campus proper and Metzger. A suggested pickup time of 12:45 at the intersection of Hamilton and Pierce with a drop off time of 1:00 to LaFarm. Below is a suggested schedule of alternative LCAT times.

Hamilton and Pierce	LaFarm	Metzgar Athletics Complex	Intramural Fields
12:45	1:00	--	--
1:20	1:35	--	--
1:50	2:05	--	--
2:20	2:35	--	--
--	--	--	--
3:00		3:15	3:20
3:35		3:50	3:55

Table 1: Afternoon LaFarm Shuttle

Alternatively, for students who would like to come earlier to LaFarm, we propose that on alternating days a shuttle runs from Hamilton and Pierce once an hour starting at 9:00am and running until a return time around noon for lunch. Below is a suggested schedule with the alternative days highlighted.

	Monday	Tuesday	Wednesday	Thursday	Friday
Departing Hamilton and Pierce	9:00	9:00	9:00	9:00	9:00
Arriving at LaFarm	9:15	9:15	9:15	9:15	9:15
Departing Hamilton and Pierce	10:00	10:00	10:00	10:00	10:00
Arriving at LaFarm	10:15	10:15	10:15	10:15	10:15
Departing Hamilton and Pierce	11:00	11:00	11:00	11:00	11:00
Arrival at LaFarm	11:15	11:15	11:15	11:15	11:15
Lunch bus departing LaFarm	12:00	12:00	12:00	12:00	12:00

Table 2: Morning LaFarm Shuttle

This recommendation was made with input from Sarah Edmonds, but will ultimately be subject to change to better serve the students and faculty visiting and working at LaFarm.

1.3f Dining

Bon Appétit Management Company has demonstrated an eagerness to help the capstone class reach its goals of envisioning a new phase of LaFarm. The company has pledged to source as much from LaFarm as the farm can produce, highlighting its commitment to sustainable food at Lafayette (C. Karwick, Personal Communication, November 2017).They have also begun to undertake a number of their own initiatives to help orient students to the dining halls at Lafayette. Right away the inclusion of dining services into our plan for increasing engagement at LaFarm makes sense. If students see the end product of LaFarm i.e. different dishes in the dining hall that are partly or entirely made from LaFarm ingredients, they may be more interested in learning more about the farm (Campus Dining 101). Visibility will result in students asking questions about what LaFarm is, and how the College can grow food that ends up in its own dining halls (Campus Dining 101). Bon Appétit is very proud of their sustainability oriented dining services and have sourced local food for nearly two decades in colleges and cafés across the country (Sourcing Practices).

The first proposal we are suggesting highlight Bon Appétit's interest in hosting their own "Orientation to Dining" during the first-year orientation experience at the beginning of every school year. This will be a 30-minute presentation in which dining services management are given a room and medium-sized group of students to share with the basics of using dining halls, information on meal plans, a summary of sustainable practices they employ, and other information that they find relevant (C. Karwick, Personal Communication, November 2017). Because of the nature of orientation, we recommend that three to five orientation groups and their leaders (60 to 80 students) rotate through these presentations in a large space such as Marquis Dining Hall, the Marlo Room, or Colton Chapel. In this setting Bon Appétit would also have the ability to explain initiatives such as Meatless Monday, Weigh the Waste, and composting, which sometimes cause tension within the student body. Meatless Monday is a recent initiative that provides a vegetarian option as the main course at meals in both Marquis and Upper Farinon dining halls. While there are options that contain meat, the main meal is vegetarian. Weigh the Waste is a mandatory program that happens monthly in the Marquis dining hall. This initiative aims to document how much food is being thrown away during the lunch hours that Marquis dining hall is operating. This information is then provided to the students on the sustainability webpage to raise awareness about food waste and what students can do to limit it.

A second proposal is the continuation of a program that lets students pick produce at LaFarm and use it to prepare a meal in the dining hall. This program was started this past year in the fall of 2017 with orientation leaders during their training. This model should be offered for all students on a monthly basis throughout the academic year. Both Bon Appétit staff and Kristin Cothran are committed to continuing this program for orientation leaders on an annual basis. Bon Appétit management is also now pursuing a version of this program that is open to the student body. The engagement team sees this as a potential opportunity for inclusion of the connected communities program that is being developed for first-year students at Lafayette. These students would have the leadership of Resident Advisors and Orientation Leaders to schedule a class for them when they might not have the knowledge or time to do so themselves. This program will require the close communication and planning of the farm manager and Bon Appétit. It will also require an open communication between resident life administrators Terrence Haynes and Tim Uhrich and Bon Appétit. The discussion surrounding the inclusion of the connected communities program has begun with resident life administration and Dean D'Agostino (K. Lawrence, Personal Communications, October 2017).

A final idea supported by Bon Appétit is the creation of cooking classes available as a course offering for students of Lafayette. This weekly course would occur on Sundays in Marquis while the dining hall is closed but employees are still working to prepare food. A class of students totalling no more than twenty would spend a 2:50 minute "lab" period in the kitchen with chef John or his assistants. Bon Appétit has already begun talks with Lafayette about the construction of a test kitchen which they would use to teach students the skills of cooking (C. Brown, Personal Communication, November 2017). The Sunday class in Marquis would be a temporary option until this test kitchen is established.

1.4 Interpretation

Food often is an afterthought in the busy lives of students and faculty. LaFarm offers an opportunity for anyone in our small college community to learn about and work with their food. This will equip students who have engaged with LaFarm with the tools they need to make healthier

choices about what they eat. This goes past just their individual health and extends to the health of the environment as well. Less food miles, less monocropping, and less pesticide or herbicide use are just a few of the results of sourcing local food (MSU 2014). These are all symptoms of the industrial agriculture system that has become the "norm" for food production in the United States and worldwide (MSU 2014, Pollan 2010).

As an institution, Lafayette has the opportunity to make a huge change in the health of the environment by supporting greater engagement with LaFarm. While a handful of students making choices to eat local food can make an impact, an entire college of 2,500 students supporting their foodshed would change the landscape of agriculture in the Lehigh Valley and the greater surrounding area. The Engagement component of the future of LaFarm is crucial in building the resilient foodshed at Lafayette. Through the work of the Operations and Academics Teams, we see Engagement as the final piece pulling all three groups together. Engagement utilizes the infrasture the Operations Team is offering and engagement helps inspire students through the efforts of the Academics Team. The Engagement Team is able to advance the founding principles of the resilient foodshed by building a commensal community, proximity, self protection, secession, and succession and moral economy. Our four-part proposal delivers specific projects to target aspects of the resilient foodshed by utilizing many existing organizations on campus to integrate LaFarm into student's lives more efficiently.

The Engagement Team sought to establish further connections for Lafayette students through food and farm. We help establish this commensal community by providing students the opportunity to build "sustainable relationships both between people (those who eat together) and between people and the land (obtaining food without damage)" through multiple aspects of our proposal (Kloppenburg, Hendrickson, Stevenson, 1996, p. 7). Our proposal allows students to understand the social connection between consumers and producers through the new POSP trip, an Orientation to Dining, and Cooking Classes. These experiences can allow for students to experience time on the farm as well as time preparing meals and eating together. This is an important aspect that builds the community relationship for students between the dining halls and the farm. Implementing a new POSP program, will allow for first year students to build the connection "between people and the land" as well as through eating together after their days of service (Kloppenburg, Hendrickson, Stevenson, 1996, p. 7). The Orientation to Dining, will educate the students(consumers) about where their food comes from(producers) and will allow students to make the connection about the food and farm experience. Cooking Classes will be the ultimate culmination of commensal community as students will be able to pick their food and cook with it later creating a well rounded experience of food and farm. These activities will provide students with shared experiences through working and eating together which will establish a commensal community at Lafayette.

LaFarm "depends upon its human neighbors, neighboring lands, and native species to supply the majority of its needs" and thankfully as it is only located three miles away, it is able to receive the necessary resources due to its close proximity (Kloppenburg, Hendrickson, Stevenson, 1996, p. 10). Through our proposed engagement opportunities facilitated by the ECOrep Assistant LaFarm Manager, Calendar of Commitment, and Transportation Improvements we imagine students will gain a better sense of local food and the close proximity of LaFarm. Michigan State has a comprehensive report named "The Local Food Movement: Setting the Stage for Good Food" and it describes how "good food" is healthy, green, fair and affordable (Pirog, 2014). LaFarm sets the stage to deliver good food to the Local Food movement by providing the campus and the community with healthy, green, fair and affordable options. LaFarm produces vegetables which

add a healthy and nutritional value, LaFarm produces food in a sustainable matter, LaFarm uses student volunteers and paid workers, and lastly LaFarm offers a fair price back to the college and free produce to community members who are in need. These involvement opportunities using the improved transportation system for to bring students together for the Calendar of Commitment at LaFarm will give students more exposure to local food and to understand the benefits of it through other programming opportunities like the Cooking Classes.

The industrial agriculture system has become the "norm" for food production and in order to move past it there must be " strategic preference for withdrawing from [the industrial system] and/or creating alternatives to the dominant system [like LaFarm]" (Kloppenburg, Hendrickson, Stevenson, 1996, p. 10). The idea of self-protection, secession and succession allows for students to understand the that there are alternatives and that we have a local farm that can be utilized as our alternative. Through the integration of food into our Bon Appetit dining services, we can show students that there are alternatives besides the industrial food system. Sterling College, located in upstate New York, provides experiential learning experiences in agriculture that are closely linked to the academic mission of the school. Because agriculture plays such an integral role in the mission of the entire school, they are able to produce enough food to cover 20% of the need in their dining halls (Sayre 2011). Currently, Lafayette sources 2-3% of food from LaFarm and as the farm expands, Bon Appetit can take on a bigger commitment to sourcing local food from LaFarm, especially when students see the connection through the Orientation to Dining and the Cooking Classes (C. Karwick, Personal Communications, November 2017). Dining can be more than just a meal, but rather an educational experience for students to grasp the connection of the benefits of our local farm.

"The global food system now operates according to allegedly "natural" rules of efficiency, utility maximization, competitiveness and calculated self-interest."(Kloppenburg, Hendrickson, Stevenson, 1996, p. 6). While it is important to understand the food system from an economic perspective, Lafayette push through the alleged rules and consider a moral economy instead. This idea challenges the campus to "view food as more than a commodity to be exchanged through a set of impersonal market relationships or a bundle of nutrients required to keep our bodies functioning" but rather as a way to build personal relationships. By participating in service opportunities at LaFarm, students will see all the work that goes into making one vegetable and that the cost of the vegetable is a mere figure behind the huge farm operation. The plants require natural resources and care to become the nutritious and healthy food that the students will care that they are eating a food as there has been a lot more effort put behind it. This creates an educational experience for students especially as they engage in activities like the Orientation to Dining and the Cooking Classes so that we can teach students to be healthier, and environmentally minded citizens. We hope that increasing involvement at LaFarm will demonstrate to students the amount of work that goes into producing and sourcing all their food, leading to an increased appreciation of food and farm relationships.

While increased involvement at LaFarm was the overarching goal of the Engagement Team, the class as a whole shared one purpose: creating a more resilient foodshed. The paths that ingredients follow as they are grown or made, harvested, shipped, and prepared are what make up a foodshed (Kloppenburg, Hendrickson, Stevenson 1996). We as the consumer have the power to scale our own foodsheds to our liking. The Engagement Team worked to create opportunities to build the resilient foodshed at Lafayette by making food, farming and dining an educational experience for students. Our four-part proposal of projects are all aimed to build the resilient foodshed and push students to gain an appreciation for their food. A student who is engaged with

LaFarm is supporting local sustainable agriculture (i.e. proximity), contributing to the production on the farm (i.e. self-protection), developing lasting relationships with the each other and the farm (i.e. commensal community), and viewing food as a bigger production than just a meal (i.e. moral economy) (Kloppenburg, Hendrickson, Stevenson 1996). By shaping our capstone project around LaFarm, we as a program are choosing to put a high value on each component of a resilient foodshed as we support local foods and farmers.

1.5 Connection to Operations and Academics

The structure of our capstone class allowed for us to approach the tasks of envisioning Phase III of LaFarm from three very different angles. From an infrastructural standpoint, the Operations team offers a number of key developments that will need to happen in the coming years in order to support a more robust LaFarm. On the Academics side, our classmates have envisioned more academic opportunities for students to be involved in research, coursework, and educational events. The Engagement group has sought to support these groups through the creation of more interest and hours spent by students at LaFarm.

1.5a Operations:

The Operations group is proposing the construction of a gazebo with tables, wood fired pizza oven, and garden plots for produce like pumpkins and sunflowers in Area 3 (see appendix 3.). These infrastructural items are meant to attract students who may not be inclined to immediately dive into the heavy lifting or chore-like aspects of farming. These elements will be used in events at LaFarm to allow students to be comfortable and entertained during speaker presentations or activities. Our proposed POSP program would be able to immediately use these improvements. Small groups of incoming first-year students would spend their days harvesting for ViC in the produce plots, learning about agriculture at the gazebo, and cooking their own meals in the wood fired pizza oven. The Newlins Farm House is being considered as a part of Phase III of LaFarm. The Operations group is proposing the renovation of the farmhouse into a classroom space. This will allow for year-round engagement opportunities, even during winter months and poor weather. Student groups will have the opportunity to complete value-added projects such as making salsa, seed orders, or crop rotation plans with the farm manager. All of these activities will be advertised on the Calendar of Commitment and interested students will register for them through the ECOrep Assistant Farm Manager or on through the "Get Involved @ LaFarm" worksheet now provided on the LaFarm website (garden.lafayette.edu). More parking will also be provided at the Newlins Farm House as well as a turnabout for convenient transportation to and from campus by car or bus. This will give the "Metzgar" LCAT bus the ability to quickly add a stop to the Newlins Farm House after its drop-off at the athletic's fields. The proposed greenhouse will offer a more controlled engagement opportunity for students working closely with the farm manager on early phase seedling or their own research. The Farm Manager may not have enough work to do during depending on seasonality and how many student groups are visiting LaFarm. The greenhouse offers another opportunity for overflow students to practice farming techniques or learn how to handle new tools. This means that the farm manager or student leaders will never need to turn down interested students who have applied to volunteer. With the increase in involved students at LaFarm we are able to justify the costs that associated with the proposed infrastructure.

1.5b Academics:

The Academics group broke their research down into three components: curriculum, research, and co-curricular activities. Any events such as class trips or speakers would be displayed on the calendar of commitment (Appendix 1.j). The responsibility of recording different group's involvement at LaFarm will be given to the ECOrep Assistant Farm Manager (Appendix 1.i), who will also have the ability to edit the calendar online. In terms of research, the Academics group is proposing that food and farming should be the theme of the Multidisciplinary Environmental Research Poster Session within the next few years This suggestion will greatly increase the number of students who visit or engage in research at LaFarm as over 100 students in multiple disciplines are involved in this annual project.

1.6 References

"About." (n.d.) *Bon Appétit Management Co.*, Bon Appétit Management Co. Retrieved from www.bamco.com/sourcing/.

"Mission." (n.d.) *Athletes C.A.R.E.*. Retrieved November 01, 2017, from http://www.athletes.care/

Borgman, M., Burnette, D., Cole, S., Gourley, R., Guckian, M., Jacokes, M., & Smith, S. (January 2013- April 2014). A Rooted University: Growing Resiliency, Community, and Engaged Food Citizens at the UM Campus Farm. *University of Michigan School of Natural Resources and Environment*. Retrieved October 15, 2017.

Brown, C. (2017, November). Personal Interview.

"Calendar Help." (n.d.) *Google*. Retrieved from https://support.google.com/calendar/answer/41207?hl=en.

"Campus Dining 101: Benchmark Study of Farm to College in New England." (March, 2017). *Farm to Institute New England*. Retrieved from www.farmtoinstitution.org/sites/default/files/imce/uploads/FINE%20Farm%20to%20College%20Report_1.pdf.

Cohen, B. (2017, September). Personal Interview.

Cothran, K. (2017, October). Personal Interview.

De Young, R., Scheuer, K., Roush, J., & Kozeleski, K. (2016). Student Interest in Campus Community Gardens: Sowing the Seeds for Direct Engagement with Sustainability. *The Contribution of Social Sciences to sustainable development at universities,* 161-175. Retrieved Online on October 15, 2017.

Edmonds, S. (2015). LaFarm 2015 Annual Report [PDF file]. Retrieved from https://garden.lafayette.edu/files/2016/03/LaFarm_annualreport_2015_final_web.pdf

Giovanniello, J. (2017, October). Personal Interview.

Karwick, C. (2017, November). Personal Interview.

Kloppenburg, J., Hendrickson, J., & Stevenson, G. W. (1996). Coming into the Foodshed. *Agriculture and Human Values*, *13*(3), 33-42.

"LaFarm Vision Document 2016." (July, 2016) *LaFarm Food and Farm Advisory Board.* Retrieved from Professor Cohen.

Lawrence, K. (2017, October). Personal Interview.

Leis, A., Whittington, M. S., Bennett, M., & Kleinhenz, M. (2011). Student farms at United States colleges and universities: Insights gained from a survey of the farm managers. *NACTA Journal*, *55*(1), 9-15.

Mitchell, A. (2017, October). Email Interview.

Pirog, R., Miller, C., Way, L., Hazekamp, C., & Kim, E. 2014. T*he Local Food Movement: Setting the Stage for Good Food*. MSU Center for Regional Food Systems.

Pollan, M. (May 2010). The food movement, rising. *The New York Review of Books*, 1-9. Retrieved September 12, 2017.

"What is POSP?" (n.d.) *POSP: Pre-Orientation Service Program.* Retrieved December 01, 2017, from https://sites.lafayette.edu/posp/

"Real Food Standards 2.0" (2016). *Real Food Challenge.* Retrieved from http://calculator.realfoodchallenge.org/help/resources.

Sayre, L. (Ed.). (2011). *Fields of learning: The student farm movement in North America*. University Press of Kentucky.

"Sourcing Practices." (n.d.) *Bon Appétit Management Co.*, Bon Appétit Management Co. Retrieved from www.bamco.com/sourcing/.

Wilcha, M. (2017, September). Personal Interview

Yale College. (n.d.). Retrieved December 01, 2017, from https://harvest.yalecollege.yale.edu/

Zinn, J. (2017, October). Personal Interview.

Zuber, A. (2017, November). Personal Interview.

2. ACADEMICS

2.1 Introduction

The academics group was created to strengthen the relationship between LaFarm and Lafayette College's curriculum. To improve this relationship, we equally divided our efforts into three subcategories: curriculum, research and co-curricular. These subcategories were created based on the three ways in which Lafayette students further expand their knowledge. Students learn from lectures in the classroom, by conducting research, and by attending educational events outside of class. The purpose of this chapter is to investigate what Lafayette College is already doing with regards to connecting curricular, research, and co-curricular activities to LaFarm and to compare these efforts to our peer colleges and universities in order to implement new academically charged events and learning opportunities for Lafayette students.

Our group's contribution to the vision of LaFarm is divided into three different focuses: curriculum, research, and co-curricular activities. Each of these components of academics are vital in developing Lafayette students' desire to pursue agricultural endeavors, particularly those related to LaFarm. Incorporating LaFarm into Lafayette's curriculum encourages student awareness of their role within the campus food loop and how it can be improved (Williams and Dixon, 2013). A sustainable campus food loop occurs when food waste from the dining halls is used in compost which is then used to produce crops that are served back to the same dining halls (Lafayette College, 2016). Composing a written report on peer schools' incorporation of sustainable food and farm into their curriculum will help build an argument for why we should strengthen the relationship between LaFarm and academics. Additionally, by providing information on past research projects related to sustainable food and farm and by creating new opportunities through the Environmental Poster Session, we foresee an increase in research projects directly related to LaFarm. Future students interested in conducting research related to food and farm will be able to see that LaFarm can be used as a living laboratory. By creating new events and workshops, we give students the ability to learn more about their role in food systems not only at Lafayette, but also within the Lehigh Valley.

Academics is an important aspect of envisioning LaFarm because it ties into Lafayette College's sustainability mission which is to work "to cut global warming emissions, integrate sustainability into the curriculum, and cultivate solutions to ensure a healthier environmental future" while also "exploring sustainable living on campus" that prepares "students for a life of environmental citizenship" (Lafayette College, 2017). Lafayette College is the only school in the Lehigh Valley to sign the American College and University Presidents Climate Commitment. Lafayette signed this commitment in 2008 and since then has "calculated its emission of greenhouse gases, completed a campus-wide energy audit, and developed a Climate Action Plan" (Lafayette College, 2017). Integrating LaFarm into every student's experience at Lafayette College is a key aspect in furthering this climate commitment and the creation of a well-rounded education at a liberal arts college (Shannon-DiPietro, 2003)[ii]. Through the integration of LaFarm into academics, a stronger community will form that will be able to create solutions that are previously mentioned in Lafayette College's sustainability mission statement (Desmond et al, 2002). Understanding food systems and food and farm will provide students with the tools and knowledge they need to engage in a life of environmental citizenship and develop solutions for future environmental problems (Shannon-DiPietro, 2003).

2.2 Methods

2.2a Curricular

The goal of the curricular component of academics is to advocate for an increased incorporation of food, agriculture, and LaFarm into Lafayette's curriculum. Our group conducted research on peer institutions that have incorporated sustainable food and farm into their curriculum through numerous course offerings. To conduct research, we chose a sample size of eight schools that included: Hamilton, Haverford, Swarthmore, Middlebury, Yale, Cornell, Dickinson, and Sterling College. There are a few reasons why our group chose these institutions. Lafayette looks at these selected colleges and universities when making decisions to better improve the academia at our school. Furthermore, the characteristics of these selected institutions reflect those of Lafayette. These colleges are within the northeast regional foodshed, have proportional student body populations (excluding Cornell and Yale), and have actively incorporated food and agriculture into their curricula which makes them worth investigating. Our group looked up "food studies and (college name)." If there was not sufficient information from a direct Google search, we typed in the search bar of the school's website "food" or "food studies" for more information. After our analysis of the schools was complete, we began generating an inventory to determine the similar course offerings among these institutions that are related to food and agriculture. We then explored the Lafayette College course catalog to search for courses offered at Lafayette that incorporate food and agriculture into their course work. This research influenced the development of a proposal detailing why Lafayette should pursue a similar endeavor (Appendix 3.a).

2.2b Research

The goal of the research component of academics is to better inform and augment current and future research efforts at LaFarm as it expands in size. LaFarm's mission is to "serve as a laboratory for collaborative student-faculty education and research" (LaFarm, 2017). In order to carry out this mission and envision how research can better be connected to the farm in the future we first needed an understanding of what LaFarm as well as what our peer college farms are doing.

To better our understanding of what Lafarm is already doing, we looked at the LaFarm website and annual reports, various departmental websites specifically the Environmental Studies and Science website, and the Engineering Studies website, as well as past environmental poster presentations. The Environmental Poster Session is an annual opportunity in the fall for students in environmentally focused classes to divide up into small teams and perform semester long research on topics relating to the overarching theme of the session that year. Students then make a professional poster with the findings from their research and get the opportunity to present their findings in front of professors and judges. Professor Kney, the professor in charge of the poster session, provided us with the poster presentation booklets from all of the past poster presentations from Fall 2010 - Fall 2016. We analyzed these poster presentation booklets for trends and connections to food, farm, and agriculture and even more specifically to LaFarm itself. The data and trends are analyzed and explained in further detail in the research results section of this chapter . Furthermore, we did content analysis on the aforementioned departmental websites, LaFarm's website, and the LaFarm annual reports to see how LaFarm is currently bridging the connection to Lafayette student and faculty research.

To gather an understanding of what our peer school and university college farms are doing, we looked at various college farm websites. For the purpose of this research component we focused on the Cornell University and Vassar College farm websites. We chose to focus our attention on these two schools because they had visible and well-detailed research sections on their

farm websites and are leaders in the college farm movement in our region. These college farm websites were analyzed for how they highlight research opportunities, past and current projects, and the overall organization of this information. Vassar College's website was particularly well organized as there was a distinct tab on the website for research. Within that tab, the research information was divided up into past, ongoing, and current research projects. While Cornell also had a separate research tab on their farm website, it was not as well organized. It wasn't as well organized as it did not categorize its research projects into past, ongoing, and future. Therefore, Vassar College's farm website was chosen to be the model for our newly designed mock research tab of LaFarm's website (Appendix 2.b).

2.2c Co-Curricular

The goal of our co-curricular effort is to create learning experiences outside of the classroom that incorporate LaFarm, or food and farm. Our three main areas of research within our co-curricular section come from looking outside Lafayette College at other schools that are similar to Lafayette, particularly Yale University, analyzing sources provided to us by Lafayette College research librarian Kylie Bailin, and discussions with Sarah Edmonds, the LaFarm manager.

A model of a co-curricular event is Yale University's knead 2 know program, as previously mentioned. Yale, which is located in New Haven, Connecticut, utilizes their college farm for engagement more than Lafayette College does currently. Yale has drop-in volunteer hours at their college farm throughout the week and on Fridays following their workdays they have the program "knead 2 know". Knead 2 know consists of a short 15-minute presentation on an environmentally charged topic followed by the making of delicious pizza, created from scratch (Yale, 2017). For the most part, the 15 minute presentations are about current research projects related to food and agriculture. While the farm visitors enjoy pizza and each other's company, the farm also provides music throughout the event. The presentations during the knead 2 know event have ranged from "the economics of large-scale wheat farming to the sexual politics of the food movement to the chemistry a malster might encounter" (Yale, 2017)[iii]. It is apparent that Yale's college farm is interdisciplinary as these three topics provided do not fall under a singular department umbrella. Events like these at Yale University have not only made their college farm a part of every student's identity (Williams and Dixon, 2013), but have also created a strong sense of community (Desmond et al, 2002).

Another avenue that we explored throughout this project was utilizing our research librarian, Kylie Bailin, to help us find sources that provide research on the benefits of farming and gardening on education. The existence of a garden on a school campus has allowed multiple disciplines to come together through hands-on learning and has provided the opportunity to develop a responsibility to live a life of environmental stewardship (Williams and Dixon, 2013). It has also been discovered that garden based learning creates a stronger sense of community (Desmond et al, 2002)[iv]. Although school gardens are a new idea and are more common in primary and secondary school, a garden on campus at Lafayette College would improve a student's identity and fulfill the mission to prepare students for a life of environmental stewardship.

We decided to meet with Sarah Edmonds as her vision of the future of LaFarm is an important aspect to be taken into consideration. While talking with Sarah, we discovered that while she is working at LaFarm, occasionally people will drive by, turn around, and come visit the farm. While visiting the farm, they express interest in the activity she is partaking in and ask if she can teach them how to do it. Unfortunately, at that time she is too busy to stop and teach someone who

is less educated on farming, so she has to turn them away. She expressed that she would like to have a designated time where she can open the farm to the public and hold classes revolving around the topics of expressed interest, which led us to the creation of a program "Transfarm Your Skills".

2.3 Results

2.3a Curricular

The main outcome of the curricular section of academics is a proposal that will serve as a resource for LaFab and faculty to use when advocating for greater incorporation of sustainable food and farm into Lafayette's curriculum (Appendix 2.a).

Institution	Food Justice Course	Food History Course	Food and Religion Course	Food Ethics Course	Food and Film Course	Food & The Environment Course	Food and Gender Studies Course	Food & Culture Course	Sustainability & Food/Agriculture Course	Nutrition Course	Food Anthropology/Sociology Course	Food and Health/Disease Course	Food Studies Professor/Director
Dickinson College	x	x	x	X	X		x	x	x	x	x		
Cornell University	x					x		x	x	x	x	x	x
Sterling College	x			x		x		x	x				
Middlebury College	x	x		x				x	x		x	x	x
Yale University	x	x	x		x	x	x	x				x	
Swarthmore		x	x					x			x		
Hamilton College	x	x					x			x	x		
Haverford College	x	x	x	x				x			x		
Lafayette College				x							x		

Table 3: Institutions and various course offerings related to food and agriculture

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Data from the inventory demonstrates that out of the eight colleges analyzed (excluding Lafayette): seven have a Food Justice course, six have a Food History course, four have a Food and Religion course, four have a Food Ethics course, seven have a Food and Culture course, six have a Food and Anthropology/Sociology course, and four have a Sustainability and Food/Agriculture course (Table 3). Schools such as Dickinson, Yale, and Cornell have excelled in establishing courses that incorporate sustainable food and farm into their curriculum for a number of reasons. These three institutions have a wide variety of course offerings that incorporate food and agriculture, certificate programs, and majors in food and agriculture studies. In regards to incorporating food and agriculture into their curriculum, Lafayette College pales in comparison to institutions listed on the inventory. We offer two courses, Biology 110: Edible Ethics and Environmental Studies 315: Food, Culture, and Sustainable Societies, which has not been taught for several years. Emphasizing the importance of LaFarm as well as the concept of a resilient foodshed across multiple fields of study at Lafayette would promote LaFarm's mission to "integrate curriculum and practice in sustainable food and agriculture for the campus community" (Lafayette College, 2017).

2.3b Research

There are two main outcomes for the research component of the academics chapter. The first outcome is a model template of where the research tab will go on the existing LaFarm website along with the information on LaFarm research that will be displayed in this tab. This model template titled, "LaFarm Website Research Template" is located in Appendix 2.b at the end of this

report. It is important to note that the research projects highlighted in the template are not a complete listing of all past and current research projects on LaFarm, but are rather a few examples that would be good to display on the website and would serve as a template for others to be added to in the future. The more detailed listing of past and current research projects on LaFarm can be found in Appendix 2.c titled "Inventory of Past and Current LaFarm Research Projects." The second outcome is a proposal for an environmental poster session with the theme of food and farm. This proposal titled, "Farm and Food Poster Session Proposal" is located in Appendix 2.d at the end of this report.

After analyzing and clicking through the LaFarm website it became strikingly apparent that research is not being obviously displayed or easily accessible. This is a shortcoming because LaFarm prides itself on being a living laboratory for student and faculty research, so it should be proudly and prominently displayed on the website. Furthermore, future students who are interested in doing research on LaFarm will be looking at the LaFarm website first and foremost to get a sense of how they could turn their peaked interest into an actual feasible research project. By documenting and highlighting past and current projects, potential research students will be able to see that they can in fact use LaFarm as a living laboratory for their research and that many students have successfully done so in the past so they can to. Furthermore, the research tab on the website will demonstrate to the general public, to the Lafayette community, and to our peer colleges and universities that LaFarm is in fact fulfilling is mission to be a "laboratory for collaborative student-faculty education and research" (LaFarm, 2017) and that as an institution, Lafayette is actively taking part in the student farm movement. From our analysis of the past poster presentation booklets, environmental studies and engineering studies program websites, and LaFarm annual reports we found one current research project, eight past research projects, and two past environmental poster presentations.

One avenue to create future student research opportunities is through the already existing framework of the Environmental Poster Session. Since the framework and the organization of the poster session already exists it would not take any extra money or time and effort to implement a session with the theme of food and farm. Our conclusion from the analysis of past environmental poster presentations is that during each year of the poster session at least 13% of the poster entries were on food and farm (Figure 10). Some years such as 2012 and 2013 there were even upwards of 30-40% of the poster entries related to food and farm (Figure 10). Within the past four years of the session when there was a specific theme such as biodiversity loss (Fall 2014) and water challenges in 21st century (Fall 2016) at least 13% of the students presentations were related to food and farming. This indicates that Lafayette College students have a sincere interest in the topics of food and farm, which is why we propose a poster presentation session themed on these topics within the next three years. We chose the goal of within three years because there is a high possibility that the theme for the next couple of years has already been selected.

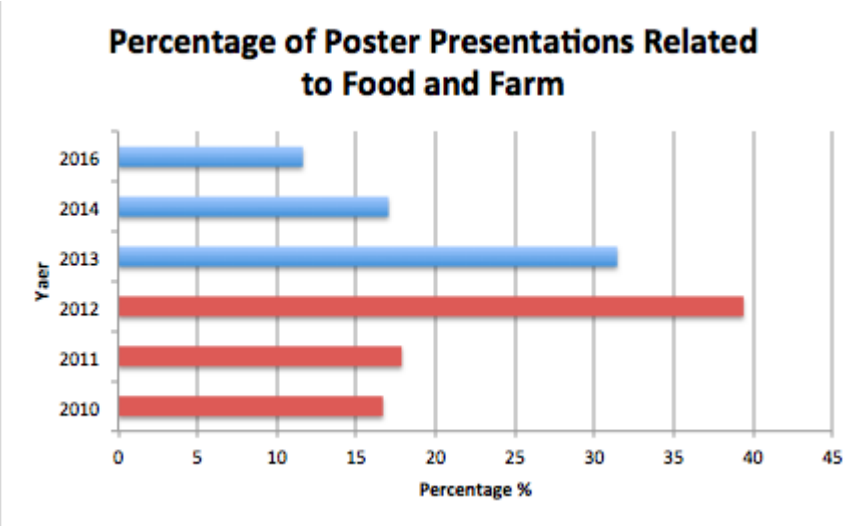


Figure 10: Graph depicting percentage of poster entries related to food and farm for each year of the environmental poster session

2.3c Co-Curricular

There are three main outcomes in the co-curricular section of academics: a proposal for the "Transfarm Your Skills" program, a guide to both the local food and local farm tours, and a proposal for the campus garden that will be located on the south facing side of Kunkel Hall. These three proposals will support our motivation to create a more well-rounded education at Lafayette while also providing a stronger sense of community and the tools required to engage in environmental citizenship.

As previously mentioned in the methods section, the "knead 2 know" program at Yale University is a concrete example of a well-run co-curricular event. This example, along with talking to Sarah Edmonds, is what lead us towards the proposal of "Transfarm Your Skills". "Transfarm Your Skills" is a program that is separated into two sections: classes and events. We decided to break the program up into two different sections as the classes portion is more formal and the events section is more informal. The classes portion of the program will be held on 5 Saturdays throughout the semester. These classes would be open to both students and the community as Sarah Edmonds has informed us about the community interest in gaining farming skills. LaFarm is considered an educational garden, yet not that many students are brought out to the farm to learn, so this will increase that aspect of LaFarm. The classes will be taught by the current LaFarm manager, but the class itself will be planned by the ECOrep LaFarm Assistant Manager proposed earlier in this report. There are currently 11 workshop topics that were brainstormed by Sarah. This doesn't imply that the workshop has to be these 11 classes, but they are topics that can start up the program as explained in Appendix 2.e.

The events portion of the "Transfarm Your Skills" will be run similar to the knead 2 know program at Yale University. The events will be open to students and will be run every other Friday. There will be parking spaces provided at the engagement area of LaFarm, so students can carpool to the event together. Students, professors, or community members will present for 15 minutes about a topic they are either currently researching or an environmental topic that they are knowledgeable about. After they present, event goers will utilize the pizza oven proposed in Chapter 2 and enjoy delicious pizza. The ingredients will be provided by the current Lafayette College dining provider, as that is how Yale's program acquires their ingredients for the pizza. The

outcome of the program as a whole would be to not only better inform students about food and farm, but to also connect students to nature and build community. The workshop would also enhance students' environmental stewardship as many of these skills can be continued throughout their lives after Lafayette College.

An important aspect of environmental citizenship is to understand an individual's location in relation to the areas surrounding them and the world (VIII Southern Connection 2016 Congress, 2001)[v]. Through both a local food and/or local farm tour of the Lehigh Valley, Lafayette College students are given the opportunity to gain an understanding of the Lehigh Valley in an agricultural setting. In Appendix 2.f, there is a proposal for both a local food and local farm tour. Within the local food tour, students would have the opportunity to take a tour of restaurants in the Lehigh Valley that pride themselves on locally sourcing their ingredients from the Lehigh Valley. As mentioned above, an important aspect of environmental citizenship is to understand location, and learning about the local food movement in the Lehigh Valley would do just that. Lafayette students have been slowly increasing their involvement in the downtown area of Easton by visiting the many restaurants that are located there. We believe that students would be interested in both of these tours as it broadens their horizons to restaurants in the Lehigh Valley. The local farm tour would consist of the few farms that Bon Appetit, Lafayette College's current dining services provider, sources ingredients from within the Lehigh Valley. Through speaking with Carolyn Carwick, the District Manager of Bon Appetit, we learned that Bon Appetit has been working towards developing a better connection to students. We believe that a local farm tour would fulfill this goal because in order to build a resilient foodshed citizens need to gain an understanding of the distance in which their food travels and the growing patterns of the food that they consume.

As previously stated in the methods section, garden based learning provides hands-on learning, builds a stronger sense of community, and help students gain the tools needed for a life of environmental stewardship (Williams and Dixon, 2013)[vi]. By placing a garden on campus that is connected to LaFarm, we can build student awareness of the sustainability initiatives that Lafayette College has created while also providing education. The garden would be an educational garden, one that provides names and descriptions for all plants present so that viewers can gain a better understanding of what they are looking at. We have provided below in Appendix 2.g a mock sign that would be used for the on campus garden. Campus gardens have been proved to promote environmental citizenship and develop a closer community (Desmond et al, 2002). This would be a logical next step for Lafayette College as it moves towards becoming more sustainable as it will teach students about what native plants grow within the area and will also give students the opportunity to participate in environmental citizenship, one of Lafayette College's sustainability missions. Attached in Appendix 2.g is a proposal for the campus garden that contains the location, plants, and labor that will be required to get the garden up and running.

2.4 Interpretation

From the research that we conducted and the faculty at Lafayette College that we spoke to, we believe that all three of our proposed curricular activities will further both the development of well-rounded liberal arts students and the mission to foster environmental citizenship in students at Lafayette College. By introducing a program that provides students with the opportunity to learn skills related to food and agriculture and an Environmental Poster Session dedicated to Food and Agriculture at Lafayette College, students have the ability to help Lafayette College shift from being just beneficiaries of our local and regional food system to recognizing their roles in these

food systems and actively taking part in one. Through shifting our ideology from recognizing ourselves as part of a food system to taking action within one, we fulfill the mission of a resilient foodshed: shifting from theory to action (Kloppenburg, Hendrickson, and Stevenson, 3). By providing opportunities for students to gain farm skills and understand the local food movement within the Lehigh Valley, students gain the ability to re-establish social connections beyond consumerism and improve relations with producers and other consumers, defined as a commensal community (Kloppenburg, Hendrickson, and Stevenson, 8). Through building this community, there is an intimate and essential connection to food that helps improve environmental stewardship (Kloppenburg, Hendrickson, and Stevenson, 8).

This improvement of environmental stewardship fulfills the mission of Lafayette College to prepare students for a life of environmental citizenship (Lafayette College, 2017). Furthermore, the proposed campus garden would eliminate the current existing distance between Lafayette College students and LaFarm, defined as proximity (Kloppenburg, Hendrickson, and Stevenson, 10). Within a resilient foodshed, proximity creates collective responsibility for stewardship of the land that lies within the designated foodshed (Kloppenburg, Hendrickson, and Stevenson, 10). Proximity is especially important with regards to LaFarm and Lafayette College due to the farm's location three miles away from campus. Dickinson has successfully overcome the same distance issues, which has helped us form proposals that overcome the existing problem. The proposed campus garden would decrease this gap in distance by increasing visibility of LaFarm right on Lafayette's campus and creating a sense of responsibility and stewardship for this garden by the students who will be taking care of it and harvesting its produce.

2.5 References

Borgman, M., Burnette, D., Cole, S. Gourley, R., Guckian, M., Jacokes, M., Smith, S. (April 2014). A Rooted University: Growing Resiliency, Community, and Engaged Food Citizens at the UM Campus Farm. Retrieved from: https://deepblue.lib.umich.edu/handle/2027.42/106572

Cheang, C., So, W., Zhan, Y., Tsoi, K. (2017). Education for Sustainability Using a Campus Eco-Garden as a Learning Environment. Retrieved from: http://eds.a.ebscohost.com/eds/detail/detail?vid=5&sid=78682655-79ab-493a-aa1c-ac9bc3c427aa%40sessionmgr4006&bdata=JnNpdGU9ZWRzLWxpdmU%3d#AN=EJ1129380&db=eric

Coastal Carolina Community College. (2017). Sustainable Agriculture. Retrieved October 23, 2017, from: http://www.cccc.edu/agriculture/

Desmond, D., Grieshop, J. Subramaniam, A. (October 14, 2002). Revisiting Garden Based Learning in Basic Education. Retrieved from: http://www.fao.org/fileadmin/templates/ERP/2013/link_Virtual_pub/GBL_paper_for_SD.pdf

Dickinson College. (2017). College Farm: Sometimes Building a Cleaner Future Starts with Getting Your Hands Dirty. Retrieved October 23, 2017, from http://www.dickinson.edu/farm

The Evergreen State College. (2017). Organic Farm. Retrieved October 23, 2017, from:

http://www.evergreen.edu/organicfarm

Hellerman, M. (2017). Gardening on the Fringes. Retrieved from: http://eds.a.ebscohost.com/eds/detail/detail?vid=1&sid=78682655-79ab-493a-aa1c-ac9bc3c427aa%40sessionmgr4006&bdata=JnNpdGU9ZWRzLWxpdmU%3d#AN=125663810&db=sih

Home - School of Food and Agriculture - University of Maine. (n.d.). Retrieved October 23, 2017, from https://umaine.edu/foodandagriculture/

Hyslop, T. (August 2015). Student Farm Research. Retrieved from: http://agriurban.rutgers.edu/Documents/Student%20Farm%20Research.pdf

Kloppenburg, J., Hendrickson, J., and Stevenson, G. (1996). Coming In To The Foodshed. Retrieved from: https://moodle.lafayette.edu/pluginfile.php/316222/course/section/117218/Coming%20Into%20the%20Foodshed.pdf

Lafayette College. (2017). Course Catalog. Retrieved October 23, 2017, from http://catalog.lafayette.edu/en/current/Catalog
Lafayette College. (2017). Guides and Policies. Retrieved from: https://sustainability.lafayette.edu/guides-policies/

Lafayette College. (2016). Food and Farm. Retrieved from: https://sustainability.lafayette.edu/initiatives/food-farm/

Lafayette College. (2017). LaFarm. Retrieved October 31, 2017, from http://garden.lafayette.edu

Lafayette College. (2017). Library Catalog. Retrieved October 23, 2017, from http://libcat.lafayette.edu

Lafayette College (n.d.) Retrieved from https://sustainability.lafayette.edu/

Lafayette College. (June 4, 2014). Photos: Students Have A Blast During Senior Week. Retrieved from: https://news.lafayette.edu/2014/06/04/students-say-goodbye-to-college-life-during-senior-week/
Lafayette College Office of Sustainability. (2017) ECOreps Program Manual. Retrieved November 14, 2017 from: https://webmail.lafayette.edu/service/home/~/?auth=co$loc=en_US&id=34049&part=2

PennState Extension. (October 31, 2017). Pennsylvania Native Plants for the Perennial Garden. Retrieved from: https://extension.psu.edu/pennsylvania-native-plants-for-the-perennial-garden
Shannon-DiPietro, M. (2003). A Well-Rounded Education. Retrieved from: https://moodle.lafayette.edu/pluginfile.php/316222/course/section/117220/Yale%20University.pdf

Sustainable Agriculture Degree Vermont | Agriculture Bachelors Degree. (n.d.). Retrieved October

23, 2017, from https://sterlingcollege.edu/academics/sustainable-agriculture/

VIII Southern Connection 2016 Congress. (January 30, 2001). Environmental Citizenship. Retrieved from: http://www.cep.unt.edu/citizen.htm

Williams, D. R., & Dixon, S. (2013, June 1). Impact of Garden-Based Learning on Academic Outcomes in Schools. Retrieved October 23, 2017, from http://journals.sagepub.com/doi/pdf/10.3102/0034654313475824

Yale Sustainable Food Program. (2017). knead 2 know. Retrieved from: http://sustainablefood.yale.edu/farm/knead-2-know

Yale University. (2017). Yale Sustainable Food Program. Retrieved October 23, 2017, from: http://sustainablefood.yale.edu/

3. OPERATIONS

3.1 Introduction

As one of seven sustainability initiatives at Lafayette College, LaFarm provides a unique opportunity to increase environmental sentiment while connecting the campus community to a sustainable food system. Emphasizing the importance of the College's location in a physical space, the food and farm initiative has the potential to usher in a new era of environmental citizenship by connecting the campus community to the region. Future expansion of LaFarm will be necessary to increase its impact and to accommodate growing interest in the initiative among the campus community. This chapter provides recommendations for increasing the physical size of LaFarm without causing negative environmental impacts. While the goal is to inspire greater student involvement and to increase farm production, the educational benefits of LaFarm stem from its contribution toward creating a resilient foodshed.

This chapter focuses specifically on operational aspects of LaFarm—expanding with an emphasis on finding recommendations for infrastructure that will work within the boundaries of the land. For example, LaFarm is currently almost carbon neutral and we determined that using limited fossil fuels would remain a priority for future farm production. We planned all labor and economic needs for LaFarm's expansion to ensure that our recommendations can be successfully implemented with lasting benefits. All of our recommendations onsite support the larger goal of engaging more students, integrating LaFarm into coursework at Lafayette College, and increasing LaFarm's contribution to campus dining while creating a more resilient foodshed.

Carrying out the expansion plan will necessitate new areas of labor and require significant funding. The final set of recommendations breaks down where additional labor will be needed and who can fulfill those roles (i.e. students volunteers, student employees, professionals, etc). It also identifies potential sources of funding for each major expense. Through this report and an interactive timeline of the expansion plan, the operations team has developed a framework for expansion designed to optimize LaFarm's growth and solidify its contribution to a resilient foodshed.

3.2 Methods

The operations team used various methods to prepare recommendations for the future vision of LaFarm. In the initial phase, the operations team conducted a literature review to set a frame for the proposal. A necessary first step was to understand the key characteristics of a resilient foodshed and how other college farms operate. We analyzed Laura Sayre's book *Fields of Learning,* which documents the rising trend of college farms from colleges and universities of all sizes (Sayre, 2011). Her book provided the team with an understanding of how college farms function on other campuses across the country (Sayre, 2011). We used the information from Sayre's book to build an inventory cataloging operations related attributes of college farms. The inventory provided background on how other colleges manage infrastructure, economics, and labor on their own farms. Following this initial research, the operations group created a more specific inventory, focusing strictly on small liberal arts schools similar to Lafayette. To gather the necessary data, the team accessed the websites and annual reports of college farms that are similar in size to LaFarm or that have a wide array of infrastructure. The schools in the inventory include Dickinson College, Amherst College, Bowdoin College, Middlebury College, Pomona

College, Davidson College, Hamilton College, Haverford College, and Colorado College. The team was able to make comparisons between these colleges' farms and LaFarm to identify what is lacking as well as what additions would be feasible at LaFarm (Appendix 3.a).

The operations teams looked specifically at what infrastructure each college farm had as well as the farms' labor needs. Some schools, such as Amherst College (Amherst College, n.d.), are more student oriented, with most labor coming from student volunteers or employees. Other farms, such as Dickinson College and Middlebury College (Dickinson College, n.d., Middlebury College, n.d.), receive more oversight from one or more farm managers. The operations team also contacted farm managers from Haverford College and Pomona College to gain direct information on farm practices on these farms, with specific interest in their use of greenhouses. Collecting this information was important for providing the team with a better understanding of what colleges similar to Lafayette had implemented on their farms and what could be feasible on LaFarm.

To gain additional information on infrastructure, the operations team reviewed research conducted on farm greenhouses. The Engineering Studies Capstone conducted two studies, one in 2015 and one in 2016, on possible greenhouse designs specifically for LaFarm (Beyer, Hanczor, & Ingrao, 2015 and Coldren, Keough, Owen, & Reager, 2016). The 2015 report analyzes various greenhouse styles and how they would fit in on LaFarm (Beyer et al., 2015) while the 2016 report focuses on carbon neutral approaches (Coldren et al., 2016). These documents provided the team with an understanding of various greenhouses and their differing functions as well as the costs and energy requirements for each.

Recognizing that each farm functions within its own region and caters to its specific community, the team realized that it would not be possible to replicate exactly what is done on other college campuses. To gain a better sense of what is feasible at LaFarm, we contacted important stakeholders involved with LaFarm expansion. Human resources were the most critical and informative for the operations team. Because operations is focused on the future of the physical site at LaFarm, it was necessary for us to speak with people directly involved with farm functions.

Our first human resources were the members of LaFAB, who oversee LaFarm functions. In 2016, LaFAB created a vision document for LaFarm (LaFarm Advisory Board, 2016). This document was of particular interest to the operations team because understanding the history of LaFarm was necessary to determine the best way to move forward. The operations team used this document to get on board with plans that have already been considered to expand LaFarm. The report included an map of the proposed future LaFarm layout (Figure 12). Two of the members of LaFAB were our advisors for the Environmental Studies Capstone. Professor Cohen and Professor Lawrence provided the operations team with the necessary background knowledge of resilient foodsheds. They also provided us with valuable feedback throughout our research and

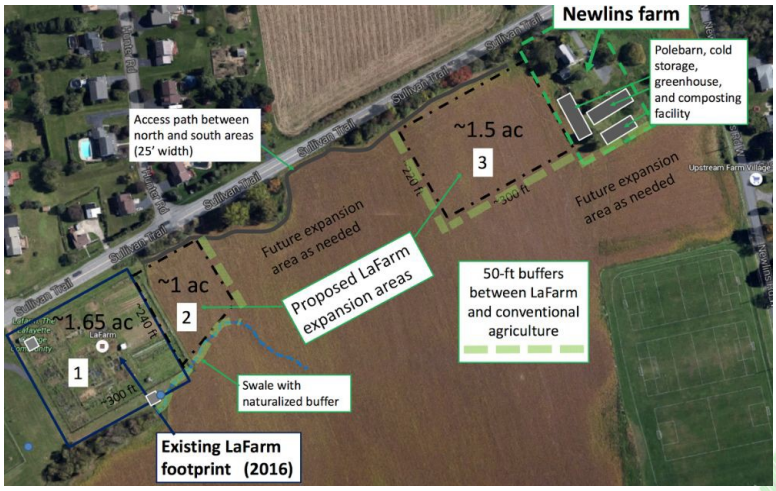


Figure 12: Proposed LaFarm Layout

offered advice for what next steps to take. The entire LaFAB came to an in-class progress presentation, providing vested opinions on our progress. Without this oversight operations would not have accomplished or manifested many of the initial objectives.

The most essential human resource for developing a dynamic and progressive vision for LaFarm expansion was LaFarm Manager Sarah Edmonds, who also serves as a member of LaFAB. Sarah Edmonds is practical, experienced, committed, and highly invested in the farm. She oversees all day to day labor on the farm, has participated in and watched the implementation of essential infrastructure, and coordinates directly with Bon Appetit for their weekly needs. The operations team did multiple site visits to LaFarm to meet and interview Sarah Edmonds. The operation team interviewed her once at the farm for around 30 minutes, and notes were taken. During this time Sarah told the operations team about existing infrastructure on LaFarm. LaFarm currently has a packing station that is used for the washing and packing of crops, and is powered by solar panels. The solar panels also power the irrigation system. LaFarm also has a seed & crop transportation van because LaFarm currently rents greenhouse space to start seeds and because the crops are not sold on sight. The crops are sold to dining services mostly, and Executive Chef John is contacted directly. Community and Lafayette vegetable stands also utilize the harvest.

Sarah Edmonds also expressed her desire for new infrastructure. The priority new infrastructure for Sarah Edmonds are a greenhouse, 4 season irrigation, and a cooler. She explained that these additions can increase production and extend the growing season at LaFarm with little increase in labor demands. The cooler is a simple storage unit that stays at a constant cool temperature, allowing LaFarm to wash and pack produce farther in advance of selling it. Crops that are ready to sell, but must wait to go to market are stored in the cooler. No extra labor is required except for placing the crops in the cooler. A greenhouse on the other hand requires daily monitoring of the seedlings, but significantly extends the growing season by allowing a farmer to start their crops earlier on in the spring and extending growing seasons later in the fall. Help monitoring the greenhouse may be necessary by a volunteer or paid student but, with the present level of crop production, Sarah Edmonds is confident she does not need more labor.

Additionally, Sarah Edmonds currently rents space from a greenhouse approximately 45 minutes from LaFarm, so having a greenhouse on site will greatly reduce her current travel time, allowing her to reallocate that time to overseeing the greenhouse at LaFarm. An onsite greenhouse will also reducing the amount of fossil fuels burned by LaFarm. 4 season irrigation is water that is available year round, and would only require instalment labor. More energy is required for 4 season water than for the current irrigation system because it requires a water heating unit to keep the pipes from freezing during the winter. 4 season water will be necessary to water seeds planted in the greenhouse during late fall, winter, and early spring. A new generator or more renewable energy sources would need to be implemented on the farm for 4 season water and the greenhouse (Edmonds, 2017).

Sarah also stipulated about the best on farm placement for the desired new infrastructure. Sarah Edmonds indicated that an ideal location for the cooler would be next to the packing station. This would place the cooler outside of the fence for production, ensuring that the cooler would not take up existing agricultural plots. The operations team had another site visit to LaFarm when it gained ownership of the old Coca-Cola trailer (Figure 11), which has the potential to be used as a new cooler, which will be explained in the results section. Sarah Edmonds was also interviewed by the operations team for a third time in Skillman Library and she heavily advocated for a student

liaison position that would coordinate between LaFarm and Dining Services (Interview Transcript 1, Appendix 3.e). These visits and interviews enhanced the operations team's understanding of the physical space available at LaFarm and what placement of future infrastructure would be most beneficial (Edmonds, 2017).

Another human resource used by the operations group was Carolyn Karwick from Bon Appetit Management Company (BAMCO), Lafayette's dining service provider. Ms. Karwick was generous enough to sit down in Marquis with a member of the operations group. Ms. Karwick stated that dining would take as much produce from LaFarm as possible (Karwick, 2017). However, a previous site visit to the Marquis Dining Hall kitchen with Executive Chef John had proven otherwise (Chef John, 2017). Chef John stated that he receives all of his potatoes from one regional farm and thus does not need potatoes produced at LaFarm (Chef John, 2017). Chef John also suggested that LaFarm provides him with salad bar item produce from cold storage, available only if a cooler is implemented on LaFarm (Chef John, 2017). Spinach, lettuce, swiss chard, arugula, kale, and romaine are all salad bar crops that could be saved in cold storage and continuously provided to Dining Services (Chef John, 2017). These crops can be harvested multiple times in a growing season without replanting them (Sarah Edmonds, 2017). Carolyn confirmed that salad bar items would be most beneficial (Karwick, 2017). These salad bar items would provide more interaction between LaFarm and BAMCO. BAMCO would profit from having access to more nutritious local food, and LaFarm benefits from making more profit and being more represented in the dining halls. With the addition of a new cooler at LaFarm, provision of consistent salad bar items would be possible.

A site visit was also conducted at Klein Farms, a local dairy farm. The operations team performed this site visit to evaluate their engagement and revenue generating infrastructure, and to investigate their cooler in person. The operations team wanted to see a conventional cooler on a farm in order to evaluate what was best for LaFarm. Upon arrival to Klein Farm, the operations team had the chance to go on a farm tour and interview the owner, Beth Klein. Beth Klein directed us to various cooler options and endorsed the recommendation from BAMCO to focus LaFarm contributions to salad bar items.

The operations team also met with current students in the Fall 2017 Engineering Studies Capstone, who are developing a report for LaFarm greenhouse recommendations. The operation team's initial idea was to incorporate a classroom into the greenhouse because learning with tangible results in the classroom was a major advantage to the operations team. The Engineering Studies students provided us with the insight that a fully equipped classroom, by its modern definition, was not feasible or reasonable within the proposed greenhouse. For example, a projector system would require too much space within a greenhouse. Operations then moved to consider renovating the Newlins Farmhouse to include classroom space, while potentially having lab space in the greenhouse. So a modern technological definition of a classroom with a projector and tables would be walking distance from the greenhouse, and there could still be basic benches within the greenhouse.

Operations also coordinated with the Engagement and Academics teams within the Environmental senior Capstone. Collaboration with these groups allowed for synergy of future LaFarm expansion plans. The engagement team informed us that the bus transportation stop at Metzgar would be adequate until LaFarm transitioned and added Area 3 (Figure 11). There does not need to be an additional stop for the bus, only new times as the engagement team will later mention. The academics team suggests a "Transfarm Your Skills" program that would run through the operation team's proposed gazebo and pizza oven in Area 3, which will be

referenced more in the results and by team academics. Topics like transportation and "Transfarm Your Skills" overlapped between all groups and were discussed together.

A final method used by the operations group was data analysis. Our initial infrastructure focus was a cooler and a greenhouse. After reviewing our research, the operations group realized that 4 season irrigation would also be necessary and that other infrastructure such as a gazebo and pizza oven would draw engagement and should also be a main focus. New parking for the expansion to Area 3 (Figure 11) will also be needed after 2019 (Figure 12). Public transportation needs, such as a roundabout for bus drop-off will also be necessary upon expansion to Area 3, but not until this expansion. Implementing 4 season irrigation, parking, and a roundabout are all products of the operations team's analysis for possible additions to an infrastructure inventory (Appendix 3.b).

3.3 Results

The final results include a proposed list of infrastructure that would be added to LaFarm based on the research and methods mentioned above. This includes the addition of a hoophouse, cooler, 4 season irrigation, greenhouse, gazebo, pizza oven, and roundabout. The operations team included a list of additional labor and funding methods that would be necessary to implement the infrastructure and expand LaFarm. After researching other colleges, mainly Dickinson College, Pomona College, and Haverford College, the operations team came to the conclusion that the infrastructure proposed were of priority to implement on LaFarm. By getting a better understanding of the infrastructure, the labor needed, the energy use, and costs, we were able to understand why this infrastructure was of priority at other college farms and how those farms benefited from implementing the infrastructure.

In order to visualize what would be of priority, we created a timeline for when all infrastructure and expansion should take place (Figure 13).

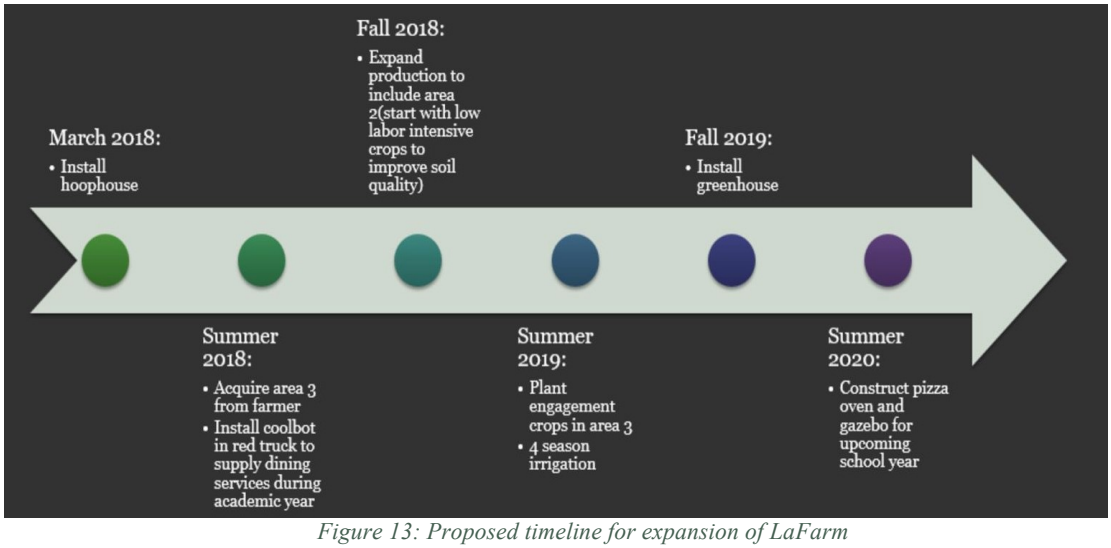


Figure 13: Proposed timeline for expansion of LaFarm

Sarah Edmonds informed us that LaFarm has purchased a hoophouse, which she plans to install in the Spring of 2018. Thus, this is the first event on our timeline. In order to increase production, adding a hoophouse, and later a greenhouse, will help increase production and crop

variety by extending the growing season. A hoophouse can be defined as a simplified version of a greenhouse; it is not made of glass and is of smaller size (Figure 11). Therefore, it does not cost as much as a greenhouse. A hoophouse protects produce from severe weather conditions because the temperature inside the infrastructure can be controlled. Therefore, plants can be grown in cold months, protected from the weather outside. This approach extends the growing season. The hoophouse has already been purchased through the Lafayette Food and Farm Co-Operative (LaFFCo) and will be installed in March 2018 on Area 1 (Figure 13). Installing a greenhouse at LaFarm is a priority, but installing a hoophouse before it is a good first step as it does not cost as much as a greenhouse but has similar capacity as one, just on a smaller scale. The hoophouse would be 20x24 feet.

Figure 14: Example of hoophouse

Figure 15: Proposed LaFarm Expansion

After installing the hoophouse, we recommend installing a cooler next to the current wash station on Area 1 (Figure 13) so that it can provide storage for produce that would be sold to dining services during the academic year. This cooler would be installed in the summer of 2018. By talking to Sarah Edmonds and Beth Klein, the operations team realized that two options could be proposed for a cooler. One of the options would be to purchase a conventional

cooler. This cooler would be 8x12 feet and would cost approximately $18,000 to purchase (Figure 14). The second option would be to utilize a red truck that LaFarm already owns and transform it into a cooler (Figure 15). The truck can be made into a cooler by buying a coolbot (around $400) and an air conditioner (around $300) that allow for climate control within the truck, making it optimal to store produce. Sarah Edmonds explained that coolers have low enough energy requirements to be powered by the current solar panels on the production farm on Area 1. Therefore, no additional energy would be necessary for it to function properly, whether it is a conventional cooler or the red truck. Because the red truck and coolbot system is the least expensive option, it seems like the best option for now. Ideally however, LaFarm could benefit by having both coolers as more crops will be grown and would need to be stored in a cool place. The conventional cooler would require around 1,113 Kwh (Kilowatt-hour) per month whereas the red truck with the coolbot would require around 5.2 Kwh if the cooler were to be open six times in an hour; if the cooler were to be open more than six times in an hour it would then require more energy. The cooler would be located on the production farm (Area 1) next to the pack station because a proximal location to the wash and pack station will reduce the labor requirements that stem from transporting harvested produce.

Figure 16: Truck with Coolbot

Figure 17: Conventional Cooler

After installing the cooler, Sarah Edmonds would later be able to expand production to include Area 2 in the Fall of 2018 as Area 2 would eventually focus on salad bar items. At first, LaFarm would start with low labor crops on that area (such as sunflowers, pumpkins, and potatoes) in order to improve soil quality. After talking to Carolyn Karwick from dining services, she expressed great interest in purchasing more salad bar items from LaFarm. Therefore, after improving soil quality on Area 2, Sarah Edmonds would then be able to plant salad bar items on Area 2 that could be stored in the cooler and sold to dining services. As a result, dining services would then be able to buy even more produce from LaFarm.

According to Sarah Edmonds, having visitors at a production farm can be problematic because people often do not know where crops are being grown and end up stepping on growing crops. While students and volunteers can still work on the production farm as they have in the past (Area 1 and Area 2), the Operations teams realized that it would be beneficial to acquire an additional 1.5 acre plot, Area 3, near Newlins Farmhouse (Figure 13). Acquiring Area 3 is the first step in actually expanding the size of LaFarm and is in accordance with the future LaFarm vision created by LaFAB (LaFarm Advisory Board, 2016). The operations team recommends acquiring Area 3 in the summer of 2018, around the same time as installing the cooler. While the

current 2.5 acres have been ideal for production, providing rich soil and easy road access, we propose the acquisition of Area 3 as a top priority because it will be valuable for accommodating increased student engagement. Therefore, Areas 1 and 2 would still focus on production, while the new area would be focusing on engagement. Certain events that are not focused on production will take place primarily on Area 3.

Furthermore, remaining within the guidelines for creating a more resilient foodshed, LaFarm has remained close to carbon neutral (LaFarm owns a rototiller that is gas powered). However, addition of new infrastructure on Area 3, primarily a greenhouse, will require greater amounts of energy. Therefore, the operations team recommends that the production farm remain close to carbon neutral—relying on solar and other renewable energy sources—while Area 3 may use some conventional energy initially with the goal of implementing renewable energy in the future. This conclusion was based on the greenhouse energy requirements estimated in the Engineering Studies Capstone report (Beyer et al., 2015) and was supported by Sarah Edmonds. The operations team realizes that the experience of working on a near carbon neutral farm is vital for developing students' understanding of sustainable farming and being part of a resilient foodshed. However, greater educational benefits can be achieved with the addition of a conventionally powered engagement space and justify the addition of Area 3 with the goal of making it carbon neutral in the future. New benefits will arise from having programs on Area 3 that engage students in topics about farming, the food system in general, and environmental consciousness.

By using crop rotation, Sarah Edmonds would be able to transition crops from Area 2 to Area 3. The crops planted would be the same on both areas and include sunflowers, pumpkins, and potatoes. These crops help to enrich the soil quality, which will be necessary on Area 2 so that in the future, less durable crops including salad bar items can be planted in that area. Planting crops in Area 3 would come a season after planting in Area 2 (Summer 2019). Even though Area 3 would mainly be focused on increasing student engagement, a small portion would be dedicated to low labor crops. Installing 4 season water would happen around the same time. 4 season water allows for more crops to be produced by extending the growing season with the help of a greenhouse. Therefore, 4 season water needs to be installed before a greenhouse can be installed on Area 3 in order for the greenhouse to function properly. This is why it the installation of a greenhouse is recommended the summer before installing the greenhouse.

As mentioned above, adding a greenhouse would help increase production by extending the growing season as it protects plants from severe weather conditions. After researching other college farms, such as HarverFarm from Haverford College (Haverford College, n.d.), reading the Engineering Studies Capstone reports (Beyer et al., 2015 and Coldren et al., 2016), and talking with Sarah Edmonds, the operations team determined that installing a greenhouse is a priority for the future of LaFarm. HaverFarm was able to install a greenhouse (Figure 16) only three years after it was proposed by an Environmental Studies Capstone class. Therefore, we believe that a similar timeline is feasible for LaFarm and that the greenhouse could even be implemented by Fall 2019 with the guidance of the Engineering Studies Capstone reports and this report. The greenhouse would be 30x96 feet and would use around 60-90 Kwh of energy (Beyer et, al., 2015). The size of the greenhouse and the energy use is based on the model recommended in the 2015 Engineering Studies Report (Beyer et al., 2015). The greenhouse would cost around $35,000 but could also be a bit more expensive depending on the power source (Appendix 3.b). Even though the greenhouse would help increase production, after

talking to Sarah Edmonds and presenting our plan to her, the operations team recommends that the greenhouse is installed on Area 3, the area that is more engagement oriented. Because the greenhouse will require more energy than LaFarm can currently provide with renewable sources, we decided that Area 3 would be a good place for it as it can get power from the nearby Newlins Farmhouse. It will be acceptable to build a greenhouse in this space because "in Forks Township (where LaFarm is located), the building codes do not differ from the Pennsylvania Uniform Construction Code, which exempts any agricultural building on agricultural land from building codes. Because LaFarm and all the adjacent land owned by Lafayette is zoned as a Recreational/Educational/ Municipal (REM) (zoning map, Township of Forks Ordinance 331 Code § 200) it can be used for a variety of purposes including agriculture" (Beyer et al., 2015) (Appendix 3.c). Additionally, the greenhouse could be used as a classroom space for laboratory classes. Initially, we had considered the addition of classroom space within the greenhouse. However, other colleges, including Haverford College and Pomona College, do not have classrooms in their greenhouses (Heredia, 2017 and Koon, 2017). Rather, they have separate classrooms with access to the greenhouse when necessary. Additionally, we spoke with students in the 2017 Engineering Studies Capstone who had found similar evidence in their own research and endorsed the idea of a classroom near the greenhouse.The Newlins farmhouse could potentially provide the recommended classroom space, negating the need to construct an entirely new structure.

Figure 18: Haverfarm greenhouse

After researching Yale University and its college farm, we learned that Yale University's farm hosts a program called "Knead to Know" at its gazebo and pizza oven (Figure 17). The

Figure 2.8: Yale University gazebo, picnic tables, pizza oven

program takes place weekly at the farm where students or people working at the farm present a question about food and farming and open a discussion about the topic. The different topics vary from "the economics of large-scale wheat farming to the sexual politics of the food movement to the chemistry a maltster might encounter," (Yale University, n.d.). Gathered around the gazebo and pizza oven, their program has had success drawing more students to the farm and educating them about food systems. In terms of labor, the students participating in the program would be the ones cooking the pizzas. The operations team proposes purchasing and installing a similar gazebo with picnic tables and a wood-fired pizza oven to facilitate greater engagement between LaFarm and the community and create a place for more educational opportunities. The academics team has proposed a program that would be similar to Knead to Know, called "Transfarm Your Skills," (Section 2). Through this program, the engagement and operations teams can achieve their mutual goal of increasing student engagement at LaFarm while fostering a greater connection to food and farm. The gazebo would be 30x50 feet with picnic tables that would accommodate around thirty people. It would cost around $200 per table for the gazebo. The wood-fired pizza oven would be approximately 4x5 feet and can be attached to the gazebo. It would cost around $2,000. Refrigeration may be needed for the pizza ingredients, but storage space may be available at the Newlins Farmhouse.

The operations team recognizes that increased engagement on Area 3 will necessitate additional parking space near the Newlins Farmhouse. We also recommend adding a roundabout in order for transportation to come and go from this area more easily. In order to attract as many visitors as possible, we believe it is necessary to add parking spaces near Area 3 so that visitors do not need to walk from Area 1. The amount of added space would be to accommodate six additional cars, as we hope that students will carpool to such events. We also hope students and take advantage of the LCAT shuttle system already in place. Currently, the shuttle stops at Metzgar fields next to Area 1, however with the addition of a roundabout at Area 3, we hope that an new stop can be added near Area 3 and Newlins Farmhouse. Because of the proximal location to Metzgar fields and the roundabout, the stop would only add approximately 2 minutes to the current shuttle schedule.

We have also developed a proposed list of specific funding sources that could be used to pay for infrastructure, increase labor, and physical expansion of LaFarm. While not in charge of collecting fundings, the operations team realized the importance of providing specific funding mechanisms that could be used to implement all recommendations. One of the funding methods we have looked at is applying for a grant through the Clif Bar Family Foundation. The grant is given to applicants that "protect Earth's beauty and bounty; create a robust, healthy food system; increase opportunities for outdoor activity; reduce environmental health hazards; build stronger communities," (Clif Bar Family Foundation, n.d.). We believe that the recommendations above for expanding LaFarm, engaging the community more, and furthering efforts to build a resilient foodshed, strongly align with the grant description. The grants through the Clif Bar Family Foundation are on average around $7,000. For more information see the Clif Bar Family foundaiton website: http://clifbarfamilyfoundation.org/grants-programs/small-grants. Another grant opportunity is through Northeast Sustainable Agriculture Research and Education (SARE) that offers "grants and education to advance innovations in sustainable agriculture," (Northeast SARE, n.d.). It offers multiple grants, many of which could fit the needs of LaFarm. These include the Farmer Grant of Research and the Education Grant (Northeast SARE, n.d.). The grants most fitted for LaFarm would have deadlines either in March or during the summer and can go up to $15,000. These grants can be found at: https://www.nesare.org/Grants/Get-a-Grant. Another organization that Lafayette College could benefit from is the National Sustainable Agriculture Coalition, "an alliance of grassroots organizations that advocates for federal policy reform to advance the sustainability of agriculture, food systems, natural resources, and rural communities," (National Sustainable Agriculture Coalition, (n.d.). It offers many grants and loans in many categories such as renewable energy, food safety, local and regional food systems, and sustainable and organic research, that are for farmers and/or organizations. For more information about the National Sustainable Agriculture Coalition Grants, visit: http://sustainable agriculture.net/publications/grassrootsguide/farm-bill-programs-and-grants/. These grants would be sufficient to fund multiple infrastructure improvement such as the cooler, the gazebo, and the pizza oven. In a broader sense, Lafayette College can also target alumni who are interested in agriculture and food and farming or rely on capital expenditures to acquire physical assets for LaFarm. As demonstrated by LaFFCo and their help in funding the acquisition of the hoophouse, student clubs and organizations dedicated to farming and the environment can also be influential.

3.4 Interpretation

Envisioning the future of LaFarm required the operations team to make recommendations consistent with the concept of a resilient foodshed. The above recommendations are intended to bolster the six components of a resilient foodshed and support LaFarm's contribution to a more sustainable food system. While improving the sustainability efforts on LaFarm and increasing environmental sentiment within the Lafayette community is a noble venture, the Environmental Capstone class and specifically the operations team decided to take it one step further. Instead of focusing on sustainability, the team shifted the focus to a resilience based model for LaFarm. The Capstone class employed this model of resilience rather than sustainability for many reasons. This is most noted in the Jevon's paradox, which asserts that as the efficiency of a resource increases, the amount being demanded will increase as well (Owen, 2010). By implementing a resilience based model on LaFarm, the operations team was able to make

recommendations for LaFarm that help build the resilient foodshed Lafayette College should be striving to be a part of.

One of the largest hurdles that the Environmental Capstone realized was overcoming the disconnect between Lafayette community members and their food. Many community members do not even know that LaFarm exists, while others fail to realize that many of the ingredients used by dining services are locally sourced. This ignorance is best exemplified by athletes that use the Metzgar field facilities next to LaFarm, but are unaware of the farm's existence. While there is a range of knowledge about LaFarm, Lafayette community members seemed to be quite culturally distant from their food. Since proximity stands as one of the facets of a resilient foodshed, the operations team decided it would be important to limit that cultural distance between people and their food. This was achieved in a number of different ways. The most inclusive way the operations team set out to achieve this cultural change is through the addition of an acre on LaFarm that would be designated as an engagement area, Area 3 (Figure 10). In creating Area 3, the operations team was inspired by successful programs that other farms implemented, including the Yale student farm and the local Klein Farm. The engagement team views this as an area to serve as a space that gathers first time visitors and involved Lafayette community members to LaFarm in order to inspire lasting connections. This area would include programs like pumpkin picking and sunflower selfies and discussion around food. These programs are based around activities that will not only draw the interest of students on campus, but will also serve as free advertising for LaFarm. Since pumpkins and sunflowers hold what College Farmer Sarah Edmunds calls "selfie appeal", students will post pictures at LaFarm with the engagement crops and expose LaFarm further. This will help gather even more Lafayette community members to LaFarm and strengthen the engagement area.

One of the most robust and innovative engagement areas the operations team came across in their research was the one at Yale University farm. Their engagement area has a wood fired pizza oven and gazebo that people used for community gathering and discussion. In order to boost interest in the farm, Yale started a discussion program called "Knead to Know" (Yale Sustainable Food Program, Yale University). The program engages participants in discussion regarding environmentally charged issues while enjoying delicious pizza from the wood fired oven, using ingredients grown on the farm. Through this program, Yale has found a great deal of success in gathering a crowd to their farm every Friday (Yale Sustainable Food Program, Yale University). Knead to Know inspired the operation team's recommendation for a similarly engaging attraction at LaFarm that would be located in Area 3. Through a similar program at LaFarm that incorporates food, education, and fun, the Lafayette community would begin to be much more connected to food production and understand the process that puts food on their plates.

Aside from reducing the cultural distance between the Lafayette community and food production, another important part of building a resilient foodshed is creating a moral economy. Currently, many people view their food primarily as a commodity (Hendrickson, Kloppenburg, & Stevenson, 1996). Food is often taken for granted and meals have become something that simply get people through the day. Lack of consideration for meals is especially prevalent in a college setting where students quickly grab meals between class and do not purchase ingredients or cook for themselves. The grab-and-go culture that has taken America by storm is detrimental to the goals of a resilient foodshed that Lafayette College should be trying to support. Thinking of food simply as a commodity hinders the resilient foodshed. Commodities can easily be thrown away and there is little connection to the product or the land from which it

is derived. The current cultural paradigm sees food as a disposable commodity, with Americans wasting up to 40% of the food they purchase every year (Gunders, 2012). The operations team hopes to curb this commoditization of food by connecting students to food production. By implementing a greenhouse in Area 3, students will be able to learn about the various different things that go into growing food from the initial phase of planting seedlings. Food is not something that just hits a person's plate. Food and eating should be viewed as the intimate interaction between humans and the land in which a great deal of work is required. An understanding of the food production can begin to educate people on the importance of being a steward to the land. Allowing students the opportunity to grow their own food from seedlings and to better understand the lengthy process of turning a seed into produce can improve overall environmental sentiment in the Lafayette Community. This will prove to be vastly important in how Lafayette community members alter their perception of food (Pirog et. al, 2014).

In addition to formal education through classes at LaFarm, members of the Lafayette community can learn about the food system simply by visiting LaFarm. Another main component of a resilient foodshed is fostering a commensal community amongst and between consumers and producers (Hendrickson, Kloppenburg & Stevenson 1996). This is made possible at LaFarm through opportunities to volunteer planting and harvesting crops. Interested participants can sign up for events through the commitment calendar that will be further discussed in chapter 4. This further community engagement with LaFarm would connect people to the process of growing produce and teach them about the steps that are required for producers to get food to the market. In better understanding the process that gets food to a person's plate, there will be a greater sense of appreciation for farmers and the work that goes into growing food. This is an important first step in changing how people connect to food and farm. Additionally, engagement with LaFarm leads to greater understanding of the local land (Hendrickson, Kloppenburg, Stevenson, 1996). As a three-acre farm, it will be hard to argue that LaFarm is actively challenging industrial agriculture through production. However, it is reasonable to argue that the learning opportunities at LaFarm—which can be extrapolated to larger farms and the sustainable food movement—are challenging industrial agriculture. In addition to representing the pedagogical mission of LaFarm, engagement with LaFarm would help students understand where their food is coming from, therefore instilling a sense of commensal community.

3.5 References

Amherst College (n.d.). *Welcome to Book and Plow farm*. Retrieved from: http://www.bookandplowfarm.com

Bowdoin College (n.d.). *Bowdoin Organic Garden*. Retrieved from: http://www.bowdoin.edu/organic-garden/

Benson, Melinda Harm and Robin Kundis Craig (2013, May 22). The End of Sustainability. *Society and Natural Resources*. 27: 777-782.

Beyer, D., Hanczor, S., & Ingrao, J. (December 2015). *LaFarm Greenhouse*.

Carleton College (n.d.). *Carleton Student Organic Farm*. Retrieved from: https://apps.carleton.edu/sustainability/campus/land/farm/

Chef John (October 5, 2017). Bon Appetit Management Company. Personal Communication

Clif Bar Family Foundation (n.d.). *Small Grants*. Retrieved from: http://clifbarfamilyfoundation.org/grants-programs/small-grants

Colby College (n.d.). *COFGA: Colby Organic Farmers and Gardeners Association*. Retrieved from: http://web.colby.edu/cofga/

Coldren, I., Keough, E., Owen, C., & Reager, K. (Fall 2016). *Carbon Neutral Greenhouse: A Feasibility Study*

Davidson College (n.d.). *The Farm at Davidson*. Retrieved from: http://www.davidson.edu/offices/farm-at-davidson

Dickinson College (n.d.). *Sometimes Building a Cleaner Future Starts With Getting Your Hands Dirty*. Retrieved from: http://www.dickinson.edu/homepage/389/college_farm

Edmonds, Sarah (October 25, 2017). LaFarm Manager. Personal Communication

Gunders, Dana (August, 2012). *Wasted: How America is Losing Up to 40 Percent of its Food from Farm to Fork to Landfill*. National Resources Defense Council

Haverford College (n.d.). *HaverFarm*. Retrieved from: https://blogs.haverford.edu/haverfarm/

Heredia, Jahzara (November 2017). Farm Manager, Haverfarm Haverford College Farm. Personal communication

Karwick, Carolyn (October 27, 2017). Bon Appetit Management Company. Personal Communication

Klein, Beth (November 3, 2017). Klein Farm Owner. Personal Communication

Kloppenburg, Jack Jr., John Hendrickson and G. W. Stevenson (summer 1996). Coming in to the Foodshed. *Agriculture and Human Values*. 13:30 (33-42)

Koon, Mary Alice (November 2017). Farm Manager, Pomona College Organic Farm. Personal Communication

LaFarm Advisory Board (July 2016). *LaFarm Phase II: Background and Rationale for Expansion*

Middlebury College (n.d.). *Middlebury College Farm*. Retrieved from: http://www.middlebury.edu/sustainability/food/farm

National Sustainable Agriculture Coalition. (n.d.) *Farm Bills Programs and Grants*. *Overview*. Retrieved from: http://sustainableagriculture.net/publications/grassrootsguide/farm-bill-programs-and-grants/

Northeast SARE (n.d.). *Research and Education Grants*. Retrieved from: https://www.nesare.org/Grants/Get-a-Grant/Research-and-Education-Grant

Owen, David (2010, December 27). The Efficiency Dilemma. *The New Yorker*

Pirog, R., Miller, C., Way, L., Hazekamp, C., & Kim, E. 2014. T*he local food movement: Setting the stage for good food*. MSU Center for Regional Food Systems.

Pomona College (n.d.). *Pomona College Organic Farm*. Retrieved from:https://farm.pomona.edu

Ratasky, Stephen (2015). Identifying Key Characteristics for Student Farm Success through a National Delphi Study. *NACTA Journal*. 59(1), 96-103

Sayre, Laura (2011). *Fields of Learning*. The University Press of Kentucky

Wellesley College (n.d.). *Saving the Earth, One Tomato At a Time: Wellesley College Students Tackle Organic Farming*. Retrieved from: http://web.wellesley.edu/ PublicAffairs/ Releases/2008/062608.html

Yale University (n.d.). *Yale Sustainable Food Program*. Retrieved from: https://sustainablefood.yale.edu/farm/knead-2-know

Yates, Joshua J (Summer 2012). Abundance on Trial: The Cultural Significance of "Sustainability." *The Hedgehog Review*

APPENDIX

Engagement Group Appendix

Appendix 1.a

First Priority List

Visibility

Lafayette College:
- Survey
- Increased Signage
  - Dining Halls
  - Transportation
- First Year Orientation

Easton Community:
- Liability at LaFarm
- Reconnect with Past Organizations
- Introduce New Organizations

Accessibility

Lafayette College:
- Better transportation
  - Shuttle Times
  - Posted Time Schedule
- LaFarm at Lafayette
  - Campus Markets
  - Gardens

Easton Community:
- Easton Farmer's Market

Attendance

Lafayette College:
- Increased Events
  - Classes
  - Organizations
  - Greek Life

Easton Community:
- Increased Events:
  - Past + New Organizations

Overall:
- Create calendar to maximize participation at LaFarm

Appendix 1.b

Final Priority List

First Time Involvement
- First Time Arrival Materials
- POSP trip

Continued Commitment
- ECOrep Assistant LaFarm Manager
- Calendar of Commitment

Visibility
- Sign at LaFarm
- Transportation Improvements

Dining
- Orientation to Dining
- Cooking Classes

Appendix 1.c

First Time Involvement Materials - Page 1. This information is targeted at an audience who has not yet been to LaFarm

LaFarm Pre-Arrival Materials #1

Lafayette's Off-Grid Sustainable Working Farm

Where is LaFarm? 3118 Sullivan Trail, Easton, PA

LaFarm on campus office location: Pardee 120

Look for **LaFarm** on these platforms:

Our GPS: 40.7338307, -75.2344246

How Can You Get There?

Take the "Metzgar" Lafayette College Shuttle From the Corner of Pierce St. and Hamilton St.

Parking is also available in the grass in front of the farm

LaFFCo provides weekly carpooling from the circle next to Farinon during the Fall and Spring

To See the Shuttle Schedule, Check Out: http://www.lafayetteshuttle.org/

Or Download the App on the Appstore

Ride Systems

What Should You Bring?

- Outdoor Clothes
- Boots or Sneakers
- Reusable Water Bottle
- Hat
- Long Sleeves
- Sun Protection (This is Required!)

What Will Be There For You?

- Garden Gloves
- Hand Tools
- Wash and Packing Station
- Restroom Facilities at Metzgar

Appendix 1.d

First Time Involvement Materials - Page 2. This information is targeted at an audience who now understands the basic duties at LaFarm.

LaFarm Post-Arrival Materials #2

What Should You Expect At LaFarm?

1) Sullivan Tr. Entrance
2) Parking
3) Community Shed
4) Community Plots + Specialty Plot Area
5) Gazebo
6) Solar Powered Irrigation + Rain Collection
7) Working Farm Shed
8) Wash and Pack Stations
9) Bryan Hendrickson Memorial Irrigation Tank
10) Orchard

Farm Management

Lafayette has an Assistant Director of Food and Farm and regular student staff members that run LaFarm. When students are at LaFarm, they will work closely with a leader to plant, weed, harvest, and grow produce.

What Tasks Are You Going to Complete?

-Harvest seasonal vegetables
-Wash, weigh and pack produce for dining halls
-Prepare seedbeds
-Transplant seedlings
-Weed crops
-Irrigate plantings
-Stake and trellis summer produce
-Mulch beds
-Work on group projects to improve LaFarm
-Maintain perennial beds
-Harvest and pack produce for market
-And so much more!

Tools You Can Learn to Use At LaFarm

Hula Hoe
Tilling Broadfork
Hand Cultivator
Transplanting Trowel
Harvest Totes
Colliniar Hoe
Wire Weeder
Tiller
Ground Staples
Weed Block Fabric

Harvest Knife
Curved Shears
Bypass Pruner
Hand Saws
Dibble
Wheel Hoe
Measuring Tape
Lawn Mower
Weed Whacker

Appendix 1.e

First Time Involvement Materials - Page 3

This information is targeted at an audience who is now moderately familiar with the tasks

LaFarm Continued Involvement Materials #3

Advanced Farm Info and Techniques

Rows of Seedlings are planted and trellised in the Spring ⟸

Students harvest produce in the Spring, Summer, and Fall ⟹

The land has to be tilled and prepared before seeds can be put in the ground ⟸

Cover crops such as grass surround the produce to hold nutrients in the soil and prevent runoff ⟹

Compost is applied yearly.

How is Food Handled and Prepared at LaFarm? Good Ag. Practices (GAP)

Production:
Inspect fencing to make sure all domestic and wild animals cannot get in
Be aware of any surface water near or in LaFarm
Harvest:
Use the restrooms when needed and ensure they are accessible and sanitary
Hygiene is required; no sick persons should handle produce
No eating, chewing gum, or smoking is allowed on LaFarm, especially during harvest times
Always thoroughly wash hands before and after handling produce
Keep tools, totes, work surfaces clean and in good condition
Post - Harvest
Handle produce carefully to prevent bruising or damage; do not let produce totes touch the floor
Keep produce cool and covered
Remove all trash both in and around LaFarm

What Kind of Opportunities Are There At LaFarm?

Lafayette Food and Farm Cooperative
Summer and Fall Campus Marquis Market
LaSeed Library Bank
Compost Initiatives
Food Recovery Initiatives
Native Plant Gardens on Campus
Special Events (Earth Week, Day of Service, Make a Difference Day, seasonal planting parties, potlucks, farm pizza oven)

Visit our website:
garden.lafayette.edu
Look for LaFarm on these platforms:

Appendix 1.f

First Time Involvement Materials - Page 4

This information provides additional resources for people who want to learn more about LaFarm.

Value Added: Additional LaFarm Resources #4

Research at LaFarm

EXCEL scholars have been a mainstay at LaFarm during summer months. To find out more information check out: sites.lafayette.edu/lafarmblog

Annual Reports

The LaFarm annual reports offer great insight into what's going on at your college farm! garden.lafayette.edu

Films

Check out the list of farm themed films at: sites.lafayette.edu/lafarmblog/resources/

We recommend:

The Brothers of DU at LaFarm:

Interested in Volunteering? Use The Easy to Fill Out Participation Form At:

garden.lafayette.edu

Want to bring along your friends? Consider signing up your Greek organization, athletics team, club, or one of your classes.

Links and Resources

CareerSpot	careerspot.lafayette.edu/
GivePulse	lafayette.givepulse.com/
LafSync	orgsync.com
ViC	sites.lafayette.edu/vic/about
Research Blog	sites.lafayette.edu/lafarmblog

Appendix 1.g

Additional Necessary Contacts.

Key contacts for those who are concerned with engagement with LaFarm at Lafayette. Included is the contact's name, title, and engagement project that they are most familiar with.

Sarah Edmonds - Farm Manager

edmondss@lafayette.edu

Kristin Cothran - Director of Student Involvement - Orientation Activities

conthrank@lafayette.edu

Amber Zuber - Director of Landis Outreach Center - POSP Activities

zubera@lafayette.edu

Chris Brown - General Manager of Bon Appetit Dining Services - Orientation to Dining

Christopher.Brown@cafebonappetit.com;

Carolyn Karwick - District Manager of Bon Appetit Dining Services - Orientation to Dining

Carolyn.Karwick@cafebonappetit.com

Marie Fechik-Kirk - Director of Sustainability

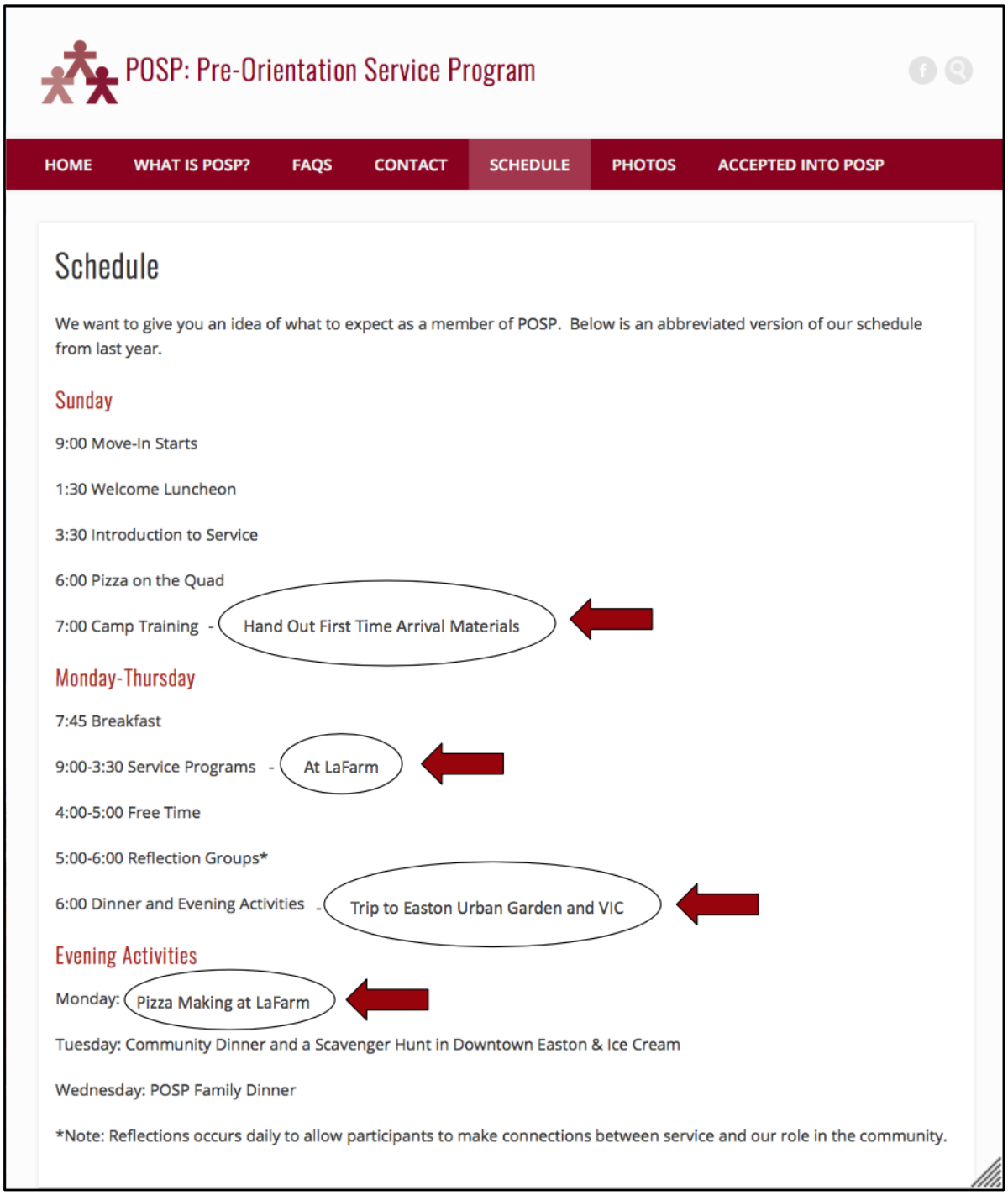
fechikkm@lafayette.edu

Miranda Wilcha - Sustainability Fellow

wilcham@lafayette.edu

Appendix 1.h

POSP Sample Schedule.



POSP: Pre-Orientation Service Program

HOME | WHAT IS POSP? | FAQS | CONTACT | SCHEDULE | PHOTOS | ACCEPTED INTO POSP

Schedule

We want to give you an idea of what to expect as a member of POSP. Below is an abbreviated version of our schedule from last year.

Sunday

9:00 Move-In Starts

1:30 Welcome Luncheon

3:30 Introduction to Service

6:00 Pizza on the Quad

7:00 Camp Training - Hand Out First Time Arrival Materials

Monday-Thursday

7:45 Breakfast

9:00-3:30 Service Programs - At LaFarm

4:00-5:00 Free Time

5:00-6:00 Reflection Groups*

6:00 Dinner and Evening Activities - Trip to Easton Urban Garden and VIC

Evening Activities

Monday: Pizza Making at LaFarm

Tuesday: Community Dinner and a Scavenger Hunt in Downtown Easton & Ice Cream

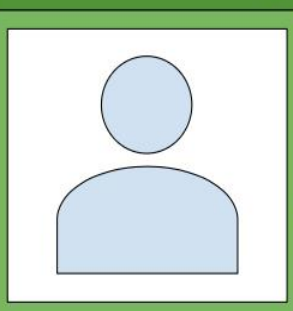
Wednesday: POSP Family Dinner

*Note: Reflections occurs daily to allow participants to make connections between service and our role in the community.

Appendix 1.i

ECOrep Assistant LaFarm Manager Job Description.

ECOrep Assistant LaFarm Manager



Necessary Skills
Basic Gardening Skills
Communication Skills
Cooperation Skills
Time Management Skills

Time Commitment
Part-Time Job
5-8 Hours / Week
1 Year Commitment

Contacts
Farm Manager:
Sarah Edmonds
edmondss@lafayette.edu

ECOrep Coordinator
Miranda Wilcha
wilcham@lafayette.edu

Job Description

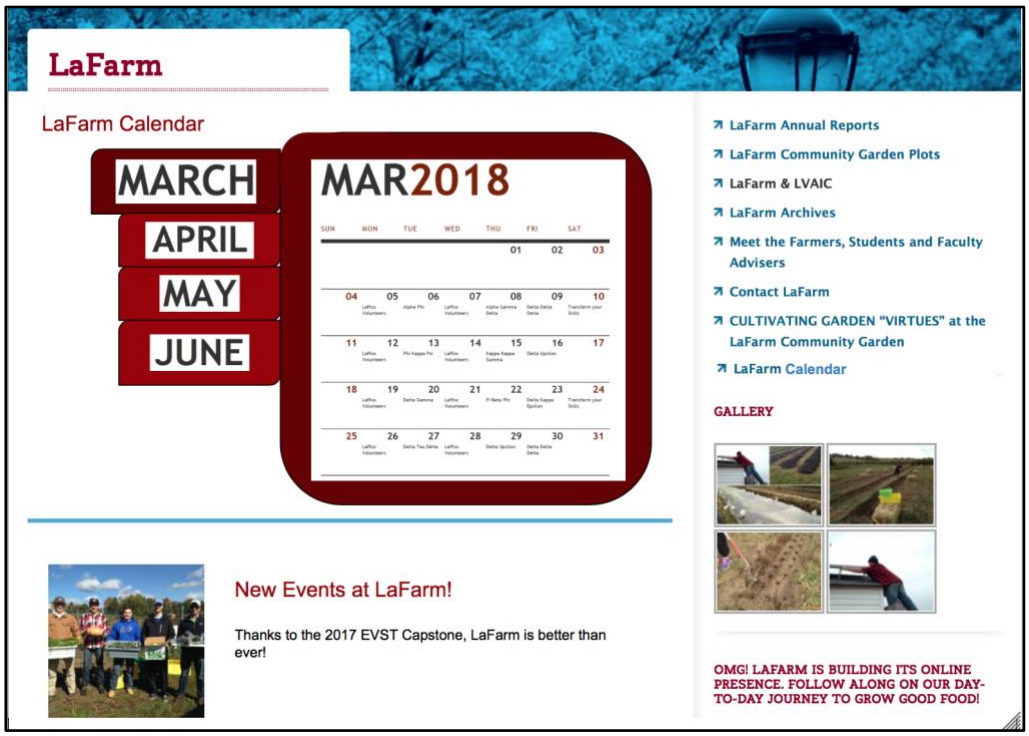
- Student liaison between farm manager and student body
- Actively involved in engagement of students with LaFarm
- Acts as coordinator between student groups interested in LaFarm
- Farming Tasks

Job Roles and Responsibilities

- Participate in orientation training and LaFarm training with Sarah
- Specifically catered to student campus involvement with LaFarm
- Organizes weekly commitment and large scale commitment
- Creates calendar of commitment
- Recruits new students to assist in LaFarm's efforts
- Update Social Media and Website
- Assist Sarah in basic day to day needs
- Attends monthly ECOrep meetings
- Support residence life staff on programming
- Set example through own sustainable actions on a daily basis

Appendix 1.j

Website Template for Calendar of Commitment.

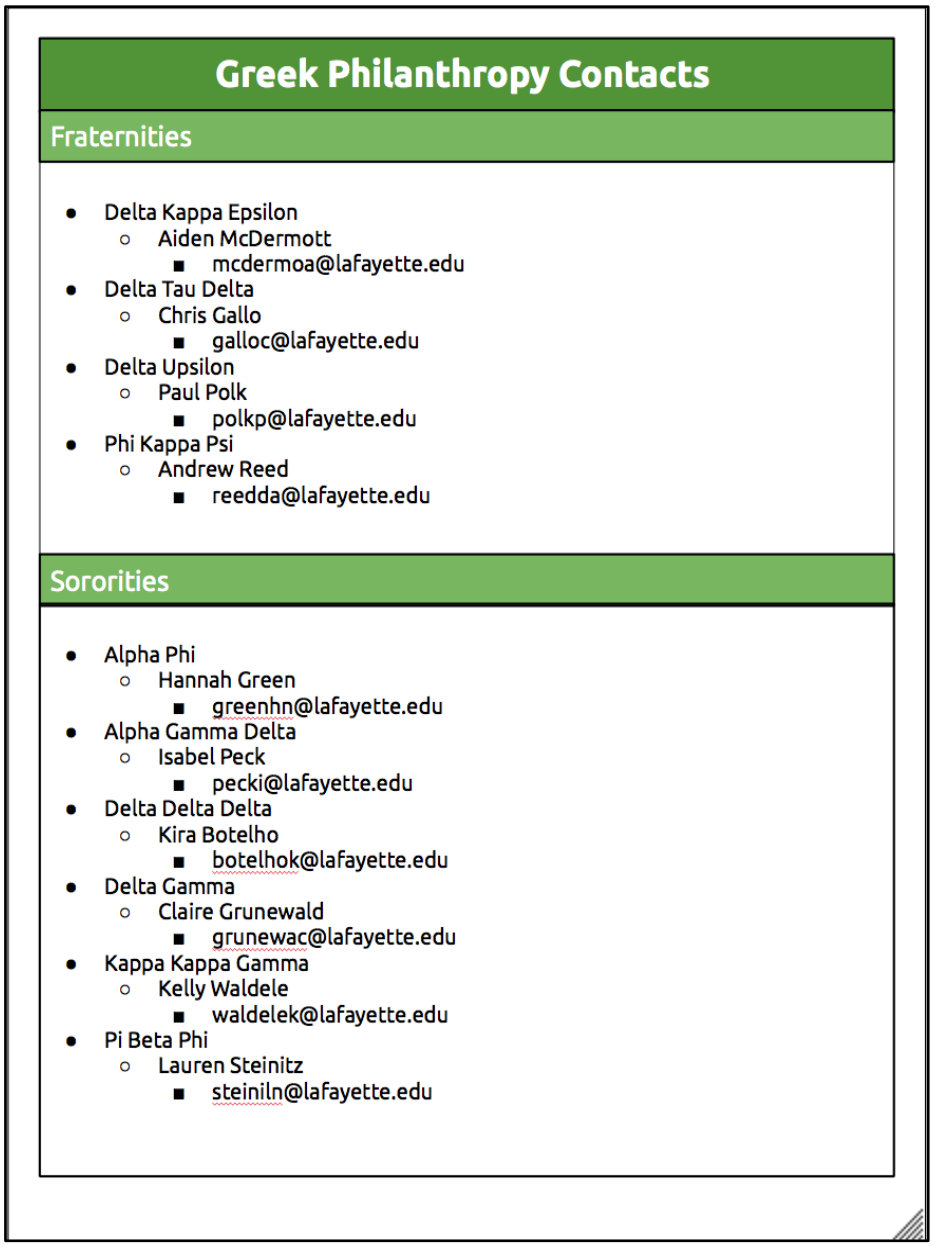


Appendix 1.k

The new "Get Involved @ LaFarm" document that farm manager Sarah Edmonds has provided

Appendix 1.l

Contact sheet for Greek Philanthropy Chairs.



Greek Philanthropy Contacts

Fraternities

- Delta Kappa Epsilon
  - Aiden McDermott
    - mcdermoa@lafayette.edu
- Delta Tau Delta
  - Chris Gallo
    - galloc@lafayette.edu
- Delta Upsilon
  - Paul Polk
    - polkp@lafayette.edu
- Phi Kappa Psi
  - Andrew Reed
    - reedda@lafayette.edu

Sororities

- Alpha Phi
  - Hannah Green
    - greenhn@lafayette.edu
- Alpha Gamma Delta
  - Isabel Peck
    - pecki@lafayette.edu
- Delta Delta Delta
  - Kira Botelho
    - botelhok@lafayette.edu
- Delta Gamma
  - Claire Grunewald
    - grunewac@lafayette.edu
- Kappa Kappa Gamma
  - Kelly Waldele
    - waldelek@lafayette.edu
- Pi Beta Phi
  - Lauren Steinitz
    - steiniln@lafayette.edu

Appendix 1.m

Email Template for Greek Philanthropy Contacts.

Email Template to Greek Philanthropy Chairs

Template

Hello ___[insert student's name]___,

My name is __[your name here]__ and I am the ECOrep assistant LaFarm Manager. Every year the brothers of Delta Upsilon volunteer and perform community service at LaFarm. We value and appreciate the work they have done for us in the past and are looking to include more Greek chapters to the efforts at LaFarm. I am reaching out to you as the philanthropy chair of ___[insert Greek organization name]___ to ask if your chapter would be able to contribute time to a service opportunity out at LaFarm.

LaFarm is Lafayette's own college farm, located 3 miles away from campus out at Metzgar fields. This 3 acre farm produces food for the college as well as people in need in the Easton community. The farm is continuously growing and we need all the help we can get. It is a great way to give back to the college and an awesome team building experience especially when new members join.

Please let me know if your chapter is able to contribute.

Best,
__[your name here]__

Appendix 1.n

Visual created for new LaFarm signage.

Appendix 1.o

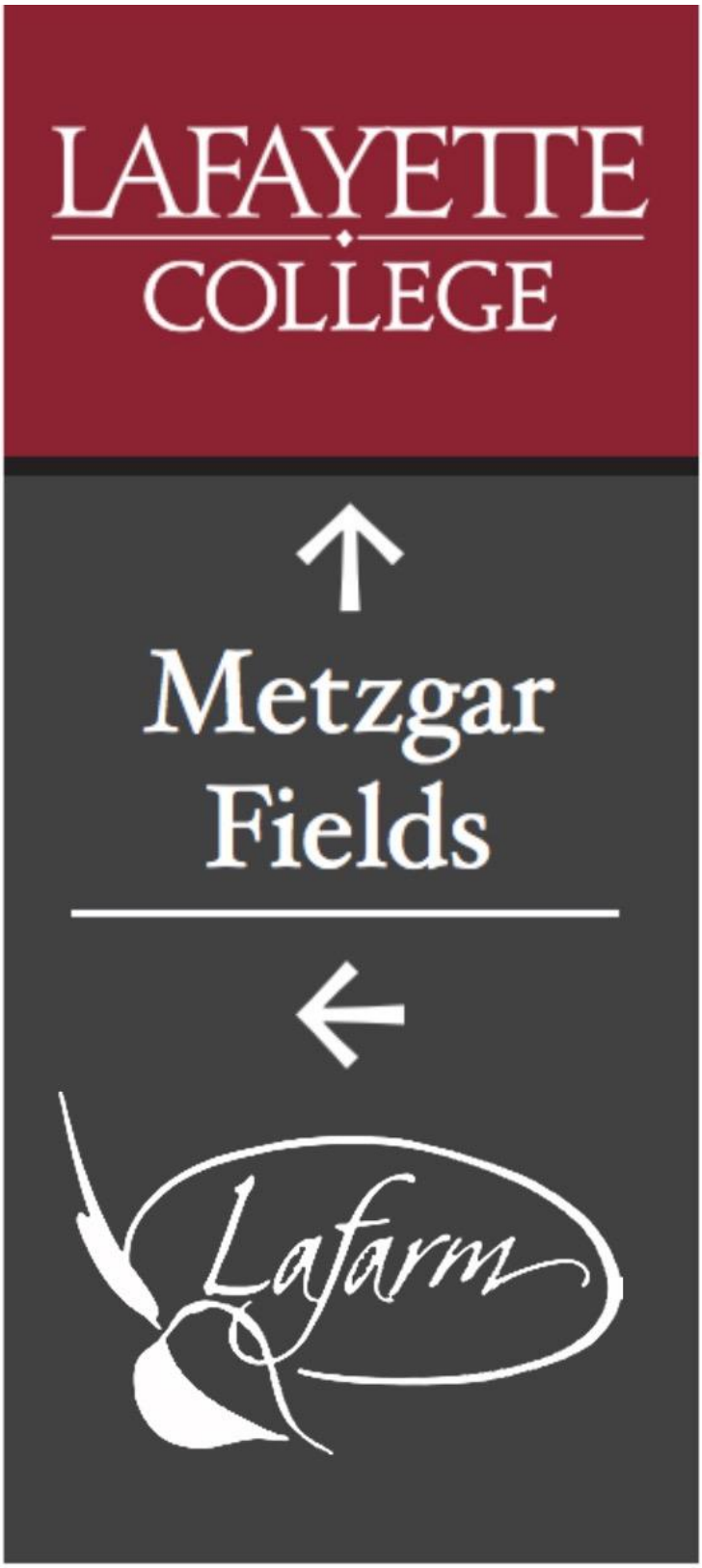
101c Standing alternative LaFarm Logo #1

Appendix 1.p

White LaFarm logo on 100D.04

Appendix 1.q

Close up white LaFarm logo on 100D.0

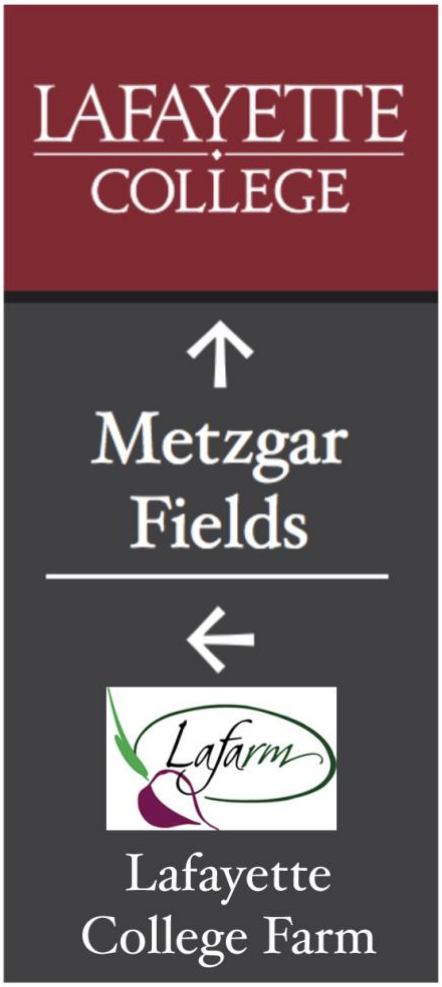


Appendix 1.r

Close up white LaFarm logo on Building ID

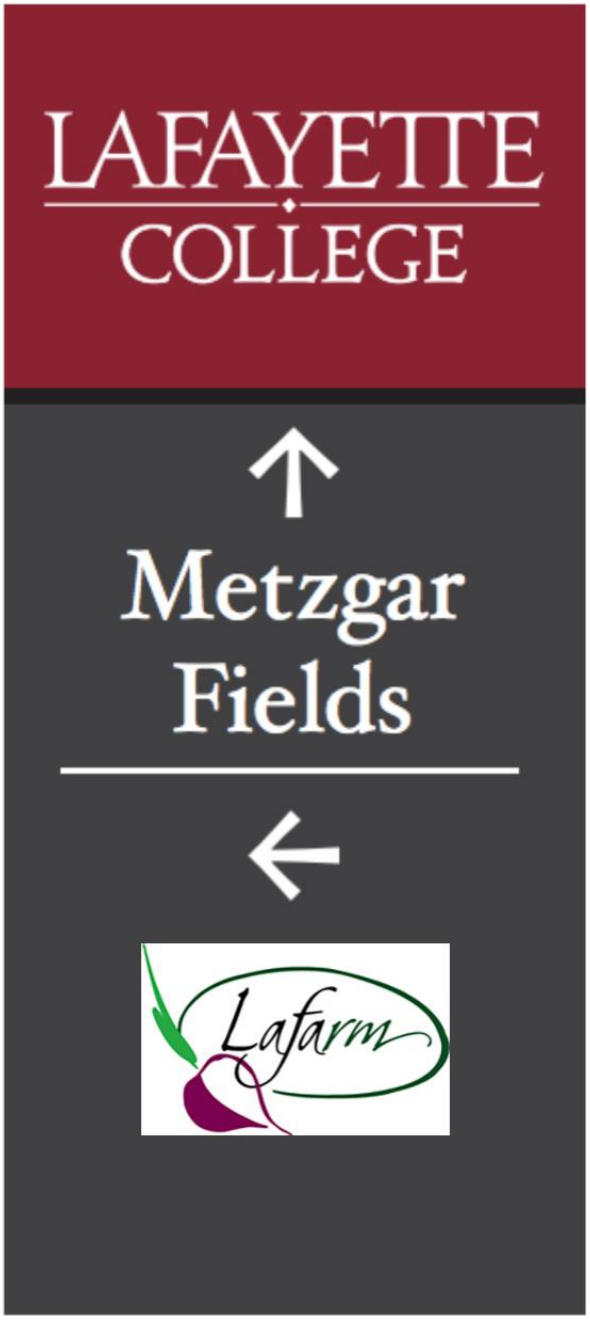
Appendix 1.s

Close up alternative LaFarm logo #1 on 100D.04

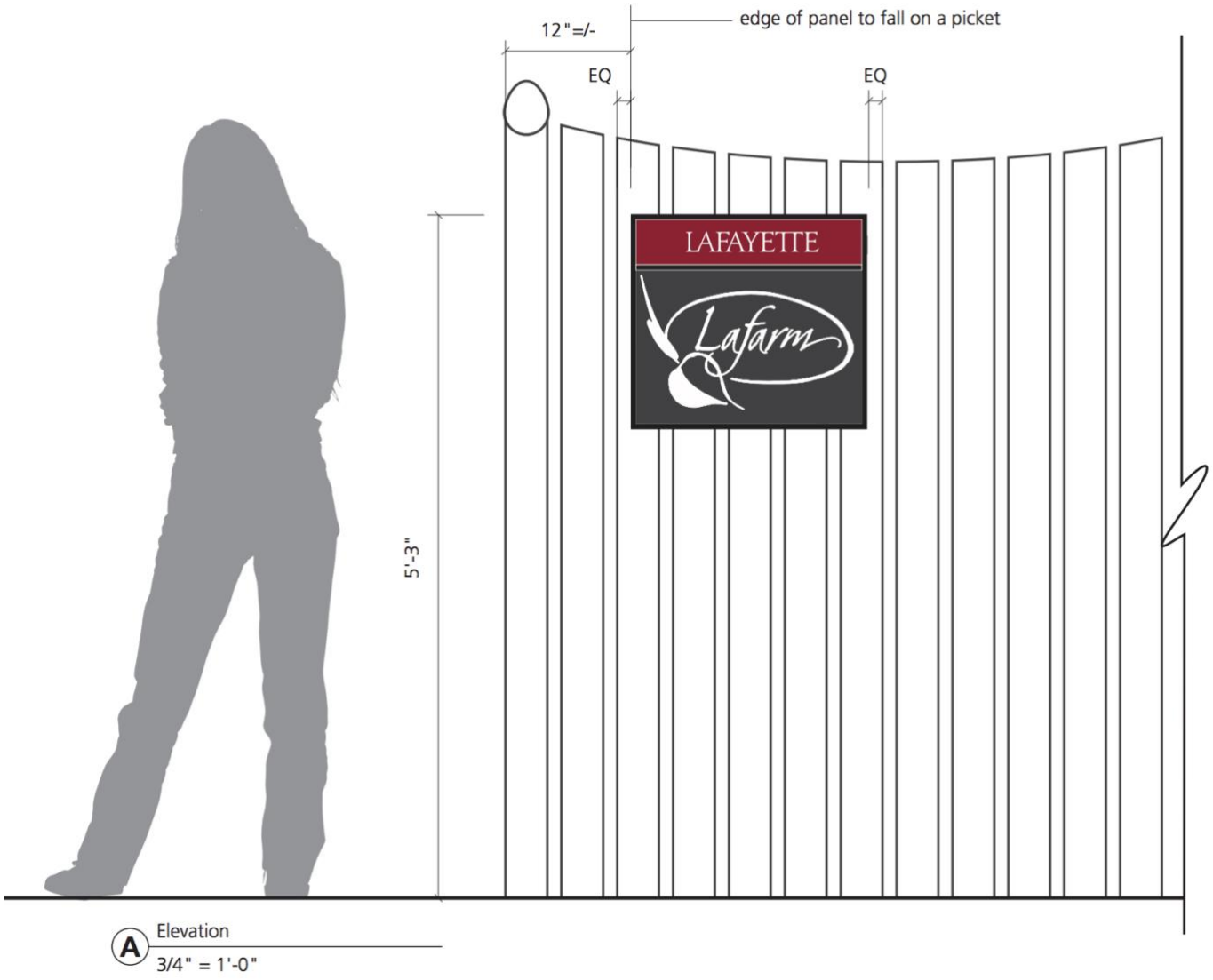


Appendix 1.t

Close up alternative LaFarm logo #2 on 100D.04



Appendix 1.w
White LaFarm on 112B.01



Appendix 1.x

Each year during the Eat Local Challenge, we serve a meal made entirely of foods grown within 150 miles of this café. This year you're going to eat something you had no idea was grown right around here.

Farm To Fork

Farm to Fork is a companywide initiative to buy locally, formalized in 1999. Our first choice is to purchase seasonal ingredients from small, owner-operated farms and ranches within a 150-mile radius of your café.

In 2013 alone, Bon Appetite purchased 1.15 tons of fresh vegetables from LaFarm. Bon Appetite continues to purchase as much fresh herbs, vegetables, and fruits as LaFarm is able to produce.

Working together, the partnership between LaFarm and Bon Appetite aims to create a sustainable food loop by growing produce for the dining halls and recycle nutrients from composted food back into the soil.

Appendix 1.y

Lafarm

DIRECTIONS TO LAFARM

LaFarm is located at 3118 Sullivan Trail, Easton, PA

Take the "Metzgar" Lafayette College Shuttle From the Corner of Pierce St. and Hamilton St.

If driving, upon entrance to the Metzger Sports area take an immediate left onto a gravel road which will take you directly to LaFarm. Parking is available in the grass in front of the LaFarm.

To see the shuttle schedule, check out:
http://www.lafayetteshuttle.org

WAYS TO GET INVOLVED:

Student Run Groups:

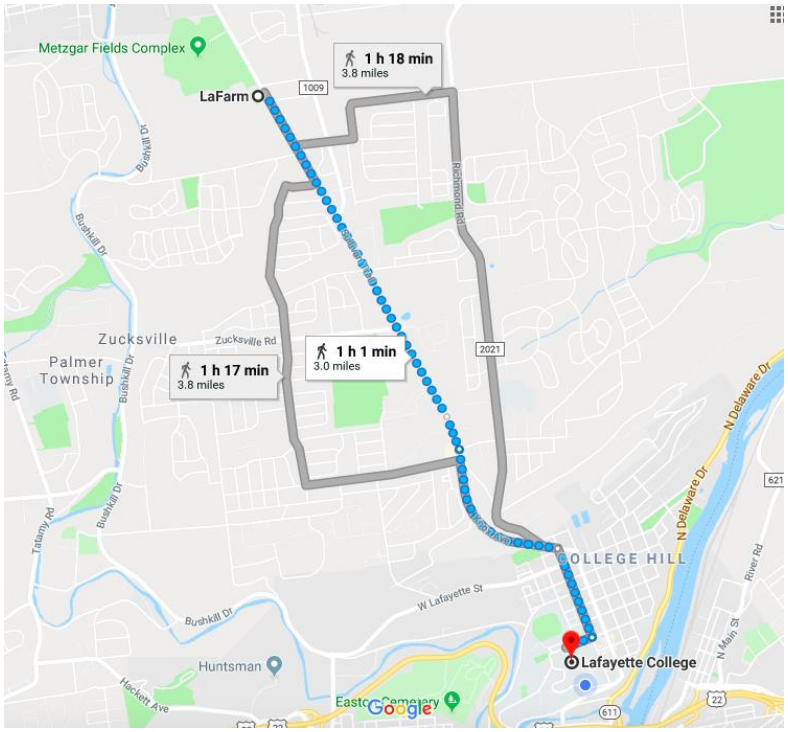
VIC (Vegetables in Community):
VIC aims to promote food justice and local food agency in Easton's West Ward.

LEAP (Lafayette Environmental Awareness and Protection):
LEAP's purpose is to work toward campus sustainability, promote discussion and awareness of local and national environmental issues, and organize students to action.

QUESTIONS, COMMENTS, CONCERNS?

SARAH EDMONDS
Metzgar Environmental Projects Coordinator
and LaFarm Community Garden & Working Farm Manager
edmondss@lafayette.edu

Appendix 1.z


Metzgar Fields Complex
1 h 18 min
3.8 miles
LaFarm
1009
Bushkill Dr
Richmond Rd
Bushkill Dr
Zucksville
Zucksville Rd
1 h 1 min
3.0 miles
2021
Palmer Township
1 h 17 min
3.8 miles
Bushkill Dr
N Delaware Dr
621
Tatamy Rd
Bushkill Dr
COLLEGE HILL
River Rd
W Lafayette St
Bushkill Dr
N Main St
Huntsman
Lafayette College
Hackett Ave
Easton Cemetery
Google
611
22

Academics Appendixes

Appendix 2.a

Proposal for Incorporation of Sustainable Food & Farm Courses Into Lafayette's Curriculum

In order to begin incorporating food and agriculture into our curriculum, we should first look at a peer school that has effectively done so. Dickinson College is a prime example of a peer school Lafayette College can learn from. Dickinson has a student body number of 2,420, which is very closer to Lafayette College's student body number and can serve as the best model for Lafayette to follow. Their student to faculty ratio is 9:1 which is very close to ours, which is 10:1. Their tuition cost is practically equal to ours, yet they still have several more courses offered oriented around sustainable food and farm in their curriculum compared to ours. Dickinson, like Lafayette, does not have a Food Studies director or professor that specializes food studies. Out of the eight institutions researched, only Middlebury College and Cornell University have a Food Studies professor or director that specializes in that field. However, they are willing to put significantly greater effort into incorporating sustainable food and farm into the curriculum compared to us, as is evident from the table (Figure 3.1). This begs the question, why is Lafayette not doing the same?

Lafayette states on the LaFarm website page "Our mission is to integrate curriculum and practice in sustainable food and agriculture for the campus community…and serve as a laboratory for collaborative student-faculty education and research." It goes on to say "LaFarm provides multidisciplinary student engagement through classroom participation and academic research." The incorporation of LaFarm during class periods continues to trend upward, which can still be improved**.** According to the 2013 Annual LaFarm Report only courses offered in four departments (EVST, BIO, ENG, CE) had made a trip out to LaFarm during class periods or for projects. Unfortunately, only seven courses across all four of those departments went to visit LaFarm during their class sessions. According to the 2015 Annual LaFarm Report, three more departments have incorporated LaFarm into their courses including Engineering Studies, Environmental Science, and History. However, the number of courses that visited is not explicitly given.

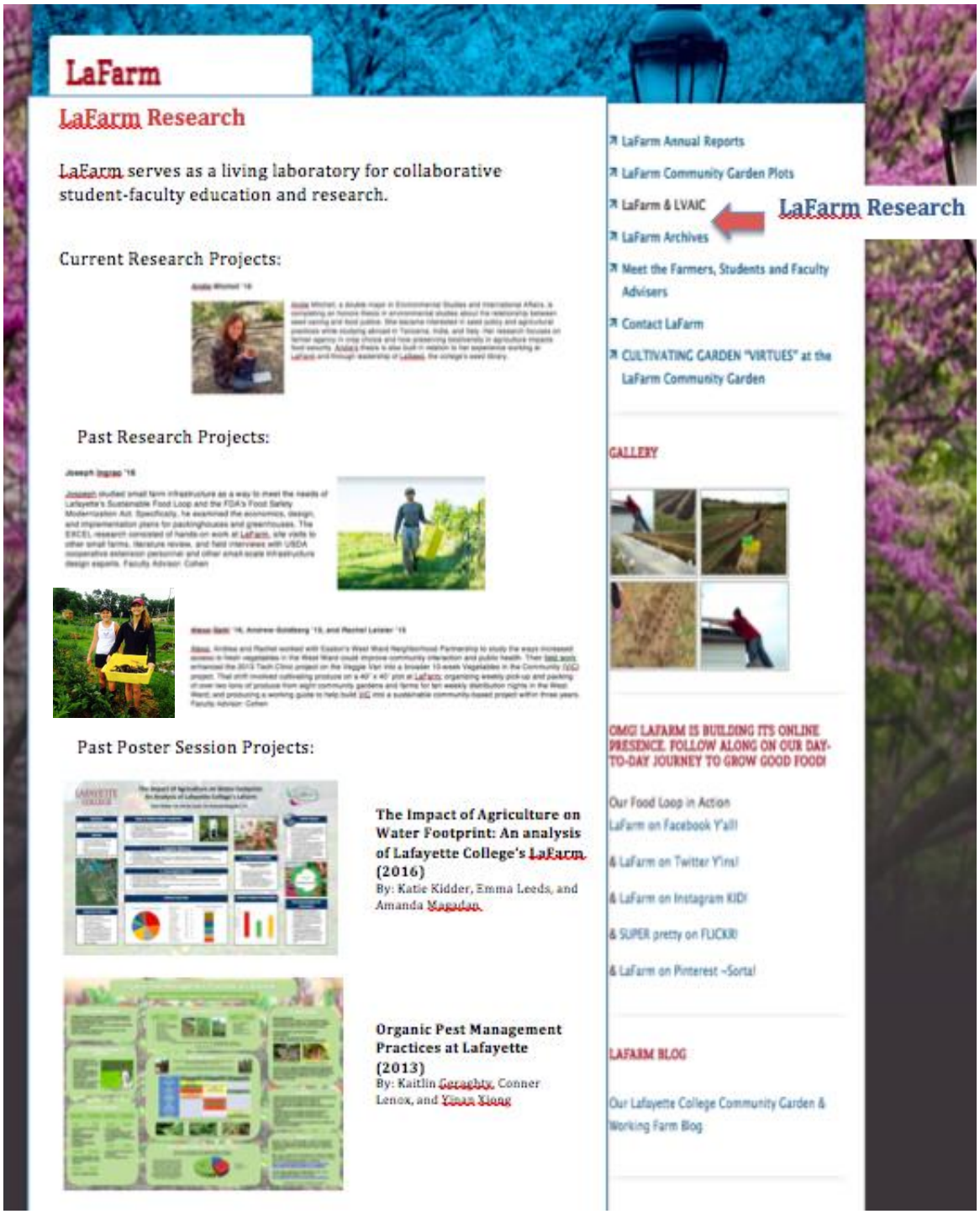
Dickinson and Lafayette College share many departments, yet Dickinson offers a greater number of courses incorporating food and agriculture compared to Lafayette. The departments Lafayette and Dickinson have in common include: Africana Studies, American Studies, Anthropology, Biology, English, Environmental Studies, Film And Media Studies, French, History, Italian, Judaic Studies, Sociology, Religious Studies, Spanish, and Women and Gender Studies. Dickinson managed to incorporate 20 courses oriented around food and agriculture across 15 different departments. Despite the fact that Lafayette shares all these departments with Dickinson, we only successfully incorporated food and agriculture into seven different departments.

Implementing and incorporating sustainable food and farm as well as the concept of a resilient foodshed into more courses at Lafayette has the potential to spark a shift toward a more sustainable food and farm oriented culture at our school. Furthermore, pursuing the incorporation of LaFarm and the concept of a resilient foodshed into our curriculum would expedite the process of Lafayette becoming a leader in the student farm movement and allow Lafayette to serve as a

model to fellow institutions to follow. If Dickinson can do incorporate sustainable food and farm into their curriculum, we can too.

Appendix 2.b

LaFarm Website Research Template

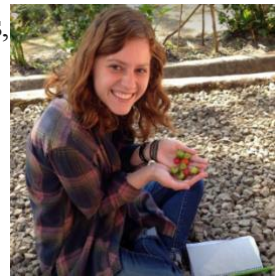


*Note: This website model does not illustrate all of the research projects but rather shows the general organization and layout of the website. A more complete listing of projects can be found below in Appendix 2.c.

Appendix 2.c

Inventory of Past and Current LaFarm Research Projects:
Current Research Projects:

Andie Mitchell '18



Andie Mitchell, a double major in Environmental Studies and International Affairs, is completing an honors thesis in environmental studies about the relationship between seed saving and food justice. She became interested in seed policy and agricultural practices while studying abroad in Tanzania, India, and Italy. Her research focuses on farmer agency in crop choice and how preserving biodiversity in agriculture impacts food security. Andie's thesis is also built in relation to her experience working at LaFarm and through leadership of LaSeed, the college's seed library.

Past Research Projects:

Joseph Ingrao '16

Jospeph studied small farm infrastructure as a way to meet the needs of Lafayette Sustainable Food Loop and the FDA's Food Safety Modernization Act. Specifically, he examined the economics, design, and implementation plans for packinghouses and greenhouses. The EXCEL research consisted of hands-on wo at LaFarm, site visits to other small farms, literature review, and field interviews with USDA cooperative extension personnel and other small-scale infrastructure design experts. Faculty Advisor: Cohen

Alexa Gatti '16, Andrew Goldberg '15, and Rachel Leister '15

Alexa, Andrea and Rachel worked with Easton's West Ward Neighborhood Partnership to study the ways increased access to fresh vegetables in the West Ward could improve community interaction and public health. Their field work enhanced the 2013 Tech Clinic project on the Veggie Van into a broader 10-week Vegetables in the Community (VIC) project. That shift involved cultivating produce on a 40′ x 40′ plot at LaFarm; organizing weekly pick-up and packing of over two tons of produce from eight community gardens and farms for ten weekly distribution nights in the West Ward; and producing a working guide to help build VIC into a sustainable community-based project within three years. Faculty Advisor: Cohen

Metzgar Irrigation & Swale Project (2013)

The overall goal of the project was to get potable water to LaFarm. This project was a collaboration between LaFarm, the art, and the environmental and engineering studies departments. The project was headed by Professor Brandes and consisted of three components: 1) design and installation of a water storage tank and surrounding sculpture made from found materials, 2) design and construction of an irrigation system using a well solar pump, and the storage tank, 3) improvements to the nearby drainage swale to reduce flooding and to increase retention and infiltration of runoff. Funding for this project was provided by Art Hendrickson'51 in memory of his grandson Bryan C. Hendrickson, CE class of 2010.

LaFarm Information Management (Fall 2013)

Lucy Bass, Elise Buffington, and Mat Pigott of the EGRS 451 class created two educational posters for LaFarm use. Through their observations and student interviews they discovered that there was a disconnect between the intent of jobs needed to be accomplished on the farm and the practical outcomes of these jobs. They recognized this disconnect as a lack of knowledge of agricultural practices and techniques needed for farm labor. The products of their research were a poster for good agricultural practices and a poster of beneficial and harmful insects.

LaFarm-to-Dining Integrated Data Management System (Spring 2013)

Annie Mikol, Nicole Alrassi, and Moussa Sarr of the EGRS 451 class created an integrated data management system for the use of garden harvest planning and procurement to facilitate the connection between dinning services and garden management staff at Lafayette. They examined the function of the food loop and were able to identify the missing links between dinning services and the garden. After identifying the missing links, they created an excel database to calculate a harvest timeline on the basis of planting dates, planting quantity, and various other factors.

Farm Project Feasbility Analysis (Spring 2012)

Caitlin Mitchell and Shaung Zhao of the EGRS 451 class created a reference map that helped to determine project feasibility for the Lafayette College Garden and Student Farm. The final product of the project is a poster, which includes a map of how to critique a college farm project proposal based on four factors: cost, number of people, lifetime, and sustainability.

Mapping the Lafayette College Community Garden (Fall 2011)

Students of the Fall 2011 EGRS 251 class envisioned the Lafayette Community Garden in the context of a larger system of food production in Easton, Pennsylvania. Research was conducted on the Lafayette Community Garden as well as at other food producers in the Easton area in order to examine the correlation between the location of healthy food sources and the general availability of healthy food options in the West Ward. Specifically, efforts were focused on understanding the available grocery stress and community gardens in various neighborhoods in Easton.

Julia Seidenstein (2011)

Julia completed her Mellon Scholar research project on LaFarm by implementing several pest control methodologies in the LaFarm community garden plots. During the 2011 growing season, Julia implemented various organic pest control methods to deal with the growing pest problem at the farm. Many of her implemented control methods yielded positive results in reducing the amount of damage caused by the pests. As products of her research project she created a poster as well as a bug encyclopedia.

Past Poster Presentation Projects:

The Impact of Agriculture on Water Footprint: An Analysis of Lafayette College's LaFarm (Fall 2016)

By: Katie Kidder, Emma Leeds, and Amanda Magadan

Organic Pest Management Practices at Lafayette (Fall 2013)

By: Kaitlin Geraghty, Conner Lenox, and Yinan Xiong

Appendix 2.d

Inventory of Poster Presentations Related to Food and Farm

All posters related to food, farming, and agriculture were included in this document. Posters that were highlighted in blue were specifically on LaFarm

Fall 2010:
Number of posters: 31 posters in total but only 18 to look at in the document
Classes who participated: Civil and Environmental Engineering **(CE 321)** and Environmental Chemistry **(Chem 252)**
Theme: No theme, "Environmental topics of their choice"
Poster #4: Post Construction Stormwater Management Case Study: Best Management Practice Methods & Treatment of Contaminated Soil By: Chris Geary and Don Peters
Poster #5: Agricultural Irrigation By: Levi Giese, Phil Hathaway, and Jason Marshalek
Poster #27: Environmental Endocrine Disruptors By: James Kugel, Tori Pocius, and Meghan Schlitt

Fall 2011:
Number of posters: 28 posters
Classes who participated: Environmental Science and Engineering **(CE 321)** and Environmental Chemistry **(Chem 252)**
Theme: No theme, "Environmental topics of their choice"
Posters that relate to food systems/agriculture:
Poster #2 Our Compost Brings All the Food to the Garden: Mass Balance of Nitrogen in Compost By: Carly Feiro and Melissa Robinson
Poster #8 Heavy Metal Removal Using a Constructed Wetland By: Zachary Benedetto, and Joseph Donatoni
Poster #11 Conventional Soil vs. Organic Soil By: Anthony Vecchio, Michael Bevilacqua, and Eduardo Rodriguez
Poster #14 Eat My Trash By: Olivia Platia, Sean O'Toole, and Elizabeth Jessep
Poster #24 Nutrient Pollution in the Chesapeake Bay By: Chris Mosley and Stephen Fiorelli

Fall 2012:
Number of Posters: 33 poster
Classes who participated: Environmental Science and Engineering **(CE 321),** Intro to the Environment **(EVST 100)**, "The Foods Choose" **(FYS 185)**, Environmental Chemistry **(Chem 252)**
Theme: No theme, "Environmental topics of their choice"
Posters that relate to food systems/agriculture:
Poster #1 Conventional Food vs. Organic Foods By: Austin Bashline, Peter Taggary and Zili Wang
Poster #5 Rooftop Gardens By: Nathan Papermaster, Nicholas Gurzynski, and Andrew Winn
Poster #8 Nutrient Cycling By: Allison Scoular, Christopher Radomski, and Sage Hartlaub

Poster #11 Lafayette Goes Local By: Ashley Bohenberger, Alexandra Elling, and Christina Marzocca
Poster #13 Land Use and the Lateral Carbon Flux of the Bushkill Watershed By: Josh Koerber, Annie Mikol, Alexa Maramba, and Charles Timko
Poster #16 It's Food, Not Waste By: Andrew Goldberg, Spring You, Daniel Friedwald
Poster #17 The Food, Energy and Environment Trilemma By: Jacob Parrish, Dan Dymecki, and Kelly Chickering
Poster #18 Food Waste in America By: Victoria Moscato, Nicole Catino, and Jen Ruocco
Poster # 21 GMOs By: Dan Beideman, Chris Pellan, and Devon Gorbey
Poster #23 Benefits of Farmers' Markets and Local Foods By: Leikune Aragaw, Austin Luginbuhl, and Caroline Ladlow
Poster #28 Vegetarianism and the Environment By: Olivia Waxler, and Caroline Kearney
Poster #29 Factory Farming By: Daria Donato, Leah Salamone, and Bridgit Reeve
Poster #30 Organic and Local Foods By: Eleanor Beckwith, Caren Hoffman, and Luning Zhang

Fall 2013:
Number of Posters: 35 posters
Classes who participated: Environmental Biology **(Biol 234),** Environmental Engineering and Science **(CE 321)**, Alternate Energy Sources, Introduction to the Environment course **(EVST 100)**
Theme: "Think Globally, Act Locally" or "Think Locally, Act Globally" Which is it?
Posters that relate to food systems/agriculture:
Poster #4 Composting Application Beyond the Backyard By: Monica Wentz, Alex Gatti, and Carolyn Messer
Poster #10 The Effects of Phosphorous Deposition in the Bushkill Creek By: Emily McGonigle and Andrea Jacobs
Poster #12 Organic Pest Management Practices at Lafayette By: Kaitlin Geraghty, Conner Lenox, and Yinan Xiong
Poster #13 The Ecological Consequences of the American Lawn By: Elizabeth Osborn and Steve Allaico
Poster #14 Can the Quad is a Learning Environment? By: Bonnie Malhotra, Nicolas Alarcon, and Andrew Hoff
Poster #19 What makes an Invasive Species Invasive? By: Bethany Rack and Leslie Tintle
Poster #20 The Cost and Benefits of Reducing Waste in Food Production/Distribution By: Patrick Grundy, Dejana Harris, and Jenna Kulback
Poster #21 The Organic Label By: Shawn Hogan, Ben Williamson, and Miranda Wilcha
Poster #27 Soil Quality of Local Organic vs. Industrial Farms By: Lucy Bass, Alexandra Sousa, Prisca Ratsimbazafy
Poster #32 Is Organic Farming a Worthwhile Alternative? By: Daniel Ma, Joey Canfield, and Chanler Fraser-Pauls
Poster #35 Organic Farming Practices By: Peter Todaro
Fall 2014:
Number of posters: 47 posters
Classes who participated: Advanced aquatic ecology **(BIOL 332),** Environmental Science and Engineering (**CE 321),** Alternative Energy sources **(CHE 370),** Environmental Chemistry

(Chem 252), Environmental Economics **(Econ 202),** Introduction to the Environment **(EVST 100)**
Theme: Biodiversity Loss: Causes, Consequences, & Choices
Posters that relate to food systems and agriculture:
Poster #7 An Economic and Chemical Analysis of Deforestation's Effect on Biodiversity in the Amazon Rainforest By: Jacqueline Cirincione, Allie Nagurney, and Chris Radomski
Poster #8 Fertilizing the Infertile or De-fertilizing the Fertile? By: Lisa Goulding, Tyler pircio, and Kanako Shibano
Poster #11 Monoculturism: Corn Crops of America By: Jesse Greenfield, Morgan Nobles, and Lisa Salomon
Poster #19 Colony Collapse Disorder: The Effect of Agricultural Pesticides By: Jessica Rupp, Bryn Gornick, and Jordan Roses
Poster #24 Threat of Biodiversity Loss Caused by Deforestation in New England By: Abby Perham, Campbell Weyland, and Doug Mitiguy
Poster #26 Honeybees: Measure of Biodiversity Loss By: Rachel Barron, Colton Mitchell, and Chad Peterson
Poster #31 Desertification and Biodiversity Loss due to Unsustainable Agriculture By: Jackie Jacobson, Dionne May, and Rebecca Miller
Poster #43 Reusable Storm water for irrigation By: Georgis Papagianis, Emily Turcotte, and Tawfiq Alhamedi

Fall 2015:
***No information available for this year. Need to email Professor Kney to see if he has the poster presentations from 2015 somewhere else**

Fall 2016:
Number of Posters: 43 posters
Classes who participates: Environmental Engineering and Science **(CE 321)**, Environental Chemistry **(CHEM 252)** Environmental Economics **(ECON 202)**, Intro to the Environment **(EVST 100)**, Global Environmental Politics **(GOVT 231)**
Theme: Water Challenges in the 21st Century Local to Global
Posters that relate to food systems and agriculture:
Poster #1 Economic effects of Water Scarcity on California Agriculture By: Alexandria Coward, Drew Petri, and Erik Sink
Poster #12 The Impact of Agriculture on Water Footprint: an Analysis of Lafayette College's LaFarm By: Katie Kidder, Emma Leeds, and Amanda Magadan
Poster #16 Analysis of Water Desalination of Agricultural use in California By: Rojhae Panton, Kate Wickersham, and Kayla Zola
Poster #24 California's Water Crisis By: Hope Gernert, Mac Jacobs, and Leon Shen
Poster #30 Techniques and viability of Soilless Farming in and Increasingly Urbanized World By: Kira Botelho, Sam Haines, and Faye Melekos

Appendix 2.e

Transfarm Your Skills

Goal: To draw students to LaFarm while also teaching them the basic skills in gardening and farming and educating them on the role that LaFarm plays at Lafayette College.

When: Two Saturdays a month, so either the 1st and 3rd or 2nd and 4th Saturday of the month.

Where: At LaFarm

Logistics:

The class would run from 12 – 1 PM every other Saturday and would be open to both students and the public. Given the infrequency of needing transportation we believe that it wouldn't be that hard to have the shuttle service drive out the students that are attending these classes. Individuals interested in taking the classes would need to RSVP for these classes to give the Lafarm manager an idea of how many people will be attending that week. A list of possible classes are:

- Soil testing
- Secondary soil implementation
- Compost building
- Basic seeding
- Trellising and pruning
- Foliar applications
- Organic practices
- Efficient harvesting
- Food safety
- Water and irrigation
- Could work with Bon Appetit at a harvest season to harvest and cook a meal

At the beginning of each semester students would be notified of the schedule for the upcoming semester including reminders the week of consisting of the topic and the link to RSVP. We envision some of the classes to line up with the labor needed to be done at the farm at that time, so it is important to meet with the LaFarm manager before sending out the schedule to make sure that the labor done during these Saturday classes doesn't infringe upon the successful production of crops at LaFarm. We believe that this initiative could be up and running by Fall 2018.

The second aspect of Transfarm Your Skills is the events portion. Students, professors, or community members can present for 15 minutes about an environmental topic that they are knowledgeable about. After the presentation, event goers can enjoy delicious pizza from the proposed pizza oven in Chapter 2. Bon Appetit, Lafayette's current dining service, would co-sponsor the event and provide the ingredients needed for the pizza. This idea came from the

foundation of Yale University's knead 2 know program, whose dining services provider also provides the ingredients for the pizza.

Funding: Students will need to pay for the classes up front as it is the best way to keep people committed to attending the events that they RSVP for. We envision the price of each class to not exceed $15 per class as those who are attending are college students who don't have a constant stream of income. Another option could be that when Laffco sponsors their Saturdays they use their budget, so those Saturdays would be free of charge while the Saturdays taught by the farm manager would cost no more than $15.

Personnel: As of now, the ECOrep LaFarm Assistant Manager would schedule out all events pertaining to Transfarm Your Skills. The LaFarm manager would teach the classes, but it would be this assistant's job to make the schedule for the semester of which weekends the classes would be on and to find different people to present for the events portion of the program. This would add about 8 hours to the LaFarm manager's schedule and the ECOrep LaFarm Assistant Manager would most likely work about 5 hours per week at the beginning of the semester planning everything, but once everything is planned the amount of time needed for Transfarm Your Skills would decrease.

Sample Flyer for Program:

EVERY 1ST AND 3RD SATURDAY

TRANSFARM YOUR SKILLS

LAFARM GARDENING SERIES

IF YOU'VE EVER BEEN INTERESTED IN GAINING SKILLS IN THE GARDEN THIS SERIES IS FOR YOU! WE ARE PROVIDING A SERIES THIS SEMESTER THAT IS OFFERED EVERY 1ST AND 3RD SATURDAY WITH DIFFERENT TOPICS EACH WEEK. THE TOPICS WILL RANGE FROM SOIL TESTING TO ORGANIC FARMING TO FOOD SAFETY. COME OUT AND VISIT ONE OF THE FARMS THAT PROVIDES FOOD TO YOUR VERY OWN DINING HALL!

greening LAFAYETTE

WANT TO LEARN HOW TO COMPOST?

DON'T KNOW ABOUT TRELLISING AND PRUNING?

INTERESTED IN ORGANIC FARMING?

WANT TO LEARN ABOUT WHERE OUR FOOD COMES FROM?

COME VISIT LAFARM!

Lafarm
3118 SULLIVAN TRAIL
EASTON, PA 18040

GARDEN.LAFAYETTE.EDU

EVERY 1ST AND 3RD SATURDAY OF THE MONTH AT 12 PM

Appendix 2.f

Local Food/Farm Tour

Lehigh Valley Food Tour

Goal: To use a tour of the Lehigh Valley and its restaurants that offer local food dishes to connect Lafayette College students to their place in the Lehigh Valley and to educate said students on what their location means to them as students at Lafayette College and as citizens of the world.

When: One Saturday a semester. Earlier in the semester will be more successful because workloads haven't picked up, so students will be more willing to participate in a more time consuming event.

Where: Provided below are a list of restaurants, and their contact information, in the Lehigh Valley that always provide locally grown ingredients in their menu items:

- **187 Rue Principale:** 187 Main St, Ste 103, Emmaus, PA
  - 610-928-0148
  - 187rueprincipale@gmail.com
- **Black & Blue:** 683 Walnut St, Easton
  - 610-438-3604
  - craft@blackandblueeaston.com
- **Bolete:** 1740 Seidersville Rd, Bethlehem
  - 610-868-6505
  - bolete2@gmail.com
- **Café Santosha:** 7150 Hamilton Blvd, Trexlertown
  - 610-366-1712
  - santosha413@gmail.com
- **Curious Goods at the Bake Oven Inn:** 7705 Bake Oven Rd, Germansville
  - 610-760-8580
  - info@eatcuriousgoods.com
- **Glasbern:** 2141 Packhouse Rd, Fogelsville
  - 610-285-4723
  - innkeeper@glasbern.com
- **Greenmouth Juice Bar + Café:** 140 Northampton St, Easton
  - 484-560-5136
  - greenmouthjuicecafe@icloud.com
- **Maxim's 22 Bistro & Brasserie:** 322 Northampton St, Easton
  - 610-252-2622
  - info@maxims22.com
- **Mister Lee's Noodles:** 325 Northampton St, Easton
  - 484-809-1346
  - info@misterleesnoodles.com
- **Molinari's:** 322 3rd St, Bethlehem
  - 610-625-9222
  - info@molinarimangia.com
- **Porter's Pub & Restaurant:** 700 Northampton St, Easton
  - 610-2506561
  - porterspub@gmail.com

- **Sette Luna:** 219 Ferry St, Easton
  - 610-253-8888
  - info@setteluna.com
- **Shankara Vegan Restaurant:** 201 E 3rd St, Bethlehem
  - 484-330-6405
  - nouvellegreen@gmail.com
- **Switchback Pizza:** 525 Jubilee St, Emmaus
  - 610-928-0641
  - marguerite@switchbackpizza.com
- **The Bookstore Speakeasy:** 336 Adams St, Bethlehem
  - 610-867-1100
  - thebookstorespeakeasy@gmail.com
- **Two Rivers Brewing Company:** 542 Northampton St, Easton
  - 610-829-1131
  - info@tworiversbrewing.com

Not all of these locations need to be used, but it is a big enough list that even if a few restaurants agree to the idea of joining the local food tour that it would be a substantial enough trip. There are also enough restaurants in Easton that the tour wouldn't have to travel that far, but it would be up to those who choose the restaurants. All of these restaurants were found at: http://www.buylocalglv.org/resources/farm-to-table-restaurants/.

Logistics: The food tour would be capped at about 10 people as it would be rather expensive to drive more than a vans worth of people around the Lehigh Valley. People would have to RSVP to the event and buy their 'ticket' in advance.

Funding: Each person who chooses to go on the local food tour would have to pay an upfront fee, not determined yet as we don't know how the restaurants will go about this. It wouldn't be much different than the day trips to Broadway shows that already occur. The food tour should not exceed $30 per person as college students do not have a consistent form of income and an important aspect of the tour is to have a group of students attend.

Personnel: This trip could be sponsored by one of the environmentally-centered clubs on campus. The logistics are already mapped out it really just comes down to finding a person to lead it and finding transportation.

Bon Appetit Farm Tour

Goal: To use a tour of nearby farms that Bon Appetit sources from to educate students about where their food comes from that they eat daily in the dining hall.

When: Most likely once a semester like the local food tour.

Where: Provided is a list of the 4 farms found on http://lafayette.cafebonappetit.com/farm-to-fork/ that could be used within this farm tour:

- **Twin Maple Farms:**
  - Produces potatoes, peppers, broccoli, cauliflower, cucumbers, sweet corn, and zucchini for Lafayette

- **Scholl Orchards:**
    - Produces apples, pears, peaches, nectarines, plums, cantaloupe, watermelon, onions, eggplant, peppers, summer squash, tomatoes, and winter squash for Lafayette
- **Real Gardens Farm:**
    - Produces eggplant, peppers, sweet corn, cucumbers, beans, beets, summer squash, and winter squash for Lafayette
- **LaFarm**

With these four farms students can get a better understanding of where their food comes from. This will also connect them more to their role as a student at Lafayette College within the Lehigh Valley.

Funding: This tour could be linked with Bon Appetit. The farms listed are farms that Bon Appetit sources from, so it would make sense for Bon Appetit to run this program to better educate students on where the food in the dining hall comes from. After meeting with Carolyn Carwick and other Bon Appetit employees we learned that they are interested in building a stronger relationship with students at Lafayette College and we believe that this local farm tour could help students gain a better understanding of what Bon Appetit values.

Appendix 2.g

Campus Garden Proposal

Who:

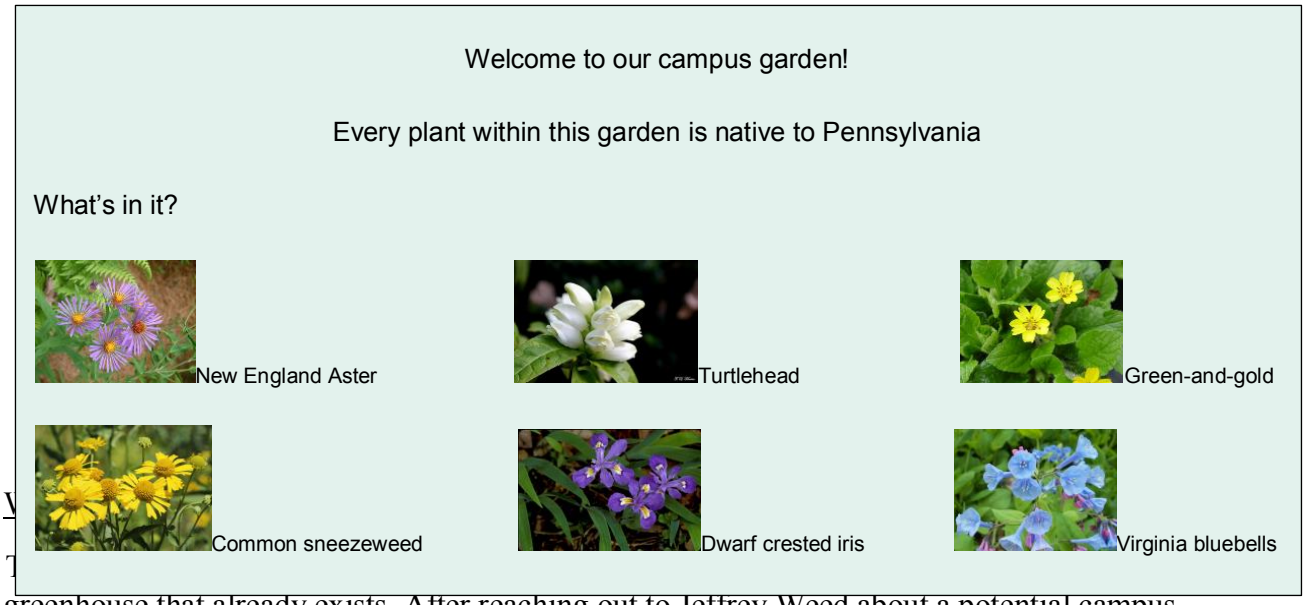
Lafayette College's EcoRep program already has work in the bio-retention area included in their responsibilities in order to get paid, so it does not seem difficult to split the EcoReps in half to where some also provide maintenance at the garden as well. Part of to EcoRep responsibility section of the job are rotating duties around the campus that already consist of duties like weeding the pollinator garden or breaking down boxes at the Post Office to make sustainable behaviors more visible on campus.

What:

The proposed campus garden will consist of native Pennsylvania perennials as they will provide less work needed to be done in comparison to other plants. Listed below are a few options that would apply to the area on campus that we have chosen:

- New England aster (blooms from August to frost)
- Turtlehead (blooms from July-August)
- Green-and-gold (blooms from April-October)
- Common sneezeweed (blooms from August-September)
- Dwarf crested iris (blooms from April-May)
- Virginia bluebells (blooms from April-June)

Along with these plants there will be herbs like basil, it has been noted from Carolyn Carwick that Lafayette students greatly enjoy pesto, and other plants that are part of the LaSeed Library*. Along with these plants, there would be a sign that is next to the garden that would explain what is in the garden (the plants listed above along with photos so viewers know which plant is which), why the garden is there, and the new proposed LaFarm logo that the Engagement Group within this report has created.



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greenhouse that already exists. After reaching out to Jeffrey Weed about a potential campus garden he proposed both this location and down at the new Bushkill Commons building. We decided that a garden at Kunkel would have more visibility on campus rather than down at Bushkill Commons.

Why:

Lafayette College states that sustainability is an important aspect of their mission to become a better institution. Although this is part of their mission statement, sustainability initiatives are not that visible around campus. A campus garden will help increase sustainability initiatives on campus along with providing students with hands-on learning and the ability to form a closer community.

Funding:

There are a few locations as to where the startup fees of creating a campus garden could come from. They could come from the Office of Sustainability, which also runs the EcoRep program or the funding could be approved by the school to put a small amount of money to the side to help start the garden because the EcoRep program would cover the rest once the garden is in place. The Office of Sustainability will most likely be more successful in terms of funding because the garden could be started throughout the semester, so the funds would be built into the EcoRep's salaries.

*LaSeed Library:

It has been expressed by LaFFCO that they are interested in having some of their seeds from the LaSeed Library planted in the on-campus garden. After reaching out to the current co-president, Jen Giovanniello, and our library research assistant, Kylie Bailin, she said that the listed seeds are currently within the library:

- Arugula
- Cucumber
- Nasturtium
- Sunflower
- Thai basil
- Melon
- Bunching onions
- Pole beans
- Tomatillo
- Cherry tomatoes
- Roma tomatoes
- Slicing tomatoes

All of these crops are what LaFarm has in excess and were meant to rotate through LaFarm. After speaking with Jen, she expressed interest in holding gardening events at the on-campus garden much like the "Transfarm Your Skills" events.

Points of Contact:

In order to make the on campus garden a reality, the current people should be reached out to and kept in the loop:

- Supervisor of Grounds, Jeffrey Weed: weedj@lafayette.edu
- Co-President of LaFFCO, Jen Giovanniello: giovannj@lafayette.edu
- Incoming seed ambassador, Faith Price: pricef@lafayette.edu

- Current LaFarm Manager, Sarah Edmonds: edmondss@lafayette.edu
- Director of Outreach and Access Services of Lafayette College Library and active participant in LaSeed Library, Kylie Bailin: bailink@lafayette.edu

Operation Appendixes

Appendix 3.a

Other College Inventory

Institution	Farm Size	Personnel (staff)	Personnel (students)	Woodf fired pizza	Composting	Greenhouse	Other Gardens	Kitchen	animals	classroom
Lafayette College	**3 acres**	**1 farm manager**	**Excel scholars, paid students, Laffco**							
Dickinson College	50 acres	2 farm managers, 1 packhouse coorindator, 1 administrative assistant, 1 campus outreach/education coordinator	4 full time spring, 6 full time summer, 15-18 part time	X	X	X				
Amherst College	1 acre of vegetables and 0.5 acres of cover crop		2 farmers, greenhouse/harvest help, field workers, share room staff, social media staff, work study			X				
Bowdoin College		1 garden manager	volunteers and interns; summer garden intern			X				
Middlebury College		1 farm educator, 1 associate director, 1 communications & outreach coordinator	seasonal volunteers and interns			X	X	X		
Pomona College		1 farm manager, 1 faculty sponsor	10 students employed, open volunteer hours on saturdays		X	X		X	X	X
Davidson College	3+ acers	1 farm manager	9 students			X				
Colby College			2 summer interns			X				
Hamilton College					X	X	X			
Haverford College	0.25 acers	1 farm fellow	3 student farmers			X			X	X
Colorado College	1.5 acres		1 lead intern and 3 other interns	X		X				

Appendix 3.a

Infrastructure	Size	Costs	Placement	Requirements	For more information, who to contact:
Gazebo with tables	30x50 - based on Klein Farm & five picnic tables (accomodates 30)	Picnic tables: from $170 to $300 (for one wooden picnic table)	Area 3	none	Yale University
Woodfired pizza oven	4X3(1000 mm) -- 4x10	$1,000-3,000	Area 3	refrigeration, ingredients, labor to cook pizza	Yale University
Cooler (trailer)	trailer (8x12)	Coolbot: $400 AC: $300 Installation: 0	next to wash station	Energy: 18,000 BTU (38-41 degrees F) opening 6x / hr	
Cooler (conventional)	8x12	18,000$	next to wash station	Energy: 1,113 avg. KW hours per month	Kleins Farm
Greenhouse	30x96 recommended in 2015 ES report	$25-35,000 based on who constructs it, could be up to $60,000 depending on power source	Area 3—ideally accessable by road to make it easier for Sarah to transport seeds	Heat and water source: 4 season irrigation and additional sources of power (more solar panels, wind, generator, or fossil fuel?) for inputs	Haverford College
Hoophouse	20x24	provided by LAFFCO	replacing dead flower bed near entrance for wash station	labor, water	
4 Season Water		dependent on irrigation style chosen (drip or spray)	Area 3 (fossil fuel)	(water heater, at least 50 feet of hosa, energy input for water heater)	
Gravel parking lot	4,800 square feet (space to fit 8 cars)	$3,599 for combined parking lot and round about	along the roundabout, closer to farmhouse	none	
Gravel roundabout	3,500 square feet (10 foot lane width x 350 foot length)	$3,599 for combined parking lot and round about	connect farmhouse road with newlins road	none	

Appendix 3.c

Zoning Map

Appendix 3.d

Contacts of other colleges and farms

Schools/farms	Contacts	Possition	Emails	Phone
Haverford College	Jahzara Heredia	Farm Manager (graduated Haverford student)	jheredia@haverford.edu	
Pomona College	Mary Alice Koon	Farm Manager	farmmanager@pomona.edu	(909) 607-8341
Kleins Farm	Beth Klein	Farm Owner	Kleinline1@aol.com	(610) 253-8942

Appendix 3.e[1]

Interview Transcript 1

- Meeting with Sarah 11/8
    - Make proposal for campus A be the original garden farm, and Campus B be the educational engagement pizza side, our plan already (zone 1,2=A zone 2= B)
    - Water is paid by the campus, electric is paid by the tenant
    - Sarah brought up coolbot - we have researched before .
    - We could set up enough solar panels on the structures we have in Zone 1 to power the cooler, would have to get grant for the cooler itself though
    - Keep greenhouse powered with solar panels in zone 1 (her suggestion, we believe it still works best in the engagement area zone 3)
    - Economy of scale, she probably won't need any more labor once adding crops/production to zone 2
    - Maybe start with fall 2019 production with garlic in zone 2
    - Can't start spinach, and lettuce, and swiss chard until we get the cooler, so can't give Bon Appetit their extra needs until cooler
    - Sunflowers summer 2018 or 2019 in zone 2 for "selfie" attraction
        - The sunflowers could go to our planned pumpkin patch for zone 3 the next year
    - 5-10 hours a week employee liaison for Sarah and coordination with Bon Appetit would really make things run smoother and help her- Sarah Says***

[1] Was not listed separately, however was a separate subject than the previous appendix

- Compost is close to the crops that need it most by Zone 1, but could be a case to move it by the pumpkin patch
- Little hole in the ground next to the lil white house by the farmhouse, could be perfect root cellar
- Could use old coca cola truck as the cooler and use a CoolBot system to rig it**
    - Could have art students repaint it

Promote reuse

Appendix 3.c